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Polypsecadium apolobamba (Brassicaceae), a New Species from Bolivia

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ABSTRACT. *Polypsecadium apolobamba* Al-Shehbaz & A. Fuentes (Brassicaceae), a new species from Bolivia, is described and illustrated. It is readily distinguished from the other Bolivian species *P. harmsianum* (Muschler) O. E. Schulz by having uniseriate seeds, pilose leaves, and longer fruits, and from *P. rusbyi* (Britton) Al-Shehbaz by having shorter non-torulose fruits, smaller petals, and shorter and curved fruiting pedicels.

Key words: Bolivia, Brassicaceae, IUCN Red List, *Polypsecadium*, *Sisymbrium*.

Schulz (1924) established *Polypsecadium* O. E. Schulz (Brassicaceae) as a monotypic genus based on a species originally described by Muschler (1908) as *Thelypodium harmsianum* Muschler. The genus remained monotypic until Romanczuk and Boelcke (1982) added two new species from Argentina. Appel and Al-Shehbaz (2003) maintained the genus with three species, but, as recently shown by Bailey et al. (2007), one of those species (*P. burkartii* Romanczuk & Boelcke) belongs to *Exhalimolobos* Al-Shehbaz & C. D. Bailey.

Polypsecadium shows remarkable morphological similarities to several South American species previously assigned to *Sisymbrium* L. sensu Schulz (1924), Romanczuk (1982), and many others (see Al-Shehbaz, 2006). However, as shown by Warwick et al. (2002, 2006), *Sisymbrium* is not represented in South

America by any native species, and all such *Sisymbrium* species belong to other genera of the tribe Schizopetaleae (as Thelypodieae). Indeed, Al-Shehbaz et al. (2006) placed *Sisymbrium* in the tribe Sisymbrieae and maintained the Schizopetaleae as a distinct but related tribe. These extensive studies prompted Al-Shehbaz (2006) to transfer all of the native South American species previously assigned in *Sisymbrium* to other genera, including *Polypsecadium*. As delimited by Al-Shehbaz (2006), *Polypsecadium* consists of 14 species restricted to South America and distributed from Colombia southward into Patagonia.

Recent fieldwork in Bolivia by one of us (AFF), as part of the "Floristic Inventory of the Madidi Region Project," led to the discovery of a new species of *Polypsecadium*. This novelty is described and illustrated below and brings the total in the genus to 15 species.

Polypsecadium apolobamba Al-Shehbaz & A. Fuentes, sp. nov. TYPE: Bolivia. La Paz: Prov. Franz Tamayo, ANMI [Area Natural de Manejo Integrado] Apolobamba, Piara hacia Pelechuco, bosque de yungas montano superior pluvial transicionando a ceja de monte, 2700–2900 m, 14°47'48"S, 69°00'52"W, 17 Apr. 2006, A. Fuentes, M. Mendoza, M. C. Lopez & R. Roque 10076 (holotype, MO; isotypes, LPB, MO). Figure 1.

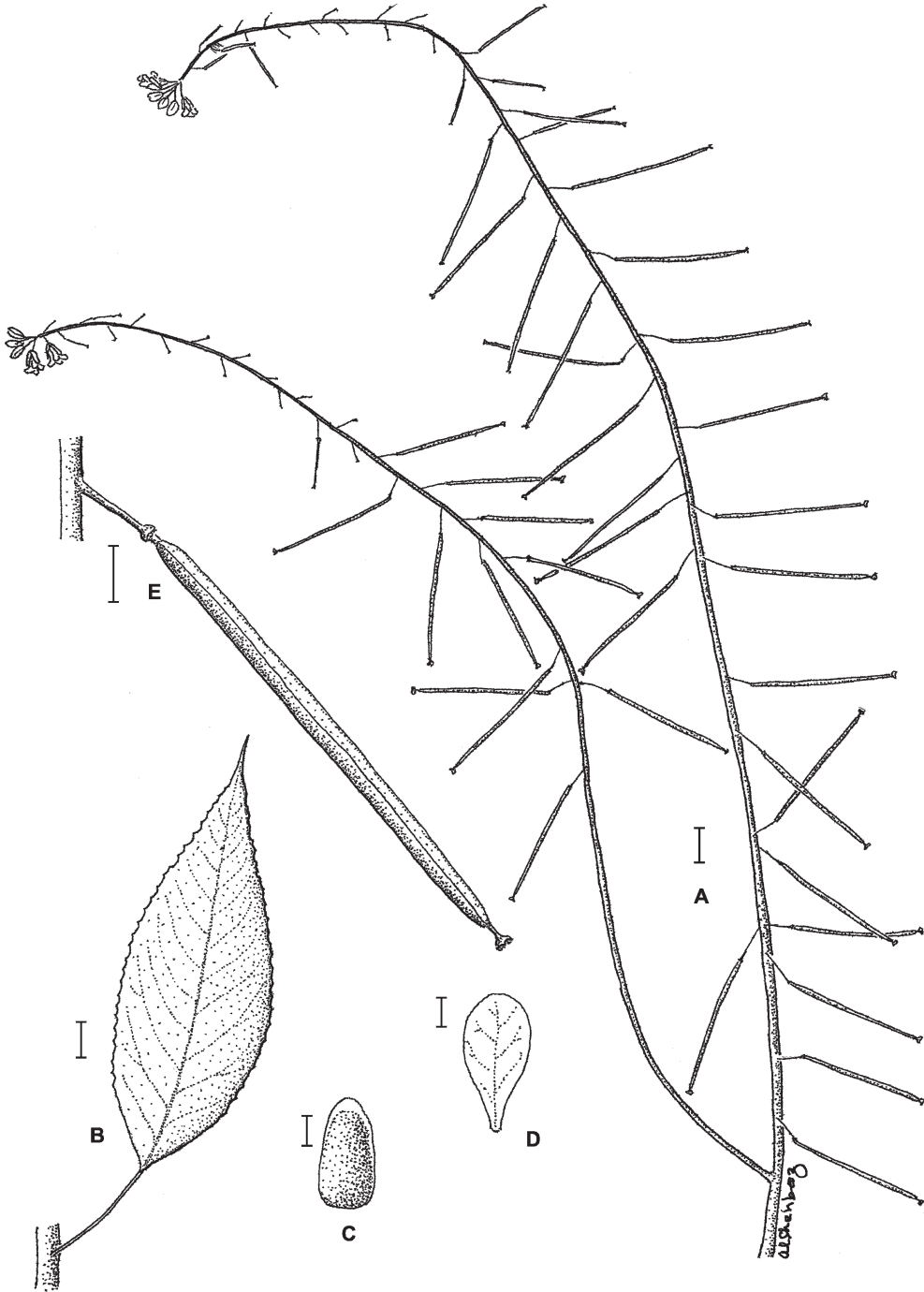


Figure 1. *Polypsecadium apolobamba* Al-Shehbaz & A. Fuentes. —A. Portion of fruiting raceme. —B. Middle cauline leaf. —C. Sepal. —D. Petal. —E. Fruit and fruiting pedicel. Scale bars: A, B = 1 cm; C, D = 1 mm; E = 5 mm. Drawn from the holotype, *Fuentes et al. 10076* (MO).

Herba ca. 1.6 m alta; folia caulina mediana late lanceolata, 10–13 × 3.5–4.5 cm, denticulata, acuminata, parce pilosa; racemi ebracteati; pedicelli fructiferi reflexi vel horizontales, 7–10 mm longi, glabri, recti, crassi; sepala oblonga, 3.5–4 × 1.2–1.6 mm, glabra; petala

alba, obovata, 4–5 × 1.7–2 mm; ovula 66 ad 80. Fructus anguste lineares, 4–5.5 cm × 1.2–1.8 mm, glabri, recti; stylus 1–2 mm longus; stigma capitata; semina oblonga, uniseriata, 1–1.3 × 0.5–0.6 mm; cotyledones incumbentes.

Herbs ca. 1.6 m tall; glabrous except for leaves; stems erect, glabrous, several branched above. Cauline leaves petiolate, middle ones with petioles 2–4 cm, blade broadly lanceolate, 10–13 × 3.5–4.5 cm, sparsely pilose with simple trichomes 0.2–0.4 mm long, base cuneate, margin denticulate, apex acuminate; upper cauline leaves narrowly lanceolate to linear-lanceolate, gradually reduced in size and width upward, moderately to sparsely pilose. Racemes ebracteate, lax, elongated considerably in fruit; rachis straight, striate; fruiting pedicels reflexed or horizontal, 7–10 mm, straight, stout, glabrous. Sepals greenish pink, oblong, 3.5–4 × 1.2–1.6 mm, glabrous, membranous at margin, not saccate at base; petals white, obovate, 4–5 × 1.7–2 mm, not or obscurely clawed, only slightly longer than sepals; filaments white, median pairs 3–4 mm, lateral pair 2–2.5 mm; anthers oblong, 1–1.2 mm; ovules 66 to 80 per ovary. Fruits narrowly linear, 4–5.5 cm × 1.2–1.8 mm, not torulose, straight; valves with a distinct midvein, glabrous; gynophore ca. 0.5 mm; style 1–2 mm; stigma capitate, considerably wider than style. Seeds yellow, oblong, uniseriate, 1–1.3 × 0.5–0.6 mm; cotyledons incumbent.

Distribution and habitat. *Polypsecadium apolobamba* grows along roadsides in the pluvial montane yungas forests of the Apolobamba Mountain Range, together with species of *Weinmannia* L. (*W. pinnata* L.), *Hedyosmum* Swartz (*H. angustifolium* (Ruíz & Pavon) Solms), *Clethra* L., and *Ocotea* Aublet.

IUCN Red List category. *Polypsecadium apolobamba*, which is known thus far only from the type locality, appears to be extremely rare and restricted to the eastern slopes of the Apolobamba Range. Its distribution elsewhere in that range and in Bolivia is unknown, and, therefore, its IUCN conservation status remains uncertain.

Etymology. The species epithet “*apolobamba*,” named after the Bolivian Apolobamba Mountain Range, is a noun used in apposition and, therefore, to be maintained according to Article 23.5 of the *International Code of Botanical Nomenclature* (McNeill et al., 2006).

Relationships. *Polypsecadium apolobamba* is easily distinguished from *P. harmsianum* (Muschler) O. E. Schulz (Argentina [Jujuy, Salta, Tucumán], Bolivia [Chuquisaca, La Paz, Tarija]; Al-Shehbaz, 2006) by having pilose (vs. glabrous) leaves, uniseriate (vs.

biseriate) seeds, and fruits 4–5.5 (vs. 1–2) cm long. From *P. rusbyi* (Britton) Al-Shehbaz (Bolivia [La Paz], Peru [Cuzco]; Al-Shehbaz, 2006), the new species differs by having obovate petals 4–5 mm long (vs. oblanceolate petals 7–8 mm long), straight and smooth fruits 4–5.5 cm long (vs. curved and torulose fruits [4.5–]5.5–8.5 cm long), and stout and straight fruiting pedicels 7–10 mm long (vs. slender and strongly curved pedicels 10–18 mm long).

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Literature Cited

- Al-Shehbaz, I. A. 2006. The genus *Sisymbrium* in South America, with synopses of the genera *Chilocardamum*, *Mostacillastrum*, *Neuontobotrys*, and *Polypsecadium* (Brassicaceae). *Darwiniana* 44: 341–358.
- , M. A. Beilstein & E. A. Kellogg. 2006. Systematics and phylogeny of the Brassicaceae: An overview. *Pl. Syst. Evol.* 259: 89–120.
- Appel, O. & I. A. Al-Shehbaz. 2003. Cruciferae. Pp. 75–174 in K. Kubitzki & C. Bayer (editors), *The Families and Genera of Vascular Plants*, Vol. 5. Springer-Verlag, Berlin, Heidelberg.
- Bailey, C. D., I. A. Al-Shehbaz & G. Rajanikanth. 2007. Generic limits in tribe Halimolobeae and the description of the new genus *Exhalimolobos* (Brassicaceae). *Syst. Bot.* 32: 140–156.
- McNeill, J., F. R. Barrie, H. M. Burdet, V. Demoulin, D. L. Hawksworth, K. Marhold, D. H. Nicolson, J. Prado, P. C. Silva, J. E. Skog, J. H. Wiersma & N. J. Turland (editors). 2006. *International Code of Botanical Nomenclature* (Vienna Code). *Regnum Veg.* 146.
- Muschler, R. 1908. Cruciferae andinae. *Bot. Jahrb. Syst.* 40: 267–277.
- Romanczuk, C. 1982. El género *Sisymbrium* (Cruciferae) en la Argentina. *Darwiniana* 24: 75–156.
- & O. Boelcke. 1982. Dos especies nuevas del genero monotipico *Polypsecadium* (Cruciferae). *Hickenia* 1(56): 297–304.
- Schulz, O. E. 1924. Cruciferae–Sisymbriaceae. In A. Engler (editor), *Pflanzenreich* IV. 105(Heft 86): 1–388. Verlag von Wilhelm Engelmann, Leipzig.
- Warwick, S. I., I. A. Al-Shehbaz, R. A. Price & C. A. Sauder. 2002. Phylogeny of *Sisymbrium* (Brassicaceae) based on ITS sequences of nuclear ribosomal DNA. *Canad. J. Bot.* 80: 1002–1017.
- , C. A. Sauder & I. A. Al-Shehbaz. 2006. Molecular phylogeny, morphology and cytological diversity of *Sisymbrium* (Brassicaceae). Pp. 219–250 in A. K. Sharma & A. Sharma (editors), *Plant Genome: Biodiversity and Evolution*, Vol. 1C: Phanerogams (Angiosperm–Dicotyledons). Science Publishers, Enfield, New Hampshire.