

Sophora japonica 'Princeton Upright': 'Princeton Upright' Scholar Tree¹

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Introduction

This cultivar of Pagoda Tree has a height of 40 to 50 feet and spread of 30 to 35 feet, forming a fine-textured, upright, rounded canopy even as a young tree. The canopy of 'Princeton Upright' appears to be more dense than the species. 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-nih-kuh

Common name(s): 'Princeton Upright' Scholar Tree, 'Princeton Upright' Japanese Pagoda Tree

Family: Leguminosae

USDA hardiness zones: 6A through 8A (Fig. 2)

Origin: not native to North America

Invasive potential: little invasive potential

Uses: urban tolerant; specimen; deck or patio; street without sidewalk; shade; parking lot island < 100 sq ft; parking lot island 100-200 sq ft; parking lot island > 200 sq



Figure 1. Middle-aged *Sophora japonica* 'Princeton Upright': 'Princeton Upright' Scholar Tree

ft; sidewalk cutout (tree pit); tree lawn 3-4 feet wide; tree lawn 4-6 feet wide; tree lawn > 6 ft wide; highway median
Availability: somewhat available, may have to go out of the region to find the tree

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Figure 2. Range

Description

Height: 40 to 50 feet
Spread: 30 to 35 feet
Crown uniformity: symmetrical
Crown shape: oval
Crown density: moderate
Growth rate: moderate
Texture: fine

Foliage

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

Flower

Flower color: white/cream/gray, yellow
Flower characteristics: showy

Fruit

Fruit shape: pod or pod-like, elongated
Fruit length: 3 to 6 inches, 6 to 12 inches
Fruit covering: dry or hard
Fruit color: yellow, brown
Fruit characteristics: does not attract wildlife; showy; fruit/leaves a litter problem

Trunk and Branches

Trunk/bark/branches: branches don't droop; not showy; typically one trunk; thorns
Pruning requirement: needed for strong structure
Breakage: susceptible to breakage

Current year twig color: green
Current year twig thickness: thin, medium
Wood specific gravity: unknown

Culture

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

Other

Roots: not a problem
Winter interest: no
Outstanding tree: yes
Ozone sensitivity: unknown
Verticillium wilt susceptibility: unknown
Pest resistance: resistant to pests/diseases

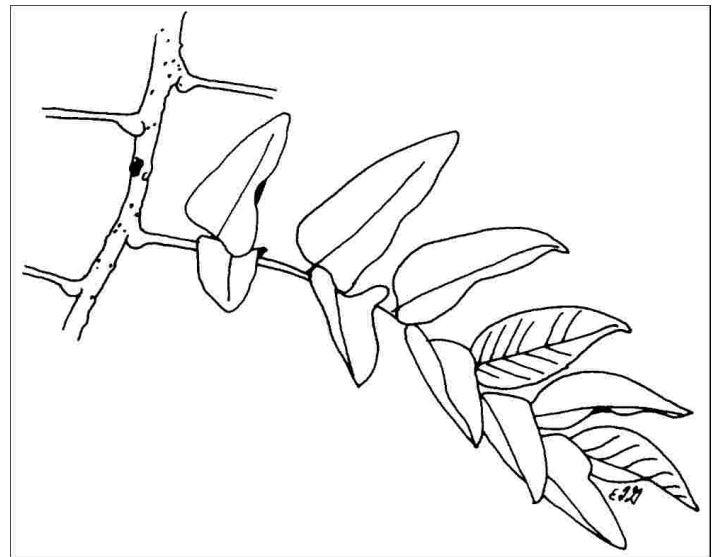


Figure 3. Foliage

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 to moderate 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 without growing too large. Adapted to restricted soil spaces, tolerates salt spray, and tolerates drought in reasonable soil but grows poorly in wet sites. It is reported to be more resistant to insect and disease problems than the species. Best when planted in full sun. *Sophora* species has a few other cultivars: 'Fastigiata' - upright habit; 'Pendula' - weeping habit; '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.