
Pennellia brachycarpa (Brassicaceae), a New Species from Jujuy, Argentina

Mark Beilstein

Department of Biology, University of Missouri–St. Louis, 8001 Natural Bridge Road, St. Louis, Missouri 63121, U.S.A. mab347@studentmail.umsl.edu

Ihsan A. Al-Shehbaz

Missouri Botanical Garden, P.O. Box 299, St. Louis, Missouri 63166-0299, U.S.A. ihsan.al-shehbaz@mobot.org

ABSTRACT. *Pennellia brachycarpa* (Brassicaceae), a new species from the province of Jujuy in northern Argentina, is described and illustrated. The new species is distinguished from other members of the genus by having corymbose rather than lax racemes and forked and Y-shaped instead of dendritic trichomes.

Key words: Argentina, Brassicaceae, Jujuy, *Pennellia*.

Pennellia Nieuwland (Brassicaceae) is a genus of 7 to 11 species distributed in the southern United States, Mexico, Central America, Colombia, and disjunctly into Bolivia and northern Argentina (Rollins, 1980; Appel & Al-Shehbaz, 2003; Fuentes-Soriano, 2004). The genus is easily distinguished from its nearest relatives in the Halimolobine clade (Bailey et al., 2002), which consists of *Halimolobos* Tausch, *Mancoa* Weddell, *Pennellia*, and *Sphaerocardamum* S. Schauer, by its cup-shaped flowers, purple to purple-tipped sepals, and petals sub-equaling or slightly longer than sepals.

The novelty described herein, *Pennellia brachycarpa*, was collected during fieldwork in northern Argentina in connection with a broad, ongoing phylogenetic study of the family Brassicaceae. Phylogenetic results from the chloroplast gene *ndhF* indicate that this species is closely related to the North American *P. longifolia* (Bentham) Rollins, a species distributed in Arizona, New Mexico, Texas, and southward throughout Mexico to Guatemala (Fuentes-Soriano, 2004). *Pennellia* was previously known from Argentina and Bolivia only by *P. boliviensis* (Muschler) Al-Shehbaz (Al-Shehbaz, 1990; Fuentes-Soriano, 2004). The inclusion of *P. brachycarpa* in *Pennellia* reinforces the southern distribution of the genus.

Pennellia brachycarpa Beilstein & Al-Shehbaz, sp. nov. TYPE: Argentina, Jujuy: Abra Pampa, S of Abra Pampa City off route 9, among rocks on isolated hilltop, 3650 m, 22°49.352'S, 65°41.324'W, 10 Feb. 2003, Mark Beilstein, Noah Whiteman & Donna Eakman 03-148 (holotype, MO). Figure 1.

Herba perennis 7.5–27 cm alta, pilis furcatis brevi-stipitatis et simplicibus praedita. Folia basalia oblanceolata-spathulata, 1–3 × 0.3–1 cm, margine subintegra vel serrulata; folia caulina sessilia, non auriculata, 0.7–2.6 cm × 1–5 mm. Racemi 7–30-flori, ebracteati; pedicelli fructiferi tenues, recti, 7–10 mm longi. Sepala oblonga, sparse pilosa, ca. 2 × 1 mm; petala alba, anguste spathulata, 2–2.5 × 0.6–0.8 mm; ovula 50–64; stylo 0.1–0.2 mm longo. Fructus lineares, 1.3–1.7 cm × ca. 1 mm, teretes, glabri; semina ovata, ca. 0.25 × 1 mm, subbiseriata.

Plants perennial, 7.5–27 cm tall; trichomes of stems, leaves, and sepals short-stalked and forked, these mixed with simple ones along stem and leaf midvein, to 0.3 mm long, rarely a few dendritic ones on leaf margin; stems erect, single, few-branched, and glabrous above. Basal leaves subsessile, oblanceolate-spatulate, 1–3 × 0.3–1 cm, base attenuate, margin subentire to serrulate, apex obtuse; cauline leaves sessile, not auriculate at base, oblong-linear, 0.7–2.6 cm × 1–5 mm, margin entire, apex subacute. Raceme ebracteate, corymbose, 7- to 30-flowered, rachis straight; fruiting pedicels very sparsely hairy, ascending, straight, slender, 7–10 mm long. Sepals oblong, green with purple tips, ca. 2 × 1 mm, not saccate, sparsely pubescent below apex; petals white, narrowly spatulate, not clawed, 2–2.5 × 0.6–0.8 mm; filaments 1–1.2 mm long; anthers ovate, ca. 0.6 mm long; ovules 50 to 64; style 0.1–0.2 mm. Fruit linear, 1.3–1.7 cm × ca. 1 mm, terete, slightly curved; valves glabrous, smooth; midvein distinct basally, obscure distally; stigma entire; seeds subbiseriate, brown, ovate, ca. 0.25 × 1 mm.

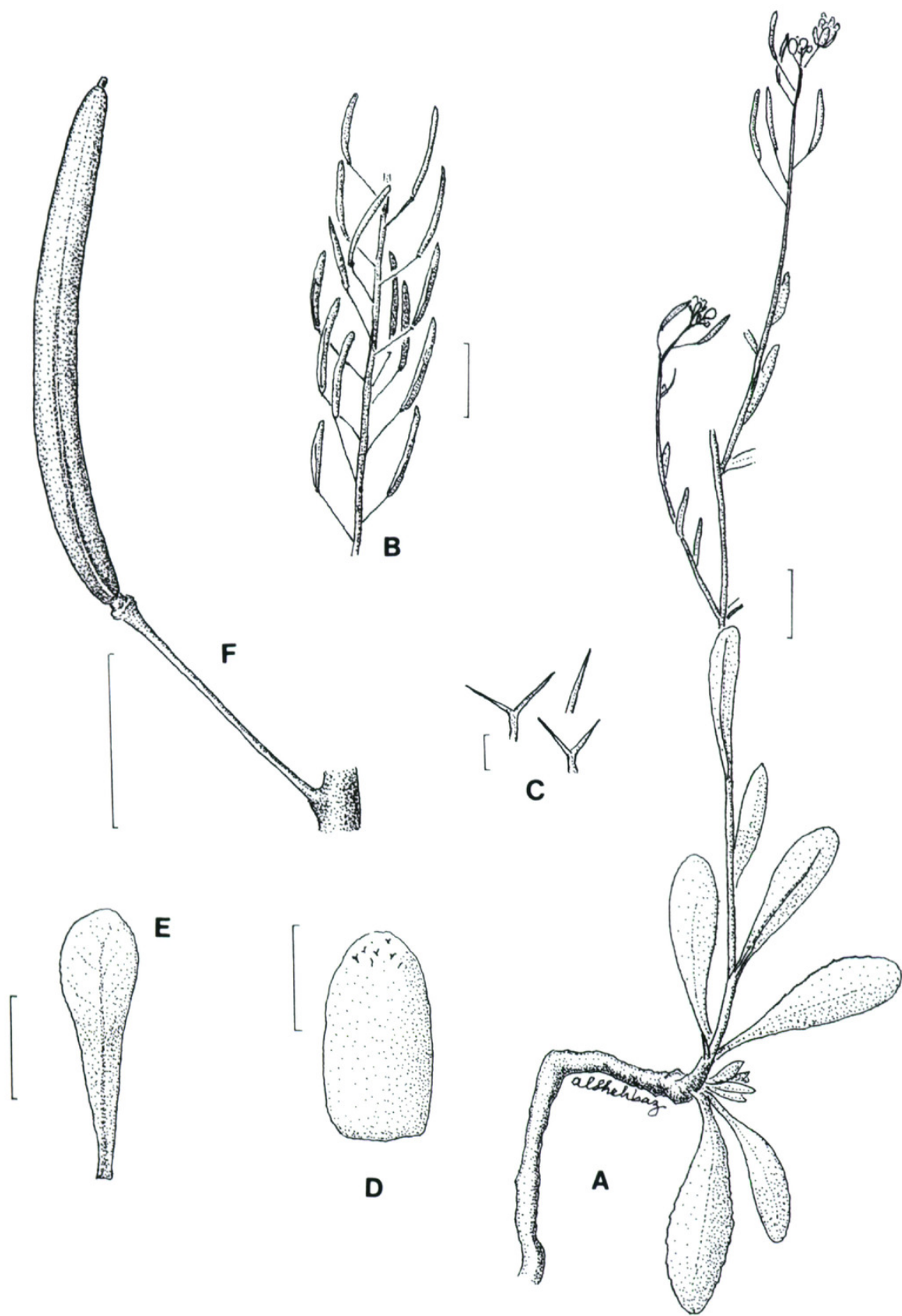


Figure 1. *Pennellia brachycarpa* Beilstein & Al-Shehbaz. —A. Plant. —B. Portion of infructescence. —C. Trichomes. —D. Sepal. —E. Petal. —F. Fruit. Scale: A, B, D, E = 1 mm; C = 0.1 mm; F = 5 mm. Drawn by Al-Shehbaz from the holotype (Beilstein, Whiteman & Eakman 03-143, MO).

Pennellia brachycarpa, which is known only from the holotype specimen, is easily distinguished from the other species of *Pennellia* by having corymbose instead of lax racemes and forked and Y-shaped instead of dendritic trichomes. It is related to a group of four species (the South American *P. boliviensis* and the North American *P. patens* (O. E. Schulz) Rollins, *P. micrantha* (A. Gray) Nieuwland, *P. lasiocalycina* (O. E. Schulz) Rollins) with terete to subterete, ascending to erect fruits (Fuentes-Soriano, 2004). From these, *P. brachycarpa* is also distinguished by its shorter (1.3–1.7 cm) instead of longer (more than 2 cm) fruits.

Ongoing studies on the South American genera of Brassicaceae should clarify generic boundaries and establish relationships among and within genera.

Acknowledgments. We are grateful to Victoria

C. Hollowell and two anonymous reviewers for their comments on the manuscript. We thank Sandra Aliscioni for help in the field.

Literature Cited

- Al-Shehbaz, I. A. 1990. New or noteworthy species in the South American genera *Mancoa*, *Pennellia*, and *Sisymbrium* (Brassicaceae). *Harvard Pap. Bot.* 2: 11–16.
- Appel, O. & I. A. Al-Shehbaz. 2003. Brassicaceae. Pp. 75–174 in K. Kubitzki (editor), *The Families and Genera of Vascular Plants*, Vol. 5. Springer-Verlag, Berlin, Heidelberg & New York.
- Bailey, C. D., R. A. Price & J. J. Doyle. 2002. Systematics of the halimolobine Brassicaceae: Evidence from three loci and morphology. *Syst. Bot.* 27: 318–332.
- Fuentes-Soriano, S. 2004. A taxonomic revision of *Pennellia* (Brassicaceae). *Harvard Pap. Bot.* 8: 173–202.
- Rollins, R. C. 1980. The genus *Pennellia* (Cruciferae) in North America. *Contr. Gray Herb.* 210: 5–21.



Al-Shehbaz, Ihsan A. and Beilstein, Mark. 2005. "Pennellia brachycarpa (Brassicaceae), a new species from Jujuy, Argentina." *Novon a journal of botanical nomenclature from the Missouri Botanical Garden* 15, 267–269.

View This Item Online: <https://www.biodiversitylibrary.org/item/14675>

Permalink: <https://www.biodiversitylibrary.org/partpdf/32563>

Holding Institution

Missouri Botanical Garden, Peter H. Raven Library

Sponsored by

Missouri Botanical Garden

Copyright & Reuse

Copyright Status: In copyright. Digitized with the permission of the rights holder.

License: <http://creativecommons.org/licenses/by-nc-sa/3.0/>

Rights: <https://biodiversitylibrary.org/permissions>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.