***Trichilia hirta* L.** broomstick
MELIACEAE

Synonyms: *Trichilia spondioides* Jacq.
Trichilia wawrana antillana C. DC.

General Description.—Broomstick is also known as broomwood, cabo de hacha, garbancillo, guaita, jojobán, jabillo, molinillo, palo de anastasio, retamo, canalete, conejo colorado, mata piojo, carrapeta, and mombin bâtard. It is an evergreen to semideciduous shrub or small tree ranging in mature height from 3 to 15 m in different parts of its range. The shrubs usually grow with a single stem in closed stands but often have multiple stems when open-grown or when they have been damaged. The bark is brown or gray, rough and lightly furrowed or scaly. Sapwood is yellowish white, and the heartwood is reddish brown with darker streaks. Twigs are green, becoming brown with age. The plants are supported by a tap and extensive lateral root system of flexible, somewhat brittle roots with thin, reddish-brown bark. The alternate leaves are pinnately compound, 20 to 35 cm in length with nine to 21 ovate to lanceolate leaflets. The inflorescences are unisexual axillary racemes. However, these plants are dioecious. The flowers are small and greenish white. The two- to four-chambered capsules split open to expose one or two seeds per chamber. The 6- to 8-mm ovular seeds are covered by a thin, scarlet to orange aril (Howard 1988, Liogier 1988, Little and Wadsworth 1964, Stevens and others 2001).

Range.—Broomstick is native to the West Indies and from Mexico through Central America to Brazil and Bolivia in South America (Killeen and others 1993, Little and Wadsworth 1964). It has been planted in southern Florida (Little and Wadsworth 1964).

Ecology.—Broomstick is relatively common and widely scattered through most of its range. It does not form stands but tends to be scattered in open forests, roadsides, brushy pastures, and disturbed areas. Although the species is found in primary remnants, it is more common in secondary forests, usually with low basal areas. Broomstick may be found in Puerto Rican forests that receive from 750 to about 1700 mm of mean annual precipitation at elevations from near sea level to 600 m. It grows in Nicaragua in deciduous to moist forests from 0 to 1,000 m elevation (Stevens and others 2001). Broomstick is reported in mountain rainforests up to 3,000 m in elevation in Bolivia (Killeen and others 1993). Although the species grows on a wide range of soil types, it is more often seen on rocky and infertile sites where competition is less severe. Broomstick can grow in partial shade but requires good overhead sunlight to flower and fruit.

Reproduction.—Broomstick flowers and fruits throughout most of the year (Little and Wadsworth 1964). The species is reported to flower from March through May and fruit from January through April in Nicaragua (Stevens and others 2001) and flowers from May through July in Panama. The flowers are insect pollinated (Center for Tropical Forest Science 2002). Plants receiving ample sunlight can produce several hundred seeds per year. A collection of fresh fruits from Puerto Rico weighed an average of 0.129 $\pm$ 0.0019 g/fruit. Surface-dry seeds separated from them weighed an average of 0.0891 $\pm$ 0.0020 g/seed or 11,000 seeds/kg. Sown without pre-treatment on moist blotter paper, 100 percent of them germinated between 17 to 232 days after sowing. Germination is hypogeal, and they appear to be recalcitrant

(lose viability if dried beyond a certain point) (author's observation). In Panama, the seeds are animal-dispersed (Center for Tropical Forest Science 2002). In Puerto Rico, seedlings are relatively common but only an occasional individual lasts more than a few weeks or months.

Growth and Management.—Broomstick in Puerto Rico appears to have a moderate growth rate and to live about 10 to 30 years. Management information is not available.

Benefits.—Broomstick adds to secondary forest biodiversity, helps protect the soil, and furnishes food and cover for wildlife. The species is used to a limited extent for landscaping and is considered a honey plant. The wood is of medium density (specific gravity 0.5), moderately hard and somewhat brash, and is resistant to attack by dry-wood termites (*Criptotermes brevis* (Walker)). Another source lists the wood density as 0.48 to 0.96 at 12 to 15 percent moisture content (World Agroforestry Centre 2002). It has been used for oars, broom handles, and rustic furniture; today the wood is mainly used for fuel, stakes, and fence posts (Little and Wadsworth 1964). An infusion of leaves, flowers, and roots has been used as a treatment for skin ulcers and as an emetic that has the unfortunate side effect of causing abortions and bleeding. Young branches were strewn on floors to control fleas and lice (Núñez Meléndes 1982).

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John K. Francis, Research Forester, U.S. Department of Agriculture, Forest Service, International Institute of Tropical Forestry, Jardín Botánico Sur, 1201 Calle Ceiba, San Juan PR 00926-1119, in cooperation with the University of Puerto Rico, Río Piedras, PR 00936-4984