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Canadian Journal of Fabrics

THE JOURNAL OF THE Textile Trades of Canada.

Vol. XIII. TORONTO, NOVEMBER, 1896 No. 11

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CONTENTS OF THIS NUMBER:

Editorial

Terms. At a meeting of the Canadian Woolen Manufacturers' Association, held in Montreal, 20th October, 1896, the following resolutions were unanimously adopted: Resolved: 1. "That the terms of dating for the whole trade in future be: Four months 1st March, spring, for goods delivered as required; four months 1st September, autumn, for goods delivered as required. Repeats and deliveries in March, April, May, for spring; and in September, October, November, for autumn, to be dated four months from 1st of the following month." 2. "That the rate of interest to be allowed for prepayment shall not exceed nine per cent. per annum." 3. "That the giving of sample ends for the purpose of taking orders should be discouraged to the utmost, and that in no case should sample ends be given without double price being charged."

Money Made. There are usually said to be two kinds of advertising; the kind you pay for, and the kind you get for nothing. To these has been added lately a third, the kind you get paid for taking. The Sanford Manufacturing Company, of Hamilton, are the discoverers of this additional and very profitable variety. The papers of Toronto and Hamilton have recently devoted a large amount of space, top of column among reading matter, to the Sanford Company. As this matter was printed as important news, one may safely assume its insertion was not paid for. The probability of the company's removal from Hamilton to Toronto was widely discussed. The citizens of the former town were depressed at the prospect, those of the latter elated. The employees of the company were panic stricken, and accepted without a murmur a considerable cut in their wages. Net result to the Sanford Company: columns of free advertising in the leading papers of Canada, and a saving of 10 per cent. on the pay roll. Did the late P. T. Barnum ever do better business than this?

Pay as You Go. The profits secured by means of long credits must give place to those resulting from the more advantageous dealing of the cash buyer, if business is to be placed on a satisfactory footing. A credit business is a risky business; the more credit, the more risk. Capital will not subject itself to risk, except it is paid for undertaking it. Thus interest charges are high relatively to the earning power of money on an investment basis. The ordinary profits of business are now reduced, so that there is not sufficient to pay normal interest charges and insure the risk entailed by credit transactions. Eventually a cash basis is inevitable. In the meantime, shorten credits.

Wool Crop Short. Indications point to a serious shortage in the United States wool crop next season. The low prices of the past two years have swept the sheep from the ranches in millions. It is estimated that flocks in the United States have decreased by 15,000,000 sheep during the past three years. Whether the lowest point has been reached remains to be seen.

THE LATE WM. MORRIS, POET AND MANUFACTURER.

The late Wm. Morris, whose poems have been so much talked of since his death, was the source of much that is best in English textile designs of to-day.

He approached the subject entirely from the artist's standpoint, and carried out his designs without any regard to their commercial utility, or the cost of production. The result was a great advance in the public appreciation of the artistic in design, and an immediate response by the manufacturers for the new demand for beautiful fabrics for household purposes. The general public could not afford Morris' fabrics at first; but they insisted on Morris' ideas in color and treatment.

The following sketch of Wm. Morris' factory, at Merton Abbey, and its output, are from special correspondence in *The Textile Mercury*, Manchester, Eng.:

"Attracted by the interesting personality of the man, and interested in him for reasons of a more practical character, the proprietors of *The Textile Mercury* dispatched me recently to Surrey in order to interview Morris for the purpose of ascertaining the exact nature of the work he was carrying on. I found Mr. Morris, as others have done before and since, the most approachable of men. He wore the familiar blue shirt, with collar attached, which has caused him to be more than once taken for Jack Tar on a holiday, and the resemblance was heightened by the pipe he was smoking, and the offer of a 'fill-up' from his pouch, made almost as soon as I entered the old-fashioned room, in which a half-completed carpet design was the principal object of attraction. When I had finished with Mr. Morris, who kindly gave up the whole afternoon to my service, I wrote for *The Textile Mercury* an account of what I saw. It was published some time ago, but has gained rather than lost interest in the interval. This will explain the reproduction below of some of the impressions formed on that occasion.

"Surrey, where Morris conducted his textile work, has been called the cradle of English calico printing, 2,000 men being employed in 1726 within the boundaries of Merton Abbey alone. The block printing industry in cotton and silk still languished on the banks of the Wandle when I was there in 1890, and it was at Merton Abbey that Mr. Morris wove furniture stuffs, silks, carpets, and tapestry, besides carrying on the business of a block printer and glass stainer. Hard by the Abbey is Merton Place, which was given by Nelson to Lady Hamilton after her husband's death. The monks whose solemn faces were once to be seen in every nook of the abbey, are gone, and only a feeble remnant of the workers who thronged the village in the old days of block printing is left. But the Surrey meadows are as green as ever, and the neatly-trimmed hedge-rows, so characteristic of our English landscape, overshadow winding lanes which lead to scenes of quiet rural life—scenes which, as Mr. Morris himself puts it, bid us

> 'Forget six counties overhung with smoke,
> Forget the snorting steam and piston stroke,
> Forget the spreading of the hideous town;
> Think rather of the pack-horse on the down.'

"Down the quiet Merton High street, to the right, is the quaint front of Mr. Morris' factory, which, was originally, to judge from the look of the place, a farm house. Here the 'Dreamer of dreams, born out of his due time,' produced the beautiful art fabrics which are now world-famed. The old house is a veritable museum of reactionary art, of which Mr. Morris is the exponent. Here the poet-artist produced designs which possess the all-important merit of originality, and in which the same idea is not harped upon for ever and for ever. I found the author of 'The Earthly Paradise' quite willing to converse with me in my character as a native of Lancashire, eager for facts bearing upon the art of design, as applied to the staple products of the County of Cotton. Mr. Morris possessed a frank and open countenance—one which banished all sense of restraint, and made the visitor feel that there was no reason to fear the presence of that ceremonial stiffness which, to the stranger, is so irksome. Dressed in a suit of dark blue serge, with an open collared shirt of lighter blue, Mr. Morris presented a decidedly nautical appearance, an illusion which was further heightened by his peculiar sea roll and engaging manner. It is interesting to learn that while admitting to the French their superiority as masters of style, Mr. Morris thought that in appreciation of beauty, in love for beautiful lines and colors, they cannot be regarded as superior to the English. People from Lyons and Arles have called upon Mr. Morris in his capacity as an upholsterer, with patterns of stuffs which amaze one on account of the amount of cleverness shown in the working up of unpromising material. Referring to the custom of some of our calico printers of buying designs from Paris which are afterwards shuffled and pieced into a variety of patterns, the same authority deprecates the existence of a class of mere artists like some of the designers in the French capital, who learn about as much of the technical portion of the work as is necessary from the weaver in a perfunctory and dull sort of fashion. 'I think,' said Mr. Morris upon one occasion, 'that the man who actually goes through the work of counting the threads and settling how the thing is to be woven through and through, should do the greater part of the drawing.' This is interesting, but nothing Mr. Morris ever said struck me more forcibly, or appeared so incontrovertible as his statement that an education all round of the workmen, from the lowest to the highest, is wanted in technical matters as in others, and that this should be obtainable in the several centres of industry without its being necessary for a man to go to London to have to learn his work. In this connection, a reference to the specimens of textiles buried in South Kensington, amidst a population to whom weaving and all that appertains to it is a matter of profound indifference, is appropriate. There are scores of valuable objects there stored away in chests which really ought to be here in the North.

"Mr. Morris' factory is an irregular collection of detached buildings on both sides of the Wandle. Here the various processes of dyeing, weaving and printing

are carried on by male and female operatives, ranging in age from the young girls of fourteen or fifteen employed in making carpets, to the grey-haired hand-loom weaver, from Spitalfields probably, engaged in the production of furniture sliks or unions. 'Bob' West, a descendant of the well-known Chartist of Macclesfield, was in charge of the warehouse at the time of my visit, and I am sorry that I did not drop across him during a visit, which I understand he paid recently to the North in search of weavers After a glance at the designing room where some of Mr. Morris' best creations originated, we went to an out-house, where a familiar sight in the shape of vats of liquid dye met the gaze. Here Mr. Morris, swaying from side to side the while, preached away in a delightful fashion on various matters connected with the operations which we were watching. The hydrosulphide vat, useful for dyeing fancy goods, light colors being dyed in the flock, came in for a share of attention. They never had any trouble with the blues, said Mr. Morris, only the light pinks and yellows caused bother. As for the madder the Avignon variety was used, that from Alsace not being suitable and the Dutch not being understood. 'We want a full deep rich red,' said Mr. Morris, who overflows with interesting facts concerning his business. They used to employ Alsace madder at the Gobelins, I was told The dunging dolly was in full swing when we reached it, water of course being the motive power. Everywhere the utmost cleanliness was observable, and the most perfect system was maintained in the various departments of the factory. Mr. Morris, it should be explained, favored the use of what he termed 'frank colors' pure and solid, although he protested against the charge laid against him of having introduced a certain 'dingy, bilious-looking yellow-green'—a color which he abhorred. His ideas have been copied and mutilated almost beyond recognition, with the unfortunate result that he is credited in some quarters with having been the producer of designs which are as far removed from his style as is that of a street pavement artist.

"CARPETS.

"All Mr. Morris' carpets are hand-made by the old Axminster method, which is identical with that employed in the making of Syrian or Turkey carpets—that is, by tufting or knotting on to a vertically placed warp the yarns which form the surface and pattern. The weft is passed in and out of alternate warps alongside of the tufted loops, and with a heavy and large comb the operative beats the tufts firmly down. The whole width and length of the original warp strings are covered with the woolen tufting, and the surface is then trimmed over with large shears, in order to cut back to one uniform level any rebellious tufts which may have raised their heads above their fellows. Such is, was, and probably long will be the process of manufacturing what Wyatt considered the most beautiful carpets which have ever been made, or, as some suppose, ever will be made. The process is tedious and costly in a country like England, although in Asia Minor, where female labor, as a manufacturer from Ouschak told me recently, can be had for half-a-crown a week, the wages item is not so serious. Mr. Morris showed me a carpet nearly 20 feet square which had just been completed, and another which had been saved from the fire at the Hon. Percy Wyndham's house in 1888, and which the genius of Merton Abbey was touching up. Speaking of Indian rugs, in many of which worsted warp is employed, Mr. Morris expressed his preference for cotton warp, which does not 'jump about' so much. The girls who were weaving one of these rugs said, in reply to a question, that they can make about four feet a week, 7 feet 6 inches wide. Yellow, again, said my guide, as we inspected the dyes of the carpet, is a difficult color to manage. 'We change the shade of the color from orange to pale yellow. This kind of thing we do with most colors, so that an almost velvety effect is produced.' The carpet was about eight times as heavy as an ordinary velvet pile. If dirt collected, the carpet could be washed with a reasonable alkaline soap mixture, care being necessary so as to avoid dyeing the fabric with the soap. Here we quitted the carpet weaving section of the factory, and crossed the grounds past the trees with their gnarled trunks and scanty leafage to another building. Mounting a short flight of wooden steps, Mr. Morris laughingly compared his place to a 'museum of reactionary art'—'of which,' I added, referring to the school now bearing his name, 'you are the leading spirit.' 'It would not pay the ordinary manufacturer,' said Mr. Morris, in reply to another remark of mine, 'to use my expensive processes. I could, no doubt, sell my business, but my successor would have to employ altered methods.' We were now in the tapestry weaving portion of the building, where I saw a design that was to be used for one of the Vanderbilts, of New York.

"TAPESTRY.

"Mr. Morris was first attracted to the subject of tapestry by reading about it in some books issued by the French Government in the 18th century on *l'Art et Metier*, or some such title. I was astonished to hear of anyone acquiring knowledge of such a craft simply from 'book larnin'.' The Gobelins naturally came in for a share of attention in discussing the tapestry industry. The *Savonnerie* at Chaillot, at one time under the direction of the great Lebrun, the first painter to Louis XIV., played an important part in the maintenance of the art. At the Gobelins the wool used is selected with great care, and the yarns are inspected by the chief of the works, being afterwards cleansed according to the colors they are to receive, affinity for this or that tint being imparted by passing through whitewash, subcarbonate of soda, or simply through bran. The scouring process, which requires great care, is followed by passing the skeins over long sticks called *lisoirs*, and plunging them into square boilers of iron, which hold the mordant. They are then immersed in a color bath.

"The dyers employed at the Gobelins are real artists, and their object is to produce colors that will

stand the test of sunshine and rain through years. This was the rule followed by Mr. Morris in all he did. It is a regrettable circumstance that many of the most lovely pieces made at the commencement of the present century have been ruined by the decomposition of certain dyes, which have turned quite brown, while others have faded altogether.

"I should like to enter more at length into this deeply interesting subject, but the *Mercury*, unfortunately for the indulgence of such a desire, is a business paper, written for business men, and I must needs be terse, and say what I have to say in as few words as possible. Here then, briefly summarized from my notes, is a description of the process employed at the Gobelins, where only a simple color is required.

'The bath is charged with the deepest color of the scale required, each tint according to its position in M. Chevreul's well-known classification being graduated in 24 tones, from the deepest to the most delicate. The dyer having placed upon his sticks the skeins which are intended to be of the deepest tint, plunges them into the bath, watches them, raises them up, hangs them on uprights at his right hand, re-plunges them in the copper, examines them, and notes the time during which they are soaked or dry. When he considers them to have reached the desired stage, they are withdrawn and spread out. During this time the bath gets weaker and weaker, more coloring matter being added if it loses its color too quickly. The liquid gradually assumes so pale a tone that the 24th tint becomes almost white. It is in these later operations that a sure eye and skillful hand are required.

"Tapestry is woven from the back, the results being visible to the worker by the aid of a small mirror, which reflects the pattern as it is formed. The principal features of the design are marked on the warp in Indian ink, while the drawing from which the weaver works lies beside him. In a low warp loom the work cannot be seen, and the trouble with the high warp is that it works over the curtain, which is thrown over the warp beam. A tapestry representing "The Visit to the Magi," designed by Burne-Jones, was being woven by Mr. Morris, for his old college (Exeter), at Oxford. The appearance of the fabric when completed must be extremely beautiful. The deeper reds employed by Mr. Morris are obtained from the insect dye known as the *kermes*, and the designs are executed in the same manner as the old Gothic tapestries. There were twelve warp threads to the inch in the pattern shown me.

"From tapestry we went to the furniture stuffs, which were being woven by hand-looms. A hanging was shown, the rate of production of which was about 12 yards weekly, the width being 54 inches. A brocatelle with a linen weft, an Ispahan hanging at 11s. to 12s. the yard, designed by Peacock; a silk warp and worsted weft stuff that does not hang nicely, and a silk train, intended for a dress for Lady Wolseley, were amongst the articles being produced as I passed in and out amongst the looms. The next process inspected was that of block printing.

"A more charming personality I never encountered than when I met Mr. Morris, whose socialistic views were quite as interesting as his wonderful factory. No one will dispute the sincerity of the capitalist and man of culture, who openly advocates principles the carrying out of which, while tending to raise the common ruck, would depress to a lower level such men as Mr. Morris himself, as far as the possession of worldly goods is concerned. 'I do not want art for a few,' said Mr. Morris before the Trades Guild of Learning, 'any more than education for a few, or freedom for a few. No, rather than that art should live this poor thin life among a few exceptional men, despising those beneath them for an ignorance for which they themselves are responsible, for a brutality which they will not struggle with, rather than this, I would that the world should, indeed, *sweep away all art for a while*. Rather than that the wheat should rot in the miser's granary, I would that the earth had it, that it might yet have a chance to quicken in the dark.'

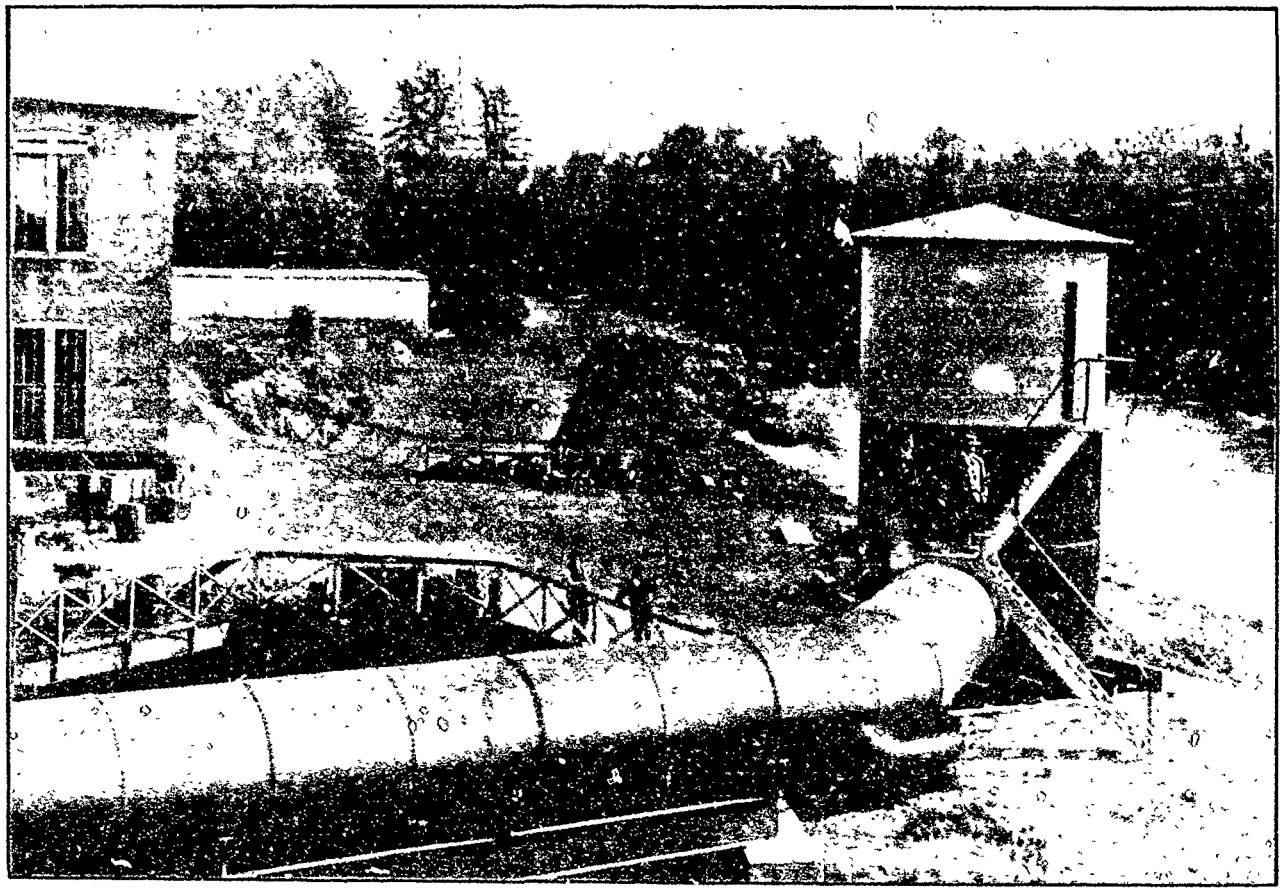
"Much more might be said concerning the business carried on by Mr. Morris within the precincts where the 'Statutes of Merton' were enacted in 1236, when the English nobles made their memorable reply to the prelates who wished to conform the civil to the ecclesiastical code: 'We will not change the laws of England.' Down the Wandle there at Garratt are Baker and Tucker's printworks; across the railway yonder are those of Mr. Littler; and away beyond the horizon to the westward, in the valley of the Cray, is another relic of the block printing days of old at Crayford, where David Evans and Co. continue on a diminished scale a business which, in the time of our forefathers, was the glory of this section of the South. We Northerners may even yet, with all our boasted wealth, our perfection of machinery and what not, learn something from a study of the quiet little industries still conducted in Surrey and Kent. Some of our calico printers do not disdain, at any rate, to steal Mr. Morris' designs; and if his work be worth stealing, the results of his efforts are certainly worth reading about. Londoners know nothing of the ancient textile arts, which are still conducted almost under their noses; let not the same charge be laid against the North, which is so much more concerned in the matter."

THE TAYLOR SYSTEM OF AIR COMPRESSION.

The utilization of compressed air for mechanical purposes has long attracted the attention of scientific engineers; but compression by steam or hydraulic power has never been perfectly successful, on account of the loss of power caused by the heating of the air in mechanical compression, and the cooling of it in transmission. These difficulties have been overcome by the Taylor system, the air from which is, by the tests, six times drier than the normal atmosphere, and of the same temperature as the water fall. This system, the invention of a native Canadian, C. H. Taylor, of Montreal, was fully described and illustrated in *The Canadian Engineer*, in April, 1895, the article having

attracted much attention at the time. It remained, however, to be put to the test in an actual working plant, which has been done at Magog, Que. Here a plant of 150 horse power has, after many initial difficulties, which proved the faith of the projectors in their system, been installed for the Dominion Cotton Mills Co., Ltd., and which for the past two months has been operating their calico printing machines with perfect satisfaction, and a great saving of expense, their former power being steam. Mechanical air compressors were tried, and failed to operate these very machines.

exhaust serves as a perfect ventilator for mines, factories, etc., and can also be used for refrigerating purposes. It can be applied to mining, pumping, drilling, elevating, ventilating, transmission of power, and street railway and other power development. According to Prof. McLeod's report, the Dominion Cotton Company's plant at Magog shows an efficiency of 62 per cent. of the actual power of the water used, transmitted in compressed air, with a waste of 20 per cent. of the air taken down. In the installation of any future plant, this surplus of air is to be utilized by increasing the size



TAYLOR AIR COMPRESSING PLANT AT MAGOG

The plant consists of a shaft sunk to a depth sufficient to obtain the pressure required, ending in a receiving tank, for the air and water.

It will be of interest to our readers to repeat briefly the claims made on behalf of the Taylor air compressing system when its description appeared in this journal. These are chiefly as follows. It can be successfully applied to any waterfall where there is a head of three feet and upwards, thereby bringing into use many low waterfalls at present not considered available for power. By this system air can be compressed to any pressure and transmitted by ordinary pipes any distance required, with little loss of energy, and with practically no wear or tear. The air can be supplied to any style of engine, taking the place of steam. Being perfectly automatic, there is no cost for operating after the plant is installed. It completely overcomes the smoke nuisance, and the

of the air chamber, and consequently the efficiency will be increased by not less than 10 per cent.

The following is the report of Prof. McLeod, of the Faculty of Applied Sciences, McGill University, Montreal, October 27th, 1896:

The Taylor Hydraulic Air-Compressing Company.

DEAR SIRS,—At your request I have examined the Tayor Hydraulic Air Compressor recently completed at Magog, Que., and beg to hand you my report thereupon. This installation is, I am informed, the first on Mr. C. H. Taylor's system of supplying power by compressing air in a falling water column. The general features of the method are clearly shown by the detail drawing. [See page 345, vol. 2, *Canadian Engineer*.] The water in the downflow pipe *A* entraps air bubbles from the small air pipes at the upper surface, and compressing them as it falls, delivers them into an air chamber at the bottom of the shaft. The air is con-

veyed from this reservoir or air chamber by the small pipe marked *D*, and the depleted water rises to the surface through the main shaft to the tail race. The pressure of the air in the chamber is measured by the difference of level between the surface of the water in the chamber and that in the tail race. In the Magog compressor the average water column measures 120.5 feet, which is equivalent to a gauge pressure of 52 lbs. The diameter of the water supply pipe is 5 feet 6 inches. The diameter of the tank at the inflow is 12 feet. The diameter of the headpiece carrying the air-tubes is 4 feet 8 inches. The internal diameter of the downflow pipe is 3 feet 8½ inches The air-compressing chamber has a diameter of 17 feet, and an average height of 6 feet from the base of the downflow pipe. The compressor was constructed to drive six double engines, the cylinders of which measure 12 in. x 8 in. diameter.

METHODS OF TESTING.

The following methods were employed in testing the efficiency of the compressor: The quantity of water which passed through the compressor was measured in the tail-race by means of an electrical recording current meter, which has been carefully rated. The section of the tail race where the measurements were made was nearly rectangular, and had a width of 12 feet. The depth of the water, which, of course, varied with the discharge, ranged from three to nearly four feet. The measurements were made in four equally spaced vertical sections and at three points in each section. The air delivered was measured by anemometers placed in a discharge pipe, the area of which was gradually enlarged to about one square foot, at which area the velocities were sufficiently reduced to admit of measurement. Measurements were made at points uniformly distributed throughout the section, and each series of readings extended over one hour. For each trial the measurements of water discharge and air delivered were made simultaneously. The anemometer employed has been very carefully calibrated for these trials. Two of the driven engines were indicated, but it was found that they were so wasteful and leaked so badly that no idea of the efficiency of the whole plant could be formed by comparing the indicated horse-power with the available power of the waterfall.

The results of the tests are presented in the annexed tabular form. Column I. gives the number of the trial, for convenience of reference. The trials 1 to 3 were made on August 7th, and 4 to 6 on August 13th, 1896, after some minor changes had been made in the details of the compressor. Column IV. gives the horse-power actually expended by the falling water on the air compressor, and Column VII. the horse-power of the compressor. The efficiency (Col. VIII.) is the ratio of the actual compressor horse-power to the horse-power available in the water fall. It will be seen that the efficiency varied from trial to trial, and that where the quantity of water used was small, the efficiency was large. It will also be observed by comparison of trials 1 and 5—in which cases the quantities of water used were nearly the same—that the efficiency was greater in the latter case. This was owing to the fact that improvements were made in the details of the compressor in the interval. By reference to Columns IX., X. and XI., it will be seen that the air was isothermally compressed, which is a very marked advantage of this compressor, as the best mechanical compressors now in the market lose a large percentage by heating the air during compression, such heat being afterwards to ally wasted if transmitted to any considerable distance through a pipe line.

Taking the most favorable conditions of working in this experimental installation as being the fairest estimate for probable future plants, the efficiency is seen to be 62 per cent. The very marked increase of efficiency with the use of a relatively small quantity of water points clearly to the possibility of an increased efficiency in future installations. It ought also to be mentioned that in a comparison which was made, when the compressor was working at nearly its full capacity, of the amount of air taken into the compressor at the air inlets with that discharged from it, it was found that there was a loss of about 20 per cent. This accounts for the smaller efficiencies obtained when larger quantities of water were used, and shows that if this loss can be made good, an efficiency of at least 60 per cent. will be obtained under all conditions of working.

C. H. McLEOD, M.E.

RESULTS OF TRIALS OF THE TAYOR HYDRAULIC AIR COMPRESSOR AT MAGOG, P.Q., ON AUGUST 7TH AND 13TH, 1896

No. of trial.	Quantity of water discharged in cubic feet per minute.	Available head in feet.	Available horse-power.	Quantity of air delivered in cubic feet per minute at atmospheric pressure.	Pressure of air in compressor.	Actual horse-power of compressor.	Efficiency of compressor.	Temperatures. External air.	Temperatures. Water	Temperatures. Compressed air
I.	II.	III.	IV	V.	VI	VII.	VIII	IX	X	XI
1	6,122	21 4	247 7	1,377	52	132 5	53 5	79	75 2	75 2
2	5,504	21 9	228.0	1,363	52	131.2	57 5	83	75 5	75 5
3	4.005	22 3	168 9	1,095	52	105 3	62.4	80	75 6	75 6
4	7,662	21 1	305 9	1,616	52	155 4	50 8	75	80.0	80 0
5	6,312	21 7	260 0	1,506	52	144 8	55 7	77	80 0	80 0
6	7,494	21.2	299.8	1,560	52	150.2	50 1	75	80 0	80 0

(Signed) C. H. McLEOD.

WHAT THE WORLD BUYS FROM CHEMNITZ.

A large market for German hosiery is the Orient. This embraces Turkey, Greece, Roumania, Bosnia, Herzegowina, Servia, Bulgaria, Asia Minor, Arabia, Persia, and in fact China and Japan are also sometimes included in this term. Low priced grades, with as much weight as possible, find the easiest sales. These are required in brown cotton, all kinds of natural imitation mixtures, vigogue, and low merino; the quality is not important, providing the article has plenty of weight. Some coarse striped hose and half-hose are also used, and Turkey takes a few goods with loud cheap embroidery, worked in the national colors and figures. Shirts and pants, in plain styles, are used to match the hosiery.

The trade with these countries used to be done by first-class houses, but ever since Jews were permitted to settle in Chemnitz, this market has gradually fallen into their hands more and more. Job lots and throw outs are sent in quantities to Bulgaria, in fact Jews will come all the way from Bucharest to buy them.

A nice little business is done with Italy in better class hosiery. Good qualities of plated and striped lisles are freely bought. Silk plated, spun, and real silk goods are in fair demand also.

Spain supplies its own demand in low qualities chiefly. There is a fair consumption of lisle goods of the best make, principally imported from France; but many of the goods are made in Saxony. Saxony does not cater for Spanish trade, as much as it does for that of other European countries, still there is a certain number of travelers sent there every year.

France imports a great deal of German hosiery. Lower full-fashioned styles are taken for exportation. For home consumption, large quantities of lisle and silk plated hose are bought. The most elaborate jacquard patterns in boot designs, striped throughout, and opera shapes, are in strong demand; in fact, opera shapes of every kind for stage and ballet purposes and sea-side wear are required.

Trade with Russia is much hampered by difficulties in transit and custom house peculation. The duties, too, are so high that the trade has dwindled away more and more. The Russian Government does its best to cultivate home manufacturing, and offers inducements to enterprising firms to erect branch establishments.

A large glove manufacturer of Saxony has erected a branch factory in Russia. The large locomotive works in Chemnitz, founded by Richard Hartmann, and known as the Sachsische Maschienenfabrik, have laid the foundation of extensive works near Odessa.

We next come to the home trade of the happy Fatherland. Until recently stockings were hard to sell, except to better class people in the larger towns. Even to-day many people in the country go barefoot. Hand-knitting, too, is a formidable rival of machinery. The army has boots of such a size and shape that they require padding to suit the individual; consequently socks do not answer the purpose, but the foot is carefully wrapped in what are called "Fusslappers," a square piece of material, about the size of a handkerchief; it is of a soft texture, very much like a coffee sack. When applied, the soldier spreads it on the floor, stands in the middle of it, carefully folds it over the foot and round the ankle, and then cautiously slides into the canoe. This style of footwear prevents the German soldier walking about inside his boots. Up to about 1884, the importation of best qualities of underwear and hosiery into Germany must have been considerable; and even to-day the fashionable shops in large towns show English goods in preference to home produce. This is specially the case with silk-striped, merino and cashmere hosiery, and in best merino, all wool, and wool and silk mixed underwear. German made goods, however, even in these special makes, are encroaching, and in a short time the importation from England will have dwindled away. Manufacturing in Germany has made such rapid improvements that some even claim superiority for German made articles, and large quantities are, no doubt, disposed of as English goods, by bearing an English stamp, and being done up in the English style.

The domestic goods of Germany are principally of a heavy and durable nature. Quantities of plain and ribbed knit fabrics, with seamless feet, made from coarse worsted yarns, are used. Owing to the characteristic economy of Germans, a pair of legs is used over and over again, with fresh feet sewn or knitted on. There is a German patent out for making stockings with a slack course in the ankle, below which the feet are cut off when worn out, and to which a fresh foot can be sewn on neatly. Such goods are sold in the shops with a supply of reserve feet. There is little demand in Germany for fine-gauge goods. Tan shades have at last become fashionable. Striped hose, which have been so little in demand in all other civilized countries of late years, have kept up their popularity in the Fatherland. Better class Germans all buy expensive articles of the best quality procurable. Washing and mending are so cheap that this is the best economy. German women are so skillful in knitting and mending, that stockings, when mended, can be worn without any discomfort to the feet.

Norway, Sweden and Denmark now form an important market for German hosiery, the bulk of which used to be supplied from England. Germans are making great efforts to open up these districts. The trade is largely done through Hamburg. Houses there have travelers and representatives continually working in these markets. The most desirable trade is for best cashmere gloves and hosiery, and heavy cotton goods of a better make. Small quantities of all sorts of hosiery are, however, required. In cheaper qualities heavy ribbed goods and seamless hose and half-hose are popular. Of late years there has been much talk of starting manufacturing in the south of Sweden. Some weaving and curtinett ventures have met with great success, and Chemnitz machine builders are continually being applied to for estimates of hosiery plants and other machinery. There is little doubt that words will soon result in action, if there are not already some ventures on foot.

It is well known to our readers what goods England takes from Germany, and where they are disposed of. The increase of importations has been great, and might have been vastly greater, but for the unfortunate, notorious "Made in Germany."

After one season the eyes of all the world were opened to the source from which so much, that had always been assumed to be English, actually came, and while going direct, many inducements were offered to Germans to make goods that were genuinely English.

In this way the standard of German manufactures was gradually raised, not only in hosiery, but in all other branches as well. To overcome the prejudice of

some people against goods without an English name, many little devices have been resorted to, so that this is quite a difficulty of bygone days. Serious for England, too, is the loss of the carrying trade, consequent on this movement. Bremen and Hamburg are now the ports for a great deal of what used of necessity to pay a tribute to England at Liverpool or London.—*Knitters' Circular.*

For THE CANADIAN JOURNAL OF FABRICS

THE WOOLEN INDUSTRY OF GREAT BRITAIN.

BY P. L. SIMMONDS, F.L.S.

The second great textile industry of the kingdom is wool; although of late years outstripped in quantity by cotton, it was in earlier days the most important British manufacture, and even at present, when the comparative value of the two materials is taken into account. The price and cost of the wool, home and foreign, used, is about 26 million sterling against 30½ millions paid for cotton, chiefly in the latter instance to foreign states, so that its position as a leading national industry takes higher rank. The cotton manufacture employs 528,000 hands in factories, while wool employs 301,000; whereas cotton and silk are obtained only in certain latitudes and in comparatively few countries, wool is produced, more or less, in all countries. Another characteristic is the great variety of qualities of wool, comparing the produce of one country with another, or even of different districts in the same country; each fleece, indeed, contains several "sorts," adapted for various purposes, so that there is, perhaps, no single article of commerce that gives rise to so many dealings as wool. Again, wool is so much preferred to any other material for nearly all clothing purposes, that the use of woolen and worsted goods has hitherto been restricted only by the cost, the consumption extending readily in all countries as the price of wool becomes less, and notwithstanding the extraordinary advance in the imports of wool, there has been as yet little accumulation of wool in stock in London. Working men now wear finer cloth than gentlemen wore half a century back.

As the consumption of wool in Great Britain has trebled in the last half century, the conditions of the woolen trade must have proportionately increased. The following is the quantity of foreign and colonial wool used in the United Kingdom, independent of some 140 million pounds of the home clip.

EXCESS OF IMPORTS OVER EXPORTS (UNFORTUNATELY ALPACA WOOL AND MOHAIR IS INCLUDED).

	Lbs.
1840	42,421,659
1850	59,938,104
1860	117,634,710
1870	170,708,115
1880	226,100,374
1890	292,315,828
1895	510,000,000

The consumption of wool in Great Britain during the present century has been, therefore, as follows:—

	Home production, fleece washed. Lbs.	Left for consumption after export. Lbs.
1800	96,000,000	105,000,000
1830	110,000,000	139,000,000
1840	120,000,000	164,000,000
1850	130,000,000	181,000,000
1860	140,000,000	249,000,000
1870	150,000,000	315,000,000
1880	149,000,000	370,000,000
1890	138,000,000	428,000,000
1895	135,000,000	510,000,000

If we include, however, all other wools, such as the wool pulled off the sheepskins received, the imported yarn and rags, etc., we obtain much larger figures. The quantity of wool at the disposal of the home trade for 1894 was 528 million pounds; but the quantity actually consumed must have been considerably larger than the above figures indicate. The rapid progress of the British woolen trade is best illustrated by the increase of Indian and colonial wool of all kinds, which principally finds a market in London, as shown in the following figures of the imports from British possessions, in the last four decades:

	1860. Lbs.	1870. Lbs.	1880. Lbs.	1890. Lbs.
1. Australasian	59,166,000	175,081,000	300,240,000	328,702,114
2. British India	20,214,000	11,150,000	29,052,000	34,238,586
3. South Africa	16,574,000	29,220,000	51,457,000	87,221,926
	95,954,000	215,451,000	380,749,000	450,162,626

If the British supplies of Indian and colonial wool have thus quadrupled in the last thirty years, the next quarter of a century may be expected to produce such an abundant supply of the raw material as will fully furnish from her own colonies and possessions the increasing wants of her continental and transatlantic brethren.

The supply of sheep and lambs' wool from her colonial and Indian possessions has long since overtaken and surpassed the imports from foreign countries, as the following figures will show:

	Foreign Wool. Lbs.	Indian and Colonial. Lbs.
1860	75,988,338	95,955,134
1870	40,116,671	219,246,292
1880	74,277,565	386,321,209
1890	86,931,433	542,304,776
1895	115,239,655	645,721,705

The following table shows the imports of colonial wool (exclusive of Indian) into Europe and America in decennial period, in bales and their value:

	Bales.	Value.
1860	266,000	£ 6,850,000
1870	698,000	11,691,000
1880	1,088,000	22,032,000
1890	1,695,000	26,272,000
1895	2,270,000	25,000,000

The bales vary in weight from different colonies. The value in price has fallen from £26 10s. per bale in 1872, to £11 per bale in 1895.

In 1810 Australia sent to England its first clip of wool, 167 lbs. The decennial exports from Australasia are shown since in the present century:—

	Lbs.
1831	2,541,205
1841	12,399,392

	Lbs.
1851	41,810,117
1860	52,196,073
1870	105,500,314
1880	345,010,328
1890	493,105,556
1895	541,394,383

The progress of every colony recorded in co. mercial history sinks into insignificance when compared with the rapid spread of Britain's Australasian settlements. A pastoral empire has been founded on that continent and its adjacent islands, which promises soon to become the most extensive ever known.

For the seven colonies of Australasia the number of sheep and wool has increased as follows :—

	No. of Sheep.	Excess Value of Exports of Wool Produced over Imports.
1861	23,741,706	£ 5,629,449
1871	49,773,584	13,488,880
1881	78,063,426	16,310,253
1891	124,547,937	24,314,601
1894	121,161,247	20,722,229

I append the returns for 1895 of sheep in British India and most of the British colonies that export wool :—

Australasia.	No. of Sheep.
New South Wales	56,977,270
Victoria	13,180,943
Queensland	19,587,691
South Australia	7,325,003
Western Australia	2,132,311
Tasmania	1,727,200
New Zealand	20,230,829
Fiji	4,130
Total	121,165,377
Cape and Natal	16,124,222
Falkland Islands	763,241
Canada	2,513,977
British India	38,000,000
Great Britain	29,774,853

The clip in Great Britain of "fleece washed" wool in 1895 was 135,000,000 lbs.

The number of factories working on wool in Great Britain in 1890 was as follows :—

	Factories.	Power Looms.	Hands Employed.
Woolen	1,793	61,831	148,729
Worsted	753	67,391	148,324
Shoddy	125	2,284	4,503
	2,671	131,306	301,556

Besides those employed in the factories there are many wool brokers, merchants and salesmen. The total number of persons, directly or indirectly, dependent upon the woolen trade may be set down at fully one million, there being a larger number of dependent workers in its auxiliary trades than in connection with any other manufacture.

It should be borne in mind that, besides the hands employed within the factories, there are numbers of wool sorters, combers, hand-loom weavers, finishers, dyers, etc., employed out of the factories, and these, at a moderate calculation, may be reckoned at fifty per cent., or one workman employed out for two in.

The value of the British woolen manufactures produced, approximately, may be placed at—

	Sterling.	Consumption Per Head of Woolens.
1830	£191,000,000	..
1840	208,000,000	2
1850	249,000,000	2
1860	311,000,000	4
1870	412,000,000	6
1880	476,000,000	7
1890	.. . .	11

The value of all kinds of woolens, worsted and yarn, exported from Great Britain has been as follows :—

	From Board of Trade Returns	From Messrs. H. Schwartz & Co.'s Annual Wool Circular.*
1830	£4,728,666	£4,851,096
1840	5,327,855	5,780,810
1850	10,040,332	10,040,332
1860	16,007,257	15,736,798
1870	26,904,974	26,159 202
1880	20,619,917	21,488,000
1890	25,666,406	20,419,000
1895	26,911,067	27,012,000

The average yearly export of all descriptions of woolens, since 1870, may be taken as £26,000,000 per annum.

Whilst the imports and consumption of wool in manufactures in the United Kingdom has largely increased in the past ten years, the export trade has been greatly checked by hostile tariffs and foreign competition. We know precisely the value of the manufactured goods exported, but we have no guide to the present amount consumed by her large and well-conditioned population of 39 million. Some of her most experienced merchants estimate it at three-fourths of the whole manufacture.

WEAVING ROOMS.

At the September meeting of the New England Cotton Manufacturers' Association, Alfred Hawkesworth, superintendent of the Merchants' Manufacturing Company, Montreal, read a most instructive paper on this subject, from which we make the following extract :—

"Good yarns properly prepared and put into looms suitable for the class of goods to be woven, and tended by weavers of experience, would be likely o furnish us with good cloths, but a weaving room built and furnished upon the best lines of modern practice is a most wonderful help in accomplishing the results above named. A weaving room should be built with due regard for light, but not too much sun. It should have good, solid floors, so that looms will stay where they are put. It should never be less than twelve feet in height, nor very much higher. It should have natural means of ventilation. It should be built at least three times the length of its width and placed east and west where it is possible. Driving belts should be from below unless the room is a basement. Weaving sheds I am not

* This includes yarn, mohair, alpaca, and other descriptions. The first column includes wool alone.

in favor of; I think better results will be got from the lower floors of a mill. In building weaving rooms from east to west, we to a certain extent and part of the year avoid the direct rays of the sun. Practical weavers know that looms further away from sunlight give better running work. The north side of a mill is known as the best place in the room to put heavy or fine work, if on that side there are no obstructions to light. A good overseer will always put his hardest weaving on that side for reasons of moisture, 'not being so dry on that side,' and therefore weaves better. The driving belts in a weave room should be from below; their electrical influence is not good for the work and you will get more light with them out of the room and less oil from overhead shafting. Some method of artificial moistening should be placed in every weaving room, of sufficient height above the looms so that it will condition the air rather than effect the warp at once. Sunlight must be overcome by artificial moisture; both its heat and electrical influences are injurious to the proper condition of the atmosphere to good weaving. We should endeavor to carry all the moisture that a temperature of 80 degrees will sustain, with a constant renewal of lighter atmosphere from above that will hold the lower air of the right weight to effect and mollify the warps. The moisture should not be such as to saturate the atmosphere at a low temperature, but steam should be used to prevent this and give the necessary heat to enable the room to carry sufficient moisture, and the upper ventilation will prevent the temperature from rising too high. Under the above arrangement a low studded room will soon either become too hot to get the benefits of the moisture, or the atmosphere will become saturated at low temperature and hinder instead of helping the weaving. A very high studded room is harder to condition, and is easier effected by outside weather than one of medium height, and while you must not strive to put heat and moisture enough into such a room as to cause saturation or 'dew point,' such a room can be held at a proper temperature and carry a large quantity of moisture. Fans for ventilation prevent the proper conditioning of the air, and should be avoided, as should all currents or draughts. Ventilation should be from above, and enough of it allowed to keep the atmosphere in the room fresh and healthy. A weave room should have alleys or passages on the back of each line of looms, running lengthways of the mill, for facility of changing warps and for carrying cloth and weft to and from the looms. The looms on each section should be numbered consecutively for convenience in keeping weavers' accounts, and for facility in tracing imperfect work of looms or fixer. Section benches should be provided for each loom-fixer convenient to his section. Cloth racks should be near section benches, one for about 200 looms, so that order and neatness may be encouraged among the weavers. A place should be provided in all weaving rooms convenient to all sides of it, where imperfect goods can be overseen. For in this, as in other things, 'eternal vigilance' is the price of good cloth."

METHODS OF CARDING.

Strong yarn cannot be made from weak fibres; this is so plain that it seems almost unnecessary to put it into words. It therefore follows that it is of the greatest importance to know how and where the fibres are most liable to become weakened, and it is also necessary to know as much as possible concerning the nature and construction of the fibre itself Almost any child can distinguish between cotton and wool in their natural state. This is superficial knowledge and does not go far toward converting either into yarn or cloth. To quote from Bain in the *Textile Manufacturers' Journal*.

"The different processes of manufacture are well known, but the fibre itself is comparatively a stranger to many textile workers. It is not necessary for some to be familiar with the structure of the fibre; the machine operator is responsible only for the form in which he delivers his material to the next in succession; if it is in such state as to result in excess of waste during the next process, he is held responsible, and to that extent only. The improved scouring machine of the present day relieves the attendant of all serious responsibility and transfers it to the one who prepares the scour. In the good old times when fortunes were made almost in a day, all this was entrusted to an iron set kettle, wood fuel, lever squeezer, drip rack, rinse-box, and an attendant who probably never gave the construction of his material a thought, and knew it as wool only because of its growth upon the back of a sheep. The dyer of those times was equally limited, and superficial; he used larger kettles and wood from the same pile, and to him wool was wool for the same reason that applied to the scourer. Many primitive methods still exist among our mills, but they are being superseded by improvements growing out of wider general information and practical experience. But in my opinion we know much more about machines than of the material manipulated by them. There are dangers in each and every process through which the fibre passes, some of which are known and easily avoided, while others steal upon us unawares; and it is these stealthy dangers that rob the material of its most valuable qualities and cause great loss to the manufacturer. The buyer for a mill should know wool thoroughly, not only as he sees and feels, and from what he has read and been told by others, but from personal investigation and study of the fibre itself.

This is not the easy matter it seems, for it means microscopic study, and the intelligent use of this instrument is not learned in a day; it requires time, patience, and deft work with the fingers. If a microscopic knowledge is essential to the buyer, it is of far more importance to the dyer and to the one in charge of the scouring, for it is he who must stand sponsor for the material through all succeeding processes. This instrument should be a part of the dyer's equipment, and in daily use, for without it he cannot know the exact result of his work. Very little injury may have resulted, or so much that it affects manipulation seriously. It is also well to remember that any injury done at this stage is past remedy. The common dyehouse preventive and detective instruments it is not necessary to comment upon, but none is of more importance to the dyer than the microscope; both he and the manufacturer should understand this fact. The carder also should possess a thorough microscopic knowledge of fibres for two important reasons. First, for self-defence in case of injured material, and second, in order to prepare his machines for the best manipulation of the many different kinds of stock that come to his hands. Knowledge of this kind cannot be too minute nor too generally diffused. The condition of all material should be thoroughly known, as it passes from one process to another, and if at any stage it has sustained injury it can be stopped then and there, and not be permitted to pass along to be discovered in another department. It is well known that the carding room is the usual place where injured material is first discovered, and as often as it is found it is supposed to have received its injury there. It should be well known that dyehouse and carding room injuries to stock are of a widely different nature, but as both are invisible to the natural eye it is all the more difficult to locate them. Sound fibres will pass through the cards intact, while unsound fibres will become more or less shortened,

according to the extent of the injury done them Then is it not necessary that the superintendent, dyer and carder put themselves in possession of all the knowledge possible in relation to fibres and that they should supplement this by close personal microscopic study? The most intelligent buyer can add to his knowledge by such study, especially when buying for specialties The best methods and machines cannot be too intelligently used, and the study of the material is of just as much importance as the study of machines If the material is not prepared precisely as it should be, all benefit from the improved machine is lost. An old-fashioned machine will turn out better work on sound stock. The microscope should come into general use in the mill among the heads of departments. It gives a feeling of security to its possessor.

THE WOOLEN INDUSTRY OF GERMANY.

The principal persons engaged in the woolen industry in Germany, conscious of the excellence of the products of their chief competitors, especially the French and English, have made every effort, not only to regain the home market, but to meet their opponents in parts of the world hitherto held by England and France. The difficulty of meeting all the requirements of the times in the matter of fashion, form, quantity, and quality has, says the United States Consul at Chemnitz, been overcome. Germany is now rapidly putting herself in a position to supply all the demands of her cloth manufacturers, and although she is obliged to buy large quantities of woolen yarns from England, she appears to be resolved to be independent. Her woolen goods have gained a great deal in quality and color. The earnest efforts of the manufacturers have been aided by Government assistance and encouragement in the shape of technical schools, exhibitions, etc Aix-la-Chapelle, Gera, Greiz, and Crimmitzschau, in Saxony, are sending tons of goods worth millions of marks to the United States, Australia, Africa, South America, India and China. The number of spindles in the woolen industry in Germany rose from 1,669,759 in 1861, to 2,787,373 in 1875, and to 3,600,000 in the present year Of these, 1,600,000 spin worsted and 2,000,000 carded yarn. The amount of raw wool spun in 1860 was 41,430 tons; in 1895, 198,479 tons The imports of raw wool were 18,300 tons in 1860, against 183,202 tons in 1895. The exports of raw wool were 4,770 tons in 1860, 20,100 tons in 1875, 9,014 tons in 1890, and 11,223 tons in 1895 The production of raw wool went up to its highest point—38,580 tons—in 1865, and it gradually sank to 22,500 tons in 1895. The imports of shoddy wool were 5,325 tons in 1880, 12,240 tons in 1890, and 12,845 tons in 1895 The exports were 14,168 tons in 1880, 14,663 tons in 1890, and 15,341 tons in 1895. In the forties Germany led the nations of Europe both in quantity and quality of wool produced. Her exports largely exceeded her imports, and the breeding of wool-producing sheep was one of the most important, as it was one of the most profitable, branches of farming This is now entirely changed, first, because of the increased value of land for other and better-paying products, and secondly, because of the enormous production in foreign countries—viz, in Cape Colony, lands along the La Plata River, and in Australia. Hence the wool produced in Germany covers only one sixth of the present demands, nor does even that pay for the efforts put forth in competition against the products of the countries above-mentioned. Nor, it is said, is there much to be made out of the new move to encourage the use of the home products, manifested more particularly in an effort to compel merchants manufacturing supplies for the military and marine to use German products exclusively. About 1860 Germany had 28,000,000 sheep, in 1873 she had 25,000,000, in 1883, 19,000,000, and in December, 1892, 13,500,000. In 1860 there were 52 sheep to each square kilometer of territory, in 1892 only 25. In 1860, to every 100 inhabitants, 73 sheep; in 1892, 27. The claim is made that moderate protective tariffs have helped the German woolen manufacturers to hold, not only their own, but to obtain a fair share of the markets in countries not yet advanced enough to manufacture for themselves. In 1895 the country used three times as much raw wool as in 1865; had won back all the home markets held hitherto almost entirely by England and France, and had gone into all parts of the world with the surplus products of her woolen looms, winning new fields from her powerful rivals The exports of woolen yarns went up from an average of 101,000 centners during the sixteen years from 1872 to 1887, to 181,000 centners in 1895. During the same period the export of woolen cloths and tissues went up from 390,000 to 616 000 centners, while the imports of woolen wares and cloths went down from 86,000 to 31,600 centners Consul Monaghan says that all this success had its origin in the simplest of causes. The German has no hesitation in getting aid when and where he can He has his agents in England, France, Belgium and the United States. He collects patterns and designs, and experiments until he obtains an article equal to the original, or so nearly equal as to replace it by means of considerably reduced prices. He has many economies in his factory unknown to the English or the American manufacturer, or, if known, never practiced.

THE WOOL MARKET.

TORONTO.—Immediately after the United States elections there was a flurry in the Canadian market, but it was not caused by any special demand from the Canadian mills While United States wool dealers have been buying freely in Canada ever since the election, the Canadian manufacturers have been holding off and seem afraid to move, presumably the cause of this timidity is the uncertainty as to the tariff. As has frequently happened before, the home manufacturer will probably suffer for his lack of faith No change which the present Government is likely to make will affect the woolen mills in any appreciable degree, and while the manufacturer is hesitating his Yankee neighbors are clearing this market of all desirable lots. Moreover, the latter are clearly foreseeing the effect which the immense slaughter of sheep in the United States must have on that market at no distant date. Wool is certain to be higher in Canada six months hence unless some unexpected change takes place in foreign markets, and why the Canadian mill owner holds fearfully aloof at this juncture seems a mystery Practically all the best blanket wool in Canada has already been laid hold of by United States buyers The quotations in Toronto market are 21 to 23c. for fleece; pulled 19 to 20c

MONTREAL.—Since last report, writes our Montreal correspondent, the wool market has been the scene of some excitement Prices have advanced some 10 per cent, and merchants find foreign holders unwilling to supply them, even at those figures, until after the opening of the next series of the London wool sales, which begin Nov. 24th We quote —Cape, greasy, 15 to 16c; B A scoured, 27 to 35c; Canadian fleece, 21 to 23c; Canada pulled wools, 21 to 24c.

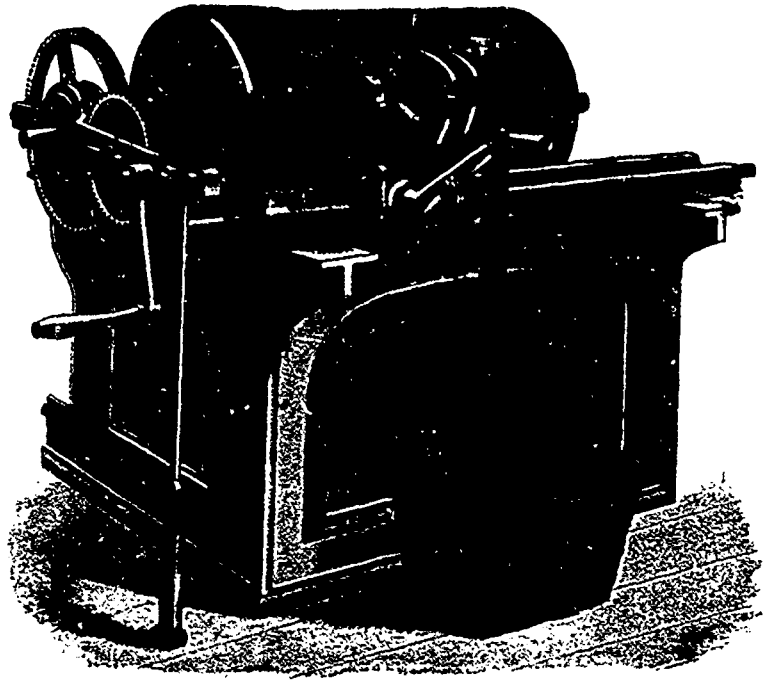
EASY CREDITING.

The following paragraph appears in a recent number of the *Monetary Times*:

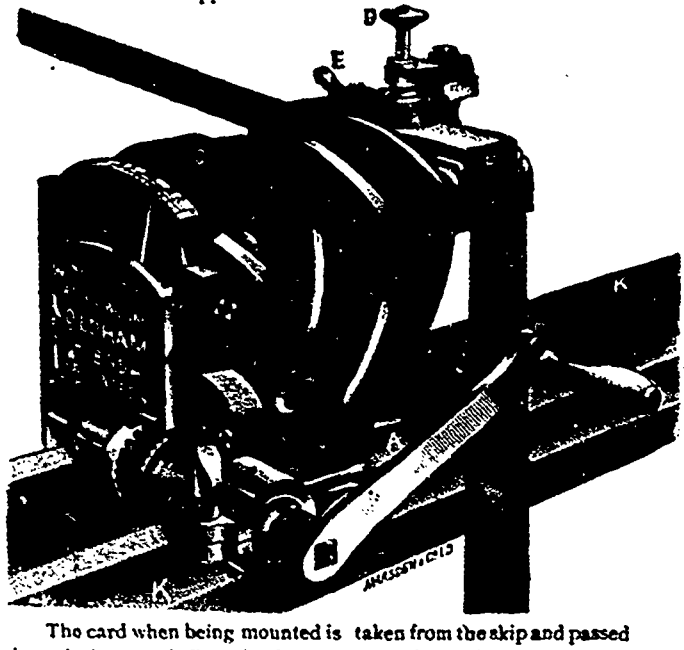
It is not difficult to get established in business in Canada A man who possesses cheek and will persistently ask for credit, will get it. If he bustles about and exhibits signs of active business and prosperity, there are numbers of people who believe all he likes to tell them about the money he has made and is making, and will not only give him credit, but will help him to get credit from others. The failure of Moses Wetstein & Co, cap manufacturers, Montreal, is one that is exciting much present comment, especially among the unfortunate creditors. Mr. W came to Canada only a few years ago, a complete stranger, but soon worked up a very fair trade, showing signs of prosperity, and recently claiming a surplus of $10,000 or over. Yet he now shows a deficiency of $8,189, upon liabilities of $16,016, and the assets returned are likely to realize much below the figures put on them The larger proportion of bills receivable, for example, are said to be due by a relative who has been for some time out of the country, and three fourths of the book accounts are classed as bad and doubtful. Mr W was very closely questioned at the meeting of creditors, but nothing very satisfactory was elicited in the way of explanation of the condition of the estate The principal reason assigned for the failure was that the cutter had wasted goods, but this would not explain a deficiency of $18,000 and over

DRONSFIELD'S PATENT CARD MOUNTING MACHINE.

The Card Mounter is fixed on the card framing in front of cylinder or doffer *F*, as shown on the engraving. The machine consists of the bed *K*, on which the carriage *H* slides, worked by the screw and chain pulley *L*, or by the handle *M*. To this carriage is fitted a cone drum in three divisions, with curved plate *E*, guiding trough *D*, and tension lever with indicator.



The double-purchase jack *U* is fixed on the cylinder, or doffer shaft, and is secured thereto by a screw and die which increases its hold on the shaft as the tension on the card fillet is increased; it is fitted with chain and change wheels for working the machine, which is actuated by the handle *R*. The rest and tool *X* is used for turning-up wood rollers or cylinders, and is fixed on the bed *K* in place of the card tension apparatus.



The card when being mounted is taken from the skip and passed through the trough *D* to the drum *A*, around which it passes over the three divisions to the tension lever and on to the cylinder *F*, the tension being regulated by the screw on the weight in the trough *D*, or by the brake on the drum shaft, and the card is mounted by turning the handle *R*. The tension arrangement is as follows: The drum which revolves as the cards passes over it has three divisions; the first is 6½ inches diameter, the second 7 inches diameter, and the third 7½ inches diamster. The largest diameter is covered with leather, so that this portion of the drum and the card revolve together: and as it requires a greater length of card to cover this surface than it takes to cover the two smaller divisions, the card is drawn over these at a greater speed than the revolution of their surfaces. The resistance between the card and the drum gives considerable tension to the card fillet, which can be regulated with the greatest nicety by the thumb-screw over the trough *D*, or by the brake on the drum shaft, the tension so obtained being indicated by the finger on the dial-plate, which is figured to show the amount of tension put on the card fillet.

In using the machine it is essential that the carriage should slide along the bed at a speed corresponding to the width of the card fillet, and this is accomplished by a change wheel, the calculation of which is that one tooth gives $\frac{1}{8}$-inch traverse of the carriage for one revolution of the cylinder, and therefore the 1-in. card will require 32 teeth, 1½-inch card 48 teeth, 2-inch card 64 teeth on the change wheel. In practice a 49-change wheel is supplied for the 1¼-inch card, and a 66 wheel for the 2-inch card, as the cards are wider than the nominal width and measure $1\frac{13}{16}$-inch and $2\frac{1}{16}$-inch respectively.

BRAKE AND TENSION INDICATOR.

A—The carriage which slides on the bed. *B*—The trough through which the card is guided to the cone drum. *C*—The cone drum, in three divisions, 6-in., 6½-in. and 7-in. diameter respectively. *D*—Screw for regulating the tension which presses on the die with spring cushion. *E*—Brake on cone drum shaft, also for regulating the tension. (*Note*—About 150 lbs. tension may be put on the card with *E* alone, the remainder of the tension required being obtained at *D*.) *F*—The lever over which the card passes from the cone drum to the cylinder. It is mounted to pull against a treble spring, and the tension is indicated by the finger on the figured dial plate *K*—The bed which is bolted to the engine framing, for mounting the cards. Approximate weight for 40" cards—gross, 4 cwt., 1 qr.; net, 3 cwt., 1 qr. For further particulars apply to the patentees and sole makers, Dronsfield Brothers, Limited, Atlas Works, Oldham, Eng.

TEXTILE IMPORTS FROM GREAT BRITAIN.

The following are the sterling values of the textiles imported into Canada from Great Britain for September, 1895, 1896, and the nine months ending September, 1895 and 1896:

	Month of September.		Nine months to September.	
	1895.	1896.	1895.	1896.
Wool	£1,693	£106	£7,019	£6,616
Cotton piece-goods	28,254	26,579	355,419	353,772
Jute piece-goods	9,138	18,598	76,320	119,588
Linen piece-goods	12,564	9,747	116,823	117,811
Silk, lace	471	248	20,273	6,900
" articles partly of	2,661	2,482	30,887	26,617
Woolen fabrics	25,593	21,682	197,209	230,671
Worsted fabrics	46,067	36,099	447,672	447,971
Carpets	13,747	11,636	145,885	138,668
Apparel and slops	45,164	53,510	283,886	286,776
Haberdashery	16,535	20,310	123,398	136,734

TURKESTAN sends between 40,000 and 50,000 tons of cotton annually to Russia, and the cultivation is increasing to such an extent that it is hoped that the figures will be quadrupled in ten years, and then Russia will be independent of the Western market. This is her undoubted object, and with that end in view the duty on American cotton entering Russia was raised in December, 1894, from 1 gold r. 40c. to 2 gold r. 10c per pood. Persian cotton, on the other hand, is admitted on a payment of 5 per cent. ad valorem. —*Consular Report.*

Foreign Textile Centres

MANCHESTER.—Although business in the cotton trade is the subject of much complaint in various quarters, good orders are occasionally given. For instance, 120,000 pieces of jaconets were placed in a single line, which is not bad even at the best of times. Members of the Exchange are, however, to be found advocating a short-time policy, and condemning the system which, as they say, places a manufacturer at the mercy of associations of brokers and operatives, and compels him to run his mill at a loss. These pessimists ask for an extension of the powers of the Employers' Federation, to include the control of production and the fixing of minimum prices. It is difficult to imagine a "hard-headed" Lancashire man (to apply a description frequently employed) advocating such a childish scheme as that contained in the second portion of the foregoing proposition. No federation that ever was or ever will be formed in such a vast industry as that of cotton will be able to enforce a rule for the fixing of a minimum price either for yarns or cloth. Another bright idea seriously brought forward this week is the formation of a strong federation ready to unite to undersell anyone starting in the trade without the consent of its members. There has been more enquiry for yarns from India, but the home trade demand is quiet. Notwithstanding the competition of Holland, Glasgow yarns were kept fairly busy this year up to May with orders from the East. Since then the demand from India has been very poor, and in the case of many contracts, both for yarn and cloth, where delivery has not been actually up to date, cancels have been frequent. This shows the poor condition of Indian business. We are buying some yarns, such as those used for grandrills, from Holland, on account of the cheap dyeing in the pauper settlements there. Flannelettes are exported from Holland, Germany and Switzerland. Certain foreign yarns spun from waste cotton are being used to a fair extent in East and North-East Lancashire for the weaving of flannelettes and fancy trouserings. In Liverpool the competition of the canal has produced a feeling of panic in many quarters The Liverpool papers themselves afford the best proofs as to the accuracy of this statement. Schemes of the most impracticable character have been brought forward in the sister city to oppose the influence of the canal. One of them is for the provision of a service of motor cars to Manchester. The whole position is summarized in the statement that whatever Liverpool can do now to cheapen carriage, Manchester also can accomplish. As to railway rates, any reduction from Liverpool must benefit Manchester, which can claim from the railway commissioners, in case of discrimination, the advantages of her geographical position. Some choice new styles are being brought out in printed textiles. Those intended for hangings, etc., are at present the ones most in favor, and therefore the ones most experimented upon Some of the latest have large damask designs mostly developed in the outline style. Other good patterns in these goods are developed in as many as ten or twelve colors, and the effect is very rich. One style which was most noticeable in the range of a large color printer here consisted of a bordering damask, the border pattern being in imitation of lace and the centre an all-over brocaded effect. The figure was printed in a very fine opaque white. The grounds are mostly of a darkish brown or red—colors which are generally in demand at this period of the year. For cretonne printing the cloths most in demand are rough oatmeal effects and fancy diagonals with crepe or other fancy armure intermixed. Some are in striped styles with floral designs upon crammed satin in one stripe contrasting with a fancy armure in the other stripe. Printed curtain fabrics are also being produced in increased quantity. Mostly these goods are of comparatively low quality—about 14x16 threads per quarter inch of 30's to 40's yarn. The borders are in stripes of leno or lappet effects, and extend to about 14 inches, while the middle is woven plain and printed upon with large damasse designs.

OLDHAM. — Mules and carding machinery continue to be replaced at one or other of the mills in the town. About a dozen spinning companies are taking and as the returns are considered barometers of the trade to some degree, they are being looked forward to with a good deal of interest. The carding and spinning machinery in the Moss Mill, Higginshaw, has been sold out, and the premises, it is stated, have been taken over by a firm of machinists. This change will mean more cotton operatives thrown on the streets. The new list of wages and regulations to govern the twining branch of the cotton trade is about completed. The representatives of the operatives and the employers have agreed upon all the points in the list, and the one now remaining for settlement is what is known as the quick-speed clause. When the list is duly endorsed it is anticipated it will become recognized throughout the Lancashire districts. It is understood to be the first list arranged for the twining trade From statements recently published, it would appear that the council of the Oldham Operative Spinners' Association have gone as far as they can in the negotiations with the Employers' Association, *i.e.*, the fine counts question. It will be remembered that the original proposal of the operatives was for a 10 per cent. advance when spinning 60's counts and upwards. A rather lengthy correspondence has since taken place between the officials of the two associations on the subject. The operatives, on the one hand, do not see why their demand should not be complied with, while the employers, on the other, see many objections and injustices both to operatives and employers were the terms conceded. In fact, the employers wish to extend the proposals of the operatives to other counts, so that it will work more equitably to all concerned—at least, that is their contention. Anyway, it now seems that the council of the operative spinners are about to submit a statement of the whole case to the officials in the branches connected with the association, and afterwards they will convene a meeting to discuss the situation. We presume that the members of the council in their future action will be much guided by the opinions there expressed. It may be noted that the instructions to the council by the members were very specific—namely, 10 per cent. advance Whether there will be any receding from this position remains to be seen

LEEDS.—The clothing trade continues in a healthy condition, and the factories are well employed, especially those turning out overcoats and waterproof garments. The reports from the country districts continue satisfactory, and the improved state of the iron districts is helping business from those districts a good deal. Business in the heavy woolen districts is certainly no worse, as there is a good general demand for fancy cloths and serges, and a few small orders have been received from the United States More repeats are coming to hand for Yorkshire flannels, and given some cold sharp weather, the present season would probably turn out to be one of the most satisfactory seasons that flannel makers have had for some years.

HUDDERSFIELD.—There has been little improvement in trade either home or foreign. A few repeat orders have come in for overcoatings and winter suitings of fine and medium qualities The spring trade for all markets is in a backward state, and the outlook is not promising. The most difficult markets now are the United States and Eastern Europe, the passing disturbances in those quarters rendering business most unsatisfactory. The prevalent slackness in the warehouses is reflected in the factories, the falling off of orders affecting both manufacturers and spinners, many of whom are unable to find full work for their employees The wool trade is only moderate, but there has been no change in prices

BRADFORD —The general tone of the Bradford market recently has been quiet, and there has been a considerable falling off in the amount of business in all departments of the raw material market There has, however, been no retrogression, and prices have not given way in the slightest The situation can only be explained by the supposition that consumers, having recently purchased very largely, are now prepared to await the course of events before involving themselves in further transactions. Fine wools and tops are in some cases rather worse to buy, and as a good deal of the stocks were acquired at rates higher than those of to-day, holders are not as a rule inclined to push business In the coarser kinds

of crossbreds there is also less actual business, but rates are exceedingly firm When a month or two since the commercial depression in the United States was at its worst, manufacturers there attempted to unload some of the American grown wool on to the English market, and in order to accomplish this end they supplied Bradford wool merchants with sample bales of wools for which there was just then no outlet in the United States The value of these samples was tested, and the result was considered satisfactory Some considerable purchases of bulk ensued, but in the cases, the quality of the bulk was altogether inferior to the samples In one case an expert said that the inferiority was fully 25 per cent. As this wool was paid for in the States, redress is only to be obtained through the American courts, towards which institutions Bradford traders hold the greatest aversion. No buyers are more exacting than Americans as to the exact and perfect delivery of goods purchased in Bradford. There is not much new business in any classes of English wool, either in pure lustre or in the wools of a non-lustrous character, but the recent firmer prices appear to be fully established. In the yarn trade, business is to some extent in a state of suspension, as users on the Continent are not inclined to follow this market any further upward, and the export merchants have contracted for sufficient yarn to cover their wants for some little time. Manufacturers in the home market have all speculated to some extent recently, and spinners are therefore, as a rule, much better supplied with orders, and are very firm in their quotations. The completion of order patterns of spring goods is now occupying the attention of makers of fancy goods, but no striking novelties in dress goods have been brought out Most of the new styles for spring are in bright effects, both as to colors and fabric, especially where the goods are intended for indoor wear, and even the most fashionable outdoor costume cloths have a suspicion of brightness, either in the shape of mixed tints or fine stripes. Plain mohair fabrics have not as yet attracted much attention, but the demand was increasing for these goods in creams and other evening wear shades. Both for America and the very best class home trade expensive black fabrics of the crepon family are again being bought.

HALIFAX.—The following is the trade report of the Halifax Chamber of Commerce for October. Wool—The market during the last month has been of a more cheerful character, and more business has been done. In strong wools the tendency of prices has been rather against buyers Worsted Yarns—Some spinners have found an increased demand for their productions during the month, but others less fortunate find instructions coming to hand rather slowly Prices are about steady, but very low. Woolens—A better demand is apparent in all classes, but prices keep low. Cotton Yarns—There has been an extremely quiet month in single bundle yarns, and the transactions are of very limited dimensions. Twofolds (in 42s more especially) spinners are pressing for orders. Warps for Yorkshire are quiet, but steady. The various branches of fustian weaving and the ready-made clothing departments about Hebden Bridge are well employed, and production in the latter is steadily increasing Spun silk—There has been some improvement during the month in the shape of more inquiry, and prices of raw material are quoted higher Carpets—Looms have been much better employed this month. Pieces—Manufacturers have received more orders during the month, and there is a better tone. The American trade is undoubtedly looking up, and more machinery is occupied on all round orders.

KIDDERMINSTER.—Carpet orders have not come to hand yet in any quantity, but the reports of travelers now on their journeys have had the effect of strengthening the belief that the coming season will be a busy one. Buyers appear to recognize that the various makes of carpet, and the designs and colorings are ahead of anything sent out from Kidderminster for some years past. Spinners of carpet yarns are getting anxious about their prices, and in some cases quotations are withdrawn. Some few large orders for woolen and worsted have been placed, both by contract and for prompt delivery

NOTTINGHAM —Certain departments of the lace trade are enjoying a very brisk business. Cotton millinery laces of the fancy order are not, however, among these. After an unusually long run there has come a considerable falling off in the demand for these goods; and though there is no actual dullness in this branch there is anything but the healthy and lively movement prevailing now which was noticeable a short time back. Some manufacturers are doing well, but they are few and far between, and the number of hands on short time, and even out of work altogether, in the factories and warehouses, is an eloquent but unsatisfactory testimony to the general state of business The best that can be said for such activity as there is in the fancy cotton millinery department is that it is exceedingly fitful. Of all the individual articles, Valenciennes in the various widths and qualities are selling best, and after them, perhaps, rank Irish guipures and combination laces There are some good orders for linen torchons and Maltese. For Oriental laces, too, there is a considerable inquiry from what may be called the most fashionable markets; but the home output of this commodity is seriously hampered by the heavy stocks of foreign goods now on the market. There is less than an average business doing in crochet. American and warp laces and the heavy goods departments are suffering by reason of the slackness of the demand which, under normal circumstances, is rather brisk at this season of the year The branches that are flourishing are those concerned with bobbinets, cotton tulles, mosquito nets and silk tulles. But the satisfaction on this score is not unalloyed. Apart from the foreign goods that are flooding even Nottingham, large quantities of these goods are coming from Derby and the West of England. Yet the local machinery producing plain goods is also well employed with orders in arrear. The goods are partly required for home millinery purposes, but principally for export for embroidery. Manufacturers of curtains and window-shades, though by no means fully employed, have booked orders to a fair extent for future delivery in the home trade and for export. As with plain goods, so with curtains. Large quantities are supplied to the town by Derbyshire and Scotland. It is unfortunate for Nottingham that the branches of the trade showing most activity are those largely drawing their supplies from a distance Silk laces and nets have been the object of some enquiry, and chenille and other falls and veilings have been rather more in demand. The supply, however, is much above the demand and there is much unhealthy competition. There is inquiry for certain specialties of frillings and ruchings for the neck, as well as for caps, aprons, collarettes and other fancy goods.

LEICESTER.—The Leicester hosiery industry is much brisker, and there is pressure for the delivery of all heavy fabrics in completion of the season's orders. Choice fabrics of lamb's wool for underwear are taken very freely, and all warm underclothing goods sell in larger quantities for home markets, while the export orders are of good extent. Football jerseys, ladies' golf jerseys and gloves are cleared out as fast as produced. Manchester distributors say that the hosiery trade has been much brisker of late, warm woolen varieties having had a good run. Local hosiery manufacturing appears to be at rather a low ebb, although at one time the prospects of establishing the industry on a large scale were freely discussed. Much of the output consists of flannelette underclothing, now used largely for ladies' wear.

SOUTH OF SCOTLAND.—The tone of the Glasgow wool market is decidedly more cheerful. Inquiries from England appear to indicate that larger supplies will be wanted before long, crossbreds being specially in request. Some very large orders have been filled for the United States for black-faced, which were made contingent upon the success of McKinley in the Presidential contest. The immediate sale is moderate, and prices are steady. The Scotch manufacturers have in some cases only indifferent employment.

BELFAST.—Firmness characterizes this market, and the turnover tends to increase. Prices are fully supported all over. Yarns continue to be in fairly strong demand, and manufacturers have booked some considerable orders for cloth, showing more of a desire to operate. Prices are nominally unaltered, but, if anything, are firmer. Brown goods are selling with a tolerable amount of freedom, the inquiry for tow goods, 38-inch power looms and cloth for dyeing being somewhat stronger. Damasks and handkerchiefs

are selling a shade better. Bordered cambric makes of the latter are moderately brisk. The home demand for finished goods is steadily growing.

LYONS.—A number of buyers have visited the Lyons market and are still there, the Parisian contingent being in force, but the business resulting is far from being proportionate with the numerical strength of the visitors, who show so much uncertainty as to what they should order for spring as to give manufacturers no clew as to what is likely to be good. Outside of the printed foulards and pongees, plain and fancy gauzes and grenadines, and the favorite muslin, there seems to be no article on which buyers can be tempted to give a favorable opinion, even without backing it by actual orders. It is therefore likely that for want of a strong successor taffeta may be allowed to linger for another season, and to partially repeat its success of the past, but this is by no means certain, and the probabilities are more against than in favor of it. For ready delivery manufacturers have been more successful, and the buyers have made their presence felt. For winter consumption the success of wool and silk mixtures seems to be assured, and buyers have operated rather freely in them. Muslin, crepe lisse, etc., have been ordered, and there is enough work on hand in these to keep the looms busy for a few months to come. Piece-dyed linings have shown activity, and on serges and satin the looms are well engaged. Orders are coming in for the better qualities of umbrella silks. While little satisfaction is found in the business with America, a fair demand is reported for the London market. Ribbons, and especially velvet ribbons, are in fair demand. The velvet market has been rather active, and a good consumption in Paris has encouraged manufacturers in their expectations for the future.

ZURICH.—The silk goods market has not been very active. Some buyers have been here, but their operations have had the restricted characteristics due to actual requirements. Spring order business, which should already be in full bloom, has hardly given any satisfactory results as yet, and American business, which usually helps to enliven the market at this time, is almost entirely absent. With Great Britain, however, business has been fair, but the London market seems to have been in the past two seasons the dumping ground of the overproduction of the silk industries of the Continent, and has taken enough goods to give it more than its share. For this reason prices are hard to get. The Zurich industry, being more essentially a mechanical industry and more devoted to the production of the cheaper staples than of high-class fancies, has to rely for its success on steady and continuous production. This naturally leads to overproduction, as has been the case this year, when the demand was not up to the supply, and the surplus has had to be marketed as best it could, as America could not be relied upon to take its usual share. A fair demand exists for black taffetas and satins. Colored merveilleux and surahs find buyers. For want of anything better to take its place it is not improbable that taffeta may again play an important part in Spring consumption.

CREFELD.—The development of fall demand is unsatisfactory, and it seems as if the reassortment demand were going to cease after having barely commenced. The reason for this slowness of demand is to be found in the unfavorable weather which has retarded consumption of fall goods throughout Germany. Wholesale houses as well as manufacturers are disappointed at the meagreness of the result, which even for linings has been poorer than usual. While business with the distributing trade has not been heavy, the demand from the cloak trade has not been much better. Cloakmakers would usually at this time be making reassortments for the later fall trade; but as they have sold little so far, the need is not urgent. The sale of novelties in dress and trimming silks is slow, and sellers have to rely on staples to keep up a fair demand. But prices of staples are not sufficiently high to leave much of a margin to the sellers. While the Berlin cloakmakers are purchasing little, those in the provinces are also buying sparingly; general conditions having been unfavorable to a good sale. This made the placing of supplementary orders almost impossible, and has deprived the market of an outlet on which it had been counting. Under these circumstances the conditions of employment in the weaving industry can hardly be expected to have improved. When stock goods are hard to move the placing of re-orders for late fall delivery is out of the question. This unwillingness to operate has extended also to the business for spring, which is also interfered with by the uncertainty of fashion, so that very little has been done for next season. The dress-silk branch has had a poor year in 1896, and has presented a strong contrast to the good times it had in 1894. In tie silks there is a slight improvement and orders are coming more freely. Umbrella silks continue good. Ribbons are quiet. Velvets are selling fairly in plain goods and in novelties, but the industry is not very busy.

CHEMNITZ.—A decided change has come over the hosiery market during the last two weeks. Orders have been coming in quite frequently and manufacturers have plenty of work now to keep their factories running. Then, too, the advance in prices has come which was predicted six weeks ago. In the staple numbers of plain hosiery an advance has been asked of from 20 to 40 pfennigs per dozen, and manufacturers refuse orders at the prices readily accepted a month ago. These higher prices are not only going to stay, but the market is already showing an upward tendency, and those buyers who have not placed their orders will undoubtedly do well to make their selections without further delay, since wages will assuredly go still higher. This season those houses that took the risk of buying early—in July or August—own their goods at a figure which is considerably below present values. In ladies' hosiery the 40-gauge goods are the most desirable. Nearly all better grades are bought this season in two-thread qualities, and even in medium grades two-thread goods are shown to a considerable extent As the wearing capacity of such goods is considerably greater than that of single-thread goods, this change is a great advantage to the consumer. Coarse-gauge goods are very little in demand for next spring. Black will again be the best-selling color for the coming season, but tans are also bought in fair quantities. As to the shades selected there is quite a difference, for while some houses have chosen rather light tans, others have taken only medium and dark bronzes, with no light shades at all. The safest way is to take two dark and one light color, as almost all buyers have done. Slates are little called for, and for other colors there is no demand. Fancy hosiery is selling well, and a number of importers have ordered a series of patterns at the various prices. Misses' ribbed hose sell very well in fine gauges with double or spliced knee, and often with double soles. In gloves trade is very quiet, orders for spring not being plentiful. Silk gloves are bought very little in this market nowadays, and taffetas and Berlins are slow Several inquiries have been made for stock lots of cashmere gloves for immediate shipment. Taffetas with buttons are selling fairly well.

PROCESS FOR THE REMOVAL OF MINERAL OIL STAINS.

BY E. SCHWEITZER.*

One of the difficult questions affecting the dyeing trades proposed for solution by the Mulhouse Society has been satisfactorily answered. The society offered a silver medal for the successful research of a practical process permitting mineral oil stains produced in weaving to be removed without sensibly affecting the cost of bleaching the cloth. It was a condition also that the method should be of general application. The mineral fats are composed of hydro-carbides, and it is evident ther fore that neither acids nor alkalies will saponify them. On the other hand, if goods contain these stains, the temperature to which they are submitted in the singeing process will liquefy the fats and make them penetrate so deeply into the fibre that soaping even under pressure will hardly turn them into emulsions These hydro-carbides are soluble in benzine, and therefore this has often been employed in dealing with them. Putting aside the inconvenience and danger which any handling of benzine entails, however, it must be taken into account that this method is not certain; many of the stains resist the action of the benzine; others become less intense, but spread, and others again disappear simply to reappear in the dyeing

As aniline has the property of dissolving many bodies insoluble in the usual solvents, it seemed to us t[illegible] interesting to try it in

* Published in the *Dyer and Calico Printer*

this case In all the trials the pieces were specially marked and the places where spots had been seen in a grey state were indicated by a thread sewn in the selvedge. The trials were made on broad sateens, diagonals, pocketings, etc In the first experiments the spots were impregnated with the ordinary commercial aniline, and the cloth having been thoroughly dried, was submitted to the ordinary processes of bleaching. The pieces treated in this way and subsequently dyed with the most delicate shades on a chrome mordant showed good results. The use of aniline alone, however, whether by steeping the cloth in it or by rinsing it, would cost too much, and therefore we made some experiments with it in solution. Camille Kœchlin found that aniline dissolved easily in soapy water. Making use of his discovery, we tried a solution of six litres of aniline in ninety litres of water, to which were added five litres of olein soap The spotted pieces were run together and before the soapy wash they were rinsed in this solution at about 30° C. A part of the pieces remained two hours before entering the keir The others passed into it immediately The result—after dyeing as in the first experiment—was good in the first case and rather less good in the second, the stains reappearing slightly.

Finally, we tried adding to the lessive (which contained nothing but soap) the necessary quantity of aniline before its introduction into the keir. By using from 12 to 15 litres for 200 pieces very good results were obtained To simplify the introduction of the aniline into the kier and in order to guard the workman from its vapor, we added it by means of a rose just before shutting the lid, the lessive being already in the keir We tried this regularly for more than two months with the goods mentioned above, which in our works always contained very many of these grease spots, and we never had to put them in hand again nor to rebleach the pieces thus treated. The price of aniline, high enough at the present time, raised the cost of bleaching of 200 pieces by from 19 to 23 shillings, which meant a mere fraction of a penny per yard. Dyed pieces stained with mineral oil can also be freed from it by a treatment with soap and aniline, 100 grammes of aniline to one litre of olein soap, for instance, for half an hour at the boil. The pieces should be dyed immediately

In continuing these researches we found that the aniline oil can be advantageously replaced by different products, especially by phenol. With this we obtained as complete a success as with aniline. Crude commercial phenol was used, and for 2,000 kilos. of cotton we used five litres of it at the insignificant cost of 15 centimes (say three half-pence) for 200 kilos of cloth (say four cwt).

For the society, E. Jaquet examined this process He reported that the result might be considered as satisfactory, and that in about 2,000 pieces which he treated by the process he found only a very small number showing grease spots, whereas the same cloths treated by his usual process usually had a large number of stains after dyeing In consequence, the society has presented M. Schweitzer with a silver medal. The process is the subject of a patent

THE USE OF THE COMBER IN COTTON MANUFACTURE.*

BY E. W. ATKINSON

The main uses of the cotton in this country I put in three classes—the thread trade, the hosiery trade, and the dress goods trade. Of course there is a large variety of other uses to which combed yarns are put, such as electric work, manufacture of lace, etc There has also been a large increase in the use of these yarns by the extensive adoption of the bicycle, whose tires are to a great extent made of combed yarns used in conjunction with the rubber. All these may, perhaps, be put in a fourth class.

So far as I know, combers have been used in making cotton thread ever since the latter began to be manufactured in this country on a commercial scale I estimate that in the last twelve years there have been added about 375 combers for this industry in this country, showing quite a heavy increase in the thread spindles. Twelve years ago nearly all thread yarns were combed as they are to-day, so that in the manufacture of thread there has been no perceptible increase in the use of the comber, as compared with the spindles employed.

In the manufacture of hosiery yarns the use of the comber has been enormously increased; in fact, this might be said to be almost a new field for it. Americans are great people for wearing underclothing. Underwear is far more generally worn here than in Europe, especially among the working people. Moreover, we wear less wool and more cotton underwear than others do. This, I suppose, is owing largely to our dry atmosphere. It has thus become the province of our cotton mills spinning hosiery yarns to develop the softest, silkiest, and best hosiery yarn that is possible, without enhancing its cost too much. Their ability to purchase a cotton comber at a moderate price has enabled them to accomplish this and to develop the industry to a very great extent. Twelve years ago, as near as I can estimate, there were about 100 combers working upon hosiery yarns. To-day there are about 600 combers combing these yarns from No. 10's up to No. 50's, and every hosiery yarnmaker is to be congratulated upon the beautiful work he is now producing. This cotton hosiery trade seems to be a peculiarly American institution, whereas when we come to the fine dress goods it is a different matter.

But here again the increased use of the comber has been enormous. Twelve years ago there were not more than one or two mills in all New England weaving combed yarns. To-day there are dozens. I estimate that there are now running about 1,400 combs for the manufacture of yarns for weaving purposes. All this has grown up in the last few years. The increasing use of Egyptian cotton, which is so well adapted to combing, has also had a marked effect. In addition to these reasons we are fast learning the technical points necessary for the successful and profitable manufacture of the finest goods, and we are gradually but surely displacing those of foreign make. I am sure that this will go steadily onward, and that with the increased demand for nice, high-grade work, and the reduced importations, the mission of the comber in this country will steadily develop to still greater proportions. I am sanguine enough to believe that as time goes on we shall comb a far greater proportion of our yarns, even for the medium and coarser fabrics. We mean to prosper, and we mean to have the American public prosper and be able to use and wear the best kind of cotton cloth. This is almost invariably made of combed yarn. There is very little, if any, cloth now made that would not be improved by combing. Combed cotton is rendered stronger, the thread is more elastic, spins better, and weaves better than carded cotton, for the reason that the short staple is taken out, but mainly for the reason that in the early stages of manufacture the fibres are all laid perfectly parallel and subject themselves to the subsequent operations of spinning much more readily. What is needed to assist the comber and make it still more effective is to get rid of the saw gin, to get our cotton properly baled and handled at the start. This will at once relieve our pickers of much of the work they now have to do, will enable us to do much less to the cotton before it goes to the comb, and will materially increase the strength of the yarn and reduce the amount of waste necessary to be taken out in the combing process.

It is this item of waste taken out in the comb that I apprehend prevents many mills from adopting it who might otherwise do so. It is a curious fact that most of our comber waste is exported. This is certainly not as it should be. We ought to be able to learn to utilize this comber waste in a profitable manner. It is a manifest injury to us to sell it to Europe, in order to be made up into superior shoddy goods and cheap hosiery yarns, which are again sold on this market

The manufacture of these yarns affords a large outlet for comber waste. I have always taken a great interest in this matter, and have on several occasions investigated the methods by which this yarn is manufactured, but for some reason or other it has been very difficult to interest our American manufacturers in this class of work. If we could eliminate the waste question—that is, sell it or use it at a price equal to that of a strict good middling cotton—then I feel confident that every pound of yarn spun to 60's or upward would be combed, for the reason that the labor, cost of comb-

* Lecture before the New England Cotton Manufacturers' Association.

ing and the interest and depreciation in combing plant, would be more than compensated for by the subsequent saving in cost of putting the material through the rovers, jacks, spinning and weaving The goods would not only be made more cheaply, but would also be far superior. I am also persuaded that any manufacturer making carded goods to-day out of 1¼-in. staple cotton will make money by putting in combers and using 1⅛-in. staple cotton.

The maximum weight of cotton manufactured in this country in 1892 was in round figures 1,572,000,000 lbs. Last year it was 52,000,000 lbs. less, but we imported and used 42,000,000 lbs. of Egyptian cotton, so that we used within 10,000,000 lbs. of the maximum amount ever used, in spite of the hard times. Taking 3,900 combers at an average product of 300 lbs. per week, or 15,600 lbs. each per year, there were combed 60,840,000 lbs., or about four per cent. of the total amount used.

LITERARY NOTES.

The Art of Knitting, Ancient and Modern, by Geo F Sturgess, published by the Co.-Op. Knitting Machinists, Leicester Price, 2s. 6d. This novel addition to the literature of the trade discloses in a concise form the great change that has taken place within the last half century between the old and slow method and the new and rapid method of producing hand-knit seamless hosiery; whereas the old speed was 50 stitches per minute, the new speed is 50,000 stitches per minute Upon this fact the writer has put much weight. The book is certainly artistic in design of cover; on the one side of the picture are represented the ancient hand-knitters, by an English, Irish and Scotch girl, each performing a part of knitting symbolic of their country; on the opposite side is to be seen a modern drawing-room ornamented by a useful ornament, the knitter, which is being manipulated by a child with such facility that the visitors are amazed at this modern achievement of mechanical skill. The inside of the book is very practical, both in instruction and diagrams; the reading is marked by marginal head notes, and from the index any point can be immediately touched upon. This makes it a book of reference which should be in the hands of every knitter of seamless hosiery, whether they be of the old school or the new; it is indeed more to them than an instruction book.

The October *Business*, published by the J. S Robertson Co., Toronto, is an anniversary number, with an appropriate cover. The department, "Art and Practice of Advertising," consists, largely, of interviews with prominent business firms in Toronto and elsewhere, expressing their opinions on advertising Other articles deal with the preparation of advertisements. Portraits of prominent business men and advertisers appear, while the editorials discuss current topics from the business standpoint.

The Canadian Advertising Agency, 26 King street east, Toronto, has published a booklet, "Canadian Magazines and Society Papers." We believe this is the first work that has ever been published in Canada bearing on this particular line of papers

"The Statistical Year-Book of Canada for 1895," compiled under the direction of the Dominion statistician, George Johnson, has been issued, and forms a volume of 1,007 pages The work shows an enormous amount of patient and careful research, and is not surpassed by any similar work in the world under Government auspices. In the editions of the last three years the casual reader would fail to see in what points the year-book could be improved on, and yet Mr. Johnson seems to bring out some new features of value each year. Among the special subjects treated of in the present volume are: A summary of the results of the last census of Canada, comprising 100 pages of tabular matter, with a sketch of the history of the census of Canada; a description of Newfoundland, with statistics; a digest of treaties made between Great Britain and other countries, in which the interests of Canada are affected, and a history of the Confederation movement The idea of British American confederation really antedates the American Revolution, having been first propounded by Sir Francis Nicholson in 1690. Although it was spoken of by Pownall, Hutchinson and Franklin in pre-revolution times, Wm. Smith is termed the "grandfather" of the confederation idea, but he was banished by the revolutionists for his loyalty to British connection in the plan he proposed, and the next to outline plans were Col. Morse, in 1784, and R J Uniacke in the N. S. legislature in 1800 With regard to the census, it is interesting to note that the first "numbering of the people" in Canada took place as long ago as 1665, a little more than half a century after Champlain had founded Quebec.

A story of the time of Shakespeare, written by John Bennett, will be the leading serial for the new volume of *St Nicholas*. It is called "Master Skylark," and will deal with the romantic events of the Elizabethan age. The great dramatist figures as one of the leading characters, although the hero and heroine are a boy and a girl. Another serial, "The Last Three Soldiers," by William H. Shelton, has a novel plot. It tells of three Union soldiers who became veritable castaways in the Confederacy. Both stories will begin in the November *St Nicholas*.

Dr. S. Weir Mitchell has for many months been gathering material for his romance, "Hugh Wynne, Free Quaker," which is to be the leading serial of *The Century* during the coming year The novel is a story of the Revolutionary War and of Philadelphia society during the period from 1753 to 1783 The Historical Society of Philadelphia gave Dr. Mitchell free access to its great collection of family letters, deposited in its fire-proof rooms by nearly all the older Philadelphia families—the Shippens, McKeans, Logans, etc Among these family archives, with their intimate revelations, and in old gazettes, Dr. Mitchell found much of his material. He also visited and studied all the localities of his story except Yorktown

We shall give an extended review of the "Dictionary of the Coal Tar Colors," by Geo H. Hurst, F C.S (Heywood & Co, Ltd., London), in our next issue

Textile Design

Weaves Figs 1, 2 and 3 are granites, constructed in their foundation out of the common 18-harness satin-weave.

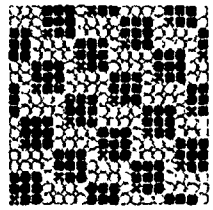


Fig. 1.

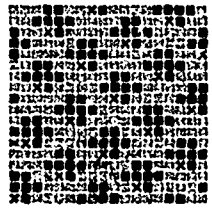


Fig. 2.

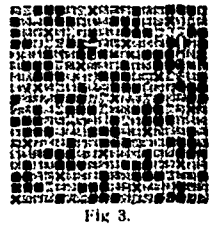


Fig 3.

Fig. 1 is produced by adding eight additional points of interlacing to the original spot.

Figs. 2 and 3 are obtained by adding (regular) seven additional points of interlacing to the original spot (indicated by ⁎) —*From E. A Possett's "New Technology of Textile Design"*

ELECTRICAL FIXATION OF DYES.

The following interesting account of the application of the electrical current to textile processes appeared in a recent issue of the *Textile Manufacture*, Manchester:—

Amongst the successful applications of electricity in industrial operations, that relating to the fixation of dyes in cotton, wool, silk, and other fabrics is the latest An American corporation has improved upon one or two old processes, and fixes the dyes on the fabrics by the use of metals and a current of electricity derived either from a battery or a dynamo

It is well known that natural dyestuffs, such as logwood, madder, fustic, hypernic, etc., have to be treated with a mordant to fix them upon the goods subjected to the dyeing process The action of the mordant is to form insoluble "lakes," as they are called, in the goods, thus leaving them dyed at those portions where the mordant and dye have formed such insoluble "lakes" The process, of which we give particulars, relates to the fixing of that class of dyes in which the coloring principle is in solution in the liquid

to which the cloth is subjected, and which coloring principle requires a mordant to fix the same in the goods. Such colors are fixed by subjecting the goods to a current of electricity after they have been run through the solution containing the coloring principle, the goods being between a metal plate or roller on the positive side, and having on the other or negative side a conductor, which may be of the same metal or some other metal, or may be a carbon plate or roller The metal must be connected with the positive current—viz , that current which would emanate from the negative element of the battery, or which would be the positive current coming from a dynamo. The goods are first saturated with the solution containing the dye, and are then placed between the metal plate or roller located on the positive side of the goods, and a suitable conductor is then placed on the other or negative side The current is then passed through the goods, and the water in or on the fibres is decomposed and oxygen is liberated on the positive plate or roller, and hydrogen on the conductor on the negative side. The nascent oxygen thus liberated forms an oxide of the metal on the positive side, and this oxide enters into chemical combination with the coloring principle contained in the goods, thus fixing the color as though a mordant had been employed in the old way

With different metals different colors or shades can be produced, and different degrees of color can be obtained by varying the concentration of the dye liquid and by the length of time the goods are treated. Thus, if logwood is employed in a dilute state, and a tin plate or roller be employed on the positive side, the goods where the current acts on them will be turned light blue, a more concentrated solution of the dyeing solution will turn them a darker blue, and still darker with a greater concentration; and so on till the greatest concentration is reached, which gives the darkest color. Of course the metallic plate or roller on the positive side must be insulated from the conductor—which may be carbon or the like—on the negative side, the goods being treated serving to separate the plates.

As to the amount of current used, this will depend upon the thickness of the goods, the size of the machine, and the rapidity with which the operation is to be performed. If rapidly-rotating pressure rollers are used, the current must have a higher electromotive force, and be greater in quantity than if more slowly-moving rollers or less pressure were used. It is impossible to state the proper electromotive force and quantity of current to be used in all cases; each specific material, the thickness of the material, and the dye employed after the required quantity and force of current necessary to effect the fixing of the color. The current strength and quantity are also altered by the pressure between the metal used and the conductor on the negative side; the greater the pressure, the less the current, and *vice versa*, if the pressure is great, the period of exposure to the current must consequently be greater. So great a pressure should not be employed as to squeeze out all the liquid containing the dyeing principle. Any engraved plates or rollers may be used for this operation The plate or roller on the positive side should have its surface from time to time wiped, in order to remove the excess of oxide; and also arrangements should be made to absorb the coloring liquid running off from the lower roll, if the rolls are used. When rolls are used, the oxide may be wiped off by a wiping arrangement bearing permanently on the surface of the roller connected with the positive current.

The process, it will be seen, differs wholly from the operation described by Goppelsroder, in which he submitted cloth between conducting plates to the action of a current of electricity, the cloth having in it a solution of aniline salt and the other materials necessary for the production of aniline black. The operation in his case consisted in oxidizing the aniline salt by the nascent oxygen liberated by the current, and thus forming the coloring matter in the goods by the operation of the nascent oxygen, as is done in other aniline processes by the oxidation of the aniline with arsenious acid or with nitrobenzole

In this process is produced an oxide of the metal, the oxide being caused to pass into the goods for the purpose of fixing the dyeing material by forming a "lake" in the fibre of the goods, the fixing of the color being wholly different from the operation above described, wherein the material in the solution—viz., the aniline salt—is oxidized by nascent oxygen; besides, the natural dyestuffs which need a mordant are fixed. The process of Goppelsroder produces aniline colors on the goods by the action of nascent oxygen, and from materials which do not contain any coloring principle in the solution. In this process it is absolutely essential that a metal be used on the positive side, while in the Goppelsroder process any conductor—for instance, carbon—can be used on the positive side, as well as a metal, as he merely seeks to liberate nascent oxygen on the goods at the point or place where the aniline salt is to be oxidized; thus he described the use of a carbon pencil.

In the new process carbon cannot be used on the positive side, but a metal must necessarily be used, as the oxide of the metal is the fixing agent for the natural color, the said oxide being carried in the direction of the current from the metallic plate into the fibre. The metals which are best adapted for use on the positive side are aluminum, tin, zinc, lead, copper, iron and brass. Bismuth and antimony do not give good results with logwood, because these metals are not capable of forming desirable salts with the coloring principle. In general, those metals work best which form with the coloring principle colored salts.

From the above it will be seen that the alloys may be used as well as simple metals with beneficial results. The selection of the metal to be used on the positive side will depend upon the natural dye used and the capacity of that dye to form insoluble colored salts with the oxide of the metal; and in this regard the old and well-known mordanting process will indicate the best metal to use with any certain color. In operating on small samples with logwood, where the plates used were between two and three inches in diameter, using tin, zinc, and aluminum plates, a treatment of ten seconds was found to be sufficient to change the yellowish brown of the logwood solution into a rich blue, the current being between 20 and 30 volts, and the goods being held firmly between the plates.

After the goods are thus treated, they must be well dried in contact with ordinary air or other equivalent way. The coloring matter in the untreated portion of the goods, if such exists, may be removed by washing, if desired, during the finishing thereof. If the goods are to have a pattern upon their surface, and are not to be dyed over all portions, the coloring matter may first be printed thereon by rollers in the form of a pattern, and the goods can then be subjected to the action of the current between plain rollers, and the coloring matter will be fixed wherever the same is in the goods. Those portions of the goods where no coloring matter exists are not effected so far as dyeing goes. The goods, after the operation, may be finished as desired. A less satisfactory result may be obtained by first treating the goods between a metal on the positive side and a conductor on the negative side, with a current of electricity when the goods are wet, and then subsequently immersing the goods in the dye liquid. A continuous current, in contradistinction to an alternating current, should be used in carrying out the new process. An alternating current can be used if like metallic rolls are used on both sides of the goods. It is preferred that the dye liquid be fresh, for with fresh liquids the result is a brighter color, the old decoction being more or less oxodized. At times the color will be the brightest on the negative side. With some dyes the continuation of the treatment beyond a certain time reduces the intensity of the color. This is found to be the case with zinc plates and hypernic.

A SALE of low wool, largely carpet wools, occurred in London on November 10th and 11th. The offerings comprised 21,000 bales, principally Russian and Asiatic stock, and the sale opened at an advance. Persian wools were firm at late rates, while Egyptian were neglected. Following are the sales in detail:—Persian, 9,592 bales, 1¼d. to 7½d.; Avassi, 886 bales, 2¼d. to 6¼d.; East India, 275 bales, 1¼d. to 6d.; Georgian, 361 bales, 5¼d. to 7½d.; sundries, 207 bales, 3¼d. to 6¼d.; Thibet, 26 bales, 9d.

SLUBBING FRAMES.

A recent writer in an Indian textile journal, which has been discussing modern mill machinery and proper use to get best results, speaks interestingly on the subject of slubbing frames, and some of his remarks are appended.

The substitution of aluminum for steel for the flyers of preparatory frames should meet with a warm welcome if it be demonstrated that the new metal will stand the wear and tear. One would think that the part which fits on the spindle would require bushing. The extreme lightness of the metal compared with steel, being as it is, 2 6 to 8, combined with its freedom from rust, should go a long way in its favor. At present the price asked by a firm trying to introduce them is almost prohibitive, but the objection of cost may vanish as the demand increases, and the methods of manufacture are simplified. With the adoption of aluminum, the difficulty of arriving at a perfect balance should be greatly reduced, especially if the presser also is made of this metal, or it might be more correct to say that a perfect balance, when the spindle would have such a light load to carry, might not be such an absolute necessity. The presser is, without doubt, the portion of the flyer which causes (since double pressers went out of use) some little trouble as to balancing to most makers, and a great deal to some.

The difficulty arising, as it does, from the use of a single presser, should not be insurmountable; indeed, one or two makers have proved that it is not. By properly proportioning the pressers, for it is here where the secret would seem to lie, they arrive at a practically perfect balance. The baleful influence of an imperfectly balanced flyer cannot easily be over-estimated, ruining, as it does, the spindle in a very short time, and setting up vibration, which is detrimental to the whole machine.

The spiral slit down the hollow leg, introduced by Mason, has been almost universally adopted, as with it the end can be run slacker, without danger of flying out of its place, than it can with the slit running from top to bottom straight. The slot by which the sliver enters the presser-eye, when made horizontal instead of vertical, is much more convenient and handy. If the thread be left out after doffing, it immediately goes to its place on the starting up of the machine. Care should be taken, however, that the point which forms the top part of the slot should have no inclination, for where the frames are made with the bobbin leading, there is a tendency for the sliver to hook on it, and the bobbin is spoiled. A slightly outward turn would take away the possibility of such a thing occurring.

Yarns and slivers should go as near to a straight line from one point to another as the circumstances of the case will admit. This truth is demonstrated over and over again by those whose business is the handling of very fine yarns; hence, the presser below the flyer is much to be preferred to the one over it. In the former, the angle at which the sliver leaves the hollow leg to go towards the presser-eye is very gentle, while that of the "presser above flyer" is most abrupt, something like the letter V. In this connection may be mentioned the necessity of periodically cleaning the slit at the top of the spindles, a duty too often neglected, with the result that the flyers cannot fall in their proper places, and act in such a position quite as injuriously as an unbalanced flyer would.

(To be continued)

ANDREW MURDOCK, of Belwood, Ont., has secured a situation as machinist in A. W. Brodie's mill, Hespeler, Ont.

W. H. NORTHCOTE CANTLIE, second son of James A Cantlie, Montreal, and nephew of Lord Mount-Stephen, has been recently gazetted to the Royal Artillery.

THE International Fibre Chamois Co. of London, Eng., and the Canadian Fibre Chamois Co. of Montreal, are proceeding against F. M. Cowperthwaite, the former manager of the Canadian Fibre Chamois Co., in two actions of $10,000 each for breach of contract with the London company by entering into agreement with Charles Riordan and others to carry on the business known as the Standard Fibre Lining Co. of St. Catharines.

FABRIC ITEMS.

H H Pigeon, dry goods Ottawa has offered 40 cents on the dollar Liabilities, $21,795

The creditors of H. W. Wilson & Co dry goods, Ottawa, have accepted 35 cents on the dollar Liabilities, $11,635

Ald Dupuis, a member of the Montreal city council, and head of the well-known dry goods house of Dupuis & Frere, died Nov 4th, aged 50

Robinson, Little & Co., London, Ont., wholesale dry goods, will build an addition to their warerooms, from plans prepared by McBride & Farncombe, architects.

C W Mowbray, Boston, organizer of the International Journeymen Tailors of America, visited Toronto and other Canadian points recently in the interest of the union.

A first and final dividend has been declared in the matter of Robert Platts, insolvent dry goods dealer in this city. The liabilities amounted to $6,076, and after preferred claims of $393 and assignee's expenses of $339 were paid, $802 remained for creditors, who will receive a fraction over 13 per cent. A poor showing, certainly.

J. Batchelor, dry goods, Leamington, Ont., has assigned to Stapleton Caldecott. Liabilities are in the neighborhood of $17,000. Following are the principal creditors Caldecott & Co., $3,000; Wyld, Grasett & Darling, $3,000, S Greenshields, Son & Co., Montreal, $4,377; G T Glassco, Hamilton, $993, S F McKinnon, Toronto, $824; George Goulding & Co., Toronto, $780.

Several Toronto houses are interested in the failure of H. Collins, dry goods merchant, of Vancouver The insolvent had been endeavoring to obtain an extension, but was compelled to assign to J K Wallace. The assets consist of stock, $20,000; book debts, $1,500, and real estate, $3,000 The liabilities are estimated to be in the neighborhood of $15,000.

J. A. Bradley, Caledon East, Ont., general storekeeper, is in financial difficulties He is accused of defrauding his creditors, some of whom are: W R Brock & Co., $1,448, Eby, Blain & Co., $293, Gold Medal Bed Spring Co., $598; Lailey, Watson & Co., $1,117; Garside & White, $185, R. H Green & Co., $159, John Muldrew & Co., $165; Morlock Bros., Guelph, $130; King Bros., Chesley, $287; Gillespie, Ainsley & Dixon, $202

Returns which have been made by the British Columbia Sealing fleet in Victoria of their season's catch go to show that, with the exception of a couple of vessels, not yet reported, the total catch along the British Columbia coast reached 10,651, as compared with 12,114 last year; along the Japan coast 18,019, as compared with 18,979 last year; along the Copper Island 1,028, as compared with 7,407 last year, and this, with the returns from Behring Sea, brings the total up to 41,281, as compared with 74,124 last year, 94,474 in 1894.

The Ontario Straw Goods Manufacturing Co., of Balmuto st., Toronto, of which Messrs Crean and Hastings were managers, is financially embarrassed. The company's difficulties are due to the protracted illness of Geo H Hastings, whose death occurred recently It is probable an arrangement will be made whereby the business will be resumed and carried on The company has been in existence since 1877 and had a capital stock of $25,000. The trade liabilities of the firm are said to be in the neighborhood of $30,000.

The Dry Goods Section of the Toronto Board of Trade passed the following resolution at a recent meeting "That, as the time for the chief importations of dry goods for the spring trade is during the months of January, February and March, it is the opinion of the Dry Goods Section of the Board of Trade that any reduction in the duties upon dry goods that may be proposed and carried by the Government of the Dominion should not take effect earlier than the 1st day of July, 1897 - any earlier date for reduction of duties would have a disturbing effect upon the business of the country, and work a great injustice not only to importers, but to the retail merchants of the Dominion generally."

Thomas Ligget, carpets, Montreal, has made a demand of assignment on W & J. M Farquhar, carpet dealers Their assets are their stock of carpets and oil cloth in their store, at 354 St. James street, notes and book debts. The liabilities are about $1,600. The largest creditors are Thomas Ligget, $280, John Macdonald & Co., $293, and Estate John Ogilvie, $469

The stock and fixtures of the late firm of John McLean & Co., millinery, Montreal, were sold at auction to Odilon Bastien at 27½ cents on the selling price as inventoried, $100,000. This included the privilege of occupying the premises of the late company until January 1st The goods in bond were sold at 40 cents on the dollar, invoice value, freight paid by the estate. This lot was purchased by Messrs Coburn, Drake and Rea, of Toronto, and the sale amounted to $7,064

The Wholesale Dry Goods Association has submitted a petition to the Montreal Board of Trade praying that any changes which may be made in the Customs tariff may not be put into operation before June 1st next, with a view to "alleviating the uncertainty and uneasiness that now exist, stimulating business to a healthy condition, and giving all classes of trade ample time to prepare for such changes as may be made" Other branches of the Montreal Board of Trade are contemplating similar petitions for the Board to transmit to the Dominion Government.

The many friends of Charles McArthur, late representative of the firm of W. J. McMaster & Co., will be pleased to learn that he has so far recovered from his recent illness as to be able to undertake the journey to the Old Country with his brother John, who came out for him When he left Hamilton station, he was met by friends from Brantford, Toronto and Dungannon, and also many Hamiltonians, who came down to wish them God-speed He was presented with a purse by R. R. Davis, containing $94, contributed by friends, also another containing $50 contributed by the Travellers' Association

J. D. Ivey, of the wholesale millinery firm of J. D. Ivey & Co., of this city, has returned from England, where he met the chief creditors of the house. The following statement was presented, as reported by the *Drapers' Record:* Liabilities to unsecured English creditors, £9,205; American, £1,445; Canadian, £687; Standard Bank, £2,053; bills under discount, £4,928; total, £18,320. Assets Stock in trade, £8,414, sold, with option of redemption, to Mr. Garland, for $4,312; book debts, £3,680, book debts doubtful, £4,638, estimated to realize £205, total, £7,597, thus showing a deficiency of £10,723 The business will be carried on in the future as the Jno D Ivey Co, Ltd.

What can be done in the way of advertising is shown by the following extract from a Cornwall contemporary:—"A C. Akin has in his store a nine days' wonder in the shape of a gramophone, or Berliner Talking Machine, an instrument made on the principle of a phonograph, which renders vocal and musical selections by great celebrities and occasionally a stump speech or a song extolling the excellent qualities of 'Textile Buckskin,' for which it is an advertisement. It has proved quite a drawing card and a very large number have listened to the selections, which are rendered in very natural tones, and can be heard distinctly all over the store."

At a meeting of the Pembroke Board of Trade, held on Nov. 9th, a report of the Committee on Manufactures was adopted. "The committee are of the opinion that a woolen manufactory would be a great advantage to the town and surrounding country, owing to the large quantity of wool exported from here annually which could be utilized and manufactured here, creating a market for wool here We have considered the fact that a good market would be found in the Ottawa district for knitted goods used in the lumber business, and believe that a knitting factory would be the most successful, and recommend that the Board of Trade take steps to bring the matter before the town council with the view of ascertaining to what extent the town would be disposed to encourage such a manufacture.

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.

Harris & Co., Rockwood, Ont., expect to open their mills at an early date.

The cotton mills at Milltown, N.B., are running again after a short shut down.

The woolen mills of the Gillies Mfg. Co, Carleton Place, Ont., are now running full time.

The Brodie Mfg. Co., Hespeler, Ont., is building a large two-story stone storehouse on its mill premises.

Thompson & Co., bobbin manufacturers, Sherbrooke, Que., have resumed work, after being shut down a week.

Jno. Livingstone, of Listowel, Ont., brother of the famous explorer, Dr. Livingstone, will spend the winter in Florida

Horn Bros., Lindsay, Ont., are working up merino wools from Mission City, B.C., in their mills, according to the *Canadian Post.*

The mills of the Dominion Cotton Mills Co., at Cornwall, Ont., were started to run full time Nov. 1st, and will, it is expected, run all winter.

As their mills have been closed down since July, the Yarmouth, N.S., Yarn Mills Co. has applied to the town council for exemption from water rates.

The recent fire in the carbonizer room of the Smith Wool Stock Company, Toronto, caused damages to the extent of $500. This portion of the mill was uninsured.

There was a blaze in the Dominion Cotton Mills at Hochelaga, Montreal, Nov. 5th, in the packing room, and caused about $3,000 damages before it could be controlled.

An employee in Mr. Cluthe's shoddy mill in Doon found five $10 bills in an old coat recently, but his joy was short-lived—they were Confederate bills of date of 1864.—*Berlin Record.*

As a result of the conference with the Ontario Premier, says the Brantford, Ont., *Courier*, it is expected the West Brantford Cordage Works will be in full swing again in a couple of weeks, with the usual 70 hands employed.

Alex. G. Rosamond, of the Rosamond Woolen Co. Almonte, Ont., met with a slight accident recently, as a result of which he is minus the top of one of his fingers, including a piece of the bone, which got caught in a shearing machine.

The manufacturers of Almonte have been seriously handicapped the past month by low water. The Rosamond Woolen Co, D M Fraser, and Wylie & Shaw were obliged to depend almost wholly upon their steam plant for power

The Rosamond Woolen Co., Almonte, Ont, will, it is said, erect an electrical power plant at a point on the Mississippi River about two miles below the mills, where the company owns an extensive water power, and employ the electric energy thus secured as an auxiliary power in running the mills, as the present power is deficient in times of low water.

A serious landslide or stone avalanche occurred recently at Montmorency Falls. The top of the cliff, which rises some 300 feet above the sea level, moved forward by the prolonged action of the rain and tumbled down, crushing the outer covering of the main water-power pipe of the Montmorency cotton mills, and causing extensive damage to the property below.

The following resolution was adopted by the town council of Parrsboro, N.S., at a recent meeting. "Moved by Councillor Copp, and seconded by Councillor Holmes, that the council ask the Local Legislature to pass an Act to authorize this town to exempt any corporation or company who start and carry on a factory of any kind in the town, with a capital of not less than $10,000, from taxation for ten years."

Goderich, Ont., talks of a carpet factory.

The Rosamond Woolen Co., Almonte, Ont., is again running its mills on full time.

The Hawthorne woolen mills, Carleton Place, Ont., are now running full time with almost full staff

Gemmill's Royal Electric Laundry, Guelph, Ont., was damaged to the extent of $700 by fire recently.

The Boston Rubber Co., of Montreal, has been voted a bonus of $50,000 by the municipality of St. Jerome, Que.

John H. Inman, head of the cotton house of Inman, Swan & Co., New York, well-known in the Canadian trade, died Nov. 6th.

A frame dwelling, adjoining the woolen mill of Moorehouse, Dodds & Co., Glen Tay, Ont., and belonging to the firm, was burned recently.

The Armitage Mfg. Company of Toronto will be incorporated with a capital stock of $10,000, to manufacture oil cloths, bookbinders' cloth, etc.

Robert Mercer, of Carleton Place, Ont., has taken the position of boss dyer in the mill at North Vassalboro, Me., of which J. M. Masson is superintendent.

Geo. Ashman, who has held the position of boss dyer in the Gillies woolen mill, Carleton Place, Ont., for some time, has resigned to take a similar position at Cobourg.

It is said that the Granite Mills, of Ste Hyacinthe, Que., F. Boas, proprietor, will be enlarged so as to employ 2,000, instead of 950 as at present. English capital is interested.

Recently, while cleaning a roller in the mule room at the cotton mills, Merritton, Ont., Jack Raycroft was badly cut about the head and face. Had it not been for his presence of mind he might have been killed.

Barnes' cotton batting factory, Georgetown, Ont., was destroyed by fire, October 17th. A Toronto firm loses about $700 on contents. Loss on factory about $1,000; no insurance.

C. L. Higgins, J. J. Westgate, J. Simpson, Montreal; J. Pearson, Toronto, and J. A. Young are the provisional directors of the Boston Rubber Co, Montreal, which will manufacture rubber goods at St. Jerome, Que. Capital, $200,000.

The Hawkesville Flour and Woolen Mills, together with the farm belonging to the estate of the late Robert McCulloch, were purchased at the auction sale by Hugh McCulloch, son of the deceased, who will hereafter carry on the business. Mr. McCulloch is a wide awake and energetic young man, says the *Waterloo Chronicle* in a recent issue, and, possessing as he does a thorough knowledge of the business, his future success is assured.

D. K. McLaren, who has been for many years a member of the J. C. McLaren Belting Co., of Montreal, has started business for himself, and has opened an office at 24 Victoria Square, Montreal. Mr. McLaren has already secured the agency for a number of important and reliable firms in the mill supply trade His long experience in the trade and his wide acquaintance with it should insure success. His two sons are associated with Mr. McLaren in the business.

Talbot *v* Canadian Colored Cotton Mills Company.—Judgment on appeal by defendants from judgment of Street, J., at the trial at Hamilton, refusing to direct a nonsuit. The appellants asked in the alternative for a new trial. The action was brought by Elizabeth Talbot, under the Workmen's Compensation Act, and at common law, to recover $3,000 for injuries sustained by her in defendants' factory, where she was employed as an operative. Defendants contended that the injury was the result of inevitable accident. Appeal dismissed with costs, Burton, J., dissenting

The following is a list of the principal creditors of Alfred Parker, doing business as the New Toronto Wool Stock Co, whose assignment was noted last month Joseph Parker, Batley, Eng., $3,180, Train, Smith & Co., New York and Boston, $1,587, M F. Hope & Co., Detroit, $1,332; Mrs. Wm Morrison, Markham, Ont., $605, Royal Oil Co., $497; Dominion Dyewood and Chemical Co., Toronto, $450. Henry Pullan & Co., Toronto, $397. M Harding & Son, Simcoe, Ont., $286, Clifford Knowles, Georgetown, Ont., $279; W A. Fleming, Montreal, $212; H. W. Petrie, Toronto, $191, Toronto Mill Stock and Metal Co, $168; S Hayley & Sons, Ltd, Cleckheaton, Eng. $172; Wilson & Ingham, Mirfield, Eng., $161; Amedee Burdette, New York, $154, Sheridan Manufacturing Co, Toronto, $110; J R. Hill, Toronto, $106; Sykes & Ainley, Glen Williams, $100; Ontario Bank, $220. The following firms are in for various sums under $100 Dawson Bros., Brampton, Ont., D Cole, Niagara; Rochester & Pittsburgh Coal Co., Buffalo; Tetlow & Sons, Cleckheaton, Eng., Jack & Robertson, Montreal, Biggar, Samuel & Co, Lehigh Valley Coal Co., P Brown, Mimico;

Paul Frind & Co., Rice, Lewis & Sons, M C Pink & Co., Jas Morrison Brass Manufacturing Co., Elliott & Co., John Perkins, and Ontario Lime Co., all of Toronto. The total liabilities to unsecured creditors are about $10,950 The assets are stock in hand, office furniture, balance due from bank, etc., $2,645, and machinery and plant estimated by Mr Parker at $15,000, on which there is a mortgage of $7,300 At a meeting of creditors called by the assignee, George Clay, Yonge street Arcade, on the 26th October, the insolvent made an offer of 35 cents on the $1, payable in three, six, nine and twelve months, dating from 15th October It was stated that Joseph Parker, of Batley, brother of insolvent, had generously agreed to waive his mortgage until the claims of the creditors at the above rate were satisfied The principal creditors agreed to accept the settlement, and meanwhile the business is being carried on in Mrs Parker's name

Some years ago, the citizens of Port Hope, Ont., granted a bonus to a company, now amalgamated with the Consumers' Cordage Co., to start a binder twine factory. According to the agreement the company has been employing a large number of hands, but in July last were forced to shut down The sales for the year up to that time had amounted to only one-half the output, consequently there remained almost a sufficient supply of twine on hand for next year's market A public meeting was held recently at which the making of twine by prison labor was condemned, and a delegation consisting of T D Craig, M.P., Mayor J. W. Quinlan, Dr Powers and Thomas Long, appointed to ask the Provincial Government to at least restrict the output from the Central Prison factory The Premier promised his serious consideration In the meantime, 80 employees anxiously await the outcome, for if no action is taken by the Government along the lines indicated it means no work for them for at least a year.

CHEMICALS AND DYESTUFFS.

Castor oil is very much higher owing to scarcity of seed; lowest price 9 to 10c according to quality. Gambier is advancing again owing to a good demand Sulphate of copper is £1 per ton dearer. The following are current quotations in Montreal —

Bleaching powder	$ 2 00	to	$ 2 10
Bicarb soda	2 25	"	2 35
Sal soda	0 70	"	0 75
Carbolic acid, 1 lb bottles	0 27	"	0 30
Caustic soda, 60°	1 80	"	1 90
Caustic soda, 70°	2 25	"	2 35
Chlorate of potash	0 13	"	0 18
Alum	1 35	"	1 50
Copperas	0 70	"	0 75
Sulphur flour	1 75	"	2 00
Sulphur roll	1 75	"	2 00
Sulphate of copper	4 75	"	5 50
White sugar of lead	0 07	"	0 08
Bich potash	0 10	"	0 11
Sumac, Sicily, per ton	60 00	"	65 00
Soda ash, 48° to 58°	1 25	"	1 50
Chip logwood	2 00	"	2 10
Castor oil	0 09	"	0 10
Cocoanut oil	0 06½	"	0 07