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# Canadian Journal of Fabrics

THE JOURNAL OF THE Textile Trades of Canada.

Vol. XX I. TORONTO AND MONTREAL, JULY, 1904. No. 7.

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**Canadian Journal of Fabrics**

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## THE WOOLEN TARIFF.

Upon its first announcement some of the Canadian woolen manufacturers thought that the new tariff providing for a minimum duty of 30 per cent. on woolen cloths brought in under the preferential tariff would prove a substantial gain; but apart from the fact that heavy importations are being rushed in under the provision extending the date of the change to the end of August, the position of our woolen mills will be very little improved. Many of them regard it as a case of asking for cheese and receiving chalk. We do not think this last criticism is just to the Finance Minister, who should be credited with the intention to render justice to the woolen interests, though that justice may have been delayed to the incalculable injury of a great native industry. The difficulty is that the Finance Minister has not given the problem sufficient study. That he has not grasped the bearings of the change upon other nearly related trades is apparent from the provision made, but since modified, as to the importation of neckwear; and from the provision he failed to make to guard the interests of the clothing manufacturers. There is a chance that a maturer study of the situation will lead him to place the woolen interests on a better footing by making the duty on low class imported goods a specific one instead of an ad valorem one. As a matter of fact, the increased duty which will have to be paid under the new tariff on goods costing 25 cents a yard only amounts to 13-5 cents per yard. Clothing manufacturers and tailors have already expressed the belief that the duty will have no effect on the importation of medium and low class goods, and since it is against these that complaint is made, the Canadian manufacturer will be where he was before. This is evident from the fact that buyers for clothing manufacturers and other consumers of low grade goods are going over to England to make their purchases as if nothing had happened. What a situation is created for the Canadian mills may be realized from the simple statement that whereas before the preferential tariff 90 per cent. of all the woolen cloths used in our Canadian clothing factories was the product of Canadian woolen mills, now 75 per cent. is supplied by British and foreign mills and but 25 per cent. by Canadian mills. This is a lamentable change in what was one of our most promising industries, without any compensating gain to any other industry or to the consumers of the goods in question.

The objections to the tariff taken by the Toronto branch of the Canadian Manufacturers' Association are quoted elsewhere. A cog or two appears to have broken in the logic of the Association when the decrease in the preference in woolens is deprecated on the ground that the change is likely to be misunderstood in Great Britain; and that it would have been better to have increased the general tariff and let the ratio of preference stand. There is too much politics and too little business in this argument. Inasmuch as English goods are the goods chiefly affected by any method of raising the tariff on woolens one process of extension will be just as unwelcome to the practical Englishman as another. If a man is to be hung it will not matter much to him whether the rope used is

made of cotton, hemp or even wool. To paraphrase a verse of Poe:

"But if trade has flown away,
In a night or in a day,
Is it, therefore, the less gone?"

and the question may be asked either of British or Canadian trade. It may be further asked, What was the purpose of the preferential tariff? Was it framed in order that Canada might "prefer" British goods to the extent of wiping out her own industries? Were the employees and customers of Canadian mills expected to forswear the use of the products of their own skill and seek beggary for the sole purpose of enabling the mills of some Old Country town to run overtime? And if so, were the textile mill-owners and operatives of Canada expected to offer themselves upon the altar of patriotism as the chief sacrifice while other industries, untouched by the incidence of the tariff, stood aloof and took no part in the oblation? Surely, if the preferential tariff is a matter of sentiment only, then whatever sacrifice is involved should be shared by all citizens alike. And this is the weakness of the preferential tariff. It mixes sentiment with business, and does not distribute the burdens equally upon Canadians, nor are its advantages bestowed equally upon the people of the Mother Country. On the Canadian side practically the whole force of the new competition created by the British preference falls on the textile trade, leaving the other chief industries unharmed. On the other side, it is not the British people at large who profit by the ruin of the Canadian woolen industry, but merely the woolen manufacturers of Yorkshire. If the preferential trade idea is to be a sentimental and a national thing, and not a specific burden laid upon a particular trade, it should be carried out on a national scale in the shape of a contribution to Imperial defence or for some other Imperial purpose.

What was, no doubt, intended by the Canadian Government, and what the judgment of the people of Canada would support, is that where manufactured goods must be imported at all we should give a preference to British goods as against those of foreign manufacture. We must not be asked to "prefer" British goods to the ruin of our own industries, but we certainly prefer to buy from Great Britain and her colonies rather than from any foreign country all the goods which we have to import.

* * *

## THE CANADA WOOLEN MILLS, LIMITED.

In another column will be found a letter from R. Millichamp in reply to the communication of John F. Morley in last issue on the affairs of the Canada Woolen Mills, Limited. It will be evident from the history of the Waterloo mill and the Brodie mill before their absorption by the present company that the firm of which Mr. Millichamp is head had remarkable success as selling agents, and few who know the firm's record, both in Montreal and Toronto, will question their business ability or their confidence in Canadian goods. Mr. Millichamp throws light upon the internal difficulties of the mills since their acquisition by the company, and it is apparent that, whatever the responsibilities of the directors may have been, no blame can be attached to Messrs. Millichamp, Coyle & Co. Mr. Millichamp held stock in the company to the amount of $40,000—being the largest stockholder but one among the board of directors—but apart from such large financial interests in the concern he appears to have personally devoted much time and thought to the problem of pulling the mills safely through the succession of difficulties into which they were involved. It appears from Mr. Millichamp's letter that Mr. Beal was deposed from the management of the Hespeler mill by Mr. Morley himself and for other reasons than those stated in our comments.

For mills operating on the lines of goods most directly affected by the preferential tariff it would have required local managers of very exceptional ability to face the competition of showy but inferior products from the shoddy districts of Yorkshire in these years, but managers of exceptional ability are not to be had for every mill at all times. The average mill can only count upon the average talent in management. Had normal conditions prevailed such as existed before the preferential tariff the various plants of the company would be running with fair profits to-day.

* * *

—At a recent meeting of the "Société d'Encouragement pour l'Industrie Nationale" in Paris an interesting paper was read on the substitution of aluminum for wood in the manufacture of bobbins. The wooden bobbin is cheap and easily worked, but it has drawbacks. Being very hygrometric, it suffers from variations of temperature; this accounts for the fact that, in spinning factories, where the atmosphere is full of humidity, the bobbins revolve irregularly, causing jerks, which slacken the speed and occasion the threads to break. The result is waste of stuff, and loss of time in joining the threads again. Bobbins made of aluminum revolve in any temperature and any degree of humidity, their relative lightness (five aluminum bobbins weigh no more than two wooden ones) allows the machines carrying them to move more quickly, or, in other words, an equal speed may be obtained at less expense of motive power; finally, the smaller volume of the bobbins diminishes the cost of transport. It was stated that several firms had adopted the use of aluminum bobbins.

* * *

—The Canadian cotton mills usually close down for a week about this time of the year to allow for repairs and to give the many hands who crave a summer holiday a chance to sniff the lake breeze or scent the odors of the spruce or cedar woods. This year, owing in some degree to the short supply of cotton,

but chiefly to the increasing pressure of foreign competition, the mills have in most cases this year shut down for two weeks, and economies are being effected wherever possible, to the detriment of the incomes of mill officers and operatives. The cotton manufacturers are naturally wondering why they were entirely overlooked in the tariff revision. The shirt and collar manufacturers and manufacturers in other cotton fabrics are also taking anxious thought for the morrow, and recall the occasion four or five years ago when Sir Wilfrid Laurier specifically promised a deputation of shirt and collar men that the duties on such fabrics would be readjusted to balance the favors that had just before then been given to the cotton manufacturers, headed by the late A. F. Gault. Whether Sir Wilfrid and his colleagues have been paying these manufacturers off as a justification for repudiating the promise is a question upon which they have often speculated in public or in private, according to which side of politics the speculator happened to be on. To what extent this speculation may develop into concrete action by the time the Dominion elections come around must be left for the professional politicians to determine. Meantime the importation of cotton, as well as woolen, fabrics continues to increase at a remarkable rate, and these importations are displacing goods heretofore made in Canadian mills whose past prosperity has supported many thousands of Canadian work people, who in turn have given trade to thousands of Canadian merchants.

* * *

—The National Association of Wool Growers and the National Live Stock Association of the United States recently held a joint convention, and the result will be the withdrawal from Congress of the Grosvenor or "shoddy" bill, framed to compel manufacturers of textile fabrics to label their goods so as to show how much wool and how much of shoddy or other substitutes for wool the goods contain. The bill was merely an attempt to make political capital by catching the votes of the wool-growers, but during the discussion of the measure at the convention its injustice and impracticability were made so plain that the convention decided to abandon the support it had been giving it. The Canadian imitators of Mr. Grosvenor will soon see with equal clearness the impractical and unjust character of their proposals.

* * *

—The raw cotton market as well as the wool market is of exceptional interest to the textile trade just now. We see in the United States and England as well as in Canada a curtailment of production among the mills. In the United States stocks are low in the hands of retailers, and trade has taken on the usual pre-election dullness in view of the uncertainty of politics. Over against this is the fact that the Government cotton crop report for July shows a condition of 88 to 90 as against 77.1 in July, 1903, and 84.7 in July, 1902. The condition is better than any year since 1898, but the contingencies of weather of the coming month have still to be reckoned with, so that the future is full of mystery. The fact that United States mills running on short time for several months past are still able to fill the current demands shows to what an extent over-production must have been going on over the border. In the case of the Canadian mills the difficulty is not over-production at home, but over-importation. On the cotton crop outlook a leading New York broker reporting on the 8th says: "In the face of these reports there seems to be little incentive to buy cotton, and spinners, in my opinion, will do well to limit purchases to their actual needs from day to day. If the fruition of the crop justifies its present promise they will be able to buy much more cheaply one or two months hence. The world will consume this year barely ten million bales of American cotton, and when the trade realizes, as it shortly will, that it is confronted with a possible supply of twelve millions of bales, prices must fall to a point that will stimulate consumption. At present the tendency seems to be still in the direction of its contraction."

* * *

## BRITISH WOOL AND TEXTILE MARKETS.

(Correspondence of Canadian Journal of Fabrics.)

Bradford, Eng., June 28th, 1904.

Since writing you last, the new clip has come on the market, and been practically disposed of. The prices paid for it were from 30 to 40 per cent. above what was paid for the same clips last year. The advance is considerable, but some of the largest dealers have bought most of the lots, apparently expecting still further advances. It is said that a good deal of this wool is intended for the States, but the exact quantity bought for there is difficult to determine.

The local sales also took place last week and here again prices averaged 10 per cent. advance on the sales of a month ago.

Several of our largest blanket manufacturers are busy with large contracts for Japan, and low material of every description is being well bought up, some classes of waste being 60 to 70 per cent. dearer than twelve months ago.

The changes in your tariff have not caused much comment in our local papers. One member of Parliament endeavored to use it as a lever against the Chamberlain policy by asking for the amount of protection placed on British made cloth by Canada and other protected countries. The answer was given, but the agitation expected did not follow.

The general opinion is that a straight 30 per cent. is required, and it was quite expected that sooner or later your tariff would be raised to that amount.

Business in raw material is very difficult, as manufacturers are loth to pay advances and only buy what they are forced to. On the other hand, dealers decline to sell at the present prices, as they confidently expect further advances on account of scarcity.

The local exhibition which is being held here still continues to be a great success in every respect, and it is anticipated that at the close the committee will have a handsome surplus to hand over.

## KNITTING MILL EQUIPMENT.

One of the marked characteristics of the time, says M. A. Metcalf, in the Textile American, is the increased demand for ready-made garments. The first demand for hand-me-downs seems to have been by the sailors fitting out in New Bedford for long whaling voyages. So many going out of port at about one time or season of the year influenced some enterprising storekeeper to have a lot of clothing made up ready for the rush. This was before the sewing machine was invented; so, too, was the miners' rush in '49, which also caused a demand for ready mades. The clothing, though far from stylish, was comfortable and durable. From this small beginning came the enormous clothing industry of to-day, with its many branches—men's clothing, ladies' clothing, muslin underwear, children's dresses, skirts, shirt waists, infants' wear, knitted underwear, etc., etc. Before the sewing machine came into use, the clothing industry was being rapidly developed, even though shapes were on the whole unsightly. The growth of this industry undoubtedly served, in a large degree, to spur on the inventive cranks to produce a sewing machine, and after its introduction, the industry grew more rapidly. Soon came the Civil War and with it came a demand for large quantities of clothing on short notice. Then after the war, when the soldiers laid off their uniforms for civilian clothes, hand-me-downs were in greater demand than ever. The growth of the industry has been marvelous. It is, and has always been, a great incentive to the sewing machine men to exert their inventive faculties, and in this large field special, as well as plain sewing machines, find a profitable market. Large and profitable industries have been developed in the ready-made garment business because the manufacture of garments in large lots make it possible to offer them at prices that command attention and in better style than those turned out by the average tailor or seamstress. While the work was farmed out, as was the custom, the results were unsatisfactory as to style and fit. Within the last two decades, the tendency has been to establish factories and bring the whole process of manufacturing all under one roof and under the eyes of experts. The results are apparent to even a casual observer. Such a condition of affairs, enables the manufacturer to take advantage of special machines, and the system of section work. The knitted underwear branch of the clothing industry early saw the advantage of concentrating its help under one roof and under the skill and guidance of experts, and they, quicker than any other branch, also saw the great advantages of special machines, and as a result, they have to-day the best equipped factories in the ready-made garment business. Almost every operation, in fact every operation has a special machine designed and adapted to perform that part of the work.

No other industry, in the textile line at least, has such a complete and thoroughly up-to-date equipment in its plants, for doing every part of their work. While almost all the other branches of ready-made clothing are struggling to adapt their manufacturing to the system of sectional work, the knit underwear manufacturers are enjoying the fruits of such system, and have been almost from the start. It is an unheard of thing for an operator to make a garment complete in a knitted underwear factory. After leaving the cutter in bundles of one dozen each, they pass successively through different operators' hands for almost every operation.

A well-equipped, up-to-date mill to-day has several features in the finishing department that the larger number of the mills have been slow to adopt. In these notable improvements are included an electric or power cutting machine, taking the place of the old way of cutting with a big, long knife, following a slot in the cutting bench and pushed by hand with an up and down motion as with a saw. Another departure is in the method of drying, a complete drying machine being substituted for the old way of a large room given up to drying and wasting heat.

In selecting the equipment for the finishing room, it is *not always the highest price machine that costs the most in* the long run. At the same time, there are some lower priced machines on the market that fill the bill quite satisfactorily on some portions of the work, more particularly on light weights and ribbed goods.

*The arrangements of the tables—cutting, inspectors,* makers, and other tables as well as the machine tables—depends greatly upon the size of the finishing room. The cutting tables should be in close proximity to the knitting frames. If the cutting is done on a floor above that where the loopers are, a chute can be arranged to slide the goods down near the loopers after they are cut and tied up in dozens. To each bundle should be attached a tag, on which is printed a coupon for every operator who works by the piece to detach, to show the number of dozens she has done; or the cutting may be done in the finishing room if more convenient on account of the floor space If there is space in the knitting room, it is more desirable to do the cutting there, the rolls of cloth being more awkward to handle than the bundled dozens. Near the loopers should be the seamers The nearer all these several operations are to each other, *the less day-help is required to handle the goods, and it is* folly to have operators of machines running after their work while their machines lie idle. It simply means more machines and more operators, and it is wiser in more ways than one to have little girls do what marking, and other preparatory work which they are capable of doing, carrying the work to the operators and taking it away, thereby getting the full production from the machines. This is the principal reason why some finishing rooms turn off more work with fewer machines than others. It is with sewing machines as with the larger machines—constant running gives greatest production.

A well regulated and well managed mill for making 100 dozen men's or ladies' fine underwear, flat goods, say half shirts and half drawers, should have for its finishing room a lay out something like the following, though, of course, the weight of the goods may make a slight difference:

One electric or power cloth cutting machine, with patterns.

Eight loopers or turning off machines.

Three seamers.

*Drying boards—character of work will determine the* number.

One power neck marker.

Patterns and shears for trimming.

Five finishing machines for shirts.

Six drawer finishing machines

One catstitching machine.

One button-hole machine.

One button sewing machine.

One strapping machine, for sewing suspender straps to drawers.

One single needle ornamental machine, for making pearl edge on binding.

One eyelet sewing machine, for stitching round eyelets, or one power eyeletting machine for metal eyelets.

One two-line taping machine, for covering back seam of drawers with tape.

One hand stitcher, for stitching drawer bands together.

One twin-needle machine for necking.

One rib cutter.

One automatic band cutting machine, for stays and lacings.

One paper cutting machine for cutting flannel domets, etc., into strips.

One power cutter, with dies for irregular shapes, for cutting stays, drawer bands, forms, gussets, etc.

One power steam press, with press boards.

If the drawers have straps on the back with two sets of buttons and button-holes, to change the waist size, no eyelet machine is needed. If a tape or lacing is used, the eyelet may either be a metal or stitched eyelet, the former calling for a power eyeletting machine, the latter for an eyelet stitching machine. It is still a custom in some mills to use end-sewing machines to close the cuffs and anklets, but it is not at all necessary, the present methods of making the seams closing the cuffs properly. Some mills have extra or spare machines enough in their finishing room to make up in regular hours what cloth is made by running the knitting frames overtime when occasion seems to demand it. These extra machines come in right handy, when, for instance, a button-hole machine breaks down, an extra one on hand prevents the work piling up and production stopped Oftentimes an extra looper or two comes in handy when the looping gets behind; or, an extra finishing machine or two, especially if new operators are to be broken in occasionally. There are many occasions when an extra machine of one kind or another catches up the work and prevents piling up, and consequent delay in shipping, besides coming into play when overtime is necessary. However, a good machinist will see to it that the work never gets piled up very high in front of any one machine under his care. The fewer machines he has in hand, the closer must he watch those upon which the most depends. If he has a rickety table to contend with, he cannot tell where he "is at" any time, but with a good, firm, 3-inch plank under his machines, he can come pretty near keeping things well in hand.

* * *

## A COMPARATIVE OIL TEST.

William F. Parish, Jr., Boston, in a recent paper before the American Society of Mechanical Engineers, shows the advantages of good oil on spinning machinery. Of all the methods of testing lubricating oils there is none that is quite so interesting, or that will give so graphically and in so short a time the effect of an increase or a decrease in frictional resistance as a dynamometrical test upon a cotton-spinning frame of the ring type.

The author describes a test made to show the relative efficiency of two different grades of oil, both of which were made for the same kind of service—i.e., spindle lubrication. One of the oils has been tested several hundred times in the shown here have been recorded in every test. These tests have been conducted in every country where the spinning frame is in use, and the reduction in power shown by this oil has ranged from 4.2 per cent. as high as 32.6 per cent. The same general system is employed in making these tests, varying in such details as duration of test, number of readings, etc. Some tests cover a week on each oil, which is necessary if a work load and atmosphere variable is to be averaged. In the test here given, the work load was taken for half an hour just previous to doffing, which is done when the bobbins are full, and for the same length of time when the bobbins were just beginning to fill. Readings were secured with both oils under these conditions.

After these preliminary readings, others were taken *upon bare spindles*, i.e., the bobbins were taken off and the delivery of roving stopped by throwing out the two back drawing rolls, leaving on the front rolls only, which with the traverse motion, spindles and cylinder constituted the test load, uninfluenced by any variable factor of work. The oil used influenced approximately 92 per cent. of this entire load.

The test was made at the Union Cotton Manufacturing *Company's mill No. 2*, Fall River, Mass., U.S.A., upon a Whitin frame of the following general specifications: 288 medium gravity spindles, ¾-inch whorl, 7-inch cylinder, 14-inch driving pulley, 1⅜-inch ring, 17 per cent. traveller, 5½-inch filling traverse motion.

This frame was working under the following conditions: 40's filling, 27.5 lbs., weight of 288 full bobbins, 14 lbs, weight of 288 *empty bobbins*, 13.5 lbs. yarn to a full frame, 90 bands to the pound, 2.3 lbs. average band pull

The spindles were of the "bath" or "submerged type," and ran in an uncovered iron bolster which was fitted into the base. These bases hold the oil, about 5 pints being required on a frame of this size to fill them full. While the frame is in operation, oil is added to that in the bases at intervals *of from two to seven weeks*. Oil that has to be confined in these bases and operated upon at the required spindle speed, which in the present case was about 8,400 revolutions per minute, must necessarily be properly constructed. Any tendency of an oil to gum or leave a deposit, to break down or wear out will show up very quickly under these working conditions.

The test, when started, was made upon the frame exactly as found, no preparation whatever being made. Part of the oil in the spindle bases had probably been there for the greater part of six months.

An exceptionally sensitive Emerson dynamometer was used. This is a compact instrument, which is fitted to the end of the drum shaft, outside of the loose pulley. The instrument for descriptive purposes is practically in two parts. One part is fastened to the shaft and carries the arms, levers, reducing links, revolution counter, and the quadrant. The other part, fitted over a sleeve on the back, is practically a dog plate engaged by two studs in the arms or disk of the loose pulley. In operating the instrument the belt is thrown from the loose to the light pulley. After the frame is up to speed, and the loose pulley is carried at this same speed, a sliding bolt is thrown from the instrument proper and is caught by one of the ears on the dog plate which is fastened to the loose pulley. This makes the loose pulley a tight pulley, and as the belt is thrown over on the loose pulley, the weight of the frame is carried through the levers in the instrument and is registered on the quadrant.

In connection with this dynamometer a tachometer is used, but in the present case it was found impossible to secure as great accuracy as was desired, owing to the difficulty in estimating the average movement of pointer to within two or three revolutions.

A Guggenheim tachoscope was therefore used. This instrument, which is of Swiss manufacture, is a clever combination of a stop-watch and a revolution counter, both of which go into action at the same time. Horn's tachometer, made in Germany, was used for registering spindle speeds five spindles being selected and their average speed taken. A special spiral spindle-base thermometer, a wet and dry bulb hygrometer for ascertaining relative humidity, and a Draper band tension scale completed the equipment.

Before considering the results shown by this test, it may be well to outline the various effects *which should result* from the use of a spindle lubricant. The spindle is

driven by a band made of twisted roving. In the present case 90 of these bands weighed one pound. These bands are put on over the drum and around the whorl of the spindle, and are tied so that they exert a pull of possibly five to seven pounds. After running they stretch to different tensions, averaging on this test 2.31 pounds. Under this pull the spindle will be driven at a certain loss or slippage which is proportional to the amount of fluid or abrasive resistance around the spindles. Resistance, either fluid or abrasive, will produce heat. Extra spindle resistance with the consequent higher driving power required, will produce greater belt slippage. Assuming that a condition produced by a poor lubricant, and substituting one more adapted to the work, the result should be a lessened spindle resistance, the consequent heat should be reduced and the slippage of band and belt should be lessened, allowing both to drive nearer to the maximum or theoretical speed, thereby increasing production.

In the present case the horse-power to drive the frame was reduced to 14.08 per cent. The actual temperature or rise of spindle was reduced 2.79 degrees Fahr. Th cylinder speed increased 3.6 revolutions per minute, and spindle speed 60 revolutions per minute. This checks conclusively by all the various effects the reduction in power caused by more perfect lubrication. The temperature of the room was favorable to the oil which made the poorer showing as it was somewhat warmer.

## RAMIE FOR KNITTING PURPOSES.

The Hosiery Trade Journal contains the following respecting ramie, which may be found to contain some additional information to that in an article on the same subject, which appeared in our issue of May, particularly as regards its use as a material for knit fabrics:

This vegetable fibre, called variously ramie, rhea and China grass, has been known for many years to be one of the best mediums for weaving and knitting purposes grown, yet the difficulties connected with its use, either real or fancied, have prevented its general adoption. As for the fibre itself, it is grown at present almost exclusively in Eastern Asia, although experiments are being made in its culture in other parts of the world. It has been grown successfully in Mexico and Texas, and can be grown as far north as New Jersey. As a matter of fact, the trouble is not to grow it, but to put it in the state where it is fit for manufacturing purposes. The plant itself is of the nettle family, and grows in a cluster of stems from which the fibre is finally extracted. These stems, averaging about the thickness of a lead pencil, grow very rapidly and in tropical or semi tropical climates four crops a year can be obtained. As one crop is larger than the yield of the same number of acres in cotton, it can readily be understood what a prolific supply could be obtained on even a limited acreage.

The preparation of these stems for market and the extraction of the fibre they contain are accomplished in China almost entirely by hand. After the stems have reached their growth they are cut and dried and the process of decortication begins. The reeds are made up of four layers, only one of which is available, the outer bark, the fibre, a woody growth, and the pith. As the work is now done in China, the fibre is separated from the outer bark by scraping. In this condition it is a grass color, but can be bleached out to a dazzling white without difficulty. It is then collected in bales and shipped mainly to London and Hamburg and from these points distributed to the English and Continental spinners. Its first cost, that is, in the decorticated condition, is not large, and the profit in spinning it into yarns is greater than cotton. On account of the length of its fibre, it can be readily spun into single yarns and yarns without a hard twist. When completed, the yarn is of unusual beauty, having retained the greater part of the original lustre of the fibre which is almost equal to that of raw silk for knitting purposes. Once having been worked up into yarns, ramie is available for both weaving and knitting purposes. In woven fabrics it makes an extremely light, strong material and has been used to advantage in the manufacture of sail cloths. Many of the large sailing yachts have been equipped with sails of this fabric, which have been found the equal if not the superior of flax. The manufacture of underwear and hosiery from ramie is comparatively new, so far it has only been undertaken abroad. As a material for the manufacture of underwear, it cannot be compared either with linen or cotton, as it stands alone, having certain qualities not found in other fibres. Outside of their strength and the beauty of finish, which garments made from this fibre will take, it is claimed for them that they have many health-giving properties which other fabrics lack. Like the Irishman's whisky, it is claimed that ramie underwear will not only keep the wearer warm in winter but cool in summer. Used in hosiery, it is said to be a sure preventive of too profuse perspiration. One of its virtues that is dwelt upon at length by an underwear manufacturer is its medical properties in the cure of rheumatism. Its antiseptic and prophylactic qualities are said to be superior to the best wool; in fact, there is scarcely an ill that the flesh is heir to which is not claimed that it will either prevent or cure. These qualities are said to be attributable to the chemical composition, which is given as follows, by Dr. Forbes Watson, who has made exhaustive research in the study of ramie. Parts, carbon, 47.28, hydrogen, 6.26; nitrogen, .09, oxygen, 42.23; ash, 4.14.

## AUSTRALIAN WOOL-GROWING.

Apropos of the centenary of the Australian wool trade, the Melbourne Argus relates the story of the introduction of sheep-breeding into the Island Continent. The tale has been told more than once already in our columns; nevertheless, it will bear another repetition. The man who may be regarded as the real founder of the wool-growing industry there, Captain John Macarthur, brought to Great Britain, in 1803, the first Australian-grown wool. The sample consisted of a few fleeces only, and Captain Macarthur's object was to try and obtain British capital to develop the industry, and secure land grant concessions from the Crown for those who would put their money into the business. He himself had already entered on sheep husbandry with great success. In 1795 he had obtained a couple of well-bred Spanish rams and three ewes from Cape Colony. They had been sent out there by the Dutch Government for the improvement of the Cape sheep. The Dutchmen, however, took little interest in the work of improving their flocks, and their coarse-woolled, long-tailed sheep exist all over South Africa to-day. Captain Macarthur noted a striking improvement on the coarse-bred sheep then in the young colony, when they were crossed with the fine-wooled merinos, and with painstaking care and tireless energy he set about the task of selection. His genius resulted in giving a direction to high-class sheep-breeding which has had a wonderfully beneficial effect on the industry. Captain Macarthur did not succeed in persuading British capitalists to put money into wool-growing at Port Jackson, but he obtained a grant of 5,000 acres near Camden for himself, and

with the aid of Sir Joseph Banks, who was ever ready to advance the interests of the young colony, he was able to take back to Sydney another small draft of pure-bred merino sheep from a small flock which His Majesty, George III., had received from the King of Spain. There were not above 10,000 sheep in Australia at that time, and most of these were coarse-wooled and of wretchedly poor quality. Captain Macarthur owned about 2,000, and by careful management his flock was bred up to a high degree of perfection In 1858, when it was finally dispersed, he had over 1,000 pure-bred merino ewes, and many of them were sent to Victoria and to South Australia. In 1806 and subsequent years, small lots of wool from the pure-bred sheep began to find their way to Great Britain. The first consignment of a couple of hundred pounds was packed in a cask! How rapidly sheep-breeding advanced may be guessed from the fact that by 1891 the number of sheep in the Commonwealth amounted to 106,000,000, of which New South Wales contained 61,000,000. The value of the wool exported in that year from the Commonwealth amounted to twenty millions sterling, and of this one-half was raised in New South Wales. Both the number of sheep and the wool output have since been considerably diminished by the drought, but that is only a temporary drawback from which the Commonwealth is now recovering, and wool growing will always remain its gold mine, since the staple of the Australian merino is the finest in the world, excepting only that of Saxony.

* * *

## QUILLAIA AND ITS USES.

It has struck us as curious that in the latest works on dyeing and on dyers' materials there is no mention of quillaia bark. Quillaia (derived from the Chilian verb quilloan, to wash), is the name of a genus of exotic Rosaceæ growing in Chili, Peru, and South Brazil. The genus, of which there are several species, consists of large evergreen trees. The bark of these furnishes an infusion, used for washing and for promoting the growth of the hair, variously known as quillaia bark, soap bark, and Panama bark or wood In nearly every case it comes from Q. Saponaria, a white-flowered tree which grows to a height of 50 or 60 feet The bark is black outside, but shows inside a liber composed of concentric yellowish-white layers. It is heavier than water, owing to the enormous quantity of mineral matter it contains The average of a number of analyses of the bark gives 18.5 per cent of ash in the bark dried at 100 deg. C, and 13.95 per cent. of ash in the bark in its ordinary air-dried state It contains a good deal of carbonate of lime, and it is remarkable that that salt is in the form of crystals of arragonite.

The useful ingredients of the bark are two in number The chief is saponine ($C_{32}$ $H_{54}$ $O_{18}$), otherwise called senegin, a glucoside of sapogenine ($C_{14}$ $H_{22}$ $O_2$) Saponine is got from quillaia bark by the extraction with boiling alcohol. Unless purified by crystallization, it contains a highly-poisonous salt called sodium quillaiate, in very minute quantities, however This sodium salt is a violent irritant, and, owing to its presence, crude saponine causes violent sneezing. Saponine has great lathering and cleansing power, and also great emulsifying action on oils. In this second effect it is assisted by pectin, the second constituent of the quillaia bark above referred to. The oil is merely emulsified, and is not saponified, and the emulsion does not separate on standing. Alcohol, however, at once causes the oil to separate, and to collect on the surface. One of the chief recommendations of saponine is that it has no effect even on the most delicate dyes, but its detergent effect is certainly inferior to that of soap. Soxhlet strongly recommends it for wool and half-wool, but Grothe, while admitting its usefulness for fabrics dyed with loose dyes, rather disparages it on the whole It is often mixed with soap. For washing purposes, the clear solution got by macerating the crushed bark in cold, soft water is used The solution must be kept in well-closed vessels, as the action of the air renders it turbid.

The infusion of soap-bark is not coagulated by boiling and is not precipitated either by alcohol or by ether The infusions of other plants which might be substituted for quillaia, such as marsh-mallow, comfrey, and quince, differ from it inasmuch as they do not reduce Fehling's reagent, so that the test provides a ready means of guarding against such fraudulent substitution. The specific gravity test, viz, that genuine quillaia bark sinks in water, must, however, in no case be omitted. The determination of the ash will at once show when a sample contains genuine quillaia bark mixed with other vegetable debris. The appearance of the arragonite crystals in a thin section under the microscope is also a valuable aid in the diagnosis.

* * *

## THICK AND THIN PLACES.

Thick and thin places in cloth are a source of annoyance and loss. The weaver knows he is producing an inferior quality of cloth, for which he will probably be fined and in some cases it would require more skill than the ordinary weaver possesses to turn off a cut of cloth without a thick or thin place in it, owing to the imperfect condition of the looms. When the loom is started thin places are often caused by poor spinning or quilling. If the start in winding on the cop tube or bobbin be poor a thread long enough to lift the fork may be left free and the fork will be lifted several times if the filling should break. In case the filling catches on without assistance from the weaver a thin place follows. Sometimes, when friction pulleys are used, the empty shuttle will pick across several times before the contact will be broken, owing to the shipper handle being stiff. In such cases, on certain classes of light-weight fabrics it requires skill to start up the loom without making either a thin or thick place.

When the rocker shaft of the lug on the bearings becomes worn, the raceway is liable, when picking, to rise sufficiently to allow the tip of the fork prongs to strike the bottom of the fork slot. The rising of the lug may be at irregular periods and a thin place may be made only once a day. Such a defect may baffle the skill of a first-class fixer for some time. The monkey tail lever may be set too far from the fork carrier, and if such be the case the let-back finger will not release the take-up ratchet gear so that it may move back one or two teeth when the filling breaks. On light-weight goods in which the least variation in the distance between the filling threads will show a defect, the skilful weaver rubs his hand across the cloth below the breast beam with the effect of removing all danger of making a thin place. Occasionally a loom will make thin places when running continuously. This may be caused by the filling being partly cut and breaking under the strain of pulling off the cop, but leaving an end sufficiently long to lift the fork and catch in the shed after two or three picks.

Cut filling is generally the result of rough places on the spinning rollers, although sometimes the temple will be set so close to the reed that it will bruise the filling thread sufficiently to cause it to break under strain. If the let-off motion be out of order, it is liable to make thick or thin places. A loose set screw or worn place in the working parts of the motion may cause, at times, a retardation or an increased de-

livery of warp, so that a thin or thick place will follow. The gears of the take-up motion may become full of dirt and so affect the taking up that it will be uneven. These defects in the loom can all be remedied by the fixer, but there are others in construction of the take-up motion which are responsible for thick and thin places, for which neither fixer nor weaver can be held responsible. Of this class of motions are all that actuate the take-up ratchet by means of a lever and a cam on the cam shaft. In short, any motion that is not positive is liable to make defects in the cloth, for which neither fixer nor weaver can be held responsible.—Wool and Cotton Reporter.

* * *

## TESTING FIBRES IN CLOTH.

To do a safe and positive kind of buying where woolens and worsteds are in question, every buyer ought to be familiar with a few of the standard methods of proof by which the qualities and characteristics of these fabrics can be established. It does not require any elaborate process, or any amount of experimenting, yet the principles of the tests ought to be understood and the ability to use them ought to be possessed by every one who is called upon to handle these fabrics to any large extent. The question of fastness of color, the action of the color under the influence of perspiration, the amount of cotton present in the make-up of the goods, and its proportion to the whole, the matter of strength of the goods, and its ability to resist wear and tear, all these are important questions, and no buyer ought to be compelled to rest entirely upon the seller's say-so as to the cloth conditions in these respects.

Goods that are intended for men's or women's wear, are specially in need of careful testing before they can be safely placed upon the counters and shelves. Mistakes in regard to the qualities of the fabrics will, if frequently made, end in the ruin of a man's trade whether he be wholesaler, retailer, or the man who makes up the fabrics into garments.

The demands that are to be made upon the goods, when it is put to use by the consumer, are usually going to control the buyer in the kind of questions he must ask and answer as to the qualities. Where wear in the shape of garment textiles is the demand, the first thought that arises is usually: How much cotton is there in the fabrics, or is there any at all?

Now this is an important matter, and one on which it is not always wise to leave altogether undetermined. To settle the question there are two very simple plans, either one of which may be adopted.

If a microscope is at hand, and it is wise to have one where buying on a large scale is done, the matter of the presence of cotton can most easily be determined. If cotton is present in any appreciable proportion, the microscope will disclose the fact without any difficulty at all. But where the proportion is not so large, the microscope is not quite so dependable.

In order to use the microscope test, it will be necessary to use an instrument of greater power than the ordinary hand glass, and the way to proceed is to pick out some of the yarn from warp and filling in different parts of the piece. These samples must then be pulled apart and untwisted carefully so that the textile fibres are clearly exposed. These fibres are then held under the glass and carefully examined, and it will not take a very wide range of experience to be able to detect the different varieties of fibre that are present in the goods. The fibre that is wool will show plainly the scaled or serrated surface which always is characteristic. The cotton, if any is present, will look flat and ribbon-like and more or less transparent. It will, however, be quite twisted and out of shape on account of its position in the fabric. Silk fibres, if present, will have a different appearance still, and will resemble a glass rod split down the middle. A little practice will enable the observer to become quite skilled in the detection of the various fibres. But the difficulty in this test is, that while it will disclose the presence of the various kinds of fibres in the cloth, it will not give any reliable idea as to the proportions or percentages of the quantity that there is in the mixture. To determine the quantity it is necessary to resort to another method.

In order to determine whether it is worth while to use any other test of more elaborate character, it may be well to test the cotton and wool by another method still. If a few threads of warp and filling are taken separately and held in the flame of a match or gas jet, the different ways in which the cotton and wool fibres willl burn will show whether there is any appreciable amount of cotton in the goods or not. The cotton fibres will blaze up quickly and burn with a sort of a flash, while the wool fibres will burn more slowly and deliberately, and there will be no difficulty at all in recognizing the presence of the cotton and in getting some conception as to its amount.

But another plan, and the one to use as a last resort is to take a sample of the goods, weigh it with exactness and care, and then boil it well in a bath of strong caustic potash. This operation will destroy all the animal fibres that may be present in the sample, and leave the cotton fibres entirely untouched. Then the residue of cotton fibre may be weighed and the two weights will show the exact proportions of cotton there may be in the goods.

The next great fact that every buyer ought to determine before he makes large purchases of woolens or worsteds, is the question of the fastness of color. Where cloth is to be consumed in the form of garments, there are at least three ways in which the colors are bound to be attacked. One of these is from the effect of perspiration. It is not hard to learn whether goods will change color, and just about how much of a change will take place, under the action of perspiration. *If a drop of muriatic acid, about one-fifth solution,* is placed on the goods, and no change in color is produced, it may be taken for granted that the cloth will be practically free from showing any effects of the action of perspiration

Another thing that is going to act on colors when goods are worn in the shape of garments, is the rubbing and friction to which they are bound to be subjected. If a cloth has not properly absorbed the color, that is, if the color has merely been deposited on the surface of the fibres and not taken into their body and substance, it will not be hard to learn the fact by a simple method or two.

Take a clean handkerchief and draw it over the end of the finger and then after moistening the handkerchief on the finger, rub over the cloth in one spot with considerable vigor and force. If the dye is not fast to rubbing, the spot in the handkerchief will show the color of the goods. If the color is fast, there ought to be no evidence in the least of color on the handkerchief after the rubbing is over. This test will always be reliable, and it will be more accurate if the handkerchief is moistened than when it is just dry.

The third fact that has a bearing on colors of goods worn for garments, is the effect of air, sunshine and moisture. This test will take longer than the others, but ought never to be slighted on that account. To test the fastness of color, so far as exposure to atmospheric conditions is concerned, there is no sure way to proceed except to take two samples of the goods and while one of them is kept away from the light and air, the other is hung up in the air exposed to sun and rain.

In about two weeks, if the two samples are compared, there ought to be no difference at all in their appearance, so far as colors are concerned. A sample may be fast to light, but not to moisture, so that a real test of value in this respect must show the effects of both the light and the moisture, and the method above suggested will be suitable for both. These few suggestions will serve to place the buyer on his guard at all times.—Davis, in Textile American.

## SOUTHERN COTTON MANUFACTURING.

J. L. Watkins, cotton expert of the Agricultural Bureau of Statistics, at Washington, has compiled statistics showing the development of cotte manufacturing in the Southern States from 1850 to 1903, inclusive. The growth is shown in the following table, which also shows the cotton crop of the Southern States:

| Year. | Number of Mills. | Number of Spindles. | Number of Bales Consumed. | Number of Bales Produced. |
|---|---|---|---|---|
| 1849-50 ..... | 168 | 245,810 | 80,300 | 2,469,093 |
| 1869-70 ..... | 154 | 344,046 | 83,068 | 3,011,994 |
| 1889-90 ..... | 240 | 1,554,000 | 526,856 | 7,472,511 |
| 1894-95 ..... | 323 | 2,382,781 | 853,352 | 9,901,251 |
| 1899-1900 .... | 499 | 4,999,587 | 1,570,812 | 9,142,838 |
| 1900-01 ..... | 581 | 5,590,783 | 1,576,786 | 10,401,453 |
| 1901-02 ..... | 624 | 6,522,622 | 1,881,132 | 10,663,224 |
| 1902-03 ..... | 640 | 7,100,292 | 1,925,954 | 10,630,945 |

—At a meeting of the Chamber of Commerce, of Halifax, England, last month, A. F. Firth moved a resolution that the Chamber should represent to the Colonial Secretary, that the difference in the preference made under the Canadian tariff might seriously affect the interests of the woolen trade in Halifax locally, and request that Mr. Lyttelton make representation to the Canadian Government with a view to getting them to raise the general tariff to forty-five per cent, and to continue the preference to England of one-third off.

## TEXTILE DESIGNS.

(From the Textile Manufacturer, Manchester.)

Fig. 1 shows a neat check, whose coloring is based upon the small point effect obtained when picking 2-and-2 across an end-and-end warp, which is weaving 2-and-2 twill. The lift used is the above-mentioned twill, using that throughout, and the warping is as follows::

Twice { 1 end black.
1 " brown.

Twice { 1 end black.
1 " black and white twist.

Twice { 1 end black.
1 " olive.

Twice { 1 end black.
1 " black and white twist.

The welting is:

2 picks black.
2 " black and white twist.
2 " black.
2 " brown.
2 " black.
2 " black and white twist.
2 " black.
2 " olive.

The pattern shown in Fig. 2 is a slight diversion from the plain hairline effect. The difference will be seen on an examination of the warping and welting plans. The former of these is:

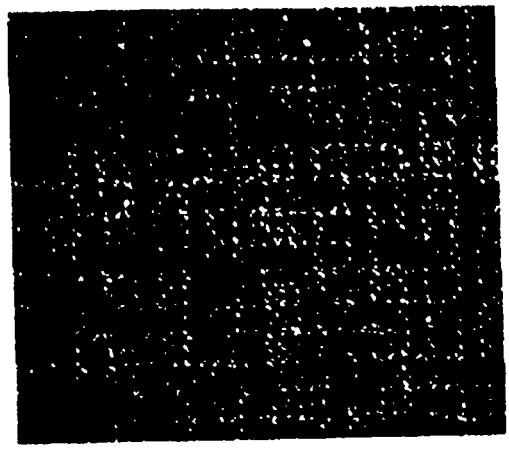

Fig. 1.

1 end black.
1 " black and white twist.
11 times { 2 " black.
1 " black and white twist
4 " black.
1 " black and white twist.
1 " black.
1 " black and white twist.
4 " black.
2 " black and white twist.

The welting is:

1 pick black and white twist.
1 " black.
Twice { 2 " black and white twist.
4 " black.
2 " black and white twist.
2 " black.
16 times { 1 " black and white twist.
2 " black.

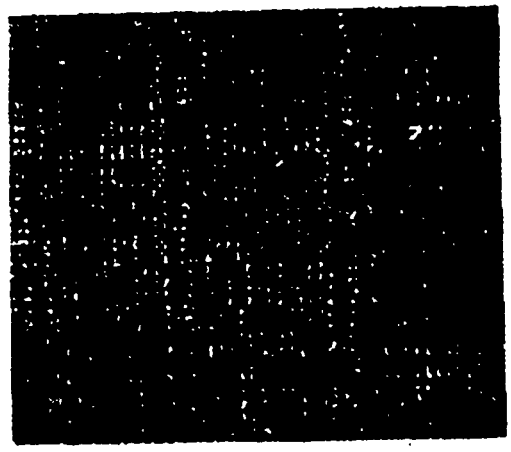

Fig. 2.

It will be seen by the above, that the groundwork consists of 2 black and 1 twist in both the warp and the weft, and these weave (in the ground portion) as if the two black threads were one. In a sense, the weave is plain and the

threads arranged 1 black (2 as 1) and 1 twist, but in reality the two black picks weave in over 1 and under 2, whilst the twist picks are shot in under 1 and over 2. This weave is regular throughout, for the cloth can be woven with two shafts, so that when the ground is left the different arrangement of the ends and picks, as given in the wefting and warping plans, causes the check design seen in the cloth.

* * *

## COTTON IN EGYPT AND THE SOUDAN.

In view of the great extension of cotton cultivation in Egypt and the Soudan, and the increasing use of this staple by some Canadian mills, the following from a report by the United States Consul, at Cairo, will be of interest:

The sowing of cotton begins generally about the 15th of February in Upper Egypt and terminates in the first fortnight of April in the most northerly provinces of Lower Egypt; occasionally, in exceptional years, the sowing is continued right up to the end of April, without any prejudice to the crop. In Upper Egypt the harvest begins about the 10th of August, and in the delta between the 5th and 10th of September, and by the end of November, even in the later or most northerly districts, the season is regarded as over.

The crop consists of three pickings, the first representing about 50 per cent. of the total yield, which is of course the best quality obtained; in the second, about 40 per cent. is gathered; and finally in the third picking the remainder, which is generally of inferior quality, is removed.

To better explain the method of selling cotton in the interior the various cultivators should be classed under three categories, viz., the native cultivators, the small proprietors, and the large land-owners, who cultivate on a large scale. The small native cultivators bring their cotton to the nearest market as soon as it is picked, but sometimes, in cases where the land is rented, they sell their cotton to the proprietors. The cultivators of the second class are in a better position to look after their own interests. Unless they have previously disposed of their cotton to the money-lenders in the summer they store it and await the arrival of the brokers, who go round the villages, and sell it to them on the spot, either harvest by harvest, or the whole crop. Sometimes these cultivators obtain money advances from the local buyers on the understanding that the latter have the preference at the time of selling. It very often happens that the inhabitants of one village, or the members of one family, combine and dispose of their cotton to one single buyer, and this system usually secures them better conditions. The large proprietors have every opportunity of disposing of their cotton at best advantage to themselves, as, with the growing spirit of competition among the buyers, they are afforded every facility to do so. Many of the large firms operating in the interior have their own gins, and a number of them who export their own cotton have steam presses to prepare the bales for shipment.

It is estimated that half the crop comes from the interior for account of the exporters and is pressed either by steam or hydraulic power. The other half is sent to Alexandria to be sold. All the hydraulically pressed bales have to be pressed again by steam before shipping. The average weight of a bale of cotton hydraulically pressed is about 8½ cantars (833 lbs.) and one pressed by steam weighs from 7½ to 7¾ cantars (734 to 768 lbs.).

At Alexandria the cotton is sold net, with an allowance of one-half of 1 per cent. for humidity and sample. The cost of weighing and selling brokerage are defrayed by the seller.

The cotton is sold on a sample drawn by the seller, but the final fixing of the price only takes place when the buyer has seen a general sample drawn by his own men and considers this sample satisfactory. Even then the buyer is free to reject the goods if on inspecting the cotton it does not turn out equal to samples or if at that moment the state of the market or news from abroad is unfavorable. This is an abuse for which no remedy has yet been found.

Steam pressing in Alexandria costs 3 piastres (about 13 cents) per cantar (99 lbs.). Freight for Liverpool is fixed at 11s. per ton measurement of 40 cubic feet; two bales are calculated for a ton. For the United States, shipments are generally made via Liverpool, but freight rates vary every year.

* * *

## THE FIBRE INDUSTRY OF THE PHILIPPINES.

Manila hemp, or Abaca fibre, is derived from the sheath of the leaf-stalk of Musa textilis, the wild plantain. Although various species of the genus Musa flourish in nearly all parts of the tropical and sub-tropical zones of both hemispheres, yet Musa textilis apparently thrives best in the Philippines. Attempts have been made to introduce this particular plant into other countries where allied species thrive, but these experiments have usually proved unsuccessful.

The cultivation and extraction of manila hemp is the most important industry in the Philippines. The fibre first came into notice in the early part of the last century, but was not recognized as a product of importance until about 1850. The steady increase which has since taken place in the annual production is shown by the following figures:

| | Tons. | | Tons. |
|---|---|---|---|
| 1850 ..... | 8,561 | 1900 ..... | 89,438 |
| 1860 ..... | 30,388 | 1901 ..... | 109,231 |
| 1870 ..... | 31,426 | 1902 ..... | 108,265 |
| 1880 ..... | 50,482 | 1903 ..... | 130,159 |
| 1890 ..... | 67,864 | | |

In order that Musa textilis may develop to the best advantage, a uniformly moist and warm climate is necessary; yet it will not thrive in marshy land.

The plant may be propagated by means of seed, but it is usually grown from suckers which arise from the root of the parent plant. The fibre has attained its highest tensile strength at the period when the flower-bud has just reached the summit of the plant. Harvesting is effected by cutting the stalk near the root and afterwards stripping off the leaf-sheaths. The suckers are left attached to the stump, and by this means the crop is constantly renewed. The leaf-sheaths are cut into strips of from 2 to 3-in. in width, and the fibre is generally extracted by drawing these strips between the edge of a blunt knife or "bolo" and a hard, smooth, wooden block attached to a light frame constructed of rattan canes. The yield of fibre varies according to the locality in which the plant is grown. In districts which have a heavy rainfall the yield amounts to 787 to 967 lbs. per acre, but in provinces in which the climate is less humid it may not exceed half this quantity. A number of machines have been introduced for the purpose of extracting the fibre economically, but none has come into general use; this has been due either to inefficiency of the machines or to prejudice of the native workers.

Manila hemp is characterized by great tensile strength combined with lightness, and for this reason is particularly well adapted for the manufacture of ships' ropes and cables. In the Philippines, some of the finer qualities of the fibre are woven into textile fabrics, and a small quantity of the fibre is employed in upholstery, packing, and brush-making.

The economic resources of the Philippines include a large number of other fibrous plants, but only one of these,

Maguey fibre, is an article of export at the present time. Cotton, ramie, and pineapple fibre are produced in these islands to a small extent, and are employed by the natives for local manufactures. Pangdan, burri, nipa, and rattan are also grown, and are extensively used for various purposes.

Maguey is a term which has been used by Spanish-speaking people to designate various species of agave. The plant usually occurs on stony or sandy soil, but is capable of growth on soils which differ widely in physical structure and capacity of retaining moisture. It bears a rosette of 20 to 40 thick, fleshy leaves of from 3 to 7 ft. in length, which rise directly from the ground. These leaves have spines along their margins, and terminate in a hard, horny point. The plant is capable of withstanding protracted drought, but in a humid atmosphere it produces fibre of greater length and elasticity. The cultivation of maguey is carried on in the islands of Panay, Cebu, and Mactan, and in the northern provinces of Luzon. The plants are arranged at a distance of 6 ft. from one another in rows which are 8 ft. apart. The life of the plant varies from 12 to 30 years. The leaves are mature in three years from their first appearance, and are then gathered. Each plant produces about 25 leaves annually yielding approximately 1½ lb. of fibre. When the plant has reached maturity the flower-stalk undergoes rapid elongation, rising sometimes to the height of 15 feet. The plant only flowers once and then dies. The flower spikelets bear numerous small slips or suckers which fall to the ground and are collected and planted out in rows. Propagation is effected either by means of these slips or by means of the suckers, which arise in the axils of the lower leaves. The fibre is extracted by macerating the leaves in water and afterwards scraping away the pulp. In some localities this treatment is preceded by crushing the leaves and leaving them in heaps to ferment. Machinery is not used at present in the Philippines for the preparation of this fibre, but there is no doubt that some of the machines used so largely in Mexico and the Bahamas for extracting sisal hemp could be adapted to this purpose. Maguey fibre is soft, elastic, of a wavy appearance, and, if carefully prepared, is white and lustrous. It is employed in the manufacture of ropes and cables, and also of lines, nets and hammocks. This fibre is not exported from the Philippines in large quantities; during the year 1901, 875 tons were exported of the value of about £20 per ton.

The pineapple is widely distributed throughout the Philippines. In some localities it is cultivated for the sake of its *fruit, whilst in certain provinces of Luzon, and in the islands* of Panay and Cebu, it is grown for the production of fibre. The pineapple plant does not thrive in wet soils, but is best adopted to a porous, well-drained soil, and is capable of withstanding protracted drought. It is generally propagated by means of the suckers which arise from the parent plant near the ground, but can also be reproduced by means of slips. When the plant is being grown for its fibre, the fruit is removed soon after flowering has taken place in order that the leaves may develop more freely. The fibre is extracted in the following manner. The epidermis of the leaves is first removed by means of a blunt iron or wooden scraper. A layer of fibre is thus exposed and is lifted with the fingers or a small spatula. The scraping is then repeated and a second layer of fibre is exposed which is in turn removed. This process is continued until the whole of the fibre of the leaf has been extracted. *The fibre is washed with water, and dried* and bleached by exposure to the sun. A mature plant usually bears about 40 leaves from 1½ to 3 in. broad and from 2 to 5 ft. long. A ton of these leaves, numbering about 22,000, yields from 50 to 65 lbs. of dry fibre. Attempts have been made to extract the fibre by means of machinery, but up to the present the machines tested have not proved commercially successful. Pineapple fibre is white, very fine, and, at the present time, is worth about £30 per ton on the London market. It is employed in the Philippines for the manufacture of the fabrics known as "pina" and "rengue," which are valued at from 1s to 3s. per yard, and are meeting with a growing demand both in Europe and America. The fibre is also used for making small cordage of great strength. In 1897 a specimen of pineapple fibre produced in India was examined in the Scientific and Technical Department of the Imperial Institute. The results showed that the sample possessed good spinning qualities and was very promising in character. The value of the fairly clean fibre in the London market was at that time about £20 to £25 per ton.

Cotton has never been an article of export from the Philippines, although it is grown throughout a considerable area. The species cultivated is Gossypium herbaceum, but G arboreum also occurs to a smaller extent. The average production of "lint" is about 165 lbs. per acre, but in 1893 a yield amounting to 315 lbs. per acre was obtained in some of the northern provinces of Luzon. The total annual production, which probably has never exceeded 100 tons, is insufficient for the local manufacturers, and considerable quantities are, therefore, imported. The nature of the soil, the conditions of labor, and the local demand for the fibre render the Philippines well adapted for the cultivation of cotton

A small quantity of ramie is produced in the Philippines, and is employed for mixing with manila hemp, silk and pineapple fibre in the manufacture of a number of fabrics. The local supply, however, is not sufficient to meet the demand, and has to be supplemented with imported fibre.

Several species of pandanus, the screw pines, occur in the Philippines. They bear thin, fibrous leaves, which are from 4 to 5 ft. in length, 1½ to 3 in. wide, and are employed in considerable quantities for making bags and mats. The mature leaves are split into strips of the desired width, and are then woven into the form required.

The burri or talipot palm grows abundantly throughout the Philippines. It produces large, fan-shaped leaves, the leaflets of which are from 3 to 4 ft. in length, and are used for the manufacture of baskets, hats, and a coarse kind of matting.

The leaves of the Nipa palm are of considerable economic value, and are used by the Filipinos for thatching houses and for making hats, sails, and rain coats

Species of the rattan, a climbing palm (Calamus) occur throughout the forests of the Philippines They furnish the well-known rattan canes, which are extensively employed in the manufacture of furniture, baskets and mats

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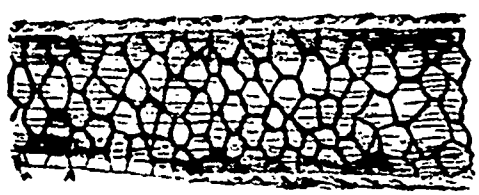
## REINDEER HAIR.

Last December, the United States Consul General, Frankfort, Germany, wrote to the Department of State, Washington, a report on the manufacture of reindeer hair. The article attracted considerable attention, both in this country and abroad, and has been universally accepted as not only an interesting statement in regard to the uses to which the hair of the reindeer is put, but also truthful As a rule, these statements that are sent to the State Department by the consular service, *may be accepted without further investigation as be* ing correct; very few persons having any opportunity, time, or desire to continue individual investigation to prove the accuracy of what may be stated by officials who are expected to be careful in what they write as based upon well authenticated facts.

We have no doubt but the United States Consul, at Frankfort felt confidence in the statements he made in his communication, in that "from time immemorial the Laplanders have known how to manufacture coarse but warm blankets from the wooly hair of the reindeer. These are an excellent protection against moisture and frost. The inhabitants of Sweden and Norway were the first to observe how well the reindeer swims across large bodies of water. This led to the thought that there must be something in the animal's hair suitable to the making of useful textiles. This, in turn, then led to the manufacture of fabrics which are used mainly for protecting the body when the wearer goes out on the sea in winter. A close examination of the hair of the reindeer furnishes an explanation of its peculiar value. The hair does not have a hollow inside space for its whole length, but is divided or partitioned off into exceedingly numerous cells like water-tight compartments. These are filled with condensed air and their walls are so elastic and at the same time of such strong resistance that they are not broken up either during the process of manufacture or by swelling when wet. The cells expand in water, and thus it happens that a man clad completely in garments made of reindeer wool does not sink when in water, because he is buoyed up by means of the air contained in the hundreds of thousands of hair cells. In the markets and stores of Norway, Sweden, and Russia, garments and blankets of reindeer wool are to be had at lower prices than other fabrics. In Vienna there is a factory which manufactures garments of reindeer wool, especially bathing cos-



tumes. For persons unable to swim, the possession of such garments is of great value. It is possible that they may be utilized in learning how to swim. Recently successful trials have been made in Paris in this line. In England attention has been directed to this peculiar property of reindeer wool, and it is proposed to take up its manufacture and possibly to improve it."

Some of these statements excited our curiosity and incredulity. We wrote to the United States Consul at Frankfort for further particulars, but our enquiries were forwarded to the United States Consul at Christiania, Norway, who replied that "reindeer hair is not used in the manufacture of textiles, for the reason that it is considered too coarse and brittle, every hair constituting a diminutive cylinder, being hollow. For filling in life belts, reindeer hair is claimed to be superior to cork, owing to its great buoyancy."

It will be seen that the Consul at Christiania does not support the statement of the Consul at Frankfort, in the matter of the hair being used in the manufacture of textiles. We are not yet satisfied that either one of these contradictory statements should be received unqualifiedly. There is nothing, however, in the structure of the hair of the reindeer to indicate that it is a desirable textile fibre for fabrication of any kind. It has no characteristic that qualifies it for any purpose of this kind It has characteristics, however, that seem to adapt it peculiarly well for filling life belts and for other like purposes. We should expect, however, that any life belt that was stuffed with this hair would serve only a temporary purpose, and, becoming soaked with water, would be a source of danger to life, as dragging down the person rather than keeping him afloat, and, therefore, vastly inferior to cork.

We give herewith an illustration of the reindeer hair, showing its structure under an amplification of 300 diameters. The fibre is extremely brittle, and incapable of sustaining any manipulation for spinning. It possesses no fibrous structure that will enable it to sustain any tension except the little strength that it possesses in its cuticle. Because there is no longitudinal fibrous structure, the fibre cannot be split, and possesses no line of cleavage. In order to obtain a longitudinal section of the hair, it must be cut with a sharp instrument, and in doing so, the thin walls of the cells are crushed, as will be noted in the illustration at A, where a portion of the fibre has been cut away, exposing the thin cell walls, which have been in a measure broken down. The cells are in the shape of a pentagonal polyedron. The cells are naturally filled with air, and so long as these cells hold the air, the floating properties of the fibre are all that could be wished; but, in time, if long immersed in water, the cells become filled with water by the endosmotic passage of the latter into the interior of the cells, and when this is the case, any article that is stuffed with the hair sinks with as much certainty as if the article were filled with wool, or cotton. This can be easily understood when the statement is made, as the result of a number of experiments made by us, that the specific gravity of reindeer hair is fully as great as wool, and nearly as great as cotton. Reindeer hair is from 40 to 50 per cent. heavier than water. This, of course, is understood to mean when the cells of the fibre are filled with water, as will invariably be the case after an exposure in water.—Textile American.

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## THE MANUFACTURERS' ASSOCIATION ON THE TARIFF.

The following formal statement, given out at Toronto last month, shows the attitude of the Canadian Manufacturers' Association on the tariff changes.

1. The Canadian Manufacturers' Association commend the general tendency of the recent tariff changes, announced by the Minister of Finance, inasmuch as they provide increased protection for certain Canadian industries.

2. The Association, while pleased that the Government has favorably considered the necessities of the woolen and twine industries, does not consider the amount of protection granted as sufficient, and does not approve of the departure made by the Government in increasing the protection by decreasing the preference. Such action will probably be misinterpreted in Great Britain, whereas an increase in the regular duties on these lines would still have maintained the principles of a uniform preference for British goods.

3. The Association, while gratified to note that the evil of "dumping" has been recognized by the Government, is of the opinion that it cannot be effectually remedied except by increased duties in necessary cases. This conclusion is reached because of certain difficulties presented by the new regulations, as follows:

First.—The difficulty presents itself at each of the five hundred ports of entry in Canada, of a knowledge of what goods are made in the Dominion, this knowledge being necessary in order to determine the application of the clause

Second.—While the sufficiently high tariff would minimize the evils of "dumping" the new regulation still leaves room for evasion of the law and the slaughtering of foreign goods upon the Canadian market through rebates, commissions and similar methods.

Third.—The Association is of the opinion that if this regulation is to be operated with any chance of success, the exporters in foreign countries who send goods to Canada, should be required to accompany each invoice of such exports with a declaration stating not only that the prices named in the invoice are the ordinary credit prices in the manufacturer's market, but that no arrangement for rebate, reduction or compensation has been or is being made with the importing firm either directly or indirectly.

Fourth.—If the new clause is to be operated effectively, a large and competent staff of experts is immediately rendered necessary.

4. The Association still has the earnest conviction that "the changed conditions, which now obtain in Canada, demand the immediate and thorough revision of the tariff upon lines which will more effectually transfer to the workshops of our Dominion the manufacture of many of the goods which we now import from other countries."

The Association welcomes the announcement that a tariff commission will be appointed by the Government in the future, and takes this opportunity of expressing the hope that such commission would be of the nature recommended by the Association in the resolution passed at its annual meeting, as follows. "That we recommend that the Dominion Government establish in Canada a permanent commission of experts, who, under the direction of the Dominion Government, shall have constant supervision of the Canadian tariff with a view to making such recommendations to the Government as will best conserve and advance the interests of the Dominion."

In the opinion of the Association, the present conditions demand immediate action by the appointment of a commission of the nature outlined.

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## COTTON GROWING IN THE EMPIRE.

The British Board of Trade recently issued a report on cotton cultivation in the British Empire and Egypt, specially compiled by R. Dunstan, Director of the Imperial Institute. The Institute is still continuing its investigations, and, therefore, no definite conclusions are given as to what extent the Empire can furnish new sources of supply of raw cotton. Mr. Dunstan looks to little extension of the production in Egypt, but dilates on the favorable prospects of the Soudan, where the area open for planting cotton is ten times as great as in Egypt. He points out that the British cotton industry is almost entirely dependent on the United States for supplies, largely due to the deterioration of Indian cotton, the replacement of cotton by sugar cane growing in the West Indies, and the continuous improvement in the quality and fibre produced in the United States. He considers the shortage of American supplies to be permanent, as the extension of manufacture in the United States will entail a greater home consumption. He declares that the best means of helping the British colonies to compete with the United States in the cultivation of cotton would be to provide them with as good means of scientific experiment and advice.

Leigh Hunt, who recently returned from the Soudan, where he contracted for a Government tract of land, on which to experiment in growing cotton, has this to say on the same subject:

"I know cotton can be produced in the Soudan, and will grow and do well. What I want to know is whether, all circumstances considered, the industry can be established on a commercial basis. The Berber-Suakin Railway is essential to the success of the industry. When it is completed I believe the rate of development will be much greater. I consider the prospects of the cotton growing scheme distinctly hopeful, but would prefer to speak of them in a year or two, when the British will be more inclined to listen, when I can say I have accomplished this and that, rather than now, when I am only entering on the experiment."

In the House of Commons, John Rutherford, member for one of the divisions of Lancashire, moved that "In the opinion of this House it is incumbent on the Government to encourage the growing of cotton in Africa and elsewhere in the British possessions, and also to co-operate with the commercial associations working in that direction." Mr. Lyttleton, secretary for the Colonies, speaking to the motion, said there was a vast field inside the British Empire for the growing of cotton, and that extensive experiments were being made in the British possessions with every prospect of success. The Government entertained the largest hopes of an immediate supply of cotton from West Africa, and he thought that the matter there might now pass from the experimental to the commercial stage. Mr. Rutherford's motion carried.

The Executive Committee of the British Cotton Growing Association is moving in the same direction, and has decided to apply for a royal charter. The capital will be $2,500,000. No profits will be divided during the first seven years.

All this goes to show that before long a supply of raw cotton for British mills can be obtained independent of the United States.

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## THE CASE OF THE CANADA WOOLEN MILLS.

Editor, Canadian Journal of Fabrics:—

Sir,—Referring to the article published in the June number of the Journal of Fabrics in reference to the Canada Woolen Mills, Limited, in which my name was mentioned, I desire to say that it would be useless to attempt to answer in detail all the erroneous statements contained therein, but with your permission, I will state a few facts and leave your readers to draw their own conclusions.

I have been connected with the selling of the goods of the Waterloo mills since 1882. At that time, it was what is usually called a country mill, i.e., making full cloths, and coarse Canadian tweeds. When the amalgamation took place in 1900, it had prospered, and grown into a seven set, up to-date mill, producing medium and fine tweeds, which had a very large distribution.

During the period mentioned, eighteen years, my firm furnished the designs and cloths to be made each season, and gradually improved the quality and style of the goods, and increased the sales to such an extent that it became necessary to enlarge the mill twice, and during all this time my firm had been the selling agents, first for the district of Montreal, and about the year 1885, we were given the selling agency for the Dominion.

With regard to Hespeler, in 1882 the firm of Brodie & Co., father and son, were in business at Peterboro, running one set of cards on flannels. In that year, my firm was appointed their selling agents, and continued in that capacity until 1900, when the mill was merged into the Canada Woolen Mills.

In the meantime, the operations at Peterboro had been very profitable, and the plant there was trebled. Their business still increasing, and there being no facilities for further extension available at Peterboro, they bought the Hespeler mill, which at that time contained 10 sets of 60-in. cards. Continuing to prosper, about the year 1890 the plant was doubled, increasing it to 20 sets of 60 in. cards, the largest mill in the Dominion of Canada.

Only a few years previous to the amalgamation, that mill turned out goods to the value of over half a million dollars in one year, on which there was a net profit of over 9 per cent,. The following year, I am speaking from memory only, A. W. Brodie bought out his father's interest for $140,000, and within a year afterwards, paid him $70,000 in cash. Please bear in mind that in the year 1882, the year we were appointed their agents, they were only running one set of cards at Peterboro.

Waterloo and Hespeler both made money up to the date of the amalgamation and prospered greatly.

During all that time we were the exclusive selling agents for both mills, except that for a year or two after we took the agency of the Waterloo mill, John Shuh, the president, continued to sell to a few special customers in the West.

Now that you have the other side of the story, I think in all fairness, you will be willing to modify your comments on Mr. Morley's statements, and that you will admit, that the selling agents did not do so badly for Waterloo and Hespeler.

I have mentioned the name of John Shuh. I have reason to believe, that it is now recognized, and admitted by some of the old directors and shareholders who were in close touch with the manufacturing of the goods at Waterloo, that its success, in the manufacturing department, was largely due to the careful and constant oversight of its late president, Mr. Shuh, who knew the mill from end to end. The vice-president also, Mr. Randall, gave much personal attention to the affairs of the company; if such is the case, their retirement may account for the startling difference in the operating results the following year.

In reference to Mr. Morley's statement that the losses at Carleton Place were increased by part of the loss at Markham being charged against Carleton Place, is an absolute falsehood. The fact is, that the Maple Leaf mill was the only one of the six mills in the combination, that showed a working profit at the mill, and while $51,000 was added to the costs of the Carleton Place mills, by Mr Morley in one year, less than $150 was spent at Markham during his management.

It is also false that we tried to get the prices on friezes or any other lines of goods, reduced. We never, under any circumstances, cut prices nor made them, but times without number we advanced the price of goods when we found that Mr. Morley had quoted them to us at lower prices than the same quality of goods were being offered by other mills.

Mr. Morley is no doubt to be believed, when he states that he interviewed the directors of the Canada Woolen Mills, individually and collectively, and made substantially the same complaints as appear in your Journal. A committee was appointed to investigate, and the result was that Mr. Morley was not believed, as the following will conclusively prove.

Mr. Davidson, the secretary, has handed me the following extract, from the "minutes of the meeting held on the 9th May, 1902, at which were present W. R. Brock, president, in the chair, with Messrs. Long, Eaton, Randall, Benson, Matthews, and Millichamp, directors, every member of the board being present. Mr. Matthews gave a review of his observations of, and conversations with, Mr. Morley, general manager, since he was appointed, and said that he was under the impression that a change was desirable. Mr. W. D. Matthews moved, and Mr. T. Eaton seconded, that a change in the general management be made, and that Messrs. Brock and Matthews be a committee to deal with the matter, and report to this board."

That resolution was carried unanimously, and, as will be seen, Mr. Eaton, although, as stated by Mr. Morley, may have been sick, yet he was well enough to attend that meeting and second the resolution. I believe that he also attended the next meeting, and seconded the acceptance of Mr. Morley's resignation.

In reference to Mr. Beal, if he made the statement to you, quoted in your comments, he must have been more than usually absent-minded and reckless in his speech. I will simply give you an extract, from the "minutes of the meeting of the directors, held on the 2nd of March, 1901, at which were present Mr. W. R. Brock, president, Messrs. W. D. Long, G. F. Benson, R. Millichamp, directors, and Mr. Morley, general manager. The general manager, Mr. Morley, stated that he had found it necessary to make some further changes in the management at Hespeler, and had placed Mr. Wm. Morrison, of Carleton Place, in charge of No. 1 mill, instead of Mr. Beal." When questioned by me as to his reason for dicharging Mr. Beal, Mr. Morley stated that it was for incompetency.

How foolish of Mr. Beal to make the statement to you that he resigned his position, at Hespeler, because we wished him to take a reduced price for a lot of goods. It is false and he knows it as he also knows, that he had nothing whatever to do with the making of prices or acceptance of orders, as the general manager attended to these matters. Evidently, Mr. Morley and Mr. Beal are now hunting in couples, and although it will be awkward for them, they will have to reconcile their differences, as best they can.

I did not intend to take any notice of Mr. Morley's communication to you, but considering the standing and large circulation of your Journal, some of the influential directors and shareholders have urged me to give the facts of the case to the public, and let your readers have both sides, and judge the merits of the case for themselves.

Perhaps you will be surprised to know that we only received from the company a commission of 2 per cent. for selling their goods. This included our office and warehouse rent, travelling expenses, salesmen, there were three engaged in our Toronto office, and three in our Montreal office, besides junior help, so that you will realize, I feel sure, that our remuneration was very modest, and I may tell you, that for the past two years our commission from the Canada Woolen Mills have not reimbursed us for our outlay.

Mr. Editor, I shall be glad if you will kindly make an appointment to come into the office and examine the Maple Leaf profit and loss account, our order and letter books, and you will find verification for all that I have written.

Apologizing for trespassing on your valuable space, I am dear sir, yours faithfully,

R. MILLICHAMP,
Millichamp, Coyle & Co.

Toronto, July 6th, 1904.

## THE BEHAVIOR OF FIBRES TOWARDS DYESTUFFS.

Study is generally made of the behavior of dyestuffs or chemical agents on fibres, but a writer in the "Chemische Zeitung" discusses the behavior of the fibres towards various kinds of dyestuffs:

1. The fibrous materials, which are used in the manufacture of textiles, show double refraction and are optically positive. The colors shown in polarized light extend with flax, hemp, and china-grass as far as green of the second order, with wool and silk as far as orange of the first order, while with cotton and wood cellulose the double refraction is least pronounced.

2. Vegetable fibres can be rendered dichroic by dyeing in proportion to their specific double refraction. Crystal dichroism has nothing to do with this phenomenon, since indigo and

isatine, which are strongly dichroic in the crystallized condition, do not produce dichroism when dyed on vegetable fibres. Slight dichroism is shown by dyeing with Bismarck brown, safranine, or methylene blue in neutral solution, while the benzidine colors, when dyed on vegetable fibres, show this property in a marked degree.

3. Neither wool nor silk can be rendered dichroic by dyeing.

From (1) and (3) it follows that the conclusion arrived at from the experiments of Sénarmont on salts crystallized from dyestuff solutions, that polychroism is brought about by the joint action of double refraction and absorption by coloring matters, can only hold good in few cases. Whereas vegetable fibres can be rendered dichroic by certain coloring matters, dichroism is never observed on wool or silk, even when the intensity of their double refraction and color is considerably greater than in the case of cotton fibres, which have been rendered dichroic. The author further infers that it is not possible to produce dichroism by incorporating coloring matter with a body showing double refraction, even if such coloring matter should exhibit strong dichroism in the crystallized condition. Thus flax dyed with benzoazurin is strongly dichroic, while wool dyed with the same dyestuff is no more dichroic than when dyed with indigo or methylene blue. From these observations the author concludes that in dyed animal fibres the coloring matter is taken up by the fibre promiscuously, while in the case of the vegetable fibres this occurs according to definite laws. In the first case dyeing may be regarded as solid solution, or if a chemical theory is adopted, the wool and silk may either be regarded as amorphous bodies or (equiaxular) belonging to the regular system. In the case of the vegetable fibres dyed with benzidine colors, the cellulose molecules must be regarded as possessing a definite shape, something like crystals, having unequal areas, to which the molecules of the coloring matter attach themselves in a definite manner, so that transmittance of the vibrations of the polarized light from the cellulose molecules to the coloring matter molecules can only take place in certain directions. An attachment of this kind can either be regarded as a symmetrical aggregation according to crystallographic laws, or as chemical combination.

Discussing the question as to whether the hydroxyl or the keton groups of the cellulose molecule take part in the chemical combination with coloring matters, the author cites the well-known fact that nitrated cotton possesses a strong affinity for basic, but none for the benzidine, colors. He adduces, however, new evidence in favor of the view that it is the hydroxyl groups which enter into combination with the dyestuff, from the behavior of benzoate of cellulose obtained by treating mercerized flax with caustic soda and benzoyl chloride. The product was found to behave in a similar manner to the nitrate, and the same was found to be the case with an ester of cellulose formed by the action of benzene sulphochloride. Whether the same hydroxyl groups always take part in the fixation of the color is left an open question; but in dyeing with benzidine colors the author regards it as certain that it is the two hydroxyl groups (assuming the $C_6$ molecule), which are first attacked at the ester formation, and which combine with the coloring matter. The author seeks further to establish the view that chemical combination takes place in the dyeing of vegetable fibres by the following observations. Flax, warmed with benzoazurin in distilled water, assumes only a light color, and is found on examination of its cross section to be dyed only on the surface. If the dyeing be effected with the addition of salt or sodium sulphate, the color becomes deeper, but does not penetrate any further into the substance of the fibre. But if linen, dyed with benzoazurin, is placed in strong caustic soda (mercerized), and examined, after washing, under the microscope in section, the color is found to have penetrated far deeper. The author explains this by assuming that the caustic soda overcomes the affinity between dyestuff and fibre, the solubility of the former is increased, and it penetrates with the alkali into the substance of the fibre, and becomes fixed there by subsequent washing. Flax dyed in an ordinary indigo vat and in a strongly alkaline vat behaves similarly.

From the examination of cross sections of dyed wool and silk, the author concludes that these fibres are much more permeable for dyestuff solutions than the vegetable fibres. The inert behavior of wool towards dyestuffs at a low temperature is due to the impenetrable character of the horny scales which form the surface. This is shown by the behavior of crushed wool fibres which were dyed a bright green when immersed at the ordinary temperature in a solution of malachite green for two minutes, while the untreated sample took up no color. Löbner has asserted that the scales on blue wool are colorless, but this was not confirmed by the author's observations. Wool dyed a dark shade of indigo showed the coloring matter to be distributed as follows: The central or medullary portion of the fibre was light blue, the outer part of the cylinder of fibrillæ blackish blue, and the narrow cuticle of scales, pale blue, but much lighter than the medulla.

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## ENGLISH WOOL CLIP.

The Kidderminster Shuttle says: The new clip is rapidly coming into the market. Farmers are displaying unusual activity in the matter; of late prices for wool have risen something like 3d. per pound, and, as crossbreds are enjoying quite a little boom, home farmers are doing well with their fleeces. It used to be said that English wools were a "by-product" of the farm, but that is no longer the case. If home-grown wools were low, that grown in New Zealand was cheaper, and consequently for a time local descriptions were somewhat neglected. It is satisfactory to be assured that, as good useful wools and well suited to the needs of manufacturers, the English products still occupy a front rank position, and command to-day as much respect as ever they did when certain fabrics are wanted. English lustre wools, as grown in the counties of Lincolnshire and Nottinghamshire, cannot be beaten for growth and lustre; while South Down, Shropshire, and Hampshire Down wools are undoubtedly equal in quality and staple to the wools produced abroad. These wools are as popular as ever; while in export account, especially to America, some very large quantities have been shipped during the past six months.

The new wool season faces us with lighter stocks in the country than has been experienced for the last ten years. During the year the higher prices which have been ruling have been a sufficient temptation to induce all the farmers to clear out their stocks, and at times some big weights have been shifted. No old wool is consequently to be touched anywhere, and this is now strengthening the hands of the country dealers. No doubt the call has of late been for demi-lustre wools and half-breeds, and lustre wools have not been considered as in fashion. And yet crossbreds have been raised to a position of strength and independence. Since the lowest point was touched the rise in certain descriptions of English wools has not been far short of from 75 to 100 per cent., and the coarser the qualities the greater the rise has been. This fact is partly accounted for by the fact that the Japanese Government have placed heavy contracts with some Yorkshire manufacturers for war materials, especially in the

shape of coarse blankets, which are made from strong-haired wools. The outlook at the Coventry wool fairs is an excellent one, and, generally speaking, farmers are receiving 2d. per pound more for their present clip to what they did a year ago. Everything points to a continuance of high values, for not until the next Australian and Argentine new clip arrives will the trade be confronted again with heavy stocks of raw material.

## TARIFF MODIFICATIONS.

On the 28th ult., the Finance Minister announced several modifications of the tariff, some of which affect the textile trades. The most important modification is that the new duties on woolen goods will not apply to any imports ordered before the recent tariff changes, if they are entered in Canada by or before the last day of August. "The reason for this," says the Finance Minister, "is that it has been represented that some lines, notably in the case of woolen goods, large quantities were sold in advance at fixed prices on the basis of existing duties. The goods in some cases were on their way, and the orders could not be cancelled. And that being so, after very careful consideration, we have come to the conclusion that no injury will be done the woolen industry for which the benefit was intended. Because the goods are ordered and have to come in anyhow. The only question is whether we should exact the higher duty and after full consideration, we have come to the conclusion that in the case of all duties which have been increased by this resolution—this will apply to special duties as well as to the various items which are set forth—and where the goods have been actually ordered on or before the 7th day of June they should come in at the old rate provided they are entered in Canada on or before the last day of August. These are all the changes. The votes and proceedings will contain all the resolutions in their amended form. In most cases the changes are very trivial, but as regards the date on which this increased tax takes effect, that is an important change, and I desire this opportunity to make it known amongst the trade all over the country, which has been so anxious for a definite announcement. There will be in connection with this, some amendments to the customs necessary."

These were announced by the Minister of Customs in the following resolution. "In respect of goods shipped to Canada on consignment, but which have been sold by the exporter to persons in Canada prior to their importation into Canada, that the duty shall not be assessed in any case upon an amount less than the invoice value to the Canadian purchaser, exclusive of all charges therein after shipment from the place whence exported directly to Canada."

"When articles of the same material, or of similar kind but different quality, are found in the same package charged or invoiced at an average price, it shall be the duty of the appraisers to adopt the value of the best article contained in the package as the average value of the whole, and duty shall be levied thereon accordingly.

"The Board of Customs may review the decision of any appraiser or collector of customs as to the principal markets of a country or as to the fair market value of goods for duty purposes. The decision of the Board of Customs in regard to such principal markets and value of goods for duty purposes in any case or class of cases shall, when approved by the Minister of Customs, be final and conclusive, except as otherwise provided in the Customs Act."

"Resolved, that whenever it shall appear to the satisfaction of the Minister of Customs, or of any officer of customs authorized to collect customs duties, that the export price or the actual selling price to the importer in Canada of any imported dutiable articles, of a class or kind made or produced in Canada, is less than the fair market value thereof (as determined according to the basis of value for duty provided in the Customs Act in respect of imported goods subject to an ad valorem duty), such article shall, in addition to the duty otherwise established, be subjected to a special duty of customs equal to the difference between such fair market value and said selling price; provided, however, that the special customs duty on any article shall not exceed one-half of the customs duty otherwise established in respect of the article, except in regard to the articles mentioned in items 224, 226, 228 and 231 of Schedule A, the special duty of customs on which shall not exceed 15 per cent. ad valorem, nor more than the difference between the selling and the fair market value of the article as aforesaid."

"The foregoing provisions, respecting a special duty of customs shall apply to imported round rolled wire rods not over three-eighths of an inch in diameter, notwithstanding that such rods are on the customs free list; provided, however, that the special duty of customs on such wire rods shall not exceed fifteen per cent., ad valorem.

"If at any time it shall appear to the satisfaction of the Governor-in-Council, on a report from the Minister of Customs, that the payment of the special duty herein provided for, is being evaded by the shipment of goods on consignment without sale prior to such shipment, or otherwise the Governor-in-Council may in any case or class of goods authorize such action as is deemed necessary to collect on such goods or any of them the same special duty as if the goods had been sold to an importer in Canada prior to their shipment to Canada."

Another change mentioned by the Finance Minister was as follows: "We have an item for silk fabrics to be used exclusively in the manufacture of men's neckwear. After very careful consideration, we have come to the conclusion to alter the form of that so that the privilege of the reduced duties should apply not strictly to men's neckwear, but to the manufacturer of neckties, using the word "neckties" instead of neckwear, and not confining it to men's neckties. It will apply to the manufacture of all neckties whether they be used for men's wear or for women's wear."

Among the articles placed on the free list by the new tariff is the following: "Goats for the improvement of stock, under such regulations as may be made by the Minister of Customs." It appears that the purpose of this change is to give an opportunity for the raising of Angora goats in Canada. The Angora goat is the animal from which the mohair of commerce is taken, and it appears that already an enterprising stock raiser of British Columbia has embarked upon the experiment. Angora goats are successfully raised in large numbers in South Africa having been imported there from Asia Minor between 1875 and 1880. More or less successful efforts have been made to raise them in Australia and in Texas, California, and other parts of the United States. The situation best suited to the Angora goat is a warm, high and dry climate, and it is a question whether the winter of Western Canada may not adversely affect the animal or its hair. This, of course, can only be determined by actual experiment.

F. G. Morley, formerly manager of the Canada Woolen Mills, Limited, is now living in Galt, Ont.

# 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.**

John Kinniburgh, boss dyer, and John Moss, overseer of finishing, of the Merchants' Cotton Co., are leaving that mill.

Charles O. Dexter, manager of the Canadian Colored Cotton Co.'s mill, at Hamilton, says there is no truth in the report that he is financially interested in a cotton mill in South Carolina.

The Roessler & Hasslacher Chemical Co., 100 William St., New York, have, at the St. Louis Exposition, an interesting exhibit of textiles bleached by their peroxide of sodium process.

The saddlery firm of Fraser, Johnson & Co., Hamilton, have failed and a legal battle is expected to arise out of a bill of sale given by the firm to Sykes & Ainley, woolen manufacturers of Glen Williams, for $3,000.

A company to be known as John A. Humphrey & Son, Limited, is being organized with a capital of $500,000, to take over the Humphrey woolen mills, at Moncton, N.B. The woolen mills will be extended, and the company will also extend its clothing factory. The first directors are: W. F. Humphrey, Senator Wood, J. H. Harris, F. M. Summer, and P. S. Archibald, late chief engineer of the Intercolonial Railway. Other shareholders are Charles S. Hickman, J. P. Sherry, O. M. Melanson, and Richard Leary.

The Eureka Woolen Mills, of Eureka, N.S., have been reorganized as the Nova Scotia Woolen Mills, Limited, with a capital of $150,000. The new company held its first annual meeting in New Glasgow on the 20th June, when the following officers were elected: President, M. H. Fitzpatrick; vice-president, A. F. McCulloch; other directors, George E. Munro, H. B. McCulloch, J. C. Redmond, Dr. F. W. Wright and D. McIvor. A. J. Chisholm was appointed secretary-treasurer. It is understood that considerable new capital has been put in by Americans.

The woolen mills of Ryan & Goodlands, at St. Boniface, Man., which for the past three months have been shut down, reopened on June 17th, and the entire plant will be running shortly. Mr. Ryan is reported by the Winnipeg Free Press as saying that in view of the increased protection promised by the Government, there was every reason to believe that in the near future the industry in this country will be on a very prosperous footing.

Andrew Villani, of Labelle County, Que., has left for St. Louis with a quantity of silk manufactured by Canadian silk worms. Mr. Villani has been raising silk worms for three years, and is well satisfied so far. Samples sent to an Italian expert elicited the information that they were better than the Chinese or Japanese product. He has several acres planted with mulberries, and expects to engage extensively in the business.

At a meeting of the directors of the Canadian Colored Cotton Goods Company, S. Greenwood, manager of the Cornwall mills, was appointed general manager of the company. He succeeds C. D. Owen, of Providence, who resigned recently. As the appointment was made entirely upon merit, Mr. Greenwood has reason to congratulate himself and will be felicitated by his many friends throughout Canada.—Cornwall Standard.

The Cornwall and York cotton mills, at St. John, are running full time, but the Gibson mill, at Marysville, N.B., is shutting down for two weeks, while the St. Croix cotton mill is on short time. The various mills of the Canadian Colored Cotton Co., and the Dominion Cotton Mills Co. shut down for two weeks.

The Standard Woolen Mills, of Toronto, are now putting in an additional boiler, which will give the mill 200-h.p. The mill is closed down while the boiler is being installed. This mill is also importing two more sets of carding machinery of American make, and when these are installed it will have spinning and carding machinery sufficient to supply all its own yarns, which it was not able to do heretofore.

The Perth Expositor reports that Wm. H. Nixon has built for T. A. Code's felt mill a very successful fulling mill for heavy duty. The new machine is what is known as a combination three kicker, with twice the capacity of the ordinary mill. In this machine the cloth, while being fulled, is regularly turned, so that the process of fulling is uniform. Any one of the kickers may be used separately or all three can be turned on at the same time, when goods sixty inches wide can be treated. This is thought to be the only machine of its kind in Canada.

A. H. Raymond, Essex, Ont., proprietor of the Essex Flax Mills, has absconded to the States, leaving creditors to the amount of about $26,000, with assets so small that the ordinary creditors are likely to get little or nothing. The Imperial Bank appears to have got all there is in the estate. Mr. Raymond appears to have obtained credit on the strength of reports from the bank almost up to the time of his absconding, and by taking steps to turn his business into a joint stock company, put on an appearance of prosperity. The assets include a standing crop of 375 acres of flax which has been sold to a Mr. Church for $371.

The Master-in-ordinary, at Osgoode Hall, to whom the case of the Canada Woolen Mills, Limited, was referred, received two tenders last month, but both were so low that they could not be considered. The mills will be closed pending a reorganization of the company. Mr. Morley, late general manager of the company, is endeavoring with some friends to form a new company, and if successful will make an offer for the Waterloo mill alone. Other parties are preparing to make an offer for the two mills at Carleton Place. If these are disposed of, the Hespeler mills would be disposed of as a separate investment. These mills are equipped with modern machinery and are first-class in every respect.

The various mills of the Canadian Colored Cotton Co., and of the Dominion Cotton Mills Co. are closed for the first two weeks of this month. James Crathern, president of the Merchants' Cotton Co., which also closed for a week, pointed out, in an interview, that it was usual for the different mills to close down for repairs for a week, and that the further suspension was caused by the conditions prevailing in the raw material market. The orders of the different companies here were steadily falling off owing to the consumer being satisfied with inferior goods from England, but he hoped that with the installation of more modern machinery, they would be able to reduce the cost of operation. R. R. Stevenson, of Stevenson, Blackader & Co., selling agent of the Montreal Cotton Co., stated that it was the enormous importations of cotton goods during the past season that have compelled the cotton mills to ease off in their production. He insisted that while the cotton markets in all parts of the world are upset on account of the vagaries of the raw cotton market, yet the fundamental trouble in Canada was caused by the low price at which goods could be laid down from England.

The entire output of the St. Croix, N.S., wool mill is now taken by the Clayton clothing factory, at Halifax.

Fire did damage to the extent of $14,000 or $15,000 to the stock of the Montreal Cotton and Wool Waste Company, June 14th

A large concentration of capital in the dyestuff and chemical trades of the United States has been made by the union of the Sharpless Dyewood Extract Co., of Philadelphia, with the New York and Boston Dyewood Co., under the name of the American Dyewood Co. The transfer took place on the 1st inst. The new company will continue its specialties of dyewoods, dyewood extracts, aniline colors and indigo. A. W. Leitch, 16 Hughson street, S., Hamilton, who has been for years the New York and Boston Dyewood Co's popular Canadian agent, will continue to represent the American Dyewood Co. in this country. The circular announcing the change says: "We bespeak for this new company the same confidence and pleasant relations that heretofore existed between yourselves and our company, and believe that the advantages derived from the extension will prove mutually beneficial."

The Lachute Woolen Mills have been extended during the past year by the addition of a five-story stone building, 140 feet long with an L of the same length, three stories high. The dam for this mill and the pulp mill has been raised eight feet. By this change the mills will have an average of 3,000-h.p. available. These woolen mills are running entirely on paper and pulp felts, the conditions in the tweed and blanket trade being such as to drive them out of that business. Mr. Ayers, the principal proprietor of these mills, is one of the woolen manufacturers who foresaw the effects which the preferential tariff would have on the tweed and other branches of the woolen industry, so he wisely dropped those lines and devoted his mills to the manufacture of pulp and paper felts, a difficult line, which for some years he has made a special study, having a pulp mill of his own to experiment upon. Mr. Ayers is convinced that the only hope of the woolen manufacturing business here is a specific duty sufficient to keep out low-class imported goods. The difference in the scale of wages and the standard of living among workingmen in Canada makes such a duty necessary if the Canadian woolen industry is not to be extinguished.

The assets of the Empire Carpet Company, at Dundas, Ont., were put up at a bailiff's sale on the 7th inst., but the sale was brought to a sensational termination by an injunction issued at the instance of a St. Catharines claimant. It appears that a chattel mortgage to the amount of $10,500 was given to Mr. Lawson, while the business was carried on at St Catharines. As will be remembered, a fire occurred there and it was claimed that the plant was a total loss. The insurance was paid over, and, as the Dundas investors in the new concern supposed, Mr. Lawson's claim was met out of the insurance money. The mortgage was not discharged, however, and upon claim of a balance the injunction in question was put in on the day of the sale. An assignment in trust to Mr. Morley had been made of the effects of the Dundas Company, but in the face of the injunction case goes into the courts and will be argued out at Osgoode Hall. The affair is complicated by the fact that though the machinery at the St. Catharines fire was reported to be a total loss some of the looms were repaired and put into tolerable shape when the plant was moved to Dundas. The individuals who spent time and money on these repairs are wondering where they stand. There are 18 power looms in the plant, for ingrain carpets.

## GERMAN PROGRESS IN TEXTILES.

Textiles now form the leading industry of Germany According to a recent report of the British Consul, at Stuttgart, textiles and their raw material show the highest figures among German exports and imports. By the official referred to, this development is attributed to the splendid technical schools of the Empire and her protective tariffs. The year 1880 is roughly indicated as the beginning of Germany's export trades in textiles. Germany now produces textile goods valued at $575,000,000 per year of which one-half is exported. The average annual increase since 1895 has been from five to ten million dollars per year. A census of leading German industries was taken in 1897, when the following were the values of various branches, not including the bleaching, dyeing and finishing branches or the domestic textile industries, which are considerable:

| | |
|---|---|
| Yarn | $18,500,000 |
| Cotton weaving | 62,000,000 |
| Linen weaving | 21,000,000 |
| Jute weaving | 11,500,000 |
| Manufacture of cloth, flannel, etc. | 91,000,000 |
| Other wool weaving | 66,500,000 |
| Mixed weaving | 28,750,000 |
| Silk weaving | 48,750,000 |
| Various weaving | 6,250,000 |
| Knitted goods | 35,250,000 |
| Trimmings, etc. | 27,000,000 |
| Embroidery, etc. | 13,250,000 |

About a million people are employed in these industries in Germany, exclusive of those employed wholly or partially on textiles in their homes.

## DR. CARROLL WRIGHT ON TECHNICAL TRAINING.

On the occasion of the dedication of the Bradford Durfee Textile School—a big three-story building recently erected at Fall River for technical training in cotton manufacturing and so-called in honor of one of the pioneer manufacturers of the city—Dr. Carroll D. Wright gave an interesting address in which he said: "Creation is the work of omnipotence, but it is left to men to develop what God has granted them. It is, therefore, the duty of the state to enhance the skill of the inhabitants by every possible means. Raw materials must be mixed with brains to gain the desired results." To illustrate this necessity, the speaker described the early efforts to grow Smyrna figs in this country and their failure. Afterward some one discovered that wasps of a certain kind were needed to fertilize the plants, and then wasps were imported with the fig trees and the results were all that had been striven for in vain previously. Much of our present manual training is without definite purpose, except that the graduates show greater adaptability to some lines of work. Technical training is for a specific end. In other words, the best work must have motive. Some prisoners were once set to work carrying stones from one point to another, and back again, just to keep them busy. They were worn out by the middle of the day. Other prisoners were employed to build a wall to keep themselves in, and yet worked all day without great exhaustion. The moral is plain. America does not now have to borrow her men of skill from other countries, as formerly, and as long as she can train her own workers, she can be expected to maintain her industrial and commercial supremacy. The development of man allies him with the Creator. To lift up those of the lowest occupations and instincts, therefore, give them the advantages of technical training.

## AS VIEWED FROM ACROSS THE BORDER.

A peripatetic philosopher, writing for Fibre and Fabric, over the initials "C. W.," gives his views of persons and things, as follows, after a trip through Ontario:

The Toronto Carpet Mfg. Co., whose mills are located near Toronto Junction, are busy in every department. They have just completed a large building in which they will install a full complement of new machinery to meet the constantly increasing demand for their product. They make ingrain carpets and rugs, and contemplate making tapestry and velvets. In ingrain carpets and rugs they make the very best quality, far better than is made across the border, as they get wool in free of duty; and right here, at least, the Canadian Parliament shows its good business sense by not taxing wool as they have done in the States. Everyone using or dealing in wool knows that the carpet trade gets all their wool from foreign countries. Then why tax it? Simply on account of the argument used, that it would be used in men's wear goods. How much would be used? Very little, as most anyone buying clothes would know this coarse wool in the goods. At any rate, the American wool grower does not sell one pound more wool for this class of trade than he did during the free wool regime. Carpet manufacturers in the States are now suffering owing to the tariff on wool, and the carpets are nothing like the quality they were five years ago. Prices have not materially changed, and buyers of carpets know the quality has deteriorated immensely in consequence of the high price of carpet wools. Some wools formerly used in carpets are now at present prices prohibitory. The Auburn Woolen Co., Peterboro, Ont., are busy. This mill is nicely located, having a never failing water power and well laid out buildings. James Kendry, the manager of these mills, is a thorough manufacturer, and it is largely due to his ability that the mill is always busy. He has surrounded himself with a competent set of overseers in every department. The Canada Woolen Mills, Limited, have about decided to sell their property to a company that will probably be formed in the near future. It appears that no company operating a group of mills in different localities, as the above concern has done, with a travelling manager and a head office in Toronto, can do as well as the individual who has worn his first suspenders in the mill he has grown up in and become the manager and head of the concern later on. No combination can beat the latter man in the textile business, providing he keeps his machinery up to date, and is a good disciplinarian. One mill is enough for any man to manage successfully, be it large or small. History of the textile business has shown this statement to be true, and the textile business will never be ruled by a trust, for were all the mills on the American continent in one huge trust, they would in time become obsolete, and other countries would in time make the bulk of the goods. Individual effort will always find its field in the textile business and win out in time over any combination in the trade. Individuality wins out in any business. What is the matter with the knit goods business in the States? Too much sameness. Look around at this time among the knitting mills that are making a profit, and you will find individuality is the ruling spirit. Such mills as the Lackawanna Knitting Mills, Scranton, Pa.; Tivoli Mills, Cohoes, N.Y.; the Victor, at Cohoes; Erie and Granite, at Cohoes; Waterford, N.Y., Knitting Co., and there are others, but the successful ones are run by having some character or other about their goods, like Wright's health underwear; have individuality or quit business; don't be continually trying to make something cheaper than your neighbor; it may flatter the vanity but it don't make profit.

## BRITISH TEXTILE CENTRES.

Manchester.—The trade in yarns from American cotton is quiet, and manufacturers are not keen for supplies. Some buyers claim to have got reductions more than equal to the decline in raw cotton, and coarse counts, especially, are slow of sale. There is an improved enquiry from India and China for export yarns. Trade in Egyptian yarns is quiet. In the cloth market there is more enquiry from India, and China trade is also improved, with better prices ruling. There is good business passing in the bleaching and finishing branches.

Huddersfield.—The sale of summer cloths, so far as wholesale houses go, is practically over, and generally merchants are keeping back orders to manufacturers for next spring. Very fair orders for next spring, however, were placed with a few makers of fine fancy worsted cloths and manufacturers of the smarter descriptions of cheap tweeds. For the Continent the demand for fine goods is not so brisk. The Australian demand for medium and cheap makes of goods has considerably improved, and there has been some recovery from the depression in the Canadian trade. The South African market is gradually improving. There is no improvement of note in the United States market. Wool prices are fairly maintained.—Textile Mercury.

Leeds.—The Textile Mercury reports: The trade generally is still quiet, but in certain branches there has been more business transacted during the past few days than for some time previously. This applies to worsted goods, and especially to crossbred worsteds, serges, plain twills and chain twill makes. Manufacturers who confine their productions to these plain makes have had a very quiet time for some months past, but for plain goods makers are finding business considerably better. Makers of fancy worsted goods are still very quiet, and many looms are idle. A few repeat orders for low tweeds for the clothing factories are being received, but those who cater for the makers-up of mantles are in a better position.

Kidderminster.—Many of the carpet mills, says the "Shuttle" of June 25th, have gone on short time. It is early in the year to curtail production, but trade has fallen off a good deal since Whitsuntide. Without doubt, there will be an immediate advance in the price of yarns. The wool market has hardened beyond all anticipation. Local farmers are insisting upon higher prices for the new clip which is now coming in. The fleeces are fairly heavy, but the peculiar weather during the winter has affected the quality, which is not quite up to the standard. The wool fairs are now being held, and high prices are realized, the advances in some cases being fully 15 per cent. A later report (July 2nd), says: The continued hardening in wool has rendered a further advance in the price of carpet indispensable. This week manufacturers have issued a revised price list. Wiltons and Brussels are advanced 2d. per yard, and Royal Axminsters 3d. per yard, from to-day. This is the second advance in carpets this year. While some manufacturers have resorted to short time, others are fairly well employed, especially upon Wiltons. In some departments Axminster manufacturers continue very active.

Leicester.—The present condition of the hosiery trade as a whole, it is well known, is not in that satisfactory condition that those most closely connected with it would desire; and many are the queries as to when an improvement may be expected. That production has become greater than demand in many lines is a fact only too true, and the question of the equality of supply and demand is one of the greatest problems

of the present day. There is one fact that a few, rightly or wrongly, maintain, that is that Great Britain does not, as a manufacturing country, maintain its markets of the world. Taking our own trade, this is only too true. America, formerly one of our greatest buyers, is now a competitive producer, and, being such, no longer desires those goods she can manufacture for her own markets. Therefore, new markets must be found to take the place of the lost ones.—Hosiery Trade Journal.

Bradford.—Writing of trade here, the correspondent of the Textile Manufacturers' Journal says, I do not hesitate to say that even crossbred wool prices would not have taken the turn they have but for the somewhat unexpected strong call met with on Continental account, and more recently on account of the Japanese Government. The orders which the latter have placed have set the whole heather on fire, and to-day export is largely accountable for the boom that has fairly set in for low crossbred wools. The "khaki" orders from Japan are all for heavy, coarse crossbred cloths, and English qualities readily fill the bill. In view of the trade having to face nearly a 50,000-bale shortage from New Zealand, this is quite sufficient to send low crossbreds booming. The price at which these Japanese contracts have been accepted does not suggest much plunder to the contractors, but they must have the wool whatever the price. There is not a very great accession of new business in yarns, which to Bradford at least is rather a disappointment, because the export of tops simply means so much less demand from spinners, and it is yarns which Bradford likes to ship, beside fully made textiles. However, there is a more decided aspect of business about the market and when men are doing one thing or another there is little room left for grumbling. Merino spinners are far from running all their frames, and even though they would gladly sell at a half penny less per pound than they have been quoting for a month past, even that does not induce manufacturers to place orders. At the same time consumption is quite adequate to take off the market all the wool that is coming to hand, and with the prospect of such limited supplies the feeling is still for higher values. The fact is remarkable that the raw material can be sold far more readily than can tops, but with the prospect of another 5 per cent. advance a fortnight hence, nobody is going to sell unless they can command a half penny more. Some are looking for a fairly big improvement in September, but merinos are not travelling on the same road as crossbreds.

Dundee.—Recent reports of the growing crop of jute not being so favorable, sellers are holding off, but buyers are not yet anxious. Prices quoted are: £13 to £15 for August, and £12 to £13 for later shipment. In heavy jute yarns there is a brisk demand, and twists are also in request. Fine yarns quiet at recent rates. Flax is firm. Reports of the new crop in Russia were not favorable, and apparently the season will be later this year The spinners buy only when necessary, and business is therefore in small parcels. Tows are more freely bought, prices tending in buyers' favor. Current quotations are: £43 for Bejetsky, £32 10s. for Livonian K, £33 for No. 1 Pernau Codilla, £38 to £40 for fine tows, and £26 to £30 for common quality. Flax yarns are quiet, and prices unchanged.

Kirkcaldy.—Linoleum and floorcloth manufacturers continue fairly active, and there is a good output from both the large firms, though much more could be done. In the linen weaving industry business continues sluggish. There has been some buying lately, but transactions on account of America and Canada are of a limited nature, the result of continued high prices. There is nothing pushing in almost any branch, and a good number of idle men are about.

## LITERARY NOTES.

Last month, the Toronto Globe celebrated the 60th year of its publication by a steamship excursion to Burlington Beach, and a luncheon at the Brant Hotel. A large number of guests, chiefly ex-employees, attended, and everybody acknowledged that the thing was handsomely done. Old men who had been readers of the Globe away back "from who laid de rail" (as Uncle Remus would say), were there and chatted instructively of the days of its great founder, George Brown, and the presence of these venerable citizens impressed the younger generation with a sense of the age, dignity and power of the paper that has done so much to mould the character and opinions of so large a section of the country. The Globe's special issue of July 2nd, celebrating the event in print, was probably the largest daily paper ever issued in Canada, the edition requiring over three carloads of paper for its 80,000 copies.

A valuable handbook for dyers and textile chemists has been issued by H. A. Metz & Co., of New York, under the name of the "Year Book for Colorists and Dyers." This is the sixth volume and contains 350 pages of useful information and tables which will be of daily service to dyers, bleachers, printers and finishers of textiles. Part I contains tables; Part II. a classification of dyestuffs giving their elements and how they are used; Part III. a test of the principal patents taken out in the past year in the United States for new colors; Part IV. is an intelligent summary of new processes in dyeing, etc., developed within the past year or two in Germany, France and other countries; Part V. describes the chemistry and dyeing department of the Mississippi Textile School, and Part VI. is a comprehensive list of dyestuffs made by the principal dyestuff makers of the world with a key to the name of the maker or agent. The work closes with useful miscellaneous notes. The Canadian agents for H. A. Metz & Co. are Pollock Brothers & Co., 55 St. Francis street, Montreal, and we understand that this really valuable work is to be had free from the firm, to those engaged in the dyeing department of mills.

The "Statistical Year Book of Canada," for 1903, is now out, and makes a volume of 773 pages. Among the new features in this issue are summarized results of the last census. By the way it is now 1904, and the volumes giving details of the census of 1901 are still unpublished. Considering its heavy cost, the census machinery is probably the most unsatisfactory branch of our public service. This, of course, is no reflection on the compilers of the year book, which is now carried on by a special staff, whose work is of great value to the country.

The "American" Buyers' Directory, for 1904, just issued, contains 176 pages of valuable matter for dealers in carpets, upholstery goods, and house furnishings in the United States. It gives classified lists of manufacturers, importers and jobbers of carpets, rugs, upholsteries, wall decorations and all kindred products, with other useful information. The book is published by The Trades Publishing Company, 102 S. 12th St., Philadelphia..

The "American Carpet and Upholstery Journal," of Philadelphia, will hereafter be issued on the 10th of each month instead of the 1st. This journal has been published continuously in Philadelphia since 1875, the past 21 years having been under the same management headed by John R. Kendrick. It is a valuable trade journal.

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The New York Neckwear Co. is the name of a new firm registered in Montreal.

## WOOL MARKETS.

In spite of the prediction made by many wool dealers last year that high prices would not last, the closing sales of the half-year series of Colonial wool auctions, in London, this month, brings a further advance, low grade crossbreds being 10 per cent higher than at the previous sales, medium grades, 5 to 7½ per cent., and merinos, from par to 5 per cent. higher. For merino wools these values are likely to be maintained till the new clip arrives. Some think there will be an advance since fashion appears to tend again towards finer fabrics in woolen goods. The market may be modified by the increased clip expected from Australia. Cape and Natal wools are in good demand at these sales.

In Canada the new clip is coming in very slowly, and making allowance for the speculative withholding on the part of many farmers, it appears that the whole clip will show a considerable falling off from last year—some say over 25 per cent. Of late years farmers in Ontario and the West have dropped sheep raising in many localities and taken up with cattle raising and horse breeding. In Ontario dealers are paying from 18 to 21 cents for fleece, washed, according to quality, and 11 to 13 cents for unwashed. Pulled supers are selling up to 22 cents for good lots, and extras from 22 to 25 cents.

Reports from the Boston market show that manufacturers, after approaching the market in a very cautious manner, have been carried away by the situation, and have bought largely at increased prices. The largest consumers are in the market buying freely. The American Wool Co. is said to have purchased 8,000,000 to 10,000,000 lbs.

Territory, Ohio, Michigan, and Kentucky grades are chiefly sought after. United States agents are buying a good quantity of greasy hoggetts and medium to fine crossbreds, also medium merinos, at the London sales, while German and French buyers seem to be going in for merinos.

The Winnipeg Free Press reports that the officers delegated by the Alberta Wool Growers' Association, the recently formed union among the largest local sheepmen, to handle the season's clip, met the representatives of four manufacturing concerns in Stirling on the 24th June. The bidding between the buyers was lively, and the price realized for the wool, $14.10 a hundred, was the highest price paid here for years. The expected clip will total 250,000 pounds, and will be ready for shipment east next month. F. D. Anderson, manager of the Raymond branch of the Bank of Montreal, was the successful bidder of the sale.

D. H. Ross, the Canadian Government's commercial agent for Victoria, South Australia, W. Australia and Tasmania, writes, as follows, regarding the wool trade there: For the nine months ending on March 31st, shipments of Australian wool sent to Boston from Victoria alone comprised over 17,700 bales. How much Australian wool is purchased by Canadians in the United States wool market would be interesting information for local exporters. The bulk of this product is purchased by British and Continental buyers in the various centres of the Commonwealth, such as Melbourne, Adelaide, Sydney and Brisbane. A few months ago an experimental shipment of 100 bales was sent via Vancouver to Boston, which tends to prove that this speedy and economical route could be used to advantage by Canadian woolen manufacturers, who may require soft Australian wools for mixing purposes. In all the Commonwealth markets a very dull time is being experienced, as, owing to the paucity of stocks, the forward sales offer little inducement to buyers. The amount of wool at the several centres of the Commonwealth has never been smaller, of late years, than it is at present. At the last sales, held in Melbourne, on March 22nd, prices averaged as follows: Greasy, 7¹½ to 9¹½d. (15 to 19 cents); scoured 15 to 19d. (30 to 38 cents).

### MONTREAL WOOL MARKET.

The market is strong at the colonial sales now going on in London, but manufacturers here are buying very sparingly—a hand to mouth kind of business. There is a strong market in Canadian fleece also in pulled, the former 18 to 20c., the latter, 19 to 21c., according to condition and quality. Capes, 18 to 20c.; B.A., pulled, fine, 38 to 42c.; fine medium, 30 to 33c.; North-West, 16½ to 17½c.

## PERSONAL.

B. B. Cronyn, foreign buyer for the W. R. Brock & Co., has been elected vice-president of the company in the place of the late Thos. J. Jermyn. James A. Catto, the secretary, and James S. Anderson, traveller in northwest Ontario, have been elected to the directorate.

J. Wesley Smith, of Smith Bros., wholesale dry goods, Halifax, who died last year, left a sum of money for the establishment of an Old Man's Home in that city. With other sums, enough money has been secured to found the institution, which will soon be in operation.

Richard Cobden, the centenary of whose birth was celebrated in England this year, was at one time interested in the textile trades. In 183- he took a partnership in a Manchester house, where his presence was speedily made manifest by the superiority in quality and tastefulness of the calico goods of the firm.

H. S. Houghton, Jr., formerly with the Rockdale Mills, Northbridge, Mass., has been engaged as superintendent of the Merchants' Cotton Company's Mill, Montreal, and took charge on the 1st inst., in succession to Mr. Hawkesworth. This mill was partially closed for a week for stock taking and repairs, but is now running full strength.

Negotiations were in progress for some time recently between one of the new Canadian linen companies and David Sloane Thomson, a linen mill manager of wide experience in Ireland and Russia. While negotiations were dragging, Mr. Thomson had two or three better offers made him, and accepted that of Frost Bros., yarn spinners and rope manufacturers, of London, Eng.

The many friends of J. L. Cockill, formerly manager of the Mississippi Woolen Mills, at Appleton, Ont., and for a time at the Streetsville mill, will be interested in hearing that he is now in Liversedge, Yorkshire, in partnership with his brother in the leather business. Mr. Cockill married a Brockville lady, and he and his wife often wish themselves back in Canada. It is now seven years since he returned to the Old Country.

A well known wholesale dry goods man passed away in Toronto, on the 25th ult., in the person of Warring Kennedy, head of the old firm of Samson, Kennedy & Gemmel, afterwards Samsoh, Kennedy & Co., of Toronto. He was a native of the north of Ireland and came to Canada in 1857, starting as a clerk in the retail dry goods house of the Walkers of the "Golden Lion." Mr. Kennedy, who was 77 years old, had retired from business since the failure of his firm in 1895. He died from an attack of paralysis, having been in a broken state of health ever since the death of his son, Frederick, last year. He took an active interest in municipal matters, having been twice Mayor of Toronto.

## THE STORAGE OF DYESTUFFS AND CHEMICALS.

In almost all dyeworks it becomes necessary to store, until wanted for immediate use, quantities of dyestuffs and chemicals. The unsatisfactory storage of these is the cause of a number of the faults that occur in the dyehouse, and, as too little attention is often given to this matter, we propose to point out the most satisfactory conditions of storage of the principal chemicals and dyestuffs in general use. First we will consider the dyestuffs. These arrive at the works in one of three states, i.e., as dry powders, stiff pastes, or as liquids. The powders are usually contained in either tins, kegs or drums, or barrels; the pastes in casks; and the fluids in carboys. The room in which these are to be stored should be a cool, dry room, with a temperature never exceeding 70 deg. F. It should be protected from the direct rays of the sun, and not connected with a dyehouse or any room in which there is free steam. The reason for having the room dry and free from steam, in the case of the dry dyestuffs, is that many of them readily absorb steam and moisture from the atmosphere, thus losing strength and causing errors in weighing. If the temperature rises above 70 deg. F. there is danger of the colors forming hard lumps, whilst the direct rays of the sun spoil most colors, even to the extent of entirely changing the shade of the part exposed in some cases. Kegs, drums, or tins that have been opened should be well covered up so as to prevent the contamination of the contents with the dust from other colors. In the case of paste colors, a moist atmosphere does not make much difference to the colors, but, on the other hand, if the temperature gets too high there is a danger of loss of water, and consequent increase in strength by evaporation, whilst too low a temperature may cause the formation of objectionable lumps. It is advisable with paste colors to force a coarse cotton cloth between the uninjured lid and the rim of the barrel. The carboys containing liquid colors should be well stoppered to prevent loss of water by evaporation. Sulphide colors keep well if protected from the action of acid fumes, but as many of them are delinquescent they should be well covered when not in use. We will now turn our attention to the chemicals in general use, of which the following arrive at the works in carboys: Spirits of salts, B. O. V., D. O. V., ammonia, bleaching liquor, and hydrogen peroxide. Spirits of Salts.—This, consisting as it does of a solution of a gas in water, is naturally very volatile, and therefore, should it be found that after opening a carboy all the contents have not been used, replace the stopper as firmly as possible. It is by far the best to keep spirits of salts, B. O. V., D. O. V., ammonia, and bleach liquor, outside in the open or in an open shed. B. O. V. and D. O. V.—These greedily absorb water from the atmosphere and should therefore be kept well stoppered. Ammonia.—This is another case of a solution of a gas in water, and it should be treated in a similar manner to spirits of salts, in the near vicinity of which it should not be kept. Bleaching Liquor.—This, as it arrives from the maker, is usually very badly stoppered, a bundle of straw as a rule playing the part of a stopper. If the bleach is only to be kept for a short period this is quite sufficient, but if it has to be kept for any lengthened period, the mouth of the carboy should be closed with a cork or stopper. Hydrogen Peroxide.—The carboys containing peroxide are usually closed by means of a cork having a nick in the edge or a small hole through. This is to make it quite impossible for the carboy to burst. Peroixde should not be stored any great period of time, as it rapidly loses strength, but it keeps fairly well for a short time if kept corked and in a cool place out of the direct rays of the sun. Acetic Acid.—This is usually stored in casks, is very voltaile, and should be kept covered. Oxalic, Tannic and Tartaric Acids.—These keep indefinitely in the wooden kegs or casks supplied by the maker, if kept dry. Alum keeps well, if dry, in bags. Soaps keep best in a somewhat moist position. Nearly all the dry chemicals are supplied in casks or kegs, and in a dry position, keep best in these. Liquid Caustic.—This should not be exposed to the air, as it rapidly absorbs carbonic acid gas from it. If the above conditions are fulfilled there should be no difficulty in storage, and readers may find therein the explanation of some mysterious fault which has occurred or still occurs in their works.—*By L. G. Richardson and A. C. Wilkinson, in "Dyer and Calico Printer."*

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The T. Eaton Co, of Toronto, has bought a large block of land in Winnipeg, upon which to erect a branch departmental store. It is reported that the R. Simpson Co. will also build a store in Winnipeg, near the Eaton Co.'s place on Portage Ave.

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—The Belgian Consul, at Asuncion, furnishes some information regarding cotton cultivation in Paraguay. Cotton is indigenous to Paraguay, and has been cultivated by the natives for centuries; but the annual output of raw cotton has never exceeded 150 to 200 tons. The soil is said to be singularly adapted for the growth of this "staple;" Paraguay would, therefore, appear to offer special advantages to the cotton-planter, more especially as it is now possible to obtain good land at from 2s. 6d. to 5s. per hectare. But here, as in most other cotton-producing countries, the labor question is the crux of the difficulty. It is impossible to obtain more than a limited number of hands, and even these few work in a most erratic fashion. The natives' wants are easily satisfied, and the prospect of increased wages does not tempt them. Until, therefore, it is possible to secure adequate labor, cotton cultivation on a large scale will be impossible in Paraguay.

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## HEMP MANUFACTURING IN JAPAN.

In a report on industrial development in Japan, the United States Consul-General, at Yokohama remarks that among the industries of that country, which are receiving especial attention, is the manufacture of hemp. It is reported that orders have recently been executed for a supply of fishing nets for Alaska valued at £6,000, and that a commissioner has lately been sent to Canada to investigate and report on the prospect of extending the market for nets in that country.

There are four hemp-spinning companies in Japan, besides which spinning is carried on as a household industry in the northern provinces, and these sources fully supply the domestic demand for all grades except bleached hemp yarn, which Japanese manufacturers have not the means of producing. The yarn is manufactured in Japan into a variety of materials besides nets. Flax is grown freely in the country, but the importation of flax, hemp, jute, and china grass during the first six months of 1903 amounted to 5,227 tons, a considerable increase over that of the same period last year, which was 3,250 tons.

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—The business of the Union Hat Works, at Brockville, carried on by Saulnier & Decelles until their recent failure, has been sold to the Walthausen Hat Corporation, of South Norfolk, Conn.

—On application of Minnie Boucher, Judge Britton has granted an order for winding up the Enterprise Hosiery Co., of Toronto Junction, Ont.

It is understood that the Singer Sewing Machine Co. has decided upon St. John's, Que., as the location of its proposed new Canadian factory, which will cost about $1,000,000.

The Parisian Waist and Skirt Mfg. Co., the Canadian Fur Mfg. Co., the Russian Fur Co., and the Grand Union Clothing Co. are among the firms recently registered to do business in Montreal.

## THE PROSPECT FOR TEXTILES IN SOUTH AFRICA.

It is interesting to know from the report that has been compiled by Henry Birchenough, Special Commissioner from the Board of Trade to South Africa, that as far as the cotton material is concerned, British goods hold the market except in a very few branches. There is no weaving industry in South Africa, so that all the goods must be imported, and of the £2,185,230 worth of cotton imports last year, £1,966,300 were of British manufacture. The next on the list is Germany, which sent to the value of £120 885, the only others of note being Belgium and the United States, who sent £61,856 and £24,206 respectively. There is no doubt, however, that many of the goods which figure as British were of Continental manufacture, merchanted in Great Britain. It is estimated that the unmistakably British goods represent about 80 to 85 per cent. of the total. The trade in cotton blankets and rugs appears to have been monopolized by the Belgians and Germans, who can come in at a price which no self-respecting Lancashire manufacturer can quote. A Belgian firm supplies blankets at 6¾d. per pound, and has even quoted as low as 5½d. The Manchester lowest estimate is 8¾d., but the goods are of a slightly better quality. The Germans compete successfully against British goods with cotton hosiery, but as they can do the same in Great Britain itself, no surprise need be felt. When it comes to better qualities, however, to mixed and all-wool goods, British makers take the lead. The trade in dyed and printed flannelettes is a growing one in South Africa, and there is considerable competition from Germany, Switzerland, and France; the Continental wares being often preferred for their appearance and soft finish In this case, also, most of the foreign goods are bought through London houses. Printed piece goods are almost entirely British, although some of the lighter dress goods are of Continental manufacture. There is, however, a certain type of German print which is generally used and well known throughout South Africa. It is a strong cotton cloth, having spots or small colored designs on navy, blue or chocolate grounds, the f.o.b. price varying from 2¾d to 4d. per yard according to quality. It is preferred by the Dutch and the natives owing to its durability and the fastness of its dye, for it can be subjected to heavy wear and many washings without much deterioration. The British manufacturers who have tried to imitate it have so far been unsuccessful, although, peculiarly enough, Great Britain sends a silk having similar qualities. America is a formidable competitor in cotton ducks and saileloths, the prices ranging from 3d to 1s. 6d. a yard, both ducks and saileloths being quite equal to, if not better, than British goods of the same price. Germany and Belgium send a large quantity of fancy bedcovers, tickings, counterpanes, lace, etc., their chief point being a presentable article at a low price. Domestic linens are almost all British, although a very few German goods are sold. Serious competition, however, is felt from America and Canada in linen saileloths and tent covers, but it is a question of make rather than price in these goods, and the American specialties are hard to beat. There is not a big silk trade with South Africa, and the material sent is usually already made up A very small proportion is of British manufacture, for we cannot expect to do better abroad than in our home markets. Ninety-four per cent. of the woolen goods which go to South Africa are either of British manufacture or go through British exporters, the amount being £719,375, against £23,262 and £4,596 for Germany and Belgium respectively. The piece-goods trade is comparatively small in the men's wear line, for most of the woolens are sent out ready made up Wool dress goods contain French and German cloths, the cashmeres of the latter country being of good value and superior dye. There are more English flannels than German ones; while France shares with Great Britain in the imports of tapestries and upholstery goods. German tablecovers sell well, and although most of the carpets are British, a large number of rugs of Eastern manufacture are sold for the better-class trade. Woolen blankets are the chief article of clothing worn by the natives, and they are chiefly British, the prices ranging from 8s. to 25s. per blanket. The features of color and design are very important, for a chief will often buy a blanket which sets the fashion, and no other design will sell amongst that tribe for a long time. The blankets are regarded almost like clan tartans, with the difference that the color, etc., changes with the whim of the chieftain. Both wool shawls and hosiery are chiefly British, although German competition is making itself felt. Of course there is no opening for textile machinery in South Africa at the present time, although the late Cecil Rhodes is said to have had a weaving and spinning shed amongst the items to be attempted. Other than a consuming country the only opening appears to be as a producer of raw material, the supply of South African wool being by no means a negligable factor in the wool industry. Those interested in South African trade will note with interest that an Industrial Exhibition is so be held in Capetown during November and December, 1904, and January, 1905.—Textile Manufacturer.

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## COTTON MANUFACTURING IN RUSSIA.

The British Board of Trade has received, through the Foreign Office, a copy of a report from the acting British commercial agent at Moscow, respecting cotton mills and looms in Russia.

From this it appears that the Inspectors of Factories in Russia have recently collected statistics concerning the output of their respective districts, but these have not yet appeared for public information, and probably will not for some considerable time. Being thus without official data, the following information has been obtained from various large local firms by the acting commercial agent:

The amount of cotton received annually from Central Asia is about 6,000,000 pouds (a poud equals thirty-six pounds), from America, Egypt, etc., about 8,000,000 pouds, or in all, say 14,000,000 pouds. Allowing for waste, the total amount of cotton yarn produced per annum would be approximately 12,000,000 pouds. As each spindle produces on an average two pouds of yarn per annum, the total number of spindles now working in Russia, Poland, Finland, etc., would be about 6,000,000.

The number of power looms may be estimated by taking the average number of spinning spindles per loom—say 40—which would give a total of 150,000. This leaves out of account all the hand looms working in Russia, the number of which it is quite impossible to estimate, even approximately. However, hand looms are now but seldom to be seen in the provinces round Moscow and St. Petersburg. In reply to the question: "Are Russian cotton textile factories now so numerous or so efficient that competition between themselves for internal trade is severely felt?" the acting commercial agent is assured that there is very severe internal competition, especially in these times of depression in trade. He goes on to say that many of those factories which simply turn out the plain cotton goods are working at a steady loss, and that only those that do their own printing or dyeing are doing a good business. The mills are cutting down the number of their employees and working hours, as, owing to the want of money, the market is glutted with their goods.

## NEW INCORPORATIONS.

The Ontario Gazetete announces the incorporation of The China and Japan Silk Co., Limited, with a capital of $40,000. The head office is to be Toronto, and the provisional directors are: A. J. Moreland and J. A. C. Poole, of Toronto, and E. S. Hassberger, of Montreal. The objects of the company are "to import, export, manufacture, deal and trade in all kinds of merchandise."

John White, W. K. White, J. A. White, Jane White, and R. Whitelaw, all of Woodstock, Ont., have been incorporated as The John White Co., Limited, with a capital of $300,000, to take over the dry goods business of John White & Co., of Woodstock.

The Stratford Cordage Co., Limited, has been incorporated, at Stratford, with a capital of $40,000, to manufacture twines, ropes and cordage. The incorporators are: F. Richardson, N. Richardson, H. E. Holmes, N. S. Fleischauer, and A. J. McPherson, all of Stratford, and J. Richardson and J. L. Richardson, of Perth County; the first four and the last mentioned being provisional directors.

Bias Corsets, Limited, has been incorporated with a capital of $100,000, the provisional directors being: H. G. Snider, E. W. Goulding, and W. H. G. Snider.

The Canada Gazette announces the incorporation of J. A. Humphrey & Son, Limited, particulars of which are given elsewhere.

The General Artificial Silk Co., incorporated in Delaware, has been granted license to do business in Ontario to the extent of $40,000 capital. This is the company which recently started a Canadian branch at Toronto Junction.

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## CHEMICALS AND DYESTUFFS.

Nothing of any importance has transpired during last month. Business is quiet. Prices unchanged.

| | | | |
|---|---|---|---|
| Bleaching powder | $ 1 40 | to | $ 1 60 |
| Bicarb. soda | 1 75 | to | 2 00 |
| Sal. soda | 0 75 | to | 0 85 |
| Carbolic acid, 1 lb. bottles | 0 35 | to | 0 40 |
| Caustic soda, 60° | 2 00 | to | 2 25 |
| Caustic soda, 70° | 2 25 | to | 2 50 |
| Chlorate of potash | 0 07 | to | 0 10 |
| Alum | 1 35 | to | 1 50 |
| Copperas | 0 65 | to | 0 75 |
| Sulphur flour | 1 40 | to | 1 60 |
| Sulphur rock | 1 45 | to | 1 80 |
| Sulphate of copper | 0 06 | to | 0 06½ |
| White sugar of lead | 0 07 | to | 0 08 |
| Sumac, Sicily, per ton | 45 00 | to | 50 00 |
| Bich. potash | 0 07 | to | 0 08 |
| Soda ash, 487° to 587° | 1 15 | to | 1 25 |
| Chip logwood | 1 50 | to | 1 75 |
| Castor oil | 0 07 | to | 0 08 |
| Cocoanut oil | 0 07 | to | 0 08 |

The R. Simpson Co., whose clothing factory was destroyed in the recent Toronto fire, will build a new factory on Front street, nearly opposite the Union Station.

The Richter Mfg. Co. has been incorporated with a capital of $50,000. The directors include: P. C. J. Richter, Tenafly, N.J.; R. E. Menzie, and J. McK. Murray, of Toronto. The company will erect a factory at New Toronto, and manufacture burlaps, canvases, etc., for interior decoration, supplementing the business of the Menzie Wall Paper Co. The new company will manufacture the same goods as the Richter Co. in the United States.

## INDEX TO ADVERTISEMENTS





—The Canada Wool Stock Co., of Dundas, now located in the old cotton mill building, has secured a stone building, and will occupy it about September 1st.

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—The Portland Cordage Company is erecting a large plant at Smith's Cove, N.S.

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—The Murray-Ferguson Flax Mill property in Strathroy, was disposed of by public auction, June 25th. The mill was purchased by A. Thompson, and the warehouse by Henry Gough, both of Strathroy.

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—Fred. A. Clarry is reported to have bought up the carding, spinning and knitting machinery of the defunct Virginia Textile Co., of Lynchburg, Va., and shipped it to Toronto to be used in the underwear factory recently referred to.

## BRITISH TEXTILE TRADE WITH CANADA.

The following table, from the Board of Trade returns, shows the values in sterling money of the exports of textiles from Great Britain to Canada for the five months ending May of this and last year:

| | Five Months to May, | |
|---|---|---|
| | 1903. | 1904. |
| Raw wool | £ 13,029 | £ 15,927 |
| Cotton, piece-goods | 368,920 | 403,813 |
| Woolen tissues | 220,060 | 292,907 |
| Worsted tissues | 407,745 | 404,697 |
| Carpets | 179,404 | 172,097 |
| Haberdashery | 120,084 | 170,062 |
| Jute piece-goods | 88,342 | 90,261 |
| Linen piece-goods | 88,765 | 93,195 |
| Silk, lace | 4,542 | 2,240 |
| Silk, articles partly of | 30,514 | 25,294 |
| Apparel and slops | 158,853 | 146,318 |

* * *

The imports into New York of dutiable silks amounted to $1,796,435 for the month of June, against $1,582,412 for June of last year. In the same time the imports of raw silk amounted to $1,461,364, against $875,596 for June, 1903. This shows quite a revival not only of the import trade, but of home manufacturing. These are figures compiled by the Silk Association of America.