

Xenophyllum, a New Andean Genus Extracted from *Werneria* s.l. (Compositae: Senecioneae)

V. A. Funk

National Museum of Natural History, Department of Botany, Smithsonian Institution, MRC
166, Washington, D.C. 20560, U.S.A. Email: mnhbo003@sivm.si.edu

ABSTRACT. A new genus, *Xenophyllum*, is described, which consists of 21 species extracted from *Werneria* s.l. (Compositae: Senecioneae). All members of this new genus are mat- or hummock-forming perennials that grow at high elevations (3000–5200 m) in the Andes from Colombia to northern Argentina and northern Chile. Included is a brief description of the disposition of the species of *Werneria* s.l. and a preliminary key to those included in *Xenophyllum*.

Werneria s.l. is a genus of 40–50 species that grows in the high-elevation areas of the Western Hemisphere. All but one of the species are confined to the Andes and can be found from Mérida, Venezuela, to Patagonia. The one exception is *W. nubigena*, which is primarily South American but also has a few isolated populations in Mexico and northern Guatemala. The species historically included in *Werneria* s.l. are related to *Senecio* L. and its relatives. The character that is most frequently used to circumscribe *Werneria* s.l. is the connate fusion of the involucre bracts at least halfway up from the receptacle (Blake, 1928; Humboldt et al., 1820; Rockhausen, 1939; Weddell, 1856). However, the fusion of the involucre bracts varies a great deal; sometimes they are fused less than half their length in many of the species of *Werneria* s.l., and more than halfway in some members of *Senecio*. Also important is the fact that the fusion is partially a function of the maturity of the head, with some involucre bracts being fused at the base but splitting in late flowering or fruiting stages. One character that is consistent in *Werneria* s.l. is the lack of a calyculus; however, there are members of *Senecio* and related genera that lack a calyculus. Finally, all but three of the species have white ray florets (two have yellow and one has purple); all three colors are known in *Senecio*.

Although *Werneria* s.l. is probably not monophyletic, there are at least three identifiable groups within the genus that can be recognized as distinct genera. The first group consists of rosette-forming plants that are solitary or in small clumps. This group has 20–30 species and contains the type species, *Werneria nubigena* Kunth, and can now be referred to as *Wer-*

neria s. str. A second group, the new genus *Misbrookea* V. A. Funk, is monotypic, with *M. strigossima* (A. Gray) V. A. Funk being its only member (Funk, 1997). The third group contains 21 species that form loose or tightly compressed hummocks or well-developed mats and have leaves along the rhizomes; these species are here moved into a new genus, *Xenophyllum* V. A. Funk.

KEY TO THE GENERA OF *WERNERIA* S.L.

- 1a. Leaves few and localized near the apex of the rhizome or just below the head; plants forming rosettes in small groups or often found individually; leaves completely green.
 - 2a. Leaves and involucre glabrous; apex of style with or without a few papillae but never with long multicellular hairs *Werneria*
 - 2b. Leaves and involucre covered with long (3–5 mm) strigose hairs; apex of style with long multicellular hairs *Misbrookea*
- 1b. Leaves numerous with at least the leaf bases covering the rhizomes for about 10 cm below the inflorescence or apex; plants forming tightly packed or loose hummocks or mats; leaves of the outer edges of the more closely compressed hummocks or mats with the distal few mm green, other leaves brown, blackish, or whitish *Xenophyllum*

***Xenophyllum* V. A. Funk, gen. nov.** TYPE: *Xenophyllum dactylophyllum* (Schultz Bipontinus) V. A. Funk, comb. nov.

Plantae perennes rhizomatosae tegetes vel aggeriformes, rhizoma in basibus foliorum persistentibus oblecta, folia caulini spirales base arcte contigua distaliter pervirida vel citrino-virida inferna atrobrunnea crassa. Capitula solitaria sessilia sin calyculo; involucre glabrum, bracteis base connatis in anthesis vel ultra; radii feminei albi (praeter in radiis violaceis *X. rosei*), flosculi disci hermaphroditi lutei vel albi; styli lutei vel rubri.

Hab. in montibus altis, e Colombia ad andinam Argentinensis et Chilensis.

Plants rhizomatous, forming loose or tight hummocks or well-developed mats. Rhizomes covered with leaves or leaf bases. Leaves spirally arranged and tightly packed, appressed at least at the leaf base, upper leaves deep or bright yellow green and lower leaves dark brown, leaves thick in cross section or if

flat then very small with a divided apex. Capitula solitary, without a calyculus. Involucre glabrous, bracts connately fused from the base, at least during flowering. Ray florets showy (except *X. esquilachense*, which has a reduced corolla), fertile, white (except for *X. roseum*, which has violet-purple ray florets that fade with age to pink). Disk florets hermaphroditic, yellow or white; styles yellow or red, the apex truncate to slightly acute or rounded with tufts of papillae near edges. Pappus of many whitish bristles; achenes dark with 7–9 ribs, pyriform.

High mountains of the Andes from Colombia to northern Argentina and Chile.

In comparison to other members of the Compositae, the species in *Xenophyllum* have unusual habits and odd leaves. No doubt this is the result of the fact that the species grow at high elevations, most at the very limit of the vegetation, from central and southern Colombia to northern Argentina and northern Chile, very nearly between the equator and the Tropic of Capricorn. Although small in stature in comparison to the more spectacular members of the family, such as the silverswords of Hawaii (*Agropyrium*) and the Espeletiinae of the northern Andes, they nevertheless have equally unusual vegetative characteristics.

The members of *Xenophyllum* are distinctive because of their leaves, hence the name (xeno = strange or foreign, and phyllum = leaves). Some species have needle-like leaves (e.g., *X. humile*, Fig. 1A), others have leaves that are triangular in cross section (e.g., *X. marcidum*, Fig. 1B), and still others have leaves that are round in cross section at the base but divided into two or more parts at the apex (e.g., *X. pseudodigitatum*, Fig. 1C). These three figures illustrate just a few of the many strange leaves in this group; among the other leaf types are flattened leaves divided at the apex, and leaves divided into finger-like projections. Some of the species names reflect the superficial similarity of the leaves to other taxonomic groups, such as *Werneria lycopodioides*, *W. juniperensis*, and *W. leucobryoides*, or body parts such as *W. digitata* and *W. pseudodigitata*.

Xenophyllum divides into three groups, one that is more northern and two more southern. The northern

species group, centered on the species *Xenophyllum humile*, has been collected primarily in Colombia and Ecuador but also from northern Peru, and one recent disjunct was collected by S. Beck in a páramo type habitat in Bolivia. The species of this northern group grow in tight or somewhat loose hummocks or mats in more or less wet páramos, except for *X. rigidum*, which grows on the upper dry slopes of a few volcanoes. I have collected five of the six species in this northern group—they are easy to recognize, closely related, and most likely form a natural group. The odd species currently included in this group is the one I have not collected, *X. acerosum*, which is known only from the type collection in southern Ecuador. *Xenophyllum acerosum* is clearly different from the other five species; however, it is poorly understood and its final subgeneric placement will have to await further information.

Both of the two more southern groups are found in southern Peru, Bolivia, and northern Argentina and Chile. One group is centered on the species *X. dactylophyllum* and has leaves that are divided at the apex. This divided leaf group is found primarily on dry rocky slopes near glaciers. The second southern group is centered on the species *X. poposum* and has undivided leaves that are sometimes terete, and other times angular in cross section; when angular they are as thick as they are wide. A few species have leaves that are somewhat flattened near the apex. The members of this last southern group grow at very high elevations (ca. 5000 m) in dry rocky areas and on glacial moraines. I have collected only 7 of the 15 species in the two southern groups: many are known from only one or a few collections and are, therefore, less well studied.

Members of all three groups are usually part of the very highest patches of vegetation on the wind-swept slopes of the Andes.

A revision of the genus *Xenophyllum* is under way, but the detailed descriptions are completed for only about half of the species. The imminent publication of other articles using the new names necessitates the description of the genus prior to the publication of the monograph. While it is difficult to produce a detailed key at this time, a preliminary one is offered that should help with species determinations.

PRELIMINARY KEY TO THE SPECIES OF *XENOPHYLLUM*

- 1a. Leaves undivided, entire.
 - 2a. Ray florets violet-purple fading through various shades to pale lavender in late flowering and fruiting stages *X. roseum*
- 2b. Ray florets white.
 - 3a. Leaves angular in cross section, width and depth ± equal.
 - 4a. Erect, growing out of sand in small clumps on slopes; involucre dark purple; only known from dry puna area of the tri-country border of Peru, Chile, and Bolivia *X. lycopodioides*
 - 4b. Prostrate, growing on rocks in mats in glacial melt streams; involucre green or with purple

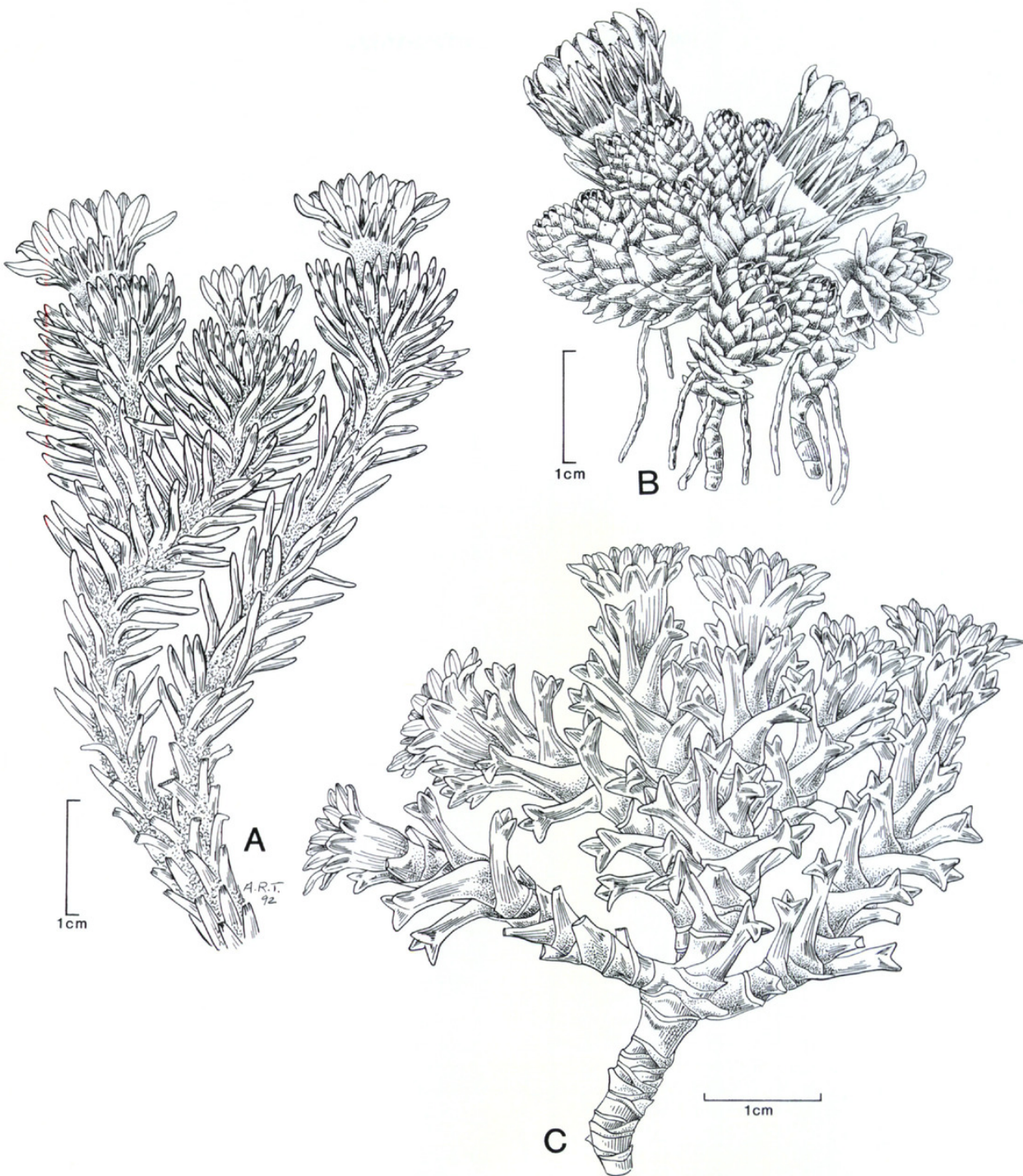


Figure 1. —A. *Xenophyllum humile* (Kunth) V. Funk. —B. *Xenophyllum marcidum* (S. F. Blake) V. A. Funk. —C. *Xenophyllum pseudodigitatum* (Rockhausen) V. A. Funk. All drawings by Alice Tangerini (US).

- borders, but not completely purple; known from two areas, one in northern Bolivia and the other in southern Peru *X. marcidum*
- 3b. Leaves terete, sometimes slightly elliptical in cross section.
- 5a. Leaves spiny and needle-like; plants with lower rhizomes bare of leaves; erect, forming loose hummocks *X. acerosum*
- 5b. Leaves fleshy, almost succulent; plants with at least the leaf bases attached nearly all the way to base of rhizome; erect or flattened forming hummocks or mats.
- 6a. Plants forming tight hummocks or loose, more open hummocks but all rhizomes erect; leaf bases usually without long hairs that wrap around rhizome (*X. poposum* occasionally has such hairs).
- 7a. Plants growing in wet páramo from Colombia, Ecuador, and northern Peru.
- 8a. Plants in rounded hummocks; leaves slightly elliptical in cross section,

- brown to dark brown or black except for the distal sections of the uppermost leaves, which are bright to medium green; heads medium-sized (20–30 disk florets); leaves usually 10–20 mm long (sometimes 7–25 mm); Colombia to northern Peru (one isolated collection in Bolivia).
- 9a. Leaves short, 7–11 mm long, triangular with a rounded-acuminate apex; plants forming small hummocks in very wet areas; occasional in southern Colombia *X. fontii*
 - 9b. Leaves longer, (8–)12–25 mm long, cylindrical, tapering to a rounded-acute apex; plants in large, tightly packed hummocks on slopes; common, especially in northern and central Ecuador *X. humile*
 - 8b. Plants in loose, more flattened hummocks; leaves round in cross section, very light brown to white except for the distal 2–3 mm of the uppermost leaves, which are medium green; heads small (11–13 disk florets); leaves 5.0–6.5 mm long; southern Ecuador *X. sotarense*
 - 7b. Plants in dry puna from southern Peru, Bolivia, northern Argentina and northern Chile.
 - 10a. Leaves narrowing toward apex but ending abruptly in a flat callused tip *X. poposum*
 - 10b. Leaves narrowing gradually to an acute or rounded tip.
 - 11a. Leaves arching outward *X. ciliolatum*
 - 11b. Leaves straight, appressed *X. weddellii*
 - 6b. Plants forming ± flat mats; leaf bases with long hairs that wrap around rhizomes.
 - 12a. Leaves rather thin, medium green, reflected just below the head, apex tapering to a point; heads with 90–120 disk florets; common in northern Ecuador and occasional in Colombia *X. crassum*
 - 12b. Leaves thick, dark green, stiff and erect, apex rounded; heads with 40–50 disk florets; known only from the Ecuadorian volcanoes Chimborazo and Antisana *X. rigidum*
 - 1b. Leaves forked, notched, or digit-like at the apex.
 - 13a. Corolla of the rays absent or greatly reduced *X. esquilachense*
 - 13b. Corolla of the rays conspicuous.
 - 14a. Leaves terete just below divisions; leaf upper portion divided in 3, 9, or many.
 - 15a. Upper portion divided into 3 or 9 parts, apices of leaves pointed; northern Argentina *X. pseudodigitatum*
 - 15b. Leaf divisions in 3, 9, or many, apices of leaves appearing rolled in at the tips; Bolivia and southern Peru.
 - 16a. Leaf apices in 3 or 9; plants in hummocks, ca. 10–30 cm tall; relatively common in certain areas of southern Peru and northern Bolivia *X. dactylophyllum*
 - 16b. Leaf apices in many parts but in multiples of 3; plants in smaller but taller hummocks, ca. 20–60 cm tall; rare, known only from two localities in southern Peru *X. staffordiae*
 - 14b. Leaves ± flattened just below divisions; leaf upper portion divided into 2 or 3.
 - 17a. Leaves divided into 2 parts at apex *X. digitatum*
 - 17b. Leaves divided into 3 parts at apex.
 - 18a. Leaves thin, herbaceous; leaf divisions obvious.
 - 19a. Leaves divided nearly halfway, divisions narrow, margins glabrous *X. rosenii*
 - 19b. Leaves divided only a small amount, divisions broad and very flat, margins of basal portion of leaf with short, evenly spaced hairs *X. decorum*
 - 18b. Leaves thick, nearly fleshy; leaf divisions minute.
 - 20a. Leaves very small, 4–6 mm long *X. amblydactylum*
 - 20b. Leaves larger, 10–12 mm long *X. incisum*

SPECIES OF *Xenophyllum* V. A. FUNK (INCLUDES ONLY COMMONLY USED SYNONYMS; ACCEPTED NAMES IN BOLDFACE)

1. *Xenophyllum acerosum* (Cuatrecasas) V. A. Funk, comb. nov. Basionym: *Werneria acerosa* Cuatrecasas, Brittonia 8: 45. 1954. TYPE: Ecuador. Azuay: Oriente border, eastern Cordillera between Oña and Río Yacuambi, crest 10,000–11,200 ft., Sep. 1945, *Prieto P-280* (holotype, F; isotypes, G, GH, MO, NY, P, UC, US; photo of holotype, US). Known only from type collection.

2. *Xenophyllum amblydactylum* (S. F. Blake) V. A. Funk, comb. nov. Basionym: *Werneria amblydactyla* S. F. Blake, J. Wash. Acad. Sci. 18: 490. 1928. TYPE: Peru. Alparmarca, in the Andes, s.d., *Wilkes s.n.* (holotype, US). Peru.

Werneria articulata S. F. Blake. Contr. U.S. Natl. Herb. 22: 651. 1924. (= *X. humile*). TYPE: Ecuador. Pichincha: crecit locis uliginosis in Páramo de Mojanduleur [Mojanda], 3400–4000 m, 1880 *Lehmann 6230* (syntype, B [destroyed]; lectotype, designated here, K; fragment of B, MA, US; photo of K, US).

3. **Xenophyllum ciliolatum** (A. Gray) V. A. Funk, comb. nov. Basionym: *Werneria ciliolata* A. Gray, Proc. Amer. Acad. Arts 5: 140. 1861. TYPE: Peru. Casa Cancha, Andes of Peru, *Wilkes s.n.* (holotype, US). Bolivia, Chile, and Peru.
4. **Xenophyllum crassum** (S. F. Blake) V. A. Funk, comb. nov. Basionym: *Werneria crassa* S. F. Blake, J. Wash. Acad. Sci. 18: 495. 1928. TYPE: Colombia. Caldas: Páramo del Quindo, swale along stream, 3700–4200 m, 15–20 Aug. 1922, *Pennell & Hazen 10031* (holotype, US not seen [records indicate it may have been destroyed while on loan to B]; lectotype, designated here, K; isoelectotypes, GH, NY). Colombia and Ecuador.
5. **Xenophyllum dactylophyllum** (Schultz Bipontinus) V. A. Funk, comb. nov. Basionym: *Werneria dactylophylla* Schultz Bipontinus, Bonplandia 4: 53. 1856. TYPE: Peru. [Dept. Puno], Prov. Carabaya, Cordillera above Agapata, 16,000 ft., June 1854, *Lechler 1807* (holotype, B [destroyed]; lectotype, designated here, G; isoelectotypes, BR, GH(pp), GOET, K, LE(pp), NY, P—4 sheets, W—2 sheets; photo of B specimen, GH, NY, US).
6. **Xenophyllum decorum** (S. F. Blake) V. A. Funk, comb. nov. Basionym: *Werneria decora* S. F. Blake, J. Wash. Acad. Sci. 18: 491. 1928. TYPE: Peru. Dept. Lima: Casapalca, in loose soils of alpine basin slopes, 4725 m, 21 May 1922, *Macbride & Featherstone 849* (holotype, F; isotypes, G, GH, US; photo of holotype, US). Peru.
7. **Xenophyllum digitatum** (Weddell) V. A. Funk, comb. nov. Basionym: *Werneria digitata* Weddell, Chloris Andina 1: 86. 1856. TYPE: Bolivia. [Dept. Potosi], lagunas de Potosi, *d'Orbigny 1407* (lectotype, designated here, P; isoelectotypes, BR, G not seen, P; fragment of G, F). Bolivia and Peru.
8. **Xenophyllum esquilachense** (Cuatrecasas) V. A. Funk, comb. nov. Basionym: *Werneria esquilachensis* Cuatrecasas, Brittonia 8: 192. 1956. TYPE: Peru. Dept. Puno: San Antonio de Esquilache, on sandy ledges above rocks, 15,500 ft., 12 May 1937, *Stafford 716* (holotype, K; photo of K, US). Known only from type collection.
9. **Xenophyllum fontii** (Cuatrecasas) V. A. Funk, comb. nov. Basionym: *Werneria fontii* Cuatrecasas, Trab. Mus. Nac. Ci. Nat., Ser. Bot. (Madrid) 29: 42–43. 1935. TYPE: Colombia. Tolima: Páramo del Tolima, 4200 m, 15 May 1932, *Cuatrecasas 2862* (holotype, MA; isotypes, MA—2 sheets, F, K). Colombia: Caldas and Tolima.
10. **Xenophyllum humile** (Kunth) V. A. Funk, comb. nov. Basionym: *Werneria humilis* Kunth in HBK, Nov. Gen. Spec. Plant. 4: 150. 1820. TYPE: Andes above Quito, 3600–4000 m, s.d., *Bonpland s.n.* (holotype, P not seen, microfiche IDC 106.III.4; fragment of holotype, F; isotypes, B–W not seen, microfiche no. 16433, IDC 1185.II.2, P; photo of holotype, US). Primarily in Colombia and Ecuador with a few in northern Peru and one collection in Bolivia.
11. **Xenophyllum incisum** (Philippi) V. A. Funk, comb. nov. Basionym: *Werneria incisum* Philippi, Anales Mus. Nac. Chile, Bot. 8: 41. 1891. TYPE: Chile. [Between Copacoya and Inacaliri], *Philippi s.n.* (holotype, SGO; isotypes, B [destroyed], GOET, K, US; photo of B, GH, NY, US; fragment of K, US). Argentina and Chile.
- Werneria decumbens* Hieronymus, Bot. Jahrb. Syst. 21: 364. 1896 (probably = *Xenophyllum weddellii*). TYPE: Peru. Viaje de Tacora á Tomarape, 4200–4400 m, Oct. 1876, *Stubel 100c* (holotype, B [destroyed]; photo of B, GH, NY, US).
- Werneria juniperina* Hieronymus, Bot. Jahrb. Syst. 21: 365. 1896 (probably = *Xenophyllum ciliolatum*). TYPE: Peru. [Peru–Chile–Bolivia border], between Tacora and Sajama, 4200–4300 m, Oct. 1876, *Stubel 106* (lectotype, designated here, B [destroyed]; photo of B, GH, NY, US).
- Werneria leucobryoides* S. F. Blake, J. Wash. Acad. Sci. 18: 494. 1928 (= *Xenophyllum sotarense*). TYPE: Ecuador. Mount Quilindaña, at level of perpetual snow, Dec. 1897, *Sodiño s.n.* (holotype, NY; isotypes, G, P; photo of NY, GH, US; fragment of NY, US). There are two sheets at P that have “Quilindana” on label but no collector or number; no decision has been made on whether or not they are isotypes.

12. **Xenophyllum lycopodioides** (S. F. Blake) V. A. Funk, comb. nov. Basionym: *Werneria lycopodioides* S. F. Blake, J. Wash. Acad. Sci. 18: 493. 1928. TYPE: Chile [now Peru], Prov. Tacna, Dept. Tacna, Cordillera Volcán Tacora, Quiñuta, 5000 m, Apr. 1926, *Werdermann 1164* (holotype, GH; isotypes, B, BM, CAS, F, G, MO, NY, UC, US; photo of F, US; photo of GH, NY, US; fragment of GH, US).
13. **Xenophyllum marcidum** (S. F. Blake) V. A. Funk, comb. nov. Basionym: *Werneria marcida* S. F. Blake, J. Wash. Acad. Sci. 18: 492. 1928. TYPE: Peru. [Dept. Lima], Rio Blanco, in mounds by brook, 15,000 ft., 20–25 Mar. 1923, *MacBride 3032* (holotype, F; isotypes, BM, G—2 sheets, GH, MA, US, W; photo of F, US—2 sheets). Bolivia and Peru.
14. **Xenophyllum poposum** (Philippi) V. A. Funk, comb. nov. Basionym: *Werneria poposa* Philippi, Anales Mus. Nac. Chile, Bot. 8: 40. 1891. TYPE: Chile. Copacoya, 3500 m, s.d., *Philippi s.n.* (holotype, SGO). Argentina, Bolivia, Chile, and Peru.
- Werneria popposa* is a common misspelling of *Werneria poposa*.
15. **Xenophyllum pseudodigitatum** (Rockhausen) V. A. Funk, comb. nov. Basionym: *Werneria pseudodigitata* Rockhausen, Bot. Jahrb. Syst. 70: 288. 1939. TYPE: Argentina. Salta: Umgebung des Nevado del Castillo, 10,000–15,000 ft., 19–23 Mar. 1873, *Lorentz & Hieronymus 96* (holotype, B [destroyed]; lectotype, designated here, GOET; isolectotype, K; photo of B, GY, NY, TEX, US). Argentina.
16. **Xenophyllum rigidum** (Kunth) V. A. Funk, comb. nov. Basionym: *Werneria rigida* Kunth in HBK, Nov. Gen. Spec. Plant. 4: 149. 1820. TYPE: Ecuador. Andes of Quito, 3600–4000 m, *Bonpland s.n.* (holotype, P not seen, microfiche IDC 106.III.3; isotypes, B–W, microfiche no. 16432 IDC 1185.II.1, F, P—2 sheets; fragment of P specimen, F; photo of P sheet, US). Ecuador, Volcanoes Antisana, Chimborazo, and possibly Pinchincha.
17. **Xenophyllum rosenii** (R. E. Fries) V. A. Funk, comb. nov. Basionym: *Werneria rosenii* R. E. Fries, Nova Acta Regiae Soc. Sci. Upsal., ser. 4, vol. 1, no. 1: 90, plate IV fig. 7. 1905. TYPE: Argentina. Jujuy: Nevado de Chañi, ca. 5200 m, 29 Nov. 1901, *Fries 862* (holotype, UPS not seen; isotypes, P, US; photo of P, US). Northern Argentina and Bolivia.
18. **Xenophyllum roseum** (Hieronymus) V. A. Funk, comb. nov. Basionym: *Werneria rosea* Hieronymus, Bot. Jahrb. Syst. 28: 648. 1901. TYPE: Ecuador. Azuay: Paramo de Cajas, 3800–4300 m, Nov. 1880, *Lehmann 5687* (holotype, B [destroyed]; lectotype, designated here, K; isolectotype, US; fragment of B, MA; photo of B, GH, NY, US).
- Werneria sedoides* S. F. Blake, J. Wash. Acad. Sci. 18: 493. 1928 (= *Xenophyllum marcidum*). TYPE: Peru. Dept. Huánuco: Punco, 21 mi. W of Huallanca, in tufts on wet rocky slopes, 13,500 ft., 1 Oct. 1922, *MacBride & Featherstone 2475* (holotype, F; isotypes, G, US; fragment of holotype, G).
19. **Xenophyllum sotarense** (Hieronymus) V. A. Funk, comb. nov. Basionym: *Werneria sotarensis* Hieronymus, Bot. Jahrb. Syst. 21: 363. 1896. TYPE: Colombia. Cauca: on the peak of Sotara, 4400 m, June 1870, *Stubel 339b* (holotype, B [destroyed]; lectotype, designated here, MA; photo of B, GH, NY, US).
- Werneria soratensis* is a common misspelling of *Werneria sotarensis*.
20. **Xenophyllum staffordiae** (Sandwith) V. A. Funk, comb. nov. Basionym: *Werneria staffordiae* Sandwith, Hooker's Icon. Pl., ser. 5, 5: 1–2. pl. 3424. 1950. TYPE: Peru. Puno: San Antonio de Esquilache, on dry bare slopes below a wall of rock, 4650 m, 14 May 1937, *Stafford 734* (holotype, K; isotypes, BM, F). Rare in southern Peru and possibly Bolivia.
21. **Xenophyllum weddellii** (Philippi) V. A. Funk, comb. nov. Basionym: *Werneria weddellii* Philippi, Anales Mus. Nac. Chile, Bot. 8: 40. 1891. TYPE: Chile. Tarapacá: Laguna del Huasco [Laguna del Guasco, 3766 m], 1 Mar. 1885, *Philippi s.n.* (holotype, SGO; isotypes, B [destroyed], K, US; photo of B, GH, NY, US; fragment of K, US; photo of K, US). Near the tri-national border of Bolivia, Chile, and Peru.

Acknowledgments. My thanks to H. Robinson for help with the nomenclature and Latin and Alice Tangerini for the illustrations. Ted Barkley, an anonymous reviewer, and the editors M. Crosby and A. McPherson provided very helpful comments. The following institutions have either loaned specimens, hosted fieldwork, or sent duplicates, all of which have been invaluable for the completion of this research project: B, BM, BR, CAS, COL, CUZ, F, G, GH, GOET, K, LE, LP, LPB, LPS, MA, MCNS, MO, NY, P, QCA,

QCNE, SGO, SMF, TEX, UC, W, and the herbarium of the University of Azuay. *Werneria* s.l. is extremely difficult to study using only herbarium material, so fieldwork has been essential for gaining the proper insight into the morphology. The fieldwork for the revision has been paid for by grants from the National Geographic Society and three funds from the Smithsonian Institution: the Research Opportunities Fund and the Lowland Tropical Ecosystems Fund from the National Museum of Natural History, and the Scholarly Studies Program of the Office of Fellowships and Grants.

Literature Cited

- Blake, S. F. 1928. New South American species of *Werneria*. J. Wash. Acad. Sci. 18: 485–498.
- Funk, V. A. 1997. A revision of new monotypic genus removed from *Werneria* s.l. (Compositae: Senecioneae). Brittonia 49: 110–117.
- Humboldt, A. von, A. Bonpland & C. S. Kunth. 1820. Nova Genera et Species Plantarum. *Werneria*. 4: 148–151, plates 368–369.
- Rockhausen, M. 1939. Verwandtschaft und Gliederung der Compositen-Gattung *Werneria*. Bot. Jahrb. Syst. 70: 273–339.
- Weddell, H. A. 1856. *Werneria*. Chloris Andina 1: 80–89, plates 16, 17.



Funk, V. A. 1997. "Xenophyllum Funk, a new genus extracted from *Werneria* s.l. (Compositae: Senecioneae)." *Novon a journal of botanical nomenclature from the Missouri Botanical Garden* 7, 235–241.

<https://doi.org/10.2307/3391934>.

View This Item Online: <https://www.biodiversitylibrary.org/item/14667>

DOI: <https://doi.org/10.2307/3391934>

Permalink: <https://www.biodiversitylibrary.org/partpdf/27020>

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>.