

***Gouania lupuloides* (L.) Urban**
RHAMNACEAE

chew-stick

Synonyms: *Banisteria lupuloides* L.
Rhamnus domingensis Jacq.
Gouania domingensis (Jacq.) L.
Gouania glabra Jacq.
Lupulus lupuloides Kuntze var. *domingensis* (Jacq.) Kuntze



General Description.—Chew-stick, also known as toothbrush tree, bejuco de soplá, bejuco de indio, mascapalo, bejuco de fuego, liane-savon, and lyenn-savon, is a scrambling and climbing woody vine that may reach 7 to 12 m of extension. The plant is supported by an extensive system of medium and fine, white, lateral roots. The stem and branches are relatively slender and support themselves by means of coiled tendrils. The alternate leaves have petioles 0.5 to 2 cm long and thin, ovate to elliptic blades 4 to 10 cm long with a serrate or wavy-toothed margin and a pointed tip. Tiny white, yellow, or greenish flowers are borne on slender axillary or terminal racemes. Few-to-many, 6- to 13-mm, gray, three-winged fruits (schizocarps splitting into three mericarps) develop later in the season. Each mericarp contains a 3- to 4-mm dark-brown seed (Acevedo-Rodríguez 1985, Croat 1978, Howard 1989, Liogier 1994, Stevens and others 2001).

Range.—The native range of chew-stick includes Florida, the West Indies, Mexico, Central America, and South America into Brazil and Colombia (Howard 1989, New York Botanical Garden 2002, Pérez-Arbelaez 1978, Secretaría de Medio Ambiente y Recursos Naturales 2002). It is

not known to have been planted or naturalized elsewhere.

Ecology.—In Puerto Rico, Chew-stick occurs in forests that receive from 750 to over 2000 mm of precipitation. It grows on soils with the entire range of textures, both poor and rich in nutrients, excessively well drained to somewhat poorly drained over sedimentary (including limestone), igneous, and metamorphic (including ultramafic) rocks. The species is found from near sea level to elevations of 1,300 m (Acevedo-Rodríguez 1985, Stevens and others 2001). Chew-stick has an intermediate tolerance of shade. It can live and grow slowly in all but dark forest understories but requires increased sunlight to flower and fruit. The species grows on roadsides, in brushy pastures, and in secondary and remnant forests. In Florida, chew-stick grows in mangroves and coastal hammocks (Nelson 1996).

Reproduction.—In Puerto Rico, chew-stick blooms from August to March, and fruit matures from November to March (Acevedo-Rodríguez 1985). In Panama, it flowers in the early dry season (November to March), and the seeds are dispersed from February to May (Croat 1978). Fruits collected in Puerto Rico averaged 0.0374 ± 0.0005 g/fruit. Seeds separated from them averaged 0.0052 ± 0.0001 g/seed or 192,000 seeds/kg. Seed should be collected by hand from fruiting vines. Hand separation is practical for small lots; larger lots could be pulverized and winnowed. Fifty-seven percent of untreated seed from the previously mentioned collection germinated between 16 and 75 days after sowing on commercial potting mix (author's observation). Seed is dispersed by its lateral tumbling action in still air or wind and by lateral extension on the vines. Seedlings and young plants are relatively common in Puerto Rico. The plant sprouts after fire and cutting.

Growth and Management.—Once established, chew-stick grows relatively rapidly. In the presence of seed sources, reproduction is usually adequate. Thinning the overstory would probably allow existing suppressed plants to grow to larger sizes and fruit.

Benefits.—Chew-stick contributes to biodiversity and biomass accumulation, helps protect the soil, and furnishes wildlife cover in forests where it grows. It is an important honey plant (Townsend 1984). In Jamaica and the West Indies, stem cuttings are used to clean teeth and gums and extracts are used to manufacture a dentifrice (Secretaría de Medio Ambiente y Recursos Naturales 2002). Triterpenoid saponins may contribute to the beneficial activity (Kennelly and others 1993). In Colombia, the plant is used for a bitter flavoring in alcoholic beverages and to treat water retention and stomach problems (Pérez-Arbelaez 1978).

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