

***Gesneria pedunculosa* (DC.) Fritsch**
GESNERIACEAE

arbol de navidad

Synonyms: *Conradia pedunculosa* A.P. DC.
Gesneria exogenia Sasse & Moc. ex A.P. DC.
Pentarhaphia pedunculosa (A.P. DC.) Decne.
Codonoraphia albiflora (Decne.) Oersted



General Description.—Arbol de navidad is an upright, evergreen shrub or occasionally a small tree 3 to 5 m in height and 5 to 10 cm in basal diameter. On rocks, the shrub sometimes takes a natural bonsai form. The root system, which may or may not have a taproot, takes whatever form necessary to anchor itself in the rocky ground where it grows. The numerous fine roots have clearly visible, white mycorrhizal growth. There are usually multiple stems from the base of the trunk. Arbol de navidad bark is gray or brown, furrowed and rough. The inner bark is light brown and fibrous. Twigs are slender, greenish gray, and form a relatively dense crown. The leaves, which are crowded near the ends of branches, have elliptic to obovate blades, 4 to 11 cm long, with smooth to fine serrate margins. The inflorescences usually have 2 to 4 flowers borne at the end of glandular-resinous peduncles 8 to 16.5 cm long. The five-lobbed tubular corolla is yellow-green to pinkish-white and 1.1 to 1.9 cm long. The fruit that forms is a four-valved, 6 to 9 mm capsule with

five long, narrow calyx lobes that release numerous tiny reddish-brown or brown seeds (Liogier 1995, Little and others 1974).

Range.—Arbol de navidad is endemic to Puerto Rico (Liogier 1995, Little and others 1974). It has been planted elsewhere in botanic gardens and arboretums but is not reported to have naturalized. A hybrid between arbol de navidad and *G. pedicellaris* Alain, dubbed “golden oldie,” has been developed for ornamental purposes (American Gloxinia and Gesneriad Society 2002).

Ecology.—Arbol de navidad is locally common and usually grows on steep slopes and shallow, rocky soils, sometimes in fractured rock. The parent materials of the soils may be sedimentary (including limestone), igneous, and metamorphic (including ultramafic) rocks. The species is found as scattered individuals or in nearly pure thickets. Plants are less common on south slopes than on north-, east-, or west-facing slopes in areas that receive from about 1000 to 3000 mm of precipitation from about 50 to 800 m above sea level. Arbol de navidad is moderately shade tolerant. It grows and flowers in openings and below forest canopies, if they are not too dense. The species does not appear to compete in dense stands of grass. It grows in remnant forest stands and advanced secondary forests, some of which are old road cuts, abandoned pastures, and fields.

Reproduction.—Arbol de navidad flowers and fruits nearly throughout the year. The flowers are probably pollinated by bats (Little and others 1974). Seed production is high and consistent from year to year. Samples of seed collected in Cayey and Susúa, Puerto Rico, in different years weighed an average of 1.78×10^{-5} g and 1.75×10^{-5} g, respectively, or 56 million seeds/kg. Both collections failed to germinate when placed on moist filter paper. The seeds are dispersed by the wind. Seedlings are relatively common on bare ground near fruiting adult plants. Adult and sapling plants sprout when cut or damaged.

Growth and Management.—Arbol de navidad is slow growing at all stages. It probably lives several decades. No plantations are known, and recommended management practices have not been published. Disturbance of the soil surface in steep, rocky terrain in moist areas near seed sources would likely result in seedling establishment.

Benefits.—Arbol de navidad is a pretty plant that adds to the aesthetics of the forest. It helps protect the soil in fragile areas and furnishes cover for wildlife. Because of the small diameters and quantities in which it is available, the wood, which is light brown and hard, is useful mainly for fuel.

References

- American Gloxinia and Gesneriad Society. 2002. Registered gesneriads. American Gloxinia and Gesneriad Society, Salsbury, CT. http://www.aggs.org/ir_ges/. 7 p.
- Liogier, H.A. 1995. Descriptive flora of Puerto Rico and adjacent islands. Vol. 4. Editorial de la Universidad de Puerto Rico, San Juan, PR. 617 p.
- Little, E.L., Jr., R.O. Woodbury, and F.H. Wadsworth. 1974. Trees of Puerto Rico and the Virgin Islands. Vol. 2. Agriculture Handbook 449. U.S. Department of Agriculture, Washington, DC. 1,024 p.

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