

A NEW SPECIES OF *JAL TOMATA* (SOLANACEAE) FROM NORTHWESTERN PERU

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Knapp, Sandra (Institute for Botanical Exploration, Box EN, and Department of Biological Sciences, Box GY, Mississippi State, MS 39762), Thomas Mione (Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs, CT 06269), and Abundio Sagástegui A. (Universidad Antenor Orrego de Trujillo, Caquetá 280, Trujillo, Perú). A new species of *Jaltomata* (Solanaceae) from northwestern Perú. *Brittonia* 43: 181–184. 1991.—*Jaltomata whalenii*, a rare species endemic to the Río San Benito drainage in the department of Cajamarca, Perú, is described and illustrated. The delimitation and relationships of the genus *Jaltomata* are briefly discussed.

Key words: *Jaltomata*, Solaneae, Solanaceae, Peru.

Jaltomata includes about 25 species of tropical and subtropical herbs distributed from the southwestern United States to Bolivia (Davis, 1980; Davis & Bye, 1982), on the islands of the West Indies (1 species; Adams, 1972) and on three of the Galapagos Islands (1 species; D'Arcy, 1982). The genus is characterized by: 1) basally articulated pedicels, 2) filaments inserted on the ventral face of the anthers, 3) basal enlargement of the filaments, 4) well developed nectariferous disk, 5) valvate corolla lobes, and 6) fruits with an accrescent calyx and juicy mesocarp (Hunziker, 1979).

The genus *Jaltomata* Schldl. has only recently been segregated from *Saracha* Ruiz & Pavón, to which it is probably not closely related (Gentry, 1973). It includes all the herbaceous and suffrutescent species formerly included in *Saracha* (Gentry, 1973) and all species formerly known as *Hebecladus* Miers (Macbride, 1962; Hunziker, 1979). The prolific German solanologist, Georg Bitter, described many species of *Jaltomata* (as *Saracha*) (see Weber, 1928 for a bibliography of Bitter's work), but many of these species are synonyms of previously published names (Morton, 1938). *Jaltomata*, together with the well known solanaceous genera *Solanum* L., *Physalis* L. and *Lycopersicon* Miller, is a member of the tribe Solaneae (Hunziker, 1979) and may be most closely related to the woody genus *Cuatresia* A. T. Hunz., with which it shares filaments inserted on the ventral face of the anthers.

A treatment of the Peruvian species of *Jaltomata* (as *Saracha* and *Hebecladus*) was published in the Flora of Peru (Macbride, 1962). This treatment is practically unusable and is completely inadequate for most of the species treated. Macbride (1962) himself noted this and stated, "The group needs revision by a student who can study living plants." *Jaltomata* is presently being revised by one of us (T.M.).

***Jaltomata whalenii* S. Knapp, Mione and Sagástegui, sp. nov. (Fig. 1)**

TYPE: PERU. **Cajamarca:** Prov. Contumazá, lecho del Río San Benito, alrededores de San Benito, 1300 m, 3 Feb 1985, *Sagástegui A., Leiva G. & Sagástegui C. 12471* (HOLOTYPE: HUT!; ISOTYPES: IBE!, MO!, NY!).

Herbae perennes vel suffrutices; folia ovata vel obovata trichomatibus simplicibus uniseriatis glanduliferis dense pubescentia; inflorescentiae axillares triflorae dense pubescentes; calycis lobi trichomatibus simplicibus uniseriatis glanduliferis pubescentes; corolla caerulea, lobis ad marginem trichomatibus minute dendriticis pubescentibus; filamenta prope basin pubescentia; bacca aurantiaca 5–8 mm diametro.

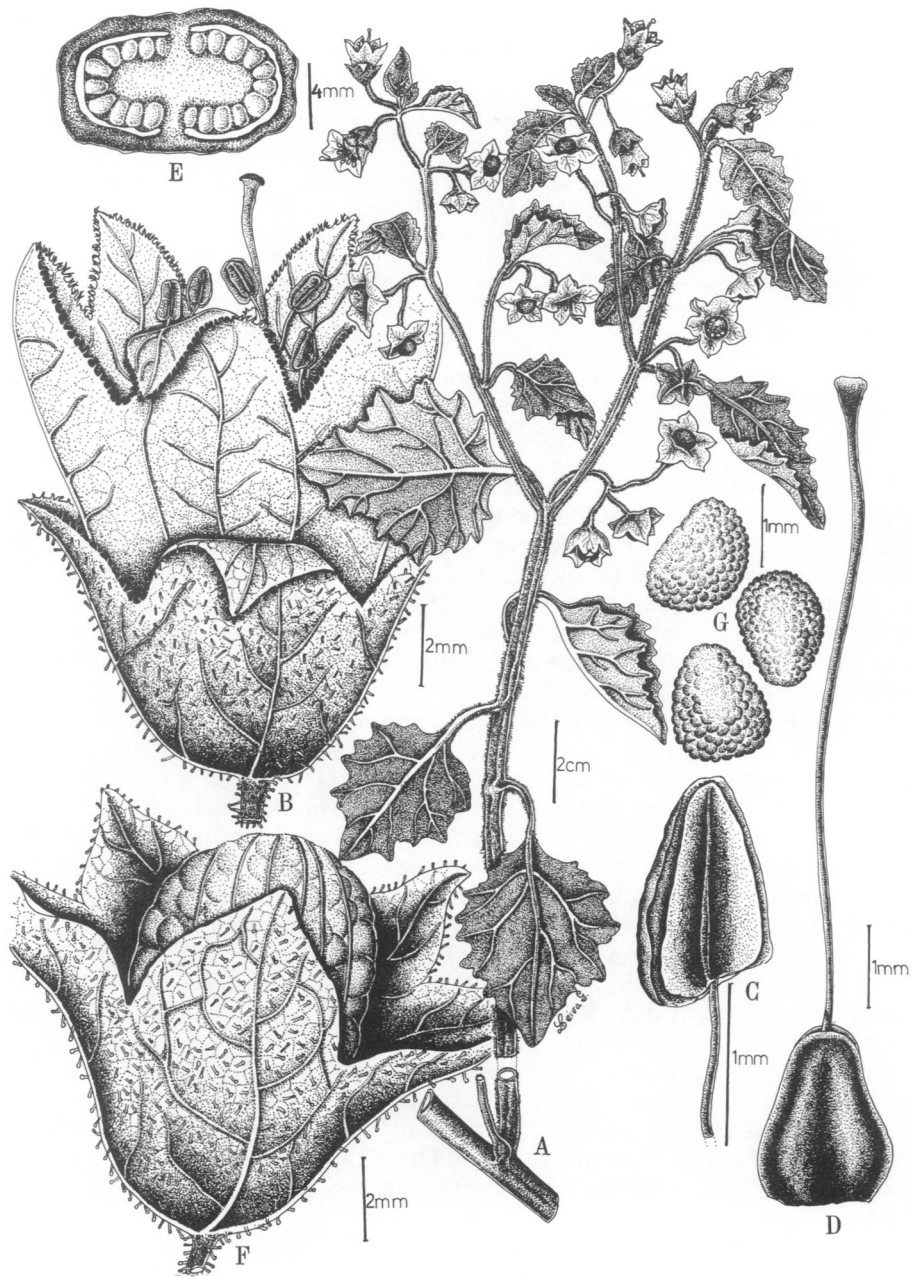


FIG. 1. *Jaltomata whalenii* (Sagástegui A. et al. 12471, HUT). A. Flowering branch. B. Flower. C. Dehiscent stamen. D. Gynoecium. E. Transverse section of the ovary. F. Mature berry with persistent calyx. G. Seeds.

Plants herbaceous to suffruticose. *Stems* terete, hollow, densely velutinous, the trichomes of 2 types, the majority 0.25–0.4 mm long, 2–3-celled, gland-tipped, these forming a dense uniform covering, scattered and evenly distributed among these shorter trichomes are 2–3 mm long, gland-tipped trichomes. *Sympodia* difoliolate, geminate on reproductive nodes. *Leaves* ovate to obovate, 3.5–

6.5 cm long, 2.5–4 cm wide, with 3 or 4 pairs of primary veins, the lamina adaxially and abaxially pubescent with erect, uniseriate, gland-tipped usually 3-celled trichomes 0.25–0.75 mm long, these denser along the veins, the margins of young leaves erose-sinuate, of older leaves erose-dentate, bearing uniseriate, multicellular trichomes 0.4–0.6 mm long, the apex acute to acuminate, the base truncate, somewhat winged onto the petiole; petiole 1.2–2.3 cm long, minutely and assymmetrically winged. *Inflorescence* axillary, (1)–3-flowered, peduncle 3–6 mm long, pedicels 5–8 mm long, the entire inflorescence densely pubescent with simple, uniseriate, gland-tipped trichomes like those of the stems. *Flowers* with the calyx pentamerous, 1–1.4 cm in diam at anthesis, enlarging in fruit, the abaxial surface pubescent with simple, uniseriate, gland-tipped trichomes 0.5–1 mm long, denser along the veins, the calyx lobe margins with some longer trichomes to 2 mm long; corolla blue, rotate-campanulate, glabrous adaxially, sparsely papillate abaxially, the papillae denser along the veins, the margins of the lobes with multicellular, dendritic, non-glandular trichomes 0.1–0.3 mm long; stamens 5, anthers 1.4–1.5 mm long, dehiscing by longitudinal slits, the filaments ca 1 mm long in the pistillate phase, 9–9.5 mm long in the hermaphroditic phase, pubescent with simple, uniseriate, multicellular trichomes 0.5–1.5 mm long in the distal $\frac{1}{3}$, inserted on the ventral face of the anther; ovary glabrous, bicarpellate with numerous ovules, with a nectariferous disk; style ca 1 cm long, glabrous, the stigma capitate, bilobed, exserted beyond the anthers. *Fruit* a globose, many-seeded, orange berry, 5–8 mm in diam; fruiting calyx accrescent, 1.6–2.4 cm in diam, not completely enclosing the berry. *Seeds* ca 1 mm in diam, the surfaces minutely verrucose.

PARATYPE: PERU. *Cajamarca*: Prov. Contumazá, lecho del Río San Benito, alrededores de San Benito, 1300 m, 28 Mar 1985, *Sagástegui A. & Leiva G. 12548* (BH, HUT).

Distribution: Known only from the type locality in the Río San Benito drainage, Provincia Contumazá, Departamento Cajamarca, Perú, at 1300 m elev. *Jaltomata whalenii* grows in rocky areas in association with herbaceous vegetation consisting mostly of grasses. Common shrubs in the area are *Baccharis lanceolata* H.B.K., *Tessaria integrifolia* Ruiz & Pavón, and *Phenax* sp. The species is very rare in the region, and recent attempts to recollect it have met with failure.

Jaltomata whalenii is easily distinguished from all other species of *Jaltomata* by its erose-dentate leaves. The globose, orange fruits are smaller than those of most other South American species of *Jaltomata*. *Jaltomata whalenii* is most closely related to *J. glandulosa* (Miers) Castillo & Schultes and differs from that species in its smaller, campanulate (versus rotate) flowers and lower elevation distribution. *Jaltomata glandulosa* is found above 2000 m from Andean Venezuela to southern Perú. *Jaltomata whalenii* may be a geographical isolate of its more common and more widely distributed relative.

Etymology: This species is named in honor of the late Dr. Michael D. Whalen, an inspirational and enthusiastic solanologist and a lover of northwestern Perú.

Acknowledgments

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BOOK REVIEW

Icones Pleurothallidarum VII. Systematics of *Platystele* (Orchidaceae). By Carlyle A. Luer. *Monographs in Systematic Botany from the Missouri Botanical Garden* Vol. 38. Department Eleven, Missouri Botanical Garden, P.O. Box 299, St. Louis, MO 63166-0299. ISSN 0161-1542. 1990. 135 pp. \$10 (paper) plus \$1.50 shipping and handling.

After publishing his two well-known volumes *The Native Orchids of Florida* (1972) and *The Native Orchids of the United States and Canada* (1975), Carlyle A. Luer shifted his attention to the largest subtribe of neotropical orchids, the Pleurothallidinae Lindley. The series *Icones Pleurothallidarum* is the result of more than sixteen years of field and herbarium experience and provides the first basic framework for the classification of this subtribe (the Pleurothallidinae currently comprising 29 genera and over 4000 species). The present volume is an up-to-date account of *Platystele* Schltr., a genus of generally minute orchids, including what is reputed to be the smallest of all known orchids, *Platystele jungermannioides* (Schltr.) Garay. Seventy three species are discussed and illustrated. Of these, 25 species were previously described by Luer and 17 are newly described. In the first thirteen pages the author presents a short historical account of the genus, a list of all the names published in the genus, and a key to subgenera and species. All known synonyms, etymology, a short description in English, a list of specimens, a brief discussion, and an accurately-executed full-page drawing are provided for each species. The drawings, all by Luer, greatly enhance the usefulness of this work. In the last three pages the author provides a list of references, a glossary of 64 technical terms used in the book, and an index of scientific names. Except for a few typographical errors (e.g., on p. 4, *Platystele* subgenus *Teagueia* Luer was described in *Icones Pleurothallidarum* I, not II; on p. 105, the bibliographic citation was omitted for *Platystele repens*) this volume is well edited. As with previous issues of *Icones Pleurothallidarum*, abundant well-organized information is available at a reasonable price. This volume and the previous six in this series are highly recommended for the scientist, field biologist or serious amateur. —GUSTAVO A. ROMERO, Orchid Herbarium of Oakes Ames, Harvard University Herbaria, 22 Divinity Ave., Cambridge, MA 02138.