***Rauvolfia viridis* Willd. ex Roemer & J.A. Schultes** bitter bush
APOCYNACEAE

Synonyms: *Rauvolfia lamarckii* A. DC. in DC.
Rauvolfia latifolia A. DC in DC.
Rauvolfia lanceolata sensu Griseb.

General Description.—Bitter bush, also known as bellyache bush, balsam, sassafras, milk tree, and ti bois-lait, is a branchy shrub to 2.5 m in height (Howard 1989, Liogier 1995). The species rarely becomes a small tree to 4 m in height (Liogier 1995) and 7 cm in diameter at breast height (Weaver 1990). Usually, there are multiple stems, as suckers arising from lateral roots, especially after fire or other disturbance. The root system is dominated by lateral roots, which support sinker roots and a moderate amount of fine roots. The ovate or ovate-elliptic leaves are 5 to 15 cm long by 3 to 5 cm broad, and grow in whorls of four or rarely three leaves. The several- to many-flowered inflorescences are usually terminal. The tiny flowers are tubular and white. The fruits are spherical or slightly flattened and 5 to 8 mm in diameter. Each contains two seeds (Howard 1989, Liogier 1995).

Range.—According to Howard (1989) and Liogier (1995) bitter bush is native to Hispaniola, Puerto Rico, the Virgin Islands, the Lesser Antilles, Trinidad, Margarita, and Venezuela. There are also records for Cuba (Martínez-Pérez and others 1997), Navassa Island (New York Botanical Garden 2001), Costa Rica (Departamento de Botánica 1999), and Colombia (Missouri Botanical Garden 2001).

Ecology.—In Puerto Rico, bitter bush grows in dry and moist forests that receive from 750 to about 1700 mm of annual precipitation. Usually rocky or otherwise poor sites are colonized in areas of both igneous and sedimentary (including limestone) rocks. The species grows from near sea level to about 400 m in elevation. Bitter bush requires full or partial sunlight. It grows in open, disturbed areas and low basal area, secondary and remnant forest. It withstands competition from herbs and shrubs well but eventually succumbs to competition from tall grass swards and closed forests. Although never abundant, the species becomes more common in overgrazed areas.

Reproduction.—A sample of bitter bush fruits collected in Puerto Rico weighed an average of 0.124 $\pm$ 0.005 g/fruit. Air-dried seeds separated from these fruits averaged 0.0247 $\pm$ 0.0004 g/seed or 40,500 seeds/kg. Sown in commercial potting mix without any pretreatment, 5 percent germinated after 11 months. Birds that eat the fruits disburse the seeds.

Growth and Management.—Growth of bitter bush is slow. The author estimated height growth of young shrubs from sprouts at 0.5 m/year. Weaver (1990) measured the diameter growth rate of two old small trees and found an average of only 0.01 cm/yr. No planting or management experience has been reported.

Benefits.—The roots of bitter bush were analyzed for alkaloids. Ajmalidine, a-yohimina, reserpinine, quebrachidine, and yohimbina were isolated. Reserpine, a sedative present in other *Rauvolfia*s, was not found (Martínez Pérez and others 1997). Bitter bush furnishes minor food and cover for birds and other wildlife. With other dry forest vegetation, it protects the soil from erosion.

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