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June 11, 1879.

Mitigation of these fears it may be pointed out that the coldness of the world is not so readily changed from the period when the old slavery systems were founded; that the equitable sentiments to which we have referred have a wider range of operation and influence than former days; that the world would stand for measures to prevent such results. With the newly developed sense of equity in mankind, and the sentiment of dread of disaster, combined with the experience the world has had of such springing from the enslavement of peoples, it may fairly be supposed that a combined influence would be successfully brought to bear to prevent similar results accruing again from the causes that formerly produced them. This being the case, under the most stringent regulations that have been made provision for the adequate punishment of those who broke them, the importation of suitable labour might, we think, be permitted, but not without the institution of a system of inspection analogous to that of our factory systems in this country. With such a system it might be tried, as without the employment of contract labour of this kind it appears to us that the only way for measures to be taken before the large areas of the lands recently bought and now coming under the influences of European civilization can be made to contribute in a degree anything like their power to the benefit of the country. It is shown that Australia, this new continent, is capable of doing great things is unquestionable; its capabilities, if properly utilized, being such as would emmanate this country to a large extent from dependence upon the United States for cotton, wool, and wool. For the last named article it is now and has been for a long time the principal source of our supply, and an abundant supply of labour is only needed to make it the chief and best for the other two.

ITALIAN SHEEP-BREEDING.

Italian sheep-breeding has its principal seat in the provinces of Lombard, the Abruzzi, Apulia, Basilicata, Calabria, and Sardinia. In the other provinces in which sheep-breeding is practiced it is restricted to the mountainous districts. The methods followed are in the main those of the Italian, wool of the second quality. In Venetia, the best variety of Sardinia, is the Marchesi and Umbria breed the best wool, the excellent Vissana wool, which is long, strong, and white. This wool, which as G. H. Elsner of the Tiber, has been adapted for cloth. The rearing of the sheep in covered folds is quite exceptional. In Sardinia and some regions of Sicily the folds remain in the open air throughout the year, exposed to all the weather; and the sheep are of course many variations of race, but only a few are held in high esteem. In Piedmont the biella sheep, which is much valued, in Lombardy the sheep of Bergamo, with wool of the second quality. In Venetia, for instance, there are many types of Sardinia, which are very variable in color, but not only a few are held in high esteem. In Piedmont the biella sheep is the best; in Lombardy the sheep of Bergamo, with wool of the second quality.

The wool of the sheep of Sardinia is of the second quality. In the Northern provinces the best wool are the "gentle," with fine wool; in Apulia and the "Lecce," with long, haughty, but small-haired wool. The wool of the Sicily and Sardinia are of small make, and yield abundance of coarse cloth, wool, in the province of Circeo, that is best adapted for industrial purposes. Good results have been obtained by crossing, especially with merino sheep. To obtain better mutton, rams from the Oxford, Worcestershire, New Kent, and Leicester breeds have been introduced. In order to improve the quality of wool, Rambouillet, Chatillon, and Meissen, Wolfs have been used, especially in the Roman Catholic provinces, and the results of these crossings were in all cases satisfactory. Nevertheless the improvement of the fleece has declined again, and consequently also the demand for good wool has fallen. The breeding of sheep to drop in the prices of the fine wools, and partly because of the growing preference for mutton and beef, so that the breeder finds it advantageous to the quality of their wools. In 1881, the number of sheep in Italy was 3,259,005 head. As far as can be ascertained this decrease has taken place during the last ten years by about one-fifth, so that the sheep at present bred in Italy may be put approximately at about 6,000,000.

VILLAGE INDUSTRIES.

A correspondent of the Manchester Guardian does not share the opinion of some writers that the mechanization of the textile industry has not yet reached the decay, if not disappearance, of many of our village industries, nor that to restore industrial villages is neither advisable nor possible. When in former times the land was more largely cultivated and the sheep and the acreage of individual farms was less than it is to-day, then village industries formed the object of all the benefits of the village community. The weaver was the chief exponent of those industries, but with the gradual extinction of the yeoman and the reduction of the peasantry to a landless class, their industries have been greatly diminished. The invention of improved processes of weaving and the introduction of machinery has undoubtedly worked a certain economic disadvantage to village industries; but this, he considers, does not account for their disappearance, and does not the least explain why they should not in suitable districts be resuscitated or more largely developed. At this moment even, lacemaking is still carried on in certain parts of Devon, Oxfordshire, Bedfordshire, and making that in Northamptonshire and Bedfordshire; boot-making in Northamptonshire and Leicester; lace-making in the counties of York, and in various other districts, as well as in Irish rural districts. These industries are not only profitable, but industrious, though only to a comparatively small extent. In Switzerland silk weaving is carried on in Zürich, Aargau, and other cantons by means of the expensive looms and material which are lent to the peasants by the manufacturers. The same is the case in the machine-made embroidery in the canton of St. Gall Here, however, as also in Appenzell, there is a trade in hand-made embroidery. Straw and horsehair plaiting for hats is also much in vogue in Lucerne, Aargau, and other cantons. In France, wool manufacture is still largely a rural industry, the great majority of the cottagers being engaged in the work. In Normandy and the Nord cotton velvets and plain cotton are extensively made in the villages; and the trade is still largely a domestic industry. Very much the same may be said of Germany; while in Italy the peasant women in almost every district where mutton cannot be provided with silk, or wool, or cloth, or what is, in Russia where village industries are most appreciated and of the most value; and it is not a little curious to find that they grow and develop precisely in those regions where they are already growing up most rapidly. These facts, in the opinion of the correspondent, are sufficient to prove what an intelligent peasantry can do, and to refute the assertion that it is not possible on economic grounds to revive village industries in this country. He believes, therefor, that whilst one result of the Small Holdings Act will be to place small cultivating owners of the soil upon the land, it cannot fail also to materially assist (combined with the spread of technical education) in reviving the rural industrial village. This is, no doubt, a slight point of view, but in supposing that village industries merely for so can hold their own against the highly organized factory work of the towns. In the old times the rural folk turned to the "industrial" part of their calling when the weather was bad or the market failure, and if village industries are to be successfully revived, they can only be maintained as a subsidiary to the more important pursuit of agriculture.

MAITING WEAING IN JAPAN.

The American Government's plans for statistics and commercial information generally is a thing that has been talked of, and the desire of the people's craving for gin lasings, cock-fights, and corpse-revives—names more emphatic than any other thing. This all things in the earth and on the earth come under the Consular len., and the manufacture of floor matting in Japan has not escaped the result. The many interesting notes by the United States Consul at Osaka and Hiogo, from which it appears that the annual exports of matting from Hiogo to the United States are valued at about $1,000 (214 yen—$1,777 cents). Of late years a great improvement has taken place in the manufacture of the higher grades of Japanese matting, both in the quality and pattern. The warp of the best grades is now generally made of hemp cloth or hemp, which greatly adds to the expensiveness and durability of the article. In Japan, as in Great Britain, mat-making seems to be regarded as a very important task for convict labour, and the following note from the superintendent of the Yokohama convict prison, shews the cost of manufacturing a roll of 40 yards of three different qualities of matting in that prison: Best quality—rush, 4000 Oxford (145 lbs.), 60 yen; hemp thread (8 lbs.), 150 yen; dyeing, 130 yen; labour 12.50 yen; total 2,500 yen; second quality—hemp (125 lbs.), 350 yen; cotton thread (6 lbs.), 320 yen; dyeing 70 yen; labour 11.30 yen; total 2,721 yen; third quality—hemp (114 lbs.), 368 yen; cotton thread (6 lbs.), 321 yen; dyeing 50 yen; labour 12.50 yen; total 1,044 yen. In the Hiogo convict prison matting of an inferior grade is manufactured at the rate of 150 yards per day, and the contract with the prison authorities to pay them is for the labour of the convicts only, the materials being supplied by them. Floor matting, designated in the United States as "Chinese mats," are not made of straw, but of a soft rush grown in China and in the provinces of Bizen, Basho, and Bungo, in the south of Japan, where the manufacture of matting is almost entirely carried on.

COTTON SPINNING IN MACEDONIA.

The cotton spinning factories of Macedonia are of comparatively recent origin. Of the two which exist at present at Salonica one has been working for about twelve years, while the other was established only in 1885. It is stated that the former, when it had no competitor, realised profits as high as 30 per cent. Although not reaching that figure now, the two factories are continually increasing their mutual competition, can both point to excellent results. They produce annually about 300,000 bales of yarn, each containing 5 kilogrammes. One-third is consumed in the country, the remainder being exported to Turkey and Greece. The consigns manufactured are from 4½ to 6½, these being most in demand in the district and most suitable for the cotton grown in Macedonia. At Niesaeta, a small
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The importance of Indian competition with Lancashire in cotton spinning cannot be disputed. The more familiar we become with its general condition, details, and future prospects, the better we shall be prepared for eventualities. In this connection, Mr. A. Lancaster, who was formerly a partner at Messrs. Ormrod, Hardcastle, and Company’s mills, Bolton, writes home an interesting letter from India. He is now engaged by the Irish Shianning and Weaving Mill Company, Limited, whose headquarters are Bombay, and he and Mrs. Lancaster are living at Calcutta, which is 1,200 miles from a presidency town. He is thus what is termed "up country." Speaking of the mills of which he has charge, he says:—"Our mill has 18,000 spindles, one-third ring frames, and the remainder mules. The mules are 700 spindles each, and we have four men and a boy to mind one pair—this would scarcely pay in Bolton. The ring frames are all tended by men, one to each frame; our shakers and intermediates do; our drawings are three men to one set, or one to each head, and we have 60 roller cards, and 32 men and boys to work them. There are 244 bobbins, and in the majority of cases one man to each loom. The females are only engaged spinning, and winding. In round numbers we have at present on our books over 20,000 bobbins. These simple facts show one thing that ought to speak with a trumpet voice to Lancashire cotton operators—that if it is in the interest of India an inchoate supply of docile, intelligent, and cheap labour, which is being steadily increasing in volume and disciplined, and disciplined to supereclipse Lancashire operatives in the occupation of supplying the world with yarn and calico. It would be a mistake on their part to assume that the situation, and large numbers of hands are needed to work this machinery, and that they could not work more. They are employed in such numbers that there may always be a fund of trained labour in store to meet any requirements of extension or competition, and this store would at any time enable the employers, if exigency demanded, to reduce present wages 50 per cent. in order to defeat competition, and still not lower the earnings of the workers. The only advantage they have to be allotted each man another head of drawing, another side of intermediate and roving, and another side of these short mules. With a reduction of one-half in wages the Indian situation would still double-man and compared with this country. The same size of a mill in England," says Mr. Lancaster, "would be run with about 100 or 200 people.”

Once upon a time—which is now receding into the far distant past—Lancashire had a large trade with India and Eastern markets in low counts of yarn, spun from Indian and other short-stapled cottons. It went mainly in assorted counts of 8's to 10's and 10's to 24's. To-day, not a bobbins of this yarn is sent to India, nor of other yarns of these counts, except a very few small packets of what is termed "spun down" worst from higher class cottons. Where has the trade gone? Mr. Lancaster answers the question, and in doing so points out several other advantages the Indian competitor possesses over the Lancashire spinner, employer or operator. He says:—

We spin chiefly 30's red yarn, and 56 and 58's warp. We spin even to 57's, but it is rather fine for our cotton. We have over 25,000 spindles per loom, and there are six pressing factories, one of which belongs to my firm. Last season we produced 250,000,000 yards, and

Sir Henry James and his Reward.

We beg to draw the attention of our readers to a report in another column of the speech of Sir Henry James, who lost his life last Saturday afternoon to an assembly of the representatives of the trade-unionists of the cotton trade on the presentation of a letter by his solicitor for an illuminated address. Owing to the holidays we reserve our comments until next week.

ABATEMENT FOR BAD WORK: MORE TRADE-UNION IMPERATIVES.

Surely the conviction must be deepening in the minds of the operatives that the time has arrived when the arrogance of trade-union officials must be firmly resisted. We wonder where the Lancashire cotton trade would have been to-day had no supervision been exercised over the work produced as it came from the hands of the operatives. This supervision in a weaving mill is exercised by the cloth-looker, and the practice is to make an abatement from the contract price for weaving when the weaver has badly performed his or her duty, by carelessness or negligence and the omission to "pull back" any serious fault that may have been woven. The common fault of abatement is made away with warp threads broken down; "floats" caused by broken threads getting caught in the shed, and tying the warp together so that the shuttle goes over instead of between, and the warp is "floated" on the top; "cables" or frets, being short spaces of the warp into which weft has not been put; thick and thin places in the cloth arising from the loom having got out of order; and bad selvages. These are the chief faults, but there are a number of others of less frequent occurrence. Every child weaver who is competent to take charge of two looms knows what they are, and knows also that it is his or her duty to keep the cloth free from them, and that if it be not done they are liable to be "doubted." This word is a contraction of the word "dubbed," and the amount so deducted from a weaver's wages is in no sense a punishment or penalty, which has the element of punishment in it. The weaver is paid a certain sum for the proper performance of the work, and when this is not to the satisfaction of the cloth-looker he estimates the short-comings and deducts a sum of, say, 4d., 3d., or 2d., according to the defective performance of the work. In extreme cases the entire sum the weaver ought to have earned upon the piece is stopped. Now we venture to say from any knowledge of both the practical and commercial side of the question that very rarely indeed is an abatement made from the weaver's wages that is at all adequate to cover the intrinsic damage made in the piece of cloth woven. Were that the case weavers would many a time have to go without wages, which, of course, would render the piece of cloth perfectly unmerchandisable. The trouble about the whole matter is, that weavers, nor their leaders have any knowledge of the commercial side of the question, and as to how the cloth is treated in the Manchester ware-houses when it is delivered to the merchant. A few defective or faulty pieces such as we have described, and for which a few abatements are made, mean in all, are quite sufficient to cause the rejection of a whole delivery, or the cancelling of an order. Either of these are very likely to involve the manufacturer in a loss of anywhere from 5s. to £500. We have known a case in which the loss has been even greater. We cannot stay to explain how this arose; we simply affirm it to be a fact. What then shall we say of the pre- tension of the weavers to have their local trade secretaries called into the weaving mills in order to adjudicate upon their wages. It is made by weavers and whether they shall be subject to abate- ments or not? Yet this is now being put forward, as the following note will show—

CHALLENGING TO START A MILL FOR AN ABATMENT.

A local contemporary has the following—A dispute has arisen between the weavers employed by the Hasbys Spinners and Manufacturing Company, Limited, Sowerby, and the firm and unless some agreement is arrived at a strike will come. The matter in dispute is the practice of fining the operatives when the cloth is damaged. Last week a weaver took a "piece" into the warehouse and it was said he did not hear anything about it until he threw his wages. He then found that his abatement of 1s. 6d. per yard had been made, and he was told that it was because the "piece" was damaged. He objected to the fine being imposed, and the money was restored, but he was discharged. The discriminations were reported to the secretary of the Hasbys and Diener's Weavers' Association (Mr. J. W. Ogden) and he went to the mill to examine the cloth, but the company would not allow him to do so. In consequence of this several meetings of the weavers have been held, and the association has resolved that unless Mr. Ogden is allowed to see the "piece," so that he can decide whether the fine was a legitimate one or not, the weavers shall work without the company's consent. The complaint is not so much about the fine, but it is claimed that it is a very one-sided plan if the company are to decide what is to be done, without having the weavers' representatives an opportunity of examining the "piece" to see if the fine is not too large. On the afternoon last week, Mr. Ogden arrived at the mill, but he was not allowed to see the "piece." A "round note" had been signed by the majority of the weavers in the meantime, together with a weekly notice to leave work, and this Mr. Ogden offered to the representatives of the company. On the ground that the notice was not legal, those in the office refused to accept it, and Mr. Ogden left the place, but also left the sheet bearing the signature in the office. We very greatly doubt the statement made in the above extract that the weaver did not see or hear anything of the defective piece until he received his wages. However, this was the case the cloth-looker was much to blame, and the least he could have done would have been to show the weaver, in order that the weaver might know what for the abatement had been made, and endeavour to avoid it in future. The secretary of the Association had then interfere could have very properly been shown the door. Managers, cloth-lookers, and all classes of intermediaries, should be very careful against the infliction of any wrong upon those subject to their supervision; and while doing this should firmly insist upon the proper per- formance of duty by the production of good work. Any carelessness in the incarceration upon this and the consequent relaxation of care is sure to entail trouble.
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cleared one peck on each, so you see this is no mean place in the cotton trade. We have five ginning factories, so I have seen the cotton grow, ginned, and sent off in bales to China, India, etc. Thanks to the new Act, our mills are stopping on Sundays. Formerly they ran as much as three- or four-eight hours a day on Sundays, all the other days being worked from light to dark, varying from 10 to 14 hours, according to the season.

This is an instructive picture, which we would recommend the operatives of Lancashire and their misleaders to carefully consider. With such competition, what are Lancashire's prospects in the future? Would it be possible for Lancashire employers to do in present conditions in the way of procuring employment for workpeople at prices that will merely return the cost of production, let alone making any provision for themselves and families? As I remark that the stockholders of the Oldham "limiteds" shew such disastrous results? Is it anything to be surprised at that the mills being kept on full-time working are again, at the present cost of production, rapidly filling their own huge volumes with yarns that cannot be sold? We think not. It would be a wonder were it otherwise. A large proportion of the spinning trade has lost its business as we have shown already, and a chain to chain that may remain, with the result that the latter is too much undone to allow of any profit being made. The knowing English employers are transferring their capital to better fields, leaving their interests in the hands of men who have no heart to work them. They are only one of the least of the best and most proficient of Lancashire workers who have gone out into the world to offer and train competitors with their fellow workers at home—which they have done, and they have shown how to do it. Mr. Langdon, the Lancashire merchant, has said:—"Of course, I do not work all these hours. I start with the engine, have three hours allowed, viz., one hour at breakfast, two for dinner, and leave off work about three-quarters of an hour. I do not like to look here as you have at home. I do not know what the unions will do in the end.

He does not know what the trades-unionists will do in the end! What do we. And yet, with such conditions and prospects, the unions, through their leaders, are harassing their employers by every possible means in their power; by extravagant demands; by hounding on the factory inspectors; by large and long Creditors for infractions of the law, committed by themselves; by the procuring of the most tyrannical and self-destructive legislation that can be found upon the statute books, and in the employment, either present or past; and by the destruction of the liberty of the people who see this facts with different eyes, and who, by the aid of more intelligence, correctly conclude that the results of their doings can only be disastrous. Verify whom the gods wish to destroy they first make mad. This is the mental condition to which the leaders of the cotton operative trade belong. They have intrigued both themselves and those that follow them. And—strange thing of all—they have for some time past, in view of the coming general election, been told that the vapidness of this insane state of mind are the axioms of political wisdom! This will last a week or two longer, until thattery has defrauded them of their votes, and professional

politicise have secured a new lease of power.

In the meantime it is highly desirable that all employers should carefully consider the course of conduct that will best conserve their own interests in the matter. I do not mean who is most likely to be-elected in the future, but who is most likely to be elected. The men who are elected individually to the ignorant and idiotic socialism so widely rampant, let them do it in their power to thwart the desires and aspirations of these small-seekers. Other things may safely be left to themselves; if the industrial and commercial interests of the country can be preserved, these will come right in the end.

THE CONDITION OF THE LACE AND HOISERY TRADES.—II.

(From Our Special Commissioner.)

NOTTINGHAM CURTAIN CHEMNZIT.

Few industries in England have had to contend with such fierce foreign competition during the past few years as the lace and hoisery trades of Nottingham. Chemnitz has, perhaps, been the cleverest and strongest rival in the struggle for the world's lace and hoisery market; and in the cotton branch of the trade, we believe we are not far wrong in saying that the Saxons can beat their Anglo-Saxon opponents. This fact is shown by the success of Chemnitz houses in the manufacture of such goods as carpets, amongst others, in the United States. Their dyers have been remarkably successful in cheapening the cost of production and in adding to the attractiveness of their productions, noticeably in the case of fast plackets. A very different matter, as far as the American market is concerned, may be formed by an analysis of official figures. The only statistics we can present bearing upon the question are those respecting our own exports and the imports of the United States. The latter, we believe, consist chiefly of English and German goods. We do not think that any other nations can do much in the American market in cotton for 1858—1859, United States imports of cotton hosiery amounted to $1,227,000, and in 1859—60 to $1,249,000. In 1859, our total exports to all countries were $2,753,300, and in the following year, $395,000, to the large South American and colonial shipments, in addition to the United States trade. But if, for the sake of argument, we admitted that the whole of these goods went to the United States, some other country in 1859 shipped 276,000 worth to the Republic. That country must have been Germany, and Chemnitz would have the lion's share of the trade. It is but obvious that the German States did not receive all its exports. If, however, we put down the quantity they received from us at $300,000 worth, the Continent, which means Germany chiefly, must have exported $1,229,000 worth. It should be pointed out that the American importations for the year ending June, while our own are for the twelve months ending December in each instance. We think, however, that the comparison is fairly accurate; and that the Germans beat Nottingham and Chemnitz cotton hosiery trade. Chemnitz is in fact supplanted by the largest producer of knit goods in the world. This great German industry nevertheless owes its origin to Lee, of Calverton, near Nottingham, for the first to establish a large mill in Germany were Protestants who fled from France after the revocation of the Nantes edict, and who were first brought to the country by the English divines referred to. Many improvements in the knitting frame owe their origin to Saxon inventors; and the machinery produced in Limbach is exported to all parts of the Continent. Paget's frame, first produced in 1853, was built in Chemnitz the following year. The Cotton frame was not much known in Saxony before 1854, when the German patents for the invention, which was brought out in 1856, expired. It is now being produced largely by German machinists. The extremely creditable results achieved by Chemnitz houses since their introduction of the McKinley bill, referred to by our Boston correspondent recently in his remarks on the importation of seamless hosiery, are a result of the careful training which both employers and workmen receive in the Saxony hoisery industry.

While remaining the palm to Chemnitz as a cotton hoisery centre, impartial authorities consider that Nottingham is the best market to go to for knit goods of wool. A well-known American buyer, who was interviewed on the subject recently, said that while he went to Chemnitz for cotton hose, he preferred crossing over to Nottingham for woolen goods. Labour is cheaper in Chemnitz, it is admitted, but Nottingham appears in other ways to have got the best of the trade. The fact is one which reflects credit upon the manufacture, of the town, of whom there are about forty. This is about two-thirds the number to be found in Leicester.

In the opinion of many, the Nottingham lace curtain trade has suffered more from outside competition than the former trade in the old town. The number of people who find employment from each machine is about 20; and a few years ago there were 500 curtain machines in operation. Whether the trade has increased or not since then it would be difficult to say without an actual count. The removal of machinery to the United States during the past year has injuriously affected the trade; as when machinery is transferred to Berlin, Pless, Leipzig, and Ayrshire, a few years ago. The industry has been rather more busily engaged during the past few seasons; but of late another falling-off is apparent. The rural districts of Nottinghamshire and Derbyshire are also keen competitors with the parent centre, and under the circumstances any immediate expansion of its productive capacity in curtains appears unlikely.

Owing to the incomplete classification of our Board of Trade returns, the imports of foreign lace goods cannot be given, the figures only applying to "cotton manufactures of all kinds," without specifying the respective contributions of lace, curtains, and other goods to the total of between two and two and a half millions sterling, at which our annual purchases under this head are valued. In the opinion of experts, more cotton lace enters the English market from Planen and St. Gall than from all the world besides. It may be added that the Board of Trade figures as affecting lace have been frequently condemned as most unreliable.

Reviews of Books.


This little volume consists of a number of those delightful sketches in writing of which Lancashire business men imbued their fitness tastes like mudgel when off-duty." Mr. Newbey, however, is not a "northern man," but one who by long residence in Lancashire, a keen faculty of observation, and a correct appreciation of the sterling qualities of Lancashire people, has
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BLEACHING, DYING, PRINTING, ETC.

CHLORIDE OF ZINC.

BY W. JONES, F.C.S.

Since heavy sizes are needed for such an essential feature in the manufacture of certain quantities of cotton goods, this chemical compound has been largely used for this purpose for the double purpose of preventing the formation of the fungus and keeping the fabric in a finished condition of the atmosphere, turning the colour of the liquid into one of the north daylight of the black, reddish brown, and reducing upon the cloth that peculiar reddish tint so well known and dreaded by manufacturers.

The following analysis of the chloride of zinc from the market, the percentage of iron in which is to be detected in the second or third decimal place, and for all practical purposes it may be regarded as absolute.

Pure chloride of zinc in the solid state is white and crystalline in appearance, and is extremely poisonous; that is, it has the property of readily forming a suspension from the atmosphere, thereby gradually assuming a liquid condition. It possesses a blinding and metallic taste, and is extremely poisonous.

Large quantities of this solid product are annually manufactured in Europe, and although comparatively little of it is used at home, it finds a ready market in India and other countries, as its compact bulk, when packed in lead-lined casks, admits of convenient exportation. Owing to the fact that it is frequently being used against the difficulty experienced in getting the hard solid substance out of the casks when required for use, it is highly esteemed, how ever, would be readily overcome if the manufacturers could be induced to spend a little more time over the final process, as by a simple arrangement the solid substance can be packed in a granulated form, thereby allowing of easy manipulation when required.

The following analysis of samples of solid chloride of zinc from different makers may be taken as representative of the average qualities of such products now upon the market:

TENDERING OF COTTON BY ANILINE BLACK.

It is a well-known fact that cotton dyed with aniline black produced by the so-called oxidation method is materially tendered. A writer in the *Quart. Journ. of Text. & Ind.,* 1861, has inserted the results of some experiments on this point. He dyed cotton with twelve per cent. of the dyeing liquor, and found that the cotton then produced the loss of strength in each case. The results are as follow:—

<table>
<thead>
<tr>
<th>Sample</th>
<th>Strength of Aniline Black</th>
<th>Strength of Aniline Black</th>
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<tbody>
<tr>
<td>1</td>
<td>100%</td>
<td>98%</td>
</tr>
<tr>
<td>2</td>
<td>100%</td>
<td>96%</td>
</tr>
<tr>
<td>3</td>
<td>100%</td>
<td>94%</td>
</tr>
</tbody>
</table>

This is the liquid condition, however, that is used, and the chloride of zinc is readily disposed of to the consumers of this country, and, as such, it is generally sold at a strength of 200%, 300%, or 400%. In this condition it appears as a clear colourless liquid, and contains varying proportions of chloride of zinc, together with such impurities as are shown in the following analyses. When such impurities exist in considerable quantities they have been added in obedience to the wishes of the consumer, for use in connection with different grades of calicoes, and no doubt some are of several distinct qualities of liquid chloride of zinc, as will be seen from the following table, designate No. 1 as a being a commercially pure article made from splinter, and No. 2 and No. 3, commercially pure article made from carbon, and No. 4, the other analyses will show at a glance the degree of similarity and difference in their qualities compared with the genuine article, although it must be distinctly understood that the actual proportions of the various impurities are different from those varying with different makers and localities, and according to the demand:

<table>
<thead>
<tr>
<th>Sample</th>
<th>Chloride of Zinc</th>
<th>Other Impurities</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. 1</td>
<td>95%</td>
<td>5%</td>
</tr>
<tr>
<td>No. 2</td>
<td>90%</td>
<td>10%</td>
</tr>
<tr>
<td>No. 3</td>
<td>85%</td>
<td>15%</td>
</tr>
<tr>
<td>No. 4</td>
<td>80%</td>
<td>20%</td>
</tr>
</tbody>
</table>

So long as the use of impure chloride of zinc is avoided, the cotton thus dyed contains a certain percentage of chloride of aniline black, and nothing can be said against the addition of such impurities to the solution. But if the purchase of pure chloride of zinc is not secured by the purchase of a commercially pure article, which, however, contains a large proportion of such comparatively non-poisonous substances as the chlorides of sodium and ammonium, then a deal of damage may ensue, for the low percentage of chloride of zinc in the solution will cause him to calculate wrongly. For, whereas he finds that a fixed amount of impure chloride of zinc will protect a definite quantity of size from mildew, a sample containing less than that amount of the antiseptic property would be liable to produce such fungoid growths, thereby causing more or less damage to the goods in connection with which it was used.

Therefore it would be well for users of chloride of zinc to purchase a commercially pure article at the outset, and, after having had a sample tested by a recognized chemical authority, to add such impurities as they desire; and they would certainly find that the addition of such foreign matters can be done at a cheaper rate upon their own premises than the original manufacture, where they have to pay for the extra cost.

In some of the books upon sizing and sizing compounds, details are given of the best methods for estimating the qualities of foreign samples in the solution of chloride of zinc. Although the method given by Mr. E. E. Wrench is fairly concise, yet there is an amount of skilled manipulation required even for such simple testing which can only be obtained by practice, and the amateur analyst who works by the book is often as much in the dark at the close of his labour as he was at the commencement. Hence more satisfaction will be obtained on all sides by trying each questionable sample to a recognized chemical authority.

TENDERING OF COTTON BY ANILINE BLACK.
then through sodium sulphide, and dyed in a liquor of 7° Bé of aniline salt and potassium chlorate, and 8° Bé in strength, 15°. (20th.) The cloth was passed through a strong solution of copper sulphate, then in the same liquor as in No. 3; the loss in strength was 20°. (21st.) It was then passed through an aniline salt bath, then through soda, then dyed in the same liquor as in No. 2; the loss in strength was 20°. (22nd.) It was treated with aniline tannate, potassium chlorate, and copper sulphate, and the loss in strength was 15°. (23rd.) Both the aniline salt and amine salt, aniline salt, and potassium chlorate, and copper sulphate: the loss in strength was 15°, but the black was liable to be uneven, (24th.) Sodium chlorate was used, but containing starch: the loss in strength was 10°, but the black was liable to be uneven, (25th.) Sodium chlorate was again used, but containing starch: the loss in strength was 15°, but the black was liable to be uneven, (26th.) An aniline liquor alone: by treating the aniline salt, potassium chlorate, copper sulphate, and antimony salt: the loss in strength was 15°. (27th.) The cotton was bottomed with diamine black KO, then dyed in an aniline liquor of 5° Bé, made with aniline salt, potassium chlorate, and copper sulphate: the loss in strength was 15°. (28th.) Cotton bottomed in diamine black KO, then dyed in a liquor containing 6° Bé of aniline salt, potassium chlorate, and copper sulphate: the loss in strength was 15°. (29th.) Cotton bottomed in diamine black KO, then dyed in a liquor containing 8° Bé of aniline salt, potassium chlorate, and copper sulphate: the loss in strength was 8°. (30th.) This method was the best, yielding the best result, but the bottoming does not fully resist exposure to light and air. Oxidation blanks, owing to the loss in strength, were recommended for dyeing yarns that have to be washed. The best method is the best for fast blacks, but they rub very much; by careful working, however, this rubbing can be reduced to a minimum.

SOCIETY OF CHEMICAL INDUSTRY.

Among the papers down for reading at the last meeting of the Manchester section of this society were some on textile industries. From papers by Mr. W. Weber the second part of his "Researches on the formation of lake pigments." He referred especially to the formation of LAKES FROM THE ACID COLOURING MATTERS, and said that the reason these lakes had hitherto turned out so unsatisfactorily was because the pigment, such as the chromium chloride, only acted on one of the two or more groups present in the colour. When chromium chloride was used in the proportion of a dye in the presence of both the sulpho and amidino groups of the former only was precipitated. The colour was soon washed out of cotton when the latter was employed. When cotton had no affinity for the acid group. If, however, the cotton was previously mordanted with tannic acid and then dyed in a solution of basic sulpho dyestuff, on the addition of chromium chloride to the dyebath, the latter was not precipitated on the cotton. By such means as this the mordant had produced permanent and fast colours from sulphomethyl blue and indigent dyestuffs, and the respective affinities of the different groups in an acid solution in this way, the proportion of the preparation of lakes was solved.

OIL AND IRON STAINS IN COTTON CLOTH. Though the stains of fatty oils could be removed by washing, the mineral oil remained a source of trouble. Iron stains could be removed by a strong solution of caustic soda or of caustic potash. Soda was the best for the treatment of starch and iron stains occurring together. When frequently happened, they proved difficult of removal. He recommended washing in a bath consisting of weak soap, one part glycerine, and three parts water. In a paper on the analysis of "The dyeing and oil," the author, Mr. J. A. Wilson, stated that a good deal of the oil at present in the market, and purporting to be cotton oil, was adulterated, to the damage of dyers and printers. His paper had special reference to the OILS USED IN WOODEN MILLS, and the commodities which had been undertaken for the insurance companies, who, as far as he was aware, were particular that only fat and not petroleum oils should be used. By treating wool with various oils and exposing it to the temperature of boiling water, great variations were observed in the rise of temperature.

## Designing.

### NEW DESIGNS.

COTTON DRESS GOODS.

Design 4 is on 6 shalts, 12 and draft, 12 to the round, all two ends, ten picks in a shed; 20 dolls per inch on a deal, 30° twist; 80 picks per inch of 30° weft; 31 inches breadth in reed. First warp pattern: 12 red and 12 blue, square pattern. Second warp pattern: 6 green, 6 red: weft the same. Third pattern: 2 dark blue, 2 medium blue, 2 blue, 2 white, 2 yellow, 6 white, 2 yellow, 6 white, 2 yellow, 6 white, 2 yellow, 6 white, 2 yellow, 6 white: weft pattern the same. Fourth pattern: 4 red, 2 light blue, 4 cream, 4 red, 2 light blue, 2 cream: weft: 28 cream, 2 red, 28 cream, 2 blue. All varieties in colours and shades may be used, e.g., the form of stripes or chevron, beaded finish.

**Design B** will furnish an immense number of still more exciting designs, either for dress goods or for any other class of goods. The colour may be varied at will, and if the separate sections of the design have been gone over repeatedly, the width of the stripes may be diminished, or the design repeated, to any number of times. For instance, 4, to the round; a simple weave, 40 dolls, 2 in a dent; 21/2s for warp, weft, 60 picks per inch, all white, double end of green, double end of red, 20 light blue, 2 orange, double end, 2 dark blue, double end with all white. Second pattern: 18 cream, 4 dark blue, double end, 2 cream, 2 purple double end, 2 yellow double end; weft all cream. Third pattern: 36 ends all light fawn, 4 light blue, 1 red, 4 light blue, 4 red, 1 white, 3 dark blue, double end pink, 2 double end green, 20 white, double end green, 20 white, double end green, 20 white, double end cream. For the white, 4 ends double violet, 2 white, 4 ends double orange; weft pattern exactly as the warp: the violet and orange weft 2 in a shed.

The firm of Johann Abraham Weuster has just erected a new ribbon factory in Barmen. Here, in Lederländer, is creating a large steam dyeing engine in both yarns and fabrics. Here, in Lederländer, we see a building power-loom weaving shed in the neighborhood of Neudals, in Bohemia. There is a firm of Bremhahn and Wintersteiger, dyers and printers. In Bremhahn, we see a building power-loom weaving shed at Fischer Gasse No. 8, by an additional shed.

The factory premises of Jacob Bich, Hermann D. J. Schott, and Isaac Massam and Son, in Nachod, are about to be extensively enlarged. In each of the two last named, 300 power-loom will be installed. A single piece of land at Bratislawa has been purchased by the Upper Lusatian firm of C. A. Kruchert, in Algegau, for the erection thereon of a loom factory intended for the needs of Austria. It will have adjoining an iron foundry.

PATENTS IN 1891. According to the ninth report of the Commissioner General of Patents, Designs, and Trade Marks, just laid upon the table of the House of Commons, the total number of applications for patents last year was 21,588, as compared with 21,207 in 1890. Of the nine applications made to the Privy Council, the whole of the number of designs proposed by one firm, and two refused, the remainder not having been disposed of at the end of the year. The receipts from the sale of patents and the registration of designs and other applications, which sum was paid over to the account of the Stationery Office. The number of applications for registration of designs, and designs, and other applications, made during the year, of which there were 277, 23 as against 22,253 in 1890 (excluding 22,253 acts of designs). No fewer than 354 designs were registered, and all designs so registered as to designs already registered, while 1,014 applications were objected to by the Commissioner-General. In the case of 1,014 of the objections, the objections were dismissed without claiming a hearing, and in 82 cases the objections were entirely withdrawn. Of the 354 opposed applications which were accorded a hearing, 44 were accepted without alteration, 53 were accepted with slight alteration, and 257 were rejected.

In regard to trade-marks, there were 10,757 applications, as compared with 10,295 in 1890 and 4,459 trade marks registered in 1890, and 4,459 trade marks registered in 1890. Of the total receipts from various sources on account of trade-marks were £1,834, as compared with £1,494 on account of renewal of patents. The figures under the provisions of the International Convention for the Protection of Industrial Property."
Machinery and Appliances.

IMPROVED PATENT SPINDLE FOOT-STEP PROTECTOR.

Makers: Messrs. E. Jagger and Co., Werneth Metal Factory, Oldham.

The greatly accelerated speed at which all classes of machinery are now worked, compared to what was the case a few years ago, has brought into prominent view the great necessity of machine-makers and users paying every attention to what were before slight details in various points of construction and working. But in nothing has this become more strongly evident than in matters affecting lubrication; and in nothing under this head has the urgency of improvement and increased care become more developed than in the lubrication of the spindles of our spinning machinery, whether it consists of mules or ring frames, or of the various frames worked in connection with those in the preparation. By neglect of proper lubrication the costly plant of our splendid spinning mills can very soon be rendered worthless, and fit for little more than the scrap purposes to which it is put. The result is an adoption of improved appliances, the life of every machine, though working at the accelerated speeds to which we have referred, may easily be prolonged beyond what has been regarded as the average duration of machinery life.

We have much pleasure in directing the attention of our readers to a simple yet valuable improvement just effected by Messrs. E. Jagger and Co., Oldham, whose previous inventions in this respect are well known. This consists of a spindle-step cover, the protector is formed in a continuous roll, so as to entirely cover the flue on which the steps are fixed, in exact imitation of the well-known "plate-step," and it has for its object the provision of the same facility for oiling, and keeping running down the spindle rail, and preventing the protectors from falling off the steps and getting lost. It also carries the step covers, which, although attached to the plate, are self-adjusting each to its own individual step, and fit inside them in the same manner as if they were single, although the steps may not be exactly straight or perfectly level. They thus thoroughly prevent the lubricant from being blown out by centrifugal force and the dirt from getting down to the bearings, and thereby ensure more perfect lubrication, prolonging the life of the machine and economising oil.

The accompanying illustrations need little description to enable them to be fully understood. Fig. 1 shows the cover a raised from the steps, from which it will be readily understood how easily it is cleaned, several covers being lifted at once. The projections b are so formed as to fit right into the cups of the steps c. Fig. 2 shows the protector in its continuous roll d, in position on the spindle rail e, the back edge of plate a of protector being raised to prevent the oil running down carriage board or spindle rail, and guide it into the steps. Thus it will be seen that the arrangement prevents the waste of oil common in the old method, and by preventing the revolution of the spindle ejecting the oil, or, what is much more wasteful, its being pumped out by lifting the spindle in the process of oiling, the great object is achieved of maintaining perfect lubrication, and preventing waste of oil with all the dirt and risks that are attendant upon it. We are informed that with this arrangement the spindles of mules will run for weeks after once using. Thus what this means in the saving of bands, straps, and the diminution of power required in driving the machinery of a large mill, shown in the saving effected in the coal bill, will be obvious to our practical readers. Fig. 3 is a sectional view drawn full size, which shows the details of construction.

Continuous plate a having holes spaced to gauge of spindles, and counter-sunk so as to conduct oil into the steps. Solid brass c forming step-bearing for spindle. Wood spindle rail e. Raised edge or head e to prevent

Fig. 1.

2. Give a description of the ordinary dressing machine for fine yarns, pay particular attention to the method of driving the frame dress.

3. Give shaft and beading plan of the following: a four shaft back for twisting; (b) a four shaft dinner or diamond, with 8 ends and 8 picks; (c) a five shaft broken twist, (d) a hexagon back.

4. You have a shaft to draw in, counting 30 bobbins on 3 bobbins, on 30 inch reed space, and have only 4-10 bobbins available to order for 20 tons on 8 bobbins, on 2-inch scale, but with enough. How many bobbins should you cut? And at what intervals? What reel should you use? (20)

5. What would you consider good average speeds at which to drive the following: (a) Plain linen looms working wide material, medium yarns and counts; (b) heavy linen looms working 8/4 to 10/4; (c) flax.? (20)

6. Sketch the mechanism of the weft lock; fully explain its action and adjustments. (35)

7. If the cloth is turned out varying in thickness of weft, reweave as finely as possible the fabric in the loom which may be necessary. (35)

8. In weaving wefts anddamasks, would you work with the butt of the warp above or below the shuttle? Give your reasons for the practice you recommend. (25)

9. Show the method of weaving cordonnets with a double heddle, and describe some method to obtain the same result in a more perfect way. (25)

10. Describe the worm wheel let-off motion, and give sketches. (25)

11. What is meant by the standard number of bobbins in finishing the cloth? Give an explanation of the following 54 yards on 40 inch reed, 19 shirts in 32-inchsett, 23 inches wide. (25)

12. What is meant by cover cloth, and how is it to be obtained? (20)

Technical Education.

CITY AND Guilds of London INSTITUTE EXAMINATION.

The following paper was set at the recent examination. The papers on the other textile subjects have already appeared in these columns.

LINEN WEAVING.

Instructions: The candidate must confine himself to one grade only, the Ordinary or Honoré, and must at the top of his paper add his name, grade, and section.

1. What is the standard length of the following: (a) a twine or art, (b) a thread, and a bundle of linen yarn? (20 marks)

2. Give the formula for calculation of warp and weft, making due allowance for shrinkage, and in the following: 54 yards on 40 inch reed, 19 shirts in 32-inch sett, 23 inches wide. (25)

3. Describe fully a complete set of sketches, the ordinary dressing machine for linen yarn. Pay particular attention to details of driving arrangements. (25)

4. You are required to weave a hemstitched towel of 28 bobbins less 1 in 12 inch scale, and have no bobbins of that count. What is the nearest count you can use from stock? If any extra by halves are required, give the proper instructions, and order a reed suited. Cloth is to be 22 inches wide. (25)

5. Describe briefly the method of dressing a 32 inch plane, with a half-inch square in the cloth, of two distinct ornaments woven; the heddles not to exceed eight shafts. Show shafts and weaving plan. (25)

6. What is the process of cotton progress in the weaving of cloth with flat yarns? (20)

7. Describe the action of the picking motions of both shaft and under beams, and explain the arrangement required when starting looms first, both with regard to time and force. (25)

8. What is the standard number of bobbins in calculating changes of warp? Find the change for 54 yards on 40 inch reed, 19 shirts in 32-inch sett, on the loom which bears as follows: Slit shaft 20, shaft 10, tooth, moving one shaft.
only; intermediate wheel, 120 teeth; intermediate pinion, 20 teeth; roller wheel, 120 teeth; roller, 40 in diameter; 
9. Describe and sketch the take-up motion geared directly to cloth beam, as used for heavy linens. Illustrate with three working drawings, to show the motion of the beam to enable you to walk the cloth fully up to its expiration. 
10. Compare the Norwich and London laces in danseuse mounting. Explain what constitutes, in your opinion, the advantages and disadvantages of each method. 
11. Explain clearly the use and action of pressure bars in the construction of the back of a cloth. 
12. Describe the ordinary Devore carding machine, as used for 8, 10 and 12 row machines. 
13. Describe and sketch the cylinder for double cloth, one face plain and the other 4 shaft twist. Put a spot on the twisted side with an altered weave, and show the two faces properly bound together.

News in Brief.

ENGLAND.

Barrow.

The barrow about 70 double loom weavers employed in the Barrow Flax and Jute works refused against being compelled to work double looms without and all the work people would do was strike. A meeting of weavers was held, when some of them stated that it was a simple work for them. It was pointed out to them that before they could strike they must obtain the consent of the committee in Dundee. It was then they worked the work, and work only one loom, and let the manager lock them out if he liked. The girls, as advised, went back to work next day, but only strike for 2s. 6d. To this the foremost weavers refused to let them stay unless double looms were started. They refused to do this, and he ordered them away. They accordingly struck.

Bolton.

The recent statement in those columns that the late Mr. Holme, who was formerly the proprietor of Bridgehouse Mill, that place Machine Works was incorrect. About 47 years ago he acted as bookkeeper at the above works, and left for England when the Wigan Twists Co., near Chorley, in which company Mr. Richard Threlfall, machine manufacturer, was interested at that time.

The machinists from Messrs. Dolan and Barlow’s, Limited, who have been engaged for the last few months at the mill of Messrs. William Clark & Co., at Rhose Island, New Jersey, U.S.A., were given a picnic and supper on May 21. The above named firm supplied the whole of the machinery for carding, combing, and spinning, the following Blochmans have been engaged on the work of fitting—Messrs. G. D. Barlow, W. E. Parry, W. Cooper, H. Guy, T. Hall, sen., T. Hall, jun., H. Hardman, E. Hardman, John Taylor, E. Ponton, and W. H. Wilson. The above stated example was received from the above Messrs. Clark Co. came in for every expression of good will.

Burnley.

Mr. Gray, cotton manufacturer and a Liberal member of the Town Council, died on Monday, after a long illness.

The failure of Messrs. Hargreaves Brothers, cotton manufacturers, Higham, near Burnley, is announced. Liabilities about £2,000. Assets about £300. A committee of creditors has been appointed.

Dundee.

The machinery required for the No. 2 mill of the Peel Spinning Co., Barry, is being supplied by Messrs. Platt Bros. & Co., Oldham.

Messrs. Jones & Co., Leigh, are having a large chimney erected at their extensive cotton mills.

Mr. T. Smith, one of the heads of the firm of Messrs. Jones & Co., has obtained a contract from the Limekilns, Oldham, to erect a chimney of £10. A committee of creditors has been appointed.

Oldham.

The mills being erected by the Parkside and Royal Spinning Mill Co. are ready for working.

During the past week the Holly Spinning Co. had five pairs of males at work, and others will be ready for spinning.

About a dozen pairs of males, together with an adequate amount of card-room machinery, are working at Messrs. J. Meredith, Jones, and Sons, Gainsford Leather Works, which are open to lookers-on.

It is reported that the formation of a limited liability company to erect a large mill at Leas has been abandoned.

We understand that Messrs. J. Meredith, Jones, and Sons, Gainsford Leather Works, are about to open branch offices in Messrs. Meredith and Sons, Manchester, are supplying the new machinery.

Mr. Charles Wilkinson, son of Mr. David Wilkinson, secretary of this firm, has been appointed assistant secretary at the Fern Spinning Co., Sow, one of the most successful concerns in the Oldham district.

It is gratifying to learn that Mr. S. R. Platt, head of the firm of Messrs. Platt Bros. and Co., machinists, Oldham, who some days ago had an accident on his yacht, Nereus, is progressing very favourably. His thigh was broken by falling down the companion-way, and it is feared he will be away for some days.

The landlord at the last of the month, Mr. S. R. Platt, was a Conservative, was appointed a county magistrate.

Rochdale.

The machinery for the new mill of the Moss Spinning Co. has been supplied by the three firms, Mr. John Moss, Messrs. Taylor, Lang & Co., and Messrs. Platt Bros.

Tyldesley.

The building of Mr. Wright and Co.’s new mill has now reached the top (fourth) storey. The other work is being pushed on as rapidly as is possible with efficiency.

Owing to the depression in the cotton weaving trade about 200 weavers employed at Messes. Baxton and Sons’ mills have been given eight days holiday, exclusive of the two Sundays taken off Whit week.

HASLEHURST.

On Sunday, before the Mayor (Mr. Hamilton) and other justices, a bench warrant was on strike at Haslehurst, and a warrant was issued for the arrest of Mr. Whitaker.

A Complainant stated that on May 24 he was in a lookout watching the mill, and the defendant and another strike worker entered the room. The defendant asked witness if he could find him spinning, and witness said he would have nothing to do with it, he must see the overseer. Defendant said witness deserved his guns and whiskeys whacking off for working here, and then struck him a blow on the mouth with his fist, and another strike hand, Winters, struck him out.

Witness left the house, and defendant said to a man called Nuttall, "Joke, that man must say something about it, we’ll throw it out of him and say he’s strike first."—Witness stated the evidence of complainant in every particular.—Defendant called five witnesses to prove that no assault had been committed. They all said they was hearing, and there witness was rather contradictory.

The Bench fined defendant 10s. and costs, and also ordered him to pay £2 2s. 6d. total amount of £2 10s. 6d. William Winters, another strike spinner, was brought up and charged with using threatening language to Samuel Lees. Defendant was impeached at Haslehurst.

Mr. Hindle prosecuted, and Mr. Whitaker defended. Defendant stated that on 24th May he was standing in Felling Street, Acre, when a prisoner came up, and referring to Haslehurst, said it was a "strange little place," and that he was going to commence, and threatened to knock his head off. Witness moved away and prisoner followed. Witness was struck and prisoner behaved himself. Prisoner had threatened witness several times, and he was in bodily fear of him, and others, and defendant said he heard defendant say that he would rejoice the next week.—Mr. Whitaker called the defendant, who denied having any malice against the complainant.

He was one of the strikers, but had now got work at the Moss Spinning Co., Rochdale, and would go there right away if they would allow him to leave the mill. The bench ordered prisoner to enter into recognizances himself in £10, to keep the peace for six months and pay costs, which, including a locative fee, amounted to £1 18s.

SCOTLAND.

Brechin.

The East Mill Co., Brechin, have had course of erection for some time past a new engine, which has now been completed. To allow this工程 to be made was suspended on Friday night of last week for ten days. The employees are to receive a week’s wages.

Dundee.

A notice has been posted in the Dundee Linen Works (Monteith, Lindsay and Co.) to the effect that after this week the works may be closed at any time without further warning. There are between 300 and 300 men employed.

Forfar.

The short-time movement in Forfar factories is being gradually curtailed. Messrs. William Land and Co., Commore Works, have resolved to work one day longer in the week, operations to cease on Friday instead of Thursday evening as before. Messrs. Laidlaw are also to start additional looms, which will mean the employment of a number of hands who were disarmed.

Glasgow.

The following table gives the price and destination of the exports of cotton and linen goods from the Clyde for last week, and also the totals to date for the year.

The following refers to cotton goods, and the second to linen. 

The following are the total values of the exports for the 40 weeks of the year ending last year—Cotton, £1,753,921; Linen, £350,287.

We learn that Mr. George Sedgwick, 11, M. I. Inspectors of Factories for Glasgow and Westof Scotland, is to be succeeded by Mr. E. T. Dawson, late junior inspector for the Leeds district. Mr. Sedgwick returns to Walsall on the 1st of July next.

Miscellaneous.

THE WOOL INDUSTRY OF THE PUNJAB.

The United States Consul-General at Calcutta, in a recent report to his Government, states that the Punjab, with its 6,551,180 sheep and 6,000 mule sheared, and already made into shawls, carpets, blankets, etc., holds an important place in the sheep and wool industry. Shearing in this province is twice a year generally, though in a few of the districts there is an intermediate shearing in June. The wool is exported out of the wool store. A man can shear 200 uncoiled and 50 washed sheep in a day. Wool sorting in the Punjab is done in a very primitive style, and some parts it is not done at all. Washing of the wool is not common, nor is it very necessary, except in the case of wool loaded with sticky matter. Unless done carefully, and with suitable soap, it is very bad for the wool, and picking by hand or some other process is in that state, still necessary. It is still necessary to hand-pick the burrs, thorns, seeds, etc., which are entangled in the fibres. The picking out by hand of foreign bodies is done everywhere. It is a very tedious process in which the wool grows in places abounding in thorny bushes and under-growth, and the workers are nearly always women.

The mere process of hand-picking involves a certain amount of teasing out of matted portions, and combing are uncommon—a state of affairs which appears to exist in the Punjab district, and in Jullundur and Ludhiana—something more than this has broken down the industry. The process is performed by hand to a mass of fluf; but to effect this, in most districts, either the frajan (bosterman) or the comb is used. A bow is suspended, string downwards, at such a height that the picking process passes through the wool to be operated upon.
The textile mer­cury.
that they could be coincided without inflicting injury upon the combined interests of the traffic; I admit, sir, I m not my means would produce, and I believe it the duty of the House, if by any means possible to see that the clause is not allowed to become a dead letter. (Hear, hear.) How is that action to be brought about? If it is made a matter of personal or political excitation or whether it is sufficiently carried out on the matter, sir, the remedy that we sought to impose—whether it is sufficiently carried out on the matter, sir, the remedy that we sought to impose—whether it is sufficient for the general public advantage, and if no one will take it up in the House of Commons, and if no one will take it up in the House of Commons, they will take the care that the person appointed shall be one who thoroughly understands the technical details and whose experience can command the confidence which is necessary both in employers and employees. Gentlemen, I am free to say that, and before I come to the decision under which I have been appointed, I shall have a further and definite announcement to the public as to whom that responsibility is to devolve. I hope that we have dealt with our legislation and the circumstances under which it was introduced. As to the prospects of the future, when the measure is in force, there is always a possibility of our representative for the active interests to see that we shall be met with this, and I hope that we have dealt with our legislation and the circumstances under which it was introduced. As to the prospects of the future, when the measure is in force, there is always a possibility of our representative for the active interests to see that we shall be met with this, and I hope that we have dealt with our legislation and the circumstances under which it was introduced. 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referred to his early days. He had told me of the political period through which he passed, the excitement of party strife, and then referred to the facts that he remembered in connection with the financial panic of 1837, which made him more than anything else, the good opinion of his fellow men, and above all the good opinion of his village among men. May I not now, following from a long distance, feel such pride as he must have felt at the time? and feelings for which I have no name, I have no words to express, I have no time to think about the subject. The subject I turn to this testimonial, which makes reference to your generosity, and I feel from such evidence of your kindness some little good on behalf of the man who are represented before me. Now, what can I say to you in return? I feel for the language of my profession. You have humbled me with a great result in my soul. It is the last I shall do my duty to class this approach me and place their marks on my heart. I shall according to my power, believing that there will be rewards greater and more valuable than anything, and the same as you have done. (Loud applause.) I can promise you that I will be in the future—this is the real. I have experienced, do my duty to this class that approached me and placed their marks on my heart. I shall according to my power, believing that there will be rewards greater and more valuable than anything.

TEXTILE NUMISMATICS.

Now, while ribbons are so much in evidence, may I mention to you that the work of a woman is in a great degree performed by the use of ribbons? Is it not a general fact, that women are the creators of beauty and grace? And when we look at the countless varieties of ribbons which we see in every dress, we can but wonder at the skill and ingenuity of the women who have been able to produce such a variety of ribbons. And it is not only for ornament, but for utility, that ribbons are used. They are used for快开自见，用黑体字，标出这段话中的每个日期。
might, therefore, name some of the principal types which form the bases of Egyptian ornament, rich and varied as it is, in the construction of the temples of their Gods, and on the palaces of their Kings, as on the small articles of use. First, there are the bull and the crocodile, the latter as the symbol of the nourishment of the body and mind; and then there is the deer beget or "scarabaeus." This insect of the Nile is of a remarkable habit of laying its eggs into excrement with which it enveloped them, forming a little ball until the surface hardens. The ball, containing the embryos, is the heat of the sun will awaken, was to the Egyptians symbolical of the future out of which new life is likewise for ever developing, and after passing through the process of being for long periods dead, the ancient Egyptians being sun worshippers, their most sacred figure was the disc of the sun, mounting the sky on the back of an ibis, a bird of great antiquity, a symbol of sovereignty commanding over life and death, since the life of this creature meant immortal death. Besides these, many others, of which, for instance, named Apis, which was the symbol of the God Osiris. The annual feast of Apis had reference to the annual inundation of the Nile, a mummified specimen of which have been found in the tombs, were holy, and anybody who killed a cat was drowned.

Another ancient state possessing culture was that of Attica in Greece, and the neighboring cities of Athens and Tigris was in early times the home of extensive industrial art. The Bible mentions the magnificence of the palace of Solomon. It is said to have been about 40–45 miles in length. The mythical tower of Babel, or the hanging gardens of Semiramis, was built by the hands of the food for three centuries.

In the ruins of great Assyrian buildings, there were found plates of alabaster, which were used for ceremonial purposes. These plates were now being used in the making of vases, bowls, cups, and similar objects. The Assyrians were also famous for their working of iron, bronze, and other metals. They were skilled in the art of forging, and their iron work was highly prized. Amongst these we see bettors with stars, strings of posts, stars, and various other decorations, the Assyrian style of art. It is a very ancient and vigorous style, which bears fruit like pomegranates.

The pomegranate plays a large part in the symbolism of many religions as well as in the Christian religion. In ancient times it was the symbol of love. Jupiter makes it the fruit of the pomegranate to give him betters, as he loves the apple, the smell of which assuages the passion; they never went to the pomegranate when the heat of passion was at its height. The apple was the symbol of the generative power of nature, and is said to belong to the God Flora.

The Bible mentions several plants and animals, for example, with the use of cherubim. "Thou shall give him with fish of the sea, and bread of the earth." The word "fish" is used in the Bible to denote both animals and plants. The fish was a symbol of life and immortality, and was often used in the decoration of the temple of Jerusalem. It is also said that the fish was the symbol of the resurrection of Christ. The pomegranate was a symbol of fertility and abundance, and was often used as a decorative element in the temple. It is also said that the pomegranate was the symbol of the fruit of the Tree of Life, which bears fruit like pomegranates.

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THE TEXTILE MERCURY.

June 11, 1876.

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centres similar to designs on Persian fabrics mentioned later on. At the present time it is only possible to say positively whether these fabrics were manufactured in Persia, or whether they were brought to Europe in theIonian, or Byzantine, where, at the time we are dealing with, Textile Industry flourished. Similarly we cannot positively determine that the new fabrics which we have reason to suppose to be some of the oldest preserved weaving products of the East, belonged to the time between the 3rd or 4th century B.C. and the 6th century after Christ. Before Christ, we not only concentrate on the Roman period, when the influence of the Syrian and the Greek styles was felt. We behold the same activity and capability, both were animated by the same spirit, the spirit of a united and progressive political government, and in the states of both peoples was characteristic for military discipline, and for the production of splendid silk goods, particularly desirable, the madder colouring of the silk was improved from Asia Minor, in which countries its production was guarded as a great secret, and the export of the eggs of the moth was taxed with severe penalties.

The legend runs that two monks conveyed in their cloaks of homespun, some eggs of the silk moth and seed of the mulberry tree, its important for its maintenance, when returning from a pilgrimage from the distant China in 632 A.D.

Those were the germs from which an industry was to be evolved, and to which European Europe owe a large part of its present splendour.

In the East, silk weaving is again a great industry, and the cultivation of the mulberry tree, a branch of industry more important and more interesting than many of its European counterparts.

Horatio made his own manufactures of silk-weavers from those countries, and in the work in which all men are engaged, they are of the same texture, skill, or in which they are believed to have been in Persia. In the Persian Kings of the 12th century, and in the 13th and 14th centuries.

In the church of St. Servaas at Maastricht there are exhibited a small collection of fabrics of the middle ages. Amongst them is a very fine specimen of Persian weaving, signed by the hands of the two last owners of the museum. The woven cloth, however, is not on show, as it is on permanent loan to the British Museum. The woven cloth, however, is not on show, as it is on permanent loan to the British Museum. The woven cloth, however, is not on show, as it is on permanent loan to the British Museum.

In the cotton of the Tucherschütz there is a piece of stuff which belonged to the person of Saint Servaas, the patron of this church, who in his birth. The figured part of this design is somewhat smaller than the border of a quart of yard.

The ornamental filling of the circumstances of these circles is composed of edelweiss in classical drawing. Within the external circle there is a more solid, regular, and more uniform, nothing in the centre. The circles are filled with flowers, birds, and foliage, and the figures are divided into a number of parts, which are filled with a variety of colours, and the inner circle of silk illuminated with a purple light. It is the only piece of silk which represents a hirt in the history of this species of material. The border of this piece is worked in the same manner, and the figures are divided into a number of parts, which are filled with a variety of colours, and the inner circle of silk illuminated with a purple light. It is the only piece of silk which represents a hirt in the history of this species of material. The border of this piece is worked in the same manner, and the figures are divided into a number of parts, which are filled with a variety of colours, and the inner circle of silk illuminated with a purple light. It is the only piece of silk which represents a hirt in the history of this species of material. The border of this piece is worked in the same manner, and the figures are divided into a number of parts, which are filled with a variety of colours, and the inner circle of silk illuminated with a purple light. It is the only piece of silk which represents a hirt in the history of this species of material. The border of this piece is worked in the same manner, and the figures are divided into a number of parts, which are filled with a variety of colours, and the inner circle of silk illuminated with a purple light. It is the only piece of silk which represents a hirt in the history of this species of material. The border of this piece is worked in the same manner, and the figures are divided into a number of parts, which are filled with a variety of colours, and the inner circle of silk illuminated with a purple light. It is the only piece of silk which represents a hirt in the history of this species of material. The border of this piece is worked in the same manner, and the figures are divided into a number of parts, which are filled with a variety of colours, and the inner circle of silk illuminated with a purple light. It is the only piece of silk which represents a hirt in the history of this species of material. The border of this piece is worked in the same manner, and the figures are divided into a number of parts, which are filled with a variety of colours, and the inner circle of silk illuminated with a purple light. It is the only piece of silk which represents a hirt in the history of this species of material. The border of this piece is worked in the same manner, and the figures are divided into a number of parts, which are filled with a variety of colours, and the inner circle of silk illuminated with a purple light. It is the only piece of silk which represents a hirt in the history of this species of material. The border of this piece is worked in the same manner, and the figures are divided into a number of parts, which are filled with a variety of colours, and the inner circle of silk illuminated with a purple light.
The Textile Mercury

July 1852

The treasures of the Aix la Chapelle Cathedral. Here we see large connected circles, with diameters of over half a yard. The figured centre, a term of four hours, is of the fourth order, and very ornamental. It was particularly popular at the time of Justinian that the two great political parties of Byzantium used to wear the colours of the Christian and heretical. The term is blue and green. The ground colour of this fabric is violet, blue, and the colour of the design yellow. The symmetrical design, which is well preserved, dates from the 7th and 8th centuries. Perhaps it is now the most beautiful, in the gold thread woven into the fabric. It is not possible to describe here all the woven pieces made under the influence of Byzantine Art, mentioned by ancient authors or preserved until the present time. The nature of the designs was composed of animals' faces, more elaborately, and surrounded by graceful floral motives. They were made by hand, and were used for various purposes. The rare fragments of pieces dating from this period correspond in many cases with the fabrics of the Byzantine Empire. According to the opinion of Dr. F. Bock, in the Byzantine Museum of the Fabre in France, the 7th century is perhaps the most interesting period for this country, for the Byzantine and Byzantine work of the time is more florid. It is noted, finally, the struggle of Christian martyrs with wild beasts in these designs, and the presence of the designs in the Cathedral of St. Vitale in Ravenna. The surviving fragments of the fabric, the church of the Emperor Justinian and his Queen Constance, the ill-famed Theodora, are followed by their relatives in the sacred diptych, for the bodyguard, etc. All the men are dressed in splendid garments with many folds. The fabrics of the later centuries with various designs referred to the last period, when such figures had the advantage of being seen upon figured textile designs; even art was outwardly being concealed, the practice of the office of idolatry, but this is a matter I leave to others.

Dr. F. Bock, who studied the literature of the ancient authors, wrote in his book, the Monuments of Byzantine Art, Rome, 1852, gives in his book the quotations which explain the designs upon the surplices and fabrics of the Churches of the Byzantine period. We find these designs in Italy before the 12th century. In volume I, of Dr. F. Bock's work: "The Liturgical Vestments of the Middle Ages," we are informed that the Church of St. Mark at Alexandria in Cairo, the Church of St. Mark's in Venice, and the Church of SS. Cosim and Damiano in Naples, are the only examples assigned to this class of fabrics to the 12th and 13th centuries. The dying of the materials forms a very interesting part of the examination of the Byzantine textile manufacture. With these details, it may be shortly stated that purple was the most valued colour of the middle ages. It comprised six to eight shades of plate, while violet, color, was the most used. The Imperial purple possessed a dark deep hue, like that of the violet. The times of the Roman Empire is the era of this gorgeous cloth. It was worth its weight in gold. The use of this colour was confined exclusively to the Imperial Court and the highest nobility of the Church. The emperors of the Alexandrians and Tyre were famous in the earliest times.

(The to be continued)

NATIVE TEXTILE INDUSTRIES IN JAPAN.

A report has been issued from the Foreign Office which has been drawn up from information received from her Majesty's Consul in Japan, who, in the course of the recent trade mission to the island of Hokkaido, has made various collations with important events in the life of the Holy Virgin. She was also visited by the Pope, and the following is a summary of the information collated.

We can trace these figures of woven designs up to the 10th century. These are some of the illustrations of scenes from the New Testament have been preserved. The employment of this kind of work for secular purposes is not as a rule, meet with approval. Thus in the 4th century we find Bishop Anas of Anna in Asia Minor complaining to the Curia of the Christian Church. He says, "I am somewhat alarmed about the waxed about the like painted clothes. Many people were dressed in apparel illustrating the miracles of Jesus Christ with the aid of the Holy Spirit. Others had their clothes ornamented with lions, bears, rocks, and hunters, so that little children used to point at them with the words, 'Look at the lions!' In the case of the splendid fabrics described by Anastasius have been preserved to the present day. Dr. F. Bock states that in the Byzantine Museum at Constantinople in Italy, five marks on the floor show the spot where the French made a bonfire of the gorgeous and expensive supernumeraries which had been presented to this old abbey by Byzantine Emperors and Ecclesiastical Princes. It is not improbable that in this instance Catholic ignorance destroyed many of the magnificent Byzantine robes which are preserved in the Church of the Holy Sepulchre, which was contained in the gold thread woven into the fabrics. It is not possible to describe here all the woven pieces made under the influence of Byzantine Art and mentioned by ancient authors or preserved until the present time. The nature of the designs was composed of animals' faces, more elaborately, and surrounded by graceful floral motives. They were made by hand, and were used for various purposes. The rare fragments of pieces dating from this period correspond in many cases with the fabrics of the Byzantine Empire. According to the opinion of Dr. F. Bock, in the Byzantine Museum of the Fabre in France, the 7th century is perhaps the most interesting period for this country, for the Byzantine and Byzantine work of the time is more florid. It is noted, finally, the struggle of Christian martyrs with wild beasts in these designs, and the presence of the designs in the Cathedral of St. Vitale in Ravenna. The surviving fragments of the fabric, the church of the Emperor Justinian and his Queen Constance, the ill-famed Theodora, are followed by their relatives in the sacred diptych, for the bodyguard, etc. All the men are dressed in splendid garments with many folds. The fabrics of the later centuries with various designs referred to the last period, when such figures had the advantage of being seen upon figured textile designs; even art was outwardly being concealed, the practice of the office of idolatry, but this is a matter I leave to others.

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(The to be continued)
THE TEXTILE MERCURY

The principal industry of the city of Siena, Turkey in the woollen manufacture of wools and gossips. It is estimated that over 500,000 pair are manufactured per annum at Siena, Florence, and Florence.

Wool: the raw material for the manufacture of textiles.

**June 11th, 1862**

The golden thread.

A maiden stood in an old world room, With the early light on her golden hair, And said, as she closed her golden eyes: "The web of my life shall be bright and fair, I shall spin out of my golden years, work of every sort other than the threshold.

I have no protection other than my maiden,

The work of the Holy Fire, under the guidance of the Holy Ghost, in the year 942. Now, 533 of the Hegira in 1345 of our art, so that the carpet was still in existence in the city of Constantinople, the seat of the Byzantine Empire. A carpet not only displaced and valued, but also of such a weight, and of such magnificent patterns, that it was an object of wonder and admiration among the citizens of that city.

In an adjoining room the same design was repeated, with the same beauty and magnificence, but in a smaller size, and with a different color-scheme. The same workmanship, the same beauty of design, and the same splendor of color were to be seen in every part of the room. On the walls and ceiling were painted scenes from the life of the Virgin Mary, and the life of Christ, with the symbols of the four Evangelists, and the coats of arms of the different families of the city.

A work of art, in every sense of the word, and yet a living thing, the carpet was an embodiment of the highest ideals of the Byzantine artist, and a monument to the glory of the Eastern Empire.

**WOOLLEN AND WORSTEDS.**

BRADFORD.—Monday was Black Friday, the usual market for the woollen trade was suspended. Some trade, however, was made. A few attempts to effect business, as remembered from the small attendance on the occasion, and a few barriers, but effects in this direction had little, if any, result. In the afternoon there was no attendance either on or in the various houses. Business here is now practically closed for the week. There was no change evident. Business here is now practically closed for the week.

**ROCHEDALE.—Owing to the Whit-mite holidays, the consumption of woollen goods is practically at a standstill, and hours of change are expected to take place for at least a month. Manufacturers are anxiously awaiting the result of the various matters that are going on, particularly the suit brought by the manufacturers against the goods to the goods required. Prices keep firm, for the manufacturers are making full time of work, and the weather is not likely to improve (yesterday) for the holidays. Very few Yorkshire goods are present at the market. There is no change in prices. Manufacturers are buying wool very sparingly. Spinners are buying in their usual way.

**FLAX AND JUTE.**

DUNDEE.—Messrs. Wilson and Berg report there has been a little better feeling in the market for flax during the past week, and in the jute branch buyers are less resistant. The most noticeable recent changes are in the quality of the material, and the market is steady. There has been a better enquiry, but buyers are still continuing their purchases within the narrowest limits. The prospects of better trade in manufactured goods are improving. The very small quantity sold on natural grounds to better pieces being obtained last season. Today there has been more enquiry, but buyers’ ideas being much below sellers’ little business has resulted. There is no change to report in the market for flax and tow yarns during the week, and the demand continues to be firm. Jute yarns have been firm, and prices are firm. Today’s business in flax and tow yarns has been restricted, but for jute yarns there has been more enquiry at a slight advance in price. In the linen trade there is nothing of special interest to report, the market is steady, and the prices are firm. In the jute trade there has been a decided some doing, and prices are firm.

**BELFAST.—There was a fairly good feeling in the market for flax during the week, but while there has been a general upturn of business the holiday week’s business has probably shown some decrease. The market has been steady to the finish, which is in excellent condition. Yarns meet with moderate attention, and prices are the same as last week. Owing to the high prices, spinners keep well formed, and decline all orders except those that are good. Yarns have been very brisk, and the orders are steadily received. It is stated that the demand for flax is firm. The house and shipping trade in white cloth is unchanged.
ABSTRACTS OF SPECIFICATIONS.

21973. December 20, 1890. LOOMS. J. and E. LINDSEY, Newark, N. J. Wire-loom. The looms have a frame constructed of comparatively thin plates of metal or wrought iron, the said frame being either in parts or in a whole. Various methods of manufacture of the looms in position are described. Drawings.

21990. December 29, 1890. DYES. T. Peters, Chelsea, Mass. Saxony. Reels of the preparation of compounds in suitable in alkaline solution is dissolved in a liquid containing sulphonic acid, and to coloring matters which are sulphonic acids of these compounds. Cottons in wetting or sulphonating them are divided into two main groups, alkali and K or R and X. The method of obtaining the soluble salts of the sulphonic acid compounds is described. Drawings.

22030. December 29, 1890. Fabric. J. W. WALKER, Newmarket, Pennsylvania, U.S.A. A "Beauharnais," "Wilmore," or "Imperial carpet," or other fabric is woven with a raised or figured pile portion and a plain or plain ground portion. Special methods of manufacture of the looms are described. Drawings.

23030. December 29, 1890. Fabrics. J. W. WALKER, Newmarket, Pennsylvania, U.S.A. A "Beauharnais," "Wilmore," or "Imperial carpet," or other fabric is woven with a raised or figured pile portion and a plain or plain ground portion. Special methods of manufacture of the looms are described. Drawings.

24224. December 29, 1890. Fabrics, etc. J. R. Green, late of Balsall Heath, Birmingham, England. Relating to the manufacture of dyes for paper, cloth, glass, etc., and the use of their compounds. The process consists in dissolving the dye in a suitable strong solution of sodium carbonate, and then applying the solution to the material to be dyed. Drawings.

25318. December 29, 1890. Fabrics, etc. J. R. Green, late of Balsall Heath, Birmingham, England. Relating to the manufacture of dyes for paper, cloth, glass, etc., and the use of their compounds. The process consists in dissolving the dye in a suitable strong solution of sodium carbonate, and then applying the solution to the material to be dyed. Drawings.

25974. December 29, 1890. Fabrics, etc. J. R. Green, late of Balsall Heath, Birmingham, England. Relating to the manufacture of dyes for paper, cloth, glass, etc., and the use of their compounds. The process consists in dissolving the dye in a suitable strong solution of sodium carbonate, and then applying the solution to the material to be dyed. Drawings.
THE TEXTILE MERCURY.

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COTTON UNCOMMERICAL.

There are many ways of looking at cotton. It may be approached from an advantage from the statistical side, bringing into view the marvellous developments of its culture, trade, and industry, the movement and finance invested in it, the population and interest dependent upon it. It may also be approached, but without so much advantage, from the positions and the direction, upon which Mr. Gosselin had something to say not long since, proving that the "cotton lords" enjoy very little more than an empty title. There is the historical standpoint, from which the outlook is unlimited, either in point of time or space, connecting the finished spindle with the crude substance in the velocity of its revolutions, with the rude implement that has been used for years and before invention put more power into it, and tracing all the mighty productive capacity of modern machinery to the first mechanical processes employed in clothing mankind. It would take a long book, or a big book, to completely exhaust even the ordinary inspirations of the chief among textiles, what may be called the commonplace of cotton. There would still remain for consideration all the wider bearing of cotton in its effect upon the welfare and habits of the people, just as it was not so long ago that the commoner wearing of printed calicoes, which required washing, led to greater personal cleanliness, and for the purpose we have at present, more particularly in view, there would be plenty of room for study of the evidence, here, there, and everywhere, of adaptations of cotton in our language. Cotton wool is an equivalent for luxury—to be lapped in cotton-wool implies tenderness of treatment. Cotton is still used in a figurative sense in many parts of the country, and if the applications of the word are not always obvious at first sight, there is no doubt of the opportunity for inquiry or conjecture. For instance, in a volume just issued by Mr. Elliot Stock, on "The Peasant Speech of Devon," we find cotton included as "tongue to be beastly trilled," and in a sentence given to illustrate the occurrence of the word in this rugged vulgar tongue, it is written, "I'll cotton thy fule yere three dellite crew yeerlymly times." There is the same emphasis given to the word, and no doubt as frequent an administration of domestic justice after it, in Northern as well as in other Western counties, and many a country lad has some cause to know what cottoning means. There is the other and much more familiar metaphor in which cotton signifies agreement, mutual inclination and liking; as where it was said in Walker's "History of the Independents," that the Parliament and their Masters of the Army could not cotton together; and again in Drayton's rendering of Horace—

So freeze he, things true and false,
So always might's be;
That part with mild, and mild with lusty,
Maye cotton and agree.

As this occurs in a name issued early in Elizabeth's reign, there are some centuries of justification for the collogium by which we "cotton to" any proposal. Further significance is given to the word in a way indicated by Dyche's "Dictionary" of 1777. There, following an amusing Inquisition description of cotton as a "woollen kind of flax," brought at that time from the Levant and both Indies," it is given again as a verb, "to agree, succeed, or hit," which is incorrect enough, and in olden days as a synonym for success in any enterprise. Names explains this as probably derived from the finishing of cloth, when it clearer, or rains to a reputation, is near or quite complete. It is often joined with gere, which is also a technical and manufacturing term. Corresponding names are given from Boxemont and Fletcher's "Monum. Thomas," 1615—

From Lyly's "Alexander and Campaspe," 1554—

"Your cotton will not come.

From the "Family of Love," 1609—

"It cottons well, it cannot choose but hear.

Apothecary.

This latter instance is explicit enough in its textile expression to contradict Mr. Smythe-Palmer's theory that cotton in this sense is evidently an old English word still surviving, and has nothing to do with cotton, being identical with Welsh cododa, cymo, to agree, consent or coincide, from cydym, cydym accord, unanimous, coincident, literally 'at one' (yn) together' (yf, yf).

"To cotton to a person' is to be of one with them, and various senses are given from Boxemont and Fletcher's "Monum. Thomas," 1615—

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fibre in being a nitro product; that is, the atoms of nitrogen are combined with oxygen in the form NO, while in the natural product they are connected with hydrogen in some form or other. In composition artificial silk is very variable, owing to the fact that the action of the nitric acid forms a variety of nitro products. One essential difference between artificial and natural silk is that in the former oxygen is abundant; in the latter it exists only to a small extent, and there is more carbon in its composition. Khilman, of Lille, proposed many years ago to convert cotton into nitro cellulose by dissolving its elementary fibres, but at the same time he recognized that its inflammable properties were a great drawback to the adoption of the process. This inflammability is, indeed, the most serious hindrance to the extended use of artificial silk. It has been stated that this defect is overcome by a subsequent process of denitrating, but the author, from his experience, says that all the schemes which have been proposed have been impracticable on the large scale. As a matter of fact the means adopted to denitrate the silk, and so modify its inflammability, also destroy the additional dyeing properties which nitration has imparted to it, so that the two methods of making artificial silk are lost.

The oldest, that of Chardonnet, consists in drawing a thread from a solution of nitro-cellulose in a mixture of alcohol and ether. The solution is poured on silk and the cohesion of the threads is thereby produced. Divillier, in 1856, consists in drawing a thread from a solution of gum-cotton, albumen, and gelatine, in glacial acetic acid. The silk produced by this method resembles more closely natural silk than that produced by Chardonnet's method, but on the other hand the use of glacial acetic acid as a solvent is rather a disadvantage, owing to its powerful corrosive properties, as it necessitates the use of silver, platinum or gold-plated tools for dismounting the materials used in the production of the thread. Artificial silk is white, and has a fine lustre, but it is deficient in tenacity, which is another objection to its use. As to its dyeing properties, unfortunately it will not stand the action of boiling water, this seriously impeding the work of the dyer. In dyeing the silk, therefore, it has to be dyed cold, and the old wood colours, such as madder, chlorophyllin, logwood, and orich, give the best results. There seems at present no prospect of artificial supplanting natural silk, although, if better methods were discovered of denitrating it, which should leave it non inflammable without destroying its other properties, it might, in the opinion of the Moyret, have a brilliant future before it.

**Calico-Printing on the Continent: the Colourist Chemist.**

Some time ago we reproduced some sarcastic remarks of a famous reporter on the artificial known dyer, who spoke of the lack of practical chemists in the silk trade. The reply to this was a vehement championship on the part of a Yorkshire gentleman—or rather a gentleman who spoke in Yorkshire—of the rule of thumb. The rule of thumb, we were told at a dyers' meeting in Bradford, had made England what it was. Rule of thumb was everything—science nothing. The speaker did not ask three cheers for the dyer, but a cheer for himself; and there was no more than a faint applause from the floor. But not far from the dyer's meeting was the Society of Arts meeting, where the same view was expressed. Somewhere, or other, he said, Englishmen always manage to beat the French at anything but tridling and ornamental work. The difference between the two dyers is that the Frenchman never writes his name on his work, while the Englishman always signs his work. In the latter case, however, a good proof of the superiority of the English worker, is that the work is marked with the name of the maker. The Frenchman is noted for the care he takes in the design of his work, and the Englishman is noted for the care he takes in the execution of it. The Frenchman is noted for the care he takes in the design of his work, and the Englishman is noted for the care he takes in the execution of it. There are two qualities in the best work, which are unalterable, and which will remain

**The Textile Mercury.**

June 18, 1871.