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THE PRESENT AND FUTURE OF THE COTTON MANUFACTURE.

Those political leaders who instigated and promoted the rebellion, labored under the conviction that their cotton controlled the Governments of Europe; and that as a consequence of its supply being forcibly stopped, war would ensue, for the purpose of breaking the blockade of the cotton ports. All such anticipations, however, have been disappointed. There never has been any interference with the blockade; and what appears to be remarkable to many persons is the determined opposition to all such interference by the leading English cotton manufacturers, and even by the operatives who have lately been subsisting by thousands on charity. To the credit of our Northern cotton manufacturers, be it said that they have not uttered a word of complaint; although many of them have suffered more, financially, than any other class of our producers.

A report to the Boston Board of Trade, on the cotton manufacture of 1862—by Mr. Atkinson—contains much useful information on the condition of this branch of industry. Prior to the war, there were about 4,800,000 spindles in operation in the cotton mills north of the Potomac; now the number running is only about 1,700,000. Several of the Massachusetts spinners had laid in a full supply of cotton for 1861; and by running half time, they were enabled to operate a portion of their machinery until the end of 1862. Thus they realized large profits for their goods. But while the large dividends paid by a few mills have attracted much attention, nothing has been said about the heavy expenses of such as were obliged to stop. The annual expenditure of one corporation owning two mills, running 15,000 spindles, and having a capital of $600,000, has been $49,232 while being stopped, and the expenses of other mills, not running, have been in the same proportion. When it is taken into consideration that about two-thirds of the number of cotton spindles in the country are idle, a tolerable idea of the sacrifices of the cotton manufacturers will be obtained.

It is satisfactory, however, to know, that this large decrease in the operations of our cotton mills, has not caused distress among the operatives. Enlistments in the army, and the great demand for mechanics in the Government workshops, have given employment to the men; while the increased activity of the manufacture of woolen goods, and other branches of business, have given employment to the female operatives. Mr. Atkinson states that, even in Lowell, where the proportional stoppage has been the largest, owing to the cotton mills having generally been devoted to the manufacture of heavy goods, the deposits in the savings banks have largely increased during the past year. The cotton mills which have been most constantly employed, and those which are now running, are chiefly devoted to making light goods, such as printing cloths, &c.

Since the great supply of the Southern staple has been cut off, many descriptions of cotton have appeared in our market, the largest amount imported being 30,000 bales of Surats. All foreign cotton is luferior to American; and only the latter would be employed could it be obtained. There had been an additional duty of ten per cent laid on the Surat cotton; but as coarse grain bags can be made of it, this impost has been removed for two years, to the great advantage of our Western farmers.

The total number of cotton mills in the United States (North and South) is 915, involving a capital of $99,551,000; having 5,035,798 spindles, and 129,458 looms; consuming 403,054,654 pounds of cotton annually, and producing goods valued at $115,137,926. In Ure's "Cotton Manufacture," the cotton statistics of Great Britain for 1860 are as follows:—Number of spindles, 33,099,056; cotton consumed annually, 1,050,895,000 pounds (85 per cent of which was American). The total value of the manufactured goods was $441,664,713—the home consumption being valued at $192,000,000; the balance being exported. It is stated by Mr. Atkinson that the average numbers of yarn spun in America is between 20's and 24's; the average numbers of English yarn is between 40's and 45's.

With respect to the character of cotton suitable for spinning, none equals the American. Surats may be used for coarse numbers, from 14's to 24's, but with an immense waste of the material. From the reports that have been made to the English Cotton Supply Association, upon the examination of the soil and climate of various countries, the Southern States appear to be better adapted for raising cotton than any other part of the earth. Many persons suppose that most of the cotton districts are low, unhealthy coast lands where white people cannot labor. This is a mistake; for the greatest quantities of cotton are cultivated on healthy uplands, and the extent hitherto devoted to its culture, is a mere patch compared with the quantity of virgin land not yet invaded by the cotton hoe. Most of the intelligent cotton manufacturers in England and America believe that, under a system of free labor, cotton will be raised in greater quantities, and at less cost than with slave labor. They are now waiting in hope, expecting that their spindles and looms will not always remain idle, as at present; but trusting that the time is not far distant when the melodious sounds of industry will again be heard in twining and weaving the fleecy products of free labor.

IMPROVING NAVIGABLE RIVERS.

Almost all great cities have been founded on the shores of seas, lakes, or rivers, because these are the natural highways and avenues of commerce. Railways have provided increased facilities for internal communication and travel; but they can never entirely supersede water channels for traffic. In the management of railways, constant care must be exercised to maintain them in proper condition, or they soon become unfit for their intended purposes. Many navigable rivers require the same attention as railways; but the importance of this fact does not seem to be generally appreciated. Not long since, a convention was held at Chicago, Ill.—which was attended by a number of our merchants—for the ostensible purpose of devising measures to connect New York city with the Great West, by a through line of ship navigation. It was proposed to construct a ship canal round Niagara Falls, through which vessels could pass down to Lake Ontario; thence up the Oswego river, through Oneida Lake, into the Erie Canal, and down the Hudson to the sea, without breaking cargo. The project is a grand one, and not impracticable; but those who attended the convention from New York, would have displayed more consistency of action, had they first instituted measures to improve the Hudson river: the navigation of which has been so much interrupted during the present season. Sufficient water flows in this noble stream to float a steamer of 3,000 tuns burden, from the city of Troy to the ocean; and yet the channel is so obstructed for a few miles below Albany, that steamboats and barges get aground daily, and navigation is interrupted for considerable periods of time. A few weeks since we were delayed below Albany for seven hours, on one of the night boats; and a whole fleet of canal boats and larger vessels suffered a similar detention. We have received a recent report by the State Engineer and Surveyor—Mr. W. B. Taylor—which contains some very useful information on the removal of the obstructions from the river. It seems that the earlier attempts to improve the navigation of the Hudson were directed by incompetent engineers, whose efforts were more injurious than beneficial. The best mode of improving the river, set forth in this report, is by Mr. S. N. Payne—an experienced river engineer—and is based upon the system so successfully carried out in the case of the river Clyde, Scotland, which is a mere streamlet compared with the Hudson. Fifty years ago, the Clyde was only navigable to the city of Glasgow, by vessels not exceeding 100 tuns burden. Now, steamships of 3,000 tuns burden may be seen at the quays there, and it has become the third greatest shipping port in Great Britain. This great result has been achieved by engineering ability, and commercial enterprise. The care of the Clyde is vested in a Board called the "River Trust." They employ a first-rate engineer, whose sole business is to improve the river, and keep it in order; and sufficient funds are raised for this purpose by a moderate tax on shipping. This engineer holds his appointment independent of political considerations; and is never removed while he performs his duties faithfully.

The method of improving the Clyde is simple and effectual. It consists substantially in employing powerful dredging-machines to excavate the river bed; and the current is contracted, and made to scour the channel by low walls erected on either side. With respect to the engineering of the Clyde, Mr. Payne states that "it confirms the opinion that the Hudson may be improved to almost any extent," and he calculates that the cost need not much exceed $100,000 for removing the present obstructions—extending for three miles—to its navigation. Four dredging machines are constantly employed on the Clyde, within a distance of twenty miles; and the side-walls or jetties, are kept as carefully repaired as the track of a railway. Such engineering measures should also be employed for improving and maintaining the navigation of the Hudson, and other similar rivers in the United States. The most sensible way of advancing the interests of cities, villages, towns, and sections of country, is by the development and cultivation of natural resources, and local advantages.

ECONOMICAL ADVANTAGES OF SYSTEM.

Persons who have noticed how work is carried on in many of our large machine-shops, cannot but wonder why it is that no established system and routine is laid down to be observed by the workmen. The advantages of such a plan are too obvious to require any comment; and it is, as we have remarked, incredible how many things are left to take care of themselves, that should have been regularly classified, and arranged with reference to the demands of the work. Let us take, for instance, the item of mandrels, as they are called here; or arbors, as they are better known in some other parts. These valuable, and indeed indispensable aids to machine work in too many instances have no more care or attention bestowed upon them than if they were scrap-iron. They are often made of iron, instead of steel, and are cut, hacked, battered, and ground in the centers, by careless workmen, until they are utterly useless. A good mandrel costs too much money to be subjected to such usage, and this is but a small part of the evil; for where such bad practices prevail there are not likely to be good workmen, and no shop can create or maintain a reputation where such carelessness is permitted. The loss pecuniarily is to be considered also; for where there are no regulations as to mandrels or other tools, any workman makes one as he requires it, and throws it down on the floor when he is done, from whence it is perhaps snatched the next moment and used for battering some other mandrel, into, or out of a pulley.

Such folly and wastefulness as this must and should receive the severest condemnation of every right-thinking person. System, as applied to the use of mandrels, is not the only place where it might be adopted with good results. Let us take the matter of measurement, for instance. In too many workshops the only reliance for proper fitting work is placed on an old, illegible, greasy, shaky-jointed, smooth-ended, wooden two-foot rule; which is about as useful for measuring purposes as so many inches of a broomstick. With this valuable aid, the old-fogy workman gravely takes a pair of callipers, and turns up a shaft from it to the size of "four inches."

Another individual bores out a wheel to "fit" it by *his* wooden rule; and the consequence is that, between them, about a sixteenth of an inch of daylight passes through the wheel when the shaft goes in, or else there is a similar quantity of iron to be forced through the bore of the wheel in excess of the proper measurement. These are not instances created for the sake of maintaining our assertion that some system is required, but are cases of too frequent occurrence, as every one familiar with the routine of a machine-shop can testify. What is true in the case of lathe-work is also correct as regards every other transaction, where fitting depends upon actual measurement. The steel scale is an excellent substitute for the box-wood rule, and should be more generally employed by workmen; but none of these can compare in value with a set of standard gages; such as are used in the Novelty Iron Works in this city, and other large and smaller machine works throughout the country. These gages, we believe, are made on the Whitworth standard, and for sizes of 3 inches are divided into sixteenths, while beyond that they are only graduated to eighths of an inch. These gages can be made so that one end can be used in turning a shaft, while the other end is flattened like a fish-tail, and reduced to exactly the dimensions of the calliper ends. Thus a shaft turned by one end, and a hole bored so as to fit the opposite part, will cause both wheel and shaft to fit each other beautifully, without loss of time. This is so much better than the old-fashioned way of using callipers for the purpose, that the two are not to be spoken of in the same breath.

Every part of the machine business can be made the subject of a general and thorough reform. There are numbers of establishments in which wooden chucks, mandrels, bolts, washers, old files, stray hammers, lathe-tools, and every conceivable thing are scattered under the benches, lying on window-sills, and trodden under foot generally. What a spectacle of slovenliness and disorder such a place presents! And what a commentary it is upon the character of those in charge. The pecuniary loss sustained by such a state of things is enormous, and might be dispensed with by having everything in its proper place, and a regular and recognized system of procedure for all, so that work would not be spoiled by carelessness. One of the many advantages would also be soon apparent in encouraging a better class of workmen, and result in good to the whole trade generally.

ICE.

It is not unpleasant at this season of the year to revert to the Polar seas, and the icebergs which slowly circle and drift therein, impelled by the resistless force of the tides. Viewed from this distance, the imagination lends them a charm which a nearer approach, or sudden contact in a vessel, would rudely dispel. If--instead of breeding fogs by drifting down into warmer latitudes, or creating terror in the heart of the mariner as he sees one of them in the grey dawn slowly bearing down upon his becalmed ship--in the place of these perils some enterprising person should boldly make fast to one of them, and tow it down off our harbor, he would find himself the possessor of a handsome sum of money though in a somewhat awkward form; for all ice, whether from salt or fresh water, is fresh, or sufficiently so for use. The value of the ice trade in this country is something important, considering the nature of the article, and the universality with which it has been adopted. Indeed from being at one time a luxury which only the rich could afford to use, it has taken place as an actual necessity; and the procurement of it, in winter, gives employment to a large amount of capital, and a great number of individuals. Of old, the nations of the world who were celebrated for their luxurious tastes, cooled their beverages with frozen snow obtained from the peaks of the mountain ranges running through their several territories; and even to this day, in some of the South American States, the scantily-clad Indians or mestizoes, bear to the homes of the wealthy the frozen snows of the mountains. Of course this is a laborious process, and the refrigerant itself of necessity must soon waste away. With us the case is different, and in our cities the canvas-covered carts, richly freighted with the huge blue blocks, go from house to house to deliver their burden, and are eagerly welcomed. For many centuries the annual frost and snow has covered the earth, and acres of water, changed by the subtle chemistry of nature into sparkling ice, have melted again upon the approach of warmer suns, and no one seemed to have conceived the importance of storing it up for use during the sultry portion of the year. At length, Mr. Frederick Tudor, of Boston, conceived the idea that ice might be made a source of profit; and in 1805 he shipped a cargo of it to Martinique. The ice was cut from the lakes with axes, and shipped at once. As in nearly every commercial enterprise, where the field is novel and untried, and experience has not suggested the proper method of procedure, the venture proved a failure, as did also several succeeding ones, until the war put an end to all trade whatsoever. Mr. Tudor was not, however, disheartened; and with an energy and determination sufficiently remarkable, considering the nature of the case, immediately resumed the business in 1823; and at length, extending his shipments to the West Indies, found his scheme successful. Of course, so long as it was a losing business, mercantile men kindly permitted him to enjoy the field undisturbed; but so soon as it was clearly shown to offer profitable employment for capital, a number of disinterested persons gave it immediate attention. Up to 1832, Mr. Tudor was alone in the ice trade; but he then began to ship to Calcutta in addition to other ports.

Such was the rise of the ice trade in this country as compiled from good authority. The progress of it may be noted in the fact that while in 1832 the amount shipped was but 4,352 tuns, cut from Fresh Pond; in 1854, it had increased to 154,540 tuns. The annual domestic consumption of ice since then is stated to be 70,000 tuns in New England, and in New York nearly 285,000 tuns. It is said that all of this vast quantity is obtained from lakes along the water-course of the Hudson river. The large cities in the Northern and Western part of the State also lay up vast quantities in addition to these enormous amounts, and tuns untold are sent abroad to various parts of the globe. The price, of course varies with the supply; the demand is unlimited. The average price is stated to be, in good seasons, at from $2 to $6 per tun for shipping; and for families, by the season—May to October—$5; at the rate of 9 pounds per day; 15 pounds are served for $8, and 24 pounds for $12. The pounds of the iceman are, however, an algebraic expression, or unknown quantity; and the general supposition is that they deliver at the weight with which they started from their depots, without making any allowance for loss by waste. Out of three weeks that we, as a matter of curiosity, weighed ice that was delivered and paid for as 100 pounds per week, we obtained upon an average 65 pounds During the present year the price of this necessary has been greatly enhanced by the avarice of the companies who monopolize the trade, and they are doubtless making money rapidly.

THE FIELD FOR LABOR.

Recent observation in several parts of the Eastern States has convinced us that the condition of the laboring population in the rural districts is immeasurably superior to the lot of the same class in the city. And this, on many accounts; not the least of which is the material benefit, pecuniary and physical, to be derived from the fresh air, wholesome food, and healthy surroundings of the country. Any one who has ever observed the tenement houses in cities—the manner in which the laboring population herd together—the stale vegetables which they are obliged, from motives of economy, to purchase—the influence of dram shops, and the countless incentives to vice and misery which exist on every hand, cannot but wish that a large proportion of the poorer classes in great cities would transfer themselves and families to the open fields, pure air and simple living of the country. At this juncture, especially when the calls of war have so materially diminished the surplus of labor, when the harvest, ready for the sickle, nods its head impatiently for the reaper to come and gather it in, an opportunity is presented to the poorer classes of crowded towns to settle themselves permanently where they can hope to become forehanded in a reasonable time. The advantages which a cheap rent, a small plot of land wherein to grow vegetables, and other features of rural life present to mechanics, as well as the more common laborers, are not to be slighted; and the manufacturers in towns throughout the Northern States can employ a vastly greater number of hands than they can at present obtain.

If the laboring population would avail themselves of this privilege, we should have a continually changing class, which would result beneficially to us, and to them; for the new men would not be imbued with the vices of the old, and those who went forth from the city would soon lose their false ideas of the division of wealth, in healthy and remunerative employment.

THE LENOX PLATE-GLASS COMPANY.

The rough plate-glass works at Lenox Furnace, Berkshire county, Mass., are the only ones of that class in the country. We recently paid a visit to this factory, which was idle at the time, in order to prosecute needful repairs to the furnaces, and introduce some improvements deemed necessary. We found a large stock of fine plate-glass, from one-fourth of an inch in thickness up to an inch and more; and some ten or twelve feet in length, by three or four feet in width: in fact sheets of the largest size are produced here with ease. The process of making the plates is quite simple, all the machinery necessary for the purpose being comprised in a large cast-iron bed, planed true on the face, provided with raised edges at the sides, on which a large cast-iron roller runs; the roller is about 16 inches in diameter. The fluid glass is poured on the table, the roller pushed over its surface, and the plate is then done. There are several furnaces in the works, for annealing or baking the plate to render it less brittle, which are very extensive. The furnaces are all heated with wood.

The crucibles or pots in which the glass is melted, are made on the premises, from clay, which being brought from Germany, is quite costly. One pot holds about 450 pounds of glass, and will last about four weeks. The fine quality of the Lenox plate-glass is due chiefly to the excellent sand found in the neighborhood, which is a species of disintegrated quartz rock common throughout Massachusetts. This is pulverized and sifted, and is of a beautiful white and glistening appearance. The company have had considerable difficulty in making a market for their goods; as wholesale dealers in the cities were not disposed to purchase of them. They succeeded, however, in creating a reputation for their glass among small dealers, which they soon increased to an extended business acquaintance; and they are now doing very well. It is designed to introduce machinery, for grinding and polishing the glass, so as to produce the finest qualities of window and mirror glasses; but this has not yet been accomplished for the want of adequate machinery. It is the intention of the company, however, to prosecute the idea at an early day: so soon as the necessary preparations can be made. There is no reason why an article equal to the best French plate-glass cannot be made in this country, by the introduction of adequate means for polishing and finishing.

THE INTERNATIONAL STEAM FIRE-ENGINE TRIAL.

The report of the Committee on the steam fire-engine trials—noticed in our issue, last week—has been made; and the prizes have been awarded. In the large class engines, the first prize of £250, was awarded to Messrs. Merryweather & Son; second prize of £100, to Messrs. Shand & Mason. For the small class engines, the first prize of £250 was given to Messrs. Shand & Mason; second of £100 to Messrs. W. Lee & Co.—for the "Alexandra"—American engine.

The weight of the engine which gained the first prize was 2 tuns, 18 cwt.; that of the one which gained the second prize, 2 tuns, 28 lbs. The American engine, which competed—the "Victoria"—belonging to J. Butt & Co.—weighed 2 tuns, 14 cwt.; W. Robert's engine weighed 1 tun 19 cwt.; Easton, Amos & Son's, 2 tuns 18 cwt., 84 lbs. This engine did very well in one trial; but injured its furnace so much as to be thrown out for those which followed. The large engines had four trials; two of which con