

Prioria copaifera Griseb.

C. SANDÍ and E. M. FLORES

Escuela de Agricultura del Trópico Húmedo and
Academia Nacional de Ciencias de Costa Rica, Costa Rica, respectively

FABACEAE (BEAN FAMILY)

No synonyms

Amansa mujer, camíbar, canime, cativo, cativo blanco, cativo negro, cautivo, floresa,
Spanish walnut, tabasara, taito, trementino (Record and Hess 1949)

The genus is monotypic and its geographic range extends from Nicaragua to Colombia (Jiménez 1993). It is also found in Jamaica. The cativales, stands of *Prioria copaifera* trees, form a belt 1 to 3 km wide in the land behind the mangrove fringe, along the Caribbean coast of western Panama and Costa Rica. Stands of the species are also found in the lower valleys of some of the larger rivers (Record and Hess 1949). The tree grows associated with *Pterocarpus officinalis*, *Carapa guianensis*, *Pentaclethra macroloba*, and the palm *Raphia taedigera* (Mart.) Mart.; when it grows on slopes, it also associates with *Dussia cuscatlanica* and *Carapa guianensis* (Jiménez 1993). In Costa Rica it is protected as a threatened species (Jiménez 1993).

Prioria copaifera is a tall canopy tree, unarmed, reaching 40 m in height and 100 to 150 cm d.b.h. The bole is straight, cylindrical, and without buttresses (Holdridge and Poveda 1975). The bark is gray, smooth, and thick (2.0 to 3.0 cm). The inner bark is reddish. Leaves are paripinnate, long petiolate, with two pairs of pellucid-dotted leathery leaflets, pellucid-dotted, leathery, elliptic-acuminate, asymmetrical base, with translucent dots, stipulate, and dark green; stipules are scaly and fugacious. The tree grows on rich loamy soils along coastal plains, on slopes, on river banks seasonally flooded, or in swamps. The common elevation range is from 0 to 40 m, although it can be found at elevations up to 150 m (Jiménez 1993).

Transition from sapwood to heartwood is inconspicuous. The green wood is light brownish gray; air-dried wood is light yellowish gray. A false heart in the pith is frequent; it is usually dark reddish brown. Growth rings are outlined by fine, light stripes (Richter 1973). The grain is straight or interlocked depending on wood origin; texture is medium or coarse; luster is low; and the wood lacks figure and is odorless and tasteless after drying. The wood is moderately heavy: green weight is 855 kg per m³, with a moisture content of 91 percent; basic

specific gravity is 0.45 (range 0.38 to 0.46) (Llach 1971). Air-drying is fast with only slight defects. Working properties are average. The polish is not very good when the grain is interlocked. The mechanical properties of *P. copaifera* are similar to those of yellow poplar (*Liriodendron tulipifera* L.), but the former is superior in hardness and compression through the grain. Natural durability is low; it is quite susceptible to termite and fungal attacks and marine borers; it is not suitable for exterior construction. Wood preservation is easy. The wood can be used in carpentry, cabinetwork, and interior construction and to make boxes, cases, and boards. The Peteri's coefficient of flexibility is 37 and the Runkel factor 0.28 (group II: very good for making paper) (Richter 1973). The timber has high quality. The dark brown, resinous gum obtained by cutting the bole has a stinging taste and is used by natives as a fly-trap. The natives claim it can also be used to trap bats, birds, and other small animals. The resin is also used to heal cuts and bites and as a general antiseptic (Pittier 1957, Record and Hess 1949). The seeds are edible and eaten locally.

Flowering occurs from December to May and September through November, with variations along the geographic range. The inflorescences are long paniced spikes, bracteate, and terminal in twigs; they have spike-like branches bearing many flowers. Flowers are small, creamy or whitish, fragrant, and sessile, with two-lobed, cup-shaped bracteoles. The flower is apetalous. The calyx is tubular, short, five-lobed, orbicular, petaloid, and imbricate. The androecium has 10 stamens that are free and unequal. The gynoecium is sessile or short-stalked, monocarpellar, and biovulate. Fruits are produced in February and March and September through November. The fruit is a brown pod, obliquely obovate-orbicular, 6 (10)–12 cm long by 6 (7)—8 cm wide, woody, and indehiscent, containing a single seed. The pod is laterally compressed; one side is convex and

the other concave. Seeds are flat, large, overgrown, exospermic, with undifferentiated testa, and surrounded by the pod; pod dimensions limit the seed and embryo growth. Fresh seeds (seed plus pericarp) average 30 to 35 per kg.

Seed behavior is recalcitrant. Germination is hypogeal and seedlings are cryptocotylar. Root protrusion occurs 30 to 40 days after sowing. The percentage of germination is greater than 85 percent.

Although the species has been propagated in small stands, it seems more suitable to natural forest management or to increasing forest richness.

ADDITIONAL INFORMATION

The genus was named for the British botanist R. Ch. A. Prior. *P. copaifera* Griseb. is the type of the genus.

Anthers are thick and apiculate with a thick connective. In the gynoecium, the style is short and awl-shaped; the stigma is inconspicuous. The embryo is large; cotyledons are thick and fleshy; the embryo axis is straight and conspicuous.

