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Author(s): Lynn Bohs

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A New Species of *Solanum* Section *Cyphomandropsis* (Solanaceae) from Bolivia

Lynn Bohs

Department of Biology, University of Utah, Salt Lake City, Utah 84112, U.S.A.

ABSTRACT. A new species of *Solanum* sect. *Cyphomandropsis* (Solanaceae), *S. hibernum*, is described from the western part of Dept. Santa Cruz, Bolivia. Its strongly discolorous leaves densely covered below with white dendritic hairs distinguish it from the other species in the section.

Solanum sect. *Cyphomandropsis* Bitter includes about 10–20 species of South American shrubs. The delimitation and phylogenetic affinities of the section are problematical at present, but it is almost certainly the sister group of the segregate genus *Cyphomandra* Sendtner (Bohs, in press). Synapomorphies uniting *Cyphomandra* and *Solanum* sect. *Cyphomandropsis* include tapered anthers with small terminal pores not expanding into longitudinal slits, large chromosomes ($> 4 \mu\text{m}$ long), and large amounts of nuclear DNA (Bohs, 1989; Moscone, 1992; Pringle & Murray, 1991).

I am completing a taxonomic revision of the section, with the goal of clarifying species and sectional limits, examining phylogenetic relationships, and assessing generic affinities. During the course of this work, I encountered the new species described below.

Solanum hibernum Bohs, sp. nov. TYPE: Bolivia. Dept. Santa Cruz: Prov. Florida, 3 km S of Mataral, valley of Río Ciénega, 18°8'S, 64°13'W, 1,400 m, 1 Feb. 1987 (fl, fr), *Nee & Coimbra 33970* (holotype, US #3146788; isotypes, LPB, NY, TEX). Figure 1.

Solano luteoalbo Persoon affine, a quo differt foliis valde discoloribus infra pilis albis ramosis dense obtectis, et inflorescentiis brevibus.

Small shrub 0.5–1 m tall with strong fetid odor. Young stems densely pubescent with unbranched or dendritically branched eglandular hairs and also some short-stalked glands; older stems medium-brown, sparsely to moderately pubescent, vertically furrowed with whitish fissures. Leaves 6–many per sympodial unit, the blades simple, chartaceous to

subcoriaceous, acute at apex, cuneate to subcordate at base, ovate or elliptic, 4–12 cm long, 1.5–6.5 cm wide, length : width ratio ca. 1.5–3.3 : 1, sparsely pubescent adaxially with curled, white, usually dendritically branched hairs, these more dense on veins and margin, densely white-pubescent abaxially with dendritically branched hairs, the margin densely ciliate, the petioles 1–2.5 cm long, densely pubescent with hairs like those of the stem. Inflorescence unbranched (rarely forked), ca. 10-flowered, 1.5–5 cm long; peduncle 0.5–2 cm long; rachis 0.5–3 cm long; flowering and fruiting pedicels 10–15 mm long, spaced 1–5(10) mm apart, articulated at or near the base, leaving scars or short pegs less than 1 mm long; inflorescence axes sparsely to moderately pubescent with mostly unbranched hairs. Calyx sparsely to moderately pubescent, not constricted at apex of tube, the radius 3–5 mm, the lobes 1–3 mm long, ca. 2 mm wide, often unequally divided, deltate, with apiculate tips. Corolla violet, chartaceous, stellate, the radius 9 mm, the tube 2 mm long, the lobes 7 mm long, 2.5 mm wide at base, narrowly triangular, acute at apices, moderately to densely puberulent abaxially, sparsely puberulent adaxially, the margin densely ciliate. Anthers usually connivent into a cone, yellow, lanceolate, somewhat sagittate at base, 5–7 mm long, 1.5–2 mm wide, glabrous; pores directed distally, not opening into longitudinal slits; filaments ca. 1 mm long. Ovary glabrous; style glabrous, cylindrical to subclavate, 7–8 mm long, 0.5 mm diam.; stigma truncate to subcapitate, the same diameter as the style. Fruits bright orange, globose, obtuse or slightly apiculate at apex, 1.5–2 cm long, 1.5–2.5 cm diam., glabrous; stone cell aggregates absent. Seeds prismatic, 4–5 mm long, 3–4 mm wide.

Phenology. Flowering specimens have been collected in December and February; fruiting specimens have been collected in February, March, and June.

Distribution. Valley bottoms and gentle slopes in arid thorn scrub and shrubby dry forest, often in rocky, sandy, or grazed areas, 1,400–1,950 m in elevation, in the western part of Dept. Santa Cruz, Bolivia.

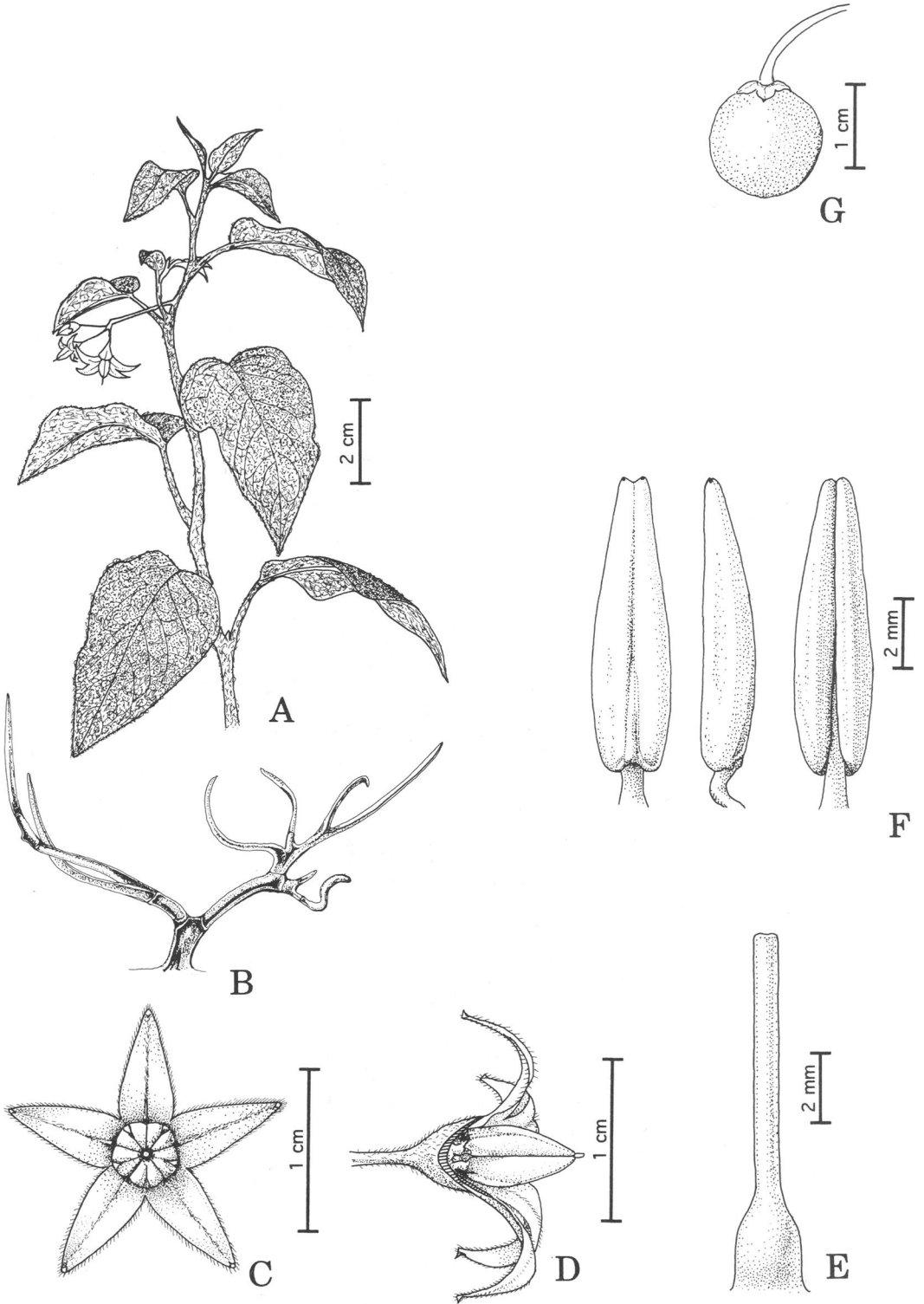


Figure 1. *Solanum hibernum* Bohs. A. Habit. —B. Dendritically branched trichome from abaxial leaf surface. —C. Corolla (frontal view). D. Corolla (side view). —E. Gynoecium. F. Stamens (left to right: abaxial, side, adaxial view). G. Fruit. All based on living material of *Nec* s.n.

Local names and uses. "Bolo bolo" (Nee & Coimbra 33970). Fruit not eaten due to its bitter taste (Nee & Coimbra 33970).

This species belongs to a putatively monophyletic clade of section *Cyphomandropsis* characterized by few-seeded fruits and large prismatic seeds. Other species belonging to this clade are *Solanum adelphum* Morton, *S. amotapense* Svenson, *S. confusum* Morton, *S. glaucophyllum* Desfontaines, *S. luteoalbum* Persoon, *S. nitidum* Ruiz & Pavón var. *hutchisonii* Macbride, *S. stuckertii* Bitter, and *Cyphomandra hypomalaca* Bitter. Although all the collections cited were originally distributed as *S. stuckertii*, *S. hibernum* is most similar to *S. luteoalbum*. Both species have abundant dendritic pubescence and violet corollas. *Solanum hibernum* differs in having the leaf surfaces strongly discolored, with the upper surface dark green and the lower surface whitish green due to the lush covering of lanate arachnoid hairs. The short inflorescences also distinguish this species, as does its Bolivian distribution.

The name is taken from the Latin adjective *hibernus*, meaning "of the winter." This name was suggested by the artist, Alejandro Purgue, who, upon examining the dense leaf pubescence, declared that the plant "had its winter coat on."

All the collections cited were seen by the author, with the exception of the duplicate specimens at LPB and JBSC, which were examined by Michael Nee.

Paratypes. BOLIVIA. **Santa Cruz:** Prov. Vallegrande, 10 km by air NNW of Vallegrande, 18°23'S,

64°8'W, 1,850 m, 1 Feb. 1987 (fr), Nee & Coimbra 33945 (NY); Prov. Vallegrande, Quebrada Llullucha, 14 km by air SSE of Mataral, 18°14'S, 64°11'W, 1,550 m, 1 Feb. 1987 (fr), Nee & Coimbra 33950 (LPB, NY); Prov. Vallegrande, 6.5 km NNW of center of Vallegrande, 18°26'S, 64°7'W, 1,950 m, 9 Mar. 1988 (fr), Nee & Solomon 36559 (LPB, NY); Prov. Vallegrande, Lagunillas, 5 km N of El Trigal on road to Mataral, 18°15'S, 64°9'W, 1,600 m, 24 Dec. 1989 (fl), Nee 38328 (JBSC, UT); Prov. Florida, 2 km NE of Mairana, 18°7'S, 63°57'W, 1,450 m, 2 June 1991 (fr), Nee s.n. (no specimen), seeds grown at the University of Utah, Salt Lake City, Utah, as *Bohs 2443* (UT).

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