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PLANETREE MAPLE  
SYCAMORE MAPLE  
HAREWOOD<sup>2</sup>  
Acer pseudoplatanus L.  
Family: Aceraceae

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This species is a native of Europe and western Asia where it is an important timber tree and has also been much planted as a shade tree. It has been widely cultivated in other countries and is found growing in the United States, except in the coldest regions, but it is not as hardy as Norway maple (11).<sup>2</sup>

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<sup>1</sup>Maintained at Madison, Wis., in cooperation with the University of Wisconsin.

<sup>2</sup>The name harewood was originally applied to a West Indian wood that was shipped to England. Its gray-brown color resembled the color of the fur of the European hare. The wood was also known as "concha satinwood" and is believed to have been related to the so-called West Indian satinwood (Zanthoxylum flavum). The sycamore maple was dyed to imitate the West Indian wood.

<sup>3</sup>Underlined numbers in parentheses refer to the list of numbered references at the end of the report.

The name Acer was given by the Romans and is derived from the words acer, acris meaning sharp or hard. It is thought to refer to the hardness of the wood, which was used for making spears and other sharp-pointed instruments. The specific name, pseudoplatanus, was given because the leaves were thought to resemble those of the plane or sycamore tree (Platanus) or more probably originally the mulberry fig tree (Ficus sycomorus) of Palestine, which has also been called sycamore. This nomenclature has caused some confusion (7, 9).

### The Tree

Sycamore maples grow rapidly and may form large, vigorous trees up to 100 feet in height, often with spreading or rounded crowns (11). Sound trees 200 years of age are reported (9). In France, they are called erables and are found associated with beech, fir, or spruce (6). Trees 15 feet in girth have been reported in England. The species reproduces freely. Logs 2 to 3-1/2 feet in diameter have been on the market (1). The Germans call the trees ehernbaum, wisser ahorn, or bergahorn (9).

### Bark

The bark is maple type, smooth and grayish green. In later life it cracks and forms broad flaky scales (1, 9, 11).

### Leaves

The leaves are paired, heart shaped at the base, 3 to 6 inches in diameter, 5-lobed with lobes pointed and coarsely toothed, dark green above, pale and smooth or slightly hairy beneath (11).

### Flowers and Fruit

The flowers appear in spring and are yellowish green, hanging in narrow clusters 3 to 7 inches long. The key fruits are paired and long winged (1-1/4 to 2 inches) (11).

### The Wood

#### Color

The natural color of the wood, though somewhat variable, is pale or whitish (sometimes referred to as satiny white) or tinged pink or light brown.

Commercially, however, the wood, or particularly the veneer, when marketed as harewood, is treated by a process that gives it a silvery-gray appearance with a metallic sheen. This method of staining is reported to have been devised and first used in France. The process at first was a trade secret, and the wood itself was not at once identified. Later, the process was worked out in Germany, England, and the United States (9). It was discovered that the wood takes on a silvery-gray coloration when treated with certain iron salts. Iron sulfate was said to be generally used in England. It was explained that the chemical reacted with minute quantities of tannin present in the wood or possibly with other constituents, such as gums or sugars. More recently the treated wood has been called "stained maple." Some dissatisfaction has been reported with the treated gray wood after continued exposure to light and air. Changes to yellowish or greenish brown or bronze, or general fading have occurred (8, 9).

#### Grain, Texture, and Figure

Sycamore maple is generally straight grained but sometimes develops wavy grain in the lower parts of the bole (1). Curly grain, fine ripple, and fiddle-back figure may also occur. Texture is close, uniform, and rather fine (1, 2, 8, 9).

#### Weight and Specific Gravity

The wood is of medium weight and averages about 35 to 40 pounds per cubic foot air dry. Specific gravity is reported to range from 0.56 to 0.80 or even 1.0 (6). It averages about 0.65 (8).

#### Mechanical Properties

The mechanical properties, as determined in England, are given in table 1 (3).

#### Seasoning and Shrinkage

The British recommend their Schedule 1 for the kiln drying of sycamore maple, if the natural white appearance of the wood is not to be darkened, otherwise they cite their Schedule 5 (4).

The standard U. S. Forest Products Laboratory schedule most closely following British Schedule 1 is T1-D3. To approximate the British schedule, substitute a 6° F. wet-bulb depression in the first step and an 8° F. depression in the second step of the schedule. The U. S. Forest Products Laboratory schedule most closely following British Schedule 5 is T5-D3. Since the British recommend their

Schedule 5 for sugar maple (A. saccharum) which is generally dried in the United States according to the more severe schedule, T8-C3, perhaps a schedule somewhat more severe than T5-D3 could be used for sycamore maple, after experience has been gained in drying it (10).

### Durability

Sycamore maple may stain during seasoning, and it is not decay resistant when in contact with the ground or in other exposed outside uses (1).

### Working Characteristics

The straight-grain wood is not difficult to work and can be planed to a fine, smooth finish (1). It absorbs stains easily and glues well (2).

### Uses

Sycamore maple is a valued wood, long used in Europe. In the 16th and 17th centuries, it was used for marquetry. It is used both as solid wood and as veneer. Among its many uses are the following: Furniture, interior trim, flooring, musical instruments, particularly violin backs and frames, sculpture, turnery, better kitchen woodenware, table tops for bakeries and laundries, spools and bobbins in the textile trade, sporting goods, washing machine rollers, and dairy implements. It is also used by wheelwrights and boat builders, and it is noted for its fuel value and as a source of fine charcoal (1, 7, 9).

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Table 1.--Strength properties of sycamore maple<sup>1</sup> (Acer pseudoplatanus L.)  
and sugar maple<sup>2</sup> (A. saccharum Marsh.)

Source.....	United Kingdom <sup>1</sup>	United States <sup>2</sup>
Condition.....	Green	Air-dried : Air-dried
Moisture content.....percent:	69	12 : 12
Weight per cubic foot		
At 50 percent moisture content.....lb.:	45	
At 12 percent moisture content.....lb.:		35 : 44
Static bending - Center loading		
Maximum bending strength - Equivalent fiber stress		
at maximum load (modulus of rupture.....p.s.i.:	9,000	13,600 : 15,800
Stiffness - Modulus of elasticity....1,000 p.s.i.:	1,300	1,460 : 1,830
Energy consumed in bending		
To maximum load.....in.-lb. per cu. in.:	13.2	14.4 : 16.5
To total fracture		
(Total work).....in.-lb. per cu. in.:	25.8	18.7 : 27.9
Impact - Resistance to suddenly applied loads		
Maximum drop of 50 lb. hammer.....in.:	29	33 : 39
Compression - Maximum compressive strength parallel:		
to grain.....p.s.i.:	3,840	6,730 : 7,830
Hardness - Resistance to indentation		
On side grain.....lb.:	860	1,090 : 1,450
On end grain.....lb.:	990	1,510 : 1,840
Shear - Maximum shearing strength parallel		
to grain.....p.s.i.:	1,280	2,190 : 2,330
Cleavage - Resistance to splitting		
In radial plane.....lb. per in. width:	390	420
In tangential plane.....lb. per in. width:	520	680

<sup>1</sup>From: The Strength Properties of Timber by F. H. Armstrong, M.Sc., A.M.I. Mech.E. Forest Products Research Bull. No. 28, Department of Scientific and Industrial Research, London, 1953, Appendix A, page 40.

<sup>2</sup>From: Strength and Related Properties of Woods Grown in the United States, by L. J. Markwardt and T. R. C. Wilson. Technical Bull. No. 479, Forest Products Laboratory, Madison, Wis. 1935.