

# Mamaki

*Pipturus albidus* (Hook. & Arn.) Gray

Nettle family (Urticaceae)

Native species (endemic)

This variable species (in the broad sense including closely related species) is characterized by ovate leaves with wavy toothed edges, three main veins from base, and under surface light gray or brown and finely hairy. The fibrous bark was an important source of tapa or paper cloth.

A small tree to 30 ft (9 m) high and 1 ft (0.3 m) in trunk diameter, or a shrub, with long drooping branches. Bark light brown, smooth, with scattered raised dots. Inner bark streaked green, fibrous, mucilaginous, and almost tasteless. Twigs finely gray hairy, slightly enlarged at nodes and often slightly zigzag.

Leaves alternate, varying greatly in shape, size, and hairiness, with slender finely hairy leafstalks of 1–3 inches (2.5–7.5 cm). Blades ovate or elliptical, 2½–8 inches (6–20 cm) long and 1¼–6 inches (3–15 cm) wide, thin or slightly thickened, long-pointed at apex, blunt or rounded at base, with wavy toothed edges, with 3 main veins from base slightly sunken and often reddish, upper surface green and slightly rough, under surface mostly light gray and finely hairy. Microscopic mineral growths (cystoliths) like crystals are present.

Flower clusters (heads) stalkless at leaf bases, rounded, ¼–½ inch (6–13 mm) in diameter, gray hairy. Flowers male and female mostly in different clusters of same plant (monoecious), many, stalkless, without corolla. Male flowers less than ⅛ inch (3 mm) long, composed of cup-shaped 4-lobed finely hairy calyx and four stamens. Female flowers with urn-shaped four-toothed finely hairy calyx and hairy pistil with ovary and long style.

Fruit a dry whitish ball about ½ inch (13 mm) across. Individual fruits many, rounded, with enlarged dry calyx enclosing one seed (achene) ⅓ inch (1.5 mm) long, elliptical and flattened, shiny.

Wood is dull reddish brown with pale whitish sapwood. Soft and fine-textured, it is easily worked.

The early Hawaiians prepared their tapa, kapa, or paper cloth from the bark of this native tree and from the introduced wauke or paper mulberry (*Broussonetia papyrifera* (L.) Vent.). This cloth served for clothing and bed covering. Rope and cord were made from the long

strong fibers. The fruits were used in home remedies. The young leaves made a good tea that was used as a tonic.

This species of mamaki in the broad sense is distributed through the islands in moderately wet to wet forests at 200–6000 ft (61–1829 m) altitude. The three other Hawaiian species currently accepted are *Pipturus forbesii* Krajina of east Maui, *P. kauaiensis* Heller of Kauai, and *P. ruber* Heller of Kauai.

## Special areas

Wahiawa, Haleakala, Volcanoes, Kipuka Puauulu

## Champion

Height 28 ft (8.5 m), c. b. h. 2.8 ft (0.9 m), spread 33 ft (10.1 m). Hawaii Volcanoes National Park, Hawaii (1968).

## Range

Kauai, Oahu, Molokai, Lanai, Maui, and Hawaii

## Other common name

waimea

## Botanical synonyms

*Pipturus brighamii* Skottsb., *P. gaudichaudianus* Wedd., *P. hawaiiensis* Levl., *P. hel*-Skottsb., *P. oahuensis* Skottsb., *P. pachyphyllus* Skottsb., *P. pterocarpus* Skottsb., *P. rockii* Skottsb., *P. skottsbergii* Krajina.

Mamaki is the favorite food plant of the green caterpillar that becomes the beautiful reddish brown Kamehameha butterfly, according to Degener.

Another Hawaiian plant, 'ākōlea, *Boehmeria grandis* (Hook. & Arn.) Heller, is also reported in old accounts as mamake or mamaki. It is a shrub with reddish leaves arranged like *Pipturus* but opposite, smooth, and not hairy, and inflorescences that are long and dangling. Both species were used by the Hawaiians for similar purposes.



**Mamaki**

*Pipturus albidus* (Hook. & Arn.) Gray

Flowering twig, ½ X (Degener)