

MANUFACTURING AND BUSINESS ITEMS.

METALS, ETC.—Sweet, Barnes & Co., the great steel manufacturers of Syracuse, are about commencing the manufacture of files by new machinery invented and patented by W. A. Sweet, the senior of the firm. Three hundred and fifty different kinds of files will be made, and distinguished by numbers instead of the English technical names.—A new hardware manufactory has been commenced at Greenwich, Conn., under the firm of Russell, Burdall & Ward, with a capital of \$300,000.—New rolling mills are to be started at Corry and at Hummelstown, Pa.—A cutlery concern of \$100,000 capital will commence manufacturing at North Adams, Mass., next spring.—The old Wenham Iron Foundry, at North Carver, Mass., is to be rebuilt.—The New Bedford Glass Company will start in February.—The first type foundry in the Pacific states was started in San Francisco last month. Over \$100,000 worth of printing types are used up in California annually.—It is stated that there are only three places in the United States where sheet and bar zinc is manufactured. These are Bethlehem, Pa., La Salle, Ill., and Mineral Point, Wis. The furnaces of Mathieson & Heghler, at LaSalle, yield 500 lbs. of this metal per day, from 12,000 lbs. of Wisconsin lead ore. Their rolling mill is capable of turning out 12,000 lbs. sheet zinc per day. The total consumption of bar zinc in this country is estimated at 10,000 tons, most of which is imported. That of sheet zinc is much greater. American zinc manufacturers cannot compete with the foreign in price, but the purity of the article commands the preference notwithstanding, to a limited extent, for certain purposes. Most of the ore manufactured in this country is made into paint.

TEXTILES.—The Spragues of Rhode Island are reported combining with the capitalists and city authorities of Augusta, Me., to organize a vast cotton manufactory at that point on the Kennebec. It is proposed to set 500,000 spindles in operation shortly, on condition that the value added to their property shall not be taxed by the city for two years.—The Fall River Print Works are about erecting an additional mill, 408 feet long by 72 wide and five stories high. The Cooperative Mill, a very large corporation, is also going up; another is just organized, and will break ground soon; another, just erected, is awaiting its machinery from England; and efforts are making to organize still another mammoth concern, with \$2,500,000 capital, for a mill with 100,000 spindles; making over twenty large cotton mills devoted mainly to the manufacture of print cloths and prints. These enterprises completed will make that city the leading manufacturing town in the United States, placing it 130,000 spindles ahead of Lowell.—A cotton mill with 2,000 spindles is going up at South Easton, Mass., at a cost of \$75,000.—John Murchison of Palestine, Texas, is about to erect a cotton factory in that place, and has already imported the requisite machinery from England.—A hat manufactory is about to be started at Kennebunk, Me.—The wool of California and Oregon amounted in 1866 to 7,000,000 lbs., the major part of which was worked up in the mills of those states. The four principal woolen mills in Oregon are the Willamette, capacity 400,000 lbs. of wool and 300,000 yards of cloth annually; Oregon City, 300,000 lbs. and 300,000 yards; Eagle, of Brownsville, "3,500 yards weekly, and 1,500 lbs. of wool annually" (so the state official report is printed in an Oregon paper); and Ellendale, 75,000 lbs. wool, 90,000 yards cloth, and 30,000 lbs. yarn.—The Oregon Iron Works, at Portland, consume about six tons raw material, and turn out work to the value of \$1,000 per day. There are a number of iron works in Portland and other places nearly equal to this.—The pioneer silk manufactory at San José, Cal., is now nearly or quite ready for operation.

PAPER.—A new paper mill is to be erected at Bennistown, Pa., by a Buffalo company.—The Stewart distillery at Buffalo has been purchased for a paper mill by another Buffalo company, of which Ira Hersey is president, with a capital of \$1,500,000. It is expected to turn out forty-six tons daily, and to manufacture manilla and printing paper from grasses, by a new invention called the "Meech process."—It is estimated that there are now 1,000 paper mills in the United States, with an aggregate capital of \$40,000,000, and a daily product of 1,200 tons. Rags are consumed to the value of \$60,000,000 per annum.

OILS.—Oil boring, strange to say, has been run into the ground. The quantity thrown upon the market, together with the diminished exportation, has reduced the price so low that the smaller wells will not pay for working, and are in many cases abandoned. Others are shutting off to await better times and help work up the price. Still others are storing away on the ground for an advance. An Oil Producers' Association is talked of.—The whale fisheries of 1866 have been more than ordinarily successful: 311 American vessels (against 279 in 1865) having secured 85,323 barrels of oil, an increase of nearly 24,000 barrels. Besides this, 109,000 barrels of oil were imported and but 9,370 barrels exported.

VARIOUS.—The shipbuilding of Maine has increased 25 per cent this year: estimated tonnage built, 100,000, to 80,000 in 1865.—The propagation of fish is increasing considerably in New England. Many farmers in Massachusetts make a paying business of their ponds.—Over seven million tons and \$256,000,000 worth of property passed through Buffalo in 1866.—It is remarked that the growth of the wheat product of Minnesota is unexampled. The export of the last year amounted to 9,267,153 bushels. The taxable property of the state increased \$12,000,000, or 25 per cent, in the same period.

The population is 340,000, of which one in every seven go to school.—The salt mines of Nevada are among the wonders of our mineral territory. A single bed covers 50,000 acres with solid rock salt, 95 per cent fine, and deeper than any shaft has yet been sunk. The accumulation continues without intermission, from the salt water which wells up, over-spreads the surface and evaporates, leaving a snowy spread of fine salt, of which 2,000,000 bushels are gathered annually.—The wine product of Los Angeles alone is calculated at over 1,000,000 gallons in 1866.

EUROPEAN VS. AMERICAN COTTON AND WOOLEN MACHINERY.

A correspondent from St. Charles, N. C., sends us a letter directing our attention to an article on the above subject which, he says, is going the rounds of the Southern press. The article is a letter published in the Raleigh (N. C.) *Sentinel*, and introduced by the editor as one received by Wm. H. Willard, Esq., from "one of the most practiced and successful operators in the Southern States." We copy the letter in full:—

DEAR SIR:—I notice by the newspapers the great improvements going on in manufacturing in North Carolina.

Last fall I went to Europe to get posted with regard to machinery of all kinds for the manufacture of cotton and wool, and to purchase woolen machinery for the mill I am now in. I returned in January to prepare my buildings, water wheel and shafting for the machinery on its arrival. We have but a small mill yet—only two sets 48 inch cards, but with my European improvements we can do a great amount of work on them. Last week we carded 5,073 pounds of clean-scoured wool, enough for six thousand yards heavy, all wool, goods. If I had supplied myself in this country I could not have done more than half that amount of work. We run our carding and spinning night and day. Our goods are all sold as fast as made—our agents in Baltimore wrote last week that every yard was sold.

I found the best cotton machinery in England, and the best woolen machinery in France, Belgium, and Prussia, except spinning, which these countries now get from England. I have machinery running from four different countries. I went in company with Mr. Johnston, of New York, was with him while there and came back with him. He purchased from one company eighty-six mules running from seven hundred to eight hundred spindles each. Garnn & Co., of which Mr. Johnston is manufacturing partner, run 4,200 looms on printing cloths. Mr. Johnston goes to England every year—he is there now.

He is throwing out all his American machinery up to the spinning, and that he replaces with English as fast as it wears out. When I was last at his largest mill, he was throwing out six of Whiton's best lappers, almost new and as good as any he makes, and putting in English. I think Mr. Johnston the best cotton manufacturer in this country. Garnn & Co. were hard run, and their paper was as low as any in New York fifteen years ago, now they are rated at seventeen millions. They have been gradually changing their machinery for English since 1857. I state these facts to show you what the best cotton manufacturers are doing. It is important to the people of the South that their mills should have the best machinery and start right, instead of being behind Yankee mills. When Mr. Johnston returns I will give you a letter to him if you wish to see his machinery. The James River Manufacturing Company, of Richmond, have changed all their preparation up to the spinning. I ordered the machinery for them from some of my English friends. I have prices and specifications which I can give you if you wish to order. In England they use no top-flat cards, nothing but the style of one I inclose, one is equal to six old-fashioned top-flat cards. With the fly comb they now put on, you can run the doffer thirty in a minute, if you wish to, and the comb will clear it, to spin 36. Mr. Johnston runs 22-inch doffers thirteen to fifteen. If you should wish any cotton or woolen machinery, or know of any person South who does, you may direct to me here, and I will send you blank specifications with prices. Duty is 35.70 on machinery.

Our correspondent very naturally asks, "Can it be possible that the English are so far ahead of our mechanics in the manufacture of machinery?" It is difficult to reply satisfactorily to this interrogatory if we allow entire credibility to the statements of the writer referred to. Certainly some of the most important improvements in cotton machinery have been made by American mechanics. We do not refer to such inventions as that of the gin by Whitney, but to such as those made by William Mason, of Taunton, Mass., the inventor of the Taunton speeder, the self-acting mule, and the ring spinning frame. His machinery is largely manufactured and used in England, and it is difficult to believe that English workmanship is so superior to American as to make all the difference stated by the writer of the letter. We venture to assert as our belief that the eighty-six mules purchased by Mr. Johnston were of Mr. Mason's plan, and that the American machinery he is throwing out and replacing with English is not of the best kind manufactured here. If our surmises are wrong it is high time that our inventors and mechanics bestir themselves and gain, at least, an equality with Europeans in the manufacture of cotton and woolen machinery. But really the letter appears to be an advertising dodge to benefit the writer as agent for some foreign manufacturers, especially as there is no such firm in New York as "Garnn & Co."

The New Word "Photogram."

"CARL BENSON" asks through the *New York Times* "What does the SCIENTIFIC AMERICAN propose to do with *autograph*, *monograph*, *paragraph* and *lithograph*, all of which represent the thing and not the agent?" We have no means of knowing whether this gentleman means to call for information or to convey a challenge. To meet each supposition in turn: First, what does Mr. Carl Benson think should be done with *epigram*, *anagram*, *telegram*, and *monogram*; all of which words are classically constructed to indicate the thing and not the agent? There is something anomalous in the past manufactures of our word-wrights, on one side or the other, and we have shown clearly where it is. If we are to be too conservative to "reform it altogether," is that an argu-

ment for going on under the wrong precedents when we have an equal number of right ones to follow? For our own part, we think enough of a correct and consistent analogy in the structure of words, to be willing to sacrifice the four wrong words to the four right words above cited. "Paragram" would have a nine-days oddity about it, we confess, but the three less popular words would give but rare offence to prejudice in the corrected form. Put them all into good grammar at once.

THE GREAT PEAT DELUSION.

BY PROFESSOR CHARLES A. SEELY.

A simple inspection of the composition of peat furnishes data for a very close estimate of the quantity of heat it can produce in burning; and thus we may easily arrive at a good opinion of its money value. For the heat producing power is what we want in fuel, and other things being equal the price of fuel must be ruled by it. Prof. S. W. Johnson gives the following as the per centage composition of the best quality of compressed peat:—Carbon 47.2, hydrogen 4.9, oxygen 22.9, ash 5, water 20. Water, ash and oxygen being incombustible cannot contribute to the heat, and the kindest view of them in peat is that they are simply worthless. This worthless matter is then 47.9 per cent. The oxygen is not in a free state but is combined with and thus neutralizes its equivalent of the hydrogen and carbon. The worthless part thus increases to over 50 per cent. of the weight of the peat. And we are too generous when we consider the incombustible part only worthless, for it is positively harmful. Fifty per cent. of such matter intimately mixed with a combustible implies a reduction of the intensity of the heat to one-half, and a notable decrease in the quantity by reason of what is required to change its state. Twenty per cent. of water is to be evaporated out of our model sample, and the heat required for that slips beyond our control. Is it unfair to conclude that this peat has no more than 45 per cent of heat-producing element, and that per ton it is worth only half as much as good anthracite?

It must be noted that the above estimate is made for the best quality of peat, and that it is very far from representing the truth about peat in general. The average value of the peat proposed to be brought into market by peat companies probably does not exceed one-third that of the best anthracite.

It is claimed, however, that by the use of machines (yet untried) peat is to be so improved that it will rival anthracite. But no one has yet told us how and why manufactured peat will produce more heat. No machinery surely can increase the combustible part, or decrease the incombustible and heat consuming part. The fact is, that the effect and object of mechanism is only to improve the physical properties of peat. I suspect that mineral coal is taken as a model, and the machines are to make imitations of its admirable hardness and density. So far, no machine has been able to give peat the density of anthracite.

If any one concerned in the matter is not satisfied with conclusions reached by the above plan of reasoning, let him make the simple and practical test of evaporating water, or learn the experience of others, which may be found widely published in books and periodicals. Concerning peat, there are no questions which need receive a doubtful answer. It has been used as a fuel for centuries, and its relation to other fuel has been the constant study of ingenious men: we have the experience and the best judgment of the accurate and economy-loving German.

But all this is not to say that peat has no value in the United States. I have only labored to point out a fair criterion of its intrinsic value. Peat is simply not so good as something else. Where we cannot have the best, we very properly use and praise the poorer quality. In the desert the lukewarm dirty water is as refreshing as nectar to the gods. The pioneers of the plains use the dung of buffaloes for fuel and they seek it as if it were a treasure. Peat has been a salvation for Ireland and some parts of Germany. Our own country is very broad and we have peat everywhere. If there are localities circumstanced concerning fuel like Ireland, there peat will be a fuel. But Pennsylvania and New York city are probably a great way from such localities. What is needed now is to determine the places where peat can be used profitably. Outside of these the peat bogs should be left undisturbed till our descendants need them. Peat is only an immature coal, and we have only to let it alone, and in a few thousand years we have a coal mine. Perhaps by the time we shall have exhausted our present mines we may open new ones where now are the great Dismal Swamp of the South and the Montezuma marsh of New York.

To conclude,—peat is valuable when on account of cost of transport, coal is too dear. But the actual value has been greatly exaggerated. There is an excitement on the subject which with many has taken the character of an infatuation. Notwithstanding timely warnings of danger some of my best friends have burnt their fingers with peat. This state of things will not last long. In a few years most of the peat bogs will be left to unmolested repose, while some districts in Maine and at the West, will find their peat a bountiful gift of Providence. And history will add the story of the great peat delusion to the facts concerning *Morus Multicaulis* and the Hen Fever. And I trust that all the proprietors of ingenious machines may be as lucky as was Lord Dexter, who sent a cargo of warming pans to the West Indies, and realized a good profit when it was found that the warming pans could be converted into sugar scoops.

AN HONORED NAME.—The last living heir of CHRISTOPHER COLUMBUS, and Duke of Veragua, died lately in Spain.