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CANADIAN Journal of Fabrics

THE JOURNAL OF THE
Textile Trades of Canada.

Vol. XIII.

TORONTO, OCTOBER, 1896

No. 10

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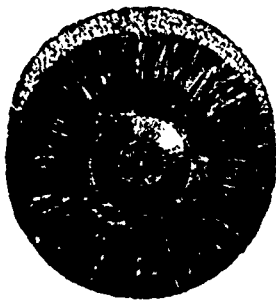
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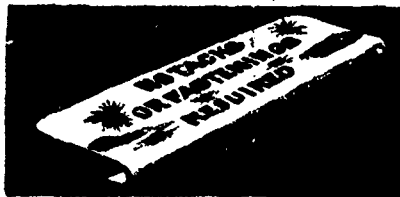
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THE JOURNAL OF THE
Textile Trades of Canada.

Vol. XIII.

TORONTO, OCTOBER, 1896

No. 10

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A Journal devoted to Textile manufactures and the Dry Goods and kindred trades.

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Editorial

Union Garments.

Much is being said of the variety of new goods which the rapid development of bicycle riding is enabling the knit goods manufacturer to produce. A glance at the advertisements of the dry goods houses shows us, however, that bicycle and sporting goods generally are not the only new feature of the market. A very noticeable one is the prominence now given to union or one piece underwear. These goods have been on the market time out of mind, especially in children's sizes, but moved slowly. To-day they are a feature of the market in all sizes and many grades, men's as well as women's and children's being found good sellers. While this is more

true of the United States market than our own, yet the tendency is well marked, and knitters who are in early may expect to get the benefit of the new movement.

The Outlook.

There can be no doubt that the signs of the times are of better omen than was the case some months ago. Prices are on the move, and prices are the commercial barometer. With wheat mounting towards the dollar mark, at the rate maintained during the past month, and cotton showing a sympathetic strengthening, there must be reason to look for fairer weather commercially. The croakers believe that present wheat prices are the result of a Republican bull movement in the United States, but though there may be such an influence at work to support any rise that takes place, the original impetus has a source widely separated from the trickery of United States politicians. The facts are that trade conditions in the Argentine Republic are improving, the enormous premium on gold which has been paid there for some years is disappearing, and consequently prices are rising and the competition of South American wheat is becoming less. This, taken in connection with the considerable shortage estimated in the world's wheat supply, accounts for the recent sharp rise. As the same cause must have the same effect to a certain extent on wool prices as well, the fall in gold in Argentina is worth careful study. Sir Robert Edgeworth is publishing a book entitled "Popular Fallacies Regarding Bi-metallism," in which he says: "The recent advance in the price of wheat is due to the rise in the gold value of the paper dollar in Buenos Ayres. Wheat, unlike most other commodities, has been subject to a double fall in price in recent years, one fall caused by the altered value of silver, as measured in gold, the other fall in value proceeding from the still greater depreciation of the Argentine paper dollar as measured in gold."

WHAT THE WORLD BUYS FROM CHEMNITZ.

The Saxon hosiery centre supplies a great variety of styles, to meet the tastes and requirements of all parts of the globe. By taking all the larger markets in succession, and seeing what kind of goods they buy, we shall best arrive at some idea of the hosiery made in the district of which Chemnitz is the centre. We will begin with the United States of North America as being the most important market for German hosiery.

UNITED STATES OF NORTH AMERICA.—Only full fashioned goods are used, and by far the greater quantity is made of cotton. Lises are also in strong demand. Cashmeres, though not a very large matter yet, continue to be bought in increasing quantities. A nice trade is done, too, in plaited goods, cotton or lisle backs and silk fronts. American-made all-silk goods have, however, now quite superseded those made in Germany. In cotton fine gauges, varying from 1½ lbs. to 2 lbs. weight for hose, and 14 ozs. to 1½ lbs. in half hose, are the staple article. A few Balbriggans, mostly not clocked, are used, but the bulk is required in black with a fair proportion of tan and slate shades. Lises from 33 to 39 gauge are used extensively in summer, and many gauge lisle stockings weighing about 1½ lbs. a dozen are sold. Both in cotton and lisle in ladies' and men's goods there has been a very strong call for solid Maco feet, or Maco split feet, the rest of the hose being black.

For children, socks and ¾-hose in sizes from 4 inch to 7 inch in white, black and tan, are imported. 1/1 and 7/1 ribbed hose are extensively used both in infants' sizes and up to 8½ inch. Most of the ribbed goods are turned out on ribbed top machines and have French feet. In fact all the goods sent to America must have French feet. Children's goods are largely bought in cashmere, and the bulk of them are fine gauge. The cashmere hose bought for ladies' wear are mostly plain black, and fine gauge. They vary in weight from about 2¼ to 2½ lbs. The men's half hose are similar in quality, and run from 1 lb. 2 oz. to 1 lb. 12 oz. A few natural wool half-hose are also bought for summer wear in light weights. Americans always prefer fine to coarse gauges, and since the former have been got out at such popular prices, the latter have gone out more and more. There is no doubt, too, that American-made seamless hosiery has supplanted the old 24 and 27 gauge produce. For winter wear, some heavy cotton hose and half-hose, and a large quantity of fleeced hosiery, is imported, but since the duty on cotton and wool goods has been the same, cashmeres have been bought a good deal, instead of fleeced hose. This, however, is not the case in the South, where cashmere is scarcely worn at all. Fancy hosiery in an enormous variety is now finding its way into the States. Embroidered goods have not yet been very much taken to, but printed and extracted styles have found favor. High fancies, Scotch checks, and boot patterns of every description have found a ready sale. Hose with lace insteps are very popular. Golf hose, though chiefly bought in England, have also been ordered in Saxony. Machinery is now being put up to meet the demand in this class of goods. Before passing to the next market, it should be remarked that most styles are required in small quantities, made 36 inches long in the leg, and in opera shapes. A good trade, too, is done in extra wide hose, 6½ inch under the welt.

CANADA.—In Canada they are now using goods abandoned by the States some five or six years ago. In this country much inferior styles are required. The

bulk of the demand is for 24 and 27 gauge heavy black cotton, weighing from 2 lbs. up, and costing between 3s. and 5s. Below 3s. the goods have circular cut legs. Of late years a fair proportion of fine gauge hose from 5s. to 6s. has also found a sale, and this shows the tendency of the market. In children's goods, low American cotton ribbed hose are required with as much weight as possible. A few heavy-weight cashmeres are occasionally bought, but the bulk of these goods has, no doubt, up to now, been bought in Nottingham and Leicester. A few odd dozens of fancy and plaited goods are bought along with the staples.

SOUTH AMERICA, WEST INDIES, MEXICO.—South America and the West Indies take all kinds of gay-colored goods, low-priced qualities, cut and cleared. Hose begin at about 1s. 6d. per dozen, and half-hose are in proportion. A nice trade in high-class lises and fine gauge cotton is done with Mexico. Cashmeres are not sent at all to South America. Many of the goods have white or brown grounds and colored stripes; press patterns of every kind are most popular. Royal blue, scarlet and chocolate are characteristic shades. Plain brown half-hose are also in demand in some parts. Seamless goods in brown and heather shades, made from imitation yarn, are required a good deal. Just as in other countries, so in South America, fashioned goods are slowly but surely killing off the older kinds of circular cut goods.

AUSTRALIA, NEW ZEALAND.—Australia and New Zealand are beginning to be an important market for Saxon hosiery. The trade used to be done chiefly through London, but transactions are now being done directly, and the future of the trade no doubt lies in this direction. Not many circulars are now bought, and the coarse gauge goods are gradually being replaced by fine gauge ones. There is no longer any prejudice against French feet. A good many children's ribbed hose in medium weights are required. Cashmere half-hose are extensively used, attention being paid that the quality is good. Besides black, navy and tan are saleable colors. There is little demand for fancies at present. The striped half hose, so extensively imported some years ago, are entirely out of favor. The patent half-hose, too, that were sold in quantities, have quite gone out.

POLYNESIA.—The islands of Polynesia get their supplies from the mainland of Australia. As washing is usually very expensive, low goods that are worn and thrown away are consumed in fair quantities.—*Knitters' Circular.*

(To be continued.)

THE CULTURE OF JAPANESE HEMP IN CALIFORNIA

An industry which is likely to be far-reaching in its effects throughout the United States and many parts of Europe, is now springing into existence in the San Joaquin Valley, California. About two years ago Felix Fremerey, who has devoted 45 years of his life to the culture of fibrous plants and the preparation of their fibrines for market, who is recognized by the Depart-

ment of Agriculture at Washington, D.C., to be an authority in these branches of industry, was appointed to superintend extensive experiments with ramie, hemp, abutilon, and other fibrous plants at Bakersfield, Kern county, California.

He brought with him Texas grown and acclimatized Japanese hemp-seed, "*Cannabis sativa japonica*," a variety similar to the Chinese seeds now extensively used in Kentucky, Illinois and Ohio, which were sown and found to make a wonderful growth in that district. On May 29th, 1894, quite a quantity of these seeds were sown by Mr. Fremerey in loose sandy loam at the Experimental Gardens. The plants were well watered for about 10 days, and in 62 days attained a height of 10 feet, which at the expiration of 92 days increased to fully 15 feet. This unexpected success encouraged the belief, which has since been fully justified by field experiments on an extensive scale, that, when sown early in the season, say middle of February to beginning of March, much better results would ensue, and two crops be easily obtainable off the same land, each crop averaging 12 to 15 feet in height.

It is claimed that from careful analyses of the fibres by experts to whom they were submitted for examination, it has been determined that they are superior in strength, fineness and gloss to the best Italian hemp, and as the stalks, which grow straight and smooth, attain more than double the size of the Eastern plant twice a year, a proportionately bigger yield of fibres should, as a matter of course, be obtainable. Favored, however, by the wonderful climatic advantages of this region, and by the natural richness and moisture of the soil, combined with ample and cheap irrigation facilities existing, expectations of the actual yield of fibres have been altogether surpassed, and practical experiments have shown that with new methods of extraction, whereby no particle of fibrous material whatever is lost, and no tow produced, an enormous yield of fibres is secured, amounting to 2,500 to 3,500 pounds per acre to the crop, according to the quality of merchandise prepared for different purposes and the prices offered.

As a necessary result of this success, a considerable acreage has been put out this year, and harvesting operations have practically begun. Briefly stated, the methods in hemp culture employed here are these: Following an irrigation the soil is plowed not less than 7 inches, and carefully harrowed to pulverize the soil as much as possible. The seed is sown in drills 5 to 6 inches apart, and about 2½ inches deep, allowing 33 to 40 pounds per acre, and afterwards rolled to bring each grain of seed in contact with the soil, and in order that the moisture may be retained, as much as possible, near the surface during the critical period of germination. Sowing thus close ensures an even growth of straight and uniform stalks, and prevents their branching out. Irrigation should be resorted to as frequently as necessary, the luxuriant growth of the plant depending more upon moisture in the soil than upon its richness in humus. The average growth of the plant after it has reached a height of one foot, is 2½ inches in 24 hours,

though it frequently grows as much as 3½ inches in that time. When ready for harvesting the crop is cut with a reaping machine and the stalks immediately conveyed to the decoicators, through which they pass with great speed, all ligneous matter being eliminated, and an endless apron conveys the resultant clean ribbons from the rear end of the machines to any point.

The ribbons are now immediately subjected to the retting or degumming process, either in ditches, tanks or boilers, which, where decortication is resorted to, is much more quickly accomplished than when the entire bulk of the stalks has to be treated, the water coming immediately in contact with both sides of the peeled bark. Where boilers are employed the retting process is accomplished with certainty in 3 to 4 hours, and the fibres thus obtained preserve all their natural strength and gloss. They are, besides, never subject to over-retting or other damaging vicissitudes, as is liable to occur when retting takes place in running or stagnant water, and consequently the highest market price is assured. This method is the cheapest in the end, but necessitates an outlay for the required apparatus, which, however, is fully justified by the certain and satisfactory results obtained. After retting and cleaning, the fibres are dried on ropes or galvanized wires, either in the open air or under shelter where fresh air has free access. When dry they are run through a softener and hauled in ordinary presses.

FOR THE CANADIAN JOURNAL OF FABRICS

WOOL PROCESSES.

BY H. F. FELLOWS.

REVERSIBLE GOODS.

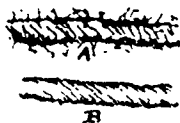
In mills where the two-beam system is in use on the loom, there is ample room for a diversity in the construction of the weaves, for each may be used on a separate beam, but in instances where both weaves are to be put on a single beam, then the circumstances are changed, and the resemblance of each to the other is a matter of importance. The method of forming two or more weaves for the purpose of deriving a striped or ribbed effect on either side of the garment, is illustrated by the following weave. The combination in the case is made up of a common four-harness twill weave and a four harness rib effect. A careful examination of these two weaves readily shows that the changes are such that a perfect union will be effected at the points of intersection. The intersections combine in a regular form. The object in this is to weave a waterproof exterior for a huntsman's cape, while the interior is of soft woolen yarns.

When it is ascertained what the two weaves are to be, the first operation consists in drafting these weaves on to the design paper. The juncture where these two patterns meet or oppose each other is then designated through the draft and woven on the loom. A vast field is open for the production of elaborate figures and ornamental designs by combining a diversity of weaves. Again, another great field is opened for diversification

by employing different yarns and stocks. In fact the scope offered for study and display of talent in the designing of fancy figured patterns is too great for immediate comprehension, and it is a many-sided mind that can penetrate this branch of the textile industry to its boundary lines.

ATMOSPHERE.

A peculiarity of the atmosphere of the American continent is that it favors electricity. It does not generate electricity; it fails to pass it off as fast as it is generated by friction. Go into any card room of a cotton or woolen mill on a dry, frosty morning, before the machinery gets warmed up, and you will see the delicate strands of roping standing out from the rub-rolls in all directions, and seeking to attach themselves to whatever objects they may be near. All this is due to the inability of the dry air to absorb the electricity as fast as generated by the friction of the different parts of the machinery, particularly the rub-rolls. A damp atmosphere, however, is a good conductor of electricity, and it is on account of this fact that the possibility of running looms by electricity is feasible. For instance, go into the same card room on a moist, rainy morning, and no presence of electricity will be noticed. This is because it is conveyed away by the atmosphere, and sufficient quantity to have any effect on the fibres is not allowed to accumulate. This accounts for the comparatively little trouble experienced through electricity in European mills. The atmosphere there is so heavily laden with dampness that the electrical element is practically overcome and carried away. The effect of electricity on yarns in process of weaving is given in the illustra-



tions. A glance at these enlarged specimens of yarns will show that one is very much "ruffled," while the other is comparatively smooth and even so far as surface structure is concerned. The ruffled piece *A* has been subjected to a charge of electricity, consequently the fibres of which it is made are striking out in all directions, and the thread is far from being a good, smooth and uniform strand like the second specimen, *B*. This latter specimen, although made of exactly the same kind of material and spun at the same time, presents a far different appearance under the powerful glasses of the microscope. The difference between the two yarns is readily seen in the sketch. The reason of the difference is that the sample *B* has not come in contact with anything electrical. The surface is exceedingly smooth, when compared with that of specimen *A*, and the fibres are retained in a firm, compact form, thus making it a good substantial and easily woven thread. We cannot reasonably expect yarn, in the condition of sample *B*, to work well in the weaving process.

FOR THE CANADIAN JOURNAL OF FABRICS.

TEXTILES IN GREECE AND ROME.

Spinning and weaving, chiefly wool, was a domestic employment of the women of ancient Greece and Rome. Cotton and silk were both known in Greece, but their cost made them uncommon wear. For a long time silk tissues were worn only by ladies of the highest rank, and in the time of the Roman emperors men who thus attired themselves were considered most effeminate. The Emperor Aurelian forbade the use of silk, and refused his empress a silken robe on account of its costliness. Various substitutes for silk were adopted both in Rome and Greece. The Island of Cos, in the Ægean, became celebrated for the production of fine transparent gauze, made by unravelling the close silk fabrics of Persia and India, and re-manufacturing the fibres. Another fabric which came into extensive use was "subsericum," in which the wool alone was silk. By the fourth century silk had become cheap enough to be generally worn by the richer people.

COTTON YARNS.*

It is not my intention at this time to go into all the details of the manufacture of yarns, or to carry on a lengthy discussion of any one subject, but to point out a few of the places which are sometimes overlooked even in mills which bear A 1 reputations. Nor is this paper intended so much for those who are old veterans in a mill, but for the younger superintendents who have yet to make their mark.

The more automatic a machine, the more the tendency to depend on that machine to do the work heretofore done by the brain. This is all right, but in no case should it lead to neglect. Machines made to-day require as much care and attention as those made a quarter of a century ago. The nearer a machine is to perfection the greater the demand on that machine for not only quantity, but quality. Quantity, quality and cost are, or should be, the three watchwords of every manager or superintendent, and how to increase the two former and decrease the latter is not a study of a day or a year, but an everlasting keeping at it so long as you are in the harness. The faculty of keeping track of details and taking advantage of failures counts for much in a business life. If I am rightly informed, it is the custom of a great many mills to run the sliver through a railway head before going to the combers, but not afterwards. If the combers always delivered a sliver of uniform weight I would have nothing to say regarding this point, but they do not, and if a railway head is a good thing to regulate the weight of the sliver before going to the combers, why is it not a better thing to regulate the sliver afterwards? Although many will differ with me in regard to the value of a railway, yet I believe it to be a very necessary machine, and although many doublings tend to produce an even thread, the railway gives you a more even sliver to begin with.

*Paper read before the New England Cotton Manufacturers' Association by John S. Adams, jr., Adams, Mass.

The drawing frame is a comparatively simple machine, but I have seen much uneven work made on a drawing frame. I do not refer so much to bad rolls as to improperly working stop motions and bad piecings. As a rule, if a boss carder has help to work in, and they are not skillful enough to work on the cards or speeders, he puts them on the drawing. It is, perhaps, a hard but comparatively simple matter to run drawing, but as all the stock goes through these machines, it is of vital importance that the work should be well done. An improperly working stop motion lets an end run through; a careless operator pieces up the end, but does not take out the single, and you get a variation of sometimes several numbers of yarn, according to the number of doublings and drafts beyond. Perhaps you think they don't do it in your mill, but get where you can watch the drawing tenders unobserved and you may see some one making either singles or doubles. Help watch a superintendent pretty sharply, and when he is around they are full of business. I have seen more or less of it done in our mill and seen it done in other mills, and have seen spinning rooms run very badly in consequence of bad splices on drawing and speeders. There is no mill but what gets some bad work, but some mills get more than others. There will always be careless help, and, perhaps, careless overseers in every mill, and it might not be a bad idea for every superintendent to spend part of his time looking after them. It is not human nature for any overseer to point out his own weak points to the superintendent, so it is quite necessary that the superintendent should be able to judge correctly of the different processes through which his cotton goes. Overseers sometimes, however, labor under disadvantages which should be taken into consideration, and all possible aid should be rendered them to improve the running of their rooms. Give them good tools and proper stock and demand good work. Encourage them all you can; keep them awake to the advancement of the times and interested in their work, and you will generally get the best there is in them; but keep them feeling like whipped curs and they do their work simply from necessity, and no more of it than they are obliged to.

Many of our mills are adopting the large ring and long traverse, and it may not be out of place to say a few words in regard to it. In changing to a large ring and long traverse each one must determine for himself just how far he can go and where to stop. The conditions are so different in different mills that it would be impossible to lay down any fixed law in regard to it. You will all have plenty of opportunity to exercise your skill as spinners before you get everything adjusted right, and it would not be a bad idea to "make haste slowly." I am confident, however, that you will be well satisfied with the results you obtain.

There must be, to begin with, well-prepared roving, and every part of the frame as perfect as possible. The bobbin, of proper diameter, must run perfectly steady

and the rings be perfectly concentric with the spindle at all points of its traverse, and well burnished. It would not be a bad idea to run the ring on a coarser number of yarn than you intend to run ultimately, till the ring gets seasoned, so to speak, and with a good overseer to push it you are ready to save money. You will require no more spinners, and can dispense with some of your doff boys, as there will be less doffing, consequently less cost and an increase in production, as the belt is on the tight pulley longer; less knots to tie in spooling, hence better work, and a large saving in that department. I think I am perfectly safe in saying that any superintendent can guarantee to his treasurer at least 15 per cent. on the cost of changing from small to large rings.

We have in our mill an Excelsior spinning frame built by the Fall River Machine Co., and a description of it and the work produced by it may be of some interest. The frame has 168 spindles, $2\frac{1}{4}$ -inch ring, $3\frac{1}{2}$ -inch space, $7\frac{1}{2}$ -inch traverse, double draft, condenser trumpets between front and middle roll, and an attachment for breaking back the roving whenever an end breaks—invented by the Sampson Cordage Co., of Shirley, Mass. The frame was designed to spin from No. 4 to No. 12 yarn. We had been obliged previous to getting this frame to spin our coarse yarn on a $1\frac{1}{2}$ -inch and $1\frac{3}{4}$ -inch ring, which not only made it expensive, but made many knots, which never failed to show themselves, and as at least one-half the breakage of the warp in a loom is caused by knots, it was a very serious matter. On the old-style frame we got about 425 yards of No. 6 yarn on a bobbin and a production of $6\frac{1}{2}$ pounds per spindle per week. We now get over 1,500 yards on a bobbin and a production of about $9\frac{1}{2}$ pounds per spindle per week ($\frac{3}{4}$ -inch front roll, running 196 revolutions per minute); the yarn being of as good quality as that made on the small ring. On No. 12 yarn, however, I have not obtained as good results as at proportionate speed; and as my tests are not complete at this time, I will not say that the frame cannot produce equally as good yarn as the single-draft frame. In order to show the results obtained by me in spinning No. 12 yarn, I have given at the end of this article a test of 120 bobbins of yarn. In conducting this test, I put in my speeders 80 bobbins of .75 hank roving, and made 40 bobbins of 1.80 hank roving. I then put the slubber roving in the Excelsior frame, putting the two bobbins that were together in the slubber together in the frame, and spun 40 bobbins of yarn with the condenser trumpets on the frame. I then took off the condenser trumpets and spun 40 bobbins more. The draft of the frame was 5.8 inches between the front and middle roll, and 5.6 inches between the middle and back roll, making a total of 32.48 inches. The 40 bobbins of 1.80 hank roving I put in our common frame, using a draft of 6.67 inches, the speed of the front roll and the twist being practically alike in all three tests. The cotton used was $1\frac{1}{4}$ -inch staple, 25 per cent. card waste mixed in. I expect to make further tests, and hope to obtain better results with the Excelsior frame.

The condenser, which is placed between the front

and middle rolls, is a valuable feature of this frame, as it concentrates and guides the loose fibres to the bite of the front roll, the breakage of ends being greatly increased without it. In using the roving breaker, we take off all under clearers, and the thread guides, being replaced by part of the roving breaker, are also dispensed with. The amount of lap waste on a frame is reduced to a minimum, as all that can possibly be made when an end breaks is from what cotton is between the front and back roll, and that which is made being in better condition to work over than the lap waste wound around an under clearer. They undoubtedly save a great deal of bad work, and yet are responsible for some, as I find that the spinners do not make as good splices without under clearers as with them. I have run the Excelsior frame with and without the roving breaker and find that it is indispensable. It not only saves waste but prevents the front steel roll from winding up with lap waste, thereby forcing the brass corner guides against the middle steel roll, which not only cuts them off but injures the steel roll. The general quality of the yarn is also greatly improved by using this device.

Competition among mills is growing stronger each day, which calls for increased skill, and it is only by adopting the best methods, and by tireless energy on the part of every man of responsibility, that any mill can hope to make for itself a record and keep it.

TEST OF 120 HOBBSINS OF YARN IN HALF SKIRNS, OR 60 YARDS.

Ex. Frame. With trumpets.		Ex. Frame. No trumpets.		Common Frame. 1 1/2 inch ring.	
Gr.	Br. Wt.	Gr.	Br. Wt.	Gr.	Br. Wt.
44	77	43.2	76	43.2	91
42.7	80	42.2	75	43.5	88
43.5	79	43.7	77	42.2	85
41.7	75	43.5	78	43.7	92
42.7	77	41.8	77	43.	90
43.5	77	42.7	76	42.	89
43.2	81	42	74	43.2	89
44.2	79	44.5	80	42.7	86
43.5	79	43.2	82	42.	87
41.8	75	42.	74	42.7	89
430.8	779	428.8	769	428.2	886 Totals.
{ 86.2	156	85.8	154	85.6	177 }
Average for 120 yards.					
{ 17.60		11.66		11.68	
Average number of yarn					

Each tests represents an average of four hobbins of yarn.

THE LONDON WOOL SALES.

The fifth series of colonial wool sales for the present year commenced September 22nd. The following quantities were brought to the hammer at the opening:—New South Wales, 1,674 bales; Queensland, 4,583; Victoria, 878; South Australia, 1,196; West Australia, 43; New Zealand, 4,453; Cape and Natal, 1,014; total, 13,841 bales. The attendance of buyers was large and representative (except of America), and competition fairly active. Prices for Australasian wools, merino and crossbred, were from par to five per cent lower than at the close of the last series. Capes, which were in limited supply, also, with few exceptions, sold about

five per cent. in buyers' favor. The quantities available for the series are subjoined, together with the corresponding auctions last year:—

	1896 Bales.	1895 Bales.
New South Wales	43,200	46,396
Queensland	37,200	35,225
Victoria	28,400	31,390
South Australia	4,900	5,373
West Australia	2,400	839
Tasmania	3,200	1,539
New Zealand	116,700	74,895
Cape of Good Hope	50,000	65,808
	<u>296,000</u>	<u>261,465</u>
Less about 15,000 bales Australasian, and 33,000 bales Cape forwarded direct from ship to Yorkshire and the Continent	48,000	67,500
Leaving of new arrivals	238,000	193,965
Add old stock	74,000	30,500
Total	<u>312,000</u>	<u>224,465</u>

THE WOOL CLIP OF THE UNITED STATES IN 1896.

The National Association of Wool Manufacturers recently completed its annual estimate of the wool clip of the United States for 1896. The estimate is based, as heretofore, upon the return of the Department of Agriculture of the number of sheep in the country on April 1, 1896, the return showing a total of 36,464,405 sheep, which is a loss of 3,484,983 sheep, since the last report, and the smallest total reported by the department since 1875.

The results of the inquiry for the year 1896 are given in the following table:—

WOOL PRODUCT OF THE UNITED STATES, 1896.					
	No. of sheep April 1, 1896.	Average weight of fleece, lbs.	Wool washed and unwashed, lbs.	Per cent. of shrinkage.	Scoured wool, lbs.
Total	36,464,405	6.38	232,474,708	60.7	91,284,579
Pulled wool			40,000,000	40	24,000,000
Total product			272,474,708		115,284,579

To a fleece product of 232,474,708 lbs. is added in the above table the pulled wool, estimated at 40,000,000 lbs., making the total clip of the year 272,474,708 lbs. in the grease or washed condition, and equivalent to 115,284,759 lbs. of clear wool. This is a decrease from 294,295,726 lbs. in 1895, and is the smallest product of wool since the year 1880. The total supply of United States wool for the past ten years has been as follows:

FLEECE AND PULLED WOOL IN THE GREASE.

	Lbs.	Decrease.	Increase.
1887	302,169,950	20,861,076	....
1888	301,876,121	293,829	....
1889	295,779,479	6,096,642	....
1890	309,474,856	....	13,699,377
1891	307,401,507	2,073,349	....
1892	333,018,405	....	25,606,898
1893	348,538,138	....	15,519,733
1894	325,210,712	23,327,426	....
1895	294,296,726	30,913,986	....
1896	272,474,708	21,822,018	....

The apparent supply of wool available for the year, exclusive of future importations, is as follows:—

	lbs.
Wool clip of 1876	272,474,708
Domestic wool on hand Jan. 1st, 1896	102,634,500
Foreign wool on hand Jan. 1st, 1896	31,533,300
Foreign wool imported Jan 1st to July 1st..	101,607,086
Total.....	508,449,594

This is a reduction of about 40,000,000 lbs. in the visible supply as compared with one year ago. But the comparatively small consumption of wool to date, owing to curtailment of manufacture, justifies the conclusion that the actual available supply is very much larger than these figures indicate, and that the residue is carried in the storehouses of the manufacturers awaiting a revival of business. It is thus evident that supplies are far in excess of any probable consumption during the year to come, and that no very great improvement in the prices of the raw material can be looked for until this vast bulk of raw wool has been materially reduced. A comparison of the prices of sixty varieties of domestic wools in the Boston market shows an average fall of 42 per cent., as compared with the prices which obtained in April, 1890, while similar comparisons of the London prices of colonial wools at the two periods indicate a gain of about 10 per cent.

BLENDING STOCK.

In these degenerate times a carder has many vexations his brother in years gone by knew nothing of, and the blending of different textiles is assuredly one of them. The modern carder can, however, console himself with the reflection that there have been no innovations in the method of blending, for it has always remained in the same good old way, discovered by the fellow who first mixed a lot of wool and dirt together. If there has been any improvement made in this direction we have not heard of it, says W. C. Bramwell, in his work on carding.

To the novice nothing would seem more simple than to throw different fibrous materials together, and shake them with a stick; but what a mistaken idea it is every practical man ought to know, but apparently does not, for, in the majority of cases, it is only novices who are ever entrusted to do it. It is disagreeable to be obliged to acknowledge the fact that not in one mill in a score, in this country, is the great importance of thorough blending properly appreciated, or, at a rate, executed.

There are men who will bestow every care in setting their cards and grinding them, who will make great efforts to get the best possible results from a lot composed of several materials widely differing in every respect from each other; and these same men will leave in the picker room (to carry out a process not in any sense secondary to grinding or setting a card) a fellow who the less he knows the more he is thought to be worth in a place of that kind. The cards have been brought into gilt-edged condition, we will assume, and the carder has devoted himself to get them into prim shape, which done, the mixture—having meanwhile been fed on the picker alternately, wool, cotton, shoddy,

etc., by guess—is brought into the card room, and the result is that all the time and care bestowed on the cards prove only to have been misdirected effort, for it has accomplished nothing towards getting a perfectly homogeneous thread, that end having been utterly defeated in the picker room, and past all remedy.

If a thread resulting from such bungling could be examined for a considerable length, under sufficient magnifying power to clearly show the nature and construction of the several fibres composing it, there would be revealed, instead of a perfect amalgamation of each individual fibre, a mass of cotton fibres in one part, wool in another, etc., producing effects that render it utterly impossible to draw such a thread "even" under any circumstances. These remarks apply with redoubled force when the blend consists of part animal and part vegetable substances. To get reasonably fair results from such admixture there must be perfect amalgamation; else how can it be expected otherwise than that each of the substances will assert itself through the carding and spinning, to the destruction of any regularity whatever in the thread or yarn?

All kinds of textiles do not require the same amount of carding; therefore, if two classes of material are mixed together this should not be lost sight of, for the closer the character of the mixed fibres the more perfect will be the yarn. The length to which the yarn is to be spun must also be considered, for there is a limit, and one portion of the batch might be quite able to be drawn to the requisite degree of itself, but could be entirely spoiled by an unsuitable mixture of some other fibre. It is very easy to make dear yarn from cheap stock, and many have found that out. It is not the low price or larger quantity of poor stock one can crowd in, but rather the percentage of yarn resulting from the batch, and the cost in labor of its manipulation, that is the vital question. So much is charged, for instance, to carding and spinning; but if it takes as long to spin 100 lbs. of inferior yarn as it does 150 lbs. of good yarn, then the economy is questionable. An English writer has truly said: "It is not wisdom to take material, although low-priced, and try to make it go to a greater length than it is really fitted; neither is it always on the side of economy to take the cheapest material that will go comfortably to the length required." A story is told of a "manufacturer, who was using a considerable quantity of 24 skeins (4½ run) black weft, and he wanted to make it as cheap as possible to have a good yarn. He put it in wool dyed black, costing 2s. 9d. per pound, along with a 7d. mungo. The cloth proved to be tender and poor, and not at all up to the mark. He then put on another lot, in which the black wool cost 3s., and the mungo 9d., and the high-priced material produced yarn 1½d. per pound less money than the high-priced material, and the cloth was all that could be desired." Another point of the greatest utility in the thorough blending and preparation is to feed the picker thin. What is the use of crowding it through and thereby converting your cards into auxiliary pickers and preparers? It is certainly economy to spend a little extra

time, and have the wool as well prepared as it is possible to have it, and thus save waste of both stock and card clothing, besides making better work. The difference between a successful and an unsuccessful carder is often traceable to his care in the picker room.

WARPS.

In starting the warp, a great many of the damages to the goods, that are caused by some part of the loom not being properly adjusted, can be prevented by making sure that each part is in proper order. There is no weave-room but that has mistakes made in it every day, and always will have; but there are lots of these mistakes that begin when the warp began, and they may be kept down by keeping a sharp lookout in starting the warp, says Nightingale.

To hold the harness up when lifting the warp in a stick or rest is needed. Sometimes a hook is hung over the top of the frame of the loom, but it is not as good as the rests made of wood. They should be hollowed on the under side to make them light, and should be high enough to hold the harness within one inch of the height they should be when hooked up. This leaves the bottom wire slack enough to hook on before hooking the top, which should be done on all looms excepting the pump-motion.

If they are hooked on top first, the straps on the bottom are too tight to permit of the wire being hooked, unless you let the harness down. In hooking up the harness, be sure that the head-motion is closed. You can then level up the harness, which should be carefully done.

After the harness is hung, draw in the selvage. The straps and heddles usually employed are none too good. In very many cases they are utterly unfit for the purpose. The idea is quite prevalent that anything will do for the selvage. It will strike some people, after a while, that the selvage is a very important part of the cloth. It is a common thing for most of the selvage threads to be thrown back in the weaving, and they are never put in again during the whole warp. Sometimes they cannot be put in for want of heddles. One strap may contain six or eight heddles, and the other side two. Sometimes eight or more double threads may be drawn all right on one strap, while on the other, for want of heddles, four or six are put in each heddle.

In some mills the character of the selvage is kept uniform on all other goods. It is dressed in three colors, four threads of each. This gives a neat appearance to the goods, and rightly gives the impression that everything pertaining to them receives the utmost care.

A good selvage also protects the warp in weaving. It enables the temples, or temple-hooks, to get hold of something that can stand the strain put upon them. It should be of uniform width on every piece woven—one inch in width at least.

Having drawn in the selvage, next put on the beam friction. A good substantial friction should be used, and

care should be taken in its construction. Uneven cloth causes more damage than any other fault in weaving, and it is being produced every day in any weave-room. The trouble resulting from it is incalculable. In most cases uneven weaving is almost imperceptible. It is not always detected even on the perch, but in the finishing-room it begins to show up in the shape of shaded goods, cockles, and the like. It confuses the finisher, and sometimes makes a bad matter worse; so we cannot be too careful about everything connected with the beam.

Ordinarily a heading is tied around the beam-head. It is a good thing, and if nothing else is used it should always be put on. There are other things that can be used also.

For THE CANADIAN JOURNAL OF FABRICS.

TEXTILES IN MÆDIEVAL EUROPE.

As in Greece and Rome, spinning and weaving were domestic arts in the mediæval ages, and no lady, however exalted her station, was exempt from such toil. The Emperor Charlemagne commanded that "the women, who on account of our occupations are our servants, shall look after the making of our jerkins and coats." This emperor established what are among the earliest technical schools in the form of spinning schools, where every form of labor connected with woolen manufacture at that time was carefully taught. The monasteries were through what is known as the "Dark Ages" sources of light on things textile for the people among whom they were situated. Each monastery produced itself everything, or nearly everything required by its inmates. As early as the ninth century the fullers and tailors among the monks in the monastery on Lake Constance taught the arts of spinning and weaving and the making of woolen garments. At Reichenbach, linen surplices were produced of so fine a texture that the monks there were appointed by decree (1070) to supply the wants of Rome itself. Many small villages grew into towns and cities through the progress of the arts fostered by the monks.

Earl Baldwin of Flanders, about 950, brought weavers from Ratisbon to his dominions, and an industry grew up which flourished for centuries. Flemish weavers became so skillful that they were thought to have some natural qualification for the work. Colored and figured fabrics, and those known as "barracon," gained lasting reputation. A cloth market was established in Middleburg in 1350, and Brussels and Ghent were largely dependant upon their textile manufactures for their leading commercial position. Thin white and colored cloths from Friesland were much prized, and mantles made from them were customary gifts from the Franconian Kings to the courtiers whom they wished to honor.

Germany, from the twelfth to the fourteenth centuries, was a great textile centre, and eventually took first place among the manufacturers of the continent. Much of the wool used in Germany was English.

THE TEXTILES OF ANGORA.

W. S. Richards, the Acting-Consul at Angora, in a report to the British Foreign Office, says: These home-made native fabrics, which consist mostly of cotton goods, although some are of silk, and a few of wool, are manufactured principally in the following towns, viz.: Tocat, Marsovan, Amassia, Aidin, Broussa, Castambol, Aintob, Gurun, and Aleppo. Those which come from Tocat are made, so far as the warp is concerned, of yarn imported from Europe, while that which forms the web is of native manufacture, being made mostly in Kharput. With the exception of the "fast" reds which are imported from Switzerland and Germany, such yarn as is imported is dyed in the country, native dyes being considered far more durable than those which come from Europe. Indeed, I am assured that colored yarns imported from Europe are not unfrequently re-dyed by the natives before they are used. At one time it would appear that the native-spun yarn was employed entirely in the manufacture of these fabrics, but subsequent experience showed that it was more economical to import the British article for the warps, although the latter is less strong than its native rival.

These fabrics consist chiefly of the following, the native (Turkish) term being given, as that which is best understood in the trade.

Aladja—a somewhat coarse striped cotton material, used by both men and women for various parts of their dress.

Yazma—small, printed muslin kerchiefs, worn as a part of the head-dress by members of both sexes, the men winding it around their fezzes so as to form a sort of turban, while the women, more especially the Christians, use it as a head-covering both in and out of doors. This article, of which very large quantities are now made in this country, was at one time imported almost entirely from Switzerland, among whose exports it figured so conspicuously that it was considered a specialty which defied competition from other markets. Now it is made almost entirely in various parts of Asia Minor, and if not quite so good as the Swiss article, it is certainly much cheaper.

Kushak, or "cummerbund," as it is called in India—a strong, half cotton, half woolen material, generally dyed red.

Amerikan—a coarse, plain, white calico, woven from English yarn, is used by the natives of both sexes as the material for their underlinen.

Peshtamal—a rough, wholly cotton fabric, made up into an article, half towel, half apron, used for drying purposes in the native baths.

Those of the native-made fabrics which consist of silk are imported mostly from Aleppo, although Broussa still sends us a small quantity of such goods yearly. In the case of both towns, nothing foreign enters into the composition of their silk fabrics (except possibly the dyes, some of which are imported from Europe), the silkworms being reared, the silk spun, the material

woven and dyed on the spot. When completed, it is made up mostly into various articles of female attire of the better and more costly kind, though it is also used as a material for men's vests. As it is undoubtedly true that this, one of the few forms of native industry which shows any sign of vitality, is making genuine, if not marked and rapid, progress every year, it is thought by some that in the course of time, and indeed at no distant date, European, and more especially British, importations into this country of cotton goods, cotton yarn, prints, and similar articles, will undergo a most sensible diminution.

Textile Design

GRANITE WEAVES.

Weaves Figs. 1, 2 and 3 are designs of granites having for their foundation the 12-harness satin. The latter is indicated by a different type (*) from that to its addition for producing the granite-weave required.

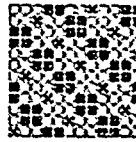


FIG. 1.

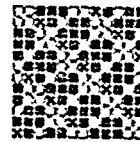


FIG. 2.



FIG. 3.

Weaves Figs. 4 and 5 are derived from the 15-harness satin which is similar to the preceding ones indicated by *

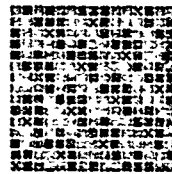


FIG. 4.

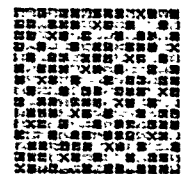


FIG. 5.

—From E. A. Possett's "New Technology of Textile Design."

CHROME ORANGE.

Translated from the German.

In the dyeing of chrome orange on cotton, it happens frequently, says an exchange, that the color instead of being lively and reddish, is dull and more of a flesh color. This evil is generally due to the incorrect composition of the orange mordant, as this is essential for a satisfactory chrome orange. I believe I can be of service to my fellow-dyers by detailing a method, the result of a practice of many years, for dyeing a full, lively, non-dusting chrome orange on cotton. For 25 kilograms—2 kilos. sugar of lead and 2 kilos. [4 lbs. 6½ ozs.] litharge, are, with the necessary quantity of water, boiled from four to five hours, stirring diligently. Best is steam, but when this is not present, and the open fire has to be used, care must be taken that the mordant does not boil over, which easily occurs if too large a fire is used. The orange mordant must be at least from 7° to 8° B after cooling. The yarn is drawn about four or five times in this mordant, lightly wrung out by hand, turned loosely into twists, and laid into a barrel, specially intended for orange or yellow, in which it is left over night. It is taken out next morning, and wrung out three times.

Next prepare a bath of 2 kilos. freshly slaked lime, stir well, let it clarify and decant the clear liquor into another vat. Enter the yarn in the clear lime liquor, draw about five times, wring out and enter the yarn into a fresh bath of 2 kilos. sugar of lead and 2 kilos. litharge, draw about five times, wring out three times, beat out well, enter again into the old lime bath, draw about five times, wring out three times, and beat out well, so that the several leas lie broad. The escaping mordanting fluid is caught and again added to the second mordanting bath.

Next follows the chroming—separate vats only to be used for chrome orange and chrome yellow, are to be procured for mordanting and for chroming.

The charge for the first portion of 25 kilos yarn (55 lbs.), consists of 1½ kilos (3 lbs. 5 ozs.) chromate of potash, for the succeeding lots use only one kilo (2 lbs. 3¼ ozs.) Add to the chromate of potash bath 750 grams (26½ ozs.) sulphuric acid, stir well, enter the yarn, draw about five times, take out, add another 500 to 700 grams (17½ to 24½ oz.) sulphuric acid, enter again, draw about five times and if necessary, two more times, until the yarn appears uniformly yellow, then wring out three times. Then draw the chromed yarn in a boiling bath with ½ kilo freshly slaked lime four times carefully and rapidly, and at once chill in cold water by drawing the yarn about in it 3 to 4 times. The quick cooling is necessary, as otherwise the orange dusts easily and gets dull rose spots. Then wash thoroughly in water, best in running, until it escapes entirely clear and is no longer milky. After washing, soap at a boil—for 25 kilos cotton yarn 250 grams (9 ozs.) soap—to raise the color and to make the yarn soft. Filling and knitting yarns are principally soaped. In oranging it is advisable to add to the lime bath, for 25 kilos yarn, the solution of 100 grams (3½ ozs.) chromate of potash, this makes the orange fuller and livelier. For some articles which need not be absolutely fast, direct dyes are generally used.

ANIMAL MORDANTS

These compounds are highly nitrogenous bodies, which can be applied to vegetable fibres and there coagulated or otherwise fixed. Hence the tissue becomes superficially converted into animal matter, and can be dyed or printed just like silk or wool. Their action is consequently quite unlike other mordants, since their union with the fibre to be dyed is purely mechanical.

Of these animal mordants, the most useful is albumen. This substance is met with in its purest form as white of egg. In countries where eggs are cheap, the whites are carefully dried down to a solid mass at a very gentle heat—say, 112° F. It can then be preserved for a very considerable time, and when wanted for use it is redissolved in water at about the same temperature, or even lower. It is generally used in the proportion of one pound per quart of water, and is thickened with gum tragacanth mucilage. It is then ground up very finely with the color to be fixed, which may be either a pigment, such as Guignet's green, chrome yellow, ultramarine, etc., or one of the coal tar colors.

After printing the goods are exposed to a temperature exceeding 160° F. In consequence the albumen is coagulated, i.e., converted into the insoluble modification in which state it adheres firmly to the fibre and holds the coloring matter locked up in itself. It can then be removed only by the action of strong alkalis, or of acids, i.e., the muriatic, which injures the fibre.

If desired to produce discharge effects upon a color fixed with albumen pepsin or the juice of the papaw tree (*Carica papaya*) might be printed on suitably thickened, the goods then being exposed to a moist heat of 98° F. Under these circumstances the albumen is rendered soluble by a process very similar to digestion in a living animal and can afterwards be washed away.

Albumen solutions may be preserved from putrefaction by the addition of small quantities of a bisulphite. It is coagulated by carbonic acid and the salts of lead and mercury. Albumen, like all the animal mordants, is much less commonly used in dyeing than in printing. If cotton is to be mordanted, it is worked in water in which the albumen has been dissolved, dried, heated to 160° F. and then passed on to the color bath. The shades thus obtained are fast and brilliant, rivaling silks in beauty, but on the commercial scale it is difficult to get them perfectly even. They are also expensive.

Blind albumen is obtained from the serum of the blood of sheep, oxen, etc. In its properties it agrees substantially with egg albumen, but it is not easily freed from the last residue of the coloring matter of the blood. For all except the brightest and most delicate shades it is preferred by reason of its cheapness. It is said that

it has recently been perfectly purified, and is consequently undistinguishable from egg albumen. In using commercial albumens, it is necessary to beware of insoluble matter, which sometimes refuses to amalgamate with the color to an even paste, and, if not carefully strained out, may cause sinearing. Attempts have been made to obtain albumen from snails, from the roe of fishes, etc., but the practical difficulties in the way have not been entirely overcome. Albumen which has been partially insoluble may be restored if heated to about 98° F., in water containing 2½ per cent of muriatic acid and 7½ per cent of the stomachs of calves or sheep, cut up into shreds, the pepsin being the active principle. The solution is filtered after the lapse of thirty-six hours, and neutralized with ammonia.

Caseine, i.e., the curd of milk perfectly freed from fatty matter, is often used as a mordant, under the name of "lactarine." It is dissolved in ammonia, mixed with the color, thickened, printed, and fixed by steaming. The fixation does not, as in albumen, depend upon a process of coagulation, but on the escape of the ammonia. The colors thus fixed are less fast than are printed with albumen, but the article is cheaper, and the colors are by some good judges considered to work better. It is, however, capricious, the mixed color sometimes becoming clotty, and spoiling, under circumstances not fully understood. In all cases it is necessary to keep the solution of caseine or the mixed color as cool as possible.

Vegetable gluten has been used for the same purpose as albumen and caseine, though with no marked advantage.

The whitest kind of gelatine—in other words, glue—has been used for animalizing cotton goods and in pigment styles. After printing or dyeing, the fixation is effected either by a passage through a solution of tannin, with or without alum, or by ageing, steaming, and passage through a salt of mercury (Lightfoot's patent), generally corrosive sublimate.

Argol, the bitartrate of potash, known also as tartar, and cream of tartar, is a substance very extensively used in dyeing, especially woolens. That it plays an active part in the production of many colors, e.g., the cochineal shades, is admitted, though whether it is rightly termed a mordant is open to discussion. Some maintain that with a decoction of cochineal it forms a small quantity of carmine, by precipitating a part—and that in the finest part—of the coloring matter in solution. Others suppose that it has a modifying action upon the pores of the fibre, enabling them more readily to take up the color. There are several grades of this useful substance. Red argol, the deposit from the fermentation of red wines, slightly refined, is used in dyeing dark colors. White argol is the deposit from white wines. The masses taken from the fermenting tuns are dissolved in boiling water, skimmed, strained, and allowed to crystallize.

All argols and tartars should be free from sulphuric acid and soluble sulphates—beyond slight traces—from chlorides and from any notable quantity of lime. If white argol is still further purified, it is known successively as gray tartar, and white tartar, or tartar crystals. As the argols and tartars have risen in price since the destruction among the vines by the *Oidium*, the *Phylloxera*, etc., a variety of substitutes have been introduced under such names as pro-argol, pro-tartar, tartar substitute, liquid tartar, essence of tartar, etc. These mixtures contain genuine argol in different proportions, along with alum, common salt, alkaline sulphates and bisulphates, oxalic and acetic acids.

Lactic acid and the lactates have been proposed as substitutes for tartaric acid and the tartrates, though not with any marked success.—*W. Crookes*.

It is said that a movement is on foot to combine all the wholesale houses in an arrangement that will protect the retailers from the competition of the departmental stores. It is proposed that English and foreign manufacturers that sell to departmental stores will receive no orders from the Canadian wholesale trade. Already a number of English and German houses have agreed to discontinue selling to representatives of departmental stores, according to the claims of the promoter of the movement.

CO-OPERATIVE KNITTER COMPANY'S SPECIALTIES

This firm is exhibiting to the trade its improved fully automatic designer for Scotch hose and glove fabrics. This is a new adaptation of the designer, making an admittedly marvellous machine for fancy goods, producing patterns in Scotch plaids, tartans, etc. It is a one-feed machine, fully automatic in detail, for making designs in two, three or four colors, widening at the calf, and fashioning the ankle one-third. The driving is frictional, no



weights are required, has automatic stopping arrangement, and when supplied with yarn, continuously produces Scotch hose fashioned in rib or plain. The output is great, and it is claimed that one operator can work four or six machines on hose, each machine being guaranteed to turn off one dozen per hour. It is illustrated on page 320 of this paper. This machine is capable of producing every kind of seamless hosiery, all being automatic, except the making of heels and toes, which is performed by the operator when required. Scotch leg apparel seldom requires feet; but seamless feet can be made on this machine at the same

rate of production as the Griswold class of machine. It is maintained that all work done on the flat knitter can be done on this machine, and at a much greater speed of production, with advantages apparent to any manufacturer. Hose are fashioned automatically without distorting the design at the narrowest part, it being gradually reduced in size as the ankle is approached, when the shaping is done by varying the gauge of loop, thus giving the shape desired by the wearer.



The first designing machine introduced by this firm, and of which numbers have been sold in Europe and America, has been running successfully for the last two years in some of the largest mills. In this machine the fashioning was haphazard, being controlled by hand manipulation, which tended to lack of uniformity, but in the improved one this is done automatically. A definite and positive method of fashioning is thus obtained to give the leg the desired shape. A distinctive feature which these builders claim on all their machines, is also the making of a seamless wrought fashioned leg quicker than on flat machines, and also that several sizes can be made with the same cylinder and dial. A rib top can also be made having a reversible design, so that the top may be worn up or turned over, and still show a pattern. This is a unique feature. The Co-operation Seamless Machines make every class of footwear as made on circular or flat knitters, and with far greater rapidity. A point noted was a 74 plain machine, working three-fold wheeling, that was changed (by inserting the whole of the rib needles) from 74 needles to 148 needles without changing the cylinder for working 28/2 cashmere. The machine occupies little space, standing on twelve inches square. Where the



whole article is required to be made, or where 2,2 tops and feet are made on other machines, this machine can be adapted. The sizes made are 4 1/2, 4 3/8, 5 1/4 and 6 inches, with 64, 74, 84 and 94 needles in cylinder and the same in dial. There is no doubt the Sturges' Designer has made a craze, both in Europe and America, for patterned hose, cheap production, perhaps, doing more than anything else towards it. No doubt in the near future knickers and breeches, the costume of our forefathers, will again become popular, and from an hygienic point of view they certainly have something in their favor to merit universal adoption. In the fabrics produced on the Co-operative Scotch Hose Machine, no surplus threads appear at the back in either plain or rib fabrics, and in rib fabric the



needles may be reduced in fashioning the ankles, after the manner adopted in frame made articles and still be seamless. Eight or sixteen needles are capable of being removed at the ankle. For gloves, mittens, gaiters and gauntlets, this machine can make the cuff and hands automatically, the top being a self-color rib, and the hand of patterned plain fabric. The welt is first made, followed by the self-top, after which an extra thread is inserted to pattern the hand, which may be designed as illustrated, in fancy stitch. When the hand is complete the additional thread is cut off automatically and the process is repeated. The fingers are afterwards made in the ordinary way or seamless, upon flat machines. To the glove trade this machine opens up promising possibilities tending to popularize seamless gloves.

AMMONIA IN CLOTH WASHING.

Translated from the German

The fundamental condition for the success of all woolen goods, as regards both purity of color and elegance, is that they issue clean from the fulling operation or washing. Great attention should, therefore, be bestowed upon the cleaning of the cloth, especially after fulling. Closely examined, the washing of fulling cloth may be divided into two parts—the solution and loosening of the fulling filth, consisting principally of all soap, color residues and glue, and next, rinsing it away with either cold or warm water. These operations are quite often performed separately, as many fullers first loosen the dirt in the engine—that is, after the milling has ended—and then wash it in the washing machine. They urge, as a reason, that the dirt will come off better from the cloth still warm from milling, than after it has laid for a time. As a good agent for expediting the loosening of the filth, in fact for increasing the effectiveness of the detergents, such as soap, soda, extract, fullers earth, etc., fluid ammonia, also called sal ammonia, has for a long time already been considered an excellent auxiliary. Practical experience has brought out the following points—

The action of the ammonia as an alkali for neutralizing fatty acids, is very strong; it saporifies fatty acids much better than potash and soda, and only its volatility makes it less suited for the manufacture of hard soaps for technical purposes. But then it is largely used as an agent for expediting the combination of other alkalis with the fats. This also explains its capability of increasing the action of other alkalis in washing, as well as that of soap. The strongly cleansing action of ammonia is very well known to textile workers. In place of the pure ammonia, urine, as it contains a large percentage of ammonia, was formerly used almost universally, and is still, to a certain extent, for washing and fulling. When hand teaseling was still in vogue, the operatives used to put into the teaseling trough the dirty and unshrunk pieces of cloth, moisten each layer with urine, and leave them exposed for 24 to 36

hours, after which time the cloth became very clean and firm, as the writer of this still remembers

If the operative pours ammonia on the cloth charged with soap at the beginning of the process, an essentially greater quantity of foam will be formed, the fulling filth raises better and quicker, and the cloth is cleaned more perfectly. But ammonia is not only more effective for the raising of the filth, it also expedites the rinsing off of the soap. As is well known, traces of soap will remain in the goods in spite of slow and careful rinsing. These residues are for the subsequent stages of manufacture, especially for piece dyeing, just as those of oil or fat. But when ammonia is added before the final completion of the washing process, and an emulsion formed of it, the residues are almost entirely neutralized. The ammonia is to be used as follows: Dilute it with from double to quadruple its volume of clean, cold water; one-half of this quantity add at once at the beginning of the washing to expedite the dissolving of the fulling dirt, and the other half only when the worst filth and foam have been rinsed away, so that the escaping water is of the appearance of clean soap water, a stronger emulsion will then be formed again, which contributes essentially to the expulsion of the last traces of soap. It is also of advantage to add a little ammonia to the fullers' earth, should it be used for the last washing.

A greater dilution is to be recommended especially when it concerns fabrics with tender colors, for instance, doeskins or worsteds in light colors. Cases have occurred where by pouring either undiluted or else not sufficiently diluted ammonia on pale summer doe skins, they became striped throughout the entire length of the piece showing that the colors had obviously been attacked. It is true, they were goods that were fulled little or not at all, for which reason greater attention was paid to their brightness than to their fastness against fulling or alkalies. Similar cases are very rare, however, and ammonia may be used without fear for any tender shades, if a certain degree of care and a sufficient state of dilution are used. There are several colors, the tones of which are slightly altered by ammonia, for instance, nearly all the reds, principally those of Brazil wood madder, or cochineal. In doubtful cases, the dyer can furnish the best information in how far the use of ammonia is permissible for a certain shade. All the colors with some pretense to fastness, as found in the cloth and doeskin manufacture, logwood black, alizarine black, diagonal black, indigo blue, alizarine blue, green and brown of alizarine or wood, also all the mode colors fast against fulling, may without fear be exposed to the influence of ammonia in washing. It is not at all true that ammonia injures the feel of goods, as is asserted sometimes.

The employment of this agent, however, requires the observance of one condition. Goods treated with ammonia must not be placed in contact with metallic parts, at least not immediately after ammonia was poured on, this contact will cause spots, which are most injurious, especially for cloth intended for piece dyeing. Cuprous ammonia is formed instantaneously, if the cloth touches copper or brass. The spots thereby are hardly noticeable in white or pale ground cloth, and only when held against the light they appear as if colored feebly brown. After dyeing, however, they are strongly pronounced, and much darker, as cuprous ammonia makes the fibre more sensitive to the dye. The spots will appear almost black in indigo-dyed cloth, and many a dyer has had a surfeit of vexation and trouble with these black spots, without guessing what caused them. Copper or brass bottoms or rollers must, therefore, never be used in washing machines. For the same reason, ammonia should never be used in fulling mills, the lower cylinder of which has a brass rim.

MELTON FINISH.

Our friend Tweed writes of the melton finish in a recent issue of *Fibre and Fabric*. Before proceeding to discuss the former letter permit me to say that the spirit manifest in it is quite commendable and therefore, whatever objections the writer may offer, are not stated in a spirit of fault-finding, or with a view of extolling one's own wisdom in order to belittle another's. On the contrary,

it is simply to enlarge upon the question of a melton finish. Firstly, let us know what "Finisher George" says regarding fulling: "I shake them out, or still better, have two men overhaul them." This is a good plan, and one any practical finisher can and will surely agree upon. But the difficulty steps in right here, when a superintendent objects to having two men devote their time to this work. Lucky is the finisher who has a superintendent over him who will not interfere with details in the finishing room. I anticipate what reply will be given to this. I will be told that no superintendent who understands his business, or who has faith in his overseers, finishers included, will ever stop to ask how this or that is done. Or, if he did, no finisher understanding his business would tolerate interference. The writer will simply answer by saying there are good men occupying the position of superintendent yet, not being practical finishers, who do not realize how essential small things are to the proper and successful finishing of goods, and look upon some details in that department as entirely unnecessary. I am sure "Finisher George" will agree with the writer in saying that good judgment on the part of the finisher is requisite in his department, and if he deems it essential to snap out every little while or have the goods overhauled by two men, he should be allowed to do so without interference on the part of a superior in command. The overhauling is conceded to be not only a good thing to do on a melton finish, but (for the benefit of the non-practical finisher) very necessary when the goods are being fulled. If the fulling is being done in "falling stocks," or "kickers," it is necessary in order to keep the pieces from getting all tangled, twisted or knotted. Again, if it is being done in a rotary mill, which no doubt is the kind of a mill used by "Finisher George," it is also necessary in order to keep the pieces free from fulling mill creases or streaks lengthwise, which will surely appear and develop alarmingly quick to the detriment of the goods. Also to allow the goods to cool, and thereby prevent them from fulling in a too rapid manner. For you may depend upon it that the foundation of a good melton finish is laid in the fulling mills. If the fulling is not done properly, nothing that can be done afterwards will remedy the mistake made in not having the goods correctly felted. How often we hear the exclamation, "Why, that piece looks 'raw' or 'gray,' what in the world is the matter?" Nine times out of ten the trouble originated in the lack of proper fulling. It is true that the giggling, if any is done, may have something to do with it, or the brushing, steaming, and, last but not least, the shearing; still, there is more danger in the fulling than in any other one place in the finishing room.

AUTOMATIC WOOL OILER.

We have pleasure in calling the attention of woolen manufacturers, and others who are interested in valuable improvements in textile manufacturing of any kind, to the Spencer Automatic Wool Oiler, invented by G. A. Spencer, Greenbush, N. Y., which is offered to the trade for the first time by the sole agents, George S. Harwood & Son, Boston, Mass. This machine can be attached to any make of wool picker or lumpers now in use. It quickly pays for itself, as it prevents any waste of oil in the picker room; every drop of oil is thrown uniformly on the wool or raw materials in the form of a fine spray as the stock passes under the oiler to the feed rolls of the picker, thereby insuring a uniformity of oiling, a saving of labor and better results in the carding and spinning departments. It is an indispensable improvement. Full particulars and prices may be obtained by writing the agents, who will answer all inquiries and supply trial machines wherever needed. The following is a copy of testimonial received from the Root Manufacturing Company, Cohoes, N. Y., by the owners of the Spencer Oiler:—

August 27, 1896.

"F. C. Hujek & Sons, Greenbush, N. Y.:

"Your esteemed favor of the 24th inst is at hand, with inquiry relative to the working of the Spencer Patent Wool Oiler. In reply I would say the oiler has been in operation on one of our mixing pickers for more than a year, and we are highly pleased with it. We get by its use a more uniform and thorough oiling of the stock than is possible to obtain by any other process we know of. We consider it a very valuable machine, and would not be without it at a much greater cost.

A. J. Root, President."

Foreign Textile Centres

MANCHESTER.—Business in our market has been partially paralyzed by the rise in the price of cotton, as sellers most frequently have been compelled to ask corresponding advances for yarns and goods, to which buyers have not been able to respond excepting in the case of lots for immediate use. In point of fact, the sales have been only of retail dimensions. Producers in nearly all quarters are more and more concerned at the slackness of a practicable demand. The leading cloth outlets remain for the most part inactive. India is sending a few offers from Bombay, but the poor prices named are rarely considered by makers. Here and there a needy seller is compelled to take best prices obtainable rather than stop machinery. Generally, however, makers are arranging to stop looms rather than go on at the prices now placed before them, and a steady increase in the amount of machinery allowed to stand idle seems inevitable unless some substantial adjustments occur shortly, though at present it cannot be perceived whence those are likely to be brought about. Representatives of the principal operatives' societies met recently in Manchester to discuss in private a proposal for the formation of a gigantic trades federation, with which all the textile trades of Lancashire will be affiliated. The project was received with great enthusiasm, and it was decided to lay the matter before the different societies. Should such a body be formed it will be known as the Lancashire Textile Trades Federation, and will embrace about 150,000 members.

OLDHAM—No attempts are made to settle the two local spinning mill strikes. The cotton spinning mills are at present working full time, but it is suggested that the time worked should be curtailed during the winter months. Short time has been commenced in the Oldham velvet trade, only four days a week being worked. At a meeting of manufacturers, last week, it was unanimously resolved to recommend all velvet firms in the Oldham district to run their velvet looms not more than forty hours per week, or to stop looms equivalent thereto. There is no prospect of a settlement being come to in the dispute with the local pattern makers, who have been on strike for over six weeks. The pattern makers employed in the machine shops insist upon an advance of from 34s to 36s. per week, and those in engineering shops 35s to 37s. per week. When the men came out on strike in the first instance 55 men were affected, and 15 stopped at work because they got the advance. About 27 have got situations in other towns, leaving about 30 men still idle. At a meeting of the men it was decided to prosecute their claims for an advance of wages.

LEEDS—The cloth market has been attended by but few home-trade merchants and manufacturers, and the usual number of dyers, finishers, etc. The London wool auctions sufficiently explain the absence of many. All parties concerned are well under contract for winter supplies. Repeat orders are more frequent than bulky, but total up to a good average, and leave little, if any machinery insufficiently employed. Merchants are doing a little in fancy chevots, twills, hairlines, and in Scotch and other tweeds at top prices. A large consumption of serges—indigos especially—is now quite certain. Worsted-coating makers are more deeply interested in the upshot of present wool sales than anyone else in the trade. Cloths, print coatings, and curl serges are the flattest goods in the markets. Few things sell better, as a rule, than coverts, mantle cloths, fancy flannels, and blankets. In the heavier woolen districts there is more inquiry from the Continent, and there is also a good home trade demand for serges, tweeds and fine vicunas. Makers of colored sealskins are also doing well, both for the home trade and South America. Feeling is rather quiet in the shipping trade for fancy rugs, but a fair demand continues for blankets in good qualities for the home market. A healthy tone is evident in the Yorkshire flannel trade, and, although repeat orders for season's goods are not yet very large, they are still sufficient to keep machinery going, and to prevent accumulation of stock. White flannels are in best demand, but there is also an improved inquiry for both scarlets and mixtures. The sales of low wools at

Liverpool this week have passed with a firm tone, and should the London sales proceed with a good spirit, a certain amount of impetus will be given to flannel buying by the merchants who are not largely under contract.

BRADFORD.—As the colonial wool sales have opened in London there was very little passing in the Bradford market in wool transactions of any kind, as both buyers and sellers seemed content to await the course of events in London. Since the conclusion of the previous series of London sales, the wool market here has shown a continuous shrinking of values accompanied by deepening depression and decreasing consumption. No recovery of tone or prices was shown until about three weeks ago, when the feeling began to be general that at last values had reached the bottom. The market has been gaining strength ever since until to-day. In both fine and crossbred colonial wools a slight advance in price has been made. It is, of course, unwise to attempt to foretell the course of prices in London, as any political disturbance would have a great effect in the present sensitive state of the market. Every day brings us nearer to a more settled state of internal affairs in the United States and in all probability we shall be hearing from that market before long. Any signs in this direction would at once add great strength to the wool market. There appears to be no new feature in the English wool market, either in pure lustre or non-lustrous wools, but the country stocks are still well held, there being very little wool coming from the country to Bradford just now. In the mohair market one hears of small transactions at very low rates in face of harder quotations at the sources of supply, but we may look for transactions of moment very shortly. In the worsted yarn market spinners are much more hopeful, as they are finding a good deal more testing of prices going on both on home and shipping account, and those firms who have sufficient particulars to keep the wheels moving are standing out for better prices. There is also more talk of braid yarns being wanted. In piece goods the worsted coating makers are still the worst off for business, and some of the leading firms have a lot of machinery idle. In dress goods there is more miscellaneous business as the spring buying season advances, but all the leading fancy goods makers are now getting well under order. The great demand seems to be for high-class goods in silk effects, and Bradford makers are quite holding their own in these goods this season, their productions showing great improvement, both in fabric and style. There is no doubt that Bradford is getting every season a better hold of the dress goods supply for the middle classes of England. The regularity of the demand has much more satisfactory results than the alternate "booms" and "slumps" of the American market. The United States dress trade for next spring is very late this year, but what buying has been done in that market is mostly on the lines of bright fabrics, which sold well during the past summer. The prospects of the fine plush trade are rather better, as it is prophesied that these goods will be largely worn in the form of jackets for the next summer. The recent wet weather has given quite an impetus to the waterproof fabric trade, and there have been inquiries for plain goods of the wool imperial class for quick delivery, but stocks had got very much depleted. There is a steady business doing in worsted Italians and linings, but the recent quick rise in cotton has distinctly checked the cotton Italian trade both in home wide widths and also in the narrow widths for the East.

KIDDERMINSTER.—Manufacturers are busy enough, but the output suffers because a good deal of time is devoted to pattern-trying and preparations for the autumn season. More is doing in the yarn trade, some contracts have been placed, and more are talked of. On the whole the market has been found harder than was expected, and it has levelled itself up to spinners quotations. There is little pressure to sell, present prices of carpet yarn comparing unfavorably with those obtained for other classes of yarn.

NOTTINGHAM.—The wage question in the lace trade here has not yet been settled, but no startling developments have occurred. At Kimberley, a few miles from Nottingham however, the case is different. The Kimberley Lace Company have locked out their curtail hands, because they refused to accept a reduction of wages, which the directors assert is necessary in order to work the business at a profit. It is an attempt to bring wages on the same level

as those paid in non-union districts. Some 38 loom-makers are locked out, but in addition to these a large number of operatives of the firm, connected with other departments, are at present unemployed. An attempt has been made to obtain non-union labor, but so far without much success, the place being carefully picketed. The matter has been taken up by the Laco Trade Union Federation, who have decided to support the men locked out if non-union labor is introduced, and the result may be more far-reaching than was at first anticipated. No particular buoyancy is noticeable in the fancy millinery lace trade. In Valenciennes and oriental laces some specialties are selling for the home trade and for export. A few special lines of silk laces are in demand for certain districts, but the amount selling is not sufficient to provide adequate employment for the machinery and hands engaged in its production. New patterns in great variety are on the market, but the stimulus is lacking at present which is necessary to make them successful. A slow inquiry is experienced for Maltese, Torchon and Brabant laces, and only some moderate assortments of box orders have been placed. The shipping trade at present is somewhat slow, although appearances point to a revival of activity in the immediate future. Fall's and veilings have shown rather more buoyancy than of late, and other fancy articles are in steady request. Manufacturers of beaded and other frillings and fancy neck trimmings are moderately busy. The bobbin net trade is still in a very satisfactory condition, and prices keep firm. Mosquito nets, too, are well inquired for. These goods continue to harden in value, and quotations forward are not given. Paris and Paisley foundation nets are slow of sale. There is a moderate demand, with steady prices, for spotted nets and light tulles. A few good orders for corset and antique nets have been placed. Prices of silk Mechlin, Cambrai, and other light tulles keep high, and in many instances orders are in arrear. An extensive business is doing in curtains, window blinds and furniture laces. Large orders have been placed for future delivery in the home trade, and there are expectations of an improvement in the demand for the colonies and abroad. The dispute which is pending in this branch has had the effect of causing great uneasiness for the future. In many instances manufacturers are, at the present time, running prices to the lowest level, so as to secure orders to provide employment for their men. As may be imagined, the competition in this branch is very severe.

PRICESTER—In the yarn market deliveries are of fair extent, but as old contracts are completed there is some difficulty in booking new business. Lambs' wool and natural wool yarns are in good request at steady prices. Cotton yarns are neglected, but cashmere and fancy yarns are in very good demand. The hosiery trade continues active, and in some departments there is considerable pressure for immediate delivery. Fancy fabrics are in strong demand. Elastic web specialties are in very fair request.

MIRKCALDY Business in the linen trade is unchanged. The demands are limited, the American trade still being affected by the political situation, while the home market continues quiet. Floor-cloth and linoleum manufacturers are busy as a rule. Light and intermediate cloths are in greatest request, the demand for heavier made goods being limited.

BRANDER—A quiet, steady tone has characterized the market, though fresh business continues to be much curtailed. Parcels of fresh Beretz have been offered, but very few sales have been made. Spot sales have been unimportant. There has been a slow demand for yarns and spinners find it nearly impossible to get list prices in case of flax yarns. For tow sorts prices are firmly held to and demand brisk. Manufacturers have not yet succeeded in getting any increase in orders worth mentioning, though here and there some fair sales have been made at slight concessions from full rates.

BELFAST.—Quietness still rules most departments of the market and buyers show little disposition to do more than absolutely necessary. The country flax markets are fairly supplied, but quality very mixed, some flax sold as low as 2s 9d. Yarns are moving slowly into consumption, and prices nominally unchanged. Brown power and hand-loom linens are meeting with steady,

though quiet demand, and fresh orders would be very acceptable. The home trade in finished goods is keeping fairly strong, orders being placed with freedom and for moderate lots. Little change in the export branch, but, if any, it has been by way of improvement.

LYONS—Buyers have been in the Lyons market, and a fair reassortment business for fall has been done, the demand being better than in previous weeks. But this does not affect the manufacturing situation, which remains unchanged, and is not likely to improve until work on spring goods commences in earnest. For ready delivery the demand extends to the same lines previously mentioned for Fall. In moire antique fancies orders are being completed, and in these as well as in other novelties woven on hand looms, when the old orders are exhausted, there is nothing to take their place on the looms. Chinis, marcelines and Florentines are selling. Crepe lisse is in good demand, and is giving good employment to the looms, but the prices paid for weaving this article are not high and do not give satisfaction. Muslins, on the other hand, are equally good, and weaving prices are satisfactory. For lining purposes piece-dyed serges find takers, as do cotton-back satins. In umbrella silks the piece-dyed qualities are selling. Novelties and fancies are quiet, except for the deliveries of previous orders. The fall season may be considered closed, as far as it affects the industrial conditions. What manufacturers are now looking for is a good spring business and plenty of orders for the looms. Spring orders have not yet been placed to any extent, but collections are ready and the last preparations are being completed. Some business for next season has been done in double-warp damasks. Fancy gauzes have also been ordered to some extent.

CREVELD—The demand for fabrics is not heavy and the market is improving but slowly. Retailers having already bought their first assortments and having had little time to sell Fall goods, are not ordering much. The market is, however, on the eve of having to provide for Fall consumption, and a more active demand for goods is likely to be felt soon. The manufacturing situation is unsatisfactory and the looms should be much better employed at this time of the year than they actually are. Orders for future delivery come in sparingly and buyers seem to be determined to work with as small stocks as possible and to make few engagements ahead. For export business is also late, and while little satisfaction can be had from the United States, the English market is also slow and orders for winter consumption in dress silks, cloakings, linings, etc., which should have already been placed, are still to come. The hand looms are mostly idle and many of them have been so for several months. With power looms conditions are not so bad, and a number of them are running on cheap umbrella silks. Umbrella silks are still the most active branch, and while the production of parasol novelties is slackening, that of the better grades of hand-woven umbrella silks is increasing. In tie silks orders have been below expectations, and many looms which would otherwise be employed in the making of tie silks are now idle. Velvets and plushes are more active, with a fair demand from stock. Seal plushes and velour du Nord sell readily. Novelties in velvet find consumption for boules.

CHEMNITZ—During the last week a number of fair-sized orders have been placed, but the market remains very quiet nevertheless, and manufacturers are anxiously waiting for buyers to come to this town. Despite the dullness in the business, now is the best time to place orders, as there are indications that higher prices will be asked before the month is over. Yarns have already gone up, which will necessarily affect cost, and an advance in wages is expected as soon as a few more orders are thrown on the market. All mills have cut down time as much as possible to avoid accumulating big stocks. Many exceptionally low offers, made by New York buyers in the market now, were declined lately by all makers, as it is less unprofitable for them to let their plants stand idle than sell goods at such prices.

In view of the near approach of their busy shipping season, the Brodie Manufacturing Co., Galt, Ont., is having the trolley track extended into their premises, between the two mills. The extension will be about 350 feet long.

THE BRITISH SILK TRADE.

From the Dry Goods Economist, New York

Thanks to the energy displayed by the Silk Association, the past two or three years have seen a slight improvement in the condition of the British silk trade. The improvement, however, has been negative rather than positive. In other words, the process of decay has been arrested in some departments of the trade. In the better qualities of silk goods the few English manufacturers who still produce are finding a fairly steady outlet for their wares, which have been patronized by the royal family, and which are brought before the better-class consumers through the medium of well-known houses. Those in the trade are to a certain extent consoled by the fact that things are actually at their worst, and that any change must be a change for the better.

But without a full recognition on the part of middle-class English women of the superior excellence of English silks compared with French, there is little hope of a revival in our silk industry. The average English woman's attitude on this point is none the less firm because it is vague. She believes that French silks are in every respect to be preferred to English, and she has carried her belief to such a length that she will positively refuse to purchase a yard of silk material unless it has the words "Manufactured in France" stamped on the selvage. Thus masquerading as French it happens that the unhappy English manufacturer—unless he be one of the few whose wares are taken up for sale by the houses referred to, which are doing their best to establish a fashion for English silks in England itself—is forced to send such silks as he cannot ship to America and other markets over to France, in order that they may be brought back again stamped with the magic words. We are the best customer France has for its silks. We take nearly one-half of the whole production of Lyons and St. Etienne every year. Our consumption of silks is growing rapidly. During the last generation our imports have trebled. In the same time our silk spinning and weaving capacity has diminished to such an extent that it is now only one-quarter of what it was then. This is certainly an anomalous condition of things in such a large textile producing country as this. One seeks a logical explanation in vain. Lyons has an advantage in that it can grow a certain proportion of the cocoons which it uses every year. But it imports far more than it grows of raw silk from Italy, India, China and Japan, and the cost of conveying the raw material to Lyons is quite as high as the cost of conveying it to Macclesfield, or Coventry or Bradford. French manufacturers do not give better value than is given in England. Quality for quality and price for price, the English manufacturer, with a fair field and no prejudice, should be able to compete, at any rate on English soil, with his French rival. When French silks began to flood the London and Manchester warehouses, on the removal of the import duty in 1860, they gained in favor by virtue of their superior design and finish.

There can be no doubt that a great silk superstition, if it may be so termed, dates from this time. But competition taught the Englishman some valuable lessons, first among which was the necessity of bringing himself into line with the Frenchman in the matter of the excellence and (what often counted for more) the fine appearance of his wares. He has profited by that lesson. But while he was learning it the superstition was growing. It is with us now as powerful as ever. Very few Englishwomen have emancipated themselves from this superstition. They do not know that French silks, the good as well as the indifferent qualities, are grossly adulterated and heavily weighted. They do not care if they are. Their mothers and Lady Fashion have taught them that it is the thing to wear French silks and that the silk stuffs of their native land are merely fit for the vulgar. No amount of talking and demonstration will disabuse their minds of the very unamiable and unpatriotic delusion which they cherish. Even royal patronage, which usually avails, has made little impression upon them. They attribute it to the kindliness of disposition of the royal ladies and to the perpetual dunning of the Silk Association. They are convinced that these same royal ladies wear English silks (and even

they do not wear these silks exclusively) against their better judgments and in accordance with a belief that they should do some thing to foster native industries. Short of a universal recognition of the general excellence of English silks on the part of English women, there is no chance of a great revival. Save in a very limited circle they refuse this recognition. The inference is therefore, that the slight improvement now noted is not likely to last long, and that a few years more will see the English silk trade concentrated in the hands of a very small class of manufacturers engaged in the production of high priced specialties. It will be interesting to give a brief review of the English silk trade during the past half century.

In 1850 there were in the United Kingdom 277 silk factories, with 1,225,560 spindles and 6,092 looms. Scotland possessed only 5 spinning mills, with 36,652 spindles. All the rest were located in England, which ran 192 spinning mills, with 886,117 spindles, 40 weaving sheds, with 2,122 looms, 30 spinning and weaving factories, with 302,491 spindles and 3,970 looms, and 10 miscellaneous establishments. Six years later we boasted 460 factories, with 1,093,799 spindles and 9,260 looms, divided thus: English spinning, 249 mills and 809,755 spindles, weaving, 129 sheds and 5,719 looms, spinning and weaving, 36 factories, with 253,800 spindles and 3,536 looms, and 40 miscellaneous Scotch looms, 6, and spindles, 30,244. In 1862, shortly after the removal of the duty, but before the injurious effects of that act were felt, the English silk-producing capacity reached its maximum. In all the country there were 771 factories, with 1,338,544 spindles and 10,700 looms. In Scotland and Ireland there were 10 mills, the former having 31,452 spindles and 60 looms, and the latter 1,182 spindles and 14 looms. The rest were located in the English counties of Cheshire, Lancashire, Sussex, Warwickshire, Gloucestershire, Staffordshire, Derbyshire, Yorkshire, Nottinghamshire and Worcestershire and between them they had 244 spinning mills, with 1,051,484 spindles, 422 weaving sheds, with 7,670 looms, 49 spinning and weaving factories, with 254,426 spindles and 2,065 looms, 3 dressing factories and 43 miscellaneous.

The first result of the removal of the duty was the closing of many of the smaller spinning establishments and a tendency on the part of the larger manufacturers to concentrate the spinning and weaving operations in one locality for the sake of economy. In 1868 there were in the country 591 factories, with 1,159,706 spindles and 14,625 looms. Of English spinning mills there were 196, with 790,896 spindles (151,330 of which were doubling spindles). Of weaving sheds there were 314, with 3,489 looms, and of spinning and weaving factories there were 54, with 230,622 spindles (26,890 doubling spindles) and 11,022 looms.

No authoritative figures of the exact position to-day are available. The Government three years ago drew up an elaborate scheme for ascertaining the spinning and weaving capacity of the silk mills then existent, but the proposal got no further than paper. There are in Great Britain to-day about 160 silk mills, with 340 looms and 14,600 spindles. These figures must not be accepted as final, but they are approximately accurate. Compare them with the position in 1862 or 1868, and it will be seen how much England has declined as a silk-manufacturing nation. Save for a period of exceptional activity in 1870-72 as a result of the Franco-German war, the capacity and the annual production have gone down steadily for nearly 30 years, while, at the same time, the imports of silk goods have gone up quite as steadily.

In our silk export trade there has been less fluctuation during the past generation than the big decline in our capacity would indicate. The declared value of our shipments of thrown twist and yarn, broadcloths, handkerchiefs, ribbons, laces and mixtures last year was £1,432,002, as compared with £1,514,803 in 1893, £1,744,645 in 1891, and £2,413,410 in 1860. The falling away is most apparent under the head of "thrown twist or yarn." The value of our exports of this class last year was £296,788, whereas in 1868 it stood at £1,239,257. Some of our foreign markets continue to have more faith in English silks than English people do. America is our best outlet for mixtures, laces and other goods, and though the quantity is a rapidly diminishing one you took from us last year

341,549 yards of broad stuffs. Singularly enough, France appears as our best market for broad stuffs, and last year took 1,614,460 yards out of a total export (under this one head) of 2,826,209 yards. This, however, does not represent a bona fide export. Though the French houses appreciate the best grades of English silks, fully three fourths of the whole, 1,614,460 yards sent to France in 1895, went there simply and solely in order to be stamped with "Manufactured in France" and to be re-imported, this being the only way of meeting the provisions of the Merchandise Marks Act, and of gulling the clever British woman into the belief that she is buying the genuine Lyons article, to which she so consistently adheres.

It is in her home trade that England cannot hold her own against the encroachments of France. In 1860 the imports of raw silk ran in value to £9,936,087, and of thrown silk to £336,991. Last year the figures were £1,509,061 and £374,811 respectively. In 1860 the manufactured silk goods brought into this country were valued at £5,665,393. In 1891 the total was £11,179,588, and last year it was £15,237,566, of which France's share was £10,997,326, made up of £7,362,945 for broad stuffs, £1,013,402 for ribbons, and £2,620,979 for other sorts. It is probable that some portion of the broad stuffs received from Holland (value, £1,323,504), and of the ribbons received from Belgium (£1,545,451), were really of French manufacture. These figures show the relative position of France and the other countries which supply England with silk goods of various categories. From the British East Indies, China, Japan, and Hong Kong the receipts last year, under all heads, did not reach £400,000.

It was stated above that French silks are heavily weighted. The remark applies with much greater force to German silks, but we are not considering them here. It need not be inferred that English silks are never weighted. But for the English dyers it must be said that they are not fraudulent. They, from the necessity of their vocation, have to declare their dyes and their weighting upon each invoice, and they are bound to do the bidding of the manufacturers. Whatever fraud there is consists in selling this combined product as pure silk. And for the manufacturer this has to be said, that English silks have always been weighted to a less extent than foreign silks. It is a common recommendation of English silks, that "they wear well because they are of pure dye, while French goods wear badly because they are of weighted dye." This is not exactly the truth. It is a question of degree. In the manufacture of English serges and other black broad silks the dye which has been found to give satisfactory wearing qualities shows a weighting of 2 ounces to 4 ounces per pound upon the boiled-off warp, and 4 ounces to 8 ounces per pound upon the unboiled-off weft. A little weighting is a distinct advantage. Without it black dyed silk is not so permanent in color, for reasons which every chemist will understand.

But dyers in France and Germany sometimes make their maximum weights up to 40 ounces per pound on boiled-off silk, to 120 ounces per pound on samples, and even to 150 ounces per pound on spun silk. Mr. Wardle, president of the Silk Association, tells us of a black silk ribbon of French dye, the warp of which was weighted to 24 ounces per pound—that is, the net 12 ounces of silk (after deducting the 4 ounces lost in boiling) was made into 24 ounces, and one shute was weighted to what he calls the "frightful" extent of 100 ounces per pound, so that one pound of silk came out $\frac{1}{4}$ times its original weight. An English lady gave 20s. per yard for some black silk faille of French manufacture. In a month it was not fit to wear, although it had been worn only a few times. The warp of this precious fabric was weighted to 20 ounces per pound, and the weft to 32 ounces per pound. The outside value of the stuff was 5s. per yard, and yet in appearance it seemed to be worth the money paid for it. It is the same in regard to white and colored goods. Some indefinite proportion of these goods are dyed unweighted, but the greater bulk is adulterated, by the newer processes, from 15 ounces up to 25 ounces per pound in organzine and to 32 ounces per pound in colored and white samples.

Cordonnet blacks for cheap shawl and dress fringes are another among the many stuffs excessively weighted. Lyons is noted for its manipulation of these silks, which are weighted sometimes up

to 800 per cent.; in other words, 1 pound of spun silk is weighted up to 144 ounces or 9 pounds. It is very rarely that cordonnet silks are weighted to less than 200 per cent. Organzine for the warp of black silk goods, again, is weighted from 18 ounces to 26 ounces per pound on boiled-off silk, and up to 90 and 100 ounces per pound for samples. The principal black dyers of Lyons have branch establishments at St. Chamand (Loire), where they send their samples to be dyed into very heavily weighted blacks, on account of the remarkable purity of the water. The black sample dyeing done there is the envy of Europe. The brilliancy, suppleness, strength, blueness of shade, expansion of thread and extent of weight are unequalled, and blacks of 100 ounces per pound have come from the place so fine in appearance as to deceive the best judges—better looking, in fact, as one of these judges has admitted, than the average English or German dye of one-third the weight. The Frenchmen excel, in fact, in the art of making a poor thing look better than a good one. It is to their clever weighting of silks rather than to the withdrawal of the import duty 36 years ago that is due the decline of the English silk trade.

MICROSCOPIC AND CHEMICAL EXAMINATION OF FIBRES AND FABRICS.

There is no branch of practical science, says Louis J. Matos, in the *Dyer's Trade Journal*, which possesses more interesting features than that embraced by the above title, and none can lay claim to giving more satisfaction to the worker. It is proposed to give in detail the general methods followed in practical work, as well as suggestions regarding such special tests as may occasionally be required in the daily operations of a mill.

As is well known, all fabrics are made up of yarns, and these are made from fibres. This being the starting point, work should commence here. Fibres used in the textile industry are of several kinds, which may be grouped as follows: 1. Of vegetable origin; cotton, linen, hemp, jute, China grass. 2. Of animal origin; wool, hair. 3. Of insect origin; silk. 4. Of artificial; artificial silk. This classification embraces those fibres which are likely to be met with in any sample of yarn or fabric of unknown origin.

For the work in question, some apparatus is needed, and although the list seems formidable, the cost is not very great, except for the first three, which can be bought for from £5 to £7. The list comprises—Microscope; eyepieces, one-inch and two-inch; objectives, quarter-inch and one-inch; glass slides, 3 by 1 inches; cover glasses, oblong, 2 by $\frac{7}{8}$ inches; glycerine, jelly; glycerine, nitric, sulphuric, acetic, and hydrochloric acids; iodine tincture; chloride of zinc; cuprammonia; caustic potash; alcohol; aniline sulphate; fine tweezers; ordinary sewing needles, forced (eye-end) into pieces of soft wood, to serve as handles; shallow dishes, of glass or china, to hold one or two ounces; and a few dropping tubes. Other articles will be mentioned, and many will suggest themselves to the operator. The re-agents can best be kept in one-ounce glass-stoppered bottles. Alcohol and glycerine may be kept in larger quantities, say four ounces. To keep the bottles, the best method is to have a block of wood, of suitable size, bored with a number of holes, of such size as to take the bottles without binding.

The objectives indicated will give a magnification of an object ample for all fibre work. The enlargement being considered in diameters the combinations are:—

Quarter-inch objective	1-inch eye-piece.	2-inch eye-piece.
One-inch objective.....	400	200
	100	50

To examine a fibre, some of the fibrous material (which may be some raw stock or thread) should be untwisted, and immersed for a few minutes in a little water in a shallow dish, when with the tweezers and assisted by the needles, a few threads can be drawn out from the mass, laid upon the slide, and held lengthwise. If several fibres are together, which is most likely, they are easily separated by the aid of a drop of water, and then covered with the cover glass. This method of mounting answers admirably for all kinds of fibrous materials, when permanent mounts are not desired. For the latter a different treatment is pursued, which is, essentially,

ally, to remove from the water such fibres as appear by a preliminary examination to be desirable, and transfer them to a small dish containing a little concentrated glycerine, to soak. In the meantime, clean a slide and cover glass thoroughly, and place upon the slide, which is heated in a spirit lamp, a small piece of glycerine jelly; the jelly at once melts and spreads over the centre of the slide. Into this melted mass the fibres are placed, and straightened to the best advantage by the aid of needles. Then the cover-glass, also heated, is laid on carefully, and a spring clip applied. In a short time the jelly sets firmly; and the fibres, whether separate or as yarn, are firmly held and always ready for examination. Other methods of mounting are in use, such as with Canadian balsam, or with Farrant's medium, both of which are to be recommended, but they offer no advantage over the one above detailed. In placing fibres or yarn on a slide, have them laid lengthwise; and if more than one thread is to be mounted on one side, lay them parallel and close together.

Cotton.—This fibre is the easiest to recognize, and when once seen is not forgotten. It is always twisted, resembling a fire-hose without water in it. The fibre is hollow, like a tube; and in cases where it has been dyed with mordant colors (that is, with iron, etc., or with alizarine), this central tube is often seen to be filled with a colored substance—a result of the dyeing. In cases where direct colors have been used, only the wall of the fibre is dyed. Cotton turns blue with iodine solution. A reaction peculiar to cotton fibre is noticed under the microscope: when two or three drops of cuprammonia are added an appearance is seen which consists of a swelling and dissolving of the fibres.

Linen.—These fibres are very regular in appearance. The wall is quite thick, causing a small canal to appear, and the ends of the fibres are finely tapered. If a transverse section of the fibres is made, they will be found to resemble polygons. With iodine the reaction is blue.

Hemp.—At first glance, hemp resembles linen; but it will be noticed that the ends of the fibres are flat, large, and of a thick appearance. The central canal is not very distinct. Fine transverse markings are noticed. Transverse sections are oval, and show several layers in the wall. The reaction with iodine is blue and yellow, both making a green appearance.

Jute.—This fibre is smooth; the ends are rounded. The central canal is distinct, and shows a peculiarity of being in connected cavities. The reaction with iodine is brownish yellow, with aniline sulphate, yellow; and with chlorine water, bright yellow, but it is changed to a carmine with sodium sulphite solution.

China Grass.—This fibre is regular in appearance, being at times cylindrical, smooth, or flattened. The central canal is prominent. The ends of the fibres are rounded, and sometimes pointed. Sections are stained blue to violet with iodine.

With the exception of cotton, all these fibres are from the bast of their respective plants; that is, they are from that part of the stem and stalk to which they impart strength and elasticity. They are arranged in the plant body in different ways, according to the order to which the plant belongs, but with the above object. Cotton is a simple seed-hair, and belongs to a separate group.

The most important of all the varieties of animal fibres is that which comes from the sheep, and even of this there are many sub-varieties. The wool fibre in general is of a somewhat complex construction, although, when once viewed microscopically, it is never forgotten. It consists of an elongated, elastic and pliable shaft, covered with scales, which overlap each other, and to which is due the property of the fibre to "felt" or interlock with other fibres of the same kind. This surface structure of the wool fibre is characteristic, and separates from hair and fur, which in other particulars are related to it. The relationship existing between wool, hair, etc., is one of degree; and this is to be thoroughly understood before any attempt is made to state definitely the exact nature of the fibre under examination. It is well known that if sheep of high grade are neglected, subsequent generations are almost sure to be covered with a hairy instead of a truly woolly fleece. It is also to be noted that from animals of high grade there may be obtained parts of the fleece which have all the properties

and characteristics of hair. Consequently, any off hand assertion regarding the origin or identity of a sample of animal fibre is absurd.

The scales on the wool fibre have a greater free margin than the scales on hair. This is apparent if the two fibres are examined on one slide. To make such a mount in a satisfactory manner, the fibres may be scoured on a small scale by shaking with a small quantity of neutral (Castile) soap in a bottle for a few minutes, drawing off the liquor, washing well in water, drying on blotting paper, transferring to a little glycerine for half an hour, and then mounting in glycerine jelly as detailed previously.

The points to be noted are as follows. The scales on hair fibres lie closer to the shaft than on the wool fibre. What is termed a "core" is present in hair, and is popularly supposed to be an almost infallible indication of hair. Such, however, is not the case, this core is common in all kinds of animal fibres—in some more than in others, in some it is quite absent, even in whole fleeces, but it is to be regarded as a part of the fibre. In the lower grades of wool it is always present, and nearly always is made prominent by having much color in it. In fact, the dark wools and hairs are made so by the coloring matter held in just such a manner. The surrounding matter is nearly colorless.

Regarding the differences that exist between wool and hair, it may be stated that wool differs from hair by being usually more elastic, curly and flexible, and by possessing the surface structures above mentioned. There is no true line of demarcation between the two.

In examining wool, fibres of a peculiar kind, quite devoid of any structure, are often encountered. They are *horny* in appearance, sometimes flat, and frequently with the "core" or central part occurring in segments. These fibres are the well-known "kemps" which are the cause of much trouble in the practical working of wool. All grades have them, although the coarser kinds have a greater proportion than the finer. The best method for examining wool is to treat a tuft with dilute solution of sulphuric acid (1 in 10, or even less), which causes the scales to stand out very prominently, and thereby materially aids in identification of the sample.

The estimation of wool in a sample of cloth consisting of wool, silk and cotton, is best done with a solution of the basic chloride of zinc, made by boiling 100 parts fused zinc chloride with 4 parts zinc oxide and 85 parts water, until a clear solution results.

If the cloth be silk and wool, a weighed piece is immersed in a sufficient quantity of the re-agent, whereupon the silk is dissolved quite rapidly if heated, leaving the wool intact; this is rinsed in water, dried and weighed. If cotton be present in the sample, as shown by examination under the microscope, it will be left with the wool, in which case the residue (after weighing) should be treated with a ten per cent solution of caustic soda to dissolve the wool, leaving the cotton, which is to be washed, dried and weighed.

To remove and estimate vegetable fibres in a sample of cloth, treat with three per cent sulphuric acid and dry. The cellulose will be completely destroyed, and can be removed by a little shaking.

In strong sulphuric acid cotton is dissolved, wool is but little affected, but silk is at once dissolved. If water is added, the wool can be removed, washed to remove the last trace of acid, and then weighed. A solution of oxide of copper in ammonia dissolves cotton and silk, but not wool. The following solvent is very useful for silk, leaving cotton and wool: 16 grammes copper sulphate, 150 c.c. water, 16 grammes glycerine. Treat this mixture with a solution of caustic soda until the precipitate formed is redissolved.

The analysis of raw wool is very important and the method which the writer uses exclusively is as follows:

Moisture.—Dry fifty grammes (average sample) in a suitable oven at 100° C., and weigh. The best method to do this is to put the wool in a tube of large diameter contained in the oven, and pass a current of dry air through while heating.

Wool Fat.—Extract the sample with ether, and agitate with water. The fat in the ethereal solution, while the oleates are in the aqueous, both are separately evaporated to dryness and weighed.

Wool—Wash with distilled water, to remove other oleates, and mix with the aqueous solution above. Treat the wool with alcohol, and add the weight of the oleates thus extracted to those above. Decompose the earthy oleates remaining in the wool with dilute hydrochloric acid remove the acid by washing; dry the wool and treat with alcohol and ether, evaporate to dryness, weigh, and calculate the earthy oleates.

Finally, dry the wool carefully, and shake over clean paper to remove dirt, sand, etc. Wash on a fine sieve, dry, and weigh

BLEACHING OF CORDS, VELVETS AND VELVETEENS.

BY G. E. HORN

The bleaching of cords, velvets, velveteens, and all goods which have a raised face presents some difficulties on account of the necessity of keeping the pile or nap from being crushed. This necessitates very careful manipulation on the part of the work-people, and handling in such a manner that the pile or nap does not get damaged in any way.

Before the goods are subjected to the bleaching process they must be dressed and singed for the purpose of setting up the pile and removing every particle of lint, nap or floss, so that the face of the goods shall have a firm and level appearance. Much attention should be given to these operations, and every possible care taken to prevent them being unevenly singed or damaged. The heavy classes of these goods fustians, moleskins and cords, require particular attention, as on account of their weight there is greater risk of the pile being damaged.

The goods after singeing and dressing should be washed, this is usually done in a wooden cistern from 12 to 14 feet long by 6 feet wide, and 5 feet deep divided by three perforated wood partitions into four compartments. An overhead winch serves to run the goods into and out of the machine. Two pieces, not more, are placed in each compartment of the machine and they are washed for fifteen minutes in a stream of clean water, after which they are run into an hydro-extractor, or piled on stillages to drain.

A continuous washing machine has been invented specially for dealing with this class of fabrics, which are treated in this machine in the open width, there is, therefore, little or no risk of any damage to the face of the cloth being done. These machines are found to be very efficient in washing.

After the washing, the goods are ready for boiling in alkali; generally an ordinary open kier is used for this purpose, a winch being employed to run in and draw out the goods, which are most carefully plaited down in the kier. On this operation great care should be exercised, as it is here that the liability of the face of the cloths being damaged is very great. The liquor used is generally one of soda ash at the rate of 1 lb of ash to 10 gallons of water, or in some cases caustic soda may be used. Sufficient liquor is employed to keep the goods in the kier well covered. The boiling is done for eight hours, after which the goods are washed, when they are ready for the next operation.

After the boiling, the goods must be chemicked or chlored. In most works the apparatus usually employed consists of a range of stone cisterns, each cistern being about five feet square and four feet deep, with the necessary winches, sufficient room should be given between the cistern to admit of easy access by the workmen. The cisterns are filled with a liquor of chloride of lime or bleaching powder at one degree Tw, the goods being entered two pieces at a time in each cistern, and allowed to remain in for a short time, or better, run in and out by the winches for 15 minutes, after which they are taken out and plaited on a stillage, and allowed to lie for four hours. To place the goods one above the other might lead to the nap of the bottom pieces being flattened, to prevent this, care should be taken that not more than four to five pieces be piled one on top of the other in any one batch.

Following the chemicking comes the souring, for which purpose many arrangements have been adopted in various works. In some places a series of tanks similar to the chemicking cisterns are employed. The tanks may be made of wood lined with lead. The liquor used is a solution of sulphuric acid at 1° Tw, and the goods

are treated in this for 15 minutes, either hot or cold; in the former case a temperature of about 120° F is used; heating, while it facilitates the process, is not necessary, and it is much safer to work cold.

After the souring, the goods require washing; this must be thoroughly done in plenty of clean water on the washing machine used in the first instance. Unless it is thoroughly done there is a liability for the goods to be tendered, which is to be avoided as much as possible. After washing, the goods are dried best on a stentering machine or a range of drying cylinders, and winches are arranged so that the back of the goods only comes in contact with the cylinders. By either of these ways the face or nap is raised up and not damaged in any way.—*Dyer and Calico Printer.*

FOR THE CANADIAN JOURNAL OF FABRICS
RHEA.

Most of our readers will have heard of the remarkable resuscitation and development of the textile fibre called rhea. Long before the dawn of history, rhea cloth was used to swathe Egyptian and Indian corpses, and after the lapse of many centuries still adheres tenaciously to the bones that crumble to dust on its forcible removal. The ordinary process of manufacture was laborious and costly, and was probably kept alive only by imperious fashion. Modern industry demands such rapid production that the working of rhea could not be thought of until some mechanical contrivance should be found to do, in a few hours, the work formerly done by many families in as many days.

In 1869 a prize was offered by the Indian Government for the invention of a machine or process for separating the fibre of rhea from the bark at a cost that would permit it to become a recognized article of commerce. Many attempts were made to secure this prize, but notwithstanding a repetition of the offer eight years afterwards, the problem remained unsolved, though meanwhile rhea fibre was growing in general estimation as a possible source of wealth. At last, a process has been invented by an English chemist which has been pronounced an entire success. A mill has been started in Rochdale, Eng., where specimens of textiles from this fibre will be manufactured, not we imagine to be placed immediately on the market, but rather to try the taste of the public in the matter. John E. Schultze has just returned to Canada from England, bringing with him some very remarkable specimens of fabrics manufactured from rhea. The filasse is perfect, and is useful for a greater variety of goods than cotton, it readily assimilates with silk and cotton and is specially suitable for mixing with wool, as it is said to prevent the shrinkage of that material in washing. It will take the same shades of fast colors as silk or wool, and dyes affect not only the surface but penetrate the fibre.

Yarns made from this filasse, both of pure rhea and of rhea mixed with silk, cotton and wool, appear to be adaptable to all classes of textiles from imitation silk, plush and damask, down to sail cloth, canvas and fishing nets. Their strength, as compared with cotton, is remarkable. Some tests were made at the Manchester Chamber of Commerce Testing House, which discovered the fact that whereas cotton yarn of a certain sample broke at a strain of 30½ lbs., rhea yarn of a corresponding sample broke at a strain of 45½ lbs. The tests of sail cloth, of cotton, linen and ramie, show equally remarkable results. The fabrics are really wonderful. The table linen has a texture and lustre equal to the finest damask procurable; the plushes, dress fabrics, curtains and furniture coverings could not be distinguished from those now on the market except for their toughness. This quality is remarkably exemplified in the lace curtains. To the eye they are ordinary cotton lace curtains, in reality they are made of rhea, half again as strong as cotton, and capable of taking a perfectly fast dye. In fact, anything made of rhea is said to take a permanent dye, or can be stamped. Some printed plush furniture coverings could hardly be matched in their class.

The new fibre has a splendid future before it. The Indian Government is sparing no exertion in extending the cultivation of this wealth producing nettle, and its possibilities and advantages are so evident that it cannot fail sooner or later to win public favor.

and subsequent adoption. Jno. E. Schultze, of E. Schultze, Son, & Co., McGill street, Montreal, will be pleased to show samples to any one interested in textile products.

FABRIC ITEMS.

The tailor shop of Martin Taylor, Quebec, was destroyed by fire recently. Loss nearly covered by insurance.

The creditors of Hewson & Co., dry goods merchants, of Niagara, Ont., have granted an extension of time to the firm. The statement shows liabilities of \$12,000 and assets of \$15,000.

James Robertson & Co., Hamilton, Ont., wholesale woolens, have gone into voluntary liquidation. The firm is solvent, and is paying 100 cents on the dollar, but on account of the business not paying, the liquidation has been deemed advisable.

The International Fibre Chamois Co., of London, England, has entered an action in the Superior Court, Montreal, against Franklin M. Cowperthwait, the former manager of the Canadian Fibre Chamois Co., for \$10,000 damages for breach of contract. The Canadian Fibre Chamois Co. has also entered an action for a similar amount against Mr. Cowperthwait for alleged breach of his duty as a director of the company, the ground of complaint being that he used knowledge of the fibre chamois business acquired as director to promote the success of a rival concern doing business at St. Catharines, Ont., and known as the Standard Fibre Lining Co.

The statement of J. D. Ivey & Co., wholesale millinery, Toronto, shows a deficit. N. Garland bought the stock at 60 cents on the dollar, and the proceeds, between \$21,000 and \$22,000, were handed over to R. Millichamp. The statement is as follows: Assets—Stock, \$43,000; accounts, \$38,000, total, \$81,000. Liabilities—Direct, \$66,000, of which \$50,000 is due to the trade and \$10,000 an overdraft on the Standard Bank; indirect liabilities, \$97,000. The paper under discount—and on this amount the Standard Bank ranks as a creditor—is \$26,000. A lot of the firm's paper was protested on October 4, and to save an assignment the representatives of the largest English creditors agreed to the sale of the stock. In March last the firm showed a surplus of \$56,000.

The difficulty of founding a wholesale business with limited capital in the face of such competition as exists in these days, has been keenly experienced by John Muldrew & Co., woolen merchants, of this city, who find it necessary to consult creditors about the state of their affairs. It was early in 1895 that Mr. John Muldrew left the wholesale dry goods firm of McMaster & Co., Toronto, with whom he had a responsible position, and opened a wholesale trade in woolen goods. At that time he claimed to have real estate and other property worth \$20,000 over incumbrances. The principal is a good salesman and a good judge of fabrics, but with heavy expenses during his first year and most of his capital locked up in land, he found it impossible to make progress as a wholesaler. Stock is now being taken and a meeting of creditors will shortly be held to consider the situation.—*Monetary Times*.

The following are the principal creditors of John McLean & Co., wholesale dry goods, Montreal.—A. F. Gault, \$23,500; City of Montreal, \$890; William McLean, \$767. C. E. G. Mathieson, \$2,052; E. Guillet & Co., \$1,182; G. R. Robertson & Sons, \$461; R. Hampson, \$315; J. Godin, \$584; T. W. Hynes & Co., \$358; Sullivan, Drew & Co., \$255; W. Carroll & Co., \$282; Chaley & Monier, \$10,458; J. Gallegari, \$1,608; E. Hecht, \$610; Haye & Co., \$3,321; J. A. & F. Higgins, \$841; Kurtz Haboeck, \$497; Kerry & Dawson, \$2,932; Wilson & Stafford, \$1,356; W. Wylie & Co., \$315; Wecker & Co., \$1,417; J. Salaman & Co., \$1,583; S. Wolff & Son, \$365; A. Hardy & Co., \$696; E. Ebeling & Co., \$2,081; Seydel & Lotzman, \$240; F. Bujatti, \$423; Carl Konigs, \$319; J. L. Fischer, \$201; Langworth Bros., \$781; Pronier & Co., \$1,694; Ross & Humbles, \$525; C. F. Klein Sclatter, \$2,256; Cook, Son & Co., \$1,495; Giroux Freres, \$880; C. G. Hill & Co., \$707; H. Mallet & Sons, \$2,221; M. Faber & Co., \$1,914; A. Phelps, \$5,403; G. Reguillart, \$8,037; P. Walser & Co., \$720; L. Permyzel & Co., \$642; C. Walser & Co., \$526.

Carruthers Bros., \$2,979; George Ordish & Co., \$3,398; H. W. Davies & Co., \$11,524; Knecht, Thomas & Co., \$947; sundry accounts, \$300; Merchants Bank, \$65,000; rent, Mrs. W. F. Kay, \$759; Alex. Stewart, \$14,500; and Greenshields & Greenshields, \$2.00.

An exceedingly handsome book containing illustrations of the coming styles has just been gotten out by the Corticelli Silk Co., Ltd. The designs are by the great costumers of Europe, including E. Felix, Paris; Debenham & Freebody, London; Jules Bister, Berlin; Ullman & Strauss, Frankfurt; Hirsh & Cie, Brussels; M. A. Vogels, The Hague; A. Izambard, St. Petersburg; Ch. Drecoll, Vienna; De Gaspari, Rosa E. Tarta, Turin; Emilia Bossi, Florence; Maison E. Minangoy, Moscow; Simpson, Hunter & Young, Glasgow; Manning, Dublin; Geo. Henry Lee & Co., Liverpool. Many of the engravings are beautifully colored, and the whole forms a real work of art. The publishers explain that their reasons for publishing this book is the fact that ladies on this side of the Atlantic have wondered why we are always a season behind the styles of the European capitals. The cause is that the modelers refuse to exhibit spring styles until May 8th and autumn styles until September 8. They have, therefore, made special arrangements with the firms above named to furnish, in advance, designs of their coming styles, so that they can be published here on April 15 and September 15. The publication price is 20c., and the book should be widely purchased.

EXPORTS OF MOHAIR FROM ANGORA.

Last year showed a remarkable improvement in the mohair trade, prices ruling higher than they had done for many years, according to the report of the British consular agent, the consequence being that exporters realized from this article £100,000 more than in the previous year. Prices ran as high as 36 and 38 piastres the oke, i.e., say, 28 5d. per pound, a thing quite unheard of since the palmy days of mohair in the early "seventies." The reason of this unusually brisk demand is variously explained, some attributing it to the employment of mohair in America for the manufacture of a special kind of carpet, while others say that it is owing to the change of fashion in ladies' dress fabrics in England, bright glossy materials, into the composition of which mohair largely enters, being much more in demand of late than the dull, lustreless, clinging fabrics which were in fashion for so many years previously.

In old times mohair was very little, if at all, exported in its natural state, being worked up by the natives, nearly always Armenians, into various fabrics known as "sofs" and "shats," and then exported to Europe. Now, however, the contrary is the case, and this once flourishing industry has practically ceased to exist, only £1,500 worth of mohair fabrics having been exported last year. As mentioned above, 1874 was the date of the apogee of the prosperity of mohair merchants, prices ranging from 36 to 52 piastres the oke—i.e., an average of 28 10d. per lb., whereas, now anything over 18. 10d. is considered a very fair price. In those halcyon days comparatively large fortunes were made by some of the natives, who built for themselves handsome country houses at Getshuren, the chief summer resort of the Angorishes, a few of which are said to have cost £3,000, a considerable expenditure in this country for such a purpose. This state of things did not, however, last very long, for there has been a steady and almost continuous fall in prices ever since 1875 until the year 1888, when the lowest price, 9d per lb., was reached. The causes of the rapid decline in the prices of mohair are various. One is, no doubt, the fact that owing to the large exportation of Angora goats to the Cape of Good Hope, where the breeding of this animal is now carried on on a very extensive scale, the supply has very much increased of late years, beyond, in fact, the limits of the demand. Then, again, the introduction into Europe of merino wool proved disastrous to mohair, to which it soon became a very serious rival. But, perhaps, the unforeseen and often inexplicable change of fashion has had as much to do with the falling off in the demand for, and therefore in the price of mohair, as anything else. A small thing may bring about a revolution in this respect, as explained above, and it is impossible to foresee what the prospects of trade may ultimately be.

It is sufficient for our present purpose to note the recent rise in price. In conclusion, I should state that the Ottoman Government has prohibited the exportation of mohair goats for the last three years, an exception being made last year in favor of one person only, a well-known personage in South Africa, for whom some 200 goats were sent to the Cape of Good Hope. I might add that the best qualities of Cape mohair are superior to anything that leaves Australia, though whether their wool, as a whole, averages so high as ours is another matter.

THE WOOL MARKET.

TORONTO.—There has been some enquiry for fleece from the United States and a considerable quantity is reported sold at from 20 to 20½c. Prices show an upward tendency. In pulled wools a steady demand is noticed from the mills, which has pretty well cleared the market of the surplus. Prices are steady at 19 to 20c. for supers and 21 to 22c. for extras.

MONTREAL.—The market is quiet and the demand is light. The advance in the United States and the firm tone of the European markets, however, prevent any tendency to shade prices. As stocks of foreign wool are light any increase in demand will ensure an advance of prices to the outside level.

IRISH MOSS FOR SIZING AND FINISHING.

This article, variously called Iceland moss, carrageen, carrageen, carragen, and pearl moss, is the seaweed *chondrus crispus*. Its good qualities in the industrial, and especially in the textile, arts are hardly sufficiently appreciated. The plant grows along the rocky coasts of Europe, and is found from Gibraltar to the North Cape. It does not seem to have been able to penetrate into the Mediterranean, and is only rarely found in the Baltic. It is moderately abundant on the west and north-west coasts of Ireland, and its collection forms one of Ireland's minor industries. On the east coast of North America it is abundant, and the principal supply comes from those shores. The crop in many places is unutilized for use to a great extent owing to its being infested with mussels and minute shellfish.

The harvest of mercantile moss is therefore confined to and obtained from the rocky shore of the Minot Ledge, which is in Plymouth county, State of Massachusetts. In this locality moss-gathering forms a considerable and distinct industry. The gathering begins late in the springtide of the full moon in May, and continues till early in September. Prior to the commencement of the gathering, bleaching beds are prepared by raking the stones off sandy plots on the beach. The collectors then go out to the rocks in boats, in order to be on the spot when the tide is at its ebb. The spring tides are chosen because of their ebbs leaving bare the most considerable extent of the rocks. The best quality, intended for the supply of druggists, is hand pulled, in order to secure its freedom from shells and tape grass, and is worth twice or thrice the value of the bulk of the crop.

During the neap tides, when the rocks remain covered, the moss is gathered or dredged by means of a long handled iron rake, as mussels are often dredged from the channels of our rivers. This part of the harvest is, of course, not so good as the other, containing, as it does, other varieties of weeds and different species of mollusca. It is not, however, rendered unsuitable for sizing purposes. The moss, both hand pulled and dredged, is laid upon the bleaching beds and exposed to the air and sunlight, which renders it white and clear. During this time it is washed in sea water half-a-dozen times or more. Rain seriously injures its quality when thus exposed, as it rapidly dissolves in fresh water. The second quality is largely used by brewers for fining beer. It is also used with the lower qualities, for sizing cotton goods and for paper sizes, and the rougher qualities for stuffing mattresses, furniture and similar uses.

The mercantile product is foliaceous, crisp, whitish, odorless, tasteless, and mucilaginous, and a strong decoction gelatinizes on cooling. It possesses adhesive and stiffening powers, and dries down on the fibre, which it will not injure, nor will it change sensitive colors.

We see no reason why this material as a home product should not be more extensively used in the sizing and finishing of colored goods than it is at present. It has strong stiffening properties; it is odorless, tasteless, harmless and cheap—a combination of merits not often found, and that should secure for it the attention and consideration of users of vegetable and animal sizes for manufacturing or finishing purposes.—*Ex.*

SOME NEW DYESTUFFS.

Benzo Fast Black.—This new product is admirably suited for dyeing greys, fast to light, on cotton. The shades are also fast to alkali, acid, iron, and do not rub. The color has also the advantage of dyeing in one bath. A great variety of shades can be obtained by combining with chloramine yellow, chloramine orange, chrysophenine, benzo-chrome brown, and other colors dyeing with salt.

Benzo Chrome Black B.—This is used as a substitute for aniline black, being cheaper and faster to light, and has the advantage over aniline black of not turning green. It can also be used for half woolen goods, the wool being afterwards topped in an acid bath. Dark navy blues on cotton can also be dyed with Benzo-Chrome Black B.

Benzo-Chrome Brown.—This new aniline brown is placed on the market in three shades: The "G" gives light tan shades; the "R" a red shade; the "B" a dark plum shade. By combining the B and R shades, good shades of seal brown can be obtained. A combination of B and G produces shades similar to cutch browns. Benzo chrome brown is specially suited for dyeing cotton and cotton and wool mixed, and also for dyeing half silk. By topping the shades on cotton in a fresh bath with bichrome potash, the shades are made much faster to light and washing.

Alizarine Cyanine Green (Paste).—A bright alizarine green has hitherto been wanting in alizarines. With regard to fastness alizarine cyanine green is equal to caruleine, it is also fast to alkalis and acids. The mordant used is the regular one, viz., bichrome potash, but it can also be dyed in one bath with sulphuric acid. Alizarine cyanine green can further be dyed with acid and chromed afterwards in the same bath with bichrome potash or fluor chrome. One special advantage of the product when dyed in this manner is that the after-chroming causes no alteration in shade. This new alizarine green has just been placed on the market by the Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld. The other products mentioned are also manufactured by this firm. For samples, etc., address the Dominion Dyewood & Chemical Co., Toronto, sole agents for Canada.

LINEN IN LEEDS.

It is commonly said of Leeds that its once thriving flax industry is practically no longer existent. To a considerable extent this is true. Thirty years ago Leeds and neighborhood contained nearly forty flourishing establishments connected with the linen trade, employing about 20,000 hands. To-day there are only about a dozen firms in the business, including both the spinning and weaving branches. In the whole of England the number of hands employed in the flax industry is below 10,000, against about 35,000 in Scotland, and nearly 70,000 in Ireland. Ulster has been able to increase its linen trade, the number of power-looms to-day being about 26,000, against 8,000 only some thirty years ago. The linen trade is not an expanding one, for it suffers severely from the competition of cotton imitations, which have driven out linen sheetings in the home markets, and interfered seriously with the sale of other goods. It is very much to be doubted whether even on the Continent the trade is developing in the same manner as other branches of the textile industries, and for the same reasons. Exports both of linen, yarn and cloth are much less than formerly. In 1875, when the impetus caused by the American Civil War and the consequent shortage in the supply of raw cotton had disappeared, the shipments were in round numbers valued at £9,000,000. Last year, when business was rather good, it was only about £6,250,000. To suggest that increased attention should be paid to such a trade as this was hardly a way out of the difficulty; and the fact is men-

tioned here by way of preliminary to the statement that, no longer depending upon flax, Leeds has done well for itself. This assertion is made with the necessary restriction that there exist in Leeds several linen firms whose business is on the most secure footing. The Marshalls were the first to found the linen industry in Leeds. The business was a big one in the district over a century ago, Benyon and Bago, Moore, Shaw & Co., Milburn, Clayton & Gersed, J. & J. Kaye and others being at that time prominent in connection with the flax trade of the place. The first extensive linen factory in the district was built in 1706 by Marshall & Benyon in Water Lane, Holbeck, a mile from the centre of Leeds. Benyon & Bago subsequently erected a very large linen factory, said to be completely fireproof, no timber being used in the construction. The floors were on arches raised upon cast-iron beams supported by iron pillars.

Among the Mills

Co-operation is one of the guiding principles of industry to-day. It applies to newspapers as to everything else. Take a share in "The Canadian Journal of Fabrics" by contributing occasionally such items as may come to your knowledge, and receive as dividend an improved paper.

A new boiler has been put in O'Hare & Sons' woolen mill, Midland, Ont.

The woolen mills at Kingsville, Ont., are now running and are said to be well employed.

The woolen mill at Pakemam, Ont., is at work again, the new dam having been completed.

David Hennigar's carding mill at Noel, N.S., was destroyed by fire last month. There was no insurance.

T. and E. Warner, who were formerly employed by the G. T. R., in Georgetown, Ont., have bought the glove manufacturing business of M. Waind, of that town.

T. Doye, designer at the Paton mills, Sherbrooke, Que., for the past six or seven years, has resigned his position and accepted a similar one in the Globe mills, Montreal.

The Granby Rubber Company, Granby, Que., is being pushed to its utmost to keep up with orders. An idea of the business being done may be had from the fact that daily some eleven hundred pounds of raw rubber are ground up.

C. O. Dexter, manager of the Canadian Colored Cotton Co.'s mills, Hamilton, Ont., asked for a reduction in water rates. The company pays the ordinary assessment and 7½ cents a thousand gallons besides, which the manager thinks excessive.

Fire destroyed the mattress factory of Chaney & Co., rear of 234-6 King street east, Toronto, recently. The building was filled with feathers, hair, ticking, and other dry and inflammable materials used in the manufacture of mattresses and pillows.

J. Ironside Thomson, Toronto, has been appointed selling agent for Moorehouse, Dodds & Co., Glen Tay, Ont., woolen manufacturers. The company has secured the services of a superintendent, we understand, who has had experience not only in a first-class Canadian mill, but learned his trade in the textile town of Dewsbury.

C. T. Grantham, formerly manager of the Yarmouth Duck and Yarn Company, has been in Toronto for some days in connection with the establishment of a cotton mill in Ontario. A

company is being formed with \$1,000,000 capital, and already \$500,000 has been subscribed by Ottawa citizens. The mill, it is said, will be erected in Ottawa.—*Galt Reporter*.

Fire completely destroyed the building owned by Jacob Lovereen, Delhi, Ont., Sept. 23rd. The lower floor was occupied by George Schmidt's shoe and moccasin factory and Griffin Bros.' steam laundry, the upper flat by Lovereen's robe and mitt factory. Lovereen's loss is about \$11,000. Insurance on building, \$1,000, on stock, about \$5,000. Schmidt's loss is covered by \$400 insurance. Griffin Bros.' loss is about \$900, insured for \$500.

James and John Camelford, of Paris, Ont., have invented a novel method of weaving carpets, so that a different pattern is represented on each side. "By introducing special pairs of warp threads throughout the width of the carpet, and arranging sets of four weft threads and passing the portions of the weft threads to form the pattern to the outside of the special warp threads, and the refuse or unrequired portion of the weft threads in pairs between the warp threads of a set and securing each set in position by crossed binding warp threads, and passing when required the weft thread from the outside of one special warp thread to the outside of the other special warp thread," is the language used in their claim, and by their new method they produce a very beautiful double design, practically two carpets in one.

FOR the first time in the history of the controversy that has raged round the "pure wool," "flannelette," and other such questions that are intimately associated with the Merchandise Marks Act, and perhaps as closely with the name of Dr. Jaeger's Sanitary Woolen System Company, Ltd., the latter firm is to occupy the role of defendants in a prosecution under the said Act. The facts, so far as they have been disclosed, are simple, though the issue involved is of the utmost general importance. It is this whether a firm importing materials or manufactured goods from abroad are at liberty subsequently to attach to them their own trade-mark. This, it seems, is what Messrs. Jaeger have been doing, and the prosecution claims that it constitutes an infringement of the Merchandise Marks Act.—*Drapery World, London, Eng*

MANCHESTER as the centre of the cotton manufacture concurrently developed the machine making and engineering businesses and industries. Spinners and manufacturers at first made their own machines, and engines, and gearing. A few of them developed special skill and excellence, and their machinery being so much better than that of others, their neighbors began to ask these machinists to make for them. Such commissions they accepted, and as these increased on their hands, they were induced to devote themselves solely to machine-making and engineering, abandoning cotton to their neighbors, or conducting it as a separate business. There yet survive a few firms who do both. Out of these conditions in the main grew the machine making and engineering trades as separate businesses and industries. Manchester having been the centre of the cotton trade, naturally became the centre of the new industries, and its mechanics and engineers acquired great expertness and skill. The products of their labor commanded the highest prices in the market, and the men got the highest wages — which they deserved. But by and by engines and machines began to be made in the new centres, which, as indicated above, were springing up. Lower wages were paid there, and, perhaps, a lower quality of labor was given for them. But the monopoly of the new trades was lost to Manchester. Then commenced the cutting-down of prices and profits, and this process has continued to the present day.

Wool Washers | **KITSON** - - -
Dryers and Carbonizers | **MACHINE CO.**
LOWELL, MASS.

A SUBSTITUTE FOR LINEN.

Consul-General Max Judd at Vienna reports to the United States Government that the use of linen for collars, cuffs and shirt fronts is practically unknown in Austria, and that the substitute used called chiffon, is not only cheaper, but superior. He describes it as looking like a fine linen and taking the same gloss, though made wholly of cotton. He writes "Intending to order shirts some months ago, I asked to have linen shirt fronts. 'Oh, you must be an American,' was the dealer's reply to my request. 'I can always tell an American in that way, they are our only customers who ask for linen bosoms in their shirts.' He asked for permission to make me one shirt with a linen front and another which would be one florin cheaper, with a chiffon front; and after a few months use I can not tell which is the linen and which the cotton. As for collars and cuffs, ninety-nine per cent of the dealers in these articles in Vienna have not even a linen sample in stock." Consul-General Judd thinks America should make cotton so that Americans might use it. The United States imports probably a million dollars worth of linen for shirts, collars and cuffs, which fact he considers worthy of thought on the part of American cotton manufacturers.

CHEMICALS AND DYESTUFFS.

Logwood and fustic are slightly easier, and castor oil is advancing. Soda ash is very firm and is likely to be dearer for 1897. The demand for dyestuffs and anilines is fairly active. The following are current quotations in Montreal --

Bleaching powder	\$ 2 00	to	\$ 2 10
Bicarb soda	2 25	"	2 35
Sul soda	0 70	"	0 75
Carbolic acid 1 lb. bottles	0 27	"	0 30

Caustic soda, 60°	\$1 80	to	\$1 90
Caustic soda, 70°	2 25	"	2 35
Chlorate of potash	0 13	"	0 18
Alum	1 35	"	1 50
Copperas	0 70	"	0 75
Sulphur flour	1 75	"	2 00
Sulphur roll	1 75	"	2 00
Sulphate of copper	4 75	"	5 50
White sugar of lead	0 07	"	0 08
Bich potash	0 10	"	0 11
Sumac, Sicily, per ton	60 00	"	65 00
Soda ash, 48° to 58°	1 25	"	1 50
Chip logwood	2 00	"	2 10
Castor oil	0 09	"	0 10
Cocoon oil	0 06½	"	0 07

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ANILINE COLORS OF EVERY KIND

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Also CAUSTIC POTASH FOR WOOL SCOURING

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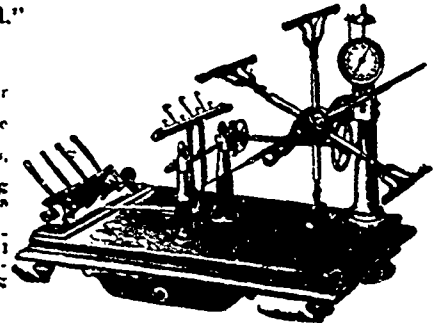


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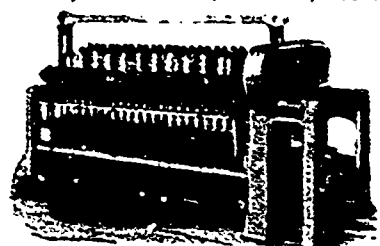
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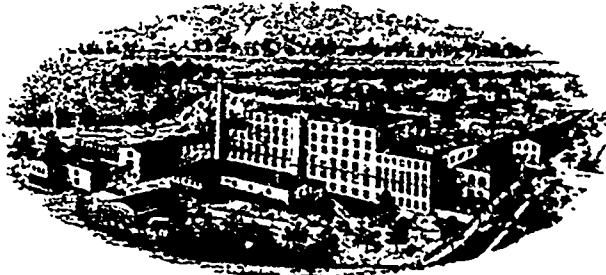
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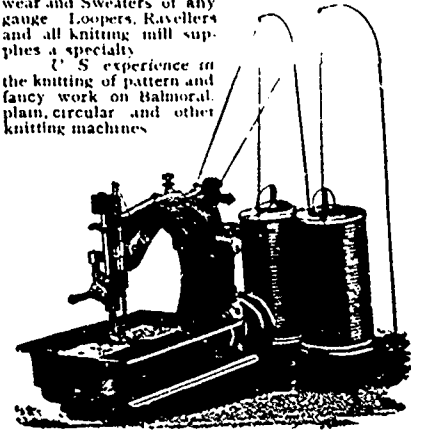
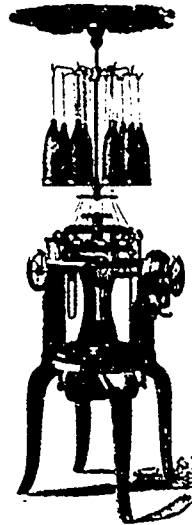
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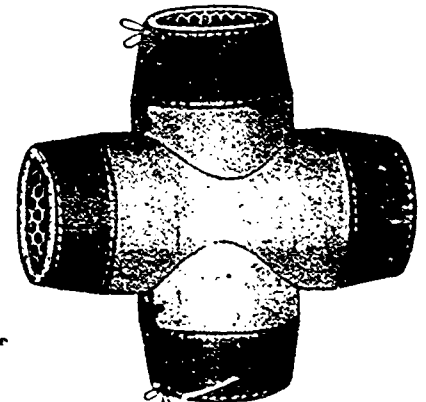


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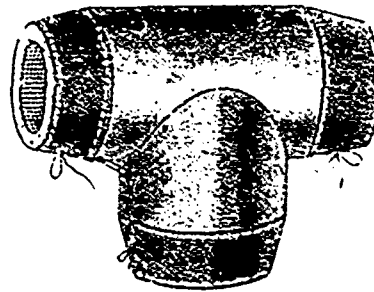
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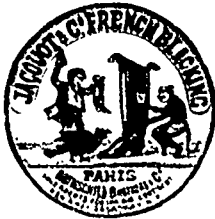
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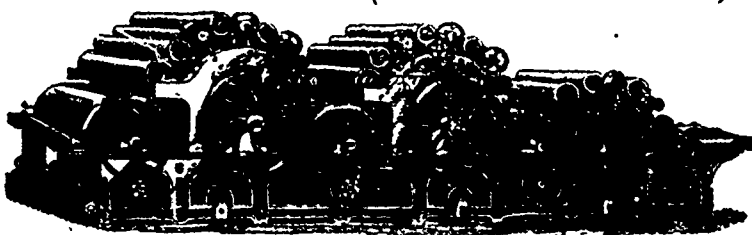
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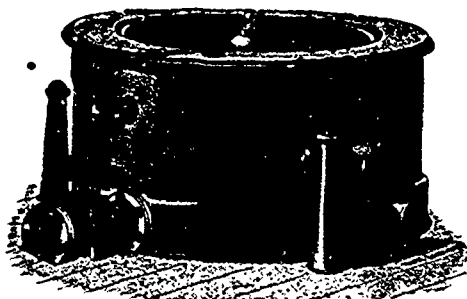
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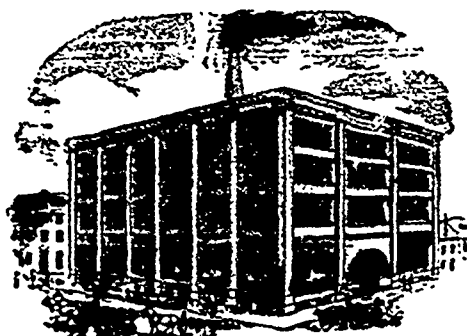
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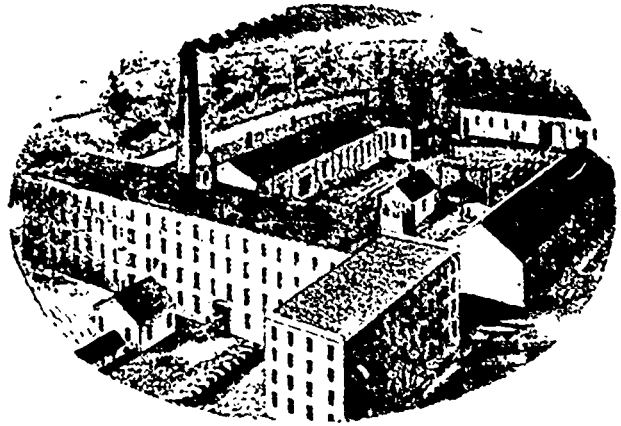
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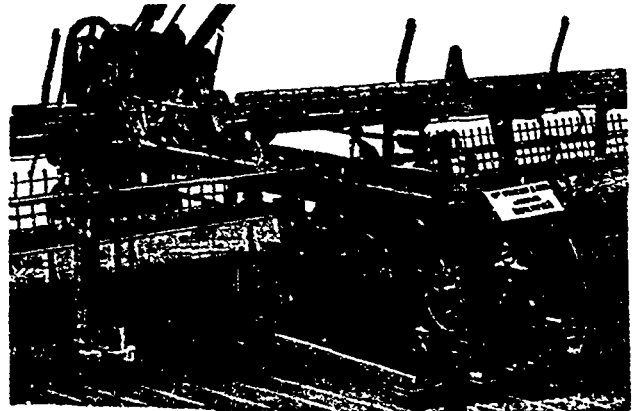
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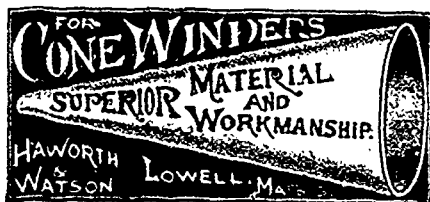
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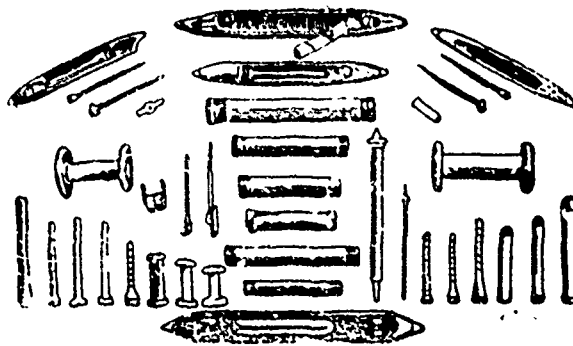
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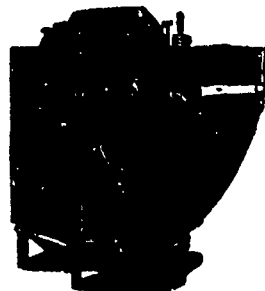
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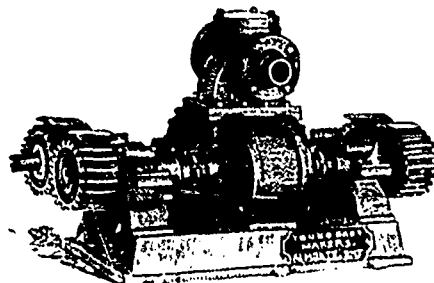
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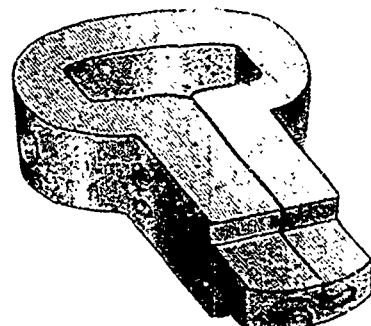


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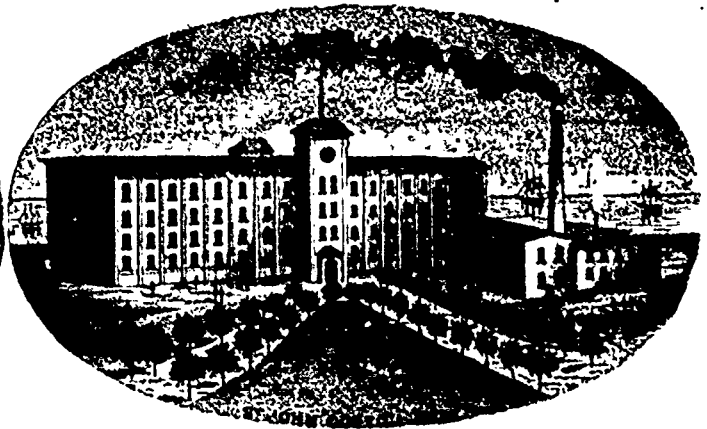
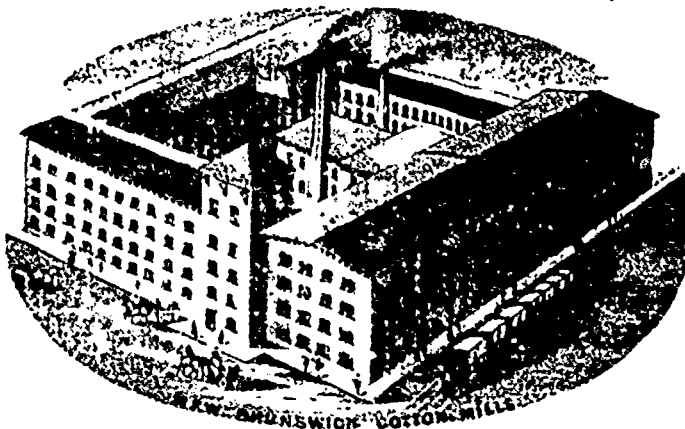


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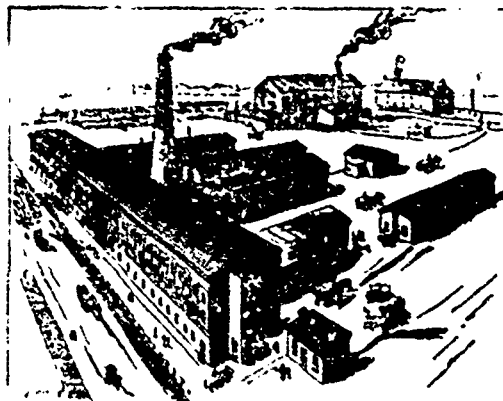
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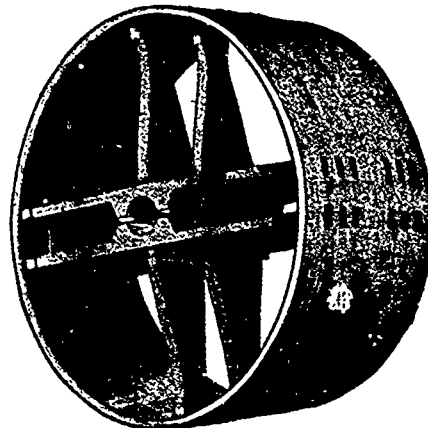
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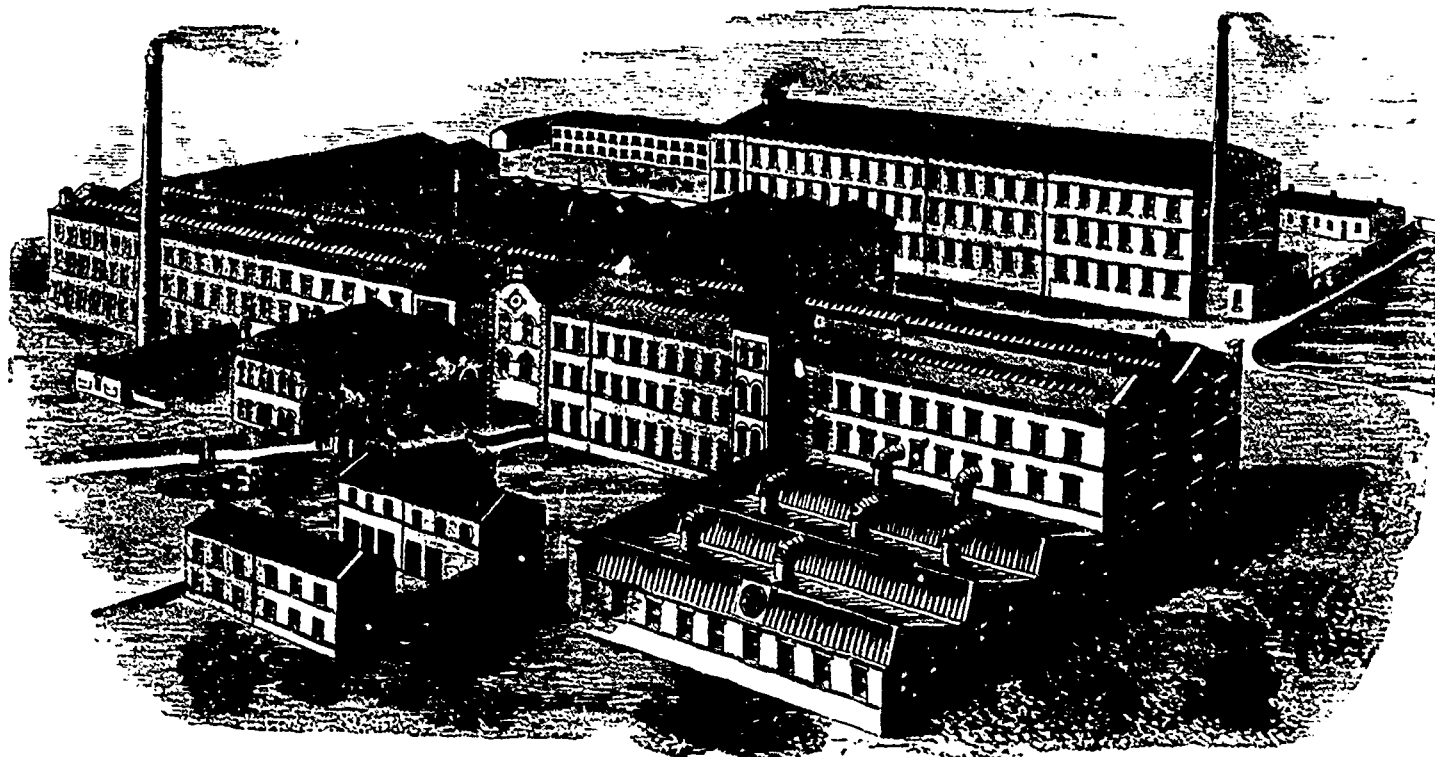
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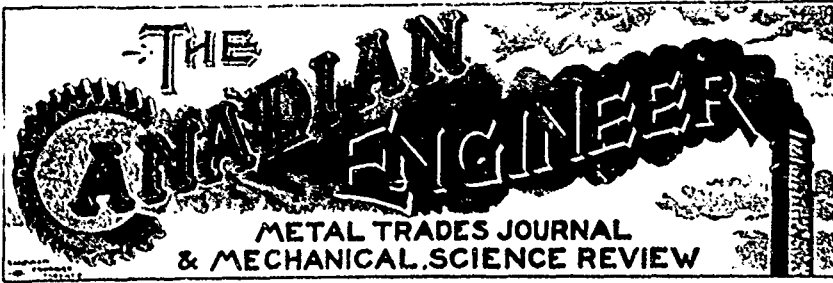
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THE POSITION OF IRISH FRIEZES.

In connection with the following extract from the *American Wool and Cotton Reporter*, it is interesting to note that Oxford grey frieze is at present the most fashionable material for men's overcoats --

There is more than one reason for encouragement in the present position of cheap Irish friezes. In the first place, waiving the question of the sensibleness or otherwise of the apparent preference for certain combinations of shades, the demand for these goods is an eminently rational one. It is a call for fabrics which, while cheap, are substantial, are of a quality quite at a parity with any reasonable expectation of what can be obtained for the rate which they command. These are, it would appear, honest goods. They are what they profess to be, and not alleged two dollar articles offered at seventy-five cents, but strong goods, made of the best materials which the price at which they are produced will permit. Again, the demand has started up mills that have been stopped for lack of orders, has relieved from enforced idleness hundreds of operatives who during the next 60 days, at least, will be earners, with a fair prospect of both partially satisfying obligations incurred while unemployed, and of securing a decent maintenance through the ensuing winter. The demand which has developed for "gold and red," "gold and green" (mixtures), double width, 28-ounce cloakings, has attained such proportions that it is taxing the facilities of some mills which have lately resumed operations for the purpose of meeting it.

Telegrams:—"Kaolin," Manchester.

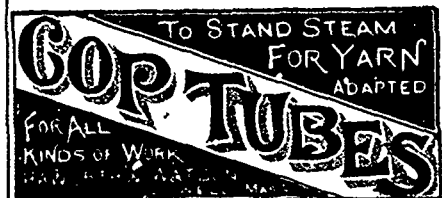
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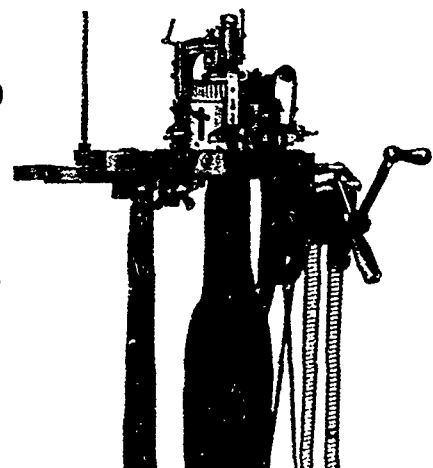
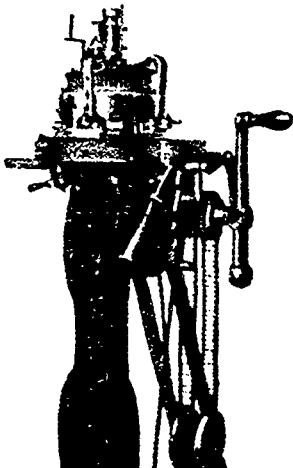
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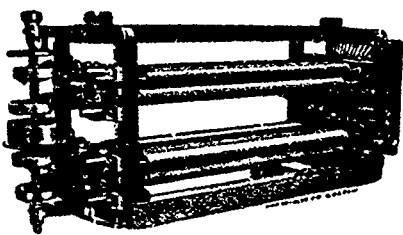
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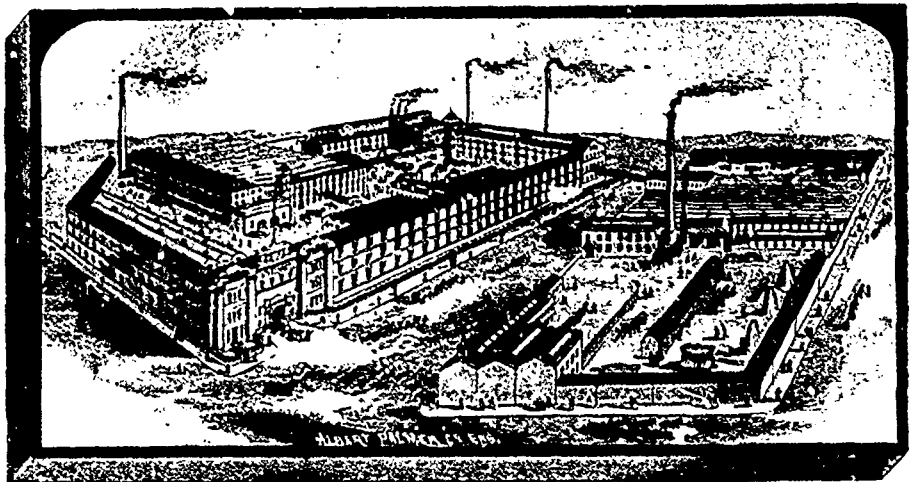
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