

Silk-oak

Grevillea robusta A. Cunn.

Protea family (Proteaceae)

Post-Cook introduction

Silk-oak, a handsome Australian tree planted for shade, ornament, and reforestation, also widely naturalized, is recognized by the pinnate and deeply lobed fernlike leaves, dark green above, silky with whitish or ash-colored hairs beneath, by the showy yellowish flowers clustered on I side of slender stiff axes, and by black curved podlike fruits with slender stalks and styles.

Medium-sized to large deciduous tree 40–70 ft (12–21 m) high and 1–3 ft (0.3–0.9 m) in trunk diameter with straight axis and many branches, reported to reach 100 ft (30 m) or more where native. Bark light gray, rough and thick with many deep furrows, on branches gray and smooth. Inner bark with brownish layer and whitish within, fibrous, slightly bitter. Twigs stout, angled, with fine gray pressed hairs.

Leaves alternate pinnate, fernlike, 6–12 inches (15–30 cm) long, almost bipinnate, with 11–21 side axes (pinnae) 1½–3½ inches (4–9 cm) long, deeply divided into narrow long-pointed lobes ¼–½ inch (6–13 mm) wide, with borders turned under, shiny and hairless above, slightly thickened.

Flower clusters (racemes) 3–7 inches (7.5–18 cm) long, unbranched, arise mostly from trunk, along twigs back of leaves, and at leaf bases. Flowers numerous with long slender stalks ¾–¾ inch (1–2 cm) long, crowded on one side of axis. They are composed of four narrow yellowish sepals almost ½ inch (13 mm) long, curved downward; no petals; four stalkless stamens inserted on sepals and opposite them; and pistil with stalk, ovary, long slender curved style, and enlarged stigma.

Fruits podlike (follicles) are broad, slightly flattened, leathery, with long slender curved style, splitting open on I side, remaining attached. Seeds one or two, ¾–½ inch (10–13 mm) long, elliptical, flattened, winged, brown. Flowering from April to autumn, but predominantly April–May.

The pale pinkish brown wood is attractive because of the prominent rays, resembling oak, as the common name suggests. This was the former “lacewood” of world trade until it became scarce in Australia. It is of moderate density (sp. gr. 0.57), has low radial but high tangential shrinkage in drying and is one of the best woods in all-around machinability ever tested by the Forest Products Laboratory. Sawdust causes dermatitis to fair-skinned people. The wood is not resistant to decay or termites, and sapwood is highly susceptible to ambrosia beetle attack while in the

log. Suitable for face veneer as well as paper pulp. It has very long fibers for a hardwood. In Hawaii, the wood has been utilized for furniture, cabinetmaking, paneling, interiors, and in one entire house including the framing.

The trees are propagated readily from the great quantities of seeds, grow rapidly, and are drought resistant. Along the road to Kokee State Park, Kauai, trees are unhealthy with ragged crowns. Elsewhere, trees have full crowns.

Introduced into Hawaii about 1880 from Australia, it is now seen as a shade tree and street tree through the islands from sea level to 4000 ft (1219 m). This species is the second most commonly planted tree in Hawaii after robusta eucalyptus, *Eucalyptus robusta*. It is hardy in dry soils, quick growing and pest-free. Although it has been planted mostly in drier areas, it does best where planted in moist sites with 60–80 inches (1524–2032 mm) rainfall. The trees scatter their winged seeds and have become undesirable weeds in some pastures and rangelands of Hawaii, requiring eradication. There are extensive naturalized stands on Kapapala Ranch in Ka‘u and Huehue Ranch in North Kona. Hawaii has 3 million board feet of sawtimber and Oahu 2.5 million, mostly in the Honouliuli Forest Reserve.

In some countries, the trees have served as coffee shade. Some were planted for this purpose in Kona in the early part of the century. This species is classed as a honey plant.

Planted for ornament and shade in central and southern Florida, where it is persistent but not naturalized. There it is recommended as a fast-growing flowering tree for well-drained and sandy soils, being both cold hardy and drought resistant. Formerly planted in Puerto Rico, but now not used because of susceptibility to scale insects. Introduced also in southern Arizona and California. Northward in temperate climates, as in continental United States, the fernlike plants are grown indoors in pots.

Special areas: Waimea Arboretum, Kalopa, Tantalus

Champion

Height 90 ft (27.4 m) c.b.h. 10.6 ft (3.2 m), spread 47 ft (14.3 m). State Forestry Arboretum, Hilo, Hawaii (1968).

Range

Native of Australia but widely introduced and naturalized in tropical and subtropical regions of the world.

Other common names

silver-oak, ‘oka kilika, ha‘iku ke‘oke’o (Hawaii); roble de seda, roble australiano (Puerto Rico); grevillea (Spanish)

Botanical synonym

Stylurus robusta (A. Cunn.) Deg.

Grevillea was dedicated to Charles Francis Greville (1749–1809), British horticulturist.



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Flowering twig, $\frac{1}{2}$ X; flowers (lower left) and fruit and seeds (lower right), $\frac{2}{3}$ X (P.R. v. 2).