

Taxonomical and distributional notes on *Polylepis* (Rosaceae)

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Abstract

Polylepis pacensis M. Kessler & Schmidt-Leb. spec. nov. is described; *P. flavipila* (Bitter) M. Kessler & Schmidt-Leb., *P. incarum* (Bitter) M. Kessler & Schmidt-Leb., *P. lanata* (Kuntze) M. Kessler & Schmidt-Leb., and *P. subtusalbida* (Bitter) M. Kessler & Schmidt-Leb. are elevated from subspecies or varietal to species rank; *P. triacontandra* Bitter is reinstated as a species. The accompanying Electronic Supplement provides an updated key to species in *Polylepis*, and reports extensions to the known distribution ranges of three additional species of the genus. © 2005 Gesellschaft für Biologische Systematik. Published by Elsevier GmbH. All rights reserved.

Keywords: *Polylepis*; Rosaceae; Taxonomy; Andes

See also **Electronic Supplement** at: <http://www.senckenberg.de/odes/06-01.htm>

Introduction

The genus *Polylepis* Ruiz & Pav. (Rosaceae, Sanguisorbeae) comprises species of trees inhabiting the high Andes from Venezuela to central Argentina. The number of species included by different authors varies between 15 and 33 (Bitter 1911; Simpson 1979; Kessler 1995a, b). The circumscription of taxa in the genus is difficult due to extensive morphological variability within populations and limited variability between many of the recognized species (Simpson 1979, 1986; Kessler 1995a, c; Romoleroux 1996). Recent extensive collections in Peru and Bolivia, and molecular studies (Kerr 2003; A.N. Schmidt-Lebuhn, M. Kessler, and M. Kumar, unpublished data) suggest that hybridization takes place between probably all species of the genus as long as they grow in geographical proximity to

each other. These findings have prompted us to reassess the taxonomic implications of hybridization in the genus, leading to the recognition of additional species that are validated below. This and the taxonomic changes proposed by Kessler (1995a, b) render Simpson's (1979) key to *Polylepis* outdated. We therefore provide a key to the 26 species recognized by us. This key, and more extensive descriptions and data on the newly validated as well as additional taxa, are presented in an accompanying Organisms Diversity and Evolution Electronic Supplement (<http://www.senckenberg.de/odes/05-13.htm>).

Taxonomy

New species

Polylepis pacensis M. Kessler & Schmidt-Leb. spec. nov.
(See Fig. 1)

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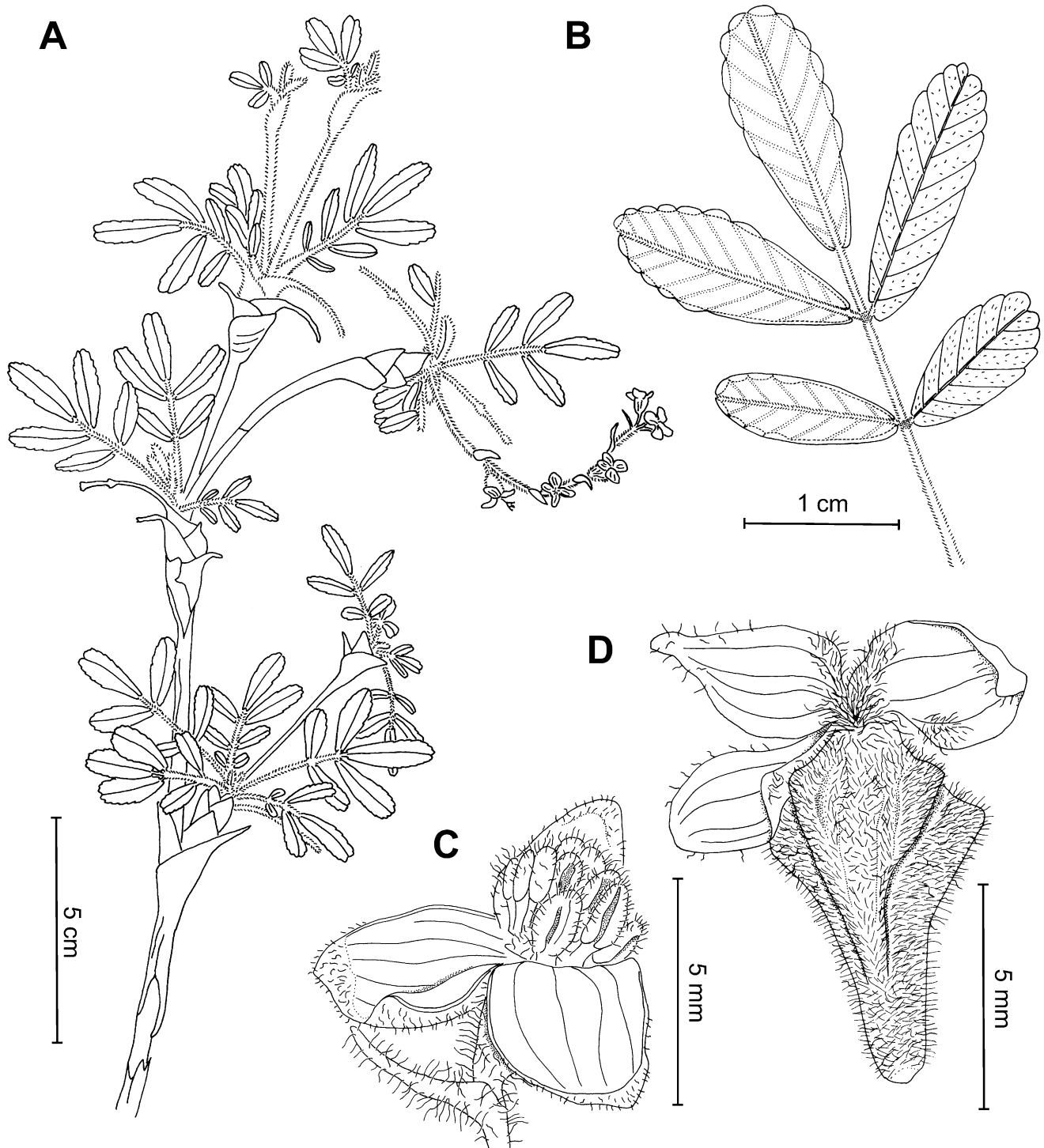


Fig. 1. *Polylepis pacensis* spec. nov.: (A) habit (Mendez & Arcienega 13); (B) leaf; left and apical leaflets show lower surface, right leaflets show upper surface (Mendez & Arcienega 13); (C) flower (Mendez & Arcienega 9); and (D) fruit (Mendez & Arcienega 18).

Etymology: The species is named after the Bolivian department of La Paz that includes the type location.

Type: Bolivia, Dep. La Paz, Prov. Murillo, sobre el camino de herradura entre Cohoni y Jalancha, 16.69°S 67.84°W, 3853 m, 13 November 2003, Mendez & Arcienega 18. Holotype GOET, isotype LPB.

Diagnosis: Differt a *P. triacontandra* apicibus foliorum rotundis ad emarginatis (versus acutis ad anguste rotundis), marginibus foliorum saepe integerrimis (versus semper crenatis), bracteis 4–7 mm longis (versus 6–10 mm), inflorescentiis simplicibus (versus saepe compositis) atque imprimis indumento foliorum

abaxiale densiter pannoso, et a *P. lanata* foliolis minoribus et indumento foliolorum abaxiale pallidore, densiore, brevior ac aequabile.

Taxa elevated to species rank

Polylepis flavipila (Bitter) M. Kessler & Schmidt-Leb. comb. et stat. nov.

≡ *Polylepis incana* var. *flavipila* Bitter, Bot. Jahrb. Syst. 45: 630. 1911. (Basionym). Type. Peru, Dep. Huancavelica, western slopes of the Andes above Pisco, Castro-Virreyna, 3900–4000 m, May 1910, Weberbauer 5433. Holotype B destroyed, isotypes F, GH, US.

Polylepis incarum (Bitter) M. Kessler & Schmidt-Leb. comb. et stat. nov.

≡ *Polylepis incana* Kunth subsp. *incarum* Bitter, Bot. Jahrb. Syst. 45: 643. 1911. (Basionym). ≡ *Polylepis besseri* Hieron. subsp. *incarum* (Bitter) M. Kessler, Candollea 50: 157–159. 1995. Type. Bolivia, Lago Titicaca, Isla del Sol, near Challa, Seler 148. Holotype B destroyed.—Bolivia, Dep. La Paz, Prov. Manco Capac, Isla del Sol, Yumani, 16°2'S 69°8'W, 3980 m, 19 February 2005, Jiménez 2716. Neotype LPB (designated here), isoneotypes AAU, GOET, NY.

Synonym: Polylepis incana Kunth subsp. *brachypoda* Bitter, Bot. Jahrb. Syst. 45: 644. 1911. Type. Bolivia, Lago Titicaca, Isla del Sol, near Challa, Seler 148a. Holotype B destroyed.

Polylepis lanata (Kuntze) M. Kessler & Schmidt-Leb. comb. et stat. nov.

≡ *Polylepis racemosa* Ruiz & Pav. var. *lanata* Kuntze, Revisio Generum Plantarum, Pars III: 77. 1898. (Basionym). ≡ *Polylepis racemosa* Ruiz & Pav. subsp. *lanata* (Kuntze) M. Kessler, Candollea 50: 147. 1995. Type. Bolivia, Cochabamba, Tunari, 3000–4000 m, Kuntze s. n. Holotype B destroyed, isotype NY.

Polylepis subtusalbida (Bitter) M. Kessler & Schmidt-Leb. comb. et stat. nov.

≡ *Polylepis incana* Kunth subsp. *subtusalbida* Bitter, Bot. Jahrb. Syst. 45: 640. 1911. (Basionym). ≡ *Polylepis besseri* Hieron. subsp. *subtusalbida* (Bitter) M. Kessler, Candollea 50: 154. 1995. Type. Bolivia, Cuesta de

Duraznillos, 2400–2600 m, December 1907, Herzog 712. Holotype Z.

Synonyms: Polylepis racemosa Ruiz & Pav. var. *tomentosa* Kuntze, Revisio Generum Plantarum, Pars III: 77. 1898. Type. Bolivia, Cochabamba, between Challa and Tapacari, 3600–4000 m, 18 March 1892, Lorentz & Hieronymus s. n. Holotype B destroyed, isotypes NY, UC, US.

Polylepis besseri Hieron. var. *abbreviata* Bitter, Bot. Jahrb. Syst. 45: 628. 1911. Nom. illeg. (based on type of *P. racemosa* Ruiz & Pav. var. *tomentosa* Kuntze).

Reinstated species

Polylepis triacontandra Bitter, Bot. Jahrb. Syst. 45: 630. 1911

≡ *Polylepis racemosa* Ruiz & Pav. subsp. *triacontandra* (Bitter) M. Kessler, Candollea 50: 144. 1995. Type. Bolivia, La Paz, Larecaja near Sorata, Cochipata, 3300 m, 9 October 1818, Mandon 674. Lectotype (selected in Simpson, 1979, p. 42) G, isolectotypes GOET, NY, P, S, US.

Synonym: Polylepis subquinquefolia Bitter, Bot. Jahrb. Syst. 45: 636. 1911. Type. Peru, Puno, Sandia above Coyoeno, 3600 m, Weberbauer 931. Holotype B destroyed, Field Museum negative #3391 of holotype at B, isotypes GH, NY.

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