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# CANADIAN Journal of Fabrics

THE JOURNAL OF THE  
Textile Trades of Canada.

Vol. XX.

TORONTO AND MONTREAL, JULY, 1903.

No. 7.

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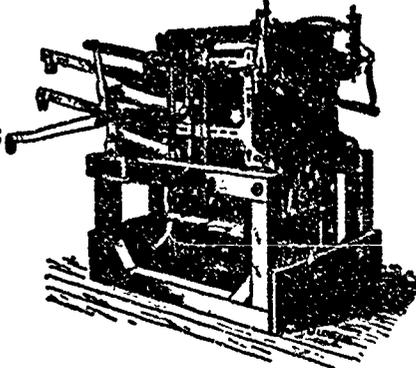
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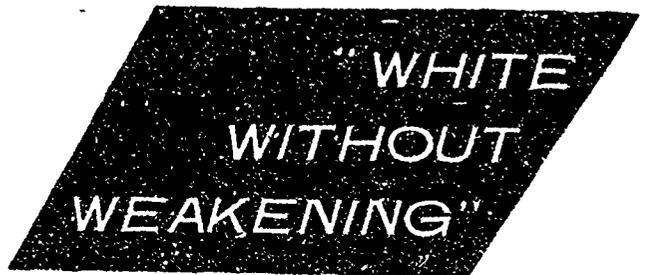
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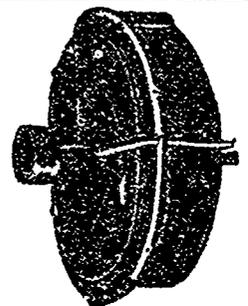
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# Canadian Journal of Fabrics

THE JOURNAL OF THE  
Textile Trades of Canada.

Vol. XX.

TORONTO AND MONTREAL, JULY, 1903.

No. 7

## Canadian Journal of Fabrics

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

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### THE CANADIAN TEXTILE DIRECTORY

A Handbook of all the Cotton, Woolen and other Textile manufacture of Canada, with lists of manufacturers agents and the wholesale and retail dry goods and kindred trades of the Dominion, to which is appended a vast amount of valuable statistics relating to these trades. Fourth edition Price, \$3 00

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### THE TEXTILE STRIKE AT PHILADELPHIA.

A strike among the textile workers of Philadelphia, which has been on for six weeks, is one of the most wide spread which has occurred for some time and is characterized by some remarkable features. One of these was a labor demonstration, when thousands of striking textile workers marched from Independence Hall to the City Hall, where a mass meeting was held. The feature of the parade was the army of children employed in the textile mills. Each youthful parader carried a small United States flag. There were numerous banners con-

taining inscriptions. One bore the simple statement "We want to go to school." There were in all about 100,000 textile workers on strike, but some of the unions are weakening. The Brussels Carpet Weavers' Union, which struck for 55 hours' work per week, decided to return to work on the old basis of 60 hours and at the same wages. The Carpet Manufacturers are determined to resist the demands of operators. Every Brussels and Wilton Carpet and Rug Mill was shut down except one, and all the Ingram Mills except a few very small ones. The labor leaders find it very difficult to prolong the strike. Of 1,550 hands employed in the John Dobson Cloth and Blanket Mill, 1,400 returned to work on the basis of 60 hours per week.

An incident in connection with the strike is told by the Carpet Trade Review, which throws a somewhat lurid light on the spirit which sometimes actuates employees. A weaver in one of the carpet factories had been drawing the lowest pay of any in the mill, and the manager had concluded to discharge him and put a man on the loom who would get out the fullest product, or at least an output to compare with other weavers. As payment was by the yard the wages depended on the steady application of the weaver. When told that he was to be discharged because he did not earn as much as the other weavers the man was greatly astonished, and said he had not exerted himself fully because he feared the concern would cut down the rate of pay per yard if his wages were higher. He begged for a new trial and at once began to turn out the standard product, and is still on the company's pay roll. These Brussels and Wilton weavers earn from \$20 to \$30 per week, and this company have paid as high as \$64 for two weeks' work. Their weavers joined the other textile workers in demanding a fifty five hour week.

### GRASS BINDER TWINE AND ITS ADVANTAGES.

Another material for binder twine has come to the front, namely, wire or marsh grass. The Munnie Harvester Co., an auxiliary of the American Grass Twine Co., is offering it to the farmers of the North Western States. Its advantage to both the dealer and farmer in cost is thus figured out. One pound (500 feet) Sisal or Standard costs the dealer say 10 3/4 cents. 500 feet Grass Twine costs the dealer exactly 6 1/4 cents. Saving on each 500 feet in favor of Grass Twine, 4 1/2 cents. One pound (500 feet) Sisal or Standard retails for say 12

cents. 500 feet Grass Twine (at one-third cheaper) retails for 8 cents. Saving to the farmer on each 500 feet, 4 cents. It takes from 2½ to 3 pounds (1,250 to 1,500 feet) Sisal or Standard to bind one acre. The saving, therefore, on one acre is from 10 to 12 cents. The saving on 100 acres is from \$10 to \$12. Outside figures are probably given in the above, as ordinary wheat requires about two pounds to the acre. Another way of putting the matter, so far as it affects the dealer, is this: On eleven cents invested in 1 pound (500 feet) Sisal or Standard the dealer makes a profit of 1¼ cents. On six and one-quarter cents invested in 500 feet Grass Twine the dealer makes a profit of 1¼ cents. On sixty-nine cents invested in 6 pounds (3,000 feet) Sisal or Standard the dealer makes a profit of ¼ cents. On sixty-nine cents invested in Grass Twine the dealer makes a profit of 19c. Commenting on these figures the Minnie Co. says: On the same amount of money invested the dealer makes nearly three times as much profit on Grass Twine as on Sisal or Standard, and at the same time saves the farmer from ten to twelve dollars on every hundred acres cut.

—The Vacuum Cleaner Co., a concern for cleaning carpets by a plan similar to what is known as the dustless process in this country, has been before the police court in London for using the streets for its vans containing the engine by which the motive power for the process is generated. The magistrates were in a quandary what to do and reserved decision. The system does not appear to be popular and referring to it the Textile Mercury speaks of the carpet cleaning trade as having developed along queer lines.

—A majority of the cotton mills in South Lancashire, England, closed the end of June and it is feared this may lead to great distress. The immediate cause was the continued heavy advance in raw cotton, which seems to have been to some extent unwarranted, but it was also due to the multiplication of mills in recent years. The system of raising the capital for the establishment of new mills is a bad one, three-quarters of the money generally coming from mortgages and loans. The result is that the mill owners are not able to face a situation like the one which has just arisen with any confidence.

—As announced by Hon. Mr. Fielding in the budget speech, the Government has adopted measures for the relief of the binder twine manufacturers, who were handicapped by the export duty on raw manilla imposed by the United States on fibre shipped from the Philippines. A bill introduced in the House of Commons authorizes the payment of a bounty to any corporation, firm or person manufacturing binder twine in Canada, such bounty to be equal to the amount paid as export duty in the Philippine Islands on manilla fibre produced in such islands and used in the manufacture of binder twine in Canada. Such bounty shall only be payable in respect of binder twine manufactured on or after the 1st day of September, 1902, provided, however, that the bounty shall not

exceed three-eighths of one cent per pound on the manilla here so used in the manufacture of binder twine. The Government in-Council may make regulations to carry out the intention of the act.

—The Stewart-Hartshorn Co., well known in connection with the manufacture of shade rollers, has issued a circular to its employees, in which it offers to reduce their working hours, provided they avoid loitering, tardiness, and careless work, so that the output shall not be less than when the ten hour rule was in force. A Saturday afternoon holiday is offered from April 1st to Oct. 31st., the working hours for the balance of the year to be from 7 a.m. to 5.10 p.m., with the usual hour for dinner. This is an experiment. If the output is reduced a return to the old system will be made.

—The strike of 18,000 cotton mill employees at Lowell, Mass., which commenced March 30, 1903, may now be said to have terminated. It is estimated that during the months of April and May the strikers lost about \$1,300,000 in wages they would have received if working. The loss to storekeepers, landlords and local tradesmen of all classes can only be guessed at. The strikers have failed to secure the ten per cent. asked, but the labor leaders claim the strike has been a benefit in that it has strengthened the labor organizations, but it is difficult for an outsider to see the matter in that light. It almost seems as if over a million dollars had been wasted for worse than nothing. In resuming work no discrimination is made against the strikers who are being taken on as fast as possible.

—Although centralization is the tendency of the day, it does not appear to be the condition in Chicago, which is the centre of a large trade in manufacturing clothing for men and women, amounting annually to about \$80,000,000. There are two or three enormous establishments in the city, employing a large number of hands, but in 1900, when the census was taken, out of 900 establishments making men's and 169 making women's clothing, 835 and 137 respectively employed under 50 hands, and although the number of establishments had increased 799 in number in ten years, the number of workpeople had increased very little. Women's clothing is manufactured to the amount of over \$10,000,000, but this does not include the output of the dressmaking establishments, whose output is valued at \$70,000,000 more.

—A notable result of the labor troubles of the times is the formation at Waterbury, Conn., of a company to insure manufacturers against losses by strikes. The company, which has been incorporated, may insure a manufacturing or industrial plant against losses by flood and epidemic, but the main purpose will be insurance against losses by strikes. The National Manufacturers' Association of the United States is planning for a similar insurance company. The president of the Association in the course of some recent remarks on this subject, said: "It will be a mutual company, and the membership will

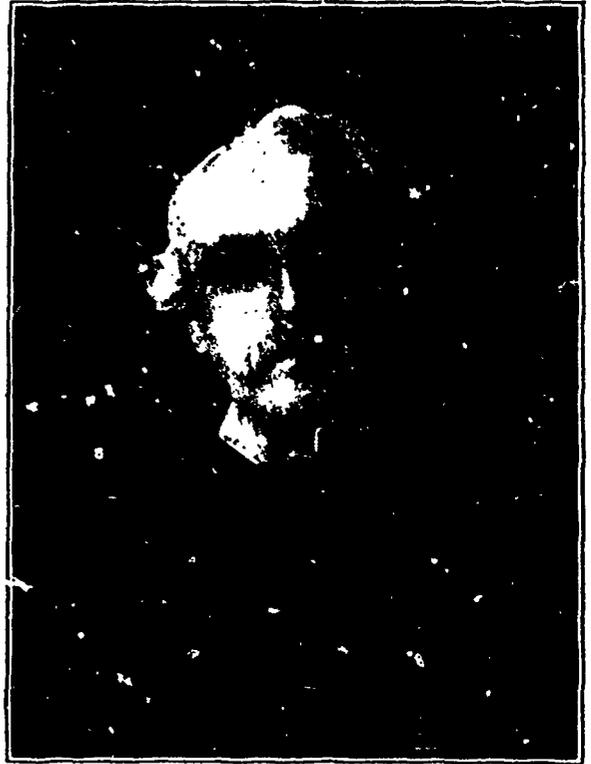
be kept secret, only its officers being known. Then organized labor will never know when it orders a strike whether it is really fighting combined capital or merely making an onslaught on the individual. The object of the company will be not only to protect its policy-holders from losses resulting from strikes, but also to protect independent workmen who care to exercise their great American privilege of working for whom they please and for what they please."

—Although the renting of machinery is not unknown in Canada, most of the textile manufacturers own their plants except in the case of furnished mills. But it is not so in Japan, where much of the machinery used, even in the model mills, is hired. Mr. Yamaguchi, an expert in the Department of Agriculture and Commerce, who was sent last year to Europe and America to purchase weaving machinery to be let out on hire to weavers in Japan, was commissioned by several Japanese weaving firms to purchase machines, and has spent in this way some 35,000 yen in America, and the same amount in Lyons. At Zurich he bought machinery to the value of 15,000 yen, and in Germany he spent 25,000 yen, the purchases including velvet-weaving and dyeing machinery. The American looms are to be loaned to the Ashikaga Model Weaving Factory, and those from France to the Kiryu Model Weaving Factory. The French habutai looms will be lent to the Fukui Weaving School, and the dyeing and other machines to the Yonezawa Model Weaving Factory, while the velvet looms will go to the Kyoto Model Weaving Factory.

#### ON THE LINE OF THE TRANS-CANADA.

In an interview with the Toronto Globe, Vaughan M. Roberts, civil engineer, who was at the head of a party surveying over the route of the projected Trans-Canada railway, told of the great resources of Northern Ontario in waterpowers, pulp timber and minerals. These resources appear to be equal to those of Northern Quebec. The Abitibi River, for instance, which at a distance of a hundred miles from its junction with the Moose averages four hundred feet in width, contains numbers of magnificent water powers, awaiting development, varying from 15,000 to 150,000 horsepower each. The banks of the river are lined with the best of pulpwood of all descriptions, which is practically valueless, however, until it is made available by the construction of a railway into the territory. All this immense territory, with its enormous natural products, will be tributary to the trans-Canada railway, whose mission it will be to develop it. It is, at present, its only hope. The tributaries of the Moose River possess powers equally good, if not better, than those of the Abitibi. There is one alone on the Missanabie, not far from the proposed crossing of the river by the railway, which is capable of developing at least a quarter of a million horse power. Above this fall there are three others within a distance of four miles, having altogether a fall of about 300 feet, capable of furnishing fully half a million horse power. Apart from its great wealth of timber and pulp wood, there is much excellent agricultural land in this northern country, and indications of very great mineral wealth. Mr. Roberts says that there are a number of smaller rivers flowing into the large tributaries of the Moose, already mentioned, from the east, which also furnish splendid water-

powers. He reports that the general features of the country are level, affording splendid opportunities for comparatively easy railway construction. It is also possible to obtain very easy crossings of the river for a railway. In some localities they spread out into shallows which may be waded. At others they contract at waterfalls into very small space, and are often divided into two or more streams by rocks or islands.



THE LATE A. F. GAULT.

A. F. Gault, of Montreal, head of the wholesale dry goods firm of Gault Bros. & Co., died on July 8th, in his 70th year, of Bright's disease. He was born in Ireland in 1833, and came to Montreal as a boy. He started in the wholesale dry goods business in 1854 under the firm name of Gault, Stevenson and Co., which in 1857 became Gault Bros. & Co., and under his direction developed into one of the largest dry goods houses in the Dominion. Mr. Gault was practically the leading spirit in promoting the cotton industries of this country, and the present advanced stage of the cotton manufactures is very largely due to his business enterprise, energy, and sagacity. He was president of the Montreal Cotton Company, of the Globe Woollen Mills Co., of the Dominion Cotton Mills Co., of the Campbellford Woollen Mills Co., and of the Canadian Colored Cotton Mills Co. Besides his business connections, which included directorships in banks, insurance companies and other corporations, he was a prominent figure in educational, social, and religious life. He leaves a widow, one son and a married daughter.

#### LITERARY NOTES.

"The All Red Line" or "The Annals and Aims of the Pacific Cable Project" is the double title of a valuable record of the development of the movement which has resulted in the completion of the state-owned cable connecting the British American colonies with the great colonies of the South Pacific and by them the British Empire in Asia with the Motherland.

George Johnson, the Dominion Statistician, is the editor of this volume of 486 pages which is published by James Hope & Sons, Ottawa. In reading the instructive history of this project one cannot help being struck by the perseverance and penetration shown by the Canadian public men whose work made this ideal a reality—and these qualities may be said to have been incarnated in Sir Sandford Fleming, whose courage and persistency nothing could daunt. The Pacific cable may be termed the great sciatic nerve of the nervous system of the new federated British Empire, and occasions may not be far hence when its vital importance will be demonstrated.

The current issue of the Canadian Magazine contains the essay which won the \$250 prize given by Sir Sandford Fleming for the best paper on journalism in its relation to education. The prize winner is A. H. U. Colquhoun of the staff of the Toronto News. Mr. Colquhoun's article is noteworthy, both for the high ideals it holds before the journalist as a public servant and for the good-will he displays both towards the journalist and the university.

The Prince Edward Island Magazine maintains its speciality of local history and island scenery and the future historian of our fertile island province will find in these pages a museum of both raw and finished material for his work.

The Delineator for August is an excellent mid-summer number. It presents the usual array of fashions, as well as numerous other features of interest to women, and stories and articles. In fiction, there are four stories that will furnish good reading for lazy summer afternoons, also the fourth instalment of Mrs. Catherwood's story, The Bois-Brules, scenes of which are laid in Canada, and in which the action becomes very thrilling.

Though the July Century Magazine is what is called a "picture number" A. Coulden's two papers are of serious interest. One, under the title of "Who was Hammurabe?" by Dr. Ward, gives us light on the character and surroundings of the greatest statesman of primeval days. Moses alone excepted. The article tells us about the recent discoveries at Susa by which the earliest code of law was unearthed. The other article is the first of a series of papers on that great religious reformer, John Wesley.

The managers of the Eastern Exhibition at Sherbrooke have issued the prize list for 1903. The enterprising textile metropolis of Quebec always gets up a good show, and its textile department includes woolen piece goods, knit goods, cotton goods, carpets, clothing, home-made flax and hemp goods and furs. The dates are Aug. 29th to Sept. 5th.

## Foreign Textile Centres

Belfast.—There has been no change in the general condition of the manufacturing branch of the market throughout the month. In the case of power-loom goods, producers have plenty of work for months to come, and do not appear to be at all eager for further engagements. Prices are firm, with upward tendency. Brown power-loom bleaching cloths in the light, medium and heavy descriptions have sold fairly well, though possibly there is a slightly quieter tendency in the last mentioned. Dress fabrics are being bought freely; demand shows every sign of continuance and prospects in this department are very encouraging. Damasks and house-keeping goods are selling quietly but steadily, the aggregate of orders placed during the month comparing well with those of the previous one. The handkerchief end is rather sluggish,

linen sorts being very flat. In other directions there is no change to chronicle. In bleached and unbleached linens the house trade has made further headway.

Bradford.—In spite of various adverse influences and the extremely quiet present-time demand for wool textiles, the quotations of all classes of both colonial and home-grown wools remain extremely firm in this market. Stocks of pure merino, in the hands of both combers and merchants, must be getting unusually small, and as there seems to be no possibility of any large supplies being thrown on to the market, holders of both raw wool and combed tops are quite prepared to wait patiently until users are forced into the market.

Burnley.—The outlook in the cotton trade is gloomy. Over 7,000 looms in the town are working short time, and a large number are stopped, waiting for warps.

Dundee.—There has been an unexpected and sharp rise in jute, due to the details to hand showing a very short crop. According to the Government report, indications point to a crop but 75 per cent. of a normal yield. Last year's crop was actually 5,800,000 bales, this year's estimated crop is said to be 5,400,000. In connection with this must also be taken into consideration the fact that last year's crop was not a full one. Hessians are quiet and not a few looms are stopped. Only the best qualities hold their value. In flax the new crop is generally reported to be promising well. Good flax, with strength and fine fibre, is difficult to buy at any price. Low qualities are cheaper. Linens are quiet, but orders are rather more plentiful. The higher price of cotton goods rather stiffens the fine end of the linen trade. The demand for fancy jute goods remains quiet. Jute cords, ropes and twines are all in good demand, and this industry is becoming an important part of the jute trade.

Huddersfield.—Woolen manufactures find it difficult to secure new orders. Worsted manufacturers are quiet. Prices for wools keep up well, but demand is slack. Some patterns are being shown for next spring trade in plain greys, fancy vestings, and striped trouserings, but little business has been done.

Kidderminster.—The local carpet trade continues to show signs of considerable activity, although the season is drawing to a close. Foreign and colonial orders are keeping some of the looms employed. The increased demand for Wiltons and the best grades of Brussels is a satisfactory feature. Many manufactures are now busy stocktaking. This is checking the delivery of yarns.

Leicester.—The volume of business in the yarn market shows steady expansion. The hosiery industry is again more active, and the deliveries, especially for colonial markets, are much above the average.

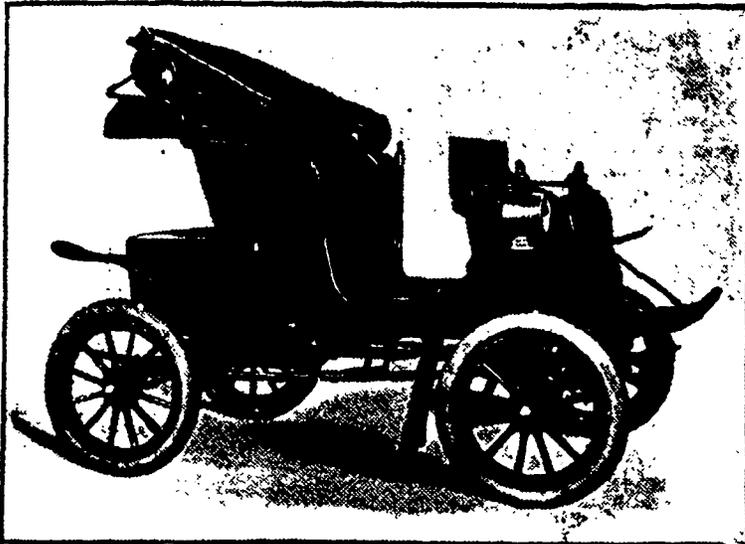
Leeds.—More seasonable weather has not increased orders for woolens or worsteds, and though there is a fair business in fancy tweeds and similar fabrics, there is lack of demand in the higher and lower branches of plain goods. Worsted manufacturers, excepting those who have caught the market with attractive summer designs, have a poor trade, and to a large extent short time at the mills is the order of the day. The medium branches are more active, but all round consumption is below the average. Low class woolen manufacturers are working on orders for forward delivery, but they are not busy. Patterns for next spring are now being shown, and the clothing houses and woolen merchants are completing their samples and patterns for the winter trade. Ready-mades are in better request, but the demand is not equal to the production.

Manchester.—A meeting of the Federation of Manchester

cotton spinners, held recently, adopted a resolution that in view of the grave condition of affairs in the cotton trade, the whole trade stop for one week, and on Saturdays and Mondays thereafter until further notice. It is expected that operations in nearly all the factories in Oldham, Higginsham, Hollinwood, Failsworth, Royton, Middleton, and Crompton will be suspended from Friday night until Tuesday morning. In some districts the mills will work only four days weekly, and in some cases only three days. Cloths and yarns are quiet, with very little business doing.

Rochdale.—A great deal of machinery is idle in this district. In the flannel market there are indications of rather more activity. Merchants have for some time past bought sparingly, and are keeping their stocks within narrow compass. Many manufacturers are curtailing production, owing to the high price of wool.

South of Scotland.—The linoleum and floorcloth works are all busy, and there is weekly a large send-off of these goods. The state of trade in the district is without appearance of any particular change. The demand for linen goods has been well sustained, but manufacturers are still observing great caution in the buying of yarns.



**STEVENS-DURYEA AUTOMOBILE.**

The "Stevens-Duryea" Automobile, made by the J. Stevens Arms & Tool Co., Chicopee Falls, Mass., is put on the market as the highest type of gasoline carriage manufactured and is equipped with a 7 horse power, 2 cylinder opposed motor of the 4 cycle type. It has three speeds and reverse, all operated by the same lever; is a two passenger carriage with a drop seat which can be instantly converted into a four passenger carriage; is of the Stanhope type with artillery wheels, fitted with either Fisk or Diamond double tube tires, Victoria or buggy top and full equipment. A few of the special advantages of the car are these: that it starts from the seat; has an individual clutch system making it practically noiseless and free from the vibration that is so noticeable in all other gasoline cars; it is a powerful hill climber and, though not built for a racing car, will readily speed 30 miles an hour.

The regular stock cars of the Stevens make have won the following races: September 24, Providence, R.I., 5 miles in 7.42. Track record for 1 to 5 miles for Gasoline Machines under 1,300 lbs. Oct. 9-14, 500 miles, New York—Boston—

New York, "Scarritt Cup." Two machines entered, both awarded first-class Certificates. November 27, Orange, New Jersey—Eagle Rock Hill. Time 3.45. Gasoline Car Record. April 25, Boston, Massachusetts—Commonwealth Avenue Hill. Time .43 1-5. Gasoline Car Record under 2,000 lbs. not only defeating cars in its own class but the time of every gasoline car entered.

### NEW TEXTILE COMPANIES.

The following new textile companies have been incorporated:—

Gaults, capital \$750,000; Winnipeg; to carry on the business, both wholesale and retail, of general dry goods merchants, drapers, haberdashers, milliners, dressmakers, tailors, furriers, lacemen, clothiers, hosiers, glovers, and general outfitters; James Rodger, of Westmount, Que., Henry M. Belcher, Frank G. Crawford, John D. Brown, and Isaac Pitblado, of Winnipeg.

The Bell Thread Co., capital, \$49,500; Montreal; Walter Bell, Alfred Mellor, John S. Mellor, Dora J. Mellor, and Stanley Canevan, all of Montreal.

The Western Leather Goods Co; capital \$40,000; Toronto; W. H. Ketchum, of New York, W. E. D. Tighe, of Toronto, and others.

The Dominion Coat and Apron Manufacturing and Supply Co.; capital \$40,000; Toronto; David Millar, Howard C. Hoops, Harry Miller, Kasel L. Sapera, and Joseph Hoops, all of Toronto.

James H. Wylie; capital \$50,000; Almonte; to carry on woolen manufacturing; James H. Wylie, William H. Wylie, James W. Wylie, John B. Wylie, A. C. Wylie, and Rebecca Wylie, all of Almonte.

W. H. Storey & Son, capital, \$100,000; Acton, Ont.; W. A. Storey, A. E. Nicklin, H. P. Moore, of Acton; W. J. Chapman, of Wingham; D. D. Christie, of Guelph and John Firstbrook, of Toronto.

The M. J. Wilson Cordage Co.; capital \$55,000; Chatham, Ont.; M. J. Wilson and George McGarvin, of Harwich, and Thomas Wilson, Richard Cochran and Richard W. Baldwin, of New York.

The Monarch Manufacturing Company; capital \$20,000; St. Remuald, Que.; to manufacture shirts, collars, cuffs, &c; Alice Robitaille, Phileas Trahan, of Quebec; Eustache Lamontagne, Oscar St. Laurent, and Eugene St. Laurent, of St. Remuald.

Clothing Cleaners; \$20,000; Montreal; to deal in wearing apparel; Alfred Prendergast, R. L. Richards, M. J. Lachapelle and C. A. Austin, of Montreal.

La Chevrerie Canadienne; \$20,000; Montreal; to establish and propagate a Canadian breed of goats; charter members, Emile Galibert, Rodolphe Tourville, Edouard J. Chapleau, Oscar Dufresne, Raoul Lacroix, all of Montreal.

Charles Twining, representing a number of English lace manufacturers, is investigating labor conditions in the province of Quebec with a view to establish lace-making factories after the models which prevail at Nottingham, England. There is no lace curtain plant at all in Canada, and from what Mr. Twining has already seen he thinks it is quite possible that Quebec may be making lace curtains before long. The Granby Leader-Mail offers an empty factory building in that town.

**BUSINESS NOTES.**

The Eastern Townships Clothing Company, Sherbrooke, has been incorporated.

Clark Wright & Son, an old firm in Kingston in the fur business, has failed and the assets are to be sold by auction on July 15th.

The Northwest Button Co., of Winnipeg, wholesale dealers in buttons and fancy goods, have dissolved. Harold A. Zuelsdorf continues the business.

The partnership between B. N. Fraser and Franz Schneider, under the firm name of the Morden Woolen Mills, at Morden, Man., has been dissolved.

Leave to appeal has been refused to the Royal Steam Laundry Co., Hamilton, in the case of Amelia Priscilla Pearce, who recovered \$422 damages against them for injuries received while working in their laundry in May, 1902.

The trial of Messrs. Bachrack, Blakley and Levey, in connection with the Margolius fraud, will take place in Montreal at the September term of the Court of King's Bench. Margolius, who was arrested and extradited from Chicago, and who will be the chief witness against them, is out on bail in the sum of ten thousand dollars.

The Thorpe & Maddock Manufacturing Company, wholesale clothiers, Toronto, have made an assignment to E. R. C. Clarkson. The failure was entirely unexpected, as the clothing manufacturing trade is considered to be in an exceedingly prosperous condition. The liabilities are placed at \$30,000. In 1892 the company was incorporated as a joint stock concern with a capital of \$100,000, of which \$25,000 is paid up. It is said that a lack of capital brought about the failure. A statement is being prepared.

**SOME INDIRECT BENEFITS DERIVED FROM NEW MACHINERY.**

We have often heard it remarked that to see a mill equipped with the very latest and best machinery it was necessary to go either to India or to Finland, and that such a sight was rare, if not unknown, in England. Needless to say, such remarks are obvious exaggerations, but still they have a large element of truth in them. English manufacturers depend very largely upon the skill of their operatives, while countries new to the industry in its modern power-driven form try to offset the ignorance or clumsiness of their work-people by the use of the very best apparatus and machinery it is possible to obtain. There is a probability that the difference between Great Britain and the countries to which she exports her best textile machinery, will, at a later day, have another phase, for it is the use of the most improved machinery which is most likely to develop the spirit of improvement. In other words, the mechanical ingenuity of the average British operative suffers because in only rare cases does he see machines before they have been on the market for many years, while some of our colonial and foreign contemporaries see the latest machines and no others. The advantage of being continually amongst perfected mechanisms is of no slight value, and it is an advantage which only a limited number of British textile operatives possess in its fullest sense. The same may be said of foremen and managers in mills—the persons who are generally credited with new ideas, or who take out the patent for any invention. These men are really superior operatives, but although possessed of greater mental power, they are as dependent upon their environment as are those in a lower station. The same may even be said of masters

and directors, for although notable inventions are sometimes made after a superficial study of a machine, they are more often the outcome of daily association with, and constant work on the machine which is improved. Then if the machine is an old one, the ideas of those who see improvements rise only a stage higher than the known machine, while the very improvements so matured may have been introduced years before, unknown to the would-be inventor. Real progression can only take place when based upon what has already been done, and to cultivate such a progressiveness it is necessary to be in constant association with the latest types of machine. It is to be feared that the affectionate clinging to old machines, which is so characteristic of the average British spinner and manufacturer will, in the way explained, produce another result in addition to the present curtailed output, and that the mechanical inventiveness for which Great Britain is noted will languish for want of proper nourishment. Some of the principal technical schools possess up-to-date machinery, and through their agency many young men become acquainted with machines they would never meet in their own mills, but their association with them is not close enough to produce more than a general knowledge or impression. It is sometimes amusing—although in a degree also painful—to find men (sometimes those holding responsible positions) spending time and money in trying to effect some improvement which has been made years before. We have gone into mills and seen so-called secret improvements which were looked upon as great acquisitions, but which have been tried and discarded years before in more progressive mills. The same thing is shown by a careful perusal of the Patent Specifications, where practically the same inventions are found patented and re-patented over and over again, at different times and by different men, each of whom thinks himself the sole originator of some brilliant, if impractical, idea. It has, however, often been shown that it pays to scrap machinery of a certain age; it is continually being shown that mills with a modern equipment pay good dividends, while the old-fashioned ones pay little or no dividends at all; economists have proved that a balance-sheet which does not allow enough for depreciation to make renewals possible whenever necessary, is a sure sign of financial mismanagement; yet we still cling lovingly to old-fashioned machines which waste our power and turn out a deficient quantity of second-rate material. With the latter facts ignored, it is perhaps asking too much to put forward the plea for the adoption of the best machines as one of the promoters of invention, for the man who neglects to benefit himself can scarcely be expected to consider the future of the industry or the prosperity of a later generation.—Textile Manufacturer.

**FIXATION OF THE DIRECT DYEING COLORS AND RENDERING THEM FAST TO WASHING.**

Our attention has been directed to a French patent relating to a process, the object of which is to fix direct dyeing colors as to render them fast to usual washing treatment. The object is a very desirable one, and although we have not tried the process referred to, yet we are of opinion that it possesses some points of merit which may be developed in such a way as to yield wider and more useful results, though we doubt whether any process will be capable of yielding equal results when worked upon each member of the wide range of direct colors. The process is as follows: A bath is prepared by mixing one lb. of sulphate alumina and 1 lb. acetate of soda, and diluting to 25 gallons. The dyed cotton is worked in the vat for an hour, then lifted, rinsed, and dried. Other alumina

salts may be substituted for the sulphate, while acetate of ammonia can replace acetate of soda. It is also possible to employ the alumina salt alone, without the presence of any neutralizing agent, but in that case it is necessary to gradually increase the temperature of the bath and to dry the goods without previously rinsing. Should the colors be such that they would be altered in tone or shade by the acidity of the dyebath, the dyed and fixed material should be taken through a weak solution of carbonated alkali.

The fixation of these colors has been the subject of prolonged investigation, for the reason that nearly all such products, when fixed, are so much changed in shade that they have practically lost all identity, this being particularly noticeable among the trisazo bodies, while many of the tetrazo group are not much better in this respect. Fixing so as to resist the action of light is of great importance, though we doubt if any one process will ever be devised which will impart fastness to washing, light, and soaping to one product, nor will any combination of processes achieve this result. It is possible that any particular color may eventually be fixed so as to resist washing, light, and soap, but not on one and the same sample. The much exploited "after-treating" process, as applied to the various direct dyeing colors, seemed at one time able to meet nearly all tests, but as the demands of the consumers became more exacting, the results of this process fell below expectation, and it has now fallen into considerable disuse.—*Textile Mercury.*

### FANCY SILKS IN JAPAN.

The *Textile Excelsior's* correspondent, speaking of manufactures in Japan, whom we have already quoted with reference to woolens and other goods, has this to say of Japanese silks:

Probably the silk weavers of Japan manufacture the best lines of goods. Silk manufacture is better understood in that country than any other. The Japanese have raised the silk worm for generations, and they understand how to get the best results. The writer called at several silk farms, and was much interested in the processes of raising the silk-worms and preparing the silken product for the markets. The silk worms are fed upon the product of the mulberry tree as a rule, but in recent years other foods have been introduced, so that in many places the variety of substances was numerous. There are a large number of workers engaged on all of the silk raising farms. The boiling of the cocoons requires the services of many persons, but these Japanese silk workers are satisfied to work for a few cents per day, if they get their food, lodging and clothing, so that the proprietors of the farms do not hesitate to engage the services of two or three hundred persons. At the boiling of the cocoons, a number of skilled workers are engaged in selecting the good from the waste cocoons. In some seasons the waste cocoons are very numerous and losses frequently result which are not made up until a good year comes around. Waste cocoons result from diseases of the worm, or where there is a double thread, thus preventing free unwinding of the silken strand. Often the thread becomes tangled and the cocoon, therefore, must be assigned to the waste pile. These waste cocoons are not lost entirely, however, as they can be cut up into a mass, boiled to a pulp, the sediment pressed through glass tubes and drawn out into a thread.

Very many of the silk producers furnish an absolutely pure silk to the consumers. On the other hand, many employ adulterants consisting of clays, glues, sizings, and the like, which are applied to the silken threads for the purpose

of adding weight, strength and gloss. These artificial compositions are usually detected by the applications of chemicals and the selling value of the silk becomes lowered. The pure silks always bring high values and are much in demand, not only by the silk manufacturers of Japan and China, but by silk people all over the world. Some of the silk raisers near Nagasaki showed your correspondent large orders for silks from European and American silk manufacturers. The Philippine Islands also consume considerable of the silk product of Japan.

One of the most interesting sights one can possibly conceive is that of a Japanese silk weaving room in full operation. There may be fifty workers in one room, operating as many different winding, twisting, weaving and finishing machines, each machine carrying more or less of the exceedingly brilliant colored threads of silk in various stages of manufacture. One will see the brightest reds that can be colored along side of the rich yellows, while off to one side is a blue shade which is superior to any color you ever saw. Then there are deep greens, and in fact every color of the chemist, so clear and bright that one becomes fascinated with the view. To add to the attractiveness of the picture, there are the pretty Japanese women and girls, all in fancy cloths, bright faces and red cheeks, for they are a healthy people. Then it must be remembered that everything is in motion. The creels are whirling about with the bright colors, the looms are heating up the cloths, the carriers are flying about, so that all is activity and the sight is one long to be remembered. The proprietor or foreman of the works comes to greet you. He is usually pleased to see you, and will invite you inside. He is as proud of his works as a boy is of a new toy. He has never been inside of an American silk works, where one machine operated by one person will do the work of a dozen of his machines which are attended perhaps by twenty persons, and his conscience does not, therefore, trouble him when he takes you about his works and points out the superiority of his machinery and his processes.

All he knows is that there is a good demand for his silken products in America and other countries, so he takes it for granted that Americans and others are not competent to make the silken cloths and yarns. That his silk goods are of the finest calibre, the patterns excellent and the finish rich, no one can deny, but any American visitor cannot but help remarking the great wastage of material, labor and time because of the absence of modern machinery and methods, such as are employed in the up-to-date silk mills of the United States.

### CONDITION OF FEMALE OPERATIVES.

Miss Carlyle, female factory inspector for Ontario, in her annual report for 1902, recently issued, finds things for the most part satisfactory, but offers several suggestions as to what should be done to better the condition of the females who work in the factories of the province. For instance, Miss Carlyle thinks that 60 hours a week is plenty for a woman to work. Sixty hours a week means ten hours a day, and this is the limit to which men will submit for a day's work. Why, then, should women be called upon to work longer hours than men? Probably the best answer is that female labor is not organized to the extent male labor is, and some employers take advantage of this fact. The ever-increasing tendency to have the employees work by the piece instead of by the day is deplored by Miss Carlyle as ruining the health of girls in factories. She says: The custom of piecework is becoming more generally adopted as a result of the small pay given to the hundreds of

thousands, according to the different industries, which stimulates the eagerness of the workers to the highest possible pitch. I have seen girls working so rapidly that I was painfully impressed, and I have asked myself how long their nervous systems would resist the great strain of the excessive fatigue resulting therefrom? Pieceworkers earn more money; every move they make counts, and the looks and pale faces tell the continued strain put forth to earn better pay. A short working day for this class of operatives seems an imperative necessity. Women employed in boot and shoe, tobacco and cigarette, woolen and knitting factories, receive better pay than those working in other industries. In the many branches of wearing apparel, the rates of wages vary so materially that it would be impossible to venture on an average wage which would not be liable to contradiction.

According to Miss Carlyle's report, there are over 50,000 females employed in the factories of Ontario, and she considers their working conditions as equal to the best on the continent, but, nevertheless, in need of remedying in many instances.

### FLANNELS—POPLINS—PEACOCKS' FEATHERS.

The American civil war of 1860 caused a cotton famine in Europe, and resulted in the price of the dainty starched Parisian cotton goods rising appallingly. Some years before, Sir Isaac Holden had bought a wool-combing factory at Roubaix. In the cotton famine he saw his opportunity. He placed upon the market a new, soft, twilled flannel. It caught on like wildfire, and its inventor followed up his success with a number of alpacas, delaines and soft cashmeres. The result was that Sir Isaac—Mr. Holden he was then—had to build new mills, and Roubaix increased from a little place of 6,000 people to a great city of 275,000 inhabitants. The firm now combs upward of 60,000,000 tops a year, and their income is in itself a large fortune.

The story of Irish poplin is a curious one. Lady Carew was to be presented at the Court of Louis Philippe. She took with her to Paris a length of Irish poplin, which was then first being made in Belfast. It was of a creamy white embroidered all over with little dots and sprigs of gold. Lady Carew took it to a Parisian dressmaker and the modiste went into ecstasies over it. On her way up the stairs to the reception rooms at the Tuileries, Lady Carew felt a pull at her dress. Afraid of pickpockets, she turned quickly. "I beg a thousand pardons," said a splendidly dressed woman who stood behind her, "but would you tell me what your dress is made of? I never saw anything so exquisite in my life." A dozen times that evening Lady Carew had a similar experience, and the result was one of the most extraordinary crazes for poplin that ever was experienced for any new fabric. One Irish firm sold £24,000 worth of the material within a year, and three large Belfast houses are said to have founded their present large fortunes on Irish poplin.

When the young Queen of Holland was crowned, her whole country held carnival. An Amsterdam dealer, who happened to have a large stock of peacocks' feathers on hand, tried the experiment of sending out hawkers with stocks of these bright-colored plumes for sale on the streets. The people bought them by the thousand, and this was the inception of the tickler craze. But the police interfered, so the Dutchman sent the rest of his stock to England. What proportions the business took on here may be gathered from the fact that one firm in Houndsditch sold 25,000 in a single day for immediate distribution. Before the boom began the firms which imported

the feathers from India and Japan were selling them at a penny for a bundle of 100. A little after they were going at sixpence a bundle, and the peddlers were getting one penny a piece. The chief firm engaged in the business sold over a million feathers, and before the craze died out made a small fortune out of the business.

### A MODERN DYEHOUSE.

A dyehouse was built last fall in Temesvar, Austria-Hungary, on a somewhat unusual principle, which it is said, experience during the past winter has proved to be sound. The usual openings in the roof were dispensed with the roof being tight. The dye vats were placed against the window piers at the side of the building, and the steam arising from them was carried from the room by electric ventilators placed in the piers near the roof. The room was heated by hot air from the dryers, carried through underground pipes and delivered to the dye-house through openings in the floor. It is said that even on the coldest days there was no trace of mist or vapor in the room.

The London, Ont., Hat, Cap, and Mantle Manufacturing Co., is going into voluntary liquidation.

The Canadian Rubber Co., Montreal, has decided to remodel their entire plant and put in new machinery.

The T. Eaton white goods factory at Oshawa is well under way. It will be 113 by 50 and three stories high.

The Walkerton hosiery factory will install a lot of new machinery in the fall. It is making a specialty of ladies' mitts.

The Northway Co. has opened up a branch factory for the manufacture of men's clothing at St. Thomas, its Toronto factory being taxed beyond its capacity.

The Brown & Wigle Co. have installed a new 90 h.p. Corliss engine in their woolen mill at Kingsville, Ont. It was made by the Goldie & McCulloch Co., Galt.

The Canada Woolen Mills, Hespeler, Ont., J. R. Berry, superintendent, are operating 20 sets of cards and 100 broad looms on various lines of woollens. New wool-scouring, drying and finishing machinery have lately been installed.

The spread of the cotton boll weevil in Texas is causing great alarm. The loss to the state for 1902 is placed at \$20,000,000 and the scientists of the Department of Agriculture are now fighting it to try and save this year's crop.

A superintendent and designer, who possesses good testimonials from English and United States mills and who holds honors from a celebrated technical school, would like to settle in Canada and is open for an engagement in an Ontario or Quebec mill. The initials are given in a transient advertisement elsewhere.

The company which proposes to establish a linen factory at Bracebridge has been incorporated as the Dominion Linen Mills. The president is Dr. Beattie Nesbitt, M.P.P., of Toronto, and others interested are Christian Kloepfer, Guelph, J. A. Kammerer, Hamilton, J. D. Shier, Bracebridge, J. H. Van Dusen, Reuben Millichamp and Ewan Mackenzie, Toronto.

At a recent meeting of the British Cotton Growing Association, held at Manchester, Edward Nathan, who recently visited the Soudan, reported that a great deal of cotton was being grown in the Soudan as distinct from Egypt, and there was a general readiness on the part of the people who had settled there to encourage the growth of cotton. Samples produced were considered satisfactory.

### RETTING FLAX.

There have been many attempts made at dissolving the pectine of flax into its various constituents, pectose, pectic, parapectic, or metapectic acid, which are soluble under certain conditions and separable from the hard and cortical matter. The last one, the patent of a Brussels merchant, aims at superseding the old and interminable process of steeping in a stream, and also the more expeditious and more modern but imperfect processes as regards the dissolving and carrying off of the pectine, and consequently the quality of the harl obtained as a final product after the operation of scutching. In the new process the harl is rendered supple by special means in the final operation of the steeping action, this being effected in an apparatus which is operated in such a manner that all the parts of the flax contained therein are entirely and alternately subjected to the treatment by the intermittent inversion of the apparatus on its own axis.

The apparatus employed is a boiler or digester, into which the flax is introduced in bundles in longitudinal cases or baskets made of wire gauze or simply having curved ribs. The digester is in the form of a cylindrical boiler mounted on two supports, the front cover of which is pivoted on hinges, and movable outwardly. The centre of the back cover is capped with a stuffing box for the shaft which passes through the axis of the digester, and is guided at the front end in a suitable cap belonging to the front cover, whilst at its back end it is supported on the outside of the digester in a pedestal that rests on the ground in the same manner as the supports of the apparatus.

To the back end of the shaft a transverse piece is keyed which forms the end of a drum with very open partitions, the periphery of which is surrounded by circular pieces or hoops, and external circular rails, one of which runs in grooved rollers at the front and the other in the grooved rollers at the back, the rollers being mounted in brackets fixed to the interior of the digester. Four longitudinal bars, which form part of the drum, and are equidistant and in vertical opposition, are provided with interior rails, with which grooved rollers mounted on the steeping basket engage, the basket being introduced and withdrawn at will through the open end of the open-work drum. The basket is divided in compartments by radial partitions or galvanized wires, each compartment coming in succession below the axis of the drum, the wires being connected longitudinally so as to strengthen each of the partitions between which the bundles of flax are placed in perfectly longitudinal order and retained in their respective compartments, either by circumferential bands or by covers made of wire and hinged to the cases, all being united to form a compact whole around the open centre. In addition to the arrangement described, a perforated false bottom is provided in the digester, and in the well thereby formed various pipes for the admission and discharge of water and steam are fixed.

It has been stated that for the satisfactory carrying out of all the operations of the process it is necessary that the quantity of flax contained in the basket should be turned around the axis at regular intervals of suitable duration in order that the flax may be subjected to the full action of the digester throughout and under the same operation. In order that this intermittent action (which should take place at short intervals—every ten minutes, for example) may not be dependent upon personal supervision which does not afford all desirable guarantees in connection with this important part of the process, the apparatus is provided with a special arrangement of pulleys and belts. This consists of a set of three pulleys, two grooved pulleys, and a drum pulley which is

keyed to the shaft between the two grooved pulleys which are loose on the said shaft. The pulleys are driven by the transmission device, consisting of two parallel ropes connected together transversely at intervals of their length by pieces of flat belting a little higher than the ropes, so that the ropes are constantly in engagement with the grooved pulleys, whilst the flat pieces only engage intermittently with the middle pulley, when they cause the drum, and with it the basket, to rotate, the belts being stretched over two sets of rollers and actuated by two grooved pulleys which are driven at the desired speed by any suitable motive-power. The flat parts in acting on the middle pulley, instead of being formed of pieces of belting, could consist of flexible ratchets, and in this case the middle pulley could be replaced by a toothed wheel which the ratchets would set in rotation during the desired period.

The decomposition of the pectine of the flax into its various constituents—in other words, the rendering of the pectine perfectly soluble—cannot be effected by a single operation at one and the same temperature, for which reason all the processes of retting with hot water or steam hitherto introduced have not given satisfactory results, the temperature in the single operation to which the textile matters were subjected being either too low or too high, so that sometimes one and sometimes another portion of the pectine was not dissolved, and impaired the final product.

According to the new process, the flax is rendered soluble by two quite distinct operations, which are carried out in the following manner: The flax, having been put into the compartments of the basket with the fibres placed horizontally, the basket running on its rollers along a suitable track made in front of the digester, is introduced into the open drum of the digester, and the cover turned down and hermetically closed. Water at the ordinary temperature is then admitted into the digester through one of the tubes beneath the perforated bottom, until the flax is almost totally immersed. Into this water-bath steam at about 100° is admitted through one of the pipes, always beneath the perforated bottom. In heating the water this steam becomes condensed and increases the volume of the bath until a temperature of 95 to 100° is produced. At this temperature, and in this bath, which is maintained for about an hour, a portion of the pectine or pectose is disengaged and dissolved, and converted into soluble pectic acid; which is carried away with the bath through one of the purging cocks.

The flax thus treated still contains certain pectine or pectose elements not decomposable or soluble in the first bath at 100°, and in order to convert these into soluble metapectic and parapectic acids, higher temperatures must be resorted to. For this purpose a bath is prepared as before, but instead of the steam being introduced at atmospheric pressure, it is introduced at a pressure of three atmospheres, so as at the end of half-an-hour to obtain this latter pressure in the digester, such pressure being maintained during the complementary half-hour. All traces of pectine being now dissolved, this second bath is employed for rendering the flax supple before the scutching, by adding to it a suitable proportion of some substance such as glycerine, sulpho ricinate of soda, etc., which makes the flax silky and facilitates its preparation for the scutching, as the troublesome operation of greasing with tallow is thus very advantageously replaced. The bath and the steam are then discharged and give the flax a final washing as they pass away. The flax retted accordingly to the process described is of excellent color and quality, and can thus be obtained in two hours only when the apparatus described is employed.

Textile materials which are coarser than flax-hemp, for instance, ramie, etc.—should be twice subjected to the action of the bath under a pressure of three atmospheres, so that they require three operations instead of two, in consequence of the different proportion of pectine contained in them. During the whole of the operations the intermittent belting is kept constantly in action, so that the basket containing the textile material is car-sized every ten minutes, each half thus during ten minutes being now below and now above the axis, so as to be subjected as uniformly as possible to the action of the dissolving baths.—Textile Manufacturer.

### MANILA VERSUS SISAL.

As showing how manila twine is regaining favor at the expense of sisal these statistics are interesting. During the nine months beginning August 1st, 1901, and ending April 30th, 1902, the deliveries of manila fibre to manufacturers in the United States and Canada were 356,475 bales. Of sisal the deliveries during the same period were 392,878 bales. One year later the deliveries for the corresponding period were of manila, 412,206 bales, and of sisal, 368,613 bales. These figures show that the manufacturers received during the nine months ending April 30th, 1903, 24,265 bales less of sisal and 55,731 bales more of manila, than they received during the preceding corresponding period. If the supply of sisal twine is unequal to the demand this season, the above figures will explain why.

The cost of sisal fibre has also been enhanced by a rise in the value of silver, the money metal of Mexico. This in turn has affected the price of binder twine, which is now much firmer. There is  $1\frac{1}{4}\%$  between the prices of different makers in the United States, the range being from  $10\frac{1}{4}\%$  to  $11\frac{1}{4}\%$  per pound, f.o.b., Chicago, for car lots.

### PAPER CLOTHING; WHAT NEXT?

The manifold uses to which paper is now put forms a stock subject for the hard up penny-a liner, says an English exchange, but, as a rule, the recital of his facts usually begins with the formula, "it is said," or "we hear." Paper clothing is one of the latest things mentioned in this line, and there is no doubt about this, for an enterprising firm of tailors in Berlin is now offering to supply complete suits in paper for 10s. The firm's advertisement gives full instructions for self-measurement, and is appearing in journals, published elsewhere than in the Fatherland, so that an export trade is evidently looked for. The material is closely woven and of a creamy tint, fairly stout, and not at all flimsy looking.—Paper Mills.

### MAKING CLOTHES IN AWFUL DIRT.

Accounts still come to hand of the awful conditions under which clothing is made in some of the cities of the United States, notably New York, and this notwithstanding the fact that before commencing work application must be made to the Factory Inspection Department of the Department of Labor, a State Department, with headquarters at Albany, with a sub-office in the city of New York, giving the name and address of the applicant, the number of persons who will work under the license, the number in family, and the nationality of the applicant, and the premises are inspected. A writer in *The Outlook* describes some of the scenes witnessed in a tour of these places, of which the following is a sample: The next house visited was in such a

condition of dirt and degradation that the marvel was that one could work who lived in it. The halls were dark. In each hallway was a sink and water. Eight families lived in this house, with sanitary conveniences of the most primitive order for one. The halls to the top were stifling with the odors. Each inch of space in the rooms was occupied. Every family took lodgers to reduce the rent. The next visit revealed two boys of eight, with caps and coats on, sitting on the floor, sewing buttons on trousers. A little girl with a needle and long thread ran from the room when the visitors appeared. The father and mother, both finishing trousers, claimed that the boys had just come from school. It was ten minutes after 12. The children corroborated the statement. The place was vilely dirty—dirt that accumulated for weeks. Even a glass sugar bowl standing on the table had dirt thick in the interstices of the pattern. The beds made the street seem preferable as a resting-place. Fifteen persons in three rooms.

Very little home work except finishing clothing for men and boys was found in the tenements. As one looked at the men's clothing lying on dirty beds, strewn over dirty floors, lying on the laps of women whose dirty dresses or aprons suggested disease, and pictured the apparently fastidious men on whom these garments would be seen during spring and summer, one wondered why the struggle to secure protection for the customers should be left to women; why it was so impossible to rouse men to the horrors of sweatshop garments.

### INFECTED BLANKETS.

Replying recently to a question in the House of Commons as to the outbreak of enteric fever on board the reformatory ship Cornwall, which it was stated had been traced to infected army blankets from the hospital camps in South Africa, Mr. Brodrick, Secretary of State for War, stated that owing to the rapid demobilization of troops an enormous stock of unwashed blankets had been placed in storage. These were more or less seriously damaged by fire, which was caused by spontaneous combustion. Orders were therefore issued that those in the worst condition be burned and that the remaining 8,000 be sold. There appeared to have been an error of judgment on the part of the officer responsible for the carrying out of these orders in not disinfecting the blankets, which had been in contact with sick soldiers.

### A RUG WOVEN IN SILVER THREAD.

A remarkable feature of the new edition of J. K. Mumford's *Oriental Rugs*, just issued by Charles Scribner's Sons, is the reproduction of a rug owned by the late Henry J. Marquand. The carpet was woven in the fifteenth century, and was given by the Shah of Persia to the Sultan of Turkey. This is a fact, as it is shown by Mr. Marquand's record that the rug had been found among the effects of the Sultan Abdul Aziz after his death. The feature of the rug is that the inscriptions throughout its border, as well as arabesques in the medallions of the design, are woven in silver thread. The carpet is a companion piece for that owned by Prince Alexis Lobanow Rostowsky, which was shown in the Vienna Museum's exhibition in 1889. The Rostowsky rug was supposed to be without parallel in the world, but this carpet, the most highly valued among the textile treasures of Mr. Marquand, contains positive internal evidence that it was made upon the same looms and in the

same period. It is thought that it was probably made for the same purpose as the one owned by Prince Lobanow, which also passed into the possession of its present owner directly from the seraglio in Constantinople.

**TRADE WITH CANADA.**

The British Board of Trade returns for May, the last issued, show the exports to Canada in textiles for that month to have been:

Wool .....	£ 2,266	£ 2,923
Cotton piece-goods .....	41,471	50,090
Woolen fabrics .....	21,346	34,414
Worsted fabrics .....	34,657	49,367
Carpets .....	11,293	22,429
Haberdashery .....	12,011	19,634
Jute piece-goods .....	13,584	23,093
Linen piece-goods .....	11,818	13,533
Silk, lace .....	94	116
Silk, articles partly of .....	3,959	2,318
Apparel and slops .....	16,887	23,162

The figures to 30th June show the following increases in the exports to Canada for the first six months of the year:— wool, £3,000; woolen tissues, £12,000; worsted tissues, £83,000; carpets, £49,000; haberdashery, £52,000; jute piece goods, £26,000; linen piece goods, £2,000; lace, £4,000; apparel and slops water-proofed, £22,000; the same not water-proofed, £9,000. The decreases were: cotton piece goods, £4,000; silk, £2,000.

**BUTTONS WHICH GROW ON BUSHES.**

No, the ivory buttons you wear do not represent the death of an elephant in the wilds of Africa; your pearl buttons were probably never nearer than you took them to the shell of a bivalve mollusk, and the probabilities are that no rubber tree was ever tapped to produce the hard rubber buttons that adorn your overcoat. Down in Central America there is a fruit-producing palm that has quite metamorphosed the button business and formed the nucleus for one of the most important industries in the United States. The seed of this fruit contains a milk that is sweet to the taste and relished by the natives. The milk when allowed to remain in the nut long enough becomes indurated and turns into a substance as brittle and hard as the ivory from the elephant's tusk. The plant that produces these nuts is called the ivory plant. Most of the buttons now used in America, whether termed ivory, pearl, rubber, horn or bone, come from this ivory plant. Thus the probabilities are that your buttons are made from a vegetable milk, and they grow on bushes.

The ivory plant is one of the marvels of the age, and is rewarding its growers with vast fortunes. The nuts are imported by the shipload and taken to the button factories, from which they issue forth every conceivable design, color, grade and classification of button. The ivory plant, one of the marvels of the age, has recently been discovered in California, but the nut it produces in its wild state is of inferior quality and will not make good buttons. It is believed that with proper cultivation the fruit would be as valuable as the Central American. If so, the growing of buttons in America would become an industry of importance second only to the growing of corn, wheat and cotton, for everybody wears buttons.

The best ivory nut for commercial purposes is found on the banks of the river Magdalena, in the United States

of Colombia, where by some it is called the Tagua palm. The fruit forms a globular head about twice the size of a man's head and weighs from twenty to twenty eight pounds. The head is a kind of cluster of bulbs, and in all contains from fifty to sixty seeds. The seeds are allowed to dry and are harvested several times a year by the natives. The Apparel Gazette, the great dealers' authority on everything that people wear, says: The ivory nut is used almost solely in the manufacture of buttons, though some factories also make poker chips from them. The nut has superseded the archaic mud, rubber and bone buttons. It admits of wider and more varied treatment for this purpose than any other known substance, and is easily worked. The United States consumes more than one-half of the world's product of ivory nuts, and nine-tenths of the vegetable ivory is manufactured into buttons. When the nut reaches the button factory, it is cut into three slabs. In the process of cutting out the button is partially shaped. Afterward the thread holes are drilled and countersunk. The button is then sent to the polisher, who uses the shavings and powder made in drilling to polish them in their white state. Afterward they are sent to the designer, who traces on the buttons in indelible dyes the designs needed to make them match the various weaves, coloring and textures of fabrics. After receiving these outlines, if the buttons are to remain smooth and receive another coat of coloring, they are put into dye. If they are to be stamped with a pattern they are put into a pressing machine fitted with dies of the pattern desired.

**DYEING WITH DRY DYESTUFFS.**

Something like the suggestion of C. Owens, of Broughton, Manchester, has been adopted already, says an exchange, at any rate in indigo dyeing. He patents a method which he claims saves dyestuff, water, coal, and labor, and consequently greatly reduces the cost of dyeing. Dry or moist soluble colors in powder form are used; for instance, 2 lb. of benzo purpurine are taken for 100 lb. of cotton. The powder is applied to the material by a hopper, under which it passes on a travelling apron, or if raw cotton is to be dyed it is fed to a beater, which opens the material and thoroughly mixes the color with it, or it may be applied to the material whilst fed into a lap machine, and in this way various colored laps may be mixed, producing a variety of shades and colors. When the powder is mixed with the fibre the material is passed underneath spurt pipes, or through a tank of water, and may be given a nip between pressure rollers. It is suggested that the water dropping from the material may be re-used with an advantageous saving of dyestuff.

The addition which T. A. Code, of Perth, is building to his Knitting Mill will be 80x40, three stories high and basement. It will be of stone.

The wholesale millinery firm of Clark, Vandelinder & Co., London, Ont., has assigned. Liabilities are placed at \$50,000 with assets of about an equal amount. Mr. Vandelinder withdrew from the firm about a month ago.

A subscriber having enquired about the Pratt Manufacturing Co., recently incorporated to manufacture woolen, cotton, and knitted goods and carpets, we have to say in reply that it is a company which expects to operate the Brodie Mill at Streetsville, Ont. They hope before long to have the mill in operation. Any particulars may be had from E. W. Pratt, 29 Front St. West, Toronto.

### A NEW CLASS OF YARN.

A somewhat peculiar, and rather wasteful, method of preparing yarn has been patented by a German cotton spinner, the aim being to obtain a union thread which is a good imitation of all wools. The principal feature of the new process is, that the long fibres of vegetable origin are reduced to the length of the short fibres of an inferior raw textile material of another kind, a part of these shortened fibres of better quality being then mixed with a greater quantity of the inferior kind and spun on the spinning frame. In this manner a yarn is obtained which, it is stated, can only be distinguished from one of superior quality with extreme difficulty. This is particularly the case when variously-colored fibres or hairs are united to make mixed yarns. In order, for example, to manufacture from cotton fibre a yarn very closely resembling worsted, the wool (the single hairs of which, as is well known, are from three to five times as long as cotton fibres in a stretched condition), after being drawn, and therefore in the form of sliver, are cut to the same length as the cotton fibres in separate pieces, and then a small percentage of the cut woolen fibres mixed with a large percentage of cotton. If, then, this mixture is spun on a spinning frame having three pairs of carrier rollers, a product is obtained which it is said that even an expert can only distinguish from genuine worsted on very close examination, or by the aid of special means. The resemblance to worsted is all the more striking when the cotton fibres employed are dyed one color, e.g., black, whilst the wool is of another color, e.g., grey.—Textile Manufacturer.

### DYEING IN THE SOUDAN.

In the region on the banks of the Niger, what is known as Dafina silk is an every-day material, and M. Maisonneuve has described in *Le Moniteur de la Teinture* the native methods of dyeing the fibre. The natives do not understand the cultivation of the silk-worm, but content themselves with gathering the cocoons from the tamarind trees and mimosas on which the insects feed. In Dafina itself the silk worm is not very plentiful, though it is to be found in great numbers in the neighboring forests of Gourounsi, from which place the Dafinese procure the cocoons. They spin the silk after the fashion in which cotton is spun, dye it with indigo, and weave it into a sort of cloth which is made up into pantaloons and worn by the ladies. This stuff does not in the least resemble silk, and the most experienced eye would not, until after a careful examination, detect the difference between it and cotton. Nevertheless, this garment is sufficiently dear, costing from 25s. to 35s. The silk is also prepared in hanks and sold raw at Dpenni and Soro, where it is used as an embroidery material for the doroke, a kind of ample blouse of whitish calico; it is also made up into a trimming called lomas, a word signifying a braid three fingers in width, with which the dorokes are often trimmed. Barth and some other travellers have expressed their belief that it was with this indigenous silk, dyed green, that the fabric known as sansandings were embroidered, but Captain Binger corrects this error, the green silk, which is ready dyed in the hank, being imported from Europe. The Soudanese do not know how to get a green; they can only obtain various shades of brown, reddish brown, dirty black, blue, yellow, rust red, and brick red.

The government of the Ivory Coast tells us that the blue shades are dyed with indigo, either pure or mixed, with several kinds from sky blue to Prussian blue. The black is produced by a sort of ferruginous earth, containing cop-

peras; several shades of brown are obtained from a bush called bassi in some districts and raat in others. This brown is the natural color of the Bambara and Malinka. In some districts the stuff dyed a light brown is stretched over a calabash or on a plank, and a black design is put on with a millet stalk shaped like a quill pen. Lozenges, squares, and triangles, forming irregular check patterns, are the usual designs. The yellow is obtained from a plant called saovaran, which is no other than the Indian saffron (*turmeric*)—the curcuma of Martinique. The root of this plant (*curcuma tinctoria*), scraped and moistened with lemon juice, gives a very rich gold yellow dye, which resists washing when prepared in this way. The leaves of the curcuma are supple to the touch and their green shade resembles that of a banana; the root is like ginger and breaks easily, the interior being of a yellow orange shade. The brick red is got with kola juice (*sterculia accumonata*), which the natives call gourou ourou. There is also a white variety of the kaoja (*sterculia macrocarpa*), and both are found in a wild state on the east coast. The white kola of Anno contains a red dye which is used in the same way as the Ashanti red kaola. The rust red is only used in certain districts for dyeing woollens used in the manufacture of carpets or covering called Kassa. This class is dyed with a stone called Sey, which comes from Hombori, and which when crushed is used with a mordant of wood ashes, the shade thus obtained being a dull, dirty rust color. The brownish red, with which yellow is dyed, is an extract of the stem of a variety of sterile sorpho, which in use is mixed with maize. It is but a little cultivated in the country, except in the villages. The pith of the plant, calcined and mixed with wood ashes, gives the skin, after long immersion, a reddish tint, which passes quickly to a brown shade. The natives never use this in dyeing cotton or other stuffs.

In addition to these tinctorial products, Captain Binger mentions several others. A lemon yellow is got from the root of a small bush known as the sey-iri. In several villages a green is obtained by topping indigo blue with this same bush, but the shades are spotted and uneven, and cloth dyed in this manner is not in request. Henna, with which the natives redden their finger and toe nails, is made from the leaves of a shrub, and is also used as a hair dye with bizarre effect, especially when the user dapples his clothing with spots of the same extract. It is not only on the banks of the Niger that native dyed stuffs are found, as the Senegalese know how to get brighter and purer shades with indigo than those obtained by the dyers of Fourou and Dafina.—Textile Excelsior.

### WOOL DYES—SOME GOOD BLUES AND GREENS.

Wool dyers are always interested in those dyes which produce level shades and possess a good degree of fastness. The dyes which are named below can be used in dyeing wool or silk, the former from baths containing either Glauber's salt and sulphuric acid or bisulphate of soda. The wool takes the color very easily and there is no trouble in dyeing level and uniform shades. In dyeing silk, either a plain bath containing Glauber's salt and either acetic or sulphuric acid, or a broken soap bath may be used, brightening up afterwards in a weak acid bath.

Cyanole Extra dyes wool very bright blue shades and is very largely used in dyeing yarn and piece goods. It gives absolutely level shades and works well in combination with other dyes. The fastness to light is very good. The shades are fairly fast to weak acids and perspiration, and

stand weak alkalies and street dust very well; they also are fast to washing and a light milling.

Cyanole FF dyes somewhat purer and brighter shades of Blue than the Extra. The fastness to light is good and much better than that of Alkali Blue or Victoria Blue, these giving similar bright shades. It is very useful in silk dyeing for producing bright blue shades, which are fast to washing, soaping and light.

Cyanole BB dyes somewhat duller and greener shades of Blue than either of the two above mentioned. The fastness to light is not so good, but it is equally fast to alkali and dyes very level. For dyeing Browns and various dull mode shades, it is even better than these first two brands.

Cyanole GG dyes a very green shade of Blue, not unlike that known as Turquoise Blue. Level shades are readily obtained; the fastness to light is fair, but not equal to that of Cyanole FF; the fastness to washing and light milling is good and the dyeings stand stoving. In silk dyeing, it is useful as giving a washing fast Blue.

Cyanole C gives a bright greenish Blue, not as green as the GG brand. The dyeings are level, stand washing, light, milling and stoving; the fastness to light is rather less than in the case of Cyanole Extra. For silk dyeing it is useful.

Indigo Blue N dyes deep bright Blues of a deeper shade than the Cyanoles. These are level, the fastness to light is fair, though not equal to that of Cyanole FF. It stands weak alkali, acids and washing. It is used with advantage in the dyeing of dark Navy Blues, Browns and mode shades in general.

Indigo Blue SGN dyes brighter and stronger shades than the N brand just noted, it does not dye quite as level as the other Blues mentioned, though with due care level shades may be obtained. It has a moderate degree of fastness to light. Used in combination with Orange, Lanafuchsine and Formyl Violet, Blues, Navy Blues, Browns, etc., may be dyed. In silk dyeing, Indigo Blue SGN will be found of some service.

Brilliant Milling Green B dyes bluish Green shades of good brightness and evenness, and they possess the good feature of being fairly fast to washing, milling and alkalies. Their fastness to light and stoving is also good. It will dye wool in a neutral bath, so that it may be employed as a shading color in union dyeing, and the dyeings have the merit of being fast to light, washing, water and alkalies.

The shades produced by these dyes are very fine, and when they are used in combination with other dyes, they produce excellent effects. Dyers who are looking for some good Blue and Green dyes cannot do better than to try some of these.—Garment Dyers' Guide.

### THE WOOLEN MILLS AT CARLETON PLACE.

Carleton Place, Ont., is one of the great centres of woolen manufacturing in this country. The reporter of the Carleton Place Herald has been making a tour of the mills in that town, controlled by the Canada Woolen Mills Co., and has this to say of his visit: When the Hawthorne and Gillies Woolen Mills of this town were taken over by the Canada Woolen Mills a few years ago, some radical changes were made in their management. The machinery was more concentrated, more modern machines were added, large towers were built at each of the mills in which the elevators were placed, thus cutting off all openings between floors for stairs and elevators, and a system of sprinklers was put in by means of large tanks in the towers and pipes throughout the buildings, which makes the mills as well protected as can be from fire. Then the steam power was taken from the Haw-

thorne and linked with the water power at the Gillies mill, and the upper mill is operated by electricity generated at the power-house below. These were the chief changes made at first, but the new owners have been steadily spending money since the beginning in minor matters, which after all go to stop the leaks and make the profits, if any, in any large manufacturing concern. Beginning at the dye house, which is located at the Gillies mill, the machinery has been so arranged and concentrated that the very best results are now obtained at a minimum expenditure of labor. This rule prevails in the scouring room and throughout to the finishing department. By concentrating the machines for each class of work a great saving is made in expense, and a more uniform output is the result. Mr. James H. Hendry, the present manager, who is nothing if not practical, is responsible for a number of these latter improvements. Even the exhaust steam is now utilized, stored in a large tank away up, it supplies hot water for the departments needing it without having to utilize live steam. Mr. Hendry is a graduate of the City and Guild's Institute of London, England, and has held many responsible positions. He was for some time instructor of the South of Scotland Technical Institute, Hawick, Scotland, and was the recipient for three years in succession of the valuable prizes which were offered in open competition to the United Kingdom for the best set of designs in worsted and woolen goods, for men's and ladies' wear. He was also the recipient of the prize offered a few years ago for the best set of designs, limited to eight harness, open to the United States and Canada. Mr. Hendry is also the author of Essays on the Selection and Preparation of Wool, Selecting Wool for Fine Goods, Carding and Spinning, Binding of Weaves for Backed Goods, and Construction of Backs, Fabrics, Designing, etc. He has been here now for almost a year, and his year's work is now beginning to tell in the output of the mills here. Mr. Hendry does his own designing, and has to superintend the whole business of the two mills, and his task is no sinecure. The goods manufactured are tweeds, shawls, rugs and ladies' dress goods. The capacity of the mills is eleven sett. The dyeing and finishing is all done in the Gillies mill, the other departments are the same in both. At present the spinners and carders are working overtime and the wet finishing department is running night and day, and everything is humming. The production is 125 doubles six quarters weekly, but the orders are coming in faster than can be filled. There are many overdue, and just now there are orders for 1,800 doubles, six quarters, with 225 doubles six quarters on one line alone. There is no stock carried. The goods at present in demand are fancy dress goods for women's wear, a line that is in keen competition with the high-class goods imported from Europe. Just now there are 192 names on the pay-roll in the mills.

The overseers of departments are as follows: Manager, James H. Hendry; assistant designer, John Ballantine; boss dyer, Edward Oliver; boss weaver, W. R. Simpson; dresser, James Rutherford; boss finisher, Abe McFadden; cloth examiner, Charles Ferrill; boss carder (Gillies), John Menzies; 2nd, James Warbrick; boss spinner (Gillies), John Flegg; 2nd, John Boland. In the Hawthorne—Assistant superintendent and boss weaver, George W. Kendry; 2nd, Charles Dickson; boss carder, H. Saunders; 2nd, S. Berryman; boss spinner, M. Walsh; 2nd, F. Stanzel; dressers, M. Ballantine and George Phillips; fireman and carpenter, J. S. Jackson; watchman, Duncan Cram. The chief engineer is D. Wedgwood; shipper, T. Cardwell; bookkeeper, Miss Ida McFarlane; wool sorter, John Dolan; carpenter, Duncan McLaren;

teamster, James Walters, watchman at Hawthorne, Reuben Bond.

Mr. James Kendry, M.P., president of the Auburn Woolen Co., Peterboro, one of the most successful mills in the country, is general manager of the Canada Woolen Mills, Limited. He is a very energetic and pushing man, with a wide knowledge of the woolen business, and to his progressive spirit and encouragement is due, to a great measure, the success here.

There are workshops at each mill, and everything in connection is kept neat and clean and in first-class order.

We are sure our citizens will be delighted to learn that this important industry in our midst is in such a prosperous way, and hope it may long continue to thrive.

### HOW JUTE IS HARVESTED.

Jute, which is used so extensively in the carpet trade in the manufacture of what are called hemp carpets, and as a material for backing or stuffing in other kinds of carpeting, is the fibre of two plants, called the houch, and isband which are cultivated in India. The word jute is derived from the names of the fibre in different districts of India—jhot and jhot. The two plants are alike in appearance, leaf and growth, but differ in their seed pods. They are annuals, and grow from five to ten feet high, with a stalk about the thickness of a man's finger, seldom branching until near the top. The harvest is in July and August, the stalk being cut off near the root. These stalks are made up into bundles and thrown into water, where they remain several days. They are then beaten until the glutinous substance in the bark is washed away, when the fibres then partially detached are stripped from end to end, hung up to dry in the sun for a few days, and finally made up into hanks for the market.

### DYEING BY ELECTRICITY.

The fabric is lightly stretched on a horizontal metallic surface, mordanted, and then covered with as much dye solution as will stay on it without running off at the edges. One pole of the battery is then connected with the fabric and the other with the metallic surface. The dyeing is finished in a few minutes, and the fabric is then rinsed, etc., as usual. If a colored pattern is desired, a corresponding metallic stencil plate is laid on the fabric, and the pole otherwise connected with the fabric is connected with the stencil-plate. The shade becomes lighter on the parts covered by the plate.

### THE KNITTING INDUSTRY IN CANADA.

The knitting industry in Canada at the present time is in a flourishing condition. This is owing partly to the very large wheat and corn crops of the past year throughout the Northwest, and partly through the influx of American farmers, crossing the borders from North Dakota and other portions of the States, into the wheat fields, thus increasing the population very materially in the Northwest of Canada. It is generally conceded, that when the farmers of any country are prosperous, it gives an impetus to all manufacturing industries, and to this I attribute largely the cause of the present good conditions of the knit goods trade in Canada. The knitting trade in Canada is confined almost entirely to home consumption, the quantity of goods exported being very small. The whole population of Canada is only about six millions, and the entire trade is therefore limited to that extent. The greater part of the machinery in the knitting

mills is of American make. The majority of the knit goods manufacturers use up-to-date American methods in running their mills, except apparently they are not as enterprising as the American manufacturer, and this may be owing to the fact that having only a limited outlet for their production, they are naturally held back in any large extension of their plants. When they want skilled help they generally employ men who have had experience in the knitting mills in the United States, although there is generally a feeling of dislike among the Canadian operatives toward a Yankee boss, as they term them. The class of goods made compare favorably with those made in the States, both as regards quality and finish, and the prices obtained are slightly in advance of similar goods manufactured on the other side of the line. In fleece-lined, for example, in Canada the garment is identically the same as those made here, for which the American manufacturer gets \$3.25 for a twelve-pound shirt. In Canada they get \$3.90 per dozen. The cost of production in Canada is somewhat higher, as the prices paid for some of the operations in the finishing room are a trifle more. The help, generally speaking, do not seem to have the ambition or hustle which is prevalent throughout mills here, with the result that while the Canadian girl in the mill gets a higher piece price for her work, she does not earn any more money than the American girl doing the same work at a less price per dozen. Then again the production being limited, as before stated, one girl does two or more operations on a garment, and therefore cannot become as efficient or do the work as rapidly as one who does only one operation day after day, thus becoming rapid and expert on that one operation. Take for example an underwear mill turning out say, 700 dozen per day of shirts and drawers in the United States. One girl doing the one operation of stitching around the neck of a shirt becomes very expert and can do about 300 dozen per day on this single operation, for which she receives three-eighths of a cent per dozen. There being no single mill in Canada producing this quantity of shirts and drawers per day, they have not sufficient work on this single operation to keep a girl steadily at work, therefore they have to combine two or more operations together and thus it costs more. The help in general are well educated and intelligent and learn quickly and make good efficient help, and do their work well. They are fully as independent as those in American mills, and while some of them have no unions, yet the help will stand together and are practically master of the situation, because help, as a matter of course, is scarce, and they have been known to stand together and threaten to strike if a Yankee boss to whom they took a dislike was not discharged, and the manufacturer has been compelled to accede to their demands or shut down the mill. They have a factory law and inspectors of factories the same as in the States, and the hours of labor are the same, viz., sixty hours per week. The payment of wages is usually every two weeks. They use the coupon system for piece work the same as is used almost entirely in the knitting mills of the United States. In the mills where cotton is used they buy American cotton from the South, and also Peruvian cotton; the latter mixes very well with fine wools, so much so, that it is very hard to detect the cotton. They use Canadian pulled wools, and Australian wools for fine woolen knit goods. For winter underwear some very heavy all wool shirts are made, weighing as high as seventeen pounds per dozen; these are for the Northwest trade, where the thermometer ranges from forty to fifty below zero the greater part of the winter. Heavy all-wool half-hose are also made for this trade, some weighing as heavy as five pounds to the

dozen. Most of the knitting mills are located in the East, so-called, and they have to supply the whole of the trade in the Northwest. A larger winter business is done than in the spring lines, owing to the fact that the summers are short, and therefore spring and light weight shirts and drawers and hose are very little worn; in fact, I have seen quite a number of men wearing heavy woolen socks all summer.

The Canadians have a protective tariff on knit goods going into Canada which is sufficient to keep out the American goods. What goods the Canadians import come from England. Cotton and worsted yarn are also imported from England. They have a duty on all numbers of cotton yarns up to 40's, but numbers over 40's come in free. This provision of the tariff comes in very nicely for making Egyptian balbriggan underwear, as they can then use the two threads of 40's, which makes a better balbriggan garment than one made of single 20's, even if it is the same weight in the shirt.

The Canadians still keep to the old plan of goods being tied up in bundles of one-half dozen and dozens, both in underwear and also in hosiery, some of which are parceled, and some not, only a very small quantity of the goods being boxed.—Observer in Textile World Record.

### BELTING AND SHAFTING.

Line and counter shafting require a great deal of the power of the plant when running at their best, and when they are out of line sufficient to cause heating of the boxes, the amount of power consumed is out of all proportion to what would be necessary if the shaft was properly lined up.

Many experimenters have shown that the pulling power of belting for a given arc of contact is almost independent of the area of the belt in contact with the pulley, and that it depends chiefly upon the sectional area of the belt, and its total tension; so that a triple belt will transmit about as much power as a single belt three times its width.

The nearer to horizontal that a belt is put the better will the belt's weight produce sufficient and uniform friction. Owing to the fact that a long belt's weight and sag are more than those of a short belt, the long belt is better than a short one. If you want to get all the work that is in your belts out of them see that they are hung horizontally.

Shafting should never be so large as to make it absolutely rigid; on the contrary, it should be to a fair degree elastic, with an ability to give and take between the power and the work. When too rigid, unless away above all requirements in size and strength, the liability to break is increased, especially if the work be of an abrupt and severe character. Long lines of shafting having the power at one end and the work at the other, should be graduated in size, the work end being of a size required to safely do the work and the power end larger, in proportion to the length of the shaft or the distance between power and work. If such shafts be of the same size the entire length, and that a fair working size only, there will be too much elasticity in the aggregate, which will tend to gradually weaken, distort and, in the end, destroy the usefulness of the shaft.

### MECHANICAL AND ELECTRICAL EQUIPMENT OF A COTTON MILL.

The mechanical and electrical equipment of the cotton mills of the Davis Mill Co., at Fall River, Mass., is in many ways exceptionally up-to-date, including a fan-and-heater system of heating and ventilation, induced-draft in place of a

chimney and electrical motor-drive throughout. To provide flexibility in the boiler plant and insure against shut-down, the induced-draft plant has been installed in duplicate. Two seven-foot blast-wheels, running in three-quarter, steel-plate housings, are driven by centre-crank, horizontal engines. The fan wheels are overhung in the housings, and are furnished with special, wide, water-colored bearings. The engines themselves are provided with extended shafts upon which a pulley is mounted between each fan bearing the respective engines. These pulleys are in reality the flanges of the couplings of the two parts of the shafts, the belts running directly on the flanges. They are used for driving the economizer scrapers. The air connection between the fans contains a flat swinging damper, which is so arranged that either fan can be shut off and the other run separately if desired. The outlet connections are likewise provided with dampers and the operating attachments are so placed that both can be changed at once by hand. The engines receive steam at 80 lbs., and are furnished with a balanced valve which can be used in connection with a damper regulator. The heating plant of the Davis Mills is a duplicate of that installed at the Arkwright Mills some years ago. It consists of a large exhaust wheel drawing air through a steam-pipe heater. The fan-wheel is provided with one tight and two loose pulleys, and the engine has an extra wide, flat-face, fly-wheel for shifting the belt. A second belt connects the fan pulleys with the line-shafting of the mill. This arrangement makes it possible in the summer-time to run the fan from the line shaft, thus taking advantage of the economy of the large mill engine, while in the winter, when the exhaust of the fan engine can be utilized in the heater, or at night when the large engine is not running, the fan is driven by the fan engine. The heater is built up of 1-in. pipe, erected on cast-iron sections, which rest at one end on ball bearings, to allow for expansion and contraction. It is so arranged that the exhaust steam from the engine can be used entirely in one group of sections, making it possible to condense all the exhaust before it is necessary to use any direct steam, which is added at a reduced pressure when necessary. The outfit also includes a Kendall receiving tank, with a water-gauge and a safety-valve, and a duplex Worthington steam-pump. The heating apparatus will heat the mill to 70 degrees F. when the temperature outdoors is zero. The electrical equipment consists of two belted direct-current generators, one of 50-K.W., and one of 75-K.W., operating at 125 volts, no load, and compound-wound. These generators supply current for lighting and for a 27-h.p. motor, and one of 43-h.p. The oiling devices of the motors are so arranged that they can be hung from the ceiling. The above apparatus has been furnished by the B. F. Sturtevant Co., of Boston, who also designed and constructed the heating and ventilating and mechanical draft plants.

### HOW MINERAL WOOL IS MADE.

Mineral wool can no longer be made from the slag as it comes from an iron furnace, simply by blowing steam through it, as was done 20 years ago. Of late, so many improvements have been introduced in the extraction of iron from ore that the slag has lost its former value in this respect, and the wool is now made from the slag of former years with far better results. The slag is brought to the works where it is broken into lumps of from four to eight lbs. It is then elevated to a platform by an endless belt with suitable buckets, and from there fed into the top of a cupola with about 12 per cent. of limestone and eight per cent. of sandstone. The limestone is added to give the wool its white color, and the

sandstone helps to make it light and fluffy, as the slag by itself is glassy and rather heavy. It takes about two tons of coal and over a ton of coke as fuel to every ten tons of the rock mixture. A layer of wood is followed by a layer of coal and coke, then a layer of the rock mixture. More coal and another layer of rock having been placed in the cupola, the fire is started, and an air-blast, with a pressure of from three to five lbs. per inch, is forced through this mass, soon heating and fusing it. When it is in this state a small opening is made at the base of the cupola, and a stream of the fluid mass as thick as the stem of a clay pipe is allowed to run out. A steam pipe with steam at 90 lbs. has a suitable opening about a foot below the base of the cupola, and a few inches from the stream of melted rock. A valve being opened, steam rushes out of the pipe with great velocity, encounters the stream of glowing liquid, and carries it along with it in a rush. The steam-jet and the flow of the rock are adjusted with such nicety by the attendant, that none of the liquid drops to the ground, but all is caught up by the steam and whirled into the blowing chamber, where it falls by its own gravity. The blowing chambers are oblong rooms 20 to 30 feet wide, twice as long and about 20 feet high, and such is the force of the jet of steam that the finer wool is blown to the extreme end of the room, the heavier and coarser settling down nearer the entrance. Having thus been automatically graded, it is packed in bags for domestic use or pressed into bales for export. The bags weigh from 35 to 55 lbs., according to quality, and the bales weigh from 150 to 180 lbs. When running with a double shift working from 18 to 20 hours, the capacity of the works is about ten tons per day. The uses of mineral wool are so many that the supply is hardly ever equal to the demand. It is used for packing around boilers, furnaces and pipes, to retain heat, and in other places to keep the frost out. It is used in buildings between the walls and in the ceiling to deaden the sound and also to retain the heat. During the recent coal scarcity it was put to a new use, a wire cage being packed with the mineral wool, which was then impregnated with kerosene and used as fuel in heaters or stoves, and, as it is incombustible, it would last indefinitely.—American Machinist.

### CHANGE OF NAME.

The Loom Picker Co., of Biddeford, Maine, long and favorably known to our readers as manufacturers of loom pickers, loom harness, reeds, picker sticks, etc., announce that the name of the company has been changed this month to the Garland Manufacturing Co. and the post office address to Saco, Maine. The company have done business under the old name and with the old address for thirty years, although the factory has been located in Saco for the past twenty years. Those not familiar with the geography of this part of Maine should understand that Biddeford and Saco are practically one place, separated by the Saco river, and that the change announced is merely a change of postal address and not of location. The circular announcing the new name states: "The management of the business and the location of the factory will be identically the same as for many years, so that the only change will be in the name and address. We change our name because our product is no longer confined to loom pickers as was the case when the business was established and as our name has implied. We change our address to Saco, where our factory has been located for many years, because the Saco Post Office is much nearer our factory than the post office at Biddeford, which is on the opposite side of the Saco river. The address

is changed not only for our own convenience, but also for the purpose of enabling us to more promptly handle our correspondence.

### SULPHUR IN WOOL.

One of the annoying things that is apt to be present in all wool is a certain proportion of sulphur. It may not be present in a very large quantity, but whenever it is in evidence it leads to complications and trouble of various sorts. At the start, perhaps, the first thing to determine is whether there is sulphur present at all or not, and this can be done by means of the following simple tests: Take a solution of oxide of lead dissolved in neutral acetate of lead solution, dilute it and raise it to the boiling point, and then place the wool to be tested in this dilute boiling solution. It will be noticed that the wool will first turn to a brown color and then finally to a black, and the reason for this is that the lead of the solution has combined with the sulphur of the wool in the form of a lead sulphide, and this has become a precipitate upon the wool fibre. The combination forms a black lead sulphide, and this sulphide will not be produced unless sulphur is present, so that it is possible to use this test to determine whether a fibre is really wool or not. A wool treated thus will show the black precipitate, while if the fibre is silk or some other material, no such precipitate will form, because sulphur is not a chemical that is found on any other textile fibre than wool. It may vary from 1 to 4 per cent. in wool, and so can cause trouble if it is not removed.

It might be thought that such a small proportion of sulphur as the above could cause no appreciable difficulty in the finishing and wool treatment processes, but such is a serious mistake. The fact is that when sulphur appears on the wool fibres and is not removed, it is bound to lead to trouble, annoyance, and difficulty. In the dyeing of wools it is well known that if sulphur is present there is liable to be great difficulty with light shades and colors. In cases of this kind it is impossible to use metallic dye kettles, because the sulphur on the wool will combine with the metal of the kettle to form a dark-colored precipitate that will cause more or less variation in the shade of the colored fibre, according to the proportion of sulphur present and the kind of metal in the containing vessel. Trouble of this description is sure to result when the neutral dye kettle is used, and if copper or lead is the metal in the kettle. It will be noticed that the same result practically follows in this case, as followed in the test above described for the detection of sulphur in the wool. The trouble in both cases arises from the formation and precipitation of a dark-colored sulphide upon the fibres of the wool. The trouble is most marked where the color or shade is delicate, and the sulphur is present in the larger proportions. Practically similar results are caused from similar conditions in the wool-mordanting operation, unless care and caution are exercised. If too much of the crystals of tin are used in the mordanting treatment of a wool from which the sulphur has not been removed, the result will be that the sulphur of the wool will combine with the excess of tin in the mordant, and a metallic sulphate will again be produced which will precipitate on the fibres of the wool in the form of a dark-colored material, which will turn the wool brown in color. This, of course, will cause infinite trouble if the wool is one that has to be dyed a light shade or color. In fact, in order to dye light and delicate shades, it is necessary to remove the sulphur from the wool before the drying is undergone.

In order to remove the sulphur which is found on wool fibres a chemical process is necessary. This process can be employed without any injury to the wool fibre as far as practical purposes are concerned, yet it might be well to state that in order to remove absolutely all traces of the sulphur by chemical means has been found impossible without resulting in some serious detriment and injury to the structure or qualities of the wool fibre. This fact is one that makes this whole matter one of importance and far-reaching in its consequences. It is doubtful if dyers fully appreciate the need of care and treatment in this respect, and colors off shade, and lacking in brilliance and effectiveness, may frequently be due to laxity and neglect. It is possible to reduce the proportion of sulphur present in the wool to about one half of 1 per cent. by chemical treatment, and when the proportion is so low it practically has no effect and cannot combine with metals in containing vessels or in mordanting liquors and so form sulphides which lead to variations in color and shade. In order to reduce the sulphur to this proportion, the plan is to steep the wool for a day in a dilute bath of milk of lime. After this treatment for twenty-four hours the wool is acidulated with hydrochloric acid, and the process is completed by means of thorough and perfect washing and rinsing in a clear, clean water. Thus the sulphur is reduced to a minimum, and little difficulty need be feared in its after-treatment in coloring or finishing.—The Textile Manufacturer.

### ON THE ORIGIN OF MILDEW IN WOOL GOODS.

Under the term mildew a disease of the wool fibre is understood which is generally attributed to micro-organisms either of fungus or mould growth. It is frequently met with, and in dyed goods usually appears as light patches.

The microscopic appearance of mildewed wool differs materially from that of wool attacked by acids or alkalis. In its initial stage it is considered by some to be curable, whereas by others the contrary is maintained. The author set out to isolate the micro-organism with the idea of being able by its study to indicate how to combat it. He found it impracticable to make cultures from pieces showing mildew, since such goods, by the time they were examined, had passed through several processes which had effected the extinction of the micro-organism, though its effects remained. He succeeded in producing characteristic mildew spots in perfect cloth by rolling it up after thoroughly wetting with a piece of rotten wood, and then keeping in a moist chamber at 41 degrees C. In three days mildew could be detected under the microscope, and from fibres taken from the infected parts pure cultures of the micro-organism of which it consists were easily produced. With these cultures a series of experiments on cloth were carried out. A piece of white cloth previously boiled for one hour in water was inoculated with a pure culture of the bacteria, and placed along with a second piece not inoculated in a moist chamber, in which the temperature was maintained at 40 degrees C. In three days the inoculated places showed the characteristic appearance of mildew, made easily apparent to the naked eye by dyeing both samples with acid green. The uninoculated piece dyed perfectly level, whilst the other one showed light patches on the inoculated places. This experiment was repeated a number of times, but always with the same results. For a further experiment two pieces were dyed with acid green, in one case with acetic, in the other with sulphuric acid, and together with an undyed piece previously boiled in water, were inoculated and tested as above described. In

four days the undyed piece was mildewed, whilst the dyed ones were not. In order, then, to determine whether the dyestuff or the acid had prevented the bacteria developing, two pieces of white cloth were taken and boiled, one in sulphuric, the other in acetic acid, corresponding in strength to the dyebaths previously used; rinsed, inoculated, and treated as before. In four days it was found that a sample which had not been treated with acid had become mildewed, whilst the acid-treated ones were quite free from it, proving that the acid prevents the development of the bacteria. Similar experiments on indigo dyed cloth first boiled one hour in water showed that it was attacked much more rapidly than undyed cloth, as the inoculated pieces showed mildew in twenty-one hours. This fact is well known to practical men, and may be owing to the dyestuff or the slightly alkaline state of the cloth. In view of the preservative action of acids demonstrated by the previous experiments, the author tried their effect in this instance. He boiled a piece of indigo-dyed cloth in N<sub>2</sub>O sulphuric acid, and afterwards inoculated it. After eight days' treatment no trace of mildew could be detected under the microscope. The author afterwards learnt from a practical man that it was his custom in summer to pass indigo pieces through acid if they could not be finished without delay, to prevent their mildewing. Further experiments showed that indigo cloth dyed in a fermentation vat was more liable to mildew than when dyed in an alkaline hydrosulphite vat, whilst when dyed in a slightly acid hydrosulphite vat no mildew could be detected after eight days' treatment. Seeing that indigo apparently favors the development of mildew, the behavior of other dyestuffs in this respect was tried. Cloth samples were dyed with the colors named, after which they were boiled one hour in water, and afterwards inoculated with the following results: From previous results it was to be expected that the slightly acid patterns would not develop mildew, but from the fact of a piece in an alkaline state like that dyed with Methylene blue not developing mildew, it may be concluded that some colors act as antiseptics. The author's finding was confirmed from a practical source that pieces dyed in an acid bath never become mildewed, and if such show mildew it has been present before the pieces have been dyed.

According to an experiment made by the author, it appeared at first sight as though cochineal scarlet covers mildew, as shown by the following experiment: A piece of cloth upon which mildew had been developed by inoculation and cultivation was dyed by him with cochineal scarlet. The color was quite even, and no mildew visible to the eye. In a few days, however, after the cloth had been frequently rubbed, the mildew places became visible. An attempt to develop mildew on cochineal-dyed cloth, even after sixteen days' cultivation, gave negative results under the microscope on the inoculated parts. The author is of opinion that all mordant colors are like cochineal in apparently covering mildew. He dyed two mildewed samples one with Chrome Black, the other with Alizarin Bordeaux on a chrome mordant. In both cases no signs of the mildew were apparent after dyeing, but after drying light places showed themselves. The conclusions the author arrives at are the following:

- 1 Mildew is the effect of a form of bacteria.
2. The mildew bacteria is very susceptible to dilute acids, either inorganic or organic.
3. Pieces dyed in acid baths will not mildew before the acid is washed out.
- 4 Pieces dyed in an acid bath which show mildew spots after dyeing were mildewed before dyeing. In pieces dyed

with mordant colors, the mildew may only become visible after a time.

5. Mildew is most rapidly developed on indigo-dyed pieces which are slightly alkaline.

6. Indigo is actually destroyed by the bacteria of mildew, and the light patches in mildewed indigo pieces are due in part if not entirely to this.

7. Many dyestuffs, such as Methylene Blue, act as anti-septics to mildew, so that goods even in an alkaline condition, if dyed with such colors, do not develop mildew.

In a supplementary article the author gives results of experiments made with Methylene Blue, Methyl Violet, Magenta, Safranine, Malachite Green, and Auramine, and Safranine entirely prevent mildew, which cannot consequently be developed upon goods dyed with these colors. On material dyed with Methyl Violet a very slight development of mildew took place, whilst on material dyed with Magenta or Auramine the mildew was strongly developed, and its ravages on the fibre easily visible to the eye, the Magenta being almost decolorized on the parts infected, whilst the shade of the Auramine was unaffected.—Farber-Zeitung

### THE DISCOVERY OF FELT.

Felt is a union of animal hair with wool in such a manner as to produce a firm, compact substance. Its discovery was of so much importance that it seemed necessary to attribute it to divine agency, and hence we have a tradition of saintly origin. When St Clement was fleeing from his persecutors his feet became blistered, and in order to abate the pain he placed wool between his sandals and the soles of his feet. On continuing his journey the wool, by the perspiration, motion and pressure of his feet, became a uniformly compact substance, which was afterward denominated felt.

## 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.

There are rumors that a woolen mill is to be established at Killaloe, on the line of the Ottawa and Parry Sound Railway.

B. N. Fraser, who recently purchased the felt factory at Brandon, is converting it into a woolen mill and expects to start running about September 1st. He will employ about fifteen hands. He has sold his mill at Morden.

Burglars attempted to blow up the safe at the cordage factory, at Stratford, recently. The whole inside of the safe was wrecked with nitro-glycerine. A bottle half full of the glycerine was found on the premises.

Mayor Floyd, of Cobourg, is in communication with a garment manufacturer, who is desirous of removing from his present site, with a view of getting the works at that town. From 75 to 100 hands would be employed, mostly girls.

A felt factory, under the control of a syndicate, is proposed at Kemptville, Ont. This is the result of the recent introduction of electric power at that village. A bonus would be expected. Negotiations are going on with M. E. Connor, of Waterloo, Ont.

The new factory to be erected by the Toronto Carpet Co., for which a permit has been issued, will cost \$60,000.

It is said that the Penman Manufacturing Co., of Paris, Ont., which recently bought the Bates Felt Works at Dundas, will remove the plant to St. Hyacinthe. Charles T. Brighton, local manager of the Penman Mills at the latter place, has resigned.

The employees of the C. Turnbull Knitting Mills Co., of Galt, held their annual picnic recently at Idylwild. One of the most interesting and exciting events of the day was a football match between the girls and boys, in which the former were successful by 3 to 0.

The Canadian Cordage & Manufacturing Company, of Peterboro, has engaged Alexander L. Sykes as general manager. Mr. Sykes has been connected with the cordage business for over a decade, and is at present manager of the Union Selling Company's branch houses in Indianapolis, Ind., and Cincinnati, Ohio.

A few nights ago, about midnight, the watchman at the Smith Wool Stock Company's premises, Toronto, discovered fire in the wool-picking room. When the firemen arrived that part of the building was enveloped in flames, which were not extinguished until \$2,000 worth of damage was done. The company's employees had been at work till 10 p.m., and when the watchman made his rounds at 11.30 he found everything all right. The blaze is believed to have originated in the engine-room. The loss is fully covered by insurance.

By the bursting of a fly-wheel, 18 feet in diameter, at the factory of the Gutta Percha and Rubber Manufacturing Company, Toronto, Albert Holden, an employee, received injuries which resulted in his death, while being removed to a hospital. Holden was passing along a lane opposite the engine room at the time. One portion of the wheel broke through the brick wall and passed just over his head. The impetus of the bricks knocked him against a wall forty feet distant, and rendered him insensible, his ribs and legs being fractured. The piece of the wheel crashed through the varnishing room, narrowly escaping two men, and passed out at an upstairs window. Another portion tore through two floors and the roof, wrecking everything in its path, and went high into the air. Still another piece wrecked the heater and broke the water pipes, causing the cellar to be flooded.

The dispute between the town of Galt and the Galt Carpet Co., H. H. Burrows, promotor, respecting the carpet factory has again been before the courts. The town agreed to settle the action brought by Burrows Co. for damages for wrongful ejection from the premises which the town provided for the factory, by paying \$998 in full, which includes \$400 deposited by Burrows as a guarantee of good faith. The evidence at the trial went to show that Burrows had not carried out his agreement and that the town was justified in ejecting him from the premises. Since the trial the town has been served with attaching orders by four creditors, and a notice of assignment by a fifth, each of these five creditors claiming to be entitled to the money. Under these circumstances, with six claimants to the fund, J. E. Jones, acting solicitor for the town, applied to Chancellor Boyd for a direction as to who should receive the money. An order has been made for payment into court of the money, where the claimants will have to fight it out. Burrows Co.'s claim against the town was for \$7,000. There is now some talk of another carpet factory locating at Galt. Fred Reynolds, who has been superintendent of a big Brusse's carpet factory at Amsterdam, purpoes branching out for himself, and has been looking in Galt for a suitable location.

The Anchor Knitting Co., at Almonte, has had a modern iron fire escape placed on the outside of their factory.

A woolen mill at Medicine Hat, which Ontario capitalists are about to start, will employ about forty hands. Medicine Hat is in the midst of a great ranching country, and it is expected there will be a good supply of local wool.

At a special meeting of the shareholders of the Brandon Binder Twine Co., a motion to increase the capital from \$100,000 to \$200,000 was carried, and it was also decided to rescind the clause which prevented a shareholder from holding more than twenty-five \$20 shares. A sharp advance in the price of twine having been made by nearly all dealers in America, in consequence of a rise in raw material, it was decided to offer to shareholders only twine at the following prices on orders received before July 1st: Manitoba, 500 feet, 13 cents; Wheat City, 550 feet, 14 cents; Brandon, 600 feet, 15 cents.

The Oxford Woolen Manufacturing Co., of Oxford, N.S. is building a new brick and stone mill, which will be one of the best mills in Canada and will embody all the latest ideas tending towards economy in manufacturing and easy facilities for carrying on work. It is being constructed on slow burning principles and will be provided with the automatic sprinkler system throughout. The mill, with the picker house, will be nearly three hundred feet long. The Company have been so rushed with orders that they were compelled to extend their plant in this way. They make both men's and women's wear.

The Empire Carpet Works at St. Catharines were totally destroyed by fire on the 29th of June. The origin of the fire is unknown, but it is supposed to have started in the dye house from spontaneous combustion. A large quantity of new stock placed in the main waterrooms of the factory a few days previously was an utter loss. In the store house, a little east of the factory, was a large quantity of yarn. The damage to this was slight and was caused by water. There were 65 hands employed in the factory. The total loss is about \$45,000, while there is \$28,000 or \$30,000 insurance. The building was of brick, three stories high. Thos. Etherington was manager.

About two hundred and fifty of the employees of the Canadian Rubber Company at Montreal, recently struck, owing to the refusal of the management to grant time and a half for night work. For some time there had been a feeling among the employees of certain departments that an effort should be made to improve conditions, complaints being made of alleged overbearing manner on the part of some of the minor officials towards the workmen, and the system of having to work overtime at day rates without being allowed time to get supper. A conference with D. L. McGibbon, general manager, resulted in their return to work. Mr. McGibbon explains that at certain seasons of the year the output of rubber goods is much smaller than at other times, and it has always been the custom of the Canadian Rubber Company not to discharge their employees in the slack season. At other seasons a rush takes place for certain lines of goods, and on these occasions the men have always worked overtime until 10 p.m., at the regular daily rate of wages. Owing to the recent dry weather orders for water hose have been extremely large, and the men in the hose and mill departments were notified that they would be expected to work five nights until 10 o'clock, when the orders would be overtaken and no more night work would be necessary. The strike was the result of several meetings of the union recently organized in connection with the international, which has its headquarters at Boston, and appears to have been ill-advised, as the company voluntarily advanced wages on May 1st and the relations between employers and employees have always been pleasant.

The Cornwall and York Cotton Mills, at St. John, N.B., were shut down for two days this month, while the boilers were being cleaned.

A competent dyer from a United States mill is anxious to settle in Canada and advertises in this issue for a situation. He is willing to come to a good mill on trial to prove his ability.

A new wheel has been installed in the power house of T. B. Caldwell's mill at Appleton, and the capacity of the plant is being taxed to the utmost to keep pace with the orders.

Stevenson, Blackader & Co., selling agents of the Dominion Cotton Mills Company, of Montreal, have given an unqualified denial to the report that the Dominion Cotton Mills might close on account of cotton market conditions.

Two girls were taken from New Brunswick to work in the cotton mills at Lowell, Mass., and the authorities summoned the man who hired them for a violation of the alien contract labor law. The girls stated that they were hired in the United States, and the case fell through.

The Standard Manufacturing Co., of St. John's, Nfld., have let the contract for the erection of a building to be used for drying oiled clothing. The building will be 66 by 52 feet, built of concrete and brick. This is the first fire proof structure erected in Newfoundland. The floors are made with steel beams, concrete and iron, and the windows and skylights are glazed with Pelkington's patent fire proof wire glass.

The Ontario Felt Works at Dundas, which lost its upper story last month by fire, is being re-roofed, and will be ready for operation about the end of this month. Meantime the mill is closed. The building was insured, but the fire did enough damage to the machinery to cripple the mill for this season. When the mill starts up it will be run on bed blankets; but later on it is intended to make harness felts and shoe felts. J. F. Morley, the proprietor, is gradually recovering from a serious illness, but is not yet able to attend to the business, which is being managed by his son.

John F. Morley, late manager of the Canada Woolen Mills Co., from March, 1900, to May, 1902, is prosecuting an action against the company, for damages for wrongful dismissal and for statements derogatory to his business capacity, which, he alleges, were made by officers of the company since he left the concern. The plaintiff charges that his dismissal was due to protests he made against the improper and unbusinesslike transactions permitted by the directors of the company, to the great loss of its shareholders. Morley himself holds \$5,000 in shares, and adds a claim for depreciation in value of his shares. The company moves to strike out the portions of his claim in which the charges of unbusinesslike methods are made against the directors on the ground that these were merely vexatious and libellous and not relevant to the issue. The master refused to strike out the paragraphs complained of, but ordered the plaintiff to give particulars of the matters charged, so that the defendants will be able to prepare evidence to meet the charges.

One of the largest dry goods merchants in New York in commenting on the situation says: "The market is a great disappointment. Last year retailers were ordering goods in quantity six months ahead. At present they are showing the greatest conservatism, and no one seems to have the confidence in the future that everyone was displaying one year ago. The high prices which are ruling for raw cotton may have something to do with this."

### FABRIC ITEMS.

Lawn hose has advanced 25 per cent. at factories.

Mohairs are to be among the favorites for the coming fall.

It is predicted that rope and sash cord will advance in price.

Fine furs, especially the very finest, will be in great demand the coming season.

There is a very firm market for fine woolen goods and holders are quite decided in their views.

Wholesale houses state that their orders for fall exceed the whole fall trade of last year, notwithstanding the higher cost of goods.

Dress goods for the fall are in large demand. English cashmeres and worsteds are advancing. French worsteds are up 30 per cent.

Moccasins, which can be worn by the summer girl in the garden, on the tennis court, or even lawn parties, are a new fad. They are made of a coarse grade of chamois skin.

Reports from Belfast show that the sowing of flaxseed, which is usually done in April, could only be done this year in sheltered lands. The crop will, it is expected, be much less than last year.

The stand-up turn-down collar is as popular as ever this season. Though manufacturers dislike it, it retains its hold on public favor. It is suitable for warm weather wear, as it does not wilt so quickly as the ordinary band.

For fall underwear, it is said that the trade is not buying as heavy a weight of garment as formerly. Quality of material counts more than heaviness of weight. An increased demand for union suits for men's wear is reported.

The carpets of the adjusting rooms of the United States mint, at San Francisco, have been taken up and treated to a process for removing the gold dust. A bar of gold valued at \$9,000 is the result. The carpets were laid six years ago.

Cotton manufacturing, it is stated, has been the leading industry in the United States for fifty years. The capital invested is now over \$460,000,000. There are 973 cotton manufacturing plants employing 10,438,121 persons.

Household linens are selling freely for the fall. The handkerchief trade is especially large. Union goods are firmer owing to the advances in raw cottons. Russian advices report scarcity of flaxseed for sowing purposes.

Advices from Roubaix, France, the centre of the fine wool dress goods in that country, announce advances of 15 to 30 per cent. in all classes of fine wool stuffs, such as those made of cashmere, yarns, etc., and the firm writing states that they will not accept orders at current prices as at present they are unable to make contracts with dyers and finishers.

At a meeting of the Brandon Horticultural and Forestry Association, held recently, Professor Wolverton read a paper on Flax. He said that 40,000 acres of flax were grown in Manitoba, according to Government reports. The fibre that was recklessly burned all over the country amounted to the value of \$2,000,000, about the value of the binder twine used by the country. He believed that the Manitoba flax would take a high place and prove to be of excellent quality. Thread and twine were shown by the professor, made from Manitoba flax. He thought that flax culture had a splendid future before it, and would save vast amounts of money to the farmers and inhabitants of this country.

Under the Consolidated Penitentiaries Act, now before Parliament, at Ottawa, the salary of the superintendent of cordage at Kingston is to be \$1,000, instead of \$1,500.

The Dominion Cotton Mills gave notice last month of an advance of  $\frac{1}{4}$  to  $\frac{1}{2}$ ¢. per yard in grey cottons and of  $\frac{1}{2}$  to 1¢. per yard in various numbers of duck. All cotton bags have also advanced. Canton flannels are up  $\frac{1}{2}$ ¢. per yard.

The sales of homespuns are as active as ever in Canadian markets. Zibeline effects in endless variety are selling freely. The cloth with insertion of mohair into the face is among the most popular lines. This is a comparatively new idea, and the manner in which domestic makers have taken hold of it shows that certain mills which turn out the better class of Canadian cloths are right up-to-date.

Flannels for men's wear are selling well, especially those made of fine Botany wools. These goods are known as flannel, but they are really fine Botany worsteds, with a raised face. They keep their shape well when made up, and give altogether better satisfaction for summer wear than the old-fashioned flannel used for suitings. They are selling in neat stripes and over-checks and fancy broken stripes.

John Muir, of Scotland, has invented a process by which hogs' hides can be made to serve as a substitute for rubber in making cushion tires for vehicles. Experience has shown that twenty three years are required to bring a rubber tree to an age where it will produce sap. The demand that is made upon the rubber plantations is becoming so great that the tree cannot keep up with the requirements, and the result is that rubber is increasing in price. Mr. Muir's patent has been sold in America, and it is proposed to establish a manufactory for the making of hogs' hide tires.

Cottonades, shirtings, apron gingham, flannelettes, domets and grey and bleached cottons have been advanced by Canadian makers five per cent., and the market is very firm at the advance. The mills state that they could not at the present prices of raw cotton reproduce the goods at the prices at which they are now selling, but that if the mills sold the raw cotton they have on hand they could make more money on it at the advanced prices than they could by manufacturing it and selling the goods at current prices. A sale of raw cotton by the Dominion Cotton Co. gave rise to the rumor that they intended to pursue the latter course, but it is not correct. They sold about a thousand bales of their stock of raw cotton to great advantage and had still enough for their own demands. They had on hand a million and a half dollars' worth of raw cotton.

A New Yorker, who is now living in Shadipore, India, in the vale of Cashmere, the home of the beautiful Cashmere shawl, gives a melancholy account of the decline of a great and famous industry. These rare and costly shawls, which were so much prized in the days of our grandmothers and handed down as heirlooms, are still made in Cashmere, but their glory has departed, and the cheap aniline dye has displaced the soft and beautiful colorings in the old-time vegetable dyes. What is left of the shawl industry is carried on by boys and men, who earn from 2 to 8 annas a day, or from 4 to 8 cents in American coinage. For this beggarly sum they sit all day at the looms, which are almost as forlorn as themselves in appearance, for they date back to the days of prosperity and are held together by a generous use of string. There is just enough demand for the shawls to keep the industry alive. Rich Cashmerians like to wear Cashmere shawls, and also employ them as draperies, and a few find their way to Central Asia and Tibet.

Canadian makers have advanced their prices for chenille table covers and curtains.

The Hudson Bay Company's post at Battleford received recently from their Onton Lake post nine wagon loads of fur for shipment to England.

The Ontario Glove Works, at Brockville, of which the late John Maclaren was manager, will be carried on as usual, under the management of Wm. C. Maclaren.

The demand for cotton grain bags is expected to be large this season on account of the great crop. The shipments of grain to Australia go in bags, and the large shipments of flour from the big mills in the West to both coasts for export have to be made in bags.

The National Association of Wholesale Tailors has signed an agreement with the district council of the United Garment Workers that insures peace in the clothing trade until the summer of 1905. The agreement establishes the nine-hour day, and only union members are to be employed.

It is rumored that the United States Government has it in contemplation to stop the importation of Argentine wool and hides; whereupon the *Prensa*, published at Buenos Ayres, asks the Argentine Government to take steps to prevent, and attributes the unfriendly attitude to commercial jealousy of Argentina's hold upon the trade.

There seems to be some danger of a shortage of binding twine in the West and Southwest, but *Farm Implement News* thinks the Kansas prison people are sending out scare head items for the purpose of getting additional appropriations from the Legislature, now in special session. The situation calls for extreme caution on the part of dealers in buying. It will be better to lose a few sales than carry over any high-priced twine.

Andrew Villani will enter upon a new industry at Montreal, namely, the culture of the silkworm, and the manufacture of the spun product. Silkworms' eggs have been imported from Italy and some thousands of worms are now being hatched. The varieties of worms that are receiving Mr. Villani's attention are Chinese, Japanese, those from the Pyrenees, and hybrids of these kinds. Those from the Pyrenees yield deep yellow silk, Japanese-European hybrids produce light yellow silk, and Chinese-Japanese hybrids give white silk.

The Cosmos Cotton Co., of Yarmouth, Nova Scotia, has entered an action in the United States Court against the Alabama Great Southern Railway, demanding \$10,000 damages. It is alleged by the complainant that on April 14 last the defendant issued a bill of lading dated Birmingham, Ala., to Smith & Coughlan for 100 bales of cotton, weighing 51,000 pounds, freight prepaid; consigned to the order of Smith & Coughlan, Yarmouth. Plaintiff avers that instead of receiving 100 bales of the weight described in bill of lading, they received half, or split bales, weighing only 26,381 pounds. This is the first case growing out of the recent alleged cotton frauds, in which it is said over \$200,000 was lost.

G. P. Foaden, of the Egyptian Government service, has been on a visit to America, and took in the Agricultural Farm at Guelph. Speaking of the cotton industry, he says that Egypt already leads the world in the production of long staple cotton, and the prospects under the new conditions are so bright that they can scarcely be overestimated. The great wealth of the agricultural lands in Egypt made it impossible to adopt American methods, but many valuable ideas were to be obtained in this country. The reverse is also true, and every season sees a number of Americans

in Egypt studying the conditions of the cotton industry there.

The demand for white goods is so great that consumers are using all sorts of goods which in previous years they would have turned down as being unfit for consideration.

### SQUIRREL SKINS.

The *New York Sun* says that the story of the sudden rise to popularity of squirrel skin in the world of dress this season is not generally known. It was brought about by the ingenuity of a Russian official. For years and years certain Russian peasants in Siberia paid their taxes in squirrel skins. This being an old custom, the Czar's government did not care to cause hardship and breed discontent by changing it. But there was little demand for Russian squirrel skins. The whole American trade took only 20,000 skins per annum at the low price of 12 cents each. The skins accumulated in the Russian government's warehouses in Siberia. There were millions upon millions. The official in question, knowing that the skins were light in weight, soft and warm, decided last year to test the caprice of fashion in respect to them. He went over to Paris, called upon a famous dressmaker, and persuaded him to use some of the skins. The idea was a success. Paris set the pace, English society took up the fashion, and fashionable Americans brought the squirrel skin craze across the water. The result has been that in 1902, the United States imported nearly 5,000,000 squirrel skins at about 37 cents each, wholesale, as against 20,000 at 12 cents each, in 1901. The rest of the world was equally liberal. The great demand emptied the Siberian warehouses of squirrel skins at a considerable profit.

### CARPET DESIGNING FOR MEN.

Speaking about carpet designing as a vocation for men, a high authority on the subject said: "It all depends on the ability of the man, for designers can be divided into three classes; mechanics, students, and artists. In the entire carpet trade there are not more than eight or nine men who can be called artists. Designers of this class receive salaries of from \$3,000 to \$5,000 a year, and are expected to be fertile in original and good ideas. Next below them are the students, some of whom will eventually develop into artists, while others, the majority, can hope to be classed with nothing better than the mechanics of the vocation, men who may be good draughtsmen, and indeed expert in all the technical details of their work, but lack originality, and consciously or unconsciously have fallen into a rut, repeating old ideas, and showing no capacity for anything above the routine work of the studio. Men of this order cannot earn more than \$1,200 a year. No one can expect to produce salable designs if he has not first made himself perfectly familiar with the work of the loom, its powers and limitations in reproducing in the woven fabric the ideas of the designers."

### PERSONAL.

John Fisher, of Huddersfield, Eng., well known in connection with the firm of John Fisher & Sons, wholesale woolens, who do business in this country, is coming to Canada with the delegates of the Chambers of Commerce.

Bennett Rosamond, M.P., head of the Rosamond Woolen Co., Almonte, has been appointed one of the delegates to represent the Canadian Manufacturers' Association at the Fifth Congress of Chambers of Commerce of the Empire at Montreal.

George Reid, of Geo. Reid & Co., dealers in textile machinery, Toronto, has gone to England on a business trip.

John A. Code, of the Appleton woolen mills, has gone to Sherbrooke to take a position in the woolen mills there.

Joel Clarke, whose death is announced at the age of 83, was formerly proprietor of the Westport, Ont., Woolen Mills.

Wm. Ewing, of St. John, N.B., whose death is announced, at the age of 71, was at one time a member of the wholesale dry goods firm of J. & J. Hegan & Co., in that city.

E. A. Genereux, who died a short time ago in Montreal, was at one time a member of the dry goods firm of Thibaut-deau, Genereux & Co., from which he retired in the seventies.

B. J. Crane, a traveller for E. Leadley & Co., wool dealers, Toronto, was drowned in Caledon Lake, near Orangeville, where he went for a day's fishing.

John W. Rutherford, C.E., a prosperous and successful builder of waterworks in the United States, who died recently, was engaged while a young man in the office of the late Mr. Thompson, woolen manufacturer, Galt.

Senator Jas. O'Brien, who died recently in Montreal, was in the wholesale clothing trade. He was a native of Ireland and came to Canada in 1850, where he started in the wholesale dry goods and clothing in 1858 and retired in 1893.

James Carmichael, the late postmaster of Oshawa, was at one time a dry goods merchant in Toronto and established branches at Oshawa and Prince Albert. In 1873 he retired from the dry goods trade and went into the manufacture of stoves. He had reached the age of 83.

M. Staunton, head of Stauntons, Limited, manufacturers of wall paper, Toronto, is dead. Deceased was the first to engage in the making of wall paper in Canada, and was regarded as the father of the business by Canadian manufacturers.

A number of changes have taken place in the staff of the Excelsior Woolen Mills, Montreal. Robert Armstrong, formerly boss dyer, has accepted a position in Connecticut. James Hall, boss carder, has left and gone on the road for an oil firm. William Black, finisher, has accepted a similar position in Amherst, Nova Scotia. J. H. Boudreau is the new carder and J. Yeaman is dyer.

Mr. and Mrs. Joseph Cartledge, of the Speed Knitting Mills, Guelph, celebrated their golden wedding on June 30th. They were presented with purses of gold by the members of the family in the United States and in Guelph. Mr. Cartledge will be 78 years of age on the 5th of January; Mrs. Cartledge is nine years younger. Both are hale and hearty. The former was born in Derbyshire, England, and after learning his trade as knitter at Swanswick, in the same shire, when still a young man came to America. Mrs. Cartledge was the daughter of a Leicester man. When he came to Guelph, Mr. Cartledge took possession of the Arkell woolen mills, which he conducted with success for five years. Then he moved

into the city and rented the property occupied by the late Dr. Herod, where he started business, and ultimately purchased it. He then bought the Galbraith knitting plant at Gow's Bridge, and under the management of his son Nathan, has carried on a good and increasing business. Mr. and Mrs. Cartledge have lived in Guelph for over thirty years.

### Situations Wanted.

**WANTED POSITION AS TRAVELLER**—Calling on the retail trade for a mill. Long experience on the Ottawa Valley, East Ontario and North West. At present representing several Dry Goods Specialty Houses. Address, N. Y. Z. CANADIAN JOURNAL OF FABRICS, Montreal.

**DESIGNER OR SUPERINTENDENT**—A Superintendent and Designer having several years' experience in English and United States mills, and holding honors from technical schools is open for engagement in a Canadian mill. Address, H.A.M., care CANADIAN JOURNAL OF FABRICS, 18 Court St., Toronto.

**BOSS CARDER**—Boss carder desires position as woolen or felt carder. Understands nearly all cards and feeds, and all grades of woolen and felt goods. Address, R. H. W., care Canadian Journal of Fabrics, Toronto, Ont.

**BOSS DYER**—Boss dyer wants position. Large experience on raw wool, cotton, rags, warps, silks, union and shoddy piece dyes, felts and wool piece dyes. Am 34 years old, strictly temperate, will go anywhere on trial. Am at present dyer and chemist in a 25-set mill—can furnish the best of references. Address, "W. B.," care Canadian Journal of Fabrics, 18 Court Street, Toronto, Ont.

**EMPLOYMENT WANTED IN CANADA**.—Overseer of Carding. Experienced on wool, cotton, shoddy mixes, and all cotton, tweeds, flannels, blankets, wrappers and knitting yarns. English, American and Canadian machines. Married. Good references. Address, "S. E. C.," 321 Court St., Auburn, Maine, U. S. A.

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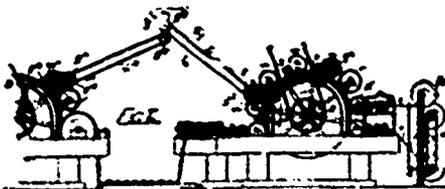
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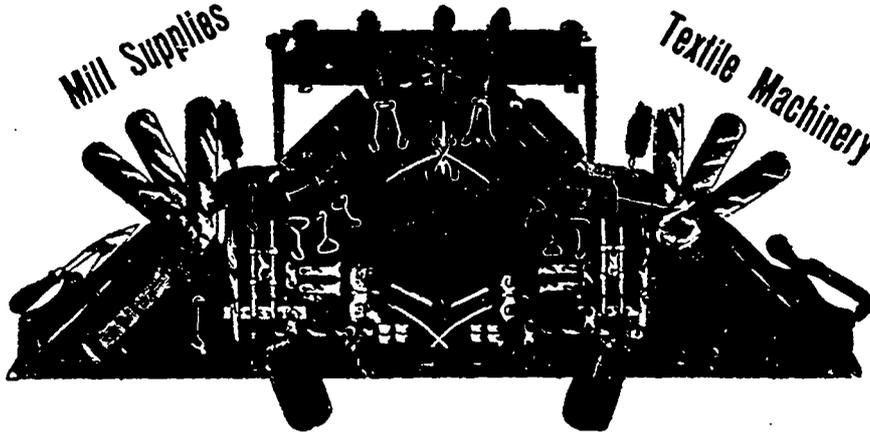
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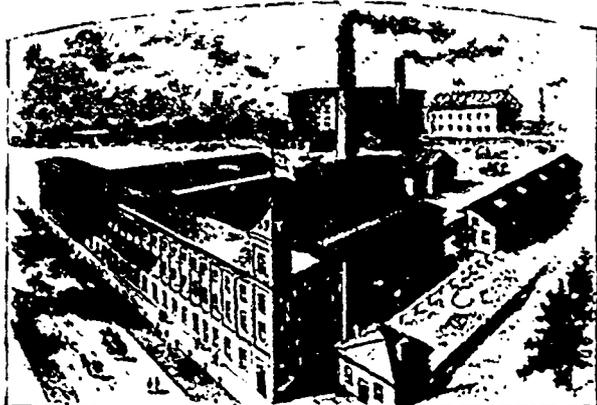
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## French Shoddy Picker Machine

SUPERIOR TO ALL OTHERS.

High Test Awarded at Paris Exposition, 1900.

Of SILK, WOOL, COTTON, WASTE, JUTE, etc., it will  
produce fifty per cent. more production than the Garnett  
Machine on one-half the power — Has no rival on the market.

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L. BREDANNAZ, Manager

Sole Agents for Canada and the United States.

Prices on Application.

Prices on Application.

Andomaro Molina, Merida Tuc, Mexico, accompanied by his son and three daughters, is on a visit to Canada. He is a wealthy land owner and manufacturer and has for a number of years devoted himself to the growing of hemp and the manufacture of binder twine, for which the principal market is found in the United States. The whole family are good linguists. His brother is Governor of Yucatan.

Thos. Sonne, Sen., tent, awning and sail manufacturer, of Montreal, is dead. He was 67 years of age, having been born in 1836 at Bornholm, in Denmark, where he learned the trade of sail-making. At the age of 18 he made several voyages to the East Indies and China, and arrived at Montreal in 1866, where he went into business as a sailmaker. Besides being the oldest man in his trade in the city, he possessed the largest factory of canvas goods in the Dominion. He was successful in his ventures, and amassed a good deal of property. He leaves a family of five sons and two daughters.

**WOOL MARKETS.**

The fifth series of Colonial wool sales opened in London on July 7th with a large attendance. Competition was spirited, and all grades were in demand. Scourings were in good request for the Continent. Slipes were unchanged. Cape of Good Hope and Natal grades were slightly easier. Merinos and fine crossbreds were steady, and medium and coarse crossbreds showed an advance of 7½d. to 10d. Several parcels of coarse crossbreds were taken for America. The offerings amounted to 9,805 bales, mainly New Zealand. Following were the prices on the opening day:—New South Wales—scoured, 1s. 1½d. to 1s. 5d.; greasy, 10d. to 1s. 1½d. Queensland—scoured, 1s. 3d. to 1s. 9½d.; greasy, 8½d. to 11d. Victoria—scoured, 1s. 3½d.; greasy, 5¾d. to 1s. 1½d. South Australia—greasy, 7¾d. to 11½d. Tasmania—greasy 6¾d. to 1s. 1d. New Zealand—scoured, 7d.; to 1s. 9½d. greasy, 5¾d. to 1s. 1d. Cape of Good Hope and Natal—scoured, 9½d. to 1s. 6½d.; greasy, 6½d. to 8½d. The sale is still in progress. Merinos are sold at rates slightly below

the May average, and some lots have been withdrawn. The market generally is strong and shows an increase generally of 7 to 10 per cent.

The country wool fairs in England have been going on. The attendance at the Leicester fair has been exceedingly large. It is declared that this season's wool has been remarkably well grown, the winter having been mild and the keep most abundant—conditions which have an important influence on both the length and strength of the staple. The increased values have been well maintained.

In the Eastern United States the sales have  
(Continued on page 220).

**CHEMICALS AND DYESTUFFS.**

There has been a little dullness in heavy chemicals during the last two weeks, but this is usual at this time of the year. Cream tartar has advanced three cents per lb.; all the other lines are firm:

Bleaching powder .....	\$ 1 30 to \$ 1 50
Bicarb. soda .....	1 75 to 2 00
Sal. soda .....	0 75 to 0 90
Carbolic acid, 1 lb. bottles .....	0 35 to 0 40
Caustic soda, 60° .....	2 00 to 2 25
Caustic soda, 70° .....	2 35 to 2 50
Chlorate of potash .....	0 09 to 0 10
Alum .....	1 30 to 1 50
Copperas .....	0 65 to 0 75
Sulphur flour .....	1 50 to 1 70
Sulphur rock .....	1 60 to 1 80
Sulphate of copper .....	0 06 to 0 07
White sugar of lead .....	0 07 to 0 08
Bich. potash .....	0 07 to 0 08
Sumac, Sicily, per ton .....	50 00 to 58 00
Soda ash, 487° to 587° .....	1 15 to 1 25
Chip logwood .....	1 50 to 1 75
Castor oil .....	0 07 to 0 08
Cocoonut oil .....	0 07 to 0 08

**NEW BLACK FOR WOOL**



**Absolutely Fast ONE DIP Black**

Unequaled for depth of shade. Users of black should investigate.  
Fastest Black on the market.

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 One 72 in. Gesaner Napper, in fine order.  
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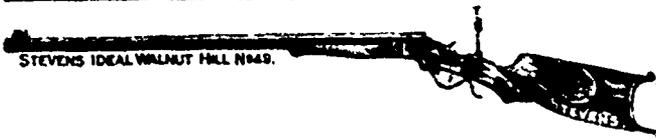
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not been large, but enquiries indicate that manufac-  
 turers could use new stocks. In the country, much  
 of the buying is over. Prices are higher than last year,  
 though it is still claimed that wool in many cases is relatively  
 lower at seaboard than in the country. In carpet wools, the  
 situation from the standpoint of the dealers is still serious.  
 Wools in the primary market abroad are reported as held at  
 abnormally high prices, and even at these are hard to get,  
 so that prices are, on the whole, somewhat stiff.

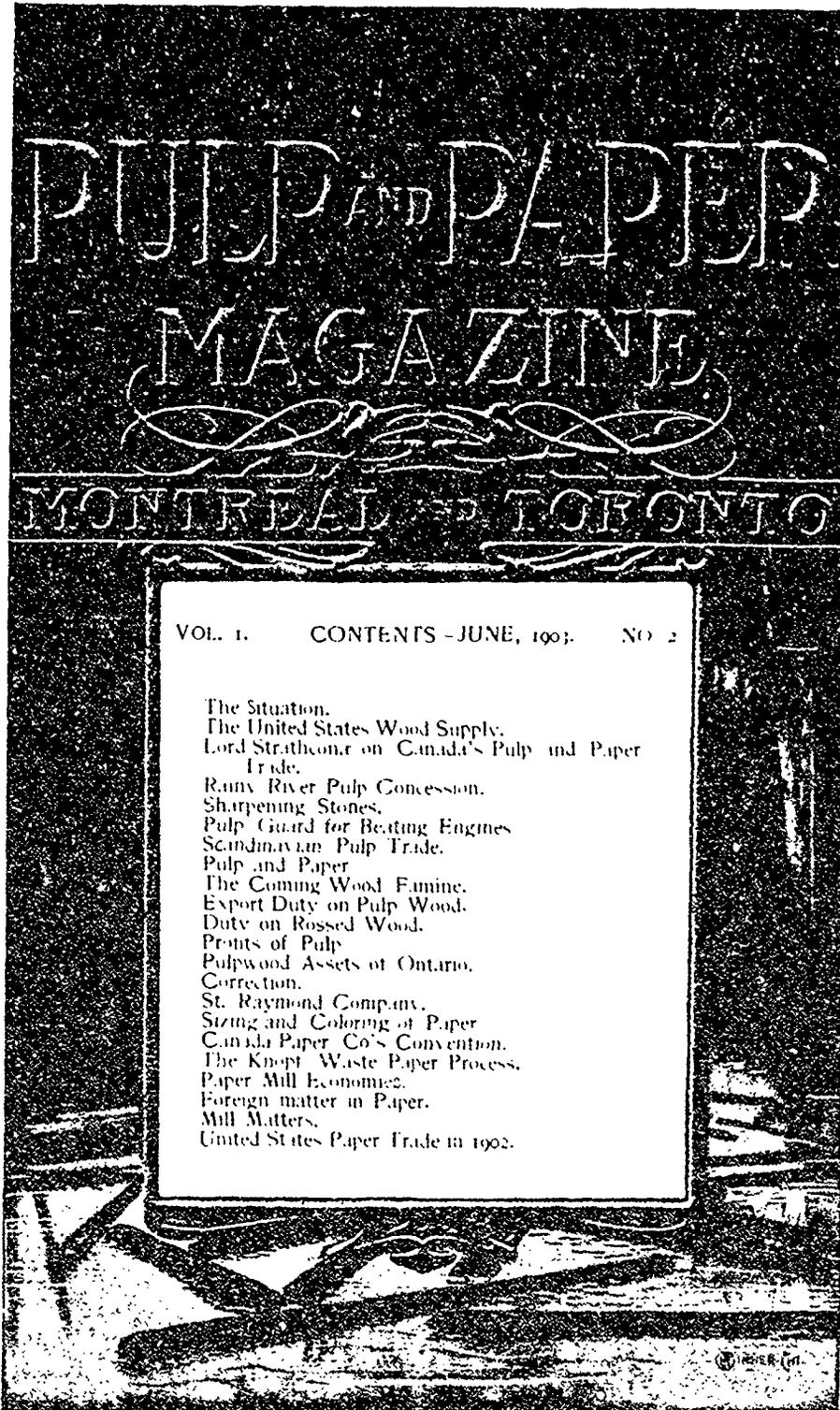
At Minneapolis there is considerable activity. Wool is  
 in good request and prices are gradually advancing. Minne-  
 sota wool commands as high as 18c. and a sale is reported at  
 18½c. Receipts of wool in the individual houses are regarded  
 by some as below normal, because of the multitude of buyers  
 who are dividing up the clip. The condition of wool this sea-  
 son is generally very light and bright, except in some sec-  
 tions where the dry weather made the wool dingy. Dealers  
 are selling all grades of medium and course flat, rejects being  
 only fine and very dingy, broken and black wools. This  
 leaves the piles of fine and fine medium very attractive.

Manitoba fleece wool is bringing 7c. per lb. laid down at  
 Winnipeg. Buyers are now operating in Territorial wool, for  
 which prices have not been mentioned.

At Montreal the market for wool is dull and prices un-  
 changed. Manufacturers are waiting to see what the Colonial  
 Wool Sales will do. We expect an advance of 5 to 7½c. on  
 all fine wools. We quote, Capes, 17½c. to 18½c.; B. A.  
 Washed Merinos, 37½c. to 42c.; fine medium, 32c. to 36c.;  
 scoured, 40c. to 50c., according to quality.

At Toronto there is quite a movement of new wool and  
 the market is distinctly strong. Quotations are: combing  
 fleece, 16c.; clothing, 7c.; rejections, 12c.; unwashed, coarse,  
 9c.; do fine, 10c.

# CONTENTS OF JUNE NUMBER.



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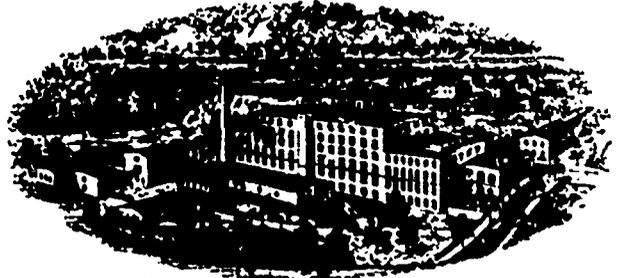
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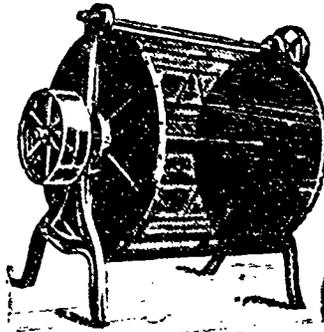
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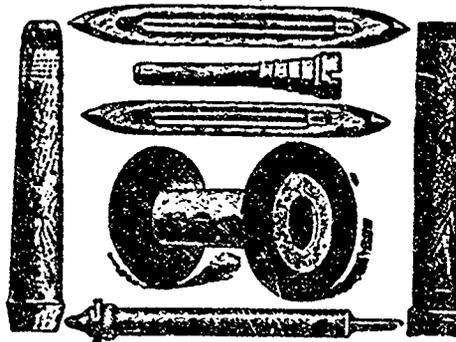
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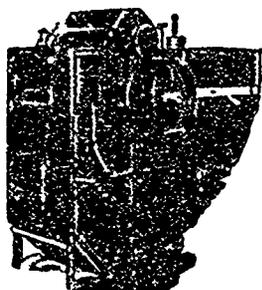
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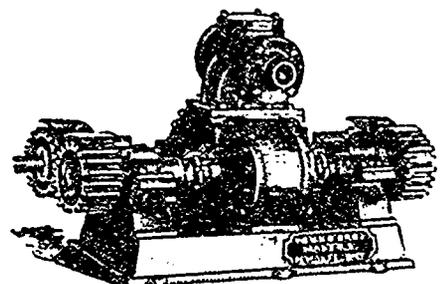
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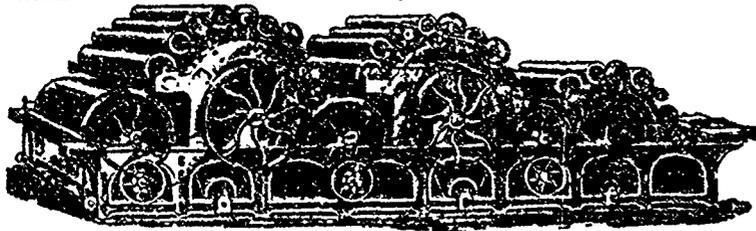
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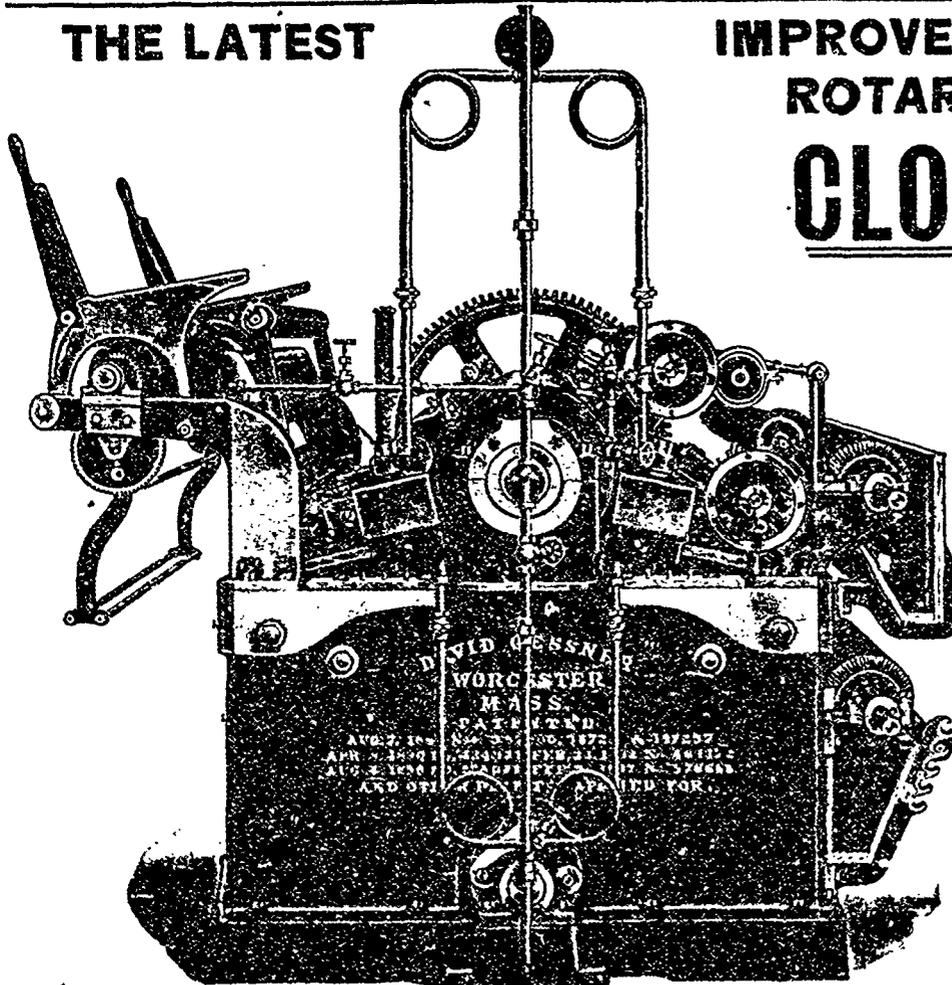
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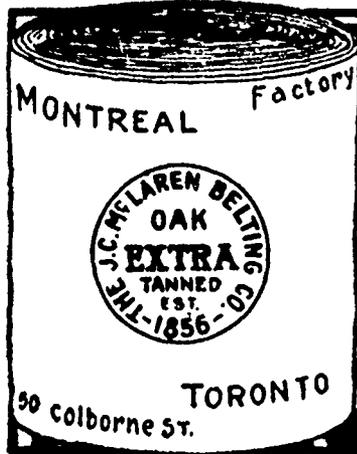


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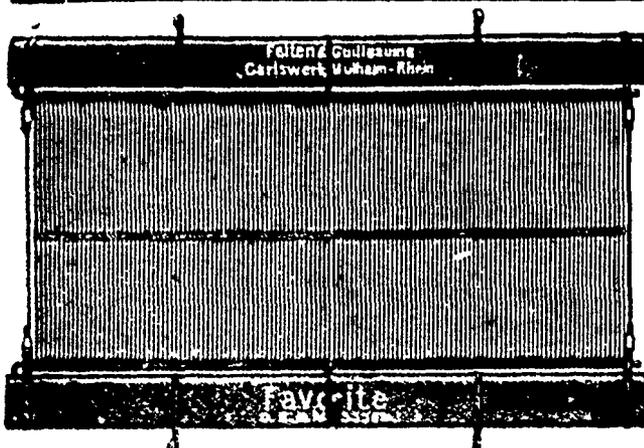
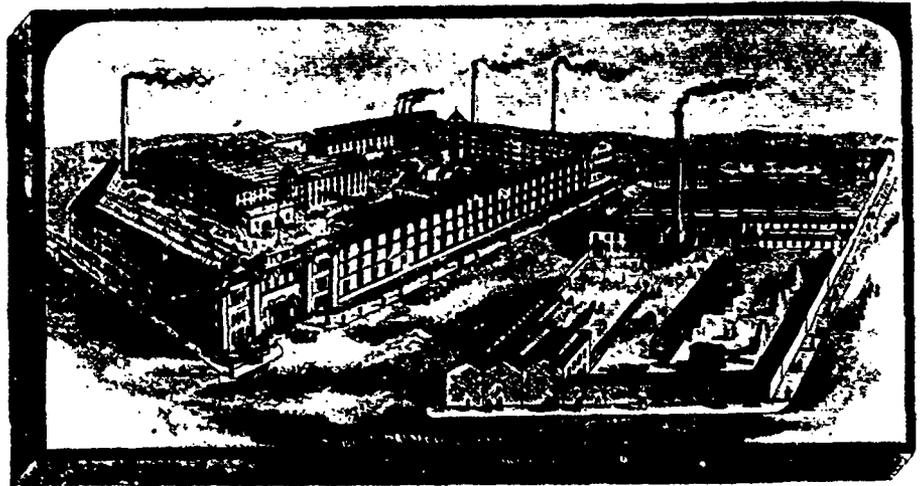
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