

## Hao, Hawaiian rauvolfia

*Rauvolfia sandwicensis* A. DC.

Dogbane family (Apocynaceae)

Native species (endemic)

Hao is a variable species of small evergreen native trees or shrubs widespread in mainly dry areas, characterized by milky sap, elliptical or oblong light green leaves mostly 4–5 at ringed nodes, small greenish yellow or whitish tubular flowers, and two-lobed black fruits. A small tree 20 ft (6 m) high, sometimes to 40 ft (12 m), and 1 ft (0.3 m) in trunk diameter, or a shrub. Bark light gray, smooth or lightly fissured. Inner bark yellowish or brown streaked with pink, bitter, when cut exuding white, slightly bitter sap or latex. Twigs stout, hairless, light green, turning gray, with raised half-round leafscars at ringed nodes.

Leaves mostly 4–5 at node (whorled), hairless, with slender light green leafstalk  $\frac{5}{8}$ – $1\frac{1}{4}$  inches (1.5–3 cm) long, slightly flattened and winged, and in angle at leaf base 5–12 tiny stalked glands. Blades elliptical or oblong,  $2\frac{1}{2}$ –5 inches (6–13 cm) long and 1–2 inches (2.5–5 cm) wide, thin or slightly thickened, blunt to long-pointed at both ends and straight on edges, upper surface dull light green with light yellow midvein and many fine parallel side veins, lower surface paler.

Flower clusters (cymes) mostly terminal, branched. Flowers many, crowded, nearly stalkless, fragrant,  $\frac{3}{8}$ – $\frac{1}{2}$  inch (10–13 mm) long, composed of green calyx of five pointed overlapping lobes, greenish yellow or whitish narrow tubular corolla with five rounded overlapping spreading lobes, five small stamens inside tube, and pistil with two ovaries, threadlike style, and long stigma.

Fruits (drupes) two-lobed, about  $\frac{1}{2}$  inch (13 mm) long and broad, slightly flattened and heart-shaped, with calyx at base, black, fleshy.

Sapwood light yellow and heartwood deep reddish brown. Moderately heavy, fine-textured, moderately hard, durable, straight-grained and without growth rings. Not used by the Hawaiians for fuel because the smoke was thought to be poisonous, nor for charcoal because it burned completely to ashes. It was however, considered a good wood for construction.

Scattered mostly in dry forests on leeward slopes to about 2000 ft (610 m) altitude. A stunted shrub on a rough lava flows.

### **Special area**

Volcanoes

### **Range**

Hawaiian Islands only

### **Other common name**

devilpepper

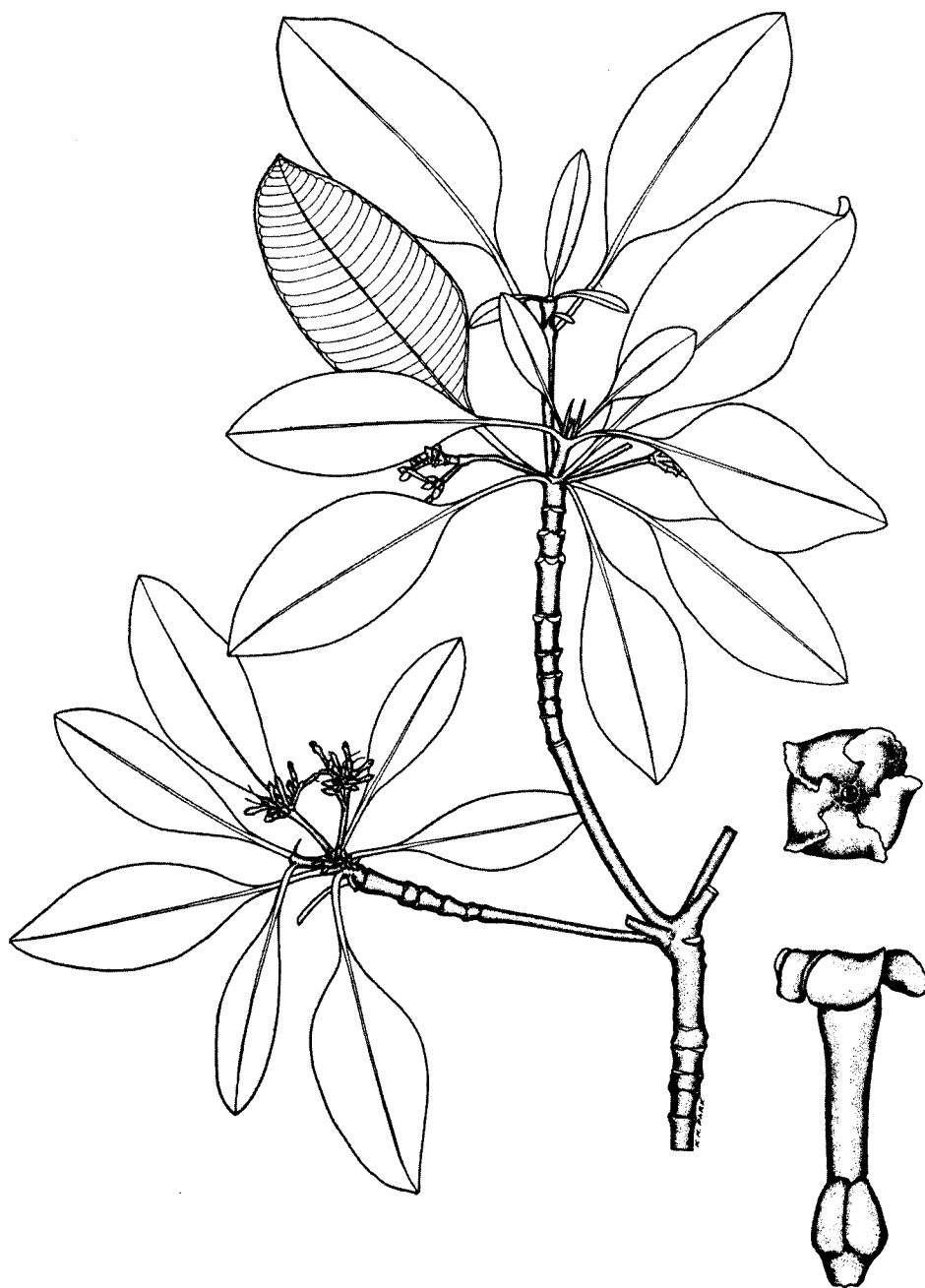
### **Botanical synonyms**

*Rauvolfia degeneri* Sherff, *R. forbesii* Sherff, *R. helleri* Sherff, *R. mauiensis* Sherff, *R. molokaiensis* Sherff, *R. remotiflora* Deg. & Sherff

This variable species was divided into seven differing mainly in sizes of leaves and flowers (Sherff 1947). The sic segregates were questioned in a monograph by Rao (1956) and are treated here as synonyms.

The genus *Rauvolfia* (formerly also spelled *Rauwolfia*) commemorates Leonhard Rauwolf (1535–96), German botanist and physician. He collected plants and made an early herbarium on his travels through the Near East in 1573–75.

The root of a shrubby species of snakeroot of this genus in India (and another in Africa) has yielded the drug reserpine for the treatment of high blood pressure and certain mental illnesses. Local use by traditional healers in India for snakebite and lunacy has been traced back many centuries. In recent years chemical tests of other species in this tropical genus have been made in screening searches for additional drugs.



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Flowering twig, 1/2 X; flowers (lower right), 5 X (Degener)