Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- [x] Coloured covers/ Couverture de couleur
- [x] Covers damaged/ Couverture endommagée
- [ ] Covers restored and/or laminated/ Couverture restaurée et/ou pelliculée
- [ ] Cover title missing/ Le titre de couverture manque
- [ ] Coloured maps/ Cartes géographiques en couleur
- [ ] Coloured ink (i.e. other than blue or black)/ Encre de couleur (i.e. autre que bleue ou noire)
- [ ] Coloured plates and/or illustrations/ Planches et/ou illustrations en couleur
- [x] Bound with other material/ Relié avec d'autres documents
- [x] Tight binding may cause shadows or distortion along interior margin/ La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure
- [ ] Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/ Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

- [ ] Coloured pages/ Pages de couleur
- [ ] Pages damaged/ Pages endommagées
- [ ] Pages restored and/or laminated/ Pages restaurées et/ou pelliculées
- [x] Pages discoloured, stained or foxed/ Pages décolorées, tachetées ou piquées
- [ ] Pages detached/ Pages détachées
- [ ] Showthrough/ Transparence
- [x] Quality of print varies/ Qualité inégale de l'impression
- [x] Continuous pagination/ Pagination continue
- [ ] Includes index(es)/ Comprend un (des) index

Title on header taken from:/ Le titre de l'en-tête provient:

- [ ] Title page of issue/ Page de titre de la livraison
- [ ] Caption of issue/ Titre de départ de la livraison
- [ ] Masthead/ Générique (périodiques) de la livraison

- [ ] Additional comments:/ Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below/
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
								✓			

Canadian Journal of Fabrics

THE JOURNAL OF THE *Textile Trades of Canada.*

Vol. XVI. TORONTO AND MONTREAL, SEPTEMBER, 1899. No. 9.

Canadian Journal of Fabrics

THE JOURNAL OF THE Textile Trades of Canada.

Vol. XVI. TORONTO AND MONTREAL, SEPTEMBER, 1899 No. 9.

Canadian Journal of Fabrics

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

Subscription: Canada and United States, $1.00 per year, Great Britain, 5/ Advertising rates on application.

Offices 62 Church Street, Toronto, and the Fraser Building, Montreal

E. B. BIGGAR { BIGGAR, SAMUEL & CO PUBLISHERS } R. R. SAMUEL

UNITED STATES AGENT
H. E. BURNETTE, Cor. Fourth and Locust Sts., Philadelphia

Toronto Telephone, 1392 | Montreal Telephone, 2589

Business correspondence should be addressed to Montreal; but cuts, news items and editorial correspondence to Toronto; cuts from abroad should be sent by post wherever possible, not by express; changes of advertisements should be in our hands not later than the 10th of each month to ensure insertion.

CONTENTS OF THIS NUMBER:

Editorial.

MULTI-COLOR PRINTING MACHINE

The Orioff machine for printing in colors is, in its operation, a departure from any machine hitherto used for a like purpose, says Engineering, London, Eng It is the invention of Ivan Orioff chief engineer and manager of the Russian Government printing works, at St Petersburg, and it possesses many points of interest. In the ordinary flat color printing machine the successive colors are applied one at a time, as each one becomes dry, but the Orioff machine puts down all the colors on the paper at once, so that a great saving of time is effected. The principle of the machine is as follows: The blocks, which takes the different colors, are fixed to a cylinder of large diameter, and each block receives the supply of colored ink intended for it, and as the cylinder revolves the ink on each block is transferred to a composition roller very similar to an ordinary inking roller. After all the colors have been transferred to this roller, each in its proper position, an engraved block or form follows and receives a perfect impression from the composition roller Thus impressed, the form passes on and comes in contact with the paper on the impression cylinder, where it prints all the colors at one operation. The whole of these various transfers are performed during one revolution of the cylinder While the blocks pass under the inking rollers the latter are at the proper time lowered by a system of cams so as to come into contact with the blocks which they are intended to ink. The number of colors that can be used is only limited by the number of blocks and the size of the machine. All the operations go on continuously, as the cylinder revolves in one direction only The number of finished impressions is stated to be about 1,000 per hour. The machine was originally designed for the Russian Government to print multi-colored patterns for bank notes, and it appears to be well adapted for this purpose. We understand that the Russian authorities have thirty-two of these machines at work in St Petersburg on their new issue of paper money, and also producing bank notes for the Chinese Government.

The Dyer and Calico Printer, in discussing the invention, says. "The machine puts down all the colors at once in absolutely correct register, and as quickly as an ordinary machine prints a single color. A contemporary, whose opinion is of value, says that the invention merits close investigation by calico printers, but after inspection of the process, we hardly think the method suitable for textile printing The printing surface is not inked directly by the color rollers, and this would give too little solidity for textiles."

MODERN FLAX SPINNING.*

(Continued from last issue).

In 1884 a machine was bought out by M. Cardon, of Lille, who in a sectional machine tried to combine the breaking and scutching of the straw with the "roughing" and hackling of the fiber. His method of scutching was quite novel, as, instead of a beating action, he substituted a pricking motion, by which he strove to break up the boon. It was found, however, that this severe pricking injured the fiber, and his machines were subsequently abandoned. Another scutching machine was that brought out several years ago by the Fiber Machinery Co., Limited, of London. It differed considerably from any previous machine. In construction the machine was something like a double-power reel, in two sections. The "stricks" of flax were carried along over the horizontal revolving "swifts," being held between two traveling bands of steel passing round a pulley. The rails of the swifts were in the form of scutching edges. The first section, revolving in one direction, cleaned one side of the root end; the second section, revolving in the opposite direction, cleaned the other side. The flax was then released by the bands, turned by hand, and the top end subjected to another pair of beaters. This machine, although giving a good yield, met with little success, for the reason mentioned in our previous article, namely, that the fiber produced had not the mellowness, small "reed," and soft milled appearance which characterizes flax "finished" on the ordinary handles. The very latest thing in the way of flax-scutching machinery is the combined scutching and hackling machine of Vallet-Rogez, of Lille, France. It resembles, in principle, Cardon's machine, which we have already described; another system of breaking and scutching being substituted for the pricking motion of Cardon, which proved the weak point in his machine. The machine is provided with mechanism for preventing the operator from inserting holders into the carriage at improper times—a very important point, since if the holders be "shoved in" the flax is not properly scutched. The breaking mechanism is as follows. Immediately below the lowest position of the carriage and on either side of a vertical line dropped therefrom are two fixed horizontal bars, at a small distance apart. In the space between these fixed bars another bar is worked with a quick horizontal motion by means of a crank, etc. This movable bar has a slot extending its whole length, and of the same breadth as the distance between the pairs of fixed bars, which is just sufficient to admit the strick of flax. The distance apart of the fixed bars becomes less towards the "fine" end of the machine, as the strick becomes smaller, owing to the loss of boon. Below the breaking mechanism and along the entire length of the breaking section are the rotary beaters, provided with blades with scalloped edges. These beaters rotate at the same speed, being so set as to work intersected. The first row of hackles in the hackling portion of the machine are formed to act as scrapers. These hackles are cut out of a thin steel plate, the points being formed into a sharp vertical edge to penetrate the flax. The bases widen out in a curve and join, and are sharpened to a horizontal edge, so that they may scrape three sides of the flax fibers and help to remove any "shove" left on after the beating process. This machine has not, as far as the writer is aware, been worked in this country. From the published description it would seem, however, that sufficient provision is not made for cleaning that portion of the strick close to the nip of the holder. The patentee claims that that yield of hackled flax is equal if not superior to that obtained from the mere scutching in the ordinary way. The principle of scutching flax remains practically what it was in the early part of the century, the only improvements being in the breaking machinery, and in the construction of the "handles." The stricks of flax when finished are put up in bundles of a certain weight, which depends upon the custom of the country and the district. In Ireland it is usually put up and sold in stones of 14 lbs. A good crop of flax should give at least five to six tons of green straw per acre, which will only weigh 33 to 40 cwt. when steeped and dried. The latter, when scutched, will yield from 20 to 50 stones of flax, according to the way it has been steeped and handled. Green flax has about 5 per cent. of bolls upon it. When watered it loses 65 to 70 per cent. The yield of fiber is about 10 to 20 per cent. on the steeped and dried straw, and only 3 to 5 per cent. on the green straw. The average stones per statute acre in the principal flax-growing countries for the last ten years are approximately as follows: Ireland, 27.5; Belgium, 31; Russia, 17; Holland, 29.5.

It will be seen that Russia has the lowest yield per acre of any flax-producing country. This is to be accounted for by the fact that in Russia the flax is sown thin, and also that the culture of the crop and the preparation of the fiber receive less care than they do even in Ireland. The reason that flax growing has of late years proved unprofitable in Ireland is in a great measure due to the fact that owing to want of care the fiber is more like Russian flax than true Irish. Now, owing to the cheap labor in Russia, a flax of poor quality can be imported into this country at less than 2s. per stone, while to the Irish farmer his flax must bring at least 5s. per stone to pay expenses. It is obvious, then, that to make a profit he must produce fiber of a quality far superior to Russian, and this can only be done by paying particular attention to the cultivation, steeping, and scutching. In Belgium, although labor is cheaper than in Ireland, flax steeped in the Lys

*printed from the Textile Recorder.

often costs 14s. per stone to produce, and can be sold at 4s. per stone profit. One point to be particularly noticed is that the cost of scutching per stone is approximately twice what it is in this country, since the men are not paid by the stone as in Ireland, but by the day, and consequently there is no difficulty in getting the flax carefully handled and thoroughly scutched out. Several gentlemen interested in the Irish flax industry have of late years been trying to instil into the minds of the farmers that if their crops of flax are to yield them a profit, they must copy our Continental neighbors, and expend more trouble upon the cultivation, steeping, and scutching of their flax. To this end they have brought over competent Belgian instructors to devote their time to showing the Irish farmer the proper methods. It is to be hoped that their efforts will meet with the success they deserve, and that the acreage under flax in Ireland will show an increase instead of the gradual diminution of the last few years, and that the quality of the fiber brought to market will be equal to that exported from the Continent. Almost every flax-growing district has its special characteristics. In Ireland, Cookstown district is the best, producing a strong, warpy flax. Magherafelt, Randalstown, Lisnaskea, Armagh, and Newry all produce good flax. Monaghan, Cootehill, and Ballybay are, as a rule, of medium strength. Strabane and Letterkenny are generally very wefty and badly handled. County Down flax is very often of a light color, and a large fibered thread flax. Strabane, Letterkenny, and Ballymoney flax is generally made up in large bundles containing about 3 stone, and sold at so many shillings per cwt. In other markets flax is sold per stone of 14 lbs. Russian flax is regarded by many as the coming flax on account of the very low price at which it can be procured. It is well suited to the production of heavy and medium numbers. We import annually between 50,000 and 70,000 tons of Russian flax, or two-thirds of our total consumption, while the average cost per ton is only about half that of Belgian and Dutch flaxes, and three-fifths that of Irish. The superior marks are possessed of a considerable amount of spinning quality and strength, and if properly "machined" and prepared can be spun into a level thread of good appearance and strength. Riga, on the Baltic sea, is the most important port for the shipment of Russian flax. The sorts which we get from that port are the Crown flaxes, the Hoffs, the Wracks, the Drieband, the Zins, and the Ristens. The marks of the Crown flaxes are K, PK, SPK, HK, HPK, HSPK, GK, GPK, GSPK, WK, WPK, WSPK, ZK, HZK, GZK, R, HR, GR, and WR, the letters meaning respectively K = kron or crown, P = puik or picked, S = sanft or sweet, superior, H, = heel or yellow, G = grau or blay, Z = zins, W = weiss or white, R = Risten. The marks of the Hoffs flaxes are HD, PHD, FPHD, SPHD, SFPHD, WSD, WPHD, WFPHD, WSFPHD. Here H stands for Hoffs, D for Drieband (tied with three bands), F = fein or fine, and the other letters as in the Crown. The marks of the Wrack flaxes are W, PW, HPW, GPW, WPW. W means Wrack and White, the other letters as in the Crown. The Drieband marks are D, PD, SD, PSD, LD, PLD, and DW. S here means Slanetz, and L, Livonian. Pernau "District" flax is grown in the neighborhood of Pernau, and shipped in the state in which it leaves the peasants, with a good deal of shove left in the top end. Pernau flax is this "District" flax opened out in Pernau and partially re-scutched, making it worth £2 per ton more. The "Braquers," who carry on this trade, select out the different qualities or marks for export. Flax shipped at Pernau comes from either of two districts, Livonia or Fellin, the latter being of a finer quality and fetching £2 per ton more. The Pernau marks are LOD, OD, D, HD, R and G. Other Russian flaxes are Dunabourg, Kowns, Archangel, Pskoff, Ostrow, Reval and Dorpat. For Dunabourg and Kowns the Riga marks are usually employed. For Ostrow the marks of both Riga and Pskoff are used and sometimes figures also. Pskoff flax is usually classed as OD, PW, W, OW, O, OO, OOO, PI, PII, PIII. Archangel flax is usually of a silver blay or a reddish "foxy" color. It is dew-retted. It is only shipped from Archangel, being produced in the interior to the south-west. The "rise" in price for the various marks varies with different years. Take Riga for instance with K as base at £18 per ton. The "rise in pounds per ton for the several marks are H = 1, P = 3, S = 4, G = 3, W = 4, Z = 10. "Stuffing" the flax with tow, or worse, is a dishonest practice of common occurrence among the Russian Jew, in whose hands the Baltic flax trade is to a large extent.

(To be continued).

—The number of sheep in Ontario in June, 1899, was 1,772,604, as compared with 1,677,014 in 1898, and 1,690,350 in 1897; according to the Ontario Bureau of Industries Bulletin, LXX., the wool clip was 5,525,122 pounds in 1899, being an increase of 420,436 pounds over 1898. The falling off in the area under flax is very marked, the acreage in 1899 being 7,103 acres; in 1898, 10,720 acres; in 1897, 16,240 acres.

—Not a great while ago, librarians and book lovers in general were discussing the deterioration in the quality of paper of late years, says the London News. It is curious to learn from Her Majesty's Waste Paper Office that one result of the change of materials has been a decided increase in liability to fire wherever paper waste is accumulated in any great quantity. It is the rarest thing to find paper made of rags now-a-days. It is made from wood and other vegetable materials, which, chemically, are not very different from the component materials of a hayrick. If paper waste is stacked in large masses, and especially if it happens to be a little

damp, heating takes place just as with a prematurely stacked hayrick, and spontaneous combustion may at any time break out in flame, as it has often been known to do in the farmyard. Of late years the greatest care and vigilance have been necessary to guard against this.

—A serious pest has appeared within the last few years in the cotton fields of the South. It is spreading with great rapidity, and threatens to ruin the industry unless it can be successfully combated. The disease is a fungus, which attacks the roots, causing the plant to wither and die. It is most destructive in the vicinity of Charleston, S.C., and on the islands adjacent to the coast. The United States Department of Agriculture, Washington, has appointed William A. Orton, a botanical expert, to investigate the matter, and it is hoped that a practical way of extirpating the pest will be devised.

THE JUTE CROP IN BENGAL.

The first forecast of the jute crop in Bengal for the season 1899 has been published by the Bengal Chamber of Commerce. It furnishes estimates of the area and outturn of the jute crop up to the middle of June, and is compiled from the returns received from the twenty-six important jute-growing districts of these provinces. The cultivation of jute outside these districts is insignificant, and has been left out of consideration. The rainfall from January to April seems to have been generally near the average, but in May, with the exception of Burdwan and a few districts in North Bengal and Bihar, the rainfall was everywhere above the normal, and was excessive in East Bengal and in the districts of Hughli, the 24-Parganas and Nadia. This excess does not appear to have affected the crop much in East Bengal (Noakhali excepted), but is reported to have prevented the full area from being sown in Hughli and the 24-Parganas, and to have injured the seedlings in Hughli and Nadia. In the first fortnight of June the weather was, on the whole, seasonable, and weeding operations were carried out successfully in most places; but the rain that has fallen up to date this month may have interfered somewhat with late sowings. According to the revised estimates for the previous five years, the normal area under jute now amounts to 2,189,400 acres, against 2,224,300 acres shown in the forecast of last year. The total area in Bengal sown with jute during the current year appears from the returns to amount to 1,914,300 acres, against 1,624,400 acres sown in 1898. The great decrease in 1898 was due to a fall in the price of jute and a simultaneous rise in the price of rice. Since then the price of jute has risen while that of rice has fallen, and the increase in the area sown with jute this year, amounting to 289,900 acres, or 17.8 per cent., is undoubtedly due to these fluctuations in prices. It will be noted, however, that the area is still smaller than that which was sown in 1895, 1896 and 1897, the cultivators not having yet forgotten the fall in the price of jute which took place in 1897. In spite of the excessive rainfall in May in many important districts, the prospects of the crop as reported up to the middle of June are good, and the latest reports received from the chief jute-growing districts confirm this favorable report. In the districts of Mymensingh, Rangpur, Tippera, Dacca, Pabna, Faridpur, Rajashahi, Dinajpur, Pogra, Purnea, and Jalpaiguri, each with an area of over 50,000 acres, and containing about 87 per cent. of the total jute-growing area of Bengal, the average outturn estimated for the year amounts to 93.2 per cent. In ten districts, the present estimates of the crop are returned as 100, or over 100 per cent.; in twelve districts they are now estimated at 75 to below 100 per cent.; and in four districts only—viz., Hughli, Nadia, Darjeeling and Noakhali—are the returns below 75 per cent. Although rain has been somewhat excessive lately, it does not appear to have injured the crop; but the final outturn is greatly dependent on the weather experienced in July and August, and on the height of the rivers in those months. It would appear probable, therefore, that if the present conditions continue, a crop slightly below the average will be reaped in the area sown this year. It must be remembered, however, that this area is still a good deal below the average, and that the total outturn for the whole province will be accordingly, in all probability, considerably below the normal.

Very little jute is now left in hand from the stocks of 1897 and 1898. Taking into consideration the estimates of area and outturn detailed in the returns, and accepting three bales per acre as the outturn of a normal or 100 per cent. crop, the gross outturn of jute may be roughly estimated for the present crop at 58 lakhs of bales. The normal outturn for the province may be taken as about 66 lakhs of bales, so that the present estimated outturn approximates to 87 per cent. of the normal outturn. Taking 16 annas to represent the normal outturn, the outturn of the present crop is thus estimated to amount to 14 annas of the normal.

THE LATE JOHN LIVINGSTONE, SR.

John Livingstone, sr., died at his home in Listowel, Ont., Sept. 6th, in the 89th year of his age. Mr. Livingstone was the last surviving member of the family of Dr. Livingstone, the African explorer, and was two years older than his famous brother. There was a strong family resemblance between the two brothers, and they maintained an intimate correspondence until the doctor's death. The deceased, John Livingstone, was the eldest son of Neil Livingstone, of Blantyre, Scotland, where he was born on May 15th, 1811. He was married in Scotland in 1834, to Sara Mackenzie, who predeceased him in Listowel nearly 19 years ago. He came to Canada in 1840, and lived in Lanark, Lanark Co., for 20 years, engaged in general storekeeping. He come to Perth county in 1860, starting a general store in a then small hamlet. He built up a large and prosperous trade, retiring in 1873. Since that time Mr. Livingstone indulged his fondness for travelling for many years, spending his summers among his friends in Scotland, and of late passing his winters with his sons on the Pacific Coast, his last trip to the Coast being in the winter of 1898. The surviving members of his family are: Neil Livingstone, Rockwood, Ont.; Dr. Henry Livingstone, California; Mrs. J. W. Scott, Listowel; John Livingstone, jr., Listowel, and Charles Livingstone, Seattle, U.S. For the past eight years he has made his home with his son in Listowel. He had been a man of vigorous constitution, and in spite of his great age was of active habits until his strength began to fail this spring, since which time he had gradually sank until the end came. His wide reading, his travels, his fund of anecdotes, his quiet and genial humor, and the kindliness of his heart, made him a most entertaining and agreeable companion, and he was held in general esteem for his honorable and manly characteristics.

—Manila hemp rose ten shillings in London, August 12th, being quoted at £39 10s. Large quantities were bought at this price on the prospect of a further rise in consequence of the resumption of hostilities and the belief that all the Philippine ports are closed or will be closed. While the price in London is only £39 10s., owing to large stocks and the quantities now in transit, the price at Manila is £49, the highest on record. The hemp dealers believe the military operations will drive the natives from the fields, and that the world's supply will be practically cut off.

Textile Design

FINE COATINGS.

The worsted fabric is designed for some time to be preferred to the woolen for fine coatings. It is not feasible to produce the same smart, neat effects even in the finest and well-spun two-fold woolen yarns which obtain in worsted textures. There may be some overlapping of the two distinct manufactures acquired from these two types of all-wool threads, owing to the admixture of woolen and worsted yarns in making some of these fabrics, but generally the worsted characteristics are paramount. The chief difficulty the designer has to overcome, writes Roberts Beaumont in the Textile Recorder, is to construct a new cloth or effect, and yet one that shall be neat in appearance, soft and elastic to the feel, and possessing sound wearing qualities. The limitations are so rigid and numerous that the scope for novelty is almost nil. The merchant asks for newness, yet if produced it is likely to be condemned as too distinctive to be salable. Small effects are alone wanted. Many interesting cloths are in the market that only differ in the slightest degree from the prunelle and 2-and-2 twills. Others are made of these weaves, but owing to some peculiarity in setting, shrinkage or finish, have a new appearance. In such cases it has been ingenuity in manufacturing, and not in weave construction, which has given success.

Design 1.

Design 2.

Some weaves that ought to be of utility in coating cloths are given in Nos. 1 to 4, inclusive. While they are all very simple in structure, yet they are representative types, suggestive of bases on which other makes may be arranged. Designs 1 and 2 are ribbed twills, the former making an elongated warp and the latter an elongated weft twill. They require, therefore, different treatment in setting, the following being suitable weaving data:

Design 1.—Warp: 2-48s worsted; 18s reed, 6s. Weft: 24s worsted; 72 picks per inch.

Design 2.—Warp: 2-36s worsted; 11s reed, 6s. Weft: Same as warp; 78 picks per inch.

Designs 3 and 4 are mainly composed of prunelle warp twill; yet one of them makes a fine vertical twill, and the other forms an angle of about thirty degrees in the fabric. They are both weavable in 2-48s warp and weft, with 72 threads and 66 picks per inch.

Design 3.

Design 4.

QUEBRACHO IN WOOL DYEING.

Quebracho wood, which has long been used by the tanner, and forms a powerful rival to the oak bark, contains 20 to 24 per cent. of tannin, and the dry extract now sent over from South America contains 60 to 70 per cent. It is somewhat remarkable that this substance has not entered the field as a competitor against sumac and catechu, and particularly for the production of metallic tannates for cloudy or dark colors, e.g., antimony, tin, zinc; or iron lakes, for dark blue, black, etc.; as also in loading silk in conjunction with tin salt, though on account of the dark color of its compounds with metallic oxides it cannot hope to rival gall tannin. Moreover, since quebracho tannin assumes a deep brown color on combination with chromic acid—in which respect it resembles catechu tannin—it ought to be able to replace the last-named tannin for dyeing cottons, being only about half as dear, and yielding a more intense color.

Dreher has experimented with quebracho in presence of chromium salts and found it to yield a much darker color than any other tannin. When chromic acid and quebracho solution are mixed together a dark brown precipitate, insoluble in water, and even in strong alkalies, is thrown down in the cold. This inert body can be made to furnish a dark, natural brown dye for wool, and one that is particularly fast to washing and milling The method pursued by Dreher to attain this object is as follows: Ten parts of dry quebracho extract are dissolved in 4,000 parts of water, and, after the addition of 8 parts of common salt to the hot solution, 100 parts of woolen yarn are entered in the bath and boiled and worked gently for about an hour. The wool, which will then be of a pale flesh tint, is left to drain, and afterwards entered for ¼-hour in a second bath (at 80 deg. C.) containing 3 parts of bichromate of potash and 1 part of concentrated sulphuric acid. When rinsed and dried, the wool will exhibit a handsome, natural brown shade, such as is greatly appreciated for various mixtures

As the wool handles nicely after dyeing in this way, there is no fear of the dyeing exerting any injurious action on the fiber. In point of depth the shade obtained approximates to that furnished by dyeing with 2 per cent. anthracene brown (powder), or 1.5 per cent. chromogene (chromed afterwards); consequently the quebracho extract is a relatively weaker dye, but is nevertheless cheaper.

The author believes that this tannin is a mixture of two or more kinds, one of which is highly colored by chromic acid, the other only faintly so; and if the two can be separated a more powerful dye will be obtained; the price of the raw material is, moreover, sufficiently low to allow a margin for the cost of purification. The other tannins, when used in the above manner, gave results of no practical value, tannin producing a dirty, pale yellow; sumac, a dirty, yellow brown, oak tannin, a dirty, dull, yellow brown; myrabolan, a dirty yellow, dividivi, a dirty, brownish olive; and catechu a reddish brown, of about half the strength of that yielded by quebracho extract.—Farber Zeitung

DISCHARGING SUBSTANTIVE COLORS.

BY M. UDE.

A. Bonnett recommends the following process for discharging the substantive dyes, especially if diazotized. The dyed cotton is passed wet into a bath containing one pound of permanganate to 100 gallons of water per 50 lb. of cotton, until the bath is fully exhausted. In this way a thin layer of permanganate is fixed, and when the stuff is passed through a second bath containing one pound of hydrochloric acid to 150 gallons of water develops free chlorine enough to destroy the diazo-compounds without damaging the fabric. In 1897, the writer described the following discharge: Tin salt is dissolved in its own weight of water and then treated with its own weight of commercial hydrochloric acid. The cold solution is quite clear and shows 15-16 deg. B. It bleaches direct dyes without hurting the fabric if the completion of its action is immediately followed by a thorough washing. The solution acts more rapidly when hot, and the action can be regulated by the temperature. With a hot bath containing 10 per cent. of the solution, the action can be observed. Diazo Black, for example,

turns to blue black and then to white. The goods can be bleached white or to an intermediate color as desired by regulating the temperature, time, and the strength of the job. If the action goes on too long, the hue becomes a pale cream, but this can be prevented by watchfulness or by using tin-potassium-ferrocyanide. The bath injures the hands of most people, covering them with obstinate ulcers, so that if sticks are not used for working the goods in the bath, india-rubber gloves should be worn. Emile Blondel has recently published his remarkable results in bleaching substantive colors with sodium hydrosulphite, and those too which resist most reagents obstinately. The writer has experimented with the hydrosulphite, and was astonished at the favorable results he obtained, and without the smallest chance of injuring the fiber. A bath made by adding 10 per cent. of sodium hydrosulphite to water at 50 deg. C., when raised to the boil, discharged every dye dischargeable by zinc or tin salts. Even Diamine Fast Yellow B is strongly affected. Many mistakes may therefore be corrected by using Blondel's process. A noteworthy circumstance is that a properly concentrated alkaline bath of hydrosulphite reduces aniline black entirely. But on washing the effect is reversed. Hence the proportions of the bottom Diamine Black and the aniline black topped on to it can be determined quantitatively, as the Diamine Black is not restored by washing.—Leipziger Farber Zeitung.

THE KERSEY FINISH.

In all goods which are to receive this peculiar class of finish the work practically begins at the fulling mill. The wet finishing processes go so far toward the making of a foundation for future work that if they are not most carefully and judiciously managed, there is sure to be trouble. The soap is best applied by pouring it on the goods, as they come through the traps. This plan works well on most kersey finishes. If the goods are to be dyed in the piece, it is sometimes thought well to apply the soap by the side box method, but the former is the preferable plan for general work.

The matter of the quantity of soap is important, for from the nature of the finish any unevenness will show. If too little soap is applied, there will be bad work, says a writer in The American Wool and Cotton Reporter, for some places perhaps may not come under the influence of the soap at all, and if too much is used the goods will get so wet that they will not work right. To avoid all tendency to impair the strength of the cloth and to injure the colors of the cloth, it is well to keep an eye to the temperature of the mill, to see that it does not get too high. If goods are also taken from the mill as soon as fulling is done, all risk of staining and spotting will be reduced to a minimum.

To scour the cloth after fulling, it is placed in the washer and served as usual. The gates are closed, and warm water and some soap are applied. Running in this, if all has been well, there should be a good lather form, and when it has become quite full and dirty, it is run off, and a new bath of warm water and soap is admitted. A half hour's run in this ought to continue the process correctly. But if it should happen that the lather does not show up in good shape, there is trouble somewhere; weak soap will act this way sometimes, or too little of it, but it ought to produce again a good, suitable lather if all is well handled. It occasionally happens that the yarns of the cloth are very greasy and dirty, and that in order to get them thoroughly clean, a little different course of treatment must be adopted. Where this does occur, an alkali solution standing at about three degrees Baume, may be useful as an aid in facilitating the breaking up of the grease. If a pail of this solution is poured into the washer it will help very materially towards the desired end. How fortunate it would be if the finisher could always have some idea as to the kind of oil that was being used in preparing the stock. Cheap oils whenever used are always hard for the finisher to remove, and mineral oils will require skill and judgment. If he knew what was being done before the goods got into his hands, it would simplify matters very much for him in this most important feature of the work. The alkaline solution will aid quite a little with most of these oils, but it is best to know what you have got to deal with if it is at all possible. A carbonized wool in the kersey that has not been correctly neutralized will always cause the finisher great trouble, if he is not aware of the fact till it is too late. This condition of affairs will always affect the finish and cause bad work. Where the wet finisher is aware of the presence of such an evil, he can easily neutralize the goods in the washer, if he knows it in time. Allow the cloth to drip and drain, then add about two pails of an alkaline solution that will stand at about 10 deg. Baume, run for 20 minutes in this solution, then rinse and remove, and the results will be satisfactory if all other features are correct. Before the gigging is entered upon it is well to take out all creases and wrinkles that are made in the cloth at the mills. If these wrinkles are allowed to remain they are not only hard to remove at later processes, but they serve to annoy the finisher at every stage. Not until the pressing is finished is their presence obliterated, and they make it hard for such operations as gigging, shearing and brushing to have the perfect and complete results that we would wish them to have. In order to take them out, the simplest way is to roll the piece smoothly upon a roller, and allow it to stand from 12 to 24 hours before it is run on to the gig Then there will be no difficulty whatever from this source The gigging begins with old, dull work, and is gradually increased in sharpness until the nap is suitably developed.

In handling a high grade kersey the steaming must follow the gig. The goods are napped back to, on the perforated cylinder, and when all is smoothly and carefully done, the steam is admitted till it permeates every part of the goods. At this stage the piece dyeing takes place, if it is essential The dyeing is followed by a number of runs on the wet gig, and then after standing for a few hours to let the goods set and the wrinkles smooth out, the drying is taken up. Drying has only two cautions to note, and these are with regard to time and heat The time must be reasonably long. It does not do to rush a kersey at the dryer. Better to take plenty of time than to give excess of heat, and expect the process to be done in less time. Then as to heat, it will always be poor policy to turn on too much. Moderateness in heat and in the gradual time taken to produce results are the things desired.

To remove the effects of electric action, the cloth is now cooled in a hallway or some cool place, and then it is brushed and sheared. In the shearing the nap must be cut down to the desired point in such a way as not to give the face a pulled or dragged-out appearance. Sharp blades and proper amount of time and gradualness of work will produce the desired effect. In the press, the cloth must receive a fair body and substantiality, and a fair lustre must be brought out. The lustre must be set by means of dampness and steam, and then after the pressing is done, a run on the brush, slightly—touching the face only, will produce results that will be beautiful and permanent. Of course, the real finish desired will vary in each particular style, and can be attained by more or less thorough treatment at some of these final details of operation.

—Improvements have recently been patented in the process for producing longitudinal stripes on textile fabrics. The coloring matter is applied to the fabric by means of tubes, the exits of which discharge the color on to the fabric, which is made to pass them longitudinally. The tubes are in communication with color receptacles, of which there may be a separate one

for each tube, or several tubes may communicate with a single receptacle, according to the effect to be produced. The shape and size of the tubes where they debouch on to the fabric may be varied according to the effect to be produced and also, of course, the fluidity or viscosity of the coloring matter employed. For producing variations of the striped effect the tubes may have a continuous, intermittent, or variable transverse motion, and a machine for carrying out the process is patented by the inventor.

CARBONIZING WOOLEN CLOTH.

Spennrath concludes an exhaustive article on this subject in the Leipziger Monatschrift with the following summary remarks: For carbonizing with sulphuric acid an acidity of 3 per cent. by weight suffices in all cases. Of bisulphate of soda, 5 per cent. by weight of the carbonizing bath should be used. Chloride of magnesia, even in quantities of 10 per cent., acts imperfectly. Fluid hydrochloric acid is to be entirely rejected Chloride of aluminum is a bad carbonizer, the more so as the deposited hydrate is hard to remove, and as this reagent by no means offers throughout the advantage of not impairing the colors. The same concentration suffices for heavy and light goods, but heavy goods should be steeped longer. Prolonged steeping has no bad effect on the fabric. Stains and tendering in the carbonizing stove occur only if the cloth is not sufficiently dried before hanging, so as to prevent any movement of the acid. Carbonizing machines which keep the fabric moving all the time are, nevertheless, safer than hanging. It is better to employ a weaker acid at higher temperature than to proceed vice versa. With sulphuric acid and bisulphate 100° C. are sufficient. Chloride of magnesia demands 130° C. at least. Bisulphate of soda gives the best white; chloride of magnesia and of alumina produces gray and dull color. On washing with soda, the goods should be entered straight away into the alkali, and not previously into water. The bath should be kept cool and taken as large as possible. Ammonia must not be used. Water drops may injure the carbonized dry goods by evolution of heat. This is most pronounced with sulphuric acid and aluminum chloride; with bisulphate they are harmless. The felting capacity is improved by carbonization with sulphuric acid and bisulphate; salts developing hydrochloric acid, in larger quantities, act unfavorably.

HUDSON BAY COMPANY.

The following is the annual report of the governor and committee of the Hudson's Bay Company for the past year: The governor and committee beg to submit to the proprietors the annual accounts, which show a profit of £125,595 9s. 11d., as compared with £69,373 7s. 9d. last year. This result has been arrived at from a combination of exceptionally favorable circumstances, namely: 1. A considerable rise in the prices of nearly all descriptions of furs. 2. Increased profits on the general business of the company arising partly from the recent gold discoveries, and partly from the improved conditions of trade throughout the whole of Canada. 3. Larger receipts from the sales of land due to the increasing prosperity of the farming industry in Manitoba and the Northwest Territories. To the profit of £125,595 9s. 11d. has to be added the sum of £26,372 19s. 10d., brought forward from last year, making a total of £151,968 9s 9d Out of this sum the committee recommend the payment of a dividend of 13s. per share and a bonus of 7s. per share, free of income tax, making £1 per share, and absorbing £100,000. The committee further recommend, that a sum of £10,000 be set aside from the profits of the year towards the formation of a provident fund for the employees of the company. After disposing of the above sums there will remain a balance of £41,968 9s. 9d. to be carried forward. The quantity of furs sold in January and March last was considerably smaller than in 1898, but, as already observed, the prices realized were generally higher than those of last year. The land account shows receipts from instalments, interest, rents, etc., amounting to £37,266 3s. 3d., as compared with £25,933 17s. 4d. for the previous year, while the expenditure shows an increase of £522 6s. 4d. The farm land sales for the year were 61,546 acres for $300,555, averaging $4.88 per acre, as compared with 37,923 acres for $183,890, averaging $4.85 per acre in 1897-8, and town lots were sold for $26,330, as against $9,174. Present advices in regard to the land department and to the general trade of the company are favorable.

STRATHCONA.

MERCERIZING IN ENGLAND.

At a glance the chief practical applications of mercerizing may be summarized, says the Bradford, England, correspondent of the American Wool and Cotton Reporter, as follows:

1. The production of crepon or crimp effects on material composed of cotton, cotton and wool, or cotton and silk 2. The treatment of wool preparatory to dyeing. 3. The lustreing of cotton. 4. The production of color effects by printing or dyeing processes on cotton and wool. These will now be dealt with seriatim.

As has been already mentioned, this effect is due to the shrinkage which takes place during an ordinary mercerizing process, and is produced by mercerizing cotton cloth in stripes or other patterns, in the manner described in a previous article It is well known that solutions of caustic alkali have, under ordinary conditions, a very destructive effect on the animal fibers, and the possibility of applying the mercerizing process to a mixed fabric containing wool or silk is largely due to the fact that the action upon the cotton is so rapid, and the necessary duration of the process so short, that the wool never becomes thoroughly wetted by the alkaline solution. It was already recognized by Mercer, and has been abundantly corroborated by later observers, that at low temperatures the action of the alkali upon the cotton is rendered more energetic while the wool is still further protected; and it is now the practice to artificially reduce the temperature of the solutions by adding of ice—as was originally done by Mercer—or in other ways. In order to produce pleasing effects by the mercerizing of mixed fabrics the material must be specially designed and woven.

The increased attention recently given to all phases of the mercerizing process has resulted in some interesting observations upon the action of caustic soda on wool which will probably lead to the introduction of an important new process. It is within the experience of many that wool is much more easily acted upon by dilute solutions of caustic soda than by concentrated solutions; and quite recently M Kertez has stated that wool treated with a strong solution of caustic soda, followed by a treatment with ammonia chloride, is not materially affected in strength and acquires a greatly increased affinity for coloring matters; in this respect resembling mercerized cotton.

Closely following this note M. Buntrock gave a much more detailed account of the action of caustic soda on wool, and as the result of a very systematic investigation has shown that under suitable conditions the strength of the fiber is not only undiminished, but is actually increased by the process.

Buntrock's experiments were made on woolen yarn, which was first wetted in water and then whizzed as dry as possible. The yarn was then steeped in the alkaline solution for ten

minutes, then squeezed, washed in one per cent. hydrochloric acid and then in water, and dried. The breaking strain of the yarn was determined before and after the treatment, with the following results:

ORIGINAL TENSILE STRENGTH, 610.

After steeping in caustic soda of:

4 degrees Be	510
6 " "	485
8 " "	475
10 " "	430
12 " "	250
14 " "	210
16 " "	180
18 " "	110
20 " "	95
22 " "	195
24 " "	200
26 " "	2.35
28 " "	240
30 " "	335
32 " "	420
34 " "	440
36 " "	580
38 " "	740
40 " "	770
42 " "	815
44 " "	740
46 " "	730
48 " "	720
50 " "	620

These figures are of course only approximate, but indicate clearly a maximum destructive effect at about 32 degrees Tw. and a maximum increase in strength at about 82 degrees Tw. It will, however, probably be found that the temperature of the solution, the quality of the wool, and the exact method of conducting the washing after steeping in the alkali, will all exert a very material influence upon the results obtained. As the result of further experiments Buntrock found that five minutes steeping in the alkali at 82 degrees Tw. gave the maximum tensile strength, more prolonged treatment resulting in a slow destructive effect; and, utilizing the known preservative effect exerted on the wool fiber by glycerine, he obtained the maximum tensile strength—870—by steeping for ten minutes in a mixture of equal parts of caustic soda, 82 degrees Tw., and glycerine.

RECOVERY OF WOOL FATS.

Hard times, close competition, and small profits have had a tendency to cause superintendents and mill agents, especially in the large plants, to look carefully into the waste products made and not used, which are daily running down the mill race, or stream, to be seen no more, including unspent dyes, such as indigoes, etc., the soap and alkalis, from the washer, the fat and suintine from wool-scouring machines or tubs, all of which can be turned to a profitable account, and help swell the balance on the right side of the ledger, says a contemporary, recently. In Europe these materials are all carefully taken care of and turned to good account. Some manufacturers on this side have also become started in this direction in good shape, and are doing well. Why not make it general? When you come to realize how much fat and suintine are wasted to-day from our wool scouring plants, and our large mills, which do their own scouring, and the uses this product can be put to, it will make you ponder and think. For when this product is processed, it proves to be a very useful article in a commercial way.

The mode of treatment and the uses to which it may be put will be the subject of this article.

The average shrinkage of wools, between the grease and the scoured state, is about 57½ per cent. The fat and suintine deposited upon the wool fiber contain a large portion of useful substances, such as potash, salts, acetic, phosphorus and benzoic acids. Some mills run the waste scouring water into a large reservoir and pump from this into long troughs made with a wooden frame, 18 inches wide, 18 inches deep at the centre, and 30 feet long. A fine burlap is fastened on each side and on the ends, so as to receive the waste liquor. This is left to drain, which leaves a soft paste. This is taken out and extracted, then processed. Another method is treating the wool by the benzine process, which is far superior to any process known. This takes out the fatty acids in a brown chocolate shade of molasses consistency, leaving the wool white, soft and supple. Modern machinery has been applied to this process, so that the danger of explosion has disappeared.

The matter extracted varies in proportion somewhat, and this is accounted for by climate and feed, yet it is safe to say that by practical tests it contains from 65 to 70 per cent. of saponifiable, and from 30 to 35 per cent. of non-saponifiable matter. This has to be separated one from the other. The means adapted to do this separation is the use of caustic soda, and a solution of ammonia, heated to 58 degrees, adding 25 per cent. of water. This will give it a white, milky shade after it has been well stirred up, and thoroughly mixed together. After this it is allowed to stand until the separation takes place, which will be only a short time. Then you will find at the bottom separation a heavy cream paste, which is the insoluble matters, on the top of this a thin, white, milky matter, which is the bulk of the soluble matter in the form of soap. The separation can be done more quickly by using a small percentage of chloride of potash; not only that, but it will make the separation more thorough and distinct. This is taken and put into a vessel and heated until the moisture is evaporated, and afterwards purified. It is then treated with warm alcohol. This gives us "lanoline," which is tasteless, and without smell, and a very valuable article for druggists. It is an active absorbent and just the right thing for cosmetics, creams, salves and other uses in pharmacy. For the skin it cannot be surpassed for its softening nature. In the unrefined state it is used for giving leather pliability and body, and sold to the trade as la gram. Soaps are made with this and other ingredients, and used over again abroad. The water has to be got rid of, also any other foreign matter which might be left in through filtration or precipitation. This soluble matter is also being used as a wool lubricant in the card room, having a percentage of soda ash added to the emulsion. The hard insoluble oil must be thoroughly removed to keep card clothing from gumming up and the goods from having a sticky, dead, clammy feel.

Andrew M. Newlands, founder of the well known manufacturing establishment of A. M. Newlands & Co., makers of rugs, etc., Galt, Ont., died very suddenly a short time ago. He was out driving on July 23rd with a party of friends, visiting Preston among other places, and returned early in the evening. During the night he took ill, and although it was not anticipated serious results would ensue, he passed away quietly and suddenly about 3 o'clock. He was born in Scotland, came to Canada when quite young, and lived in Preston for several years before coming to Galt, and started the industry referred to fifteen years ago. A widow, one son, Andrew Newlands, of Buffalo, and one daughter, Mrs. Chapman, of Detroit, survive. Deceased was about 60 years of age, was well known and extremely popular. A year ago he withdrew from active business on account of frequent attacks of illness.

CANADIAN TRADE WITH HAYTI.

There seems to be an excellent opening for trade in the West Indian Islands of Hayti. The United States consul at Gonaives has pointed out in a recent report to his Government that there exists a demand for various products of the United States which could be vastly increased if certain special requirements of the market were specially observed. We quote from his report:

It is only a short time since American industries have been represented in the Haitian markets otherwise than by provisions, such as pork, flour and fish, and by soap and timber; but for about twenty years cotton goods have entered into competition with the Manchester productions, which until then held the undisputed monopoly. American articles, such as denims, prints, checks and ginghams, are gaining a firmer foothold in this country, thanks to their real merit, enabling them to compete advantageously with English articles, in which often the manufacturers, in their endeavors to obtain the best selling price, conceal the quality of the goods by the use of sizing, which disappears on the first washing. By this subterfuge they have defeated their object, for the consumers have learned to place greater confidence in the American article, though it may cost a little more. A complete victory for American cotton goods might already be assured if the manufacturers would observe certain small details which the customs of the market have rendered necessary. For instance, the length of the tissues should strictly measure 12½ or 25 yards. The former dimension has become very popular in recent years, and to it is due at least 50 per cent. of the importations. In the prints the American manufacturer shows too much uniformity, his assortment containing too few designs and not enough contrast in colors. Besides, the packing would prove more suitable if, instead of cases containing bolts measuring from 2,500 to 3,000 yards each, bolts measuring 625 yards were sent, that is, so that 25 pieces of 25 yards, or 50 pieces of 12½ yards, could be sold. The bleached or unbleached cotton, checks or ginghams would also increase in favor if they were sent in pieces of 625 yards, to be resold in packages containing 4 to 6 pieces. Manchester occupies first place for blue handkerchiefs and Union Madras handkerchiefs. An enormous number of these are used in the interior, where all the country people, and many in the towns (men, women and children), use them as a headdress. The finer qualities of colored batiste handkerchiefs are made especially for this trade in Belfast, Ireland.

The following linen articles, or those in linen and cotton mixed—Brabant, batiste, cambric, Peotille, drills, linen ducks—are practically monopolized by the Irish manufacturers. Among the finer grades are light-weight woolens which come from France, England and Germany. Personally, the writer is of the opinion that the American manufacturers could find very good openings in Hayti for the following articles: Hosiery; shoes for men, women and children; straw or felt hats for same; hollow-ware, tinware, pottery and chinaware. Transactions between the two countries are hampered by terms of credit, which are considered too short. While the European manufacturers allow six months, the American manufacturers must be paid in sixty days, rarely granting more than ninety days. The trade of the Haitian importer being generally based on credit, with no fixed time for payment, he is naturally influenced by the offers of travelling men sent to this country by the European houses. The American manufacturer ought also to send commercial travelers who speak French, who could visit twice a year the different markets of the country with samples. It is also thought that a much larger share of the Haitian trade would flow toward the United States if, in the local banking business, there were some American houses making a specialty of exchange transactions between the two countries. France, Germany and England have the monopoly, in a certain measure, of this branch of banking business in the country, and it is not believed that Hayti will enter thoroughly in the line of progress marked out by the International American Congress until American bankers are themselves represented in the country.

It is true that certain interested papers, as well as some Europeans established in Hayti, try to divert competition in reporting that the economic and moral situation of the country is bad, undoubtedly without considering that the reader can well ask why they themselves should stay in the Republic.

A NEW TEXTILE PLANT.

United States Consul Atwell writes from Roubaix, July 18, 1899: Some years ago an explorer in Asia discovered a plant of silken fiber used by the Turcomans for the manufacture of withes and cord, and by the Canagues for woven goods. This plant, known as the Apocynum venetum, is a sort of bush with slender, cylindrical branches, sometimes six feet high. It grows in Europe, Siberia, Asia Minor, the north of India, Manchuria and Japan; but it is not cultivated, and up to the present has been used only in the natural state. The branches die yearly and in the spring new shoots start horizontally from the roots. It flourishes best where the land is under water a part of the year, notably in the neighborhood of rivers that overflow at stated periods. Under favorable conditions the Apocynum develops quickly and in a short time the branches form a thick growth, almost like a miniature wood. The best fiber is obtained by cutting the branches in midsummer when the plant has obtained its full growth. The attention of the Russian Government was called to this plant in 1891. It is there known as the Apocynum Sibericum, because it was first seen in Siberia It grows luxuriantly on the banks of the Amu, Barya and the Ili, and the natives of these regions have used the fiber for many years for cord and fish nets. They value it not only for its great strength but also because no care is required in its cultivation In 1895 the Russian Government began to use it in the manufacture of bank notes, and since then the plant has been cultivated at Poltava. The results obtained thus far are considered excellent, and the time is doubtless near when Apocynum venetum will take an important place in the textile market

BRIEF BUT INTERESTING.

The weight of the wool taken off eight Cotswold sheep, owned by Robert Gamble, of North Elmsley, Ont., was 67 lbs.

The following were among the enquiries relating to trade matters received at the High Commissioner's office in London during the week ending June 16th, 1899. A Scotch house desirous of extending their trade in jute yarns in Canada ask for the names of Canadian rope and twine makers, and carpeting and mat manufacturers.

A remarkable sample of merino wool is in the possession of B. Cunningham, president of the Stawell Agricultural Society, who obtained it from Beveridge Bros., the owners of Mirranatwa station, in the Victoria Grampians. The wool measures 11 inches in length, and was taken from one of three merino ewes, aged 3½ years, which had never been shorn The three fleeces weighed 86 lbs. There is not the slightest sign of any break in its staple.—Textile Mercury, England.

Some ten years ago a French missionary started the systematic rearing of two kinds of spiders for their web, and the "Board of Trade Journal" states that a spider-web factory is now in successful operation at Chalais-Meudon, near Paris, where ropes are made of spider-web intended for balloons for

the French military aeronautic section. The spiders are arranged in groups of twelve above a reel, upon which the threads are wound. It is by no means easy work for the spiders, for they are not released until they have furnished from thirty to forty yards of thread each. The web is washed, and thus freed of the outer reddish and sticky cover. Eight of the washed threads are then taken together, and of this rather strong yarn cords are woven, which are stronger and much lighter than cords of silk of the same thickness.

The chief point to be attended to in using blood albumen, remarks The Berlin Farber Zeitung, is its proper solution. Water must be used which under no circumstances exceeds 36 deg. C., and it must be allowed to act for an hour without stirring. After the water has soaked well into the albumen, and it that at the bottom is slimy, stir slowly from above downwards and without any rotatory motion, which tends to make lumps which dissolve with difficulty. Alkalies should never be used, or water containing iron. All these things color the solution. The albumen requires fifty times its weight of water.

Ubeim's bleaching process seems to be rather complicated. It is no wonder that Ubeim admitted that it cost more than grass bleaching. The process consists of eight separate parts, all carried out under pressure. There are (1) washing, (2) a lime bath (2 to 3 per cent.), (3) souring with hydrochloric acid, (4) a bath containing 2 per cent. soda, 1 per cent. caustic soda, ½ per cent resin, (5) a soap bath for three hours at 50 deg. C., (6) rinsing for three hours, (7) peroxide of hydrogen at 50 to 60 deg. C., (8) souring with hydrochloric acid. Scheurer and Schoen are about to investigate the process, and may succeed in simplifying it.—The Dyer and Calico Printer.

Very good crepe effects can be got with chloride of zinc. If a woolen material is printed with zinc chloride of 72 deg Be. and steamed, the contraction of the printed parts gives a very good result. Silk can be creped by printing with a zinc chloride solution of from 20 to 40 deg. Be.; at 72 deg. Be. the silk becomes dissolved, especially on steaming. As cotton is affected at lower temperatures than wool by concentrated zinc chloride it is possible in a mixed fabric to cause either the cotton or the wool to contract or both. Cotton, treated with zinc chloride of 72 deg. Be., should be dried at 40 to 50 deg. C. By stretching during the treatment with the zinc chloride a silky lustre is obtained exactly as when ordinary mercerization with caustic soda is employed.—The Dyer and Calico Printer.

Some of the latest about lignorosin, the new substitute for lactic acid, appears in The Duetsche Wollen Gewerbe. It is used in about the same proportion as lactic acid, and, like it, should be assisted with sulphuric acid. It also requires bichromate in the same quantity approximately. A good mordanting bath is made with 1.6 per cent. bichromate, 2.8 per cent. lignorosin, and .8 per cent. sulphuric acid, diluting the lignorosin well with hot water before putting it in. Lignorosin baths differ from those made with tartar or lactic acid in having a brownish color, which does not go when the bath is boiled This makes the mordanted material assume a brown color, so that lignorosin is only suitable when dark shades are to be produced The bath exhausts better of chrome with lignorosin than with tartar, and lignorosin equalizes better than lactic acid, and gives very full and lively tones As regards fastness, colors got on lignorosin are quite as fast to milling, hot pressing and water as those obtained with tartar or lactic acid, but they are inferior to the latter in resistance to light

According to the Chemiker Zeitung, a new process for producing indigo on the fiber has been discovered. The indigo salt is incorporated with a suitable thickening and an excess of soda lye, with stirring, precautions being taken to keep down the temperature. The material is printed with the mixture, dried, steamed, and finally washed. The steaming time can be reduced by adding another deoxidizing agent. The new process has the advantage of giving clearer and leveller colors, and that it can be combined in printing with the fixing of steam-colors. A good printing mixture consists of 1½ lb. indigo-salt, 3 lb. British gum, and 5½ lb. soda lye of 40 deg B. The steaming after drying lasts 40 minutes, and is followed by washing, souring, again washing, and finally drying. A reddish blue of great purity is obtained. If a little grape sugar (about 1-10 lb.) is added to the above printing color before use, 30 minutes' steaming will do.

According to the story of an aged resident of Fitzroy, Ont., he well remembers the time when there was but one darning needle in that county, and the only mill was a day's journey distant. One day a Mrs. Dickson, who chanced to have temporary possession of the darning needle and had it carefully stuck in her apron in a holder, set off for the mill with a bag of grain laid on the back of a horse. The good lady had a rough road to travel, and unfortunately lost the darning needle. This was really a public calamity in Fitzroy. Nearly twenty housewives depended upon that darning needle for repairing socks and for other coarse mending. It passed from one house to another by special messenger, and every woman had the use of it one day in three weeks. Another darning needle could not then be procured nearer than Perth a distance of 50 miles away. Tidings of the disaster which had befallen Mrs. Dickson soon spread, and on the following morning a dozen women, some of them accompanied by their children and some by their husbands, turned out to search three miles of forest path. It seemed a hopeless task, but keen eyes were bent upon every portion of the highway, and at length a little girl espied it. A great shout was raised, and the good news was carried along the line of searchers. The party returned home, and the rejoicings in newly-settled Fitzroy that day were great.

WEAVING FROM COPS.

This method of sending the filling yarns to the weave room is fast gaining favor with both the manufacturer and weaver, and although it is not a new idea, it is only within the past few years that it has been adopted to any extent by woolen mills. Until quite recently the cop winder was used only in connection with the weaving of the very heavy yarns, such as are used for backing and carpet yarns, but the desire of manufacturers to increase production at every possible point has led many of them to adopt this system on all sizes of yarn up to 3½ and 4 runs, and the results have been most satisfactory. It is easy to see that there must be a considerable increase in the production from the weave rooms, says The American Wool and Cotton Reporter, for instead of placing a small bobbin of yarn in the shuttle, the amount of yarn held by three large warp bobbins, in the form of a cop, can be used, thus lessening to a considerable extent the labours of the weaver in not being obliged to change shuttles so frequently, and at the same time giving a greater production to the manufacturer. There is also a much less breakage of the filling by the use of this system, as there is little or no tension on the yarn while weaving, thus ensuring fewer imperfections in the cloth. Aside from the increased production of the weave room through the use of the cop, there is a considerable gain in the amount of work done in the spinning department, for instead of the spinner being obliged to build a bobbin to fit the shuttle, he can make it as large as the gauge of the spindles will permit, thereby saving considerable time and labour in doffing. Another important feature of this system is that where it is desired to keep on hand a large supply of yarns, it is unnecessary to tie up a lot of bobbins or spools, for as

soon as the yarn is spun it may be copped, and the bobbin returned to the spinning room, while the cops can be stored away until needed, and it will be found that the yarn will be in much better condition for weaving than if left on the bobbin. It is not an expensive operation, as the labor employed is of the cheapest. That manufacturers realize that there are many advantages to be gained by adopting this system is evident from the fact that it is growing more popular each year.

FANCY COTTON BLANKETS.

In the manufacture of fancy cotton blankets the first subject of importance is the selection of the proper kind of weft. This should be of a medium coarse grade, fairly clear, free from stains, and possessed of a sufficient degree of elasticity and strength. A fine, soft, and expensive cotton is unnecessary, but the staple should be long, and have qualities which will allow of a good, long, flowing nap being obtained on the gig. About 10 per cent. of short fiber may be used to advantage in the mixing The weft yarns for the blankets should have as little twist as is consistent with its weaving strength, and it is essential, says The Tradesman, that it be free from twits, lumps or slubs.

As the weft plays a prominent part in the blanket, care should be taken in its preparation. It is unnecessary to grind the cards previous to running a batch through for such work, but it is advisable to overhaul the strippers and workers and get the clothing into good working condition. Such weft should be spun down slightly, which will reduce the risk of uneven places and produce a better thread. All soft ends should be anticipated by a readjustment of defective bands, for soft threads show prominently if allowed to pass into the finished cloth.

The widest blankets usually have about 1,200 ends in the warp, and are slayed into a No. 10 reed, three ends in a dent. The design varies, but most of the patterns work on twenty-five shafts, and in many cases the five-shaft weave is employed. This weave throws the weft on the face and the warp on the back, or vice versa, in equal proportions, making a reversible blanket. When twenty-five shafts are used, the design can be planned by judicious drafting so that equal quantities of weft are on both the face and back of the blanket, the warp being also allotted in the same equal proportions. Supposing that the pattern is made up of all white cotton warp and blue and red weft, for five ends of blue on the face there are the same number of red on the back, and vice versa. It requires only a little mechanical manipulation of the boxing chain, with the loom on pick-and-pick, two boxes on the side and two colors of weft, to produce an unlimited variety of the Greek pattern or any design of a simular order. When the ground of the blanket is woven in one color, the weaver can throw off the boxing-chain pawl, let the boxes stand, and weave the one to the next border, when the pawl is dropped, the two shuttles run, and the coloring formed.

The first operation in the finish of these blankets is scouring the goods. All loose dyestuffs, oils collected during carding and weaving, and foreign matter of all kinds must be scoured out in the washer. An olive soap or a soap which can cut the grease and leave the goods soft of handle should be used. Much care is needed to avoid bleeding the colors, particularly if the dyes are of the red or scarlet order Many good blankets are ruined at this stage by the reds running into the white grounds If the coloring is fast and the applications of soaps regular, there need be no trouble about this. Avoid running in hot water upon any portion of the goods in the washer Better remove the string and start again if more hot water is needed Look out for the rolling and knotting of the goods, as it will not take much to wear off the fancy borders if certain parts of the blanket have to take all the frictional contact with the sides of the washer or with the squeeze rolls. After completely removing the suds, dirt, and all foreign stuffs from the blankets by alternate washings and rinsings, they are passed to the fulling.

The goods should be fulled just enough to close up the meshes, but not enough to stiffen the texture like a horse blanket. The use to which the blankets are to be put requires that the material be soft and easy of handle, and this cannot be if the texture is shrunk up too much in the fulling A run of two hours in the fulling mill should be sufficient, as against five or six hours usually needed for the regulation horse blanket Bleeding of colors, unequal fulling of the blankets, and resultant stiffness are to be avoided by precaution and frequently examining the goods. The goods should be tacked evenly, otherwise the borders will be drawn out of line and spoil the effect of the design. After fulling, another washing is required to remove all residue of fulling soaps, and the blankets may then be taken to the gigs.

The gigging of Indian blankets for house decorative purposes differs somewhat from the gigging for regular goods. Warmth, softness, and smoothness of the nap are the essentials in the ordinary blanket. The decorative blanket, however, is finished with a view to appearances. The gigger aims at getting a long, flowing, and smooth nap. This he does by beginning to open and lay the nap with some old teasels. If new teasels were used at the start, the strong teasel points would tear off much of the nap instead of laying it. About every other slat should be filled with old work for the first dozen runs. Then the new slats may be gradually added as the nap is started, and kept up until all the slats are filled with new teasels. Then the gigging may proceed until the nap is in the required condition. The blankets will require reversing occasionally, and both the wet and dry processes of gigging are used. The moisture of the wet process adds materially in raising the nap, as it imparts an elasticity to the fiber and prevents it from breaking under strain, as it would if perfectly dry. A cut of five pairs of blankets may be gigged in four hours and then taken to the finishing room. After the treatment just described, the nap of the blanket covers the border pattern, and the figures or design work do not show to advantage. The best way to open out the nap and add to the beauty of the finish is to use hand cards, and run them across the borders at an angle with the blanket. This will draw the nap in the direction of the border plan, and show up the designs. The ends of the blankets are then sheared, so as to make an even and square heading on which to sew binding braid, or they are overrun with double and twist or binding thread of various colors. Silk makes a good binding material, and if used in the same shade as the ground of the blanket, the effect is pleasing and tasteful The blankets are afterwards rolled together in pairs with one of the borders on the outside. Some ribbons are used to keep the package in shape, when the blanket is ready for the saleroom

DEPRECIATION.*

There is no question on which there is such divergence of opinion, alike as to what is meant by the phrase, nor, when that is agreed upon, how the operation is to be conducted, than depreciation. What is depreciation? Primarily it is, of course, that allowance which should be made to cover the inevitable deterioration in any machine or article used, so that at the expiration of the period when it is no longer capable of economical employment, a sufficient sum will be accumulated to replace it In short, it is a payment out of revenue of a sum equal to the amount of capital absorbed in earning the revenue. In a sense this is a reserve fund, and should be treated exactly in the same way as the latter—that is, the amount set aside should be rigidly reserved, in order that it will be available for the purchase of

*From a paper by Joseph Nasmith, reprinted from the Knitters' Circular.

the machines or articles which need replacement at the period when that is needed. It is a common practice to deal with the allowance made for depreciation merely as a matter of account, but it is only a sham unless the actual sum so accumulated is at the termination of the predetermined time available either in cash or kind—preferably the former. A reserve fund is thus created, which differs from that ordinarily known by that name only because it is ear-marked, and set aside for a specific purpose, the ordinary fund being available for any of the purposes of the business. The charge for depreciation is one which constitutes a special expenditure for a specific purpose, and must be so regarded. It is, in its essence, reserved profit, and as such should be tangibly represented either in cash or in some other form equivalent thereto.

There are, however, other considerations of importance in the case which are more complex. Primarily, as was said, depreciation is an allowance for the natural deterioration of the machine or utensil, which means capital expended, and in this form should always be made. As to the amount of the allowance, this depends on many conditions. The writer may be excused if, under the special circumstances, the illustrations given are confined to textile factories, although it may be truly said that the same principles underlie all cases, and only need special application. In the case of a machine it is requisite to consider that not only does it wear out, but that owing to the efforts of inventors and constructors, it may become, if not obsolete, not equal to machines of a later date It is quite clear that in some few cases where a startling invention occurs, the whole value of any machine may be destroyed at one stroke; but this is an extremely rare—nay, almost unknown—occurrence. As a rule, the work of evolution proceeds in stages, sometimes quickly, sometimes more slowly; so that the unfortunate manufacturer does not suddenly find his machinery and plant rendered obsolete and of no value. But it is obvious that, however slow, this factor is one to be reckoned with, and does, undoubtedly, diminish the value year by year.

As an example of what is endeavored to be enforced, take the spinning frame. The old throstle or flyer spinning machine was—although in some respects the best ever used—incapable of producing more than a given quantity of yarn per hour. In consequence the efforts of inventors were turned to other modes of continuous spinning, and the ring frame was evolved. At first, owing to imperfections in the method of manufacture, the gain was not large, and was to some extent diminished by the comparatively great power needed to drive the machine, and the frequent breakages. The great conception of Sawyer, that it was possible to obtain a point of support high up the bobbin, speedily led to improvements, and the combination of this principle with that of a self-contained spindle, which was the work of Rabbeth, carried the process further. But evolution was not yet at an end, and the application of the humming-top principle to the spindle gave a further impetus to the productive capacity of the machine Moreover, while the inventor was busy, the constructor was not idle. Grateful as we ought to be to those whose conceptions have led to the evolution of the best forms of spindle, it is certain that at least as much is due to those able constructors whose constant vigilance and effort have so improved them as to add considerably to their value and efficiency.

The instance given shows that changes take place gradually, but it is quite clear that a spinner whose mill was equipped with frames having flyers would find its value much diminished on the introduction of ring spinning, and similarly would suffer proportionate loss, if, having put in machines fitted with the common ring spindle, the newer type became an operative success Further, the diminution in value is affected not only by the increase in the working velocity of the spindle, but also by the greater efficiency, owing to better construction, which leads to a greater continuity of work. An increased production, at all approaching the amount arising from the introduction of ring spinning, renders it imperative, in the face of competition, that the new instrument shall be adopted, and thus, unless it can be applied to existing machines—utilizing some of the parts—destroys the entire value of the latter, except that of the material. Let it be assumed that a still further step is taken. It is common knowledge that many attempts have been made to spin yarn on the bare spindle of a ring frame. Hitherto success has not followed any of these efforts, but let it be assumed that some one solves the problem. Part of the cost of a ring mill consists of the bobbins which are perforce used. This at least would be rendered unnecessary, and the bobbins would cease to have any value in this connection. Further, let it be assumed that in order to produce cops on a continuous spinning frame a radical change is made in the character of the spindle used so as to obviate the necessity for a ring and traveler; it is clear that the value of existing machines would at once suffer diminution. Much more striking would be the effect if some change in design resulted in the capacity to spin much finer counts than is possible on a ring frame, while retaining the continuous principle. This would be little short of a revolution, and would lead to an enormous diminution in the value of mule plants. There can be no doubt, therefore, that in considering the question of depreciation, it is as essential to take into account fully not merely the deterioration arising from wear and tear, but also the decrease of value consequent upon the production of new mechanical contrivances of greater power and capacity. These considerations apply in a lesser degree to buildings, but they do apply, because a given class of machinery is best arranged in a building of specific dimensions, which may not be the best under other conditions. For instance, it is customary to provide so many cards and speed spindles for a given number of spinning spindles. It needs no demonstration that an increase in the productive capacity of any of these will affect the required number of the others, and that where a building has been designed to hold conveniently and most economically the specified machinery, it will not be so well adapted under the changed conditions. It is quite true that this consideration has not so much force in the case of buildings as it has in that of machinery, but it is not entirely to be lost sight of, as will be readily admitted if a mental comparison be made between the mill building of twenty years ago and that of to-day.

Having thus laid down the principles of the subject, it will be easy to deal with their application, although there are many considerations of importance to deal with. In the first place it is evident that the amount allowed for depreciation must always partake of the nature of an estimate. It is quite true that, in some cases, past experience will enable an approximately true estimate to be made of the loss from wear and tear, but even this is largely affected by changes in form or construction leading to superior velocities. It is, however, equally certain, that not even an approximately true estimate can be formed of the diminished value likely to arise from new inventions or improvements in construction, because that would necessarily be prophetic, and not based upon any definite data. There is no doubt that an older and inferior machine at a certain value may be considered equal in productive capacity to a newer and superior one at full value, but it will be found that a full review of all the circumstances will lead to the conclusion that the value must be very low. Having thus formulated the principle underlying the subject, it is necessary to deal now with the correct mode of estimating the amount which is required to provide for the loss of capital which follows upon the use of a machine. It is customary to fix a definite percentage of the value of the machine or building, and deduct it from the value year by year, the percentage being fixed by assuming a definite life

for the machine. Thus it may be assumed that a speed frame has a life of twenty years, so that a deduction of 5 per cent. yearly from the original value will at the end of that term provide a fund to purchase a new machine of equal value. Such a procedure is simple, and hardly requires explanation; but while safe so far as wear is concerned, it does not meet all the conditions. Further, it may well be that although a life of twenty years may be fairly presumed for a speed frame, it is not equally safe to fix the same period in the case of a loom. In other words, while the fixing of a single rate to cover the depreciation of all machines may be convenient, it is far from being accurate, because some wear faster, or tend to become less efficient, more quickly than others. For instance, compare the action of a spinning frame with that of a loom. In the one the motion, although rapid, is continuous, and comparatively free from shocks, in the other, during the whole period of work, the motion is intermittent and violent. It is obvious that in the one case the conditions as to wear are favorable, while in the other they are unfavorable. Thus, the character of the machine, the work it has to do, and the care bestowed on it, have a great influence upon the question of depreciation, and render it necessary to consider these factors in fixing a charge. It is also desirable that the position in which a machine is placed should be considered, as in some cases there are local circumstances, such as damp or dust, directly tending to a depreciation of the machine. It is therefore essential not only to look at the matter in bulk, but also to consider the machines in detail, in order to ascertain whether one wears out more quickly than another, so that the proper allowance may be made in each case. In a spinning mill there is not much difference in the rate of wear of the various machines, because they are all run at regular speeds and without shock; but it is clear that even in this case a drawing frame is not liable to deteriorate so rapidly as a mule or a picker.

While the working of a machine tends towards a diminution of its life, the repairs upon it from time to time tend to an increase of the latter. It is thus necessary to make some provision in the estimation of yearly value for the effect of the expenditure on repairs. It should be borne in mind that the effect on the value, measured by an increased capacity of the machine for work, does not always coincide with the money cost of repairs. More money may be spent on the latter than represents the value added to the machine, for while there is, beyond doubt, an increase in value, it may not be equal to the expenditure. The general effect of repairs is, however, to extend the life of the machine, and looked at merely from the standpoint of wear and tear, they should be charged as an offset to the depreciation in the year when they occur. On the other hand, extensive repairs when the machine is old do not affect the question of its comparatively diminished value in view of improvements made in the design and construction of similar machines during its life. This is a factor to which it is impossible to give any definite yearly value, but it is one to be reckoned with, nevertheless. It can only be taken into account properly by deducting periodically a special charge, but is met to some extent by the decreased value of the machine arising from the operation of the regular charge.

It is urged, therefore, that there are many considerations to be taken into account in reckoning depreciation. These are: (1) the loss of capital by the natural wear and tear occasioned by work and by neglect or carelessness; (2) the addition to the value at any given period which results from effective repair; (3) the character of the work to be performed, and its effect upon the construction, operation, and amount of wear of the machine; (4) the loss of capital caused by a decrease in the relative value owing to the introduction of superior instruments capable of more economical results.

In fixing the amount set aside for depreciation, we are at once met with a bone of contention. Shall the fixed amount be deducted yearly from the original or depreciated values? In other words, shall the life of the machine be taken as the period during which its cost shall be provided for, or shall there be at the expiration of that time a residual value which is equivalent to an extended life? It is quite certain that every machine which is replaced has some residual value. The material of which it is composed is worth something, and to that extent the absolute wiping out of its value in a given period is unjust. Generally speaking, however, the amount is not large, and may, in any case, be allowed for in making the calculation of the yearly allowance. It may be fairly argued that the plan of deducting equal yearly instalments tells very heavily when the machine is worn and is less effective, while the deduction of a diminishing yearly sum depreciates sufficiently at the beginning, when the machine is at its best, and less after its working value is decreased. While this is true, it is purely a matter of account; and it is only permissible to adopt the plan named when the residual value at the expiration of the fixed period is only equal to that of the material. For instance, if a machine be valued at £100, and is depreciated at 5 per cent. per annum on that amount, at the expiration of twenty years the cost is wiped out. If now the percentage be only deducted from the diminished value annually, then at the end of the time named there is still 36 per cent. of the original value remaining. Now, it is obvious that no machine is worth at the expiration of such a term 36 per cent. of its original value—at any rate, no textile machine is—so that the method of computation named is of no value. If, therefore, the allowance is to be deducted from the depreciated amount yearly, then the rate must be higher at the beginning of the term than at any later period, and must, indeed, be on a diminishing scale throughout the whole period, in order to reduce the value to its proper level. On the whole, it is better and simpler, considering the purpose of depreciation, to deduct annually a fixed sum from the original cost, so that there may be some period when the account will close.

There is one other matter which deserves special consideration, namely, the question of how to charge loose tools or accessories. In connection with all textile machines there are always a number of accessories, such as bobbins, skewers, skips, shuttles, etc., which, while not being part of the machine, are yet essential to its working. It is idle to charge these to capital as plant, and wherever this is done the account will not be kept properly. They wear out much more quickly, and require renewing more frequently, than the machines in connection with which they are to be employed. So that, if they are treated as plant, they require a much greater amount written off annually. The proper way to treat them is to catalogue them at every stock-taking, charging against revenue all additions made during any period, and valuing them as a special item for use in a going concern. This system has the advantages that it gives a check on that inevitable leakage which always takes place in a manufacturing concern, and provides for the renewal of all accessories out of the yearly income. It is becoming the practice in the English cotton trade to charge a definite yearly sum to depreciation, instead of a percentage, care being taken to make it adequate. Loose plant and accessories should be charged against revenue, and not counted as plant, and care should be taken to keep them up to full value year by year.

—Wallace Manufacturing Co., A. M. Wallace, treasurer, importers and dealers in potash, and manufacturers of potash fig soaps, factory and office, 629 N. Front street, "Station S.," Philadelphia, Pa., give the following directions for using ammoniated carbonate potash, when washing worsted wools: Dissolve 25 lbs. ammoniated potash, adding 1 quart liquid ammonia, in a barrel or tank holding 40 to 50 gallons of water,

and feed into scouring machine with soap as necessary. The potash and ammonia will give the soap body, perfect saponification and a lavy enduring lather, leaving the wool open, soft, lustrous and thoroughly clean. We would suggest finishing the wool with a very neutral olive oil potash soap exclusively. The superiority of potash and potash soap for washing worsted wools is unquestioned.

LITERARY NOTES

The Ottawa Free Press has issued a very handsome souvenir of Ottawa, printed on coated paper, and richly illustrated with views of the Capital City and vicinity. It contains 79 large pages, with a map showing the water powers to be obtained within a radius of 45 miles of Ottawa. The occasion is the 30th anniversary of the establishment of The Free Press, which has shown much enterprise in issuing this work.

The publishers of The Corticelli Home Needlework Magazine announce a new department for October under the title of Modern Lace Making, which will be in charge of Mrs. Sarah Hadley, of New York, whose work has always attracted marked attention. The same issue will likewise contain ideas for simple Christmas needle work, besides new patterns for centerpieces, doilies, picture frames, tea cloths, silk purses, etc. Those of our readers who feel an interest in this class of work should send 10 cents for a copy or become subscribers at 25 cents per annum with as little delay as possible. Address, Corticelli Silk Co., Ltd., St. Johns, Que.

The September Century is a Salt-Water Number. In a general sense, this may be said to be apropos of the international interest in the yacht races for the America's cup. The special feature of the magazine is the first of a series of four papers in which Captain Joshua Slocum narrates, in a humorous and individual style, the story of his successful circumnavigation of the globe, alone, in a forty-foot sloop, the "Spray," constructed by himself. This unprecedented achievement involved two crossings of the Atlantic, and the rounding of Cape Horn and the Cape of Good Hope. In the opening instalment Captain Slocum takes the "Spray" from Buzzard's Bay to Gibraltar and thence, in forty days, to Pernambuco harbor, with "all well on board," and a great eagerness "for the more perilous experience of rounding the Horn." In "The Way of a Ship"—a phrase borrowed from Solomon—Frank T. Bullen, author of "The Cruise of the Cachalot," tells of the peculiarities, good or bad, of certain ships on which he has gone down to the sea; and in "Salvage," Morgan Robertson turns to good account, as a fiction writer, the intimate knowledge of things nautical acquired in ten years before the mast. "The Atlantic Speedway," and the possibility of making it safer, *engage the attention of H Phelps Whitmarsh, author of "The W[illegible]'s Rough Hand."* "Where a Day is Lost or Gained," is the paradoxical title of an article by Benjamin E. Smith on the international date-line in the Pacific. The annals of Chinese piracy have been ransacked to good purpose by John S. Sewell, who writes of "The Scourge of the Eastern Seas;" and New England family papers have been turned to equally good account in Robert S. Rantoul's "Voyage of the Quero," the true story of how the news of Concord and Lexington was carried to King George. Winslow Homer, "A Painter of the Sea," is the subject of a critical paper by W. A. Coffin, with reproductions of some of the artist's work; and not less appropriate to a deep-sea number is Dr. Weir Mitchell's poem "The Sea-Gull." "An American Forerunner of Dreyfus" is the story of a gallant American naval officer whose life was made a burden to him, early in the present century, because of his Jewish birth and faith. The "Alexander the Great" and "Many-Sided Franklin" biographies are continued, and Crawford's "Via Crucis" and Stockton's "The Vizier," and there are other papers, poems and pictures that landsmen may prefer to the wealth of material about the briny deep.

Foreign Textile Centres

MANCHESTER.—Recently many of the packing-rooms have been much busier, the warehouses in the neighborhood of York street and Portland street having sent away large quantities of heavy goods. Amongst the consignments forwarded a fair sprinkling of cases for colonial customers was to be observed says the correspondent of The Draper's Record. Some of the houses generally supposed to be almost entirely engaged in the home trade now transact a respectable trade with the Cape and Australia, and much closer attention is paid to the Canadian market, business with which is facilitated by the frequency with which buyers visit the market. Houses on the Pacific Coast are giving larger orders on this side, owing to the increased turnover due to orders from the Yukon district. The cotton trade continues busy, spinners and manufacturers, except in cases where mills are closed for the holidays, have been able to keep machinery well employed. There has not been much fresh business in cloth for India, but as producers are well engaged, they hold firmly to quotations. Home trade houses are taking delivery of goods freely on account of old contracts, but are not giving out much fresh business. There is no new feature to report of cotton specially interesting to the drapery trade, which may apparently look forward to a fairly prosperous season in the Lancashire district for some time ahead. The activity in the iron and steel industries helps to swell the returns of retailers, whose working-class customers are earning good wages. From the dress goods departments satisfactory reports are to hand. The Bradford salesmen have done fairly well this season. In the lace sections chenille veilings are spoken of as likely to have a run on the American side. Velvet spots are well thought of. In the silk districts trade has shared in the improvement noticed in the more important centres of industry. Producers of spun yarns are better employed than throwsters or manufacturers, by "spun" goods being meant the article produced from waste silk, corresponding to the Continental schappe, in which, however, the gum is retained.

BOLTON.—Trade was never so prosperous in Lancashire as at the present time Industries are so busy that overtime is being extensively worked, and those that are running regular hours could do with extra time to keep up with contract engagements entered at the beginning of the year. Foremost is the *cotton industry, which is at full stretch, and has been for* close upon the last twelve months. To-day things in this section are so healthy that more new mills are about to be erected in South Lancashire, although the cost of building factories just now is much greater than a year ago. Enormous quantities of cotton-piece goods for export have been ordered by shippers to India and China, and makers have perhaps larger contracts on hand than at any previous time. A feature during the last few weeks has been the large demand from China. Some manufacturers are under orders for that country for the next nine months. The home trade department is also improving. All looms are running, and before long more weaving sheds may be built in Burnley, Nelson and Colne.

BRADFORD.—In the wool market here, although there are no signs of any declension of values, there has been recently rather

less disposition on the part of purchasers to complete any large buying transactions. The full explanation of this is that most of the fine merino in the form of either wool or tops which was taken by speculators (when prices were much nearer the bottom) has now been brought back into the market in order that holders might realize their profits, and this movement tended to create the impression that the legitimate supply was increasing. There is also a disposition to wait and see if the United States buyers are likely to be much in evidence at the coming series of colonial wool sales in Coleman street. Holders of both raw material and merino tops are, however, not at all pushing sales, but have every confidence that at a very early date their holdings will be worth distinctly more money, and there certainly does seem every indication that their predictions will be verified. There can be no doubt that in the woolen and worsted coating trades the orders for the ensuing season have been arranged for at prices which are practically equal to the present prices of merino wools, and buyers of both foreign and home-dressed goods are finding that no large contracts can be arranged except at prices very nearly approaching the advanced prices of raw material which are ruling to-day. In both Australia and the River Plate growers are so impressed with the shrinkage in the production of the finest merino wool that they have every confidence in waiting for the improved range of prices, which they believe will be reached very shortly. All the finest colonial crossbred wools which nearly approach pure merino in character are gradually hardening in price, a result, no doubt, of attempts to substitute these wools for the absolutely pure merino wherever possible. Even the lower classes of crossbred wools are distinctly dearer, and thick counts of worsted yarns made from this class of wool are being largely bought, both on home trade account and for the Continental woolen trade, and it is the opinion of several well-informed trade authorities that this latter trade is at the present time only a tithe of what it will be in a very few years' time when the special goods into which it is being introduced become better known. Bright lustre home-grown wools are in good demand and are dearer, as also are the yarns made from them, probably as these always sympathize with any increase in the price of mohair. All other classes of home-grown wools are quite firm, it having been found that their condition is this year exceptionally good, and present prices are extremely low as compared with the average for several years past. The readers of this letter have been warned for some weeks past that a further distinct advance in the price of raw mohair might be looked for very soon, and holders of raw mohair at the sources of supply have lately been demanding rates quite in advance of the current prices of this market. Although consumers here have been pursuing a bear policy for some weeks, and have been, as far as possible, abstaining from purchasing, these have been compelled at last to acknowledge themselves defeated, and within the last ten days I learn that some very large lots of mohair have been bought for this market at rates from 1d. to 2d. per lb. more than the quotations which have been ruling for some weeks past. Spinners of mohair yarns are in a very independent position, as their number is restricted and they are all engaged for some months to come. Manufacturers have sold bright goods so well for the next spring season that particulars are very plentiful.

LEEDS.—The attendance of cloth merchants, manufacturers, dyers, finishers and drysalters at this market recently, says The Textile Mercury, was larger, which is probably due to the fact that the outlook in all branches of the trade has of late materially improved. Stocks in the country are known to be low, and retailers have had a better clearance than for some years past The shipping trade is improving to an important extent, and all the mills are fully employed on the orders in hand. Prices are firm all round, but the level of value is not higher than is rendered necessary by the rates quoted for the raw material The opinion is frequently expressed that there will presently be a further advance in the price of Colonial wool. Worsted coatings and tweeds are in active request for the winter and spring seasons, and the fancy trade is brisk. There is a growing demand for plainer cloths of medium quality, and serges have seldom had a better sale. In the costume and mantle cloth trade there is an unimportant labor dispute, but the stocks on hand are sufficient for present purposes. There is more activity in twilled and union cloths, the latter being largely shipped to the Far East. Blankets are selling well on home and foreign account, and there is a good demand for certain classes of horse rugs and army goods.

LEICESTER.—The yarn market has a buoyant tone, and spinners are now in a position to dictate their own terms. The orders on hand will more than absorb the production for the remainder of the year. The export branches show a great expansion, and the turnover in lambswool and fancy yarns is very much above the average. With a largely increased consumption of choice fabrics, plain goods, and fancy specialties, the hosiery industry is in a much more satisfactory condition, although there is some resistance to higher quotations. Plain goods for the home trade sell with much greater freedom, and the stocks on hand in many departments are light.

HALIFAX.—The following is the Chamber of Commerce trade report for August: Wool—The market has been cheerful, with a large business in merinos and fine crossbreds at advancing prices. Strong crossbreds and English wools have been more in demand, and are now strong in price, but without much advance. Worsted Yarn—There is little change to note in this branch during the month. Spinners upon the whole have been well employed. A fair quantity of new orders have been placed for super yarn, and better prices are being paid with greater freedom. Spun Silks—There has been considerable activity during the month. Machinery is well employed, and prices are advancing. Cotton—Bundle yarns in twofold 42's are for the most part neglected. There has been an increased demand for twofold 32's for China. Warps remain firm, and on the whole well engaged. Fustians and ready-mades—The demand still keeps active, with full employment. Woolens—Manufacturers generally are well employed at present. Colder weather would no doubt improve the demand for heavy woolens, more especially blankets. Carpets—Business has been quieter during this month, and looms are largely engaged in the production of new patterns for next season. Dyeing—The dyeing trade in Halifax during the past month has been good all round.

NOTTINGHAM.—There is a good demand for fine yarns suitable for nets and also for special numbers of lower counts in ordinary and Egyptian yarns. Prices are not quotably altered, but buyers are unwilling to place orders at actual quotations except to satisfy proximate wants. There is no speculative demand. Cotton nets are firm at previous quotations. Business in the fancy millinery lace warehouses is slow, and there is much machinery unemployed. There is a fair amount of activity in the hosiery warehouses, especially in the larger underwear and in the wool and mixed departments.

ROCHDALE.—A fair number of orders for export are still being given out, and these, with the earlier orders, are keeping manufacturers well employed. The demand for tennis and cricketing flannels has been unusually good and repeat orders have been frequent, but at this late period of the season it may be said to be practically at an end. Prices keep very firm, but without any material change.

KIDDERMINSTER.—Carpet manufacturers are busy preparing for the autumn season, and already new patterns have been shown, with satisfactory results. Business, of course, is not brisk, but the deliveries of carpet for August are by no means

small The yarn trade is steadier. Not much business is passing, but there is less pressure to sell at marginless prices. On the whole the market is talked into a lower and more helpless state than it really is.

BELFAST.—The improved condition of the linen market has been well maintained. The expansion of trade has been quiet and continuous, not spasmodic, and as the busy season is approaching there is likely to be much more activity than the market has witnessed for years. Yarns continue to sell more freely and prices have advanced. There is an increasing demand for nearly all descriptions of brown cloth, and manufacturers have been able to secure higher rates generally. The difficulty of prompt delivery is making itself felt. Additional looms are being erected in several factories in order to cope with the increasing demand. Powerloom linens for bleaching are selling freely and steadily. Unions are in active request, and cloth for dyeing and hollands are meeting with a regular sale. Damasks and household linens are beginning to move off a little more freely, and the handkerchief trade is steady. The demand for handloom linens for bleaching is maintained. There is a steadily improving demand for bleached and finished linens. White goods generally are selling better, and prices are rising in correspondence with the increased cost of raw material and of production.

KIRKCALDY.—Linen manufacturers are not only fully employed, but prospects are excellent. The linoleum industry is active, with every likelihood of larger demands in the near future.

CHEMNITZ.—At the present time Chemnitz is a very busy town. Only a few buyers are still here, however, as most of them came sooner this year than usual, and only a few are late, says The Dry Goods Economist, New York. Those who came in the field early have done well, as they will get their goods considerably cheaper than those who are here now. The market is filled with orders as it has not been for years and they keep coming in with every mail. As a rule much writing and wiring back and forth is necessary before prices and delivery are satisfactory to both buyer and seller. The upward tendency of the market will remain until spring, and those waiting for lower prices to place their orders will be sadly disappointed. If anything a still further advance may take place. The high-grade staple goods sold last year at the dollar limit cannot be procured any more at that price. The Richelieu lisles and similar styles are out of question at that figure. The fine-gauge staple goods cost now from 7 per cent. to 10 per cent. more than last year, and even if buyers are willing to pay these advances, they have to allow a long time for delivery, as nothing can be had now for December. Fancy striped hosiery was slack for a while, but now it has picked up again, and neat patterns are bought in all the modern shades, especially blues of all descriptions and purples. Grays are also used a great deal for ground shades, with delicate stripes on the top. Most of the styles selected are boot patterns, the larger half being black boots, the balance colored, which match the top. Embroidered hosiery is a great success. Large dots are taken up by all houses and any neat, new pattern does not go begging for buyers. In extracted goods the orders are larger than the production, and this line of goods will be the cause of many complaints on account of being late. The same must be said of lace hosiery, as at least double the number of dozens have been sold that can be delivered. Orders keep coming in, however, at present advanced prices. Gloves are rather quiet, as the big orders are not in, only a few buyers having been in the market. A good season is expected, nevertheless, and here also will higher prices be the trouble.

LYONS.—In the Lyons market the political situation in France has had some influence in making buyers more conservative, and in creating some doubts in regard to the future, but prices have not been affected, and at last mail advices they were firm, and the tendency was toward still higher figures. Manufacturers have been buying to a fair extent in silk for ready delivery, while they have also indulged in some contracts for future delivery in anticipation of their requirements for spring goods. The visible supply continues to be smaller than it was at the same date in previous years, and notwithstanding the heavy shipments from Asiatic ports since the commencement of the season stocks are not being built up. From Shanghai alone the shipments for the season up to August 15th have been 31,000 bales, while the shipments from Yokohama up to the same date to Europe and America were over 9,000 bales or more than double the exports to the same date last year. Between Shanghai, Yokohama and Canton the shipments up to the end of August are likely to reach, if not exceed, 50,000 bales. Although the arrivals of China silk have commenced to be heavy, the threatened overflow to the market has not materialized, the silk having either served to make deliveries on old contracts or been quietly laid aside for speculation. The sorts that are relatively in best demand are Broussa silks, which are held at firm figures and are strong. Syria silks come next, and are followed by Italians. In all of these firmness prevails. In French silk the demand is not particularly heavy in this market, but a few good contracts for Cevennes and other French sorts have been closed in the departments at firm figures, and in Alais business has been done in extra Cevennes at 57½ francs per kilo, and holders are holding out for 58 francs. In Marseilles there has been a good demand for Syria raws. In dry cocoons the demand has been good, and the stock in Marseilles has fallen below 30,000 kilos. Contracts for future deliveries have been made for dry cocoons, deliveries to be made in October and November on the basis of 12 to 12¼ francs.

TEXTILE IMPORTS FROM GREAT BRITAIN.

The following are the sterling values of the textile imports from Great Britain for July and seven months ending July, 1898-1899:

	Month of July.		Seven months ending July.	
	1898.	1899.	1898.	1899
Wool	£ 1,361	£ 2,184	£24,274	£10,509
Cotton piece-goods	53,718	45,903	280,513	322,719
Jute piece goods	11,834	15,050	79,097	72,458
Linen piece-goods	19,142	17,831	85,828	105,766
Silk lace	826	920	4,994	9,832
" articles partly of	6,688	8,784	17,677	25,986
Woolen fabrics	55,431	43,180	162,396	179,746
Worsted fabrics	88,382	74,374	364,774	337,616
Carpets	11,029	11,907	109,881	114,305
Apparel and slops	30,357	23,851	161,729	124,359
Haberdashery	17,001	12,175	90,147	90,831
Writing-paper, &c.	2,536	2,600	12,944	15,698
Other paper	627	788	4,256	4,861

TEXTILE PUBLICATIONS.

In order to accommodate readers of The Canadian Journal of Fabrics, the publishers will be pleased to mail any book in the following list on receipt of the publisher's price, duty free. Books on technical and practical subjects, not in this list, can be obtained and mailed at publisher's prices. In ordering, please give full address, written plainly:

Worrall's Directory of Cotton Spinners, Manufacturers, Dyers, Calico-printers and Bleachers of Lancashire, giving the mills of the British cotton district, with number of looms and spindles, products of the mills, cable addresses, etc $2 00

Worrall's Directory of the Textile Trades of Yorkshire, *comprising* the woolen, worsted, cotton, silk, linen, hemp, carpet, and all other textile mills, giving looms and spindles, and the various lines of goods manufactured, etc 2 00

Worrall's Textile Directory of the Manufacturing Districts of Ireland, Scotland, Wales, and the counties of *Chester, Derby*, Gloucester, Leicester, Nottingham, Worcester, and other centres not included in preceding works, with capacity, products of mills, cable addresses 2 00

The *Wool Carder's* Vade-Mecum, by Bramwell; third edition, revised and enlarged, illustrated; 12mo..... 2 50

Technology of Textile Design, by Posselt..... 5 00

The *Dyeing of Textile Fabrics*, by Hummel..... 2 00

Textile Calculations; very complete; by E. A. Posselt..... 2 00

FABRIC ITEMS.

The tannery of Marcil Lebrun at Ste. Flavie, Que., was *burned down*, Sept. 7th. Damages, $3,000; insurance, $1,000.

Outside business men are indignant over the fact that the traveler of a well-known Montreal firm, according to a new law, had *been fined* $100 for selling goods in St. John, N.B., without a license.

Samuel G. Treble died suddenly in Hamilton, Ont., a short time ago. *Heart trouble* was the cause. He was about 52 years of age and was unmarried. J. M. Treble, Toronto, is a brother. There are five or six brothers, and one sister, Mrs. Shirk, of *Dannville, N.Y.* The late Mr. Treble was in the men's furnishing business in Hamilton for 26 years, and for sixteen years he did business at the corner of King and James streets, selling out *last spring to George* Paine.

Attention is called to the advertisement of The Jones-Mullen Co. in this issue. This handy mode of recovering *umbrellas is becoming* more popular daily. It is not always convenient to get the work done at the regular factory so that this adjustable cover, which can be put in place by a clumsy man as *well as by a clever woman*, is a decided boon to all. Over a quarter of a million of these covers have already been sold. They cost much less than the old way, and make your old umbrella as *good as new*.

The fur season is now nearly over for the year, and only one or two large lots from the north are yet to come in, which will aggregate *possibly* $25,000, *says* The Edmonton Bulletin. The purchases for cash at competition and by private sale have amounted to about $125,000, and with those to come in about $150,000, *exclusive of that traded* directly by the Hudson Bay Co., and other firms at the outposts. Speaking generally, the trade has been good. The catch has been up to the average and prices have been *high*. Marten, which forms a large share of the Edmonton fur trade, was particularly high. Beaver, also an important fur here, was low, but all the other furs were up. The principal furs traded at Edmonton are marten, bear, lynx, beaver, red fox, mink, wolf, muskrat and skunk.

Windsor, Ont., Sept. 12.—Ex-Alderman John Ritter, of Chicago, was arrested on a Grand Trunk train between Port Huron and Detroit by United States Customs officials, charged with smuggling a quantity of silks into the United States from Canada. Ritter, who has a large clothing and furnishing business in Chicago, arrived in Sarnia with goods for Chicago. All the cloths and bolts of dress goods and fine silk tapestries were duly entered at Port Huron customs house, and the ex-alderman was almost past detection when there was a delay of trains, and an unexpected transfer of baggage on the Michigan side of the river. A porter picked up a bundle of silk quilts which Ritter had entered as "personal belongings," and, astonished at their weight, remarked aloud that "These are kinder heavy for silk bedding." Special Officer Buzell heard the remark, and seeing a clue to a possible smuggler, jumped on the train as it was pulling out. The officer entered the baggage car and searched the "heavy" quilts. They were genuine bedding, but instead of being stuffed with cotton, were found to be filled with high-priced silk vestings. Ritter, on arrival in Detroit, was placed under arrest on a charge of smuggling. He was released on $2,000 bond to appear before the Grand Jury when wanted.

THE CANADIAN ORDER OF THE KNIGHTS OF THE GRIP.

The primary object of the society which has just been formed in Toronto is to promote social intercourse among commercial travellers all over the Dominion. It is entirely separate *from* the Commercial Travellers' Association, but, like that body, may start a beneficiary department. The meeting just held in Toronto being the initial one, was largely taken up with considering the constitution drafted by the Law and Legislation Committee. Branches have been started in Kingston, London and Montreal, while in Windsor, Brockville, Belleville, *Chatham*, Guelph, and other towns and cities they were about to be organized. At present nearly 800 members are identified with the association.

The first officers elected were: Supreme Gripman, W. M Jackman, London; P. S. Gripman, T. F. Corey, Toronto; S. Chief, W. H. Escott, London; S. Chaplain, J. D. Bland, Toronto; S. Secretary, R. H. Silliman, Toronto; S. Treasurer, W. R. Madill, Toronto; S. Captain, W. H. Graham, Kingston; S. Lieutenant, A. R. Colvin, Montreal; S. Sargeant, B. McDonald, London; S. Custodian, W. E. Short, Montreal; Supreme Auditors, G. D. McAllister and R. S. Mooney, Toronto. S. Alfred Jones was appointed solicitor. Next year the Gripmen will meet in London.

WOOL SMUGGLING.

Moses Doan and James Mullins, of Sembra, were arrested at Marine City, August 22nd, by Deputy Collectors Bailey and Beatty, and Marshall Butler, with 700 pounds of wool in their possession, which had been smuggled over from the Canadian side. Wool smuggling across the river by small boat has been suspected in the vicinity of Marine City for months past, but the officers were never before able to land the smugglers They were arraigned before Commissioner Haddis, and pleaded not guilty. Bail was fixed at $500. The duty on the quality of wool captured is 13c. a pound. According to the accounts of the officers the smugglers gave their captors an exciting time. Thursday night the three above mentioned officers went to Marine City, and hid along the river bank. Between 3 and 4 o'clock in the morning a boat was seen approaching the shore The plan was to allow the men to land and then surround them from three sides. The first large sack of wool had just been thrown on the ground when the word was given by Mr. Bailey, but there was a hitch in the plan, as the smallest of the smugglers escaped. Butler and Beatty wrestled with the largest of the two and Bailey took after the fleeing man. The chase was exciting, as the moon had gone down, and Bailey was guided only by the noise the man made in crashing through the brush. He fired several shots at the flying smuggler, none of which took effect After a run of half a mile the smuggler was winded and surrendered.—Sarnia, Ont., Canadian

—The American Shropshire Registry Association met in Toronto, September 4th, the meeting being the first held on this side of the border, and decided to reduce the cost of registering imported Shropshire stock from $1 per animal to 50 cents. The *Hon* Jno. Dryden, Minister of Agriculture, of Ontario, was re elected president, and the other officers were also re elected.

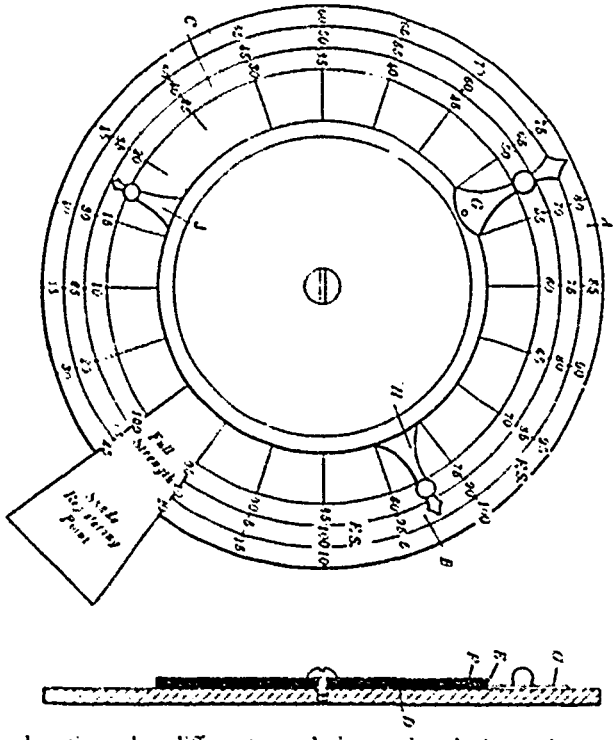
THE WOOL MARKET.

Montreal.—There has recently been a better demand from the mills, which have been compelled to replenish their stocks of foreign wool in spite of the high prices. We quote Greasy Cape, 19 to 21c; Yellow B.A. scoured, 30 to 35c., and white, 40 to 50c. Canadian pulled, 20c., and fleece at 17 to 18c.

Toronto.—*The market is very quiet and almost featureless.* The bulk of the clip is being held by dealers, and prices are merely nominal, Canadian fleece being quoted at 14 to 15c. There are some who predict a rise in Canadian wools before long owing to an increased demand from Europe and the United States for coarse wools, which is expected to grow up in the near future. The present prices of fine wools are driving the manufacturers to look for every means of using coarse wools, and it is believed that the market will soon be full of cloths, especially for women's wear, which are made from coarse wools. Such a departure in fashions will be very welcome to Canadian growers.

SHADE FINDER AND COLOR INDEX

Standard colors, even if kept away from light and other injurious influences, are always apt to lose a certain amount of their original hue in the course of a protracted length of time. As a means of obviating this disadvantage, and also of readily noting any color for future reference or reproduction, an American colorist has devised a very simple and handy register. This register consists of three superposed colored discs, representing respectively the various gradations of the shades yellow, red, and blue. The lower disc is opaque, but the two upper ones are formed of gelatine or some other transparent material. All *three discs are mounted on the same base, and capable of separate rotary adjustment, and each disc is provided with a marked*



SHADE FINDER.—FIG. 1.

scale denoting the different gradations of coloring. As any shade may be obtained by varying the quantity of the three primary colors, such may be registered by noting the scale number of each of the discs when the required tint is obtained at the shade-registering point.

The device is illustrated in Figs. 1 and 2, the former being a plan and cross section of the finger or index, whilst Fig. 2 represents the sheets or color discs. On the base of the device are arranged the index circles marked with the proportions in which the colors of the discs vary in strength. A is the outer circle giving the proportions of the yellow, B the central circle representing the proportions of the red, whilst the inner circle C treats the blue in a similar manner. Each circle is gradated *in degrees varying from one-hundredth part to the full strength* of the color. D, E and F are the three sheets or discs mounted one over the other, and movable on a central pivot common to all three. The yellow one D is the undermost; E, the red one, is located centrally; whilst the upper disc F is blue. The yellow disc is composed of paper, but the two upper ones are made of gelatine, mica or glass.

Each disc is supplied with a handle G, H or J, which also acts as a pointer. G is the longest, and corresponds with the

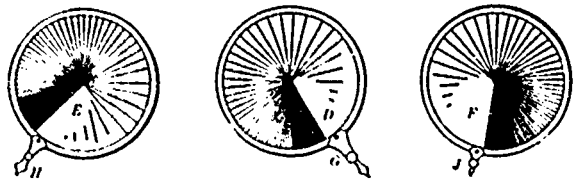


FIG. 2.

outer circle of the base dial. H corresponds with the central, and the shortest pointer J with the inner circle. These levers are used to move the discs round when finding any shade, and when that is attained, the numbers of the dial to which they point represent the proportion of each color to be registered. These numbers may be noted down, and the resultant shade re-obtained after any lapse of time.—Textile Manufacturer.

Among the Mills

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

The big pulp mill of the Riordon Paper Mills Co., at Hawkesbury, Que., is about ready for operation.

The Gillies' woolen mill, Carleton Place, Ont., was closed for a day recently to replace some of the old looms with wide looms.

John Macfarlane, president and managing director of the Canada Paper Co., Montreal, has returned from a two months' trip to Great Britain and the continent.

The Sault Ste. Marie Pulp and Paper Co. is asking for tenders for the construction of a sulphite pulp mill to be erected at its works in Sault Ste. Marie, Ont.

Z. Paquet, manufacturer of hats, etc., is putting in an electric lighting plant at his factory at Hare Point, near Quebec. The steam plant of the factory is also being enlarged.

W. Warnock, W. S. Caron, S. Pierce, H. A. Ambridge, E. C. Jenkins, E. McCausland, E. A. Miller and H. Sheldon, Aylmer, Ont., are being incorporated as the Atlantic Washing Machine Co., Ltd., of Aylmer, Ont., to make washing machines; capital, $3,000.

The construction of the rubber factory at Port Dalhousie, Ont., will be a great boon to St. Catharines. The new factory will be of twice the extent of the building burned last New Year's Day, and will employ several hundred hands. This industry, with the promised extension of the Niagara Central Railway to Port Dalhousie in two months, will advance St. Catharines as a business centre.—Toronto Globe.

The St. Stephen Globe says: A large addition will soon be built to the cotton mill at Milltown. It is estimated the building will cost $25,000.

The Dominion Cotton Mills Co., Montreal, is installing in its mill a 200 k.w., S.K.C. synchronous motor. This is in addition to a number already placed.

The large pulp mill of the Glen Falls Paper Company, Riviere a Pierre, Que., was destroyed by fire, together with about a thousand cords of pulp wood, Sept. 7th.

McLean & Scott, woolen manufacturers, Pembroke, Ont., recently put in a new fulling mill, and built a new flume, for which Wm. Sparling & Son had the contract.

Reid, Craig & Co., Quebec, have decided to change their paper mill at Lorette, Que., into a cotton mill. Work, it is said, will be begun at once on the necessary changes.

Jos. Sparrow, master mechanic of the Montreal Cotton Co., Valleyfield, Que., is building a number of houses to be occupied by the new operatives the company will employ this fall.

The "Empress of China" arrived at Victoria, B.C., with what is stated to be the largest and most valuable cargo of raw silk ever brought to America, the value being placed at over a million dollars.

The Canadian Rubber Co.'s works at Montreal have recently turned out a belt for the I.C.R. elevator at Halifax, N.S., which is over a third of a mile long, three feet wide and half an inch thick.—Carleton Sentinel.

It is said that J. Laurence Whitcomb, a London promoter, is forming a combine of pulp mills, which will have a production of 400 tons daily, to be increased to 600 tons; $10,000,000 is to be the capital stock.

The Dominion Brussels Carpet Co., Sherbrooke, Que., is now in active operation. The machinery was first started up August 25th. The company is advertising for travellers in The Canadian Journal of Fabrics.

A meeting of the directors of the Royal Paper Co., Angus, Que., was held in Boston last month to appoint a general manager in place of the late Hon. W. B. Ives. F. P. Buck was unanimously chosen general manager of the company.

It is stated that a proposed glue factory combine in the United States has secured options on Canadian factories, and will place the only glue factory to be left in Canada in Berlin, Ont. It is very doubtful if the trust will be successful.

S. Claxton, who has been for some time employed in the office of the Dominion Cotton Mill, Kingston, has been promoted to the mill at Hochelaga, Que. The Kingston papers speak in a very complimentary way of him previous to his leaving.

It is rumored that an automobile factory is to be started at Sydney, C.B., to which The Yarmouth, N.S., Times remarks: "To the town that hath shall be given, but to the town that hath not shall be taken away even the woolen mills and the iron foundry which it hath."

The town of Coaticook, Que., has passed a bylaw granting aid to the Penman Manufacturing Co., to enlarge its factory. It is the intention of the company to commence the work of enlarging the factory at once, and when completed they will employ about 200 hands, nearly double the present staff.

Thomas Logan, chief engineer with W. Parks & Son, Ltd., cotton manufacturers, St. John, N.B., met with a very painful injury recently. He was repairing a piece of machinery and was accidentally struck on the forefinger by a sledge wielded by one of his assistants. The blow was dealt with such force that it crushed the bone and caused such injuries that it was necessary to amputate the finger.

State Bros. have opened a steam laundry at Moosomin, N.W.T.

The Royal Carpet Co., Guelph, Ont., is putting in additional looms and winding machinery.

The capital stock of the Laurentide Pulp Company is increased from $1,200,000 to $1,600,000.

W. F. Wallenstein's mattress factory at Victoria, B.C., was gutted by fire on August 30, and about $1,700 damage done. There was $500 insurance.

The Globe Rubber Works, Quebec, M. Frankerburg, proprietor, are being moved from Quebec to Montreal; a branch will be retained in the former town.

A company, at the head of which is John Mather, of Ottawa, has decided to establish pulp and paper mills at Keewatin, Ont., where an immense power is obtainable. The mills will have a capacity of one hundred tons daily.

The Guelph, Ont., Carpet Co., has completed its stone and brick building, which is specially roofed with glass, and is now setting up the machinery. There are twelve brussels looms in addition to the ingrain plant.

Angus Park, formerly with the Paton Mnfg. Co., Sherbrooke, Que., who has been overseer for the Nantic Mnfg. Co., East Lyme, Conn., U.S., for the past five years, has purchased a Gosett woolen mill at Hanover, Conn., which he will operate in the future on woolen goods.

F. H. Hale, Grafton, N.B.; G. A. White, A. B. Connell, W. Knox, J. S. Creighton, Woodstock, N.B., are being incorporated as the Carleton Woolen Co., Ltd., to take over and carry on the plant and business of G. A. White, woolen manufacturer; capital, $10,000; chief place of business, Woodstock, N.B.

A few friends of Norman Wight, until recently secretary of the Consumers' Cordage Company, Ltd., Montreal, presented that gentleman recently with a handsome gold watch, as a mark of their esteem. Mr. Wight has left the employ of the company to enter the grain business in the firm of Wight & Esdaile, his brother, R. E. Wight, being one of the partners.

Raw cotton is said to be from 17 to 20 per cent. dearer than at this time a year ago, which accounts for the recent stiff advances in the cotton goods price lists of manufacturers. The Merchants Cotton Company announced an advance of 5 per cent. on some 17 different lines of their manufacture about Sept. 1st. The classes affected are 4 lines of white cotton, 10 of gray, 2 of drill, and 1 of Atlantic duck. These lines were not advanced before.

Mrs. Peter Durion died a short time ago from injuries received at W. W. Doherty's carding mill at Campbellton, N.B. The unfortunate woman was stooping for the purpose of gathering some scattered wool, her hair became entangled in the roller, which drew her head between them, literally tearing the scalp from her head. She remained in that terrible position for nearly an hour before being discovered. She lived for nearly three days after the accident.

The weaving trade in Canada is in so prosperous a condition that attempts are being made to induce English operatives to emigrate from Lancashire to the Dominion. The Montreal Cotton Company, Valleyfield, near Montreal, is offering from 33s. to 37s. 6d. per week for sateen weavers. So far, however, there has been no noticeable exodus of Lancashire weavers, the weaving branch of Lancashire's staple industry being rather too prosperous now to cause weavers to go so far from home for work, even if the terms are attractive.—The Canadian Gazette, London.

At a meeting of the Longueuil town council a bylaw was introduced, and read a first and second time, granting the Alaska Feather and Down Company, Montreal, exemption from

municipal assessment and water taxes for twenty years, with a lease of the old Ives foundry, the company binding itself to employ at least sixty hands, and to pay annually in wages not less than $15,000. As soon as the bylaw is passed the company will remove to Longueuil, and commence operations, including the manufacture of wire mattresses.

D. K. McLaren has just returned from a trip to the Old Country. This makes Mr. McLaren's second trip within two years. While in England he visited the card manufacturers, particularly around Yorkshire, hunting for something new, as he is always on the alert. He is at home in the card rooms, and says he ought to have been a card maker, as he takes so much interest in card making, in fact, that he feels quite as much at home in a woolen or cotton mill as any other place you can put him. He has taken over the agency for the hard and tempered electro-pointed card, made by one of the celebrated card manufacturers of Cleckheaton, Eng. This is a splendid thing, and recommends itself to any practical man. It is claimed that the points of the teeth will wear as long again as any ordinary card that has not been treated in the same manner, at the same time they are not so hard to break off. Mr. McLaren was much struck by the enjoyment of life on the part of the mill operatives as instanced by the annual week's holiday of the Oldham cotton weavers, known as "The Oldham Wakes." These operatives subscribe throughout the year to a fund, which this year reached $800,000, the whole of which will be spent by them during the week in the popular seaside resorts along the Lancashire coast, in the Isle of Man and Scotland. Thirty thousand men, women and lads, the latter with their sweethearts, leave Oldham to pass the holidays together.

—A company to be known as the American Grass Twine Co., has been formed to take over the business of the three existing companies which engage in the manufacture of grass twine in the United States. The old concerns were practically one in their ownership and the object of the present change is mainly to simplify the management and reduce expenses. Three factories will be operated, one at Oshkosh, Wis., another at St. Paul, Minn., and the third at West Superior, Wis. The factory at West Superior will be a new one, and will employ 500 hands to start with. The other two are already running to their full capacity, night and day.

—One of the largest and most valuable silk cargoes ever brought to any Canadian or United States port reached Victoria, B.C., by the Canadian Pacific Railway steamer "Empress of Japan," from Shanghai, August 8th. The cargo amounted to more than 300,000 pounds of silk. There was a contest between the Canadian liner and the Pacific Mail Steamship Company's steamer "China," which plies between the Orient and San Francisco, but the "Empress of Japan," although sailing from Hong Kong twenty-four hours behind her rival, reached Shanghai first, thus securing the large shipment. The "Empress of Japan" is commanded by a new captain, G. D. Bowles, who was formerly chief officer on the "Empress of China."

—The improved ventilating fans made by the McEachren Heating & Ventilating Co., Galt, Ont., are now attracting a great deal of attention, and for them the makers claim the following advantages over other fans of similar shape: It is not what is commonly known as an open fan. As far as the makers have been able to test this fan they find it capable of handling more air for its size and the power required to drive it than any fan in the market. These fans are used for ventilating, removal of dust from flax mills, rag cutters, rag dusters, carpet cleaning rooms, sand paper machines, etc., smoke, gas and offensive odors from blacksmiths' shops, moulding shops, glue factories, etc., steam from dye house, paper mills, pulp mills, felt factories, laundries, soap works, etc., in tanneries for drying leather, causing a uniform and constant change of air through the entire building, irrespective of atmospheric conditions. The new fans are built on strong iron frames with very convenient means for setting in walls, windows, or any place where power can be attached. Their blades and shaft are of steel, running in extra long babbited boxes, supplied with self-oiling chambers, which allow them to run a long time without attention. They are generally driven by belt, but we can supply them with direct steam engines, electric motors, water motors, etc.

—A fire test of cotton bales of three different forms was made at Lowell, Mass., on June 9, says The Engineering News. The forms of bales tested were, the round or cylindrical bale of the American Cotton Co., which was described in The Engineering News of December 16th, 1897; the Lowry bale of the Planters' Compress Co., and an ordinary square bale. The test was conducted by the Associated Factory Mutual Fire Insurance Companies of the United States. Two small frame houses exactly alike were constructed about 100 feet apart. Each was built at an elevation of 2 feet from the ground. The space between the houses was filled with dry boards and cotton waste, over which ten gallons of kerosene were poured. In one house eight American round lap bales and one square bale were stored, in the other eight Lowry bales and one square bale. The combustible material under the houses was ignited at 1.35 o'clock. The flames burned for one hour, and entirely consumed the houses. Sprays of water were then turned on, and the flames extinguished. When the super-structure of the houses collapsed the square bale stored with the American bales fell to the ground and beyond the reach of the flames. Soon afterwards, in order to equalize the conditions, the other square bale was removed from among the Lowry bales. As they had burned only a few minutes it was agreed that the square bales had not been subjected to the same severe test as the round. The bands of one of them had burst, however, and long after it had been drenched with water it was examined and found to be burning inwardly. Nearly all the wires on the Planters' bale were burned off, and the bales elongated from 3 feet 3 in to 6 feet, and over. This exposed the cotton in the Lowry bales to the flames, which were eating into the bales at many points when the fire was extinguished. Two of the Lowry bales broke in two and were more badly burned than the others. The round bales neither unrolled nor extended in length, and only the outer surfaces exposed to the intense flames were burned. The cotton saved from the fire will be carefully picked over, and the salvage reclaimed will be accurately weighed.

CHEMICALS AND DYESTUFFS.

Business dull as usual during the month of August. Reports from abroad advise advances in all alkalies. The following are current quotations in Montreal:—

Bleaching powder	$ 1 95	to	$ 2 00
Bicarb. soda	2 00	"	2 05
Sal soda	0 70	"	0 75
Carbolic acid, 1 lb. bottles	0 35	"	0 37
Caustic soda, 60°	1 75	"	1 80
Caustic soda, 70°	2 00	"	2 10
Chlorate of potash	0 13	"	0 15
Alum	1 35	"	1 50
Copperas	0 70	"	0 75
Sulphur flour	2 00	"	2 50
Sulphur roll	3 00	"	3 50
Sulphate of copper	5 00	"	5 50
White sugar of lead	0 07	"	0 08
Bich. potash	0 09	"	0 10
Sumac, Sicily, per ton	70 00	"	75 00
Soda ash, 48° to 58°	1 15	"	1 25
Chip logwood	1 90	"	2 00
Castor oil	0 09	"	0 09½
Cocoanut oil	0 06½	"	0 07

The Canadian Textile Directory

1899 Edition Just Issued. **CLOTH, $3.00.**

THE CANADIAN TEXTILE DIRECTORY is more than a mere directory of names. It gives facts and figures about the textile trades of Canada which have been attempted in no other work. It contains not only lists of all the general stores, retail dry goods dealers, hat and fur dealers, clothiers, haberdashers, tailors, milliners, etc. (the retail lists contain over 19,000 names), but all the wholesalers and commission merchants or manufacturers' agents in similar lines, and all the mills and factories engaged in manufacturing fabrics connected with the textile and kindred trades. It is the only work in Canada which gives a full list of the boards of trade, commercial travelers associations, and dry goods and kindred associations, while the immense amount of statistical information, such as the details of the imports and exports of dry goods, etc., the tariff of Canada, of the United States and Newfoundland, sterling exchange rates, etc., make it indispensable in an office of any pretensions.

As an example of the information given in the various lists of manufacturers, the following shows the form of report of the Woolen Mills Name and address of Proprietors, and names of the Officers (if a joint stock company), the capacity in sets of cards, looms and spindles, when established, whether water, steam or electric power, description of goods manufactured, whether the mill has a dye house, and names of selling agents, if any. Corresponding information is given concerning the other mills, of which the following is a list: Asbestos miners and manufacturers, manufacturers of awnings, batting (wool and cotton), bedding, binder twine, braids, buttons, caps, carpets (including hand loom weavers), children's wear, cloaks, clothing, collars, cuffs, cordage, corsets, cottons, embroidery, feathers, felts, flags, flax, fringes, furniture, gloves, hair cloth, hats (straw, felt and cloth), haberdashery, horse covers, hosiery, jute goods, lace, ladies' wear, mantles, mats, mattresses; men's furnishings, millinery, mitts, neckwear, oil cloth, oiled clothing, overalls, paper, pulp, pins, print goods, regalia, rope, rubber goods, sails, tents, shirts, shoddy, felt, straw goods, suspenders, tarpaulins, tassels, thread, tow, trusses, linens, umbrellas, upholstery, wadding, water-proof garments, webbings, window shades, worsteds, etc. The woolen mills include the carding mills, manufacturers of tweeds, blankets, flannels, yarns, homespuns, and all other piece goods, carpets, felts, and all kinds of knitted fabrics. The cotton mills include all classes of cotton piece goods, yarns, wadding, batting, etc. There is also a complete list of the tanners and curriers, laundries, dyers, dealers in raw wool, furs, etc. Under each heading the whole of Canada and Newfoundland is included.

The number of copies left on hand is limited and those wishing to secure a copy before the edition is exhausted should order without delay. Address,

Biggar, Samuel & Company.

62 Church Street, Toronto, or **Fraser Building, Montreal**

Copies Mailed post-paid on Receipt of Price