



Sophora japonica Scholar Tree¹

Edward F. Gilman and Dennis G. Watson²

INTRODUCTION

Sophora species grows to a height of 40 to 60 feet and spread of 30 to 45 feet, forming a fine-textured, round canopy even as a young tree (Fig. 1). It has a rapid growth rate and tolerates polluted city conditions, heat, and drought. The tree prefers a sunny, open location on any light soil. The very showy, greenish-white to yellow flowers are produced in mid to late summer and provide an airy feel to the tree for several weeks. A yellow dye can be made by boiling the dried flowers and buds in water. The young green twigs turn a dark grey with age. The species tree must be at least 10-years-old to bloom, but the cultivar 'Regent' blooms at six to eight-years-old.

GENERAL INFORMATION

Scientific name: *Sophora japonica*

Pronunciation: sah-FOR-uh juh-PAWN-ih-kuh

Common name(s): Scholar Tree, Japanese Pagoda Tree

Family: *Leguminosae*

USDA hardiness zones: 5 through 8A (Fig. 2)

Origin: not native to North America

Uses: large parking lot islands (> 200 square feet in size); wide tree lawns (>6 feet wide); medium-sized parking lot islands (100-200 square feet in size); medium-sized tree lawns (4-6 feet wide); recommended for buffer strips around parking lots or for median strip plantings in the highway; near a deck or patio; shade tree; specimen; sidewalk cutout (tree pit); residential street tree; tree has been successfully grown in urban areas where air pollution, poor drainage, compacted soil, and/or drought are common

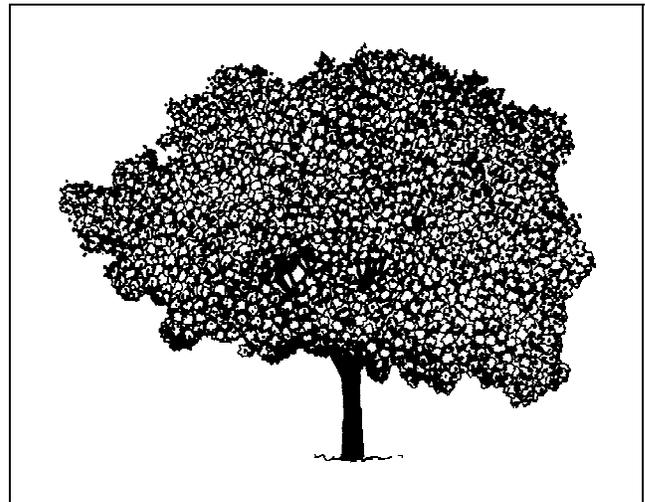


Figure 1. Middle-aged Scholar Tree.

Availability: generally available in many areas within its hardiness range

DESCRIPTION

Height: 40 to 70 feet

Spread: 40 to 70 feet

Crown uniformity: symmetrical canopy with a regular (or smooth) outline, and individuals have more or less identical crown forms

Crown shape: round

Crown density: moderate

Growth rate: medium

Texture: fine

1. This document is adapted from Fact Sheet ST-592, a series of the Environmental Horticulture Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Publication date: October 1994.
2. Edward F. Gilman, associate professor, Environmental Horticulture Department; Dennis G. Watson, associate professor, Agricultural Engineering Department, Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, Gainesville FL 32611.

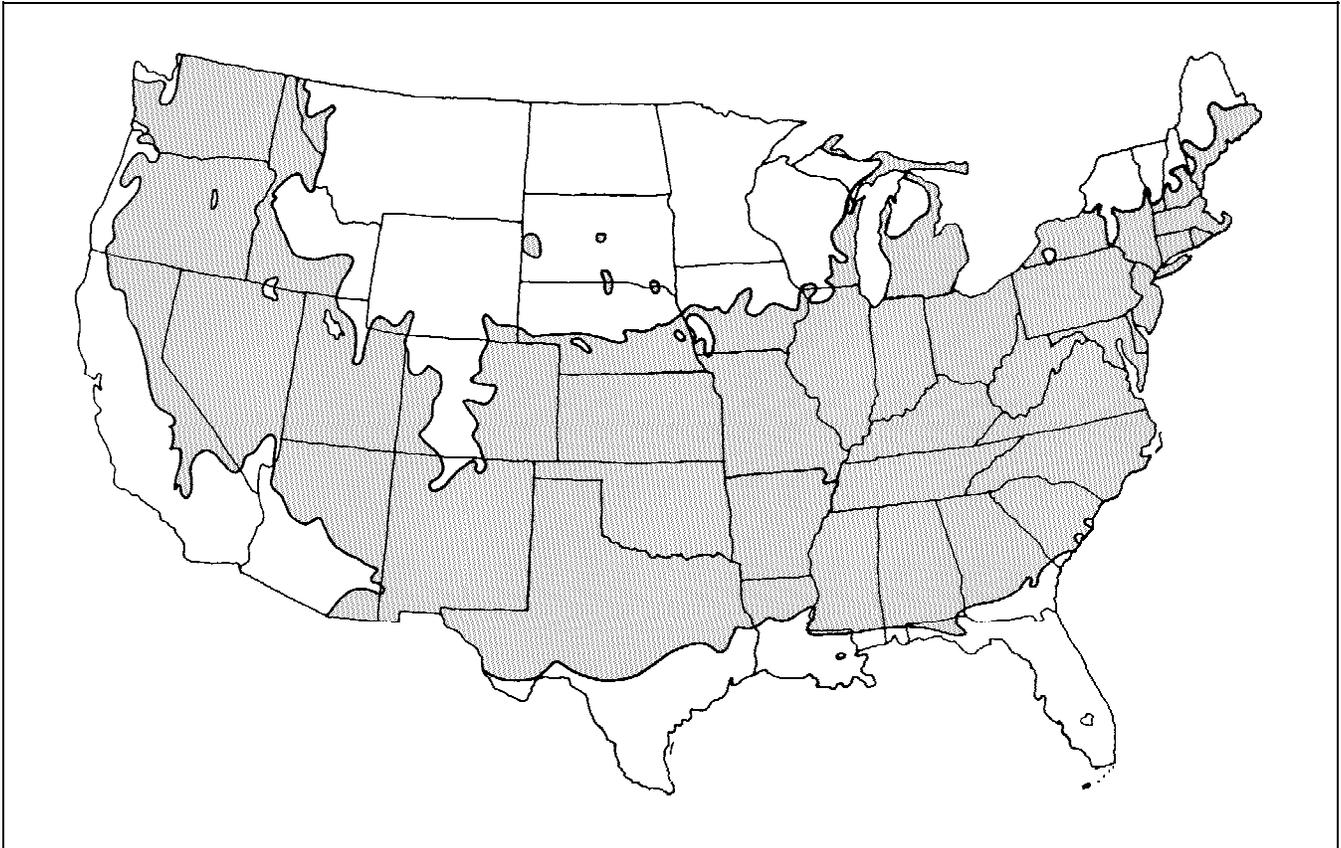


Figure 2. Shaded area represents potential planting range.

Foliage

Leaf arrangement: alternate (Fig. 3)
Leaf type: odd pinnately compound
Leaflet margin: entire
Leaflet shape: ovate
Leaflet venation: pinnate
Leaf type and persistence: deciduous
Leaflet blade length: less than 2 inches
Leaf color: green
Fall color: yellow
Fall characteristic: not showy

Flower

Flower color: white; yellow
Flower characteristics: showy; summer flowering

Fruit

Fruit shape: elongated; pod
Fruit length: 6 to 12 inches; 3 to 6 inches
Fruit covering: dry or hard
Fruit color: brown; yellow
Fruit characteristics: does not attract wildlife; fruit, twigs, or foliage cause significant litter; persistent on

the tree; showy

Trunk and Branches

Trunk/bark/branches: droop as the tree grows, and will require pruning for vehicular or pedestrian clearance beneath the canopy; not particularly showy; should be grown with a single leader; no thorns
Pruning requirement: requires pruning to develop strong structure
Breakage: susceptible to breakage either at the crotch due to poor collar formation, or the wood itself is weak and tends to break
Current year twig color: green
Current year twig thickness: medium; thin

Culture

Light requirement: tree grows in full sun
Soil tolerances: clay; loam; sand; acidic; occasionally wet; alkaline; well-drained
Drought tolerance: high
Aerosol salt tolerance: moderate

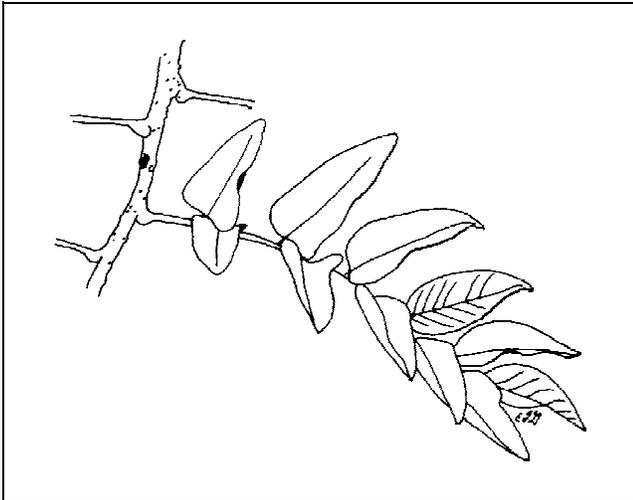


Figure 3. Foliage of Scholar Tree.

Other

Roots: surface roots are usually not a problem

Winter interest: no special winter interest

Outstanding tree: tree has outstanding ornamental features and could be planted more

Invasive potential: little, if any, potential at this time

Ozone sensitivity: tolerant

Pest resistance: long-term health usually not affected by pests

USE AND MANAGEMENT

The tree drops flower petals creating a creamy white carpet for several weeks on the ground, but they can temporarily stain sidewalks. The yellow fruit pods form in late summer and are quite showy, dropping later in the winter and could be a nuisance to some people. But they are small and fairly easily washed away. The leaflets are small, creating light shade beneath the tree and are mostly washed away with rain or fall into shrub beds or between the grass blades.

Some trees come from the nursery with multiple trunks or branches clustered together at one spot on the trunk. Buy those with one central trunk growing up the center of the tree or prune the tree to a central leader to create a strong, durable structure. Space branches along the central leader to ensure good branch attachment. It may take several prunings to train the tree to the proper form.

This urban-tough tree is highly recommended for urban street tree planting. Also makes a nice medium-sized patio tree and is well-suited for parking lot planting, creating shade from its spreading canopy. It is adapted to restricted soil spaces, and tolerates

drought in reasonable soil and is tolerant of salt spray. Best when planted in full sun and well-drained, not wet, soil.

Sophora species has a few cultivars: 'Fastigiata' - upright habit; 'Pendula' - weeping habit; 'Princeton Upright' - upright form suitable for narrow sites, somewhat smaller than the species; 'Regent' - oval crown and blooms at an early age, has glossy leaves which shed soot and dirt, readily available in nurseries.

Pests

Potato leafhopper kills young stems causing profuse branching or witches broom on small branches. It usually is not a problem on larger trees.

Diseases

Sophora species is generally pest- and disease-free.

Occasionally, Scholar Tree will get a fungus canker about two-inches or less across, have raised reddish brown margins and light brown centers. The infected stem is killed when the fungus girdles the stem. Another fungus is sometimes found on dead branches on *Sophora* species. Frost injury may give both fungi an entrance into the tree. Prune out dead, damaged, or diseased branches.

Twig blight or dieback can be a problem occasionally. Prune out infected branches and avoid unnecessary wounding. Keep trees vigorous by regular fertilization.

Powdery mildew forms a fungus mat which looks like a white coating on the leaves. The disease is usually not serious.