

*American Sycamore*



Forest Service

U. S. DEPARTMENT OF AGRICULTURE



# AMERICAN SYCAMORE

(*Platanus occidentalis*)

By H. S. BETTS, senior engineer, Division of Forest Products

American sycamore, commonly known simply as sycamore, grows to a larger diameter than any other American hardwood. Trees are on record that measured over 10 feet in diameter and 140 feet in height.<sup>1</sup> The range of sycamore extends throughout nearly all of the eastern part of the United States. It is a hardy and fast-growing tree and thrives in the wet bottom lands of the Ohio and Mississippi River valleys where it often serves a useful purpose in holding river banks in place. Although the supply of sycamore is less than that of many other hardwoods, the fact that it often grows on lands not suitable for cultivation will probably insure a continued supply for commercial purposes.

The tree is easily recognized by the smooth whitish or pale green patches of new bark which are exposed by the shedding of the old bark. Sycamore wood is moderately strong and hard, has a reddish-brown color and a striking figure when quarter-sawed. It is used principally in the manufacture of furniture and food containers.

Sycamore is widely used as a street tree, especially an imported sycamore (*Platanus acerifolia*) which has the advantage of being especially free from attack by fungi and insects. In addition to the eastern sycamore, there are two other native sycamores which grow in the Southwest, i. e., California sycamore (*Platanus racemosa*) and Arizona sycamore (*Platanus wrightii*). The wood of the southwestern sycamores is used very little for commercial purposes.

**Nomenclature.**—American sycamore is commonly called sycamore. Other names sometimes used are button-wood, button-ball tree, and plane-tree.

**Distribution and growth.**—Sycamore grows in scattered groups or singly from southern Maine westward to Nebraska and southward to eastern Texas and northern Florida (fig. 1). It grows best on flat lands where there is a good supply of ground water and along the edges of streams, lakes, and swamps. It is rarely found on dry soil. Sycamore usually has a short trunk which often divides near the ground into conspicuously irregular and massive branches. The trees do not as a rule yield a large proportion of high-grade lumber. When mature they are generally about 90 feet high and from 2 to 5 feet in diameter. Such trees are frequently hollow at the base because of heart rot. Smaller second-growth trees not over 20 inches in diameter are usually sound.

**Supply.**—Figures are not available on which to base a reliable estimate of the supply of sycamore. A very rough estimate places the stand at approximately 3,000,000,000 board feet. Probably at least one-half of the stand of sycamore is in the central and southern portions of its range in Alabama, Arkansas, Indiana, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee.

<sup>1</sup> Yellow-poplar is the tallest American hardwood.



FIGURE 1.—Range of American sycamore (*Platanus occidentalis*).

**Production of lumber.**—The first recorded production of sycamore lumber was in 1899<sup>2</sup> when the cut was 29,715,000 board feet (fig. 2). In 1904 it dropped to 18,002,000 feet and then rose in 1909 to 56,511,000 feet. For the next 20 years it remained below the 1909 figure—generally considerably below. In 1929 production reached 57,714,000 feet and 3 years later in 1932—a year of business depression—fell to an all-time minimum of 7,747,000 feet. In 1943 the production of sycamore was 67,935,000 board feet. The average annual cut of sycamore lumber for the 10-year period 1934–43 was 37,400,000 board feet. Maximum production was reached in 1942 when the cut was 77,700,000 board feet reported by 28 States. The marked increase in the production of sycamore in 1941, 1942, and 1943 was probably due largely to the heavy demands for boxing and crating lumber brought about by the war.

The center of production of sycamore lumber has tended to move southward from the States bordering on the Great Lakes to those bordering on the Gulf of Mexico. Indiana was the leading State up to 1915.<sup>3</sup> For the next 11 years Arkansas was first (1915–1925.) It

<sup>2</sup> Statistics of the Bureau of the Census.

<sup>3</sup> Except in 1911, 1912, and 1918, when Missouri or Arkansas was first.

was followed by Tennessee (1926-1932)<sup>4</sup> and then by Mississippi which was the leading State up to 1941.<sup>5</sup> In 1941 and 1942 the leading States were Indiana and Missouri, respectively. The five leading States in 1943, in order of production of sycamore lumber, were Missouri, Mississippi, Alabama, Arkansas, and Louisiana.

**Veneer.**—The amount of sycamore consumed in the manufacture of veneer ranged from 576,000 feet log scale in 1905<sup>6</sup> to 7,319,000 feet log scale in 1937.<sup>7</sup> For the period 1927-1937 the average annual consumption of sycamore veneer logs was 5,581,000 feet, equivalent to approximately 6,700,000 board feet of lumber.<sup>8</sup>

In addition to the sycamore used for lumber and veneer indeterminate amounts are cut for other purposes such as railway ties, cooperage, fence posts, and fuel. The average annual cut of sycamore for all purposes in recent years is estimated at 45,000,000 board feet.

**Properties.**—The heartwood of sycamore is reddish brown. The sapwood is lighter in color and generally from 1½ to 3 inches thick in trees of commercial size. At times the heartwood and sapwood are not clearly defined. In quarter-sawed wood the medullary or pith rays are very conspicuous and, though smaller, resemble those in quarter-sawed oak. In sycamore, however, the rays are darker than the rest of the wood, while in oak they are lighter.

The wood of sycamore has a close texture, an interlocked grain, turns well on a lathe, and shrinks moderately in drying. It is moderately heavy,<sup>9</sup> moderately hard, moderately stiff, moderately strong, and has moderately good shock-resisting ability. The wood keeps its shape well when bent to form after steaming. It is intermediate in nail-holding power but ranks high in ability to withstand splitting because of the interlocked grain. It is inclined to warp and presents some difficulties in seasoning. The wood is not durable when exposed to conditions favorable to decay. Sycamore wood does not impart taste, odor, or stain to substances that come in contact with it.

**Principal uses.**—Sycamore is used principally for lumber, veneer, railway ties, cooperage, fence posts, and fuel. The lumber goes largely into furniture and boxes—mostly small food containers. These two uses accounted for over 97 percent of the sycamore lumber manufactured into wooden products in 1940. Other products made from sycamore lumber include flooring, scientific instruments, handles, and butcher's blocks. Considerable sycamore veneer is used for fruit and vegetable baskets and berry boxes. This veneer is made from logs by the rotary process. Sycamore staves are used to a limited extent in sugar and flour barrels.

Sycamore was long the favorite wood for plug-tobacco boxes, both solid and veneered, and more of it was used for these boxes than for any other product. Sweetgum has, however, partly displaced sycamore as a tobacco-box wood chiefly on account of its greater supply and the comparative ease with which it can be obtained, al-

<sup>4</sup> Except in 1925, when Arkansas was first.

<sup>5</sup> Except in 1939, when Alabama was first.

<sup>6</sup> The first year for which Census statistics on the amount of sycamore logs used for veneer are available.

<sup>7</sup> The last year for which Census statistics on the amount of sycamore logs used for veneer are available.

<sup>8</sup> Overrun in log scale considered to be 20 percent.

<sup>9</sup> The average weight of sycamore in an air-dry condition (12 percent moisture) is 84 pounds per cubic foot.

though not considered quite so satisfactory for the purpose. Sweet-gum has also displaced sycamore to some extent as a veneer material for fruit boxes and baskets.

Sycamore is generally used for the cheaper grades of furniture, but in one form or another in practically all grades. Large quantities of sycamore slats go into the backs of cheap chairs. In the more expensive furniture, it is used for interior parts, such as drawer backs and sides, shelves and pigeonholes, guides, etc., and occasionally for outside pieces. Sycamore was formerly used in considerable quantities for staves and heading for slack barrels. The high-grade cooperage stock went mostly into sugar and flour barrels and the lower-grade material into barrels for shipping crockery and glassware.

The amounts of sycamore used in making various wooden products in 1912, 1928, 1933, and 1940 are shown in table 1. The total figures include sycamore in the form of lumber, logs and bolts, and veneer.

TABLE 1.—*Sycamore used in the manufacture of wooden products*  
(Thousands of board feet)

Classes of products	1912	1928	1933	1940
Agricultural implements.....	290	14		5
Boxes, baskets, and crating.....	16,452	11,220	8,390	11,250
Boxes, cigar and tobacco.....	430	500	57	16
Butchers' blocks.....	1,600	186	(1)	118
Car construction and repair.....				3
Caskets and burial boxes.....				4
Conduits, pumps, and wood pipe.....		15		
Dairy, poultry, and apiary supplies.....	(2)			80
Fixtures.....	713	171	12	69
Flooring.....	(3)	(3)		213
Furniture.....	2,446	13,736	5,208	17,305
Handles.....	500	168	91	134
Instruments, musical.....	305	71	22	5
Instruments, professional and scientific.....				162
Laundry appliances.....	2	585	150	
Machinery.....		111		
Plumbers' woodwork.....		134		
Radio and phonograph cabinets.....	(4)	(4)		
Refrigerators.....	340	1,480		
Rollers, shade and map.....	202			
Sash, doors, general millwork.....	1,754	298	18	22
Sewing machines.....	150			
Ship and boat building.....	38			
Shuttles, spools, bobbins, looms.....	(5)	500	(5)	9
Signs, scenery, displays.....				76
Sporting and athletic goods.....	30	201		4
Toys.....	91	212	10	
Trunks and valises.....	5			
Vehicles, motor.....	(6)	6,905	4,815	2
Vehicles, nonmotor.....	63	7		7
Woodenware and novelties.....	642	1,063	161	
Total.....	26,053	37,477	18,934	10,29,484

<sup>1</sup> Includes skewers.

<sup>2</sup> Included in "Woodenware and novelties."

<sup>3</sup> Included in "Sash, doors, general millwork."

<sup>4</sup> Included in "Furniture."

<sup>5</sup> Includes kitchen cabinets.

<sup>6</sup> Includes planing-mill products, such as siding, ceiling, and flooring.

<sup>7</sup> Planing-mill products not included in 1933 and 1940 canvasses except flooring which is listed separately.

<sup>8</sup> Does not include looms.

<sup>9</sup> Included in "Vehicles, nonmotor."

<sup>10</sup> This figure is made up of 21,058,000 board feet of lumber, 5,726,000 board feet of veneer, and 2,700,000 board feet of logs and bolts.



FIGURE 2.—Lumber production of American sycamore (*Platanus occidentalis*), 1899-1943.

## REFERENCES

- AMERICAN TREES. H. H. Gibson. 708 pp., illus. Chicago. 1913.
- CHARACTERISTIC AND USES OF SYCAMORE. Lumber Veneer and Consumer. July 30, 1922.
- LUMBER USED IN MANUFACTURE—1928, 1933, and 1940. (Summary Tables.) U. S. Forest Service Preliminary Statistics—Forest Survey of the United States.
- LUMBER USED IN THE MANUFACTURE OF WOODEN PRODUCTS. J. C. Nellis. U. S. Dept. Agr. Bul. 605, 18 pp., illus. 1918.
- THE SOUTHERN HARDWOODS—SYCAMORE. Southern Hardwood Producers, Inc. South. Lumberman 161 (2033): p. 83, illus. 1940.
- THE SYCAMORES. J. S. Illick. Amer. Forestry 28: 145-150, illus. 1922.
- UTILIZATION OF SYCAMORE. W. D. Brush. U. S. Dept. Agr. Bul. 884, 24 pp., illus. 1920.

