CATALPA WOOD.

A little over half a century ago General William Henry Harrison, in an agricultural address delivered in Ohio, recommended farmers to cultivate the catalpa because of the great durability of its wood when used for fence posts, etc. He was led to give this advice from having found in an old French stockade at Vincennes, while he was Governor of the then Northwest Territory, pickets of catalpa wood which were yet perfectly sound, although they must have existed in place for more than a century. Lately this tree has become an object of a great deal of attention on the part of arboriculturists, principally on account of the testimony of Dr. Warder and Mr. E. E. Barney and a few others as to the value of its timber.

The catalpa (*Catalpa bignonoides*), although quite extensively cultivated as an ornamental tree in the Middle and Eastern States, is a native of the South and Southwest, having its northern limit in Southern Illinois and Indiana. This tree does not acquire a very large size in the streets, parks, and suburbs of our Northern cities, nor in such situations is it often shapely; but in its native Southern and Western home it is straight and handsome, and often attains a height of fifty feet, with a trunk diameter of three feet or more. The foliage consists of large, heart shaped, long petioled leaves of a peculiar shade of green, and having a silky luster. The tree blossoms in great profusion in June and July, and is then especially ornamental. The flowers, disposed in large showy panicles, are about an inch long, bell shaped, with a five lobed, wavy border, and are white, spotted internally with yellow and violet. The flowers are succeeded by slender, cylindrical, dark brown pods, often a foot long, which hang until spring. These pods are divided lengthwise into two cells, which are filled with flat seeds having cottony wings. When perfectly ripe and dry, the capsules are often used as cigars by boys (the cottony contents readily burning and producing much smoke), and are hence familiarly known as "smoking beans."

Mr. E. E. Barney, the veteran car builder of Dayton, O., has recently brought together all the facts and observations in his possession touching the economic value of this tree, and published them in pamphlet form. From this we learn that there are two marked varieties of the catalpa, one blooming two weeks earlier than the other. The blossoms of the early bloomer are larger, more profuse, and less tinged with purple; pods longer and finer; the bark dark colored and furrowed, resembling the bark of elm and locust trees of the same age. The bark of the late bloomer is laminated, comparatively smooth, and light colored. The earlier variety is of more rapid growth, and is straighter and taller, and has been found to endure a winter that killed the other. Mr. S. H. Binkley has on his farm, several miles from Dayton, a grove of six hundred catalpa trees, of the late blooming variety, planted from seeds twelve years ago. They are now from 25 to 30 feet tall and from 4 to 8 inches in diameter at the ground. They would now make twenty-five hundred fence posts. Eighteen years ago, while repairing a fence, Mr. Binkley, lacking a few stakes, trimmed up some catalpa limbs, three or four inches in diameter, and used them for stakes, thinking they might last one season. A recent examination of these stakes, which have been in the ground for eighteen years, has shown them to be perfectly sound. The valuable qualities of the tree, to sum up the evidence presented by Mr. Barney, are: Its easy and rapid growth in almost any kind of soil, freedom from the attack of insects, and the great value of its timber as regards its durability either in the earth or exposed to the air. The principal demand for the timber will be for railroad ties; for this purpose wood should be durable when exposed to the weather, and neither too soft to resist crushing weight on the rails nor too hard to hold the spikes properly. These qualities, Mr. Barney asserts, are found combined in the catalpa. In addition to its durability, catalpa possesses qualities that render it one of the very finest of woods for inside finish and cabinet work, inasmuch as it has a beautiful fine grain, of a warm yellow color, and is susceptible of a high polish.

Mr. Barney's pamphlet is published for the purpose of disseminating knowledge as to the value of the tree and to promote its cultivation. The author estimates that at present prices a plantation of catalpa will yield a return of $25 per acre for each year of the time during which the trees occupy the ground. Mr. S. Foster, a horticulturist of Iowa, thinks that the common (or late flowering) variety cannot be depended upon north of St. Louis, while the early bloomer has endured the severest winters of the Western States without injury.

American Trade with Belgium.

Mr. Weaver, U. S. Consul, at Antwerp, reports to the Department of State that in exports to Belgium the United States rank next to Great Britain. Our direct trade with that country exceeds $25,000,000 a year, and with more direct steam communication might be largely increased. The staple American articles having a firmly established sale in Belgium are breadstuffs, petroleum, oils, rosin, turpentine, cured meats, lard, tallow, tobacco, dye woods, copper, minerals, clays, drugs, honey, canned provisions, cotton, lumber, and, recently, fresh oysters. To maintain the trade in these productions, great care as to the quality and packing is indispensable. The imports of cotton are decreasing for want of direct communication with our cotton ports. The lumber trade might be increased were the facilities greater for discharging such cargo at Antwerp. The prices of fresh meats, eggs, butter, etc., in the Belgian markets, seem to warrant their direct importation in refrigerator ships. Belgium being the most successful manufacturing state on the continent, the market for American manufactures there cannot be very large; still, the Consul thinks that, in addition to the usual list of agricultural and mechanical implements, household notions, sewing machines, and so on, our machine-made horseshoes and nails, school furniture, carriages, and wheelwrights' supplies, match splints, gutta percha harness mountings, wooden boottrees, lasts, and possibly tram cars, might be profitably sold. In introducing new wares the prevalent styles and taste in Belgium should be conformed to. Above all, economy must be consulted, for, unless cheaper as well as better than Flemish goods, American wares will not sell there.

FENCE ECONOMY.

Dr. Franklin B. Hough, in his recently issued "Report upon Forestry," prepared under the direction of the Commissioner of Agriculture, says that according to recent estimates the cost of the fences in the United States amounts to $1,700,000,000, and the annual expense of maintenance is $198,000,000, excluding interest at 6 per cent on the original cost. We confess to never having had much faith in the accuracy of big-figured statistics of this sort, for the reason in this case that we fail to see exactly how they are reached. Perhaps to take the totals representing one State would be to convey a better idea, and these are furnished by estimates made by the Maine Board of Agriculture, which fix the total length of fences in that State at between 127,000 and 131,000 miles. The first cost is reckoned at $1 per rod, and the interest on this sum, with repairs, etc., comes to about $6,000,000 per annum. This excludes the value of the land covered by the fence itself, which at $30 per acre is worth $975,990.

With some notion of the large sums invested in fences thus attained, it is not at all difficult to realize the importance of the statement quoted by the author, to the effect that "from one quarter to one eighth of the present fences of the country would be amply sufficient to keep stock within proper limits, especially since it appears that we are wasting money through a wrong appreciation of the use of fences which any one, so far as he is personally concerned, can remedy for himself.

The question is, Are we to fence to keep cattle out of fields where they are not wanted, or in fields where they are? The general rule is to do the first; but just here, Dr. Hough says, we are doing exactly wrong, and hence by simply changing our practice the way to economy is open. It is very much cheaper to fence the adjacent lots of a large field than it is to fence each lot separately. Supposing, for instance, an area of one square mile be divided into four 160 acre lots. These, if adjacent, would require 1,920 rods of fence. If separate fences were erected about each lot, then the length of fence would be 2,560 rods. Supposing the number of fields to be 64, of 10 acres each, if adjacent, 5,760 rods of fencing would be needed; separate fences would require 10,240 rods, and here there would be a saving of seven rods of fence per acre; that is at $1 per rod, $7 per acre, or on the entire area the neat sum of $4,380. The difference is saved by the same subdivision fences answering for the adjacent fields.

American Carpets.

Our production of carpets is larger than that of any other country in the world. In 1875 the value of the product was $32,376,168. In 1872 our importations of carpeting amounted to nearly $6,000,000; in 1877 they were only $674,911. In their report as to the character of American carpets, the Centennial judges said: "The proofs at the Exhibition of our attainments in this manufacture were observed with no little surprise. It was manifest, from the absence of rival foreign exhibitions, that in respect to the carpets of the cheaper and medium qualities, up to the two and three ply ingrains, the competition is confined to our own manufacturers. Even rival English manufacturers generally admitted that in the production of Jacquard Brussels, tapestries, and Wiltons, and narrow Axminsters, we have nothing to learn from them either in design or fabrication."

It is worth remarking in this connection that when American inventors undertook the task of devising carpet weaving machinery, the work was all done on hand looms by men. Now women and boys do all the manual labor. In 1844, a man with a helper could weave not more than seven yards of Brussels carpet in a day. Now a girl will weave fifty yards in that time.

The Influence of one Mill.

A single woolen mill in the city of Lawrence produces every week a million yards of dyed or printed cloths. It pays $160,000 a week as wages. It employs 5,300 persons, paying them at an average rate of 95 cents a day to women and girls, and $1.40 a day to men. It consumes 500 tons of starch, and expends $400,000 for printing and dyeing materials every year. The wool it requires calls for the fleeces of 10,000 head of sheep. It secures food, clothing, and usually respectable savings to 5,300 persons and their dependents—not less than 10,000 souls altogether. This, with the freights paid for transportation of its materials and products, shows what one mill contributes to the wealth, power, and prosperity of the country. The woolen industry of the whole country amounts to more than $200,000,000 a year. There are nearly a thousand woolen mills in Ohio and other Western States.

The South as a Field for Manufactures.

In a speech on the Texas Pacific Railway, Senator Lamar lately dwelt at great length on the natural advantages of the South for successful manufacturing. Every condition of soil, climate, and raw material for the development of a great industrial community are there. The South has already begun her industries of the future, and the profits that are realized from them are, in some instances, prodigious. But to develop these industries, she must have free access to the markets of the world, and be able to attract to herself the skill, and capital, and machinery, and appliances of the North. In the South land, food, raiment, and shelter are cheap, and taxation is growing every year less burdensome. In everything except capital, skill, and experience, the manufacturers of the South are on an equality with those of England, and the saving in baling, waste, and transportation gives the South great advantages. Nowhere in the world can cotton be manufactured so cheaply as on the spot where it is grown, where water power is so abundant and unfailing; and every factory set up there will help to develop the diversities of Southern agriculture. The cotton crop last year amounted to 4,700,000 bales; yet the Southern States have but a small part of their cotton lands under cultivation.

Glass Making at Pittsburg.

Pittsburg has 72 glass factories, covering an aggregate area of 200 acres. Twenty-two of these establishments are devoted exclusively to the manufacture of window glass, the remaining fifty to bottle glass, table ware, lamp chimneys, and so on. The work of some of the best of the window glass factories is considered equal to any foreign product. Fully 5,000 persons are engaged in this branch of the glass industry, and the annual product is not less than 800,000 fifty foot boxes a year. The wages now paid to first class men range from $100 to $130 a month. Second class men get $65. In the making of bottle glass, from a half drachm vial to a twelve gallon carboy, American manufacturers claim to beat the best foreign products, with the exception of one particular style of wine bottle, in which Germany excels. In the manufacture of fruit jars, represented by ten factories in Pittsburg, the American article is far superior to the European. There are no plate glass factories in Pittsburg, though they have been successfully established in Indiana and Missouri. The Indiana factory is turning out as good an article as the French, and the machinery used was made at Pittsburg. As yet no cut glass worthy the name is made in Pittsburg, the art of cutting not being well understood, and the demand for this quality of glassware not being sufficient to warrant the importation of skilled and artistic labor from Europe. The moulded table ware is good and cheap, so that a considerable quantity is exported.

Work for New York City.

Referring to the effect of the opening of the Mississippi in furnishing a water way for the commerce of the interior, Senator Windom said that to meet such competition New York must no longer rely upon her present advantages. She must not only give to commerce a free harbor and a free and improved canal, but she must also exert her powerful influence for the removal of all obstructions and impediments to the movements of commerce on the lakes. Nor will this be enough. To give the Northern route its highest degree of efficiency and power, the Lakes and the Mississippi must be connected by a canal, which will make the upper Mississippi river the base line of New York's commerce, and thereby unite the two great systems of lake and river transportation.

American Workmanship.

In the course of a description of a visit to the French war vessel, the Richelieu, a foreign correspondent remarks that it seems impossible for one to go anywhere without some specimen of American ingenuity cropping up; accordingly, on the quarter deck of the Richelieu was a Gatling gun beside a mitrailleuse. It is astonishing, the correspondent adds, how tasteful Americans are in everything relating to machinery. The Gatling, beside the dull, heavy, somber French piece, looked like a bit of jewelry, its steel and brass flashing like gold and silver in the bright sunlight of the Mediterranean. And this is the more noteworthy because the French have a decided bent toward decoration, and generally make things look as well as possible.

Progress in Hard Times.

Notwithstanding the times, it is doubtful if the country ever made greater or more rapid progress in substantial wealth than during the past seven years. From a comparison of the statistics of the census of 1870 with those furnished by the Bureau of Agriculture for 1877, it appears that there were 31,000,000 more acres of land under cultivation last year than in 1870, an increase of 34 per cent. The percentage of increase in the number of corn produced was 22½; of wheat, 52; of rye, 42; of barley, 35; in tons of hay, 34; and in pounds of tobacco, 91 per cent. The live stock over the aggregate of 1870 was, horses, 44 per cent; mules, 45; cows, 26; oxen and other cattle, 29; sheep, 25½; swine, 28 per cent. The aggregate increase in the number of live animals amounted to about 25,000,000 head. The excess of the grain crop of 1877 over that of 1870 was nearly 550,000,000 bushels. Our exports for the year ending June 30, 1877, exclusive of gold and silver, amounted to $632,980,080.