

## Koa haole, *leucaena*

*Leucaena leucocephala* (Lam.) de Wit.

Legume family (Leguminosae)

Post-Cook introduction

Koa haole (foreign koa), or *leucaena*, is a vigorous shrub or small tree of dry lowlands throughout the Hawaiian Islands, also of larger size on moderately wet sites. This naturalized deciduous species is characterized by twice-pinnate leaves with numerous small gray green leaflets, many flowers in whitish round balls  $\frac{3}{4}$ –1 inch (2–2.5 cm) across the spreading threadlike stamens, and many clustered dark brown flat pods. Mimosoideae subfamily (Mimosoideae).

A rapidly growing small tree 20–30 ft (6–9 m) tall and 4 inches (10 cm) in trunk diameter. Bark light gray to brownish gray, smooth with many dots or warts (lenticels). Inner bark light green or light brown and slightly bitter. Twigs gray green and finely hairy, becoming brownish gray.

Leaves alternate, twice-pinnate (bipinnate), 4–8 inches (10–20 cm) long, with 3–10 pairs of lateral axes (pinnae), the axes gray green and finely hairy, with swelling at base. Leaflets 10–20 pairs on each lateral axis, stalkless, narrowly oblong or lance-shaped,  $\frac{5}{16}$ – $\frac{5}{8}$  inch (8–15 mm) long and less than  $\frac{1}{8}$  inch (3 mm) wide, shortpointed at apex and unequal or oblique at shortpointed base, thin, gray green and nearly hairless, slightly paler beneath, folding upward together at night.

Flower heads are whitish round balls  $\frac{3}{8}$ – $\frac{1}{2}$  inch (10–13 mm) across on stalks of  $\frac{3}{4}$ – $1\frac{1}{4}$  inches (2–4 cm) in terminal clusters (racemelike) at ends or sides of twigs. Flowers many, narrow, stalkless. Each individual flower  $\frac{5}{16}$  inch (8 mm) or more in length has a tubular greenish white hairy five-toothed calyx more than  $\frac{1}{16}$  inch (1.5 mm) long, five narrow greenish white hairy petals nearly  $\frac{3}{16}$  inch (5 mm) long, 10 threadlike white stamens about  $\frac{5}{16}$  inch (8 mm) long, and slender stalked pistil nearly  $\frac{1}{4}$  inch (6 mm) long with narrow green hairy ovary and white style.

Pods many oblong, 4–6 inches (10–15 cm) long and  $\frac{5}{8}$ – $\frac{3}{4}$  inch (15–19 mm) wide, flat and thin, with raised border, dark brown, short-pointed at apex, narrowed into stalk at base, and minutely hairy. Many hang down in a cluster from end of stalk, splitting open on both edges. Seeds many in a central row, beanlike, oblong, flattened, pointed, shiny brown,  $\frac{5}{16}$  inch (8 mm) long. Flowering and fruiting nearly through the year.

Wood hard and heavy (sp. gr. 0.7); sapwood light yellow and heartwood yellow brown to dark brown. It makes excellent firewood and charcoal and has potential as a source for pulp and paper, roundwood, and construction material.

The seeds, after being softened in boiling water, are strung into necklaces, leis, table mats, purses, and curiosities for tourists.

The plants contain a poisonous alkaloid called mimosine, which can cause the loss of long hair in humans, horses, and some other animals, and sickness in ruminant animals. Mimosine is easily leached from leaves by soaking in water, and cooking will also remove it.

The trees are easily propagated from seeds or cuttings and coppice well. However, because of the hard seed coat, the seeds should be treated or scarified first. In some countries this species has been used for coffee shade, cacao shade, and hedges. Being hardy it can be planted in pastures, to be followed afterwards by timber trees. In some areas the trees are planted and managed for fuel or charcoal on a short rotation of 3 or 4 years between cuttings. Young plants have been harvested also as a green manure for tea and coffee plantations. In the Far East this legume is grown to rebuild the soil and as a forage crop.

Abundant as a weed in dry lowlands of Hawaii, often forming dense thickets in lowlands and lower mountain slopes of 2500 ft (762 m) altitude. According to Degener, this species was unknown in Hawaii in 1864, but reported as “frequent” 20 years later. It is reported that seeds have been broadcast from airplanes.

### **Special areas**

Waimea, Koko, City

### **Range**

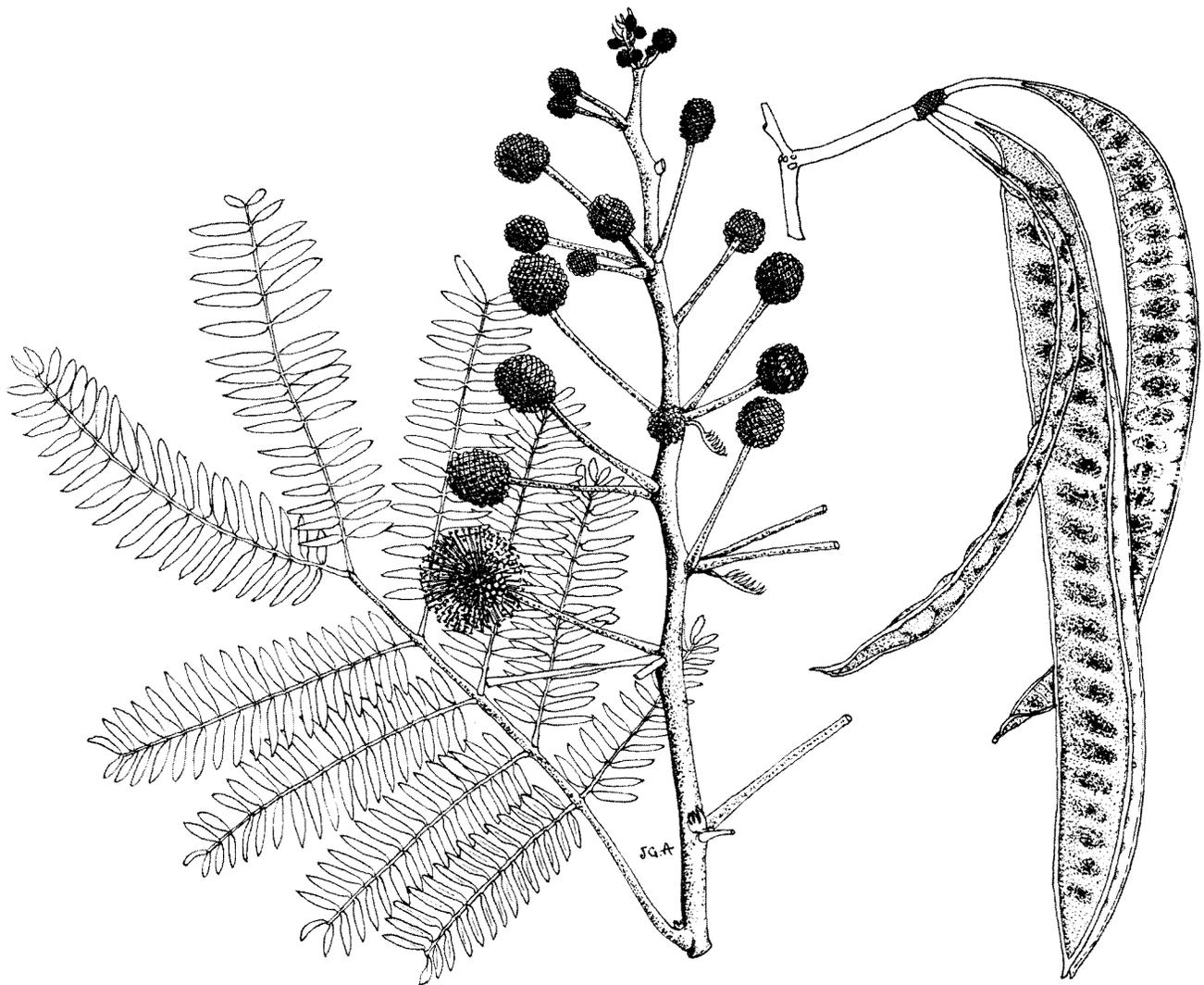
Native apparently in southeastern Mexico but the distribution has greatly extended by introduction beyond. Now widely naturalized through New and Old World tropics. Naturalized in Hawaii, Mariana Islands, southern Texas, southern Florida, and Puerto Rico and Virgin Islands. Planted also in California.

### **Other common names**

false koa, lili-koa, ekoa, ipilipil, wild tamarind; zarcilla (Puerto Rico); tantan (Virgin Islands); tangan-tangan (Guam); taln tangan (N. Marianas); telentund (Palau); ganitnityuan tangantan (Yap); tangan-tangan (Marshalls); lopa-samoa (Am. Samoa)

### **Botanical synonym**

*Leucaena glauca* Benth.



**Koa haole, leucaena**

*Leucaena leucocephala* (Lam.) de Wit.

Flowering twig, fruits (right),  $\frac{2}{3}$  X (P.R. v. 1).