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## A New *Bonamia* (Convolvulaceae) from Nicaragua

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**ABSTRACT.** A new species of *Bonamia* has been discovered in the Department of Chontales in Nicaragua. *Bonamia douglasii* is described and compared with other large-sepaled species in the world. This species differs from the other Central and North American members of the genus in being a woody climber with two cordate outer sepals larger than the inner three.

**RESUMEN.** Una especie nueva de *Bonamia* se ha descubierto en el Departamento de Chontales de Nicaragua. *Bonamia douglasii* se describe y se contrasta con las otras mundiales del género con sepalos grandes. Esta especie se difiere de las demás de la América Central y Norte en que es una trepadora leñosa con los dos sépalos exteriores mayores que los interiores.

Myint & Ward (1968) recognized 23 neotropical species in *Bonamia* A. Thouars. Revision of the genus based on the more abundant material now available indicates that 18 of the species they studied should be retained (Austin & Staples, unpublished data). However, exploration in the American tropics since the early 1970s has resulted in the addition of *B. apurensis* D. F. Austin (1982a), *B. mexicana* J. A. McDonald (1987), and *B. leonii* A. H. Gentry & D. F. Austin (1988). During study of specimens for the *Flora de Nicaragua*, I encountered yet another *Bonamia* that previously had not been recognized. Because the specimen represents a unique, locally endemic taxon, it is presented as new. The following, along with the three species recently described, brings the current neotropical generic total to 22.

*Bonamia* has recently been delimited by Verdcourt (1963, 1974), Myint & Ward (1968), Austin (1975, 1982a, b), Austin & Ghazanfar (1979), Austin & Cavalcante (1982), Austin & Staples (1985), Gonçalves (1987), and Breteler (1992). In these studies the genus was delimited as having free or partially free styles, non-acrescent sepals, dehiscent fruits, and ovate, obovate, or ovate-cordate cotyledons.

***Bonamia douglasii* D. F. Austin, sp. nov.** TYPE: Nicaragua. Dept. Chontales: Hacienda Veracruz, 12°11'N, 85°22'W, elev. 120–140 m, pastures and gallery forest, 19 Dec. 1984 (fls & buds), *W. Douglas Stevens 23522* (holotype, MO; isotype, FAU). Figure 1.

Species *B. sulphureae* affinis, sed ab ea sepalis exterioribus amplius reniformibus, sepalis interioribus minoribus differt.

Perennial climbers, woody, the stems twining, appressed brown-sericeous when young, glabrescent, older stems brown, lenticellate, striate. Leaves simple, petiolate; lamina coriaceous, elliptic to broadly ovate, 2.5–5.8 cm long, 1.8–5 cm wide, entire, the apex obtuse to mucronate, apiculate, the base obtuse to rounded, brown-sericeous, 4–6 veins conspicuous below, obscure above; petiole canaliculate, 2–5 mm long, 2 mm wide, brown-sericeous. Inflorescences racemose to flowers solitary, near the ends of terminal or on lateral branches, peduncles reduced to ca. 2 mm on solitary flowers, 3–4 mm long in racemes, brown-sericeous; pedicels 5–8 mm long, brown-sericeous; bracts scalelike, 1.5 mm long, triangular, brown-sericeous; sepals unequal, imbricate, the outer longer and broader than the inner, reniform, 8–9 mm long, 9–12 mm wide, coriaceous, basally obtuse, apically rounded, the margins entire, undulate, brown-sericeous, the inner 6–7 mm long, 3–5 mm wide, chartaceous, glabrous; corolla induplicate-valvate and convolute, funnel-shaped, 16–18 mm long, white, brown-sericeous on the mid-petaline bands with V-shaped trichomes, the cylindrical tube 6–7 mm long, glabrous; the limb almost entire; stamens equal, included, 4–5 mm long, the filaments fused to the corolla tube, glabrous at the base, the anthers 1–1.5 mm long; nectary 5-lobed; ovary ovoid, 2.5 mm wide and long, brown-sericeous throughout most of the length, the trichomes V-shaped, some areas near the bottom glabrous, the styles 2, unequal, 5–7 mm long, the stigmas capitate, 1 mm wide. Fruits not seen.

The epithet is dedicated to W. Douglas Stevens, indefatigable student of Nicaraguan botany.

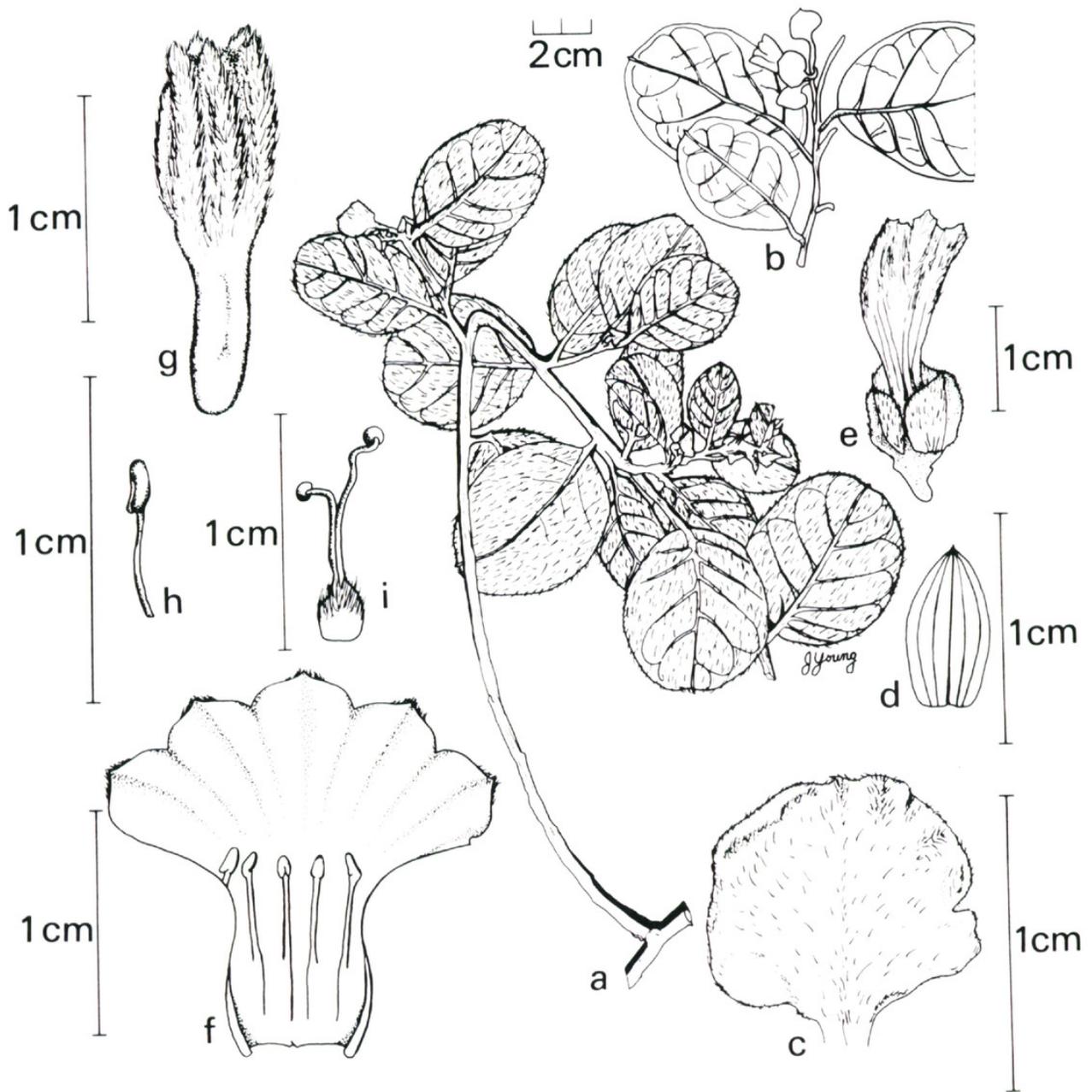


Figure 1. *Bonamia douglasii* D. F. Austin. —a. Habit sketch. —b. Flowering branch with racemose inflorescence. —c. Undulate outer sepal. —d. Inner sepal. —e. Corolla with sepals partly dissected. —f. Dissected corolla with androecium. —g. Intact corolla with pubescent plicae. —h. Stamen. —i. Gynoecium. Based on Stevens 23522.

In Central America this species superficially resembles *Bonamia sulphurea* (Brandege) Myint & Ward, which is now known from Guatemala, Honduras, Mexico (Veracruz) (Myint & Ward, 1968), Panama (Austin, 1975), and Colombia (Santander, Uribe 3950, US). If the Stevens specimen had been collected in South America it might have been confused with *B. ferruginea* (Choisy) Hallier f. This latter species shares with the Mesoamerican plants the short pedicels. The two may be distinguished by the capitate inflorescences with 10 or more flowers in *B. ferruginea*, and racemose inflorescences with fewer than 10 flowers in *B. douglasii*.

The fact that the outer sepals are larger than the inner in *B. douglasii* makes it unique among the Central American and North American species of *Bonamia*. The trait, however, does occur in other species of the genus, including: *B. cordata* (Hallier f.) Hallier f., endemic to the Malagasy Republic; *B. ferruginea* (Choisy) Hallier f., from the upper Amazon in South America; *B. kuhlmannii* Hoehne, known from only the type collection in Matto Grosso, Brazil; *B. mossambicensis* (Klotzsch) Hallier f., known from Mozambique and Tanzania; *B. pannosa* R. Brown, endemic to central and western Australia; and *B. peruviana* v. Ooststroom, found only near

Departamento Loreto in Peru. Thus, the large outer sepals in *Bonamia* have arisen in four areas: Central America, South America, Africa—Madagascar, and Australia.

Moreover, having outer sepals larger than the inner or outer sepals enlarging in fruits has arisen several times within the family, including in one form or another *Aniseia* Choisy (Merremieae D. F. Austin), *Bonamia* A. Thouars (Cresseae Bentham & Hooker), the entire tribe Poraneae Hallier f. with nine genera, *Hildebrandtia* Vatke (Hildebrandtieae Peter), and *Jacquemontia* Choisy (Convolvuleae (Choisy) Choisy). Surely there must be some strong force(s) selecting the trait in this suite of species within *Bonamia* and across the family. In some situations the large sepals appear to function as wings for wind-dispersal or maybe water-dispersal. In other cases the larger outer sepals may function to prevent insects biting through the calyx to rob the flower of nectar. No studies of the function(s) have been made.

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