

A REMARKABLE DOUBLE TREE.

The SCIENTIFIC AMERICAN of December 8, 1894, contained an interesting picture of a double elm. The accompanying cut of a double ash is from a photograph taken by Prof. William Werthner, of the Dayton High School. The tree stands near Waynesville, O. It is a very symmetrical coalescence of two blue ash trees, 5 feet apart at the ground and at 15 feet above joining to form a perfect trunk that extends to a height of some 70 feet. Each tree is from 15 to 18 inches in diameter, and each trunk, as well as the upper bole, is perfectly normal, nor does the fork show any signs of a flattening, ridge or one-sided coalescence. Hence, the union must have taken place when the trees were saplings.

Is this a "natural graft," or did some Indian possibly use the saplings as part of his wigwam support and tie them so tightly as to induce a coalescence? The size of the trees (considering the slow rate of growth of the blue ash) seems to make them antedate the white settlers in Ohio.

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PULPIT IN THE CASTLE CHAPEL AT ASCHAFFENBURG.

The accompanying engraving is reproduced from the Building Edition of the SCIENTIFIC AMERICAN for September, 1896, in which some account of Aschaffenburg, a town in Lower Franconia, Bavaria, where the subject of the illustration is to be found, is given. The history of Aschaffenburg goes back to Roman times, and it has long been noted for its educational establishments. The Pompeianum, a villa erected by King Louis of Bavaria in 1824-49, in imitation of the house of Castor and Pollux at Pompeii, is one of the sights of the town, as is also Abbey Church, which contains fine monuments. The schloss, or castle, with its four lofty towers, each 191 feet high, was erected in 1605-14. The pulpit was built in 1630 from designs by Georg Riedinger, of Strasburg. The name of the builder is unknown. The design of the pulpit is good, considering its date, for it was made in the midst of the Rococo period. The combination of conventional ornament with figures in the round and bass-relief has not usually been as successful except in the hands of a few of the best Italian sculptors.

The original engraving of this handsome piece of work appeared in *Blätter für Architectur und Kunsthandwerk*.

The Gagnon Electric Railroad at Butte, Montana.

At the recent annual meeting of the Montana Society of Civil Engineers, President Herron described the Gagnon Electric Railroad, which the Colorado Smelting and Mining Company, of Butte, has the past year built to avoid the wagon hauls of its ores from the mine to the smelter.

This interesting work has a total length of 2.7 miles, says the Engineering and Mining Journal. At the Gagnon terminal is a tunnel 254 feet long through the waste dumps. This tunnel is on a 70° curve, and has a grade of 3 per cent. At the reduction plant terminal the concentrator bins are approached on a trestle with a grade of 2 per cent and a 65° curve. The maximum grade for loaded cars going out of the tunnel is 3 per cent. Empty cars returning up Montana Street have a maximum grade of 10.62 per cent. This grade is from Park Street to the mouth of the tunnel, and is operated by an electric hoist plant of two 15 H. P. Sprague double reduction motors established at the mouth



DOUBLE ASH NEAR WAYNESVILLE, OHIO.

Photo, by Wm. Werthner, Dayton, O.

of the tunnel. A cable is attached to the cars at the tunnel, which is the summit of the 10.62 per cent grade, and the cars are then let down as far as Park Street. At this point the cable is detached and the cars then proceed to the reduction plant under control of the trolley and brakes, having then a maximum down grade of 7.46 per cent.

The cars are of 10 tons capacity and are operated two

together. Each is supplied with two 15 H. P. motors, and power is furnished from the city electric plant. Track and wheel brakes are on each car, but the wheel brakes are ordinarily sufficient to control them, the track brake being used only in emergencies. The electric hoist will also probably be done away with, as the combination of the two brakes is found to be efficient, even on the 10.62 per cent grade. The road is owned by the Butte Consolidated Street Railway Company, the ore being hauled by them under contract with the Colorado Company. Mr. F. W. Blackford had charge of the construction of the line.

A Long Distance Trial of the Torpedo Boat Porter.

Following closely upon the performance of the torpedo boat Porter on June 6, when she made a record of 42 miles in 1 hour and 50 minutes, comes the announcement that she has recently made the run around Long Island in 12 hours and 35 minutes. As the total distance is about 300 miles, she must have averaged from 23 to 25 miles an hour continuously for half a day. The little vessel left her moorings at the foot of Twenty-third Street at six o'clock in the morning, and the inspecting board was landed at Brooklyn at 6:35 P. M. the same day. The excellence of the workmanship on the engines is shown by the fact that they ran continuously at this high rate of speed without any mishap or heating of the journals. The highest speed for any one hour of the run was 27 knots, which is about a knot and a quarter less than the highest speed attained on her first trial trip.

While upon the subject of high speed vessels, it is interesting to note that the *Ellide*, a pleasure yacht which has been built from the designs of Mr. Charles D. Mosher, has made a speed of 33½ miles an hour during a preliminary trial trip on the Hudson River. The *Ellide* is about 80 feet over all, with a beam of 8

feet and a draught of 4 feet. Steam is supplied by a Mosher water tube boiler, and she is driven by quadruple expansion engines of 800 horse power. The boiler was not carrying a full head of steam, and it is expected that when the official trial takes place, the *Ellide* will prove to be the fastest vessel of any kind in American waters, if not in the world.

Production of American Cheese.

A recent report of the United States Department of Agriculture shows that nine-tenths of the cheese produced in this country comes from the States of New York, Wisconsin, Ohio, Illinois, Vermont, Iowa, Pennsylvania, and Michigan, in the order of their importance. The State of New York turns out half the total product, and the production of this State and that of Wisconsin represents more than two-thirds of the total. The cheese made annually in the United States necessitates the use of milk from about 1,000,000 cows, and its value varies between \$20,000,000 and \$25,000,000. In spite of the importance of the home production, the United States imports annually about 9,000,000 pounds of foreign cheese. The annual rate of consumption, which shows a slight tendency to decrease, is actually about 3 pounds of cheese per head of the population. The production amounted to 105,000,000 pounds in 1849; 103,000,000 in 1859; 162,000,000 in 1869; 243,000,000 in 1879, and 256,000,000 in 1889. The exports amounted to 81,000,000 pounds in 1893, 74,000,000 in 1894, and 60,000,000 in 1895.



A PULPIT AT ASCHAFFENBURG BAVARIA.