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Canadian Journal of Fabrics

THE JOURNAL OF THE Textile Trades of Canada.

Vol. XIII. TORONTO, AUGUST, 1896 No. 8

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Editorial

The Yorkshire College.

The Yorkshire College, Leeds, is a much prized centre of light and learning in the textile education of England. Some time ago the Clothworkers' Company, of London, had granted $50,000 for improving the accommodation, and the appliance of the textile and dyeing departments of the college, and a good half of that amount was to be spent in the erection of a new building for dyeing, to contain a splendidly appointed laboratory for the pursuit of original research work. Viscount Cross, the worshipful master of the Clothworkers' Company, along with about 18 other members, recently laid the foundation stone of the proposed new building. At various times in the past twenty-five years the Clothworkers' Company has expended $180,000 upon the improvement of the college.

Knitted Novelties.

Among other novelties called into being by the bicycle craze are half-length drawers, suitable for bicycle riders. The prices asked for the imported ones are high, and it seems that there is a good field in this line of goods for the domestic manufacturer. If he will make a good strong garment, with reinforced seat, that can be retailed for from 75 cents to $1, a large business can be done. Another novelty produced by United States manufacturers is a man's jersey overshirt in black and white stripes at $9 a dozen. Infants' vests with double overlapping fronts are shown by specialty houses. The latter are also showing new styles in knit bandages made with very full front.

Wm. Parks & Sons, Ltd.

To the dozen or so staple lines manufactured by this firm has recently been added a new one which promises to make itself widely and favorably known. The flannelettes which the firm of Wm. Parks & Sons, Ltd., are placing on the market are meeting with the best possible reception at the hands of the trade, and the samples which THE CANADIAN JOURNAL OF FABRICS has seen are as complete a justification of this popularity, as is the name of the firm a guarantee that the quality of the goods will be maintained. David Kay is the agent of the firm in Montreal and J. Sproule Smith in Toronto.

Clothing.

We are slow in Canada; so our neighbors across the line tell us, and there is some justification for what they say. On our side we sometimes add that we are sure nevertheless. At the present time there are indications that we are gradually but surely overtaking our more agile competitor. In nothing, perhaps, have we more leeway to make up than in the clothing trade. The great majority of Canadians wear custom-made clothing, and of the remainder the greater number wear that of imported manufacture. That this is a profitable field for the investment of capital is shown by the fact that in Chicago there are, according to an exchange, more than thirty wholesale clothing houses employing, at a low estimate, 35,000 people altogether; 800 of these are cutters; 25,000, including machine

operators, are tailors; the rest of the number are made up of pressers, clerks, stockmen, travellers and so forth. Much of this development has been due to the financial crisis through which the United States recently passed, because many gentlemen who had hitherto patronized some expensive custom tailor felt the necessity of economy, and finding that they could be fairly well satisfied with ready made clothes, turned their attention in that direction. This gave an impetus to that business that had not been thought of before, and every effort was made to retain this trade; as a natural result better material, better style, and better workmanship were introduced, and whether or not the effort has proved successful will readily be seen by visiting any first-class retail clothing store. On the other hand, the regular customers of the clothiers, the working class, felt the hard times keenly and were obliged to demand cheaper clothing. Economy was exercised in every branch, from the manufacture of the cloth to the finished garment. Many ways were discovered for accomplishing the same results at less cost, and to day the same clothing can be bought for about one-third less than it could a few years ago. Our reasons for economy are not so exacting in Canada, because, in the first place, we have not had any panic, and in the second, custom-made clothing has never been so expensive with us as it is across the line; but the improvements in the manufacture of clothing are drawing patrons every day, and one or two special lines have recently attracted such widespread attention that the public is everywhere familiar with the ready-made article, and is prepared to wear it if only the manufacturers seize upon the situation and do not allow themselves to lose the ground already gained. The lines referred to are the bicycle, golf, and outing suits generally in men's wear, and the shirt waists and separate skirts in women's wear. These have been placed on the market at such low prices and in such attractive lines that the take-up has been enormous. The man who wears a ready-made bicycle suit or ready made flannels in summer, will be not unlikely to wear a ready-made overcoat in the winter. Clothing cut in large quantities is, of course, cheaper than separate cut garments would be. Certain economies may be exercised in the manufacturing of the cloth without affecting its usefulness, while improvements in the making up give the purchaser a better garment now than ever before. The business has been brought to perfection by the employment of first class designers, and by having such a variety of sizes and shapes that eight out of ten people can be fitted without any alteration whatever, and when by reason of some peculiarity of build some alteration is required, this is no more than is necessary in a large percentage of custom-made suits. Another advantage that ready-made clothing has over custom is that the customer has the opportunity of seeing how it is going to look on him before he buys it, and does not have to depend upon the word of the tailor to know the effect of certain patterns of cloth. *Take hold.*

Textile Tendencies.

Cotton Markets. The recent great heat and dry weather has caused a rise in cotton, as it insures a shorter crop than was anticipated, and prices have jumped in consequence in one week from $7\frac{7}{16}$ c. to $8\frac{1}{8}$c. It is very unlikely that further advances will take place, as the demand for raw material in the United States during the coming season is sure to be limited. The mills at present are overstocked and the outlook very uncertain. In Canada the month has been eventful, as there has been a tumble in flannelette prices, brought about by the entrance of Wm. Parks & Sons, Ltd, St. John, into the field of competition. Just what the outcome will be is hard to say, but at present the trade generally stands to lose a large sum by the cutting and counter-cutting going on between the St. John firm and the cotton combine, as stocks were fairly heavy in the wholesale houses when the war began. The question of who can stand it longest is now to be discussed, we suppose, but we hope that the matter may be satisfactorily adjusted and trade placed once more on a profitable basis before serious losses take place.

Woolen Markets The chief talk of the wholesale trade is, at present, centred about the recent curtailing of the terms of credit. A good deal of resentment is expressed in some quarters at the change, especially as it was undertaken by the manufacturers without the approval of the trade. The fact, of course, being that such approval could never be obtained. The manufacturers are on the right track. The present credits are much too long, and they would be coming nearer a profitable basis of doing business if the existing terms were cut down by half. There is a very marked tendency in the trade at present to do a hand-to-mouth business. We hear of the probable havoc to be wrought by the Liberal administration, and by the United States politicians, and this is thought to justify a most conservative policy. The facts are, however, that the new administration is pledged to make no changes till next year, and that when these changes are made they cannot materially affect our manufacturers, because the duties cannot be lowered to any extent, and the revenues which are necessary be raised. We may have a revenue tariff, but it will afford ample protection. It is impossible for the duty to be lower than twenty-five or thirty per cent. The possible crash in the United States will drive capital and population over the line into Canada, and if that is the case, even Free Silver loses many of its terrors. Canada itself is on the verge of a period of expansion which will in all probability equal, if not surpass, the famous gold boom in South Africa. Money is scarce for the present, but it is more on account of the lack of confidence of the public than because of any real cause for uneasiness in the outlook.

HALF-WOOL DYEING.

The manufacture of half-woolen goods has taken a great upward tendency within the last ten years, and in consequence the dyeing of half-woolens comes more and more into importance. Dyeing mixed tissues, that is to say, those which have been wrought from several qualities of fibres, is much more difficul. than working goods of one fibre in the dye liquor, as for obtaining equal shades on the fibres different dyestuffs are required as a rule, which must be worked after different methods, and, moreover, because the first dyed fibre must not be affected by the dye process of the fibre to be worked afterwards, in the event dyeing of the various fibres is to be done in different operations.

Three processes of working half woolen goods can be adhered to, all of which are still in practical use:

1. Dyeing cotton first and wool afterwards.
2. Dyeing wool first and cotton afterwards.
3. Dyeing cotton and wool together in one bath.

In the earlier stages of the process the plan of dyeing or mordanting cotton warp was followed, then weaving same with wool, and finally to dye the latter in the piece. Then followed a period when raw cotton was interwoven with wool, and this half-woolen tissue was worked such that cotton became dyed in the first and wool in the second bath. Black dyeing was done on half-wool by mordanting cotton warp in the yarn with sumac and iron, and then weaving the yarn to a tissue with wool, whereupon it was passed through bichromate of potash and finally dyed with logwood and fustic. Blue shades were obtained by treating the different fibres with the same mordants and dyeing with logwood, Methyl Violet, Soluble Blue, etc. Brown shades were wrought by dyeing cotton in the warp with cutch and blue stone, then interweaving same with wool, wet out with bichromate of potash, and dye with logwood, camwood and fustic.

1. The process of first dyeing cotton in the warp has been retained up to this day for all the goods where it is desired to avoid dyeing cotton in the tissue. Thus alpaca serges and similar qualities of cloth are still being produced by dyeing warps first. These warp dyeings must be fast to acid, as the wool will be dyed acid afterwards and must resist the various operations of finish, such as steaming, singeing, crabbing, etc. Aniline black came into great importance and is still at the head of all the dye processes. Most dyers and manufacturers would gladly introduce another color on account of Aniline Black having such a difficult dye method and the tendering of the fibre, which latter is often left unfit for use. Aniline Black it should, however, be stated has received a competitor during the last years in the diazotisable blacks fast to acid, and the Diazo Brilliant Black has been introduced for warp dyeing. These blacks do not offer all that is required, and amongst other disadvantages they are not sufficiently fast to crabbing. a process of interweaving black dyed cotton with white wool and then to treat same on the crabbing machine in boiling water, when wool is more or less tinged. This disadvantage is not to be noticed in a new group of dyestuffs, which after having been dyed direct, are worked with bichrome and blue-stone. Benzo Chrome Black belongs to this group, which proved to be fairly fast to crabbing and likely suit in competing with Aniline Black in warp dyeing, as besides the advantage of fastness to crabbing, it has that of a simple dye method and other good properties. Some firms have indeed adopted it after subjecting this color to very severe tests. Besides black, brown warps are in demand, and the direct fast brown shaded with chrysamine with an after-treatment of bichrome and bluestone and the Benzo Chrome browns have prospects of being accepted for this kind of material. A chromable blue would also be of great importance. The manufacture of black on goods with white warp distinguishes itself from the process above mentioned, in that mordanting cotton with sumac and iron is no longer done in the yarn but in the tissue.

By this method, after having washed the raw material in a tepid bath of ammonia and soap, crab, steam and singe, whereupon enter into a cold sumac bath in a jigger for three hours, rinse well and pass on to a bath of 10 per cent. blue stone, or copperas, pyrolignate of iron or nitrate of iron. The goods are now wetted out in two or three per cent. bichromate of potash after having been carefully rinsed, when rinse again and finally dye with 30-40 per cent. logwood chips or about 10 per cent. logwood extract. Steam the goods, singe, rinse and press after drying, or steam once more in order to produce the goods so as to be fast to ironing. After the iron bath, dyers often pass through a bath of prussiate of potash.

Another black for halfwool which should be mentioned, is that of dyeing cotton with an oxidation black, wool with logwood, Victoria black and similar products.

For other colors besides black the method of dyeing cotton first, wool after, is not of general interest as for this there are not a sufficient number of fast cotton colors at disposal. Experiments have been made for producing shot effects by dyeing cotton first with such direct dyeing colors, tingeing wool as little as possible, and which are so fast to acid that they resist the subsequent dyeing of wool. Unfortunately there are but few direct dyeing colors, even of those fairly resisting acid and working alkaline, leaving wool sufficiently white as to dye the latter in all possible light shades, and thus there is every probability that dyeing cotton first will not come into general demand.

2. For half-wool piece dyeing the second method, by which wool is dyed first and cotton to follow, is by far of more importance. After this method wool is dyed acid first and the shade is kept a few shades lighter, because one has to take into account that the subsequent dyeing of cotton darkens the wool, now mordant the goods with sumac and tartar emetic or iron in a jigger, rinse well and work with basic dyes if possible cold in a jigger. What is of special importance in dyeing half-wool is that cotton and wool are of uniform shade. The

shade of the cotton must not appear lighter than that of wool, on the other hand must not be essentially darker. Where the cotton should be lighter one is in a position to help one's self by darkening with sumac and iron, but where the cotton is darker the goods should be passed through a weakly acid bath. By this method one can also dye cotton different to wool and thus obtain shot effects of two colored patterns square and stripes. Patterns with several colors can be obtained by weaving dyed cotton into the material, which cotton must be dyed with a color fast to acid. Dyed silk can also be woven along with the wool or cotton, when fine effects can be produced. Black belongs also to this method of dyeing wool, and is obtained by dyeing wool first with Victoria black and cotton, to follow with aniline oxidation black. This process of dyeing wool first, cotton after, is the most in use according to our knowledge, but has a disadvantage same as the first process mentioned, and that is that several baths are required, causing costs to increase essentially.

Since direct dyeing dyestuffs were introduced it became possible to work half-wool after the third dye process, working in one bath, by which a great saving is effected in workmen's wages, plant and time; whereas two days are necessary to produce a black on half-wool after the older dye methods; a one-bath black can be done in two hours, thus considerably more can be produced. Shades wrought in one bath have great advantage, being fast to rubbing, acid and perspiration; the goods have a more agreeable handle than those treated with sumac and iron after the old method. This advantage is only of importance for dress material, less or not at all in coatings or linings. For these textures the handle is not firm enough, as the cotton selvedge is required to be hard, which can be obtained by additions of starch, dextrin, size, etc., be it either in the dye-bath or in the subsequent finish. We will not omit to mention that dyeing half-wool in one bath has already been done previous to the direct colors being known, and thus, for instance, Yellow was obtained with Curcuma, Glauber's and sulphuric acid; Red, Green and Violet were produced after giving the fibre a tannin bath, when somewhat even shades were obtained on both wool and cotton. Very light shades, or such which can be called slightly tinged, were produced by dyeing direct with basic or acid dyes. But since direct dyeing colors have come into the foreground the one-bath method has come into real importance.

You will be aware that we have dye stuffs which, although working the different fibres under the same and almost equal conditions, work the fibre very rarely quite even, and unfortunately this group of dyes falls on in most cases stronger on one fibre than on the other, or one of these fibres appears of a different color from that obtained on the other, and this it is which causes such difficulties to work half-wool in one bath.

From what is said we have learned that the direct-dyeing dye stuffs can be grouped as follows: *A*. Wool and cotton dyeing evenly; *B*. Wool appearing stronger than cotton; *C*. Cotton appearing stronger than wool; *D*. Dyeing wool in another shade than cotton.

Best suited for half-wool dyeing would be those colors under *A*, which work both fibres even, but we regret to say that their number is very small. The qualities dyeing wool more than cotton, are very numerous, and should be worked in combination with those colors dyeing cotton stronger than wool in order to bring about that cotton and wool dye a uniform shade. The fourth group or direct-dyeing dyes which work wool a different shade than cotton are those suited the least for half-wool dyeing. It is not always possible to obtain the shade with direct colors only and it becomes necessary to shade cotton with basic dyes, and wool with acid colors. Only those colors of this latter group are at all coming into consideration which work in a neutral bath. We are glad to say that in the Sulphon group dyes are being produced excellently suited for half-wool. For shading wool there are moreover at disposal Indian Yellow, Orange GT, Cochineal-Scarlet PS, Croceine Scarlet 3B, Brilliant Croceine 3B, Alkali Violet R, New Victoria Blue B, Acid Violet HW, which fall on well in a neutral bath.

The difficulty of dyeing half-wool in one bath is besides increased by the fact that the affinity of the direct colors is by no means under all conditions the same on both fibres. Temperature, addition of color or chemicals, concentrated baths and quality of cotton and wool all tend to affect dyeing. The affinity of the dye stuffs on wool is enhanced by increasing the temperature when boiling, therefore the substantive dyes fall best on wool, whereas at a lower temperature they work best on cotton. This affinity is taken advantage of in order that the one or the other fibre can be made to appear darker. When giving instructions in practical dyeing, one has, however, always to direct the thoughts to the instructions being most simple, so as to give reliable results. It is not to be expected from a practical dyer that he keeps within the temperature of exactly 5-10 degrees for a given time, and one dare not approach him with any other directions than either hot, cold or boiling. The affinity of the dyestuffs to the different fibres is further affected by additions such as the following: Alkaline salts, soda, phosphate of soda, borax, which all weaken the affinity to wool; acids, on the other hand, improve the affinity to wool. It is unquestionably most to advantage to dye in a neutral bath with common or Glauber's salt, as alkaline additions easily affect wool, whereas presence of acid prevents cotton to be sufficiently dyed. For working these substantive colors, dye methods have been proposed from different parties which proved partly only admissible for very special patterns.

One dyer recommends working from 15-20 per cent. Glauber's salt and 5 per cent. borax at 122-140 F., a temperature which can scarcely be regarded sufficient to produce even shades on wool. Another dyer proposes dyeing cotton hot in an alkaline bath, to neutralize with more or less bisulphate of soda, and now to dye wool boiling in proportion to the percentage of wool in the

fibre; according to the property to the dyestuff more or less bisulphate of soda should be added, a process, by-the-by, which is possible to be adhered to in lab ratory dyeing, but which will scarcely bear out a satisfactory result. The same dyer proposes further to dye grey, drab and fashion shades quite separate on either wool or cotton, with colors working either on wool only or when on cotton only with 20-30 Glauber's salt. We already mentioned above that the affinity of the direct dyestuffs is by no means one and the same, but is affected by circumstances beyond control; to match off fashion shades on half-wool by the one bath process, so that wool and cotton are of uniform shade, such as is the demand in the dress material branch, is a problem yet to be solved. The half-wool pattern card issued by the different aniline color works has to a great extent caused the belief to gain ground that it was possible to work level shades in one bath. Practical tests, however, have at all times turned out badly; laboratory dyeing of goods for pattern cards and practical dyeing of goods in bulk is done under different conditions.

It is not advisable to give general directions for dyeing half-wool in one bath, as the affinity of the dyestuffs to both fibres is not only caused by the quality of the ingredients, temperature and concentrated baths, but also by the quality of the fibres contained in half-wool. In most cases, we dare say, it would be recommendable to work neutral with common or Glauber's salt, viz.: Work for an hour at 176-194 F., boil for half hour, shut off steam, and allow to cool till cold. One may also proceed by boiling gradually and slowly, and then to work for half hour without steam, whereupon again raise slowly to the boil, then work for half hour without steam, and continue until the shade is obtained. If half-wool contains some cotton difficult to dye, it is then recommendable to add to the dye-bath $\frac{2}{3}$, $\frac{3}{4}$ of the dyestuffs intended for shading cotton, together with the necessary color for wool, and to dye after the method above mentioned; having obtained the shade desired, shut off steam, and add the remaining part of the cotton dyestuff, and now let cool. In special cases this dye method can be modified, to which we shall draw attention later on.

Dyed in a neutral bath, the dyes may be distributed in the following way over the four groups above mentioned:—

A. Colors dyeing cotton and wool evenly or almost so, *i.e.*, equal shade and equal fullness. Thiazole Yellow, Toluylene Orange G, Congo Orange R, Benzo Orange R, Orange TA, Congo Red, Hessian Purple N, Benzo Purpurine 4B, 10B, Congo Corinth G, Toluylene Brown R, M.B. Direct Fast Brown B, Benzo Brown NBX, Benzo Black Brown, Benzo Dark Brown, Benzo Azurine G. 3G, Chicago Blue B, Benzo Cyanine B, Benzo Blue 2B RW, Blue for Half-wool, Diazo Blue Black, Diazo Black B.R, Direct Blue Black BN, Direct Deep Black G & R.

B. Colors falling on wool stronger than on cotton, but in equal, or in almost equal, shade, same as cotton. Chrysamine G R, Chrysophenine, Geranine G, Brilliant Geranine 3B, Delta Purpurine 5B, Hessian Purple B, Congo Rubine Diazo Red Blue, Brilliant Benzo Blue 6B.

C. Colors dyeing cotton stronger than wool, but in equal or in almost equal shade same as wool: Chloramine Yellow, Curcumine S, Chloramine Orange, Brilliant Azurine, 3B, Chicago Blue R, Benzo Sky Blue.

D. Colors dyeing wool and cotton in essential different shades: Benzo Brown NBR, Benzo Black Blue GR, Benzo Olive.

The above experiences rest on experiments made on half-wool astrachan with loose cotton warp, easily to be dyed: the firmer the cotton is twisted, the more difficult it will dye, and consequently a number of dyestuffs do not answer what is said under the above section *A*, but show the property of those dyes under the above section *B*. Such a classification of dyestuffs must always give different results according to the quality of the half-woolen cloth, even if the conditions at which dyeing was done were the same.

We have to distinguish between three groups of half-woolen material offering essentially different difficulties in one bath dyeing: *A*. Coatings: Ladies' trimmings and gentlemen's suitings (cheviot, worsted yarn imitation); *C*. Linings: Italian cloth, serges and such like qualities; *C*. Ladies' dress material. One bath dyeing has come most into importance and is of the greatest success in dyeing coatings, as these work the easiest because cotton is well covered, requiring generally to be only darker than wool without it being necessary that the shade must be exactly the same, and further because only few dark and saturated shades are in demand: consequently change of shades with an exact matching off is seldom wanted.

A 1. Only three shades, black, brown and blue, have to be considered in gentlemen's material, and according to the texture very different quantities of dye stuffs are required for the same shade. Worsted yarn half-wool: worsted weft with cotton warp. Cheviot half-wool: cheviot weft and cotton warp; cheviot shoddy: cheviot weft and shoddy warp; Doubles: Cloth of similar texture as broad-cloth, wool face, shoddy back and inside cotton warp. The shoddy warps are of very different composition.

Worsted goods require from 25 per cent. to 30 per cent. dye stuff more than cheviots; those with cotton warps from 10 per cent. to 20 per cent. more than shoddy warp. The doubles require about as much dye stuff as cheviot half-woolen goods.

The different coloring materials mentioned in this article are manufactured by the Farbenfabriken Vorm Friedr. Bayer & Co., Elberfeld, Germany, and sold in Canada by the Dominion Dyewood and Chemical Co.

W. J URQUHART men's furnishings, Brantford, Ont., is offering his creditors 40 cents on the dollar

JAS. OWENS, tailor, Guelph, Ont., has assigned to F J Scheals.

TESTS FOR INDIGO.

Indigo runs so rapidly into money that it always pays to have every case of it tested before buying it. Any dyer can test it, or that duty may be assumed by some of the office force. If extreme care is taken about each part of the test, accurate results are sure to be obtained. I think that the method known as Fritzche's method will be the most satisfactory to the inexperienced chemist.

The commercial value of indigo is determined by the amount of pure indigotine that the sample contains. The method of testing as given by Fritzche gives results that are less than one per cent. in error.

The apparatus required will be as follows: An accurate balance that will weigh milligrams; a scale that will weigh as much as two pounds and as fine as 1-32 ounces; a Kip apparatus for generating carbonic dioxide; apparatus for drying and washing the gas. The remainder of the apparatus will consist of an Erbenmeyer flask, having a rubber cork perforated with two holes; in one of these holes a glass tube is inserted that is bent at right angles and only long enough to pass through the cork, so that by the use of it pressure may be brought upon the surface of the liquor contained in the flask. Into the other perforation in the cork a siphon-shaped glass tube is inserted; the arm that passes through the tube into the flask flares at the end, and the bell shaped end has glass wool inserted in the end to serve as a filter; this tube is set so that the bell is half an inch from the bottom of the flask. The ends of each of these two glass tubes are fitted with rubber tubes, so that they may be connected with the gas generator.

A 12 ounce beaker should also be provided to hold the liquor that is forced out of the flask, also filter paper and glass funnels. The gas generator should be loaded with marble dust and hydrochloric acid in the manner that obtains in laboratories for the production of carbonic dioxide; with the above apparatus on hand and in working order the test is a simple matter.

After the apparatus and the samples of indigo that are to be tested are at hand, the flask and its fittings are dried thoroughly, weighed and their weight recorded. In the meantime the indigo has been powdered with a mortar and pestle and sifted through fine muslin, so that no lumps may get in to disturb the accuracy of the test.

Weigh accurately 1 gram of indigo and place it in the flask; add to it 4 grams of powdered grape sugar, 80 cubic centimeters of a deci-normal solution of chemically pure caustic soda and enough alcohol to fill the flask to nearly an inch from the top. The stopper and tubes are now put in and the weight of the whole taken on the large scale.

The flask is placed upon a water bath and heated slowly until the contents come to a boil. After it comes to a boil, it should be simmered for half an hour, and, while it is simmering, it ought to be shaken at frequent intervals so that the contents may become thoroughly dissolved and mixed together, and the indigo get completely reduced. As the liquor becomes heated, it will become dark coffee color, with a violet tint; when the indigo is entirely reduced a sediment of a lightish brown cast will gather.

After the contents of the flask have simmered the half hour, the flask is removed from the water bath, the rubber tubes are slipped over the glass tubes and tightly closed with pinch-cocks to prevent the re-oxidation that the atmosphere would cause if it were not excluded.

The flask is placed where it will not need to be disturbed, convenient to the gas generator.

The sediment will settle in an hour, and after it has settled care must be taken not to disturb it again; the rubber tube is connected with the gas generator and its contents, excepting about half an inch in the bottom, forced into the beaker. The weight of the flask is again noted.

A jet of carbonic acid gas is from the generator then passed through the liquor for fifteen minutes, and a jet from either the lungs or a bellows for ten minutes longer. This precipitates the indigotine by changing the caustic soda from hydrate to carbonate of soda. The liquor is then put through a filter, the filter paper having been weighed on the fine scale. The precipitate that remains on the filter is carefully washed with hot water, then with hot muriatic acid to move the lime, and finally with cold water to remove all foreign matter. The filter and contents are dried at a temperature of 180° F. for three hours; it is then put in a desiccator *for an hour and then weighed accurately.*

By subtracting the weight of the filter paper from the last weighing, we shall have the weight of the indigotine obtained. It will be seen that we have made six different weighings in the course of the test: 1, the weight of the flask and fittings empty; 2, the weight of the flask, fittings and contents; 3, the weight of the sample of indigo; 4, weight of flask and contents after forcing out part of contents; 5, weight of the filter paper, and 6, the weight of the filter paper and its contents. We will now work out an example to illustrate how we have found the value of the sample; the first weighing gave the tare of the flask; from the second weighing we are able to determine the weight of the contents of the flask; by subtracting the fourth weighing from the second we determine the weight of the contents of the flask that was forced out. Now, the proportion that the liquor forced out bears to the indigo that is obtained will be the same that the total contents of the flask bears to the whole amount of indigo that the sample contains:

Solution: 250 gross—75 tare = 175 net contents. 100 residue—75 tare = 25 net residue. 175 net contents—25 net residue = 150 net used. 150 : 55 :: 175 : x, which solves 64.16, or the percentage of indigotine that the sample contains. In the above proportion the 55 represents the weight in centigrams. of the indigotine collected on the filter paper.

I think that the reader will see that the above method of testing indigo will be much more profitable

than buying from price or physical appearance. That indigo is the cheapest that contains the most indigotine for a dollar. We do not mean to say that this test will prevent waste of indigo in the dyehouse or that it will guarantee the best results with the vats; that will always remain within the province of the skillful dyer.

GERMAN IMPROVEMENTS.

(Translated from the German of Professor Wilkolm.)

In a report recently published, Prof. Wilkolm, of the Limbach hosiery school, gives an interesting account of the patents taken out in Germany in connection with the knitting industry. We give the following translated extracts from this report, as being of interest to our readers. Prof. Wilkolm gives the number of patents taken out in Germany, connected with hosiery, exclusive of those concerning sewing machinery, as exceeding four hundred during the years 1893-5 One-third of these relate to machinery and apparatus, and two-thirds are applicable to finished goods.

The majority of the machinery patents taken out are for improvements relating to the Lamb knitting machine and the Cotton's system of rotary machine. In connection with the former, those taking the lead are improved locks for making narrow widths of fabric on wide machines, following which are counting apparatus, driving mechanism, electric throwing out arrangements, springs, splicing carriers, special locks applicable particularly to rib work, latch openers, including brushes with interchangeable bristles, winding-up apparatus, fancy design machines, and slides with ball bearings.

On Cotton's patent frames improvements have been introduced relating to locking and sinking, new coverers for marking goods, tucking apparatus, improved narrowing mechanism, thread carriers for high heels, light carrier rods, arrangements for running stitch patterns, for plush patterned goods, an apparatus applicable for making vertical striped hose, friction carriers for plating, and for making plush fashioned goods. Improvements have also been introduced in connection with driving and winding up apparatus, interchanging from rib to pearl work, etc., and for the stopping of machines on the breakage of single threads, and last, but not least, those appertaining to the avoiding of accidents incidental to such machines.

In circular frames, the French circular frame leads with quite a number of improvements in arrangements for drawing down the work, apparatus to measure the thread as it runs into the machine, and an electric motor fitted on the axle for direct driving. There are also various improved thread regulators, one of which is a duplex regulator, for long or short loops for plush work. Improved sinkers are also introduced for the making of twist work. To English circular frames is added an arrangement for making lining fabric and to rib frames for making a welt on patent rib work.

The double rib warp loom is also provided with arrangements for cutting plush and fringes, for making friezed and knotted fabrics, and embroidery machines have apparatus for ornamental thread work, head classifying, and for production of lamb skin.

In the finishing department we find hose boards with changeable foot parts, and glove cutting shapes with changeable fingers.

The Germans evidently suffer the same as ourselves, the patent authorities not taking any responsibility, as according to Prof. Wilkolm the same thing has, in some cases, apparently been patented several times over.

In manufactured goods there are patents for stockings having running stitch patterns, half-circular patterns, on the front of legs, strengthened knees, heelless stockings, and stockings without feet, specialties made from fleecy and plush-fabrics, and those with strengthened calves, also stockings combined with pants and belts, with separate toe divisions, those strengthened with leather, others with garters worked in, and with welts to pass the garter through. Several include interchangeable parts such as heels, soles, toes, knee-pieces, and protectors for heel, feet, etc., a stocking singed on the outer side to make it smooth and bright, and a knitted stocking of wire for surgical purposes completes the list of protections in this department.

In the glove department, patents have had nearly as much attention, of which a few include checked hands with plain seamless fingers, imitation ringwood gloves made on circular tuck frames. A glove with a pocket on the inside or outside of the hand has apparently been patented several times. Gloves which will do for lefts or rights are also included. Quite a number of cutting shapes are introduced, and have been patented, to simplify production, and increase the application of different materials. A glove all in one piece without outside seams, seamless gloves, gloves with gussets, and those with cross seams inside the hands, and with cross slits inside the fingers, to enable the fingers to be easily thrust out to take hold of anything. Not to be passed unnoticed is an over-glove of knitted waterproof stuff to protect leather or kid gloves.

In shirts and pants, strengthening of various parts, special shaping of armholes and breast parts, and special position of the openings are the principal specialties protected, while a special finish has been introduced to breeches, whereby they resemble cloth.

There are also knitted rugs for bed, sleeping, and horse rugs, always circular, some of wool with and without lining, others of linen yarn with wool lining.

Masks of knitted material, knitted playing balls, and chest protectors completing the list.

COST OF READY-MADE CLOTHING.

In connection with our discussion of the prospects of the clothing trade in another column, it may be of interest to consider the following facts and figures, which are given in an American exchange in an interview with the superintendent of a large clothing manufacturing business in the United States:—

"The retailer's profit varies considerably, but on a suit made by a reliable house you will find that a suit to retail at $15 will cost about $11, which gives a profit of $4, to be divided up between the expenses of the store and the pocket of the proprietor, but in addition to this, there is a discount of from 7 to 8 per cent. allowed by the wholesale dealer, which the retailer seldom fails to take advantage of. The wholesaler's profit is something that takes a little figuring, although we calculate to make 15 per cent. We put into a $15 suit cloth that costs us $1.50 per yard, and as it takes 3¼ yards for every suit, the cost of that is $4.87½. Our cutters and all the cutters in first-class houses get $20 to $22 per week, and the cutting of a suit such as we are talking about would cost about 35 cents. We pay $1 for making a coat and 50 cents each for trousers and vests, which is $2 for a suit. Then the linings, buttons, canvas, padding, silk, stay tape, etc., etc., we can figure at about $1.50 more. These things we cannot get at exactly, for they vary with different suits. For instance they are much cheaper for black goods; we buy black buttons, linings, etc., in large quantities, and get them proportionately cheaper, whereas, in browns, grays, or other fancies, we must match the cloth, and the great variety of shades and styles necessarily limits the quantity purchased of each, but I think $1.50 would be a reasonable figure. 'That makes the suit which you sell for $11, cost you about $8.72½,' I said, 'and leaves you a profit of $2.27½, not counting the discount allowed to the retail merchant.

"Yes, but to offset that discount, we get a discount on all our material, everything that enters into the construction of the suit except the labor; then again, we have to pay for selling the goods, and we estimate that our salesmen are paid about 5 per cent. of their sales, and their expenses will reach nearly 2 per cent. Now, some houses will get the same price for a suit, $11, that cost considerably less to make; for instance, they may pay only $1.25 for the making, and use cheaper material for sewing and lining, but I think that the figures I have given you are about what it costs any reliable manufacturer. Now, as a comparison, it may be interesting to look at the cost of making the cheap suits, say the bicycle suits, retailing round $3 50. The cost of the cloth is about 30 cents a yard, and I hardly need to dwell upon the composition of this material, in fact, it is something that had better not be inquired into; it is a case of 'ignorance is bliss.' Two yards and three quarters are used (no vest being made, and the breeches short), so this costs about 82½ cents; 10 cents is paid for cutting a suit; for making the trousers $6 per dozen, and the coat $10.50 per dozen or $1.37½ for the suit. Trimmings are estimated at about 20 cents, including buttons, buckles, etc., and there is generally little or no lining used, so the suit would cost about $2.50 complete. These are sold at $3 each in good-sized lots. The retailer may sell them at $3.50 or he may offer them at cost, as a leader, hoping they will attract business. Of course, in looking over the figures I have given you, you must remember, as I said before, that many retailers will get a better price for their goods, that is, if the wholesale price is $11, they may be able to get $16 or $18 for them, if they are not too near a large city, while on the other hand severe competition may reduce this profit considerably. Again, manufacturers in taking advantage of certain styles may be able to reduce the cost materially in certain directions. The cost of making the same suit may vary a trifle each week. Where they are all machine-made, from the cutting to sewing on the buttons, as is apt to be the case in cheap suits, the cost is less, and some apparently first class suits are made in this way, selling at the regular price and thereby giving the manufacturer a better profit."

TITANIUM OXIDE AS A MORDANT FOR WOOL.*

BY JOSEPH BARNES, F.I.C.

More than eleven years ago I discovered the property which oxide of titanium has of combining with polygenetic coloring matters, and showed that it could be applied as a mordant to cotton in the same manner as alumina, and would produce shades somewhat resembling those yielded by the latter substance. In 1887 I dyed samples of cotton yarn by means of titanic oxide mordant, and these were exhibited at the Manchester Exhibition, in the show-case of Messrs. Kearns, Allan & Co. No notice of these appeared in any of the English publications, but they were reviewed by Dr. O. N. Witt, in *Dingler's Polytechnische Journal* and *Die Chemische Industrie*. Beyond this no mention has been made in any journal or text-book with reference to this property of titanic oxide. The reason why the matter has not attracted any attention is, probably, owing to the fact that the colors obtained on cotton presented no striking characteristics; and that they were no more than could be easily obtained by the use of commoner materials; and also owing to the generally prevailing idea that titanium was a rare element and one not likely ever to enter into serious competition with the common and easily obtained oxides of chromium, aluminium and iron. Quite recently it occurred to me to try the effect of a titanium mordant on wool. The reason why this substance had been tried on cotton only was because I was at that time interested in the dyeing solely of vegetable fabrics. I found upon making preliminary trials on wool that the oxide of titanium was really an excellent mordant for animal fibre, and was just as easy of application as those which are usually made use of, and further that it appeared to possess properties which would make it possible to produce shades which could not be obtained by any mordant hitherto employed. Then again, there is the fact that the element titanium is much more abundant than is generally supposed, and that during recent years it has been found in very large quantities, and is now thrown away as a waste product. Having made a few more experiments with this sub-

* A lecture read before the Society of Chemical Industry.

stance, and having convinced myself that apart from the probability of a commercial development in the use of oxide of titanium as a mordant, I thought it worth while to again bring the subject before this society, and to lay before it a few results which I have obtained in its application to animal fibre.

Oxide of titanium is said to be used in the manufacture of artificial teeth, and to enter into the composition of a certain glaze of earthenware; further than this, I am not aware of any practical application to which it has been put, and seeing that this substance is one that has hitherto never entered into questions of practical interest to the dyer, I may be excused for occupying a little of your time in giving a brief description of its more important properties.

The element titanium has an atomic weight of 48. In the periodic classification it comes between carbon and zirconium, which form, together with cerium and thorium, the even series family of Group IV.—the old series of the same group being silicon, germanium, tin and lead. Its richest ores are rutile, or titanium dioxide and titanate of iron, or ilmenite. Brookite and anastase are rarer forms of titanium dioxide. It is a very widely distributed element, and exists in much greater quantities than was formerly supposed. The number of minerals in which it is found is very great, and it has been shown to exist in the sun's atmosphere. Bauxite, a mineral which has of late years been obtained in large quantities in Ireland for the manufacture of sulphate of alumina, contains considerable quantities of oxide of titanium, varying from 2 per cent. to 10 per cent. A sample which I have here contains 6.42 per cent., the bulk of which, viz., 5.37 per cent., enters into solution along with the alumina when the ore is treated with vitriol, and is then reprecipitated as metatitanic acid upon boiling the clear solution. Titanium exists, in more or less quantities, in most clays, and in some samples the amount is considerable. New Zealand magnetic iron sand, of which there are immense deposits, contains from 7 per cent. to 10 per cent. of oxide of titanium. According to recent investigations it appears that this element exists in notable quantities in the ash of many plants.

Of the better known elements, tin and silicon are most closely allied to it in the general habitude of their compounds, and titanium may be considered to hold an intermediate position. It may be obtained in the metallic condition as a dark powder by heating sodium in the vapor of titanium chloride. This powder burns, when heated in the air, with great brilliancy, and dissolves in hydrochloric acid, forming a violet solution of titanus chloride. This is a higher chloride than the tin chloride which would be formed under similar circumstances, and may be termed a sesqui-chloride ($Ti_2 Cl_6$). Titanous chloride and, indeed, all titanous salts, are more prone to oxidation even than the stannous compounds. The anhydrous-tetrachloride is produced by heating the oxide, mixed with carbon, in a current of chlorine. It is formed at a lower temperature than the corresponding silicon chloride. It may also be produced by heating the oxide in a mixture of chlorine and carbon monoxide. It is a heavy, strongly-fuming liquid, boiling at 136° C., and may easily be obtained free from iron by distillation. When mixed with a small quantity of water it forms a solid oxy-chloride, which is soluble in a further addition of water. Alkalies throw down from this solution a hydrated oxide, which, unlike the hydrated oxides of tin and silicon, is insoluble in caustic soda or potash. It may be dissolved in cold mineral acids, and in alkaline oxalates, fluorides, and tartrates. When its solution in hydrochloric or sulphuric acid is boiled, the oxide is reprecipitated in a different condition—as metatitanic oxide. It is now no longer soluble in hydrochloric or dilute sulphuric acids, and has only a feeble attraction for coloring matters. It may be easily dissolved by means of hydro-fluoric acid, or by moderately strong sulphuric acid, *e.g.*, by mixing with dilute sulphuric acid and concentrating on the water bath.

A solution containing titanium gives, with tannic acid, an orange precipitate, with gallic and pyrogallic acids, orange or brownish yellow solutions, and with salicylic acid a pale yellow coloration. The action of hydrogen peroxide upon a solution of titanium is very characteristic—a yellow to deep orange coloration is produced, which is destroyed by alkalies and restored by the addition of acid. The yellow and orange colors produced by salicylic and gallic acids and by hydrogen peroxide are imparted to wool when the latter is steeped in their hot solutions. The color produced by hydrogen peroxide is supposed to be owing to a peroxide of titanium ($Ti O_3$); it is destroyed after boiling some time.

Now with regard to the most suitable compound for the mordanting of wool, it is very obvious that solutions of the oxide in mineral acids could not be used without some addition to prevent the precipitation of metatitanic oxide upon boiling. Oxalates, fluorides, and tartrates may be used for this purpose, and with all three I have been successful in the mordanting of wool. It is impossible for me to say, from the small number of mordanting experiments that I have made, what is the best material or the best proportion, or what are the best conditions generally, but I may say that, so far, I have met with most success in the use of the "tartrate." With the "oxalate" I found that the duration of heating and the temperature were most important things to attend to, and that, after heating for a certain time, the wool either lost the titanic oxide, or, what appears more likely, the latter became transformed into the meta or inert condition. Wool, when mordanted with the "oxalate," assumes a bright but pale yellow color, and if taken out at this stage will dye up satisfactorily; if the heating be continued, the yellow color disappears, and the wool will then give a poor result in the dye-bath. With the "tartrate" the wool may be boiled for an hour or two without this degenerative action taking place, at least to any serious degree, though I am inclined to think that even in this case there is a period of maximum efficiency and then a falling away.

Wool mordanted with the "tartrate" mordant has a decided cream color.

The question as to the best method of mordanting is, however, one that can only be settled by a long series of comparative experiments. The "tartrate" mordant that has been used for the patterns exhibited was prepared as follows:

20 grm. of anhydrous titanium chloride were mixed with 80 grm. of cream of tartar and 50 c.c. of water. The mixture was then evaporated on the water-bath to a clear viscid residue, which, upon cooling, weighed 113 grm. From 20 to 25 grm. of this mordant were used for each 100 grm. of wool, and the mordanting bath was kept at the boil for about two hours. The dyeings were generally done with the addition of 3 c.c. of acetic per litre of dye-bath.

The following is a list of colors thus obtained on wool:

Alizarine gives a deep maroon.

Alizarine orange gives a bright scarlet.

Cerulein gives a dark green, yellower than with a chromium mordant.

Alizarine blue gives a blue, redder than with a chromium mordant.

Logwood gives a deep black.

Tannic acid gives a deep yellow.

Salicylic acid gives a sulphur yellow.

All these colors, except the last one, withstand the action of dilute mineral acids and soaping. Even the logwood black and tannic acid yellow, after they are soaked in dilute hydrochloric acid at 3 deg. Tw. for one hour, and then rinsed and soaped, suffer to a scarcely perceptible degree.

The behavior of the mordanted cloth in the alizarine dyebath is very remarkable; before the final maroon shade is developed the cloth assumes a brilliant red color, and if it is taken out at this stage and dried it will be found to be nearly the same color as that produced by alizarine orange. It is in this condition sensitive to acids, which turn it to a dull brown color; washing and heating with water turn the brown color to a maroon. The red color withstands the action of the soap bath, and after this treatment it is much less sensitive to acids. When the red color before soaping is heated with distilled water it gradually assumes a maroon shade. At first it occurred to me that this difference in color was owing to a difference in ratio between the coloring matter and mordant, but dye tests made with varying amounts of coloring matter and the same amount of mordant gave gradations in depth and little variation in tone.

With regard to the fastness of these colors to light, I may say that there has been no time to make thorough tests. Samples of the logwood black and tannin yellow have been exposed in a window facing the south from March 4th until the end of May, and show no signs of fading. The colors, which were dyed on cotton yarn and exposed in the Manchester Exhibition during the exceptionally sunny summer of 1886, showed no more tendency to fade than the corresponding colors on an alumina mordant, and the tannin yellow did not appear to suffer in the least, whereas the wood yellows were nearly bleached.

Oxide of zirconium, which comes next to titanium in the even series family Group IV., has also an attraction for coloring matters, and when wool is boiled in a solution of zirconium sulphate it becomes mordanted with the oxide, and will yield with alizarine a color very like the one produced on a chromium mordant. I have also prepared small pieces of cotton with a zirconium mordant, and obtained colors with alizarine and alizarine orange, the former yielding a reddish violet, and the latter a red. Cerium does not appear capable of yielding a mordant to wool; when wool is boiled in a solution of a cerium salt it will not take up any color in the dyebath. I have produced colors on cotton with a cerium mordant, but they are quite worthless, being entirely destroyed by the weakest acid, and resembling in this respect the lakes produced by the alkaline earth metals.

LIFE OF THE WORKPEOPLE IN THE HOSIERY TRADE OF CHEMNITZ.

(*Continued.*)

A married workman usually occupies a room with a small attic attached. This has to serve all purposes for himself, his wife, and family, however numerous. The large room is used for cooking and general occupation in the day-time, and in many cases it also has to do duty as bedroom for part of the family, while the others sleep in the attic. There are many such apartments in one large building, often tenanted by as many as twenty families, four on each floor, making up a total of perhaps two hundred people in a house.

Young girls and men, whose homes are not in the town, lodge with other workpeople, and pay 2s to 2s. 6d. a week.

A large portion of the unmarried workpeople live with their parents, frequently having employment in the same factories with them. These contribute a small sum towards the family expenses.

Many of the workpeople, both men and women, live in the surrounding villages, and walk to Chemnitz and back again every day, often a distance of six or seven miles each way.

All the workpeople have coffee of a very inferior quality, with a roll of bread, when they get up before going to work. They take some bread and fat with them to eat at lunch. A few of the better-off workpeople have sausage for lunch. A small number of the wealthiest workpeople get their dinner at a restaurant, where, for a small sum, they get a liberal meal of meat and vegetables and a glass of beer. The majority, however, bring their dinner in a tin can containing chiefly potatoes, vegetables and gravy. Tea here is a similar meal to lunch, and their evening meal at home consists chiefly of boiled potatoes, with, perhaps, meat, the gravy of which, or part of it, is reserved for next day's dinner.

The total daily cost of food for a hard working

woman, such as a trimmer or winder, is about 7½d, while those employed on lighter labor can manage on 5½d.

Most workmen buy ready-made clothes; a suit costs 25s. to 30s, but the material is usually very poor, and not equal to what can be bought in England for the same price. Nevertheless, rapid progress is being made, and no doubt in a few years' time the values will be equal.

Visitors are always very favorably impressed by the personal appearance of the working classes, an agreeable air of neatness pervading them. Bad boots and torn clothes are rarely seen. In winter, every man wears a good top-coat.

The girls are very particular with their hair. This is necessary, as they dispense with hats, only tying a shawl over their heads in winter.

Our readers will have noticed there is no holiday all the week, consequently amusements are reserved for Sunday. On this day, much time is devoted to dancing. Nearly all of the numerous public houses have a dancing hall, and at four o'clock in the afternoon the music begins.

This excessive dancing is the greatest curse of the country, involving the young people in such heavy expenses.

The popular amusement for the married men is the card game, skat. The play, however, is usually so low that a man may go on losing all night and be at little loss. Here, again, the great expense is the beer drinking. It goes on all through the game.

This card game, and also skittles, are played a good deal in the evenings during the week, but not nearly to the same extent as on Sundays.

There are a few shops in the town that retail very bad spirits, made from potatoes. This drink is extensively sold, as it costs a mere nothing.

The police watch these places carefully, and efforts have lately been made to suppress them entirely.

Every workman has to pay an income-tax and a town-tax. The latter covers town, church, poor, and school rates.

The scale of taxation is as follows:—

Annual Income.	Income-tax.	Town tax.
£ s d.	£ s d	£ s d
15 0 0	0 0 0	0 3 11
20 0 0	0 0 0	0 5 2½
25 0 0	0 1 0	0 7 2
30 0 0	0 2 0	0 9 1½
35 0 0	0 3 0	0 11 1
40 0 0	0 4 0	0 13 0
47 10 0	0 6 0	..
50 0 0	..	0 16 3
55 0 0	0 8 0	..
60 0 0	..	1 4 8½
62 10 0	0 10 0	..
70 0 0	0 13 0	..
75 0 0	..	1 9 3
80 0 0	0 16 0	..
95 0 0	1 1 0	..
100 0 0	..	2 5 6
110 0 0	1 9 0	2 13 4

—Knitter's Circular.

Foreign Textile Centres

MANCHESTER Looms are busily engaged with worsted novelties, both on season orders and repeats The fancy goods trade has been comparatively satisfactory In laces there is a moderate business passing The premier foreign market is the United States, which takes nearly a third of the export in cotton lace and net Of late business has not been so good with the New York market, but large shipments have been made to the continent, especially to Plauen and St Gall, which consume large quantities of net for embroidery purposes The Canadian trade has been moderate of late A number of buyers are in the market, and good shipments should soon result The Newfoundland houses are in much better heart, trade with the island having improved considerably There is a steady business in silks The raw materials remain firm in the Eastern markets of origin, and holders display no signs of weakness There have been very few future contracts of late in the raw silk market, and even in these the details have been kept secret Spot silk remains fairly steady, although there has not been much doing in it The cotton market is in a very unsteady condition The sewing thread trade is quiet, but retail houses are endeavoring to have prices fixed on a more uniform scale in order to avoid the excessive competition, by which, entirely through their own fault, they have in the past sacrificed profits. The linen branches are moderately active, and there has been a steady trade doing with some of the leading colonial outlets For fancy damasks and other articles of that description the inquiry continues good Embroidered makes are also in steady request. In distributing circles natural wool underwear sells well, and there is a demand for ecru, whites and tans In hosiery the predominance of fast blacks, with a few tans, has limited the choice considerably, and there are fewer varieties offered than formerly. Perhaps merchants would prefer to see more choice, but for the goods in demand they have had satisfactory sales Advices speak of a healthy activity in the lace trade. The big jobbing houses have dealt freely in the millinery varieties Linen lace, I hear, is having a fair demand, and some low offerings of lace collars and ruchings are also selling well. Grass lawn and muslin sets have also been offered to a considerable extent Valenciennes and embroidered mulls, Valenciennes edgings and insertings have all received a good share of support. So far as linens are concerned the shipping trade has not been active New York and Canadian houses have operated sparingly, although a large number of buyers are over

BRADFORD —There appears to be no further movement in any class of raw material as far as can be ascertained on 'change here, but on the whole the feeling is more cheerful, while a healthy feature of the trade is that at present raw wool is the most depressed end of the market, and manufactured goods the least English wool is more depressed, and the enquiry for pure lustre wool has sunk almost to vanishing point, notwithstanding the fact that both mohair and alpaca are firm at unchanged prices, but even when a bright goods season was fully assured a year ago the pure lustre wool only followed the quick advances in mohair very slowly In colonial wools and tops of a fine character there is very little doing in the way of new business, and the tendency of prices is in buyers favor In crossbred wools of the lower grades, there is all the time a considerable business being done, but spinners complain that even at the very worst period of 1894, there was a better margin for working expenses between the costs of the wool and of the yarn than there is to day In many cases it is now a great struggle for spinners to keep their machinery going, and, as they expect an improvement in the course of a month or so, there is such keen competition for any new orders put on the market that prices are unusually unsatisfactory There is not much new yarn business coming from the Continental manufacturing districts or from the braid centres, although the latest Paris dress models would lead one to expect that braid trimmings are to be much more generally worn In the warehouses, although business recently has not been brisk, there has been quite an average business doing for the time

of the year in a variety of goods The stocks of Sicilians and other classes of bright dress goods, which were in some cases rather heavy some weeks ago, have, I find, been gradually reduced by the demands of the later shipping markets, and now there are no specially heavy stocks of these goods to be found Makers are now getting their spring samples into more complete shape, and, as a rule are looking forward hopefully to the opening out of the buying season for next spring It seems to be generally acknowledged that bright dress fabrics in one form or another are sure to be wanted There has recently been more inquiry here for goods for the coming winter season, both in plain and fancy serges, and in high-class shot jacquards In the lining trade business is rather quieter, but some of the clothing houses are beginning to use more of the heavier linings for their winter-wear goods.

KIDDERMINSTER —Stock taking has proved satisfactory and equal to anticipation The last six months' trade has been larger than for a long time previous The brilliant weather has helped out the carpet season, and "repeat" orders have interfered with the preparation of patterns for the next season Production is now slackening, but the output is still greater than usual at this period. There is a strong feeling of confidence in the future of the trade Spinners have quite as much as they can do, and as they have had to pay more for wool, the prices for yarn are firm

NOTTINGHAM —The shipments of lace and patent net from this country during June show an improvement as compared with the same month of last year and the year before, the actual values being, June, 1896, £151,921 ; 1895, £123,208; 1894, £134,050. This improvement is due to the sustained demand for certain classes of millinery laces and to the larger takings of silk goods by American houses. New York, for instance, took last month nearly $98,000 worth of this class of laces as against only $18,000 worth in June, 1895 Nottingham manufacturers are well occupied at the moment on the production of silk veilings, nets and tulles, and large quantities of these are moving There has been a lull in the demand for veilings during this week, but, on the other hand, it is confidently thought that there will be a resumption of good orders in the course of the next week or two The latest novelties in fancy cotton laces are selling freely for the best home and foreign markets Fashion continues to be gracious to them Valenciennes, Oriental laces and special lines of other fine goods are going off in large quantities Narrow edgings and insertions in butter and two tones are still in favor. Shipping assortments of cotton laces are giving a considerable amount of employment The Swiss embroidery and Irish trimming departments, on the other hand, are languid and relatively few orders have been placed. Robbinets, light tulles and mosquito nets are in request and prices remain firm Orders for special qualities are in arrear and stocks are not accumulating Spotted, striped and antique nets are meeting with a fair enquiry. There is a somewhat restricted demand for Paris and other stiff foundation nets, but this branch is nevertheless fairly brisk There is life also in Honiton braids, silk and cotton purls and linen beadings which are in request for trimmings at home and for the manufacture of real point laces at home and abroad The outlook for curtain and window blind manufacturers is bright A reasonably good value of orders has been booked for future delivery, and though the machinery is far from fully employed there is a good prospect of success with the novelties which have been prepared for the next season There is peace just now between employers and workers, but the increasing complaints about foreign competition and low wages abroad are very loud and bitter just now and it is quite possible that there will be trouble on the wages question as soon as the dull season comes round again.

MACCLESFIELD —The silk trade since about May has shown a falling off owing to the change in the seasons. Weavers generally are fairly well employed The cut-up or tie silk trade may be said to have now fairly got hold upon Macclesfield, and some of the more important manufacturers now make this a leading point, both for the home and shipping trade, great quantities of these goods are now sent to the States and the Continent The dress trade, which has now also developed very considerably in Macclesfield, has been very successful. Just for the present this trade is somewhat quiet The dyers' strike, of course, has played an important part in the staple trade during the past three or four months, and in conversation with an important manufacturer during the week we were given to understand that the result of this may be that some good may eventually yet result from what at present appear to be untoward circumstances. The strike has been the means of a considerable amount of dyeing being sent out to the Continent, and this has opened the eyes of the manufacturers to see where they have been beaten in this direction by competition with the Continental dyers, who, we were informed, can so manipulate the silk in the dyeing that it is of great advantage to the manufacturers to send their work abroad, and the feeling now exists that it is no use the Macclesfield master dyers opening their houses until they can compete with the foreigner in this direction. If the strike were to end at the present time there would be very little for the local dyers to do until the master dyers had so arranged their houses as to be able to do the dyeing on the same principle as their Continental competitors. When they do this there will be double the quantity of work for them to do than there was before the strike commenced. We are pleased to learn that one or two of the dyers in the town have now laid themselves out with a view of competing with the Continental dyers, and are prepared to do the work on the German principle.

LEICESTER —The Leicester hosiery industry maintains the improvement which has been going on for several months, and manufacturers are now actively engaged in preparing for heavy deliveries of outer fabrics, which have been ordered in very large quantities. During June we exported 65,107 dozen pairs of stockings and socks. This represents a slight advance on June of last year, when we sent abroad 64,530 dozen pairs, and a slight decrease on June, 1894, when we shipped 72,251 dozen pairs. For the half year the total is 371,873 dozen pairs, as compared with 365,840 dozen in the first half of 1895, and 386,473 dozen in the same half of 1894.

SOUTH OF SCOTLAND.—There is little fresh to report with respect to the South of Scotland woolen trade. Confirmation of spring orders which have been placed are few in number, and it is rather early to expect any confirmation in quantity. The prospects for next season are good, as buyers have ordered a large quantity of first samples. Cheviots and worsteds are in most favor There are almost no repeat orders for winter goods coming in, and this is causing a slackness throughout the district.

DUNDEE —Sellers are offering jute in the Dundee market at rather lower prices, consequent on the satisfactory reports upon the new crop which continue to come in. The market for jute cloth is steady, but there is less demand, and buyers are offering a fraction under current prices. The linen trade of Fifeshire remains in a very quiet and unremunerative state Manufacturers are beginning to complain bitterly of the keen competition which now exists, for, notwithstanding the low price at which they can secure their yarns, the profits they are enabled to make are merely nominal. The near approach of the holidays, too, by no means conduces to activity, and it is anticipated that still lower prices may prevail two or three weeks hence

BELFAST —Business keeps more or less quiet, but the market is characterized by a strong tone, and prices in both yarns and cloth are more likely to advance than recede. Flax is looking fairly well, but heavy rains of late have laid a number of fields. Length very irregular, and as Continental advices are not very favorable, it is certain that the raw material will be dear during the coming season. Yarns are moving quietly into consumption to meet manufacturers' immediate requirements, but as the mills and factories were closed for the holidays on the 12th and 13th, both supply and demand were much under usual average. Prices are unaltered, but nothing is doing to test them. In cloth ends business is steady, though by no means brisk. Manufacturers as a rule keep well engaged on contract, and are more or less independent of fresh business, the consequence being that rates keep very steady. Hand-loom linens are in light supply, the demand being also much

curtailed Tow-made goods and union fabrics are in strong request, and there is fair demand for damasks and housekeeping linens Home trade in white goods is quiet, though inquiries have been somewhat more numerous, and indications are not wanting that an early improvement will set in Export trade with most markets is fairly sustained, but there is still a great want of life in the demand from your side The foreign West Indian trade has taken a slight turn for the better, but is still weak. With Australia the demand is strong, and with Germany there is an increasing turnover; otherwise the export markets are unaltered. Taken all round, we should say the linen trade is in a quiet but thoroughly healthy condition, and the outlook for the remainder of the year is encouraging

LYONS —This is the time of the year which is considered the quietest, and this year is no exception. There are very few buyers in Lyons, and the vacation period is in full bloom. New orders are coming in at a very slow rate and a small business only is being done on small re-assortments. As this quietness is not unexpected it has no effect on values, which are well held and unchanged. Among the goods which have a share in the small movement are moi e antique, taffeta, crepe lisse and muslin The conditions of employment in the industry remain unchanged Not much activity prevails in the production of silk fabrics. The velvet industry has been a little better favored, and production of velvet is on a rather good scale. The ribbon market is quiet. In velvets, while manufacturers are already well provided with orders, there has been little new business done, the demand developed having been for small assortments only.

CREFELD.—The goods market is in almost complete rest, and very little business is being done either by manufacturers or wholesale houses Retailers are not ordering, and what demand they have they can easily cover from their present stocks. The demand for export is slow, and there is little to interfere with the midsummer quietness. The cloak trade are ordering little silk, and their purchases are smaller than usual at this time With the exception of a small movement in linings for ready delivery little is being done with cloakmakers. The manufacturing situation is unchanged and the power looms have some work on hand and are fairly well engaged, but the hand looms are not well provided with work, and many of them are idle. On the whole there is much room for improvement For dress and trimming silks the producing activity is not great. In umbrella silks there is fair activity in the making of novelties. Tie silks are slow, and looms for these are poorly employed, while in the ribbon branch there is much room for improvement. Novelties for Fall receive little attention in the form of advance orders. The only article that is receiving any attention is moire. Moire has been the object of some business for the opening season and is also under discussion as a probable favorite for Spring. But this has not gone so far as the actual placing of advance orders, as buyers prefer to wait and see what reception consumers will give to moires in the Fall before ordering them extensively for Spring In pile fabrics the demand has been moderate, little new business having been transacted While the outlook for velvet is good, activity is not well distributed among manufacturers. Mantle plushes are quiet.

ZURICH —The transactions in raw silk are limited in volume, and the market shows little change. The firm tendency shown by the Asiatic markets keeps prices in Europe steady and firm, so that while there is no progress made in the situation no ground has been lost. The market for silk fabrics is between seasons, and little new business is being done, manufacturers being engaged in filling the orders previously received. Between the summer weather, the inventories and the general dullness in business, the silk goods market keeps quiet and within very limited bounds The Swiss silk industry, unlike that of France, Germany and the United States, has not a large home market to fall back upon. It relies for its success almost entirely on the export trade. With the poor business that has been done with America in the last six or eight months one of the regular outlets is crippled To make up for this loss business on the English market has been forced, and this year the imports of silk fabrics in Great Britain have been larger than usual But for that quarter also the demand has fallen down to summer proportions and manufacturers have to bridge over this dull period the best they can. The plank of safety for the future seems to be found in moires, which are expected to be the leaders of the future

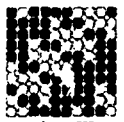
Textile Design

WOOLEN DIAGONAL

Complete Weave.
Repeat 9x9.

Warp.—5 880 ends, 6¼ run, woolen yarn, dark shade, 18 harness, straight draw
Reed.—14×6=70 inches wide in the loom
Filling:—88 picks per inch, 7½ run, woolen yarn, dark shade.
Finish. Shrinkage at the fulling, 12 per cent., cloth finish, 58 inches wide

WORSTED DIAGONAL



Complete Weave.
Repeat 10x10.

Warp:—4,455 ends, 2/36's worsted, dark shade, 20 harness, straight draw
Reed:—13⅓×5=66 inches wide in the loom
Filling:—68 picks per inch, 2/36 s worsted, dark shade
Finish:—Shrinkage at the fulling, 3 per cent., clear finish, 58 inches wide

FANCY WORSTED TROUSERING

Complete Weave.
Repeat 24 × 6.

Warp.—4,480 ends, 24 harness, straight draw.
Reed:—17½ × 4 = 64 inches wide in the loom
Dress:—2 ends, 2/40's worsted, dark shade
4 ends, 2/40's worsted, light shade.
2 ends, 2/40's worsted, dark shade
7 ends, 2/40's worsted, light shade
2 ends, 2/40's worsted, dark shade
7 ends, 2/40's worsted, light shade

24 ends in repeat of dressing.

Filling:—70 picks per inch, 2/40's worsted, dark shade
Finish:—Shrinkage at the fulling, 3 per cent. clear finish. 56 inches wide

THE GERMAN CARPET TRADE.

According to the report of the directors of the Berlin Chamber of Commerce, simultaneously with an excessive increase of carpet factories there occurred last year a further fall of prices, which are now, especially for inferior sorts, as low as would seem possible. The qualities have been reduced in the same degree, and the cheap Axminster carpet now offered to the public is so poor that one can only console himself with the hope that the lowest limit has been reached, and that the time for better goods will soon return The consumption in carpets is unmistakably increasing. The old warp-printing factories, whose products have been long widely known as of good quality, have had, as far as can be seen, a normal business year. Changes in prices for this class of carpets have not been necessary, and only through the very unfortunate habit of selling goods in stock as "job lots" have these factories also suffered. The branch of hand-knitted carpets has experienced, in the last year, a considerable alteration, through the establishment of a joint-stock company, embracing the three most important manufactories From this union a saving of expense on sales and samples is expected, as well as advantages from referring orders for the various qualities to those departments of the business best equipped to meet the wants of the customer The sale of the better kinds of knitted carpets is slowly increasing, and the products of the factories are generally good Inferior qualities are not by any means so well received as is the case with cheap chenille carpets, which come into competition with the better Brussels and warp-printed carpets The manufactories engaged in hand-knitting work are greatly benefited by this The business in oriental carpets has become quite extensive. Larger quantities are coming continually from Persia. The dealers, who know the German markets, supply sizes and pat-

terns to suit the German taste Prices have fallen so low that competition with German work must become more and more perceptible, which would be the case still more if the organization of this trade could be made more reliable The trade is carried on mostly via Constantinople, where at times very large and valuable quantities of carpets are stored Since the United States has given its attention to oriental carpets very considerable quantities, chiefly of the better sort, have gone to that country.

THE DYER'S POSITION.

One of the most responsible positions in a factory is that of the dyer. The color of a piece of goods is one of the most important selling features, it is also a point that is subject to the closest examination, and one that the buyer is less charitable about than any of the other defects of manufacture Coarse threads from the card room, bad splicing from the spinning room, mispicks from the weave room, if none of them happen too frequently, are passed over with an allowance and no comment over them is made Not so the defects that the dyer has produced; a cloudy piece is unsalable If a piece is a little off shade, the buyer makes a claim and this comes home to the manufacturer more forcibly than the dollars that the little eighths that he allows every day for other imperfections appear to.

There should be a closer bond between the dyer and the manager; this would tend to operate to their mutual advantage. The dyer should realize that the manager is having trouble in other departments, and when matters are mentioned that should have been done better, it is in a spirit of trying to improve the work, not for the sole purpose of making it unpleasant for the dyer. The manager ought to take into consideration the difficult and perplexing nature of the work, and exercise the same charity for the dyer that he would display toward the carder, spinner, weaver or finisher, if any of them happen to get into difficulties.

Again, when we consider the nature of the work to be done, it is to be wondered at that our dyers do not realize the advantage of a technical training, and our manufacturers the importance of employing a man so trained. It is a common thing to see thousands of dollars' worth of valuable material placed in the hands of careless or ignorant men to try to save a few hundred dollars in salary. How long is it going to take our manufacturers to see that this is at best a penny wise, pound foolish policy? It is a policy akin to that of a railway company that would consign the safety of its patrons to the stability of an arch, designed and built by a man without the training of a civil engineer, but a clever fellow withal.

When dyers and confidential clerks are selected upon the same basis, for ability and integrity, the drysalters will have to dismiss all of their salesmen who can only dispose of goods through corruption. Then the dyestuff trade will be reduced to the plane of honest competition; the firm with brains, brawn and energy, who will give the most and the best for a dollar, will be the one that will prosper and the dyestuff business will be reduced to the plane of other sorts of trade. If the dyer feels that he has rights that the manufacturer is bound to respect, he should remember that the manufacturer has interests that the dyer is bound to preserve. At all times the manufacturer is entitled to the best work that the dyer can turn out The man who takes only interest enough in his work to have it "pass," is so uncertain a factor that his value is comparatively small. Every dyer should feel that he is doing the best that can be done, and that he is getting the best possible results from his administration.

The dyer should be always on the alert to reach forth for new methods of doing work and new dyestuffs for doing with; he should aim to use the dyestuffs with as much economy as if he had the bills for them to meet. By so doing he will assist the manufacturer, who is subject to the keenest competition in selling his product, to reap the benefit of equally keen competition among the dyestuff dealers We do not mean to say that the dyer should become a "scorcher after all of the novelties that are introduced; rather that he will possess a power over the salesman who only aims to sell a good bill of goods, and is not competent to judge as to the adaptability of the articles he is selling to the work that the mill is doing This intimate knowledge of what is being brought out will save the manufacturer from the purchase of a lot of material that will be of but little value to him, and which will lie around to be eventually destroyed. When men realize that they are mutually dependent, when they realize that each will be doing the best for himself, when he is exerting himself for the mutual good, all will be drawn more closely together; mutual tolerance will prevail, and mutual benefit will be reaped.—*Wool and Cotton Reporter.*

THE FACTORY GIRL IN JAPAN.

BY ROBERT P. PORTER.

Factory girls in Japan are very different from factory girls in the United States. The latter live at home, enjoy their evenings, and on Sunday, dressed in neat attire, go to church, take fresh air in the parks, on the streets or lakes, or, on the Atlantic coast, go down to the seashore and take part in the recreations which Sunday affords Then their hours are not so long, nor are they allowed to work so many hours overtime as the Japanese. In appearance, however, the Japanese factory girl, as I have seen her in all parts of the main island, is as robust and rosy, and indeed, as happy as her co-laborer beyond the Pacific Probably she enjoys fewer sensations She may be less of a vertebrate. Nevertheless, there she is, plump, full of good nature, willing to work any number of hours, docile to a fault, and apparently contented with her lot. This being the case, why should those who are not contented with their lot worry about the Japanese factory girl? For my part, I have no desire to sow the seed of discontent. Nor will anything that I may say of the condition of these girls at the present time be likely to have that tendency. I merely state the facts as I found them in Tokyo, in Nagoya and in the district of Osaka. Those facts will naturally be of considerable interest to our mill owners, because they in part explain why the Japanese can manufacture so much cheaper than they can in the United States or in Europe.

The facts herewith given about factory girls were obtained direct from a typical mill and mostly written down by the proprietors. The yen is valued at about 53 cents, and two sen equal a fraction more than an American cent.

The age of factory girls in Japan ranges from 12 to 30 years. In the house weaving and spinning much younger girls are found than this, but 12 is about the youngest I have found in factories. The girls employed in the rooms spinning fine thread are, as a rule, the youngest.

Their wages, therefore, show similar differences, between five sen a day for day girls, and eight sen for girls living in the boarding houses established within the mill, and ten yen per mensum. Wages are also paid by quantity according to the kinds of work. For rough spinning the pay per hank is about three sen, and skilled girls can undertake from seven to nine hanks a day For reeling, the pay per spool is 5-10 to 6-10 sen, and when the girls become used to the work they can reel as much as 50 spools. The maximum limit for girls in the fine spinning department is 15 to 16 sen, but this is not particularly bad pay for little girls 14 to 15 years old. Different mills have certain fixed regulations for increasing the wages and for conferring prizes on girls. The increase is generally made three or four times a year in some mills, while in others the extra is given according to the result of diligence every half year, the extra being about 20 sen. The rate of gift is graduated according to the diligence of girls, and some mills give 20 sen for those who work uninterruptedly for one month, 40 sen for three months, 1 20 yen for six months. For those who renew their service after the articled term of three years is over, the rate of favor is about double. For girls that have attended to their work without any absentment for the period of three years, the special favor is 15 yen; for those of five years 25 yen, and for those of seven years 35 yen, this being extra pay besides what they receive as their wages. The lowest get about 3 yen a month, next higher 5 or 6 yen, while the highest get 10 yen.

Girls are encouraged in their thrifty habits and there are in several mills both compulsory and voluntary savings in force. For both savings, interest at the rate of 10 per cent. is paid by such mills, but when a girl leaves the factory before the expiration of the fixed term of three years, she forfeits her compulsory savings. Girls being mostly very thrifty, many of the high waged operatives remit as much as 7 or 8 yen per month to their home, such girls, of course, drawing 10 yen After the service of three years, therefore, girls that are of thrifty habits accumulate 70 or 80 yen, besides a few suits of clothes, which they have purchased out of their own earnings while they were at the factory In every mill the majority of girls live in the boarding houses established within its premises The table charge is two sen each meal, that is, six sen a day. Consequently even though the daily wages for the youngest that have newly articled themselves are in some mills only five sen when they attend to their duties from their home, the rate is increased to eight sen when they lodge in the factory boarding house

The food they get at six sen is of better quality than the poor can generally afford at their home Breakfast generally consists of boiled rice and a few slices of pickled radish, or sometimes rice and pounded bean soup, dinner consists of rice and vegetables; while supper, which is to them the treat of the day, consists of rice and fish. In other words, these girls are fed just as maids in respectable families are, or perhaps much better. On holidays special lunches are provided by their employers. Special uniforms used in respective mills are to be purchased by girls, generally less than one yen to be paid back in four or five months' instalments.

All other things as quilts, footgear, umbrellas, etc, are furnished by mills free of charge. Therefore, the monthly expense which a girl in a factory boarding house in Japan is required to disburse does not much exceed 2 yen, and it is remarkable that girls can lay by 70 or 80 yen when they have served out the term of three years. The mills in Tokyo and Osaka do not neglect to attend to the education of their girls, and every day they are taught to read or write two or three hours after their regular hours are finished.

"They are also taught sewing," said a Japanese mill owner to me "However, owing to the strain which their bodies are subjected to, not very many attend to lessons, about one out of seven, or perhaps, much less, if those who regularly attend their lessons are counted In the higher grade, pupils are even taught an English reader or two as a regular topic, and grown-up pupils can spell the different technical terms used in the mills with ease."

Japanese factory girls are divided into night workers and day workers, the working hours being generally 12: but when time for tiffin and so forth is taken away, the real working hours do not exceed 11 It is not, however, infrequent for girls when the business of the mill is pressing, to work extra six hours or so, and as on such occasions they are paid extra 8 sen, they are not much averse to subject themselves to such tremendous overwork. The regular holidays for girls are about five or six days per year, also a week beginning from the latter part of the year to the beginning of next year And then every week, when machines are polished and cease running, girls can enjoy a few hours rest Though such is the strain which the factory work demands of them, the number who work uninterruptedly for a year, or even two or three years, is not small, and there are some grown-up girls that are in a factory above 20 years. They enjoy a monthly salary of 10 yen, keep up a household of their own, and can, as a Japanese gentleman puts it, "even afford to maintain their husbands."

The sick rate of girls is very small, only four or five girls per day out of above 1,700 girls employed in one large mill I visited. Generally in each mill a regular physician is on duty and examines and prescribes for girls who feel themselves indisposed. There are also a number of nurses When a girl is confined in bed she is allowed a half of the lowest limit of wages, that is, 4 sen a day, but when her confinement has been brought about through the discharge of duties, as, for instance, injury sustained from machines, then she is entitled to the full amount of her wages till the time of her recovery, and even a certain amount of consolation gift upon her recovery. The maximum charge for medicine is 3 sen per day, and when, owing to the long confinement, the bill for medicine reaches a comparatively large sum, to the means of the girl, she is allowed to pay it by instalments after she has recovered health But when the factory doctor declares the case incurable, then the mill will undertake to pay itself the expenses which the girl has incurred on account of sickness, and will also provide her a travelling expense. It is said, therefore, that for one girl returned to her parents in that way, her employers incur the loss of 20 yen or so.

The majority of cases of illness consist of lung trouble In some mills the operatives organize what may be called a mutual relief society with a certain fund, which, in large mills, can obtain a receipt in the form of contribution of officers and operatives a sum of a little less than 250 yen in half a year. In engaging operatives, factories generally advance to them travelling expenses, to be refunded in two years But when the girls go through the service of three years, their employers will give them, by way of parting present, one-half the expenses needed in going back The majority of the girls are engaged through the medium of agents, to whom the charge of 20 sen is to be paid at first by each girl and also the monthly charge of 2 sen, all through the term, the latter being charge for acting as security for girls This responsibility undertaken by agents must prove highly convenient for employers, and the latter are, therefore, more inclined to get hands through the medium of agents At present, owing to the activity of various industries in the interior, every mill finds it difficult to secure the service of operatives.

GOVERNING MILL HELP

There has been much said in regard to heads of departments having the proper tact in governing help in all our textile papers for some years back. Such subjects as "The study of human nature," "How to handle the various kinds of temperaments," "How to give orders to them," "How to correct bad practices," etc., and yet have the work go on all right, and have all understand there is no partiality shown, and at the same time not have anyone think you are setting yourself up as a judge or get the name of an arbitrary tyrant Now, all these are good, and the man who studies and uses them in a common-sense manner cannot help seeing the good results of it It is a common thing for lazy, good-for-nothing help to have a dislike for the overseer who keeps him at his work, especially if it comes by fits and starts, says a writer in an exchange. If the overseer is out on the tower enjoying an hour's chat with one of his fellow overseers, and then when he gets a cue that the agent or treasurer or super is coming around, and he flies around in his rooms trying to get the second hand and the rest of the help to put everything in Sunday-go-to-meeting shape in a few minutes, he must expect that the help will try and play the same trick on him Practical mill superintendents or agents know when that trick is being played just as well as the overseer who does it, and the few who do not make it hard for such an overseer, for he is always on the alert for more production and get the standard quality of goods from the cheapest cotton he can, so as to get the greatest margin of profit And when he comes in and finds things so slick and nice he is tempted to think a little more speed or a little cheaper stock, or a hand or two less, would be in good order The practical super is around the mill enough to see how things are kept all the time, and if he thinks things are not kept as clean as they might under the circumstances, the overseer soon gets his attention called to it. A man may study all the rules which may tend to keep a department in good running order, but it does not amount to shucks if he cannot so learn it that its effect will be seen on himself by the help. It will not do to tell a second hand or any of the help that they are required to do thus and so, and then go and leave them to it, and next day come round and go up into the air because his orders were not obeyed

It is a common thing for some people who come to seek employment in a mill, when you ask them what they can do when they ask for a job, "Oh, almost anything. I know there are some who can take hold almost anywhere in a card room or a spinning room, but they are the exception and not the rule I have had

that experience many times, but I generally ask them when they say they can do "most anything," "Can you run a slasher?" No!" "Can you draw in warps?" "No!" "Can you grind cards?" "No!" "But you said you could do most anything." A few weeks ago I had a young man of that stamp, who finally said he was quite smart at any job he had worked at, but had never worked in a cotton mill, but knew he could get along quite well in an hour or two if I would only try him. It is a common practice for some men to "go into the air" when some of the help do wrong things, especially young help.

Now, it is well to remember that children are and will be children, and we must treat them as such, knowing it is mostly of necessity of some kind we use them, and we know they do not get $5 a day I am aware some good people are quite ready to say, "If they do not do right, discharge them," and they say it as though it was the acme of sound reason. It may be in some cases, but there are cases where discharge will not fill the bill. Malicious mischief makes one amenable to the law, and when a boy or girl, by sheer deviltry, spoils a lot of work, breaks a machine down, destroys the mill property in the many ways it is possible in a mill, simple discharge does not act as a real corrective measure. I once discharged a boy of sixteen for breaking windows by drumming on them, he did it out of all bearing I wished to charge him, but the agent said, "No! let him go," but at the next mill he worked at he was charged for all he broke, and his father had to give an order on his pay for the full amount to prevent legal proceedings. It cured him and saved hundreds of windows from being broken at that mill The overseer did not rave or shout, and the help all agreed he did the right thing. The advice generally is, "You must not do this or that, you must do thus or so," giving a list of rules. I think it best to sum them up by saying, "Keep about your own business all the time the mill is running, what you are hired for, keep a cool level head, have the work done in the best way all the circumstances in your case will allow; be gentlemanly;" but the latter does not mean you are to enter into a conversation on the topics of the day, even with your best help, nor to sit down and take refractory boys and girls on your knee and talk to them about their wrong doings, like a blessed old grandmother helping to spoil a bad boy or girl, or fishing for the good will of the help to the detriment of the work, though they may give you taffy and a smoking set and gold-headed cane on your birthday, or when, by reason of your extreme gentlemanly actions toward the help to the detriment of your firm, you are given the opportunity to hand in your resignation The great majority of mill agents well understand all that

I have had my attention called to the lack of overseers overseeing very much of late while attending to starting up machinery that had been moved. I have been in mills where notices were posted up in conspicuous places, both in English and French, when to oil this and that, when to clean this or that, and instructions to second and third hands as to fixing and attending to the requirements of the room, but I have been viewing the proof of the dead letter of such notices by examining machines that had been in one of these rooms. The indications were that the cat had been frequently away, and that the mice had had many a good play to the detriment of the machinery Oiling, cleaning and fixing, except on the very face, seemed to have been things unknown. The help had so got in the rut it was hard to get them out. Show them what to do and how you want it done, leave them for ten minutes to attend to another gang, and if nothing is done as ordered, discharge them, says our good reasoner. Then what in such a locality? Hire in just the same? I say nay, except in the worst cases, but teach them, stay round until the principal parts are attended to as you require, then move and get back soon. "But that is too much work," says the man who is anxious to tell the latest story to his fellow overseers; but bye and bye, if fate so favors him, he becomes super, then he wants every man in his room, and when he has to face surplus seconds, too much waste from spinning or carding, weaving or dressing, loss in production with high cost of repairs, as well as high cost for running the departments, he gets on his ear, looks round on his own old department first and finds some of his own old ghosts, but puts the blame on some one else.

But, by the way, what kind of examination do students at our schools of technology go through on what has been written above? It has nothing whatever to do with what is generally understood as cotton manufacturing, but it plays so important a part that the lack of this qualification, though well up in technology, often proves a downright failure.

PAPER HOSIERY MOULDS.

In making hosiery moulds from paper, the parts pass through a tank containing the cementing solutions which impregnate the paper. The thicknesses are permitted to dry a few days, when the whole are run through a solution of oily matter that soaks into the fibre. Then another partial drying occurs, after which comes pressing, during which operation the three-quarter thickness is compressed to less than a half inch, or to required proportions. Now the forms are sawn out, edges sandpapered, a coating of waterproof paint put on, and the forms are ready for use. They are much lighter and cheaper than wood.

A second style is made from pure cellulose that has first been treated to a bath of caustic soda and afterwards acted upon with carbon bisulphide. This is dissolved in water, an insoluble coagulated mass is procured, and the latter, when separated from the water, drys out into a hard, compact form. This same substance has been procured in a slightly different form for use in making tool handles and buttons. The operation of getting this material into shapes for hosiery boards is accomplished by cutting the forms from the dried sheets, smoothing, polishing, staining, etc., is done in ordinary way.—*Paper Mill.*

THE FINISHER AND THE TRADE.

There are two sides to the finisher's work and they are both equally important. Usually the finisher looks more especially to his immediate employers, but he must never forget the fact that back of his employers he is working for the great body of consumers who are in every case the ultimate arbiters of his fortunes. There are certain parts of the finisher's work which bear with special weight upon this outside factor, and if the finisher wishes to succeed in every respect, he must keep the requirements and the ever changing demands of the trade constantly in view, says the *Wool and Cotton Reporter*. When we come to look into the finishing department, there are certain fundamental processes with which the outside world is very little acquainted and for which there will naturally be very little regard. This, of course, is a technicality so far as the trade is concerned, and although the finisher knows very well that these parts of the process affect very intimately the finished product, still he knows too that there are ways in which the trade may be partially satisfied in other respects and by other methods.

When the ordinary man takes hold of a piece of goods, the first thing he thinks of is the general appearance to the eye. The next to the feel, and last of all does he think of those qualities in the fabric which owe their presence to the fundamental processes of the finisher's work. Taking them in this order we would naturally expect, as far as the trade is concerned, the smoothness, the clearness, the brilliance and the naturalness of the face surface of the goods would be the main considerations that would enter into their judgment, and hence these things would be the main things which the finisher must depend upon when he has the trade particularly in view.

Now in order to facilitate the production of the best results along these lines, there are two or three processes that stand out with great prominence, these are the brushing, the steaming and the shearing.

The pressing, of course, should be included, but we take it for granted that nothing need be said specially on this part of the work. With regard to the brushing and steaming, we may well say that by far the largest part of the desirability in the finished fabric, so far as the appearance is concerned, is due almost wholly to these

particular processes Brushing with the right kind of points cannot help but result in a smooth, soft and pleasing face, and if the brushing is interspersed or used in connection with the steaming, the result will be even more satisfactory.

The brushing and steaming, especially the former, are practised both when the fabric is wet and when it is dry; the wet brushing will give a smoother and more lustrous and at the same time a soft and pleasing face; and in this case of course the nap will be well laid. On the other hand, where the goods are treated dry, the nap is raised more and the shear is able to do its work more satisfactorily. Now we feel satisfied in saying that nothing can be done to a piece of goods that will affect the judgment of the trade so readily as the proper use of brushing and steaming If these two processes are gone through with just as often as the time at the finisher's disposal will permit, the results will be more and more to the satisfaction of the trade. It is not too much to say that the brushing with and without steam may take place between all the stages of finishing after the goods have once come from the dryer, and when this is done not only between the pressing and steam lustreing, but also between several runs on the shears, the finished results will be entirely satisfactory In using the steam it is necessary to bear in mind that, unless the goods are in perfect condition, the results may not be what we might wish. If the cloth is uneven in the breadth and if there happen to be traces of cockle present, even if these have been removed in the drying, it is better not to use the steam along with the brushing. After the goods which happen to be in such a condition have been steam lustred, then it is safe enough to use the steam along with the brush. The steam lustreing serves to set the finish, and once it has taken place, such steaming as the goods receive along with the brush, can do no appreciable harm. What steaming is done along with the brushing is never very elaborate It must simply be enough to raise the fibres a little and make them pliable and elastic This will aid the brush in completing the result we wish to attain. It would never do for the steam that has been employed in brushing to affect the body of the goods.

The steam brushing that is done between the shearing cuts is also very important. It equalizes the nap, covers the twill and gives a soft and lustrous appearance to the thread. It has even been sometimes the practice to brush and steam after nearly every run. This, while not absolutely essential in ordinary goods, certainly does enhance the finish of the finest grades immensely, and thus meets the wishes of the trade.

CORTICELLI SILK COMPANY.

The Chicago World's Fair medals and diplomas have at length been distributed W H Wyman, manager of the Corticelli Silk Co, at St Johns, has received through the Department of Agriculture at Ottawa the medal and diploma awarded to his company. The following is the wording of the diploma

CORTICELLI SILK CO (Canada)
St. Johns, Province of Quebec.
Exhibit: Spool Silk.

AWARD

For spool embroidery and sewing silk, machine and hand button hole twist, embroidery, knitting and rope silk, filo and telephone floss and yarns for manufacturing purposes These silks are of a superior quality, pure dyes, and good twists of great strength. All wash silks, warranted fast colors, will stand washing without injury to color or texture. They are most lustrous and of a variety of kinds and sizes, put up both in skeins and on spools, for decorative art embroidery, and are most valuable, especially for the very large variety of shades in every color. This exhibit deserves mention for the unique display of reeling raw silk from cocoons, and an interesting feature with this silk reel is the electrical heating of the water in the small basin which contains the cocoons

H. J KIMBALL,
President Dept Com
ELLA E. LANE HOWES,
Individual Judge.

This is certainly very emphatic and gratifying testimony of the excellent quality of the silk manufactured by the Corticelli Silk Company in St Johns.

HISTORY OF THE READY-MADE CLOTHING TRADE.

(*Continued*)

The future prosperity of the clothing trade will depend, very largely, upon the relations which may exist between capital and labor No trade has ever been permanently successful, which has ground the faces of the poor, and no nation has ever permanently maintained its position in the councils of the world, which has not been the home of a contented people

The revelations of the Sweating Commission of the English House of Lords have brought to light many facts, which prove that a horrible condition of insanitation has been permitted in many of the workshops of Jewish sub-contractors, and others, engaged in the manufacture of clothing, but the general evidence by no means established the position which some pseudo-philanthropists have taken, when they have asserted that the influx of foreign labor has been abnormally great, that the workers are underpaid; the hours are exceptionally long, the workshops, as a rule, are unhealthy, and the whole position of the labor question, such as to condemn the trade in the estimation of all who desire their country's weal That these assertions were disproved, rather than confirmed, in the evidence before the House of Lords, and from the experience of those engaged in the trade, will be apparent to the candid reader on the perusal of the following facts

First, then, with regard to the much vexed question of the influx of foreign labor, an inquiry into the actual state of affairs reveals the fact that (1), between the years 1871 and 1881 the increase of the whole of the foreign population of the United Kingdom was 22,000, or from 114,000 to 130,000, and of that number of 22,000, the increase of Russians and Poles was about 5,000, and this increase is accounted for by the fact that (2) in 1871 there were 9,974 Russians and Poles returned as living in this country, and in 1881 15,471 (3) The returns of the Russian Emigration Bureau show, however, that although between the years 1870 and 1880, the annual emigration of Russian subjects was about 35,000, and that this number had increased about 3,000 a year from 1880 to 1885, and still more from 1886 to 1888, yet this efflux has been mainly by way of Hamburg and Bremen to distant countries, out of Europe, principally the United States, and *not* to the United Kingdom

So far as the clothing trade is concerned, Leeds has undoubtedly received the largest share of those Russian or Polish Jews who have chosen Hull as their port of landing into England Twenty-five years ago there were not a sufficient number of Jews in Leeds to form a congregation for which ten men were requisite The Jewish population may now be estimated at from 8,000 to 10,000, and the district of Leeds, called the Leylands, may now be said to be a Jewish colony, for in the board school of the locality, 75 per cent. of the children are Jews, and the shops and streets of the district have assumed all the characteristics of the Jews' quarters in Whitechapel, Hebrew characters being printed on their signboards and notices, and the conversation of the people is very largely in the same language.

The quality of the house accommodation in Leeds, the cheapness of rents, and the lower cost of living, as compared with the East-end of London, have undoubtedly been great inducements to the Jews to prefer Leeds to the metropolis, and although in some cases the wages in Leeds are from 10 to 15 per cent. less, yet they are, as a rule, more uniform, as larger "cuttings" are given out by the wholesale clothiers of Yorkshire than by the London houses, who still cut very largely by hand, or on grooved tables, and not by machine

A return made by J. Newhouse, Inspector of Factories for Leeds, of Jewish workshops of every description, and number of hands employed, 1st April, 1889, shows the following results —

		Males	Females	Total.
Workshops	119	1,433	1,871	3,304
Dwelling houses.....	31	119	18	137
Total	150	1,552	1,889	3,441

In these figures are not included many other places, where work is carried on in bedrooms, or other secluded places which have escaped the attention of the inspector. The trades carried on, in these various workshops, are cigar and cigarette making, boot and shoe making, and tailoring The tailors number some 3,000.

The evidence of the inspector shows also that (1) on the whole the workshops were fairly well adapted to the requirements of the trade They are all well ventilated, with an average of 438 cubic feet of space for each worker, 250 feet being the space prescribed by Act of Parliament, (2) the drainage is fairly good, and floors and walls on the average clean, but (3) the w. c. accommodation is defective, and generally in a disgusting condition. Probably, since the complaints of the inspector, this matter has been put right to some considerable extent.

The workshops of the Jewish sub-contractors in Leeds are much larger, and as a rule employ more hands than in any other part of the kingdom The London Jews seldom have more than eight or ten machines. In Leeds the largest has forty, and the average of machines to each master is from twenty to thirty. Indeed, some of the masters have laid down engine-power to drive their sewing machines, which is quite exceptional so far as this country is concerned in regard to Jewish sweaters. As nearly all these people are coat-makers, and seldom deal with trousers or vests, subdivision of labor prevails amongst all of them. This state of things, combined with strict surveillance from the factory inspector, has brought about a much improved condition for the workpeople, both as to wages and shorter hours.

As regards the prices paid by manufacturers to the Jews for coat-making, no complaint was made by anyone during the Sweating System Commission. This is very remarkable, in face of the many slanders which have been circulated regarding trade. But there is no doubt that the keen competition of the last few years has reduced prices considerably, although the increased facilities for rapid production have been more than ample compensation, in most cases, for the lower prices. A Jew who can take out a thousand coats to make at 2s would stand a better chance of making money than one who could only manipulate 250 in the same time at 2s. 6d. Personal inquiries, both in London, the provinces, and Leeds, have convinced the writer that the major part of the reduction of the prices per garment, which has occurred of late years, has really mainly been felt by the sweater, if, indeed, it has, in the aggregate, been felt at all, for the lowering of prices has often so enhanced the production, that, what with constantly improving machinery and further sub-divisions of labor, there have been fewer idle hours than ever, and the average earnings per week have shown an increase instead of a decrease.

(To be continued.)

UNDER COLLAR CLOTH.

New fashions are constantly making demands for certain kinds of fabrics, and these changes of fashion are often the saving of mills which are out of orders. There was a time some years ago when the collars of coats were lined with meltons which matched the predominating color in the face. After this fashion had become obsolete, the collars were lined with the material of which the coats were made, now this style of manufacturing has had its run, and the use of meltons for the under collars has again become the style The under collar fabric business will never assume large proportions because one piece of goods will make a large number of under collars, but is a regular business in a small way for the manufacturer who gets the fabric and the price right. "Slater's" have for a long time made an under collar melton, which sells for a dollar a yard, and this seems to be the popular price on this character of goods This fabric should be made "all wool," which is the only way the hard, leathery feel which is required can be obtained. This firm feel is the principal quality demanded, and the fabric must have this without being bulky and too heavy It should weigh from 14 to 15 ounces, and more than this is to its detriment, for as soon as a bulky under collar lining is used the set of the collar is destroyed The yarn used should be about four run warp and filling and the fabric should be woven on a regular four harness broken twill, three ups and one down, or else on a plain weave. The colors are extremely simple, there being only four shades demanded, a black and a blue and two Oxford mixes, which should contain three and five per cent. respectively. This fabric must be well fulled up, and give an impression of great firmness without any extra weight.—*Textile World.*

THE RULING PASSION.

A retired Humorist one day ventured into a cotton mill, and while in an unguarded moment he was explaining one of his post-mortem jokes to an innocent operative, he was drawn into the ponderous gearing and dreadfully crushed. They combed what they could of him out of the machinery and spread the effects on the floor.

"Who is it?" was the anxious inquiry as the crowd gathered around. Nobody could answer.

Then the eyes of Humorist slowly opened and his lips moved.

"There is good reason why nobody recognizes me," the Humorist painfully whispered.

A sympathetic bystander bent down his ear.

"Why is it?" he asked.

"Because," explained the Humorist, seeing an opportunity to steal home, "because I have been travelling *in cog.*"

And then a smile like a summer cloud played for an instant over his features and he was gone. He never spoke again.

That was one satisfaction.—*New York Recorder.*

LITERARY NOTES.

Dr. Weir Mitchell has been engaged for several years on a novel which will give peculiar satisfaction to those who rejoice in the able and worthy treatment of American life and character in American fiction. The story is called "Hugh Wynne, Free Quaker," and will begin as a serial in the November *Century*. Those who have read the manuscript say that it is not only Dr. Mitchell's masterpiece, but will rank as one of the greatest of American novels. The scene is laid in Philadelphia before and during the Revolutionary War, and among the characters are Washington, Franklin, Lafayette, Benedict Arnold and Major Andre. The hero of the story serves on General Washington's staff.

The ninth annual edition of the Blue Book, 1896-7, has been issued by the Davison Publishing Company, New York, and a notable new feature added to the work this year is the patent index, enabling anyone to immediately turn to the cotton, woolen, silk, dyers, supplies or alphabetical index. A complete directory of textile mill supplies has also been added to the large book, this covering seventy-five pages, and constituting a valuable feature in connection with a textile directory. The list of new mills added since the previous edition is very large, especially in new cotton mills in the South. Over 130 new knitting mills are recorded, showing what a thorough canvas has been made of the country. This edition of the Blue Book is the best that has been issued, and the valuable features added will be appreciated by the trade. The Blue Book, Davis Publishing Co., 401 Broadway, New York. Price, office edition, $3; pocket edition, $2.50.

TOURS was the first great silk-weaving center of France. Under the direction of the Italian weavers introduced by Louis XI., in 1470, a considerable degree of prosperity was attained. Before the revocation of the edict of Nantes the number of looms in operation had reached 8,000 This prosperous industry was completely destroyed by the fatal measure. During the latter part of the eighteenth century Tours revived to a certain extent, and the number of looms once more reached 2,000. Since sixty years ago the Tours silk industry has been going backward again, and at present, it is said, employs but 1,000 looms with an annual product of perhaps 6,000,000 francs.

FABRIC ITEMS.

Mollison Bros. & Co., large wholesale dry goods merchants, of St. John, N.B., have met their creditors.

The Samson, Kennedy estate has paid a final dividend of 2 per cent., making 27 per cent. in all.

Kirby Bros., dry goods merchants, Windsor, Ont., have assigned. The business was established in 1892.

C. M. Babcock, one of Brockville's leading dry goods merchants, died suddenly at Brockville, Ont., Aug. 9th.

R. R. Southcombe, who came from Oshawa to Toronto about ten years ago and opened a men's furnishing store, has consulted his creditors

W. D. Cameron, manufacturers' agent, Halifax, has been appointed agent in the Maritime Provinces for the Montreal Suspender Co.

Quebec now has two suspender factories, Jacob Miller, formerly with Vineberg, having started for himself in April last, at 78 St. Valier street.

W. W. Cowell, a well-known traveller for McMaster & Co., who formerly represented Samson, Kennedy & Co., died suddenly at Jarvis, Ont., July 24th.

Mrs. L. A. Turgeon, dry goods and shoes, of Sherbrooke, has assigned, owing about $10,000; she succeeded her husband in business a few years ago and found trade of late very dull.

The large wholesale millinery house of D. McCall & Co., Toronto, has compromised with its creditors at 50 cents on the dollar cash. Business will be carried on without interruption. Difficulties were said to be due to real estate depreciation.

The dry goods estate of McCabe, Robertson & Co., Toronto, has proved rather disappointing to creditors. A second and final dividend at the rate of 5¼ per cent. has been declared, payable on the 15th inst., on liabilities of $41,968. This, with the former dividend, which was at the rate of 12½ per cent., shows that only 18 per cent. was realized in the wind-up process.

The heavy failure of Dupuis Freres, Montreal, came as a great surprise to the trade, as since they obtained an extension of time a few years ago, they have been supposed to have been doing a remunerative business. The liabilities are over $100,000, the Quebec Bank, which took over their account from the Banque du Peuple about a year ago, being interested to the extent of $30,000. The abandonment, which was a voluntary one, was made to Kent & Turcotte.

C. E. Gagnon & Co., dry goods, Montreal, have obtained an extension of 12 months; they owe about $6,000 and show assets of $12,000 to $13,000, but these locked up in stock and book debts. C. E. Gagnon, who managed the business, was of the firm of Matthieu & Gagnon, who failed some years ago, and he afterwards carried on his trade under his wife's name, but did not make a success and compromised at 50 cents on the dollar cash, in 1894.

Collector Milne, of Victoria, B.C., reports on this season's operations of the Canadian sealing fleet in Japanese waters, that the catch on the whole is slightly better than that secured last year, averaging 643 skins to each of the 28 schooners engaged in the industry, 18,019 skins altogether. In addition to these, there is the catch of eight American schooners, totalling 3,808 skins; the catch of seven Hakodate sealers, numbering 2,417 skins, and reported catch of four other American craft, making a grand total of 25,524 skins.

The death of David A. Fleming, who for twenty years past has been in the employ of Messrs. Gault Bros. & Co., Montreal, has removed one whose fidelity was highly prized by his employers, and by all those brought into contact with him. Such a long connection speaks in the highest terms of both employer and employee. Mr. Fleming's high character was greatly appreciated by a large circle of friends, and the estimation in which he was held was evidenced by the large number of influential citizens who participated in the final tribute of respect to his mortal remains.

On the demand of Munderloh & Co., Bernard Levin, doing business under the style of B. Levin & Co., wholesale fur manufacturers, 491 and 493 St Paul street, Montreal, has assigned. Assets are stock-in-trade, book debts, safe, office furniture, etc. The liabilities exceed $26,000. The largest creditors are W Harrison & Son, $7,539, estate C. H. Levin, $5,120, W B Francis, $3,000, La Banque du Peuple (indirect), $1,868, J & A Boskowitz, $1,758; Theodore Thorer, $1,542; Vero & Everett, $994, N Jacobson, $833; Lincoln, Bennett & Co., $752; Axion, Grundy & Rowbotham, $715, Howlinson, Ferguson & Andrews, $606, W Lucas & Sons, Ltd., $565, T. F. Firth & Son, Ltd., $388, Munderloh & Co., $366, Bank of Toronto, $350, estate John Pratt, $275, S Neave & Sons, $272, and P R Poland & Son, $202. Arch W Stevenson, chartered accountant, has been appointed provisional guardian

TEXTILE IMPORTS FROM GREAT BRITAIN.

The following are the values, in sterling money, of the textile imports into Canada from Great Britain for June, 1895, 1896 and the six months to June, 1895 and 1896:

	Month of June		Six months to June.	
	1895.	1896.	1895.	1896.
Wool	£ 1,310	£ 255	£ 3,567	£ 5,466
Cotton piece-goods	28,844	25,069	258,922	259,050
Jute piece-goods	6,113	17,570	48,173	79,492
Linen piece-goods.....	11,912	10,039	76,367	81,014
Silk, lace	451	189	17,682	5,844
" articles partly of....	3,548	1,773	16,295	14,826
Woolen fabrics	12,850	17,478	91,768	115,872
Worsted fabrics.....	47,851	41,609	257,617	278,256
Carpets	6,771	3,459	109,432	108,158

WATERPROOFING UNFULLED WOOLENS AND CLOTH.

The following four methods were given in reply to a question in the *Oester's Woolen und Leinen Industrie:*

1 Take a petroleum cask half full of clean water and dissolve therein 22-33 pounds crystalized alum, and the same weight of sugar of lead Heat by steam till all that is soluble is dissolved Pour off from the sediment. The fabric is soaked in the clear liquid in a wooden vat for two hours, with frequent stirring, care being taken that it is well soaked before entering. After being well rinsed, dry thoroughly. It often happens that white specks appear when the stuff is dry. In that case rinse again with clean cold water, and whizz in a centrifugal hydro-extractor.

2. Prepare two solutions, one of 1 pound alum in 3½ gallons of water, and the other of sugar of lead in the same proportions The clear liquid is drawn off from the precipitate, and the fabric is treated with it (best upon a washing machine, as the pressure of the rollers causes the liquor to penetrate better into the fabric) If a washing machine is not used, the fabric must be left at least two or three hours in the liquor, and dried without rinsing. (This constitutes a vital difference between methods 1 and 2 No. 1 says rinse well before drying).

3. The same as 2, exactly.

4. Dissolve 50 pounds potash alum in 500 gallons of water. Then soften 10 pounds glue with cold water till it has taken up 10 gallons thereof; then heat the glue to boiling, and while boiling stir into it 2½ pounds tannin and 1 pound waterglass (strength not stated). Now add the alum solution, and heat the whole, with good stirring, until the mixture is perfect Then allow to cool Boil 10 pounds of the gelatinous mass thus obtained for three hours with 10 to 12 gallons water, keeping the liquid at the same bulk by occasionally adding fresh water. Then allow to cool to 175° F (not higher). Then pass through rollers at a temperature of 120° F.

The fabrics thus treated have gained in weight, strength and fullness, besides having become waterproof

KNITTING IN SOUTH WALES.

Hosiery manufacture has passed through many different phases since the introduction of the hand stocking frame, in the year 1589 Small stockingers' shops, in our central hosiery districts, have given place to large factories, and the hand frames have become displaced by power machinery of many varieties Nearly all the different processes in the making of a stocking are mechanically performed here In these districts, quantity is the order of the day, and many thousands of dozens are made weekly in these large factories Those of our readers who are busily connected with the trade in these hives of industry, may be surprised to know that even at the present time there are spots in our own British Isles where only hand-knitted stockings are known. These are fast disappearing, for small knitting machines of the "flat" and "circular" types, capable of producing a finished stocking, in imitation of hand-knitted ones, are finding their way into even these remote parts. Some of such districts are now becoming hosiery centres, hosiery manufacture being carried on in several different places The district having the most varied aspect in this direction is, without a doubt, that of South Wales.

Hosiery manufacturers and knitters may here be found busy producing stockings suitable for their locality The term hosiery manufacturer is here applied to those having a few knitting machines of one or other of the classes previously mentioned. A few sell to shopkeepers only, while others cater for their particular district, not a small proportion of the machines being kept employed in re footing, which is a large trade in some districts

In taking a trip through Glamorganshire, Cardiganshire and Pembrokeshire, we find three classes of manufacturers, if the latter can be included under this title First, are the few wholesale manufacturers, who sell only to the larger shopkeeper The second class are those selling direct to the purchaser, not only what they manufacture, but goods bought from well-known English firms. The third class are those in the mountainous district, who buy yarns—supplying some to their neighbors—and have one or two knitting machines, upon which they knit special articles, or re-foot stockings, as required

Probably the largest hosiery factory in South Wales is to be found in Glamorganshire, some forty of the small knitting machines being constantly employed. Besides this factory, there are several others, ranging from forty to one or two machines only. These manufacturers make a particular class of goods—"Welsh Knitts"—which are sold entirely in the district, markets and fairs being attended, where the goods are sold direct to the wearer. These markets are held in the larger towns, and are mostly covered-in markets, each having a lock-up shop, where the stock is kept ready for the one or two markets per week. The fairs are held in more secluded districts in the mountains, usually once a month. These Woolen Fairs, as they are termed, are largely attended, and a surprising amount of business is done in the few hours they remain open

Reference has been made to re-footing One manufacturer informed the writer that on an average he receives 300 pairs of stockings per week, to be re-footed and returned at the next following markets This is the most profitable department of his trade The principal goods sold in this district are the various blue, grey and brown plain and ribbed knitted hose, in men's and boys sizes, and black in women's and girls sizes Those made in the district are usually sold as they leave the machine, while a few are hand-washed and shaped in wooden presses. One important point noticed was the comparatively good quality of the goods sold, farm laborers buying grey knit hose at 1s 9d per pair and a special pair of fancy or navy blue ribbed hose as high as 2s 9d., these being, as one said, for Sunday wear. In this district it is apparent they have yet to learn that "cheap" goods are the cheapest In this respect they give an example which might be followed in our large manufacturing districts with advantage to the trade generally

The class of goods produced in the district referred to are made from special Welsh yarn or fingerings, at prices ranging from 1s 6d to 3s. 6d per lb To manufacture low class goods has yet to be learned, which none of the manufacturers as yet appear in any way anxious to learn We shall treat, in another article, on knitting in the mountain districts.

INDIAN WOOLS.

Dr. Watt, in his learned and exhaustive work on the "Economic Products of India," published by the Indian government, says that the wool of the major part of the sheep of India is so deficient in scales that it has come to be regarded as hair rather than wool, and the recent expansion of the woolen trade in India has been in regions known to produce woolly fleeces. The exports of Indian wool, says the *Textile Mercury*, amount in quantity to a little over twenty million pounds, valued at ten to thirteen million rupees It appears to be mainly used in Europe for the manufacture of carpets, rugs and blankets Throughout the length and breadth of India wool weaving may be met with, but mainly in the preparation of coarse blankets from wool for which there is little or no market in Europe. Carpet weaving, however, still flourishes, and that, too, outside of the precincts of the gaols. But it is in the Punjab and Cashmere that a high-class native woolen industry exists. In the Punjab, owing to the conservative policy of the rulers of Cashmere, the goods are very superior in quality to those of Cashmere itself, where the finest wools have been retained for the shawl weavers by a protective policy, while the shawl and pashmina industry of the Punjab has been starved of the better wools to such an extent that for many years its looms have been supplied with yarns spun from Persian growths. Amritsar is the Bradford of India, but it has had to share the fate of competition in the production of cheap and inferior goods for a popular market. The industry, however, is a fairly flourishing one and of considerably greater importance than that of Cashmere. The attempt to establish large power-loom woolen mills in India has been fairly successful

As showing the modern character of the Indian export trade in raw wool, it may be mentioned that in Milbron's "Oriental Commerce" (a work published in 1813) there is no separate article devoted to wool, such as occurs on sugar, silk, etc. The Cashmere trade in shawls and fine woolen goods existed, however, and is briefly dealt with. In 1805 the Bombay imports of woolen goods were valued at 345,000 Rs., and in the fiscal year 1890-91 at 7,410,000 Rs., the total imports of woolens in all India being over eighteen million rupees in that year. The first record of exports of raw wool appears to have been in 1834, when the quantity that left India was given at 69,900 pounds Once established, however, the trade grew rapidly, increasing to 486,000 pounds in 1835, 1,196,000 pounds in 1836, 2,444,000 pounds in 1837, and passing over a gap of thirty-five years we find the exports amounting to 24,122,000 pounds, or adding foreign wools (which come to India from the Persian Gulf, or across the land frontiers into Scinde, the Punjab, northwest provinces and Bengal, and are afterwards exported) to 34,133,000 pounds, the figures for the year 1890-1. As to the flock of sheep and goats in India, one authority estimates that it cannot possibly be less than 50,000,000, since the skins supplied annually to the foreign and local markets come well on to 40,000,000. But of that flock, perhaps, more than half are goats, and of the remainder a large percentage yield so inferior a fleece that when clipped and sold it is generally classed as hair instead of wool. It is the wool, however, of the village weavers of coarse blankets, rugs and inferior carpets, but which as a rule escapes registration, since it is mainly used up locally. The wool of Indian commerce to a very large extent is imported across the land frontier, or derived from the Native States of Rajputana, Kattywu, Cutch, and of the Punjab and the Himalaya Dr. Watt doubts if there are 30,000,000 fleece-yielding sheep in India, as stated by one writer, or if such a flock exists at all.

BRODIE gives the following as an effective method of cleaning rusty instruments. Fill a suitable vessel with a saturated solution of stannous chloride in distilled water. Immerse the rusty instruments, and let them remain overnight Rub dry with chamois, after rinsing in running water, and they will be of a bright silvery whiteness

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.

The Belmont, Ont , flax mill is working overtime

E Livingstone, of Belgrave, Ont , is building a flax mill at Blyth, Ont.

M. B. Berry has moved his blanket factory from Quebec to Lorette, Que.

The Norfolk Knitting Mills, Port Dover, Ont., are running over time just now to fill several large orders

T. & M. Johnson's mill at Zurich, Ont , was burned to the ground on July 13 The property was uninsured

The Berlin Brush Co is moving into the larger premises formerly occupied by the J. Y. Shantz & Son Co

The closing of the Yarmouth woolen mill, Yarmouth, N S , has thrown about sixty hands out of employment.

Brodie & Co., Hespeler, Ont , are manufacturing beavers and similar cloths, having recently put in machinery for that purpose

The town of Bowmanville having granted a bonus of $8,000 some Toronto men are starting a rubber factory in that town

W. B. Bradley, formerly of the Ottawa woolen mills of Daigleish & Bradley, is now running a carding mill at Kazuabazua, Que.

It is estimated that there is in the neighborhood of one million pounds of wool in the hands of Manitoba and North-West growers

The Granite knitting mills of St. Hyacinthe, Que., have just put in a new 51-inch water wheel of 183 horse power This gives these mills a total of 750 h p.

The Woodstock, N.B., wrapper factory will be in its new building very soon, when about twenty-five additional hands will be taken on. Thirty-five are now employed.

The Brandon *Sun* says that the manager of the woolen mills at Morden, Man , has bought about 50,000 lbs. of wool from the farmers of southern Manitoba at from 14c to 15c

Chas. E. Stanfield, Truro, N.S., is for the present dropping the tweed and other cloth departments of his mill, and devoting his attention to knit goods, in which his machinery is fully employed.

The famous firm of Samuel Law & Sons, Ltd., Cleckheaton, Eng., will have an exhibit of their card clothing at the Industrial Exhibition in charge of their agent, George Reid, 118 Duke street, Toronto.

Some of the leading woolen manufacturers have met and discussed the question of credits, and have decided that it is in the best interests of the trade to shorten credits by dating ahead a month earlier, namely, 1st September and 1st March, in place of 1st of October and 1st April respectively

Thomas Wardlaw, formerly manager of the Quebec Worsted Co., and more recently of the Worsted and Braid Co , Toronto Junction, recently bought up the plant of Dixon Bros , worsted spinners, Dundas, Ont., and put in new machinery The mill is reported to be fully employed.

The Kingsville, Ont , woolen mills are running full time

J F Haskell has asked for a winding-up order for the Montreal Silk Mills Co

The Dominion Cotton Mills Co. is running its mills, at Moncton, N.B , on half time.

The Canadian Colored Cotton Co. began running the Cornwall mills on half time in the middle of July

The Board of Trade, Amherst, N S is anxious to correspond with capitalists who would establish a woolen mill in that town

The St Boniface woolen mill, just across the river from Winnipeg, was struck by lightning and slightly damaged on Sunday, August 2nd

Dupont & Wilson, oilcloth manufacturers, Kingston, Ont , whose difficulties have already been noted, are now offering 60 cents at 6 and 12 months.

Letters patent have been issued to the Winnipeg Rubber Company, which has been formed with the object of carrying on business in all kinds of rubber goods.

J Walshaw, Bolton, Ont , lost his fine blanket mill, together with the storehouses and a saw mill, by fire August 12th. Loss over $30,000 and insurance but a small amount Mr Walshaw will rebuild at once.

The employees of the Paton Mills, Sherbrooke, Que , presented Arthur D Brodie with an onyx stand and parlor lamp recently, on the occasion of his marriage E Hargrave, Esq , read the address, which was appropriately responded to by Mr Brodie

Edward Oliver, who has had charge of the dye house of the Cornwall Manufacturing Company for over eight years, has now taken in charge the Cornwall Steam Dye Works, 25 Pitt street, Cornwall, Ont., where he is prepared to do all kinds of cleaning and dyeing

The Winger Woolen & Felt Co , Ltd , held its first annual meeting recently, at which the following gentlemen were elected to the board of directors: A. H Erb, *president*, Hy Winger, *vice-president*; J P. Luckhardt, Dan Ratz and Geo. Klinck, sec.-treas., J. S Weichel

A man named Joseph Gervais was killed in Willett's Mills, Chambly Canton, recently, by the bursting of a fly wheel He was struck by a large piece of iron in the region of the heart and instantly killed Gervais was about fifty years old, and leaves a wife and two or three children.

The employees of the W. E. Sanford Manufacturing Co , Hamilton, Ont , held their tenth annual picnic at Mohawk Park, Brantford, Ont., recently. The run was over the new T , H & B. from Hamilton to Brantford The principals of the committee of management were Henry Cartmell, chairman, James Munro, treasurer, and Harry Atwell, secretary

Williams, Greene & Rome, shirt manufacturers Berlin, Ont , presented a trophy to the Canadian Wheelmen's Association, for team competition on Dominion Day It was a handsome affair, of silver, 4 ft 10 in high and 3 ft 8 in circumference, the body representing a Greek vase, having on either side a Greek ewer handle entwining a winged bicycle wheel At the base is a bicyclist, standing by his wheel The pedestal of the cup is polished black and grey marble. It was made by the Meriden Britannia Company, Hamilton, and its winners were a Toronto team.

Mr. Dalgleish, whose woolen mill at Ottawa was burnt down last March, decided not to rebuild in that city, which is now without a woolen mill or even a carding mill. Mr. Dalgleish moved to Campbellford, Ont., where, with his assistants, Messrs. Paterson and Barrett, they took over the old linen mill, till recently operated by Mr. Routh, of Cobourg. The firm is known as Dalgleish, Paterson & Barrett, and they operated two sets of cards with eight narrow looms and two more broad looms to be put in. They are now manufacturing tweeds and sell their own goods to the trade The building is a fine one and has a capacity for four sets of cards.

Wm Parks & Son, Ltd., cotton manufacturers, St. John, have built a new warehouse for the Courtenay Bay mill. This mill is fairly humming with business, and is now filled with orders, one of its specialties being the new flannelettes which have proved so popular with the dry goods trade. New and handsome patterns in these goods are now being designed, and the goods are being got out in better finish than before. Part of the mill is at present running at night Six new napping machines are being put in. The St John mills are very favorably situated, both for good work and cheap production They are right on the sea shore, where coal can be landed direct from the Springhill mines, while the situation by the sea side gives the moisture so essential in good cotton spinning.

TEXTILE EDUCATION IN THE UNITED STATES.

Two rooms in the Parker Building, Lowell, Mass., have been leased for the new textile school. The 10,000 square feet of floor space will afford ample space for the opening of the enterprise, and the work of fitting up the rooms has begun. The machinery will be in part like that in regular use in the mills, though some special machines will be necessary. The course of study, the number of instructors and the admission to the school are things yet to be considered, but it is the aim to help the employees rather than graduate nothing except superintendents and overseers. There will be day and evening classes, and courses of lectures for which some of the experts in Lowell manufactures will be called upon. Several applications have been made for the position of principal. The school will have $50,000 in sight when it opens, but some private contributions are expected, and there will be some income from tuition.—*Textile World.*

A CORRESPONDENT in New Britain, Conn., U.S.A., writes that business is very quiet in most parts of the United States at the present time; there are a few special manufacturers that are having a demand for all that they can make, but in general the trade seems to be waiting for the action of Congress, and for encouragement in orders before extending the general departments of business. It is hoped that after the Fall elections business will revive.

CHEMICALS AND DYESTUFFS.

Orders are fairly numerous but small in value. Trade generally seems very quiet, but this is to be expected at this season. The following are current quotations in Montreal.—

Bleaching powder	$ 2 00	to	$ 2 10
Bicarb soda	2 25	"	2 35
Sal soda	0 70	"	0 75
Carbolic acid, 1 lb. bottles	0 27	"	0 30
Caustic soda, 60°	1 80	"	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 08	"	0 09
Cocoanut oil	0 06½	"	0 07

PRACTICAL DYEING CHAMBERS.

It is a well-established fact that the simplest contrivances and arrangements for accomplishing certain purposes are generally the best For instance, I came across many dyeing devices in my long practice, that were fitted up with all manner of devices and auxiliaries, says K., in *Textile Zeitung*, and had been gotten up regardless of expense, still their rendition did not pay—stood in no proportion to original cost On the other hand, I remember a very simple and at the same time exceedingly cheap working dyeing arrangement. It was as follows Brick gutters in the floor of a plain room 3¼ meters [12½ feet high], containing ribbed heating pipes which received their steam direct from the boiler A few funnels were dug at their level outside the walls, they admitted air into the gutters which contained the heating pipes that had the necessary slope on account of the condensed water. Above in the ceiling were openings for the air to escape to the outside. The bleached dyed and printed fabrics and yarns, to be dried, were suspended on poles from the ceiling to the floor These poles were laid parallel upon a frame immediately underneath the ceiling, and could be pushed closely together Fresh air passed constantly over the heating coils below, was well and rapidly heated, mounted upward through the material and escaped to the outside, creating so energetic a current of air that the material moved to and fro, dried quickly, and could be taken out soon This simple arrangement also exerted a marvellous influence upon the fullness of the material Plushes and chenilles became exceptionally handsome, plain cotton goods became fuller and richer in quality than by any other kind of drying I have used before or since The escape of the air to the outside could be regulated at will by means of slides at the holes For new drying chambers I can recommend this kind of disposition warmly It is specially appropriate in high rooms, as the hot air can be used to thorough exhaustion.

WOOL MARKETS

TORONTO.—The wool market remains featureless with nothing but a little hand-to-mouth buying on the part of the manufacturers going on. The prices of Canadian wools are temptingly low, but still fail to draw trade We quote clothing, 20c to 22, according to the selection, North-west wools, 9c to 11 Foreign wools remain unchanged

MONTREAL.—A fair amount of Cape wool has been sold recently at 15½ to 15 cents, but the manufacturers are complaining about the very small orders for next Spring season's goods A great many in the trade have not seen fit yet to give any orders Some are making a handle of the fact that the manufacturers changed their date a month ahead without consulting the rade A few lots have been sold of fine B.A. at 32½ to 33c; merican woo's have been offered freely in this market without much business being done.

THE ENGLISH COTTON TRADE.

Two classes of the manufacturing community who are ordinarily given, with much excuse, to grumble at the times, are doing at least fairly well. Cotton spinning has not been so prosperous for some years. English calico printers, says the *Manchester City News*, ought to have had a good six-months' business; but they are chronic grumblers, and it need not be expected that any of them will own to the fact Last year would have been the biggest year on record if it had not been for the falling off in the Indian trade—owing to re-imposition of the duties and the uncertainty of their duration—of sixty million yards. During the last six months, however, the exports to India were forty million yards in excess of those for the same period last year, and as other markets, excepting Turkey, are also better, the probabilities are that when this year closes a record will have been established Moreover, the home demand for summer goods is lively, the taste being for designs of a floral and fancy character, which for the most part can only be produced by calico printers. For purposes of reference we append the following interesting figures —

SIX MONTHS' EXPORT OF PRINTED CALICO

1891	450,700,000	yards.
1892	461,700,000	"
1893	487,000,000	"
1894	500,800,000	"
1895	468,800,000	"
1896	530,000,000	"

GERMANY publishes about one book each week on one of the various subjects of textile manufacturing. England publishes at least one every month Technical education is best recognized in Europe by Germany and Austria having nearly one hundred and fifty textile schools, and these under government control, *i.e.*, the teachers, being appointed by the government, advance gradually to a more important position with reference to location of school and higher salary, and this method makes teaching textile manufacturing a live study.

SULPHUR TRUST.

Following several months of quiet negotiation, announcement is made of the amalgamation of the sulphur mining interests of Sicily Advices of the completion of the transaction are confirmed by New York brokers Consumers, we understand, have been for some time indulging in more or less speculation as to the purpose of the promoters of this great movement which effects the sulphur producing industry at its most important source, and involves some four or five million dollars capital As a matter of fact, the prime object of the trust is the maintenance of the price of sulphur in the markets of the United States and elsewhere. The consolidated sulphur interest, which will be known formally as the Societa Anglo-Siciliana, will inaugurate its duties by fixing and making the strongest endeavors to maintain what it considers a fair price for sulphur and by products This price will be based, for the present, upon the standard quotation of $15.94 per ton, for best seconds, unmixed brimstone, aboard the vessels at Sicilian ports. The new company is empowered to regulate the production of sulphur to meet the demand, which authority appears ample to materialize the desired end, particularly as English reclaiming interests are involved in the new deal, and the consumers of sulphur have no appeal from the dictation of the trust The abrogation of the Italian export duty upon sulphur, of $1 98 per ton, obviates just so much of the expense of production, and is sure to be appreciated by the consumers Imports to the United States during the past year of crude sulphur and brimstone aggregate, approximately, 150,000 tons Sicily furnishes three quarters of the sulphur product of the world, though English reclaimers, with a present annual production of 40,000 tons, are gradually increasing their output. Japan, with its "drop in the bucket" to day, is making some progress in the sulphur industry, though developments now are but in their early incipiency — *Ex*

THE SAMPLE EVIL

Much attention is now being given by our American contemporaries to the evils of sample cutting One of them says —"The expense of this practice, which comes largely upon the manufacturer, is quite an item, and the manufacturer might be justified in refusing to stand it on this ground, it would be difficult to prove to him that it was a profitable and necessary expense. The growth of the practice has been marked this season, some clothiers who have heretofore not availed themselves of it have made requests for samples, and the average commission merchant is forced to keep a small staff steadily employed in cutting and preparing them. It is also large expense for the commission agent, and in many instances a needless one There was a time when buyers did not require any samples, and certainly they bought just as intelligently as they do now. It is probable that there are more lines now than then, and values being so much closer that a closer examination and comparison of fabric are necessary Still there are some buyers who have not felt the necessity for resorting to this practice —they buy in the old way, and are just as successful as those who have adopted the new idea But granting that the practice is essential, that is, that it is necessary for the clothier to have samples in the various lines before him in order to assist him in arriving at a correct conclusion, it is not possible to devise ways and means to the same end without permitting of the many abuses? The buyer merely needs the samples for comparison, beyond that they are of no value to him, then why should he be given them to do with as he pleases? There would be less abuse of the system, and less objection to it, if the buyer should return the samples immediately after he was done with them. One agent says he is going to bind a lot of small samples to loan to the buyer, probably he may gain something by doing this It is evident that something will have to be done for self-preservation, there is a lack of business morals and mercantile principles in the system as practised to-day.

FEWER NEW MILLS IN THE SOUTHERN STATES.

The so-called syndicate of cotton machinery builders, located in Massachusetts, which has been supplying machinery to Southern mills and taking a large portion of the payments in the shares of the capital stock, had a meeting within a short time and came to an understanding that the members of it would no longer furnish machinery to Southern mills and take payment in stock the same as they have done heretofore, but furnish machinery only for cash or its equivalent It has been not uncommon for these concerns to take 25 per cent in cash, 25 per cent in a twelve months' note, or longer time, and the balance in stock. The probable effect of this understanding will be less cotton mill building in the Southern States The erection of cotton factories in the South has been overdone and the time has arrived when conservatism should govern the ambition of the people in that section towards the erection of cotton mills

THE EFFECTS OF ADULTERATION.

In the last annual report of the Rangoon Chamber of Commerce there are some interesting remarks on the subject of the adulteration of textile goods. It appears that until recently there has been a great demand in the Burmese market for the silk wares manufactured at Surat. But during the last two or three years that demand has been steadily decreasing, and the silk weavers of the old presidency town have consequently complained so loudly that their wailings have reached the Rangoon Chamber of Commerce, which has accordingly instituted an inquiry It was believed that the competition of inferior goods, "made in Germany," would be found at the bottom of the falling off in trade, but such has not proved to be the case, says the *Draper's Record*. The increasing poverty of the lower class Burmese has induced them to substitute to a considerable extent cotton for silk in their wearing apparel; but this is not the main cause of the decrease in the demand for Surat cloths That cause is to be found in the conduct of the weavers themselves They have lately taken to reducing the quantity of the silk in their manufactures, making up the deficiency in weight by the use of such substances as sugar, salt, flour, etc. Naturally, textiles thus compounded neither wear nor wash well, and accordingly the once great popularity of Surat silk goods in Burma has almost disappeared. The Rangoon Chamber recommends that a return be at once made to the purer manufactures of three years ago. No doubt this is the right step to take but whether it will have the hoped-for effect of again securing Burma's custom for Surat is another matter Trade lost in the manner described is not often regained

THE woolen mill at Pakenham, Ont, has been closed down for some time during the building of a new dam

A WOOLEN mill is spoken of for Cobden, Ont