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# *Agrostopoa* (Poaceae, Pooideae, Poeae, Poinae), a New Genus with Three Species from Colombia

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**ABSTRACT.** *Agrostopoa* Davidse, Soreng & P. M. Peterson, a new genus endemic to the páramos of Colombia, is proposed. The genus includes two new species, *A. barclayae* Davidse, Soreng & P. M. Peterson and *A. woodii* Soreng, P. M. Peterson & Davidse, and a third species transferred from *Muhlenbergia* Schreber, *A. wallisii* (Mez) P. M. Peterson, Soreng & Davidse (lectotype designated here). A key for determining the species and illustrations of the three species are provided. *Agrostopoa* is placed in subfamily Pooideae because it has non-Kranz anatomy and lanceolate membranous lodicules, and in tribe Poeae where it differs from *Agrostis* L. by having carinate lemmas with a terminal awn or mucro, well-developed paleas, and peculiar synflorescences with recurved branches and fragile pedicels. It is classified near *Poa* L., but differs from that in its single-flowered spikelets that lack rachilla extensions and possess awned or mucronate lemmas.

**RESUMEN.** Se propone *Agrostopoa* Davidse, Soreng & P. M. Peterson como un género nuevo endémico de los páramos de Colombia. El género incluye dos especies nuevas: *A. barclayae* Davidse, Soreng & P. M. Peterson y *A. woodii* Soreng, P. M. Peterson & Davidse; y las tres especies transferidos de *Muhlenbergia* Schreber: *A. wallisii* (Mez) P. M. Peterson, Soreng & Davidse (lectotipo designado aquí). Se presenta una clave de determinación y las ilustraciones de esas tres especies. *Agrostopoa* pertenece a la subfamilia Pooideae basado sobre la anatomía foliar de non-Kranz y el tipo de las lodículas cuales son membranosas y lanceoladas, y a la tribu Poeae donde *Agrostopoa* se diferencia de *Agrostis* L. por tener las lemas carinadas con una arista o un mucron terminal, las paleas bien desarrolladas y las inflorescencias peculiares con las ramas curvadas y los pedicelos frágiles. Según la esquema de clasificación *Agrostopoa* es aproximada a *Poa* L., pero se diferencia de éste género por tener las espiguillas con una sola flor que

carecen la extensión de rachilla, y tienen las lemas aristadas o mucronadas.

**Key words:** *Agrostopoa*, Colombia, IUCN Red List, Poaceae, Poeae, Poinae, Pooideae, Sierra Nevada del Cocuy, Sierra Nevada de Santa Marta.

A perennial grass collected in 1959 by Barclay and Juajibioy on the isolated Sierra Santa Marta massif in northern Colombia has remained unnamed until now. Reexamination of this collection convinced us this collection represents an unknown species in subfamily Pooideae Benth, tribe Poeae R. Brown. Our search also indicated that a very similar annual species had been previously described by Mez (1921) as *Muhlenbergia wallisii* Mez, a genus placed in subfamily Chloridoideae Kunth ex Beilschmied, subtribe Muhlenbergiinae Pilger (Peterson et al., 2001 [*M. wallisii* was intentionally excluded from this Chloridoideae volume of the *Catalogue of New World Grasses*], 2007). While inventorying species of *Muhlenbergia* Schreber from South America in 1989, PMP recognized that the type collected by G. Wallis (*M. wallisii*) was not a chloridoid grass, but a member of the Pooideae. Despite the efforts of agrostologists to assign this collection to a current genus in the intervening years, the mystery remained. After the initial description of *M. wallisii*, no further mention has been made of this species in the grass literature, as far as we are aware, until Soreng et al. (2003: 454) reevaluated the US isotype fragment and noted that it represented an “unknown *Deyeuxia* or Pooideae.”

The reappearance of the *H. G. Barclay & P. Juajibioy 7079* specimen from the Sierra Nevada de Santa Marta gave us more material to study the annual species, enabling us to reclassify this species into the correct subfamily, and now we provide a new combination in a new genus, *Agrostopoa* Davidse, Soreng & P. M. Peterson. In addition, we also describe two new species of *Agrostopoa*, one based on another

*Barclay & Juajibioy* collection from the headwaters of the Río Sevilla, Sierra Nevada de Santa Marta, and the other based on a *J. R. I. Wood* collection from about 500 km south-southeastward in the Sierra Nevada del Cocuy in Colombia.

***Agrostopoa*** Davidse, Soreng & P. M. Peterson, gen. nov. TYPE: *Agrostopoa wallisii* (Mez) P. M. Peterson, Davidse & Soreng.

Genus novum ad tribum Poeas pertinens quod ab *Agrostide* L. lemmate carinato in mucronem vel aristam non geniculatam terminalem desinente atque palea subchartacea et chlorophyllous lemma aequante manifeste bicarinata marginibus spatium inter carinas non excedentibus recedit; a *Poa* L. spiculis sine racheolae extensione flosculum solitarium gerentibus atque lemmate aristato vel mucronato recedit.

Annuals or perennials, tufted or sometimes rooting at the lower culm nodes, branching primarily intravaginal; *culms* 7–29 cm, terete, slender, hollow, glabrous, smooth; *nodes* 2 to 6 or more, 0 to 3 nodes exposed above. *Upper sheaths* loose, smooth, margins closed at the base for 1–3 mm or up to 1/4 the length; *basal sheaths* herbaceous, papery, or becoming fibrous; collars without auricles; *ligules* 0.5–3.5 mm, hyaline, clear or slightly brownish, abaxially smooth, glabrous, apices entire to sparingly shallowly lacerate or irregularly deeply lacerate; *blades* 0.8–5 cm, to 1.5 mm wide, thin, folded with flat or slightly involute margins, the uppermost 0.5–1 cm, apices indistinctly to distinctly naviculate, slightly scabrous. *Synflorescences* 1–4 cm with 5 to 20 spikelets, paniculate, axis erect or arching, smooth, with 2 to 5 nodes; *branches* 1 to 4(to 5) per node, spreading, sinuous, slender, fragile, smooth, longest branches 0.4–1.6 cm with 1 to 7 spikelets; *pedicels* smooth, proximally capillary, recurved, fragile (breaking near base), distally expanded for 0.2–5 mm below the spikelet attachment. *Spikelets* 2.4–5.6 mm (excluding awns), 1-flowered, laterally compressed, nodding, without a rachilla extension, disarticulating above the glumes; *glumes* 2, unequal to equal in length, thinly chartaceous, 1- to 3-nerved, keel smooth or keel and margins slightly scabrous apically, margins hyaline, narrow, spreading and exposing the floret; *lower glumes* 2–5.6 mm, 1-nerved; *upper glumes* 2.4–5.6 mm, 1- to 3-nerved; *lemmas* 2.1–4.5 mm, slightly shorter to slightly longer than the glumes, laterally compressed, 5-nerved, glabrous, surfaces mostly smooth, thinly chartaceous, keeled, keels finely scabrous in the distal 1/3–1/2; *apices* mucronate (< 0.7 mm) or awned from between 2, delicate, slightly scabrous, lateral lobes to 0.2 mm, or terminally awned, mucros and awns extended only as a vein, densely and finely scabrous; *awns* 2–5.2 mm,

straight, or slightly sinuous, twisted; *calluses* glabrous, smooth, indistinct; *paleas* subequal to equal to the lemma in length, hyaline to thinly chartaceous, chlorophyllous, keels 2, smooth or slightly scabrous with distal hooks, the margins about as wide as the inter-keel region, 0.2–0.25 mm wide. *Flowers* bisexual; *lodicules* 0.3–0.7 mm, 2, lanceolate, entire; *stamens* 3, rarely 2, anthers 1.6–2.7 mm, filaments attached near the middle of the anther; *ovaries* glabrous, styles terminal, stigmas densely plumose, white, bearing branches to or near the base; *caryopses* 1.2–2 mm, fusiform, slightly laterally compressed, ventrally shallowly sulcate, firm, slightly translucent, light brown; *hilum* basal, punctiform; *embryo* 1/5–1/3 the length of the grain. *Chromosome* number unknown.

**Leaf anatomy.** In cross section, the blades are thin with unspecialized mesophyll and widely spaced vascular bundles indicating C<sub>3</sub> metabolism. Microhairs are absent.

**Distribution.** All three species currently described in *Agrostopoa* are endemic to páramos of northern Colombia, from 3450 to 4500 m elevation.

**Etymology.** We combine the generic names of *Agrostis* and *Poa* to represent a new genus that is somewhat morphologically intermediate between these two genera.

**Discussion.** *Agrostopoa* differs from *Agrostis* by having carinate lemmas that are mucronate or awned with terminal non-geniculate awns and by having thinly chartaceous, chlorophyllous paleas that are as long as the lemmas with distinct keels where the distance between the two nerves is equal to or broader than the distance from either nerve to the margin. *Agrostopoa* differs from *Poa* by having spikelets with a single floret without a rachilla extension, and by having awned or mucronate lemmas.

The only species of *Agrostopoa* previously described was named *Muhlenbergia wallisii* ( $\equiv$  *Agrostopoa wallisii*) by Mez (1921). Because *A. wallisii* does not have Kranz anatomy and bicellular microhairs are lacking, it is definitely misplaced as a member of subfamily Chloridoideae (Peterson et al., 2001, 2007). In addition to possessing C<sub>3</sub> metabolism, the lodicules of *Agrostopoa* are thin and lanceolate, characteristics that indicate a relationship with subfamily Pooideae rather than Chloridoideae.

*Agrostopoa* seems most allied to members of tribe Poeae s.l., subtribe Poinae (Soreng et al., 2003, 2007, 2008), where the following genera also have single-flowered spikelets: *Aniselytron* Merrill, *Apera* Adanson, *Arctagrostis* Grisebach, *Libyella* Pampanini, and *Tovarochoa* T. D. Macfarland & But. Traditionally, subtribe Agrostidinae Fries has included many genera

with single-flowered spikelets, but that characteristic is highly homoplastic in tribe Poeae sensu Soreng et al. (2003; cf. Soreng et al., 2007). Based on the following five major suites of characters, we are placing *Agrostopoa* in subtribe Poinae rather than Agrostidinae: (1) the upper culm sheaths are closed up to 1/4 their length, common in Poinae, rare or absent in Agrostidinae; (2) the palea keels are well separated, with the palea margins about as broad as the inter-keel gap, whereas in Agrostidinae the margins are commonly wider than the narrow inter-keel gap (or invagination, if detectable when keels are absent); (3) the paleas are membranous and chlorophyllous, whereas Agrostidinae paleas are typically hyaline throughout except for the nerves of the keel (when present); (4) the awns are terminal and not geniculate, and the awns themselves are evenly scabrous along their length, whereas in the Agrostidinae the awns are typically dorsal and geniculate and the vestiture may vary along the length of the awn (exceptions are the following genera that have terminal or subterminal awns: *Ancistragrostis* S. T. Blake, *Simplicia* Kirk, *Echinopogon* P. Beauvois, and *Dichelachne* Endlicher); and (5) the lemmas and calluses are totally glabrous and smooth except for hooks on the upper half on the keel and apex near the awn (*Agrostis* and relatives typically have some lines of minute hairs along the base of the marginal nerves, and there are usually hooks and also sometimes hairs on the lemma surfaces). Without additional analyses, we are not able to suggest what genera within the Poinae might be most closely related to *Agrostopoa*.

*Agrostopoa* species resemble elements of the Old World *Colpodium* Trinius complex (Alexeev, 1980; Alexeev & Tzvelev, 1981; Hedberg & Hedberg, 1994) that have single-flowered spikelets with glumes approximately equaling the lemmas and lack or have only vestigial rachilla extensions (i.e., *Colpodium* s. str. [sections *Colpodium* and *Keniochloa* (Melderis) E. B. Alexeev] and *Paracolpodium* (Tzvelev) Tzvelev sections *Paracolpodium* and *Tzvelevia* E. B. Alexeev). Species of *Agrostopoa* differ from all of these by the glabrous lemmas that are scabrous in the upper part (vs. pubescent in part and smooth throughout) and have awns or mucros, and by having hooks along the palea keels. From *Colpodium* they also differ in having 5-veined lemmas, and from *Paracolpodium* they differ in lacking rhizomes. *Agrostopoa* panicles are reminiscent of the racemose panicles with pendulous spikelets found in *P. wallichii* (Hooker f. ex Stapf) E. B. Alexeev. Preliminary molecular analyses by Gillespie et al. (2008) have shown *Colpodium* and *Zingeria* P. A. Smirnow to group together with *Milium* L., slightly apart from other elements of subtribes Puccinelliinae Soreng & J. I.

Davis and Poinae, and for *Paracolpodium* to align within Puccinelliinae with *Catabrosa* P. Beauvois, *Catabrosella* (Tzvelev) Tzvelev, and *Hyalopoa* (Tzvelev) Tzvelev. However, unlike *Agrostopoa*, none of the other genera listed above or other Puccinelliinae have awns, whereas some genera of Poinae do. A possible relationship of *Agrostopoa* to genera of subtribe Cinninae Caruel also needs to be explored, as newer DNA evidence suggests that Cinninae genera may belong within Poinae (Gillespie et al., 2008). Cinninae genera have single-flowered spikelets, but, among other differences from *Agrostopoa*, their spikelets disarticulate at the base of the glumes, and their panicles are otherwise unspecialized.

KEY TO THE SPECIES OF *AGROSTOPOA*

- 1a. Plants annual; lower glumes (2-)2.3-2.6 mm; upper glumes (2-)2.4-3.9 mm. . . . .1. *A. wallisii*
- 1b. Plants perennial; lower glumes (2.8-)3.4-5.6 mm; upper glumes (3.2-)4-5.6 mm.
  - 2a. Lemmas awned, the awns 2-5.2 mm; basal sheaths papery; plants loosely tufted; culm nodes 3 to 10, upper 1 or several nodes exerted from the basal tuft of leaves; major roots to 0.25 mm diam.; lower glumes (2.8-)3.4-4.4 mm; upper glumes (3.2-)4-4.4 mm . . . . .2. *A. barclayae*
  - 2b. Lemmas mucronate, the mucros to 0.6 mm; basal sheaths becoming fibrous; plants densely tufted; culm nodes 2 or 3, hidden in the basal tuft of leaves; major roots to 0.4 mm diam.; lower glumes 4.4-5.6 mm; upper glumes 4.7-5.6 mm . . . . .3. *A. woodii*

1. ***Agrostopoa wallisii* (Mez) P. M. Peterson, Soreng & Davidse, comb. nov.** Basionym: *Muhlenbergia wallisii* Mez, Repert. Spec. Nov. Regni Veg. 17(13-18): 214. 1921. TYPE: Colombia. Magdalena: Sierra Nevada de Santa Marta, *G. Wallis s.n.* (lectotype, designated here, US 90978 ex B; isotype, US 90979). Figure 1.

Annuals, branching frequently from the lower nodes; *major roots* ca. 0.20 mm diam.; *culms* 7-15 cm, slender, erect, smooth, glabrous; *internodes* more than 6, except the 2 lowermost, all elongated, without adventitious roots. *Leaves* mostly cauline; *sheaths* herbaceous not becoming fibrous or papery, with the margins free to within 1-2.5 mm of the base and overlapping for most of its length, loose (lightly inflated), smooth; *ligules* 0.8-3.5 mm, triangular, hyaline except at the base, acute, smooth, clear, upper margin entire or sparingly lacerated; *blades* 0.8-2.5 cm, ca. 0.3 mm wide, folded or slightly involute, twisted in senescent blades, thin, surfaces and margins smooth, apex indistinctly narrowly naviculate, smooth (faintly slightly roughened with incipient hooks). *Panicles* 1-3.5 cm, with 5 to 15



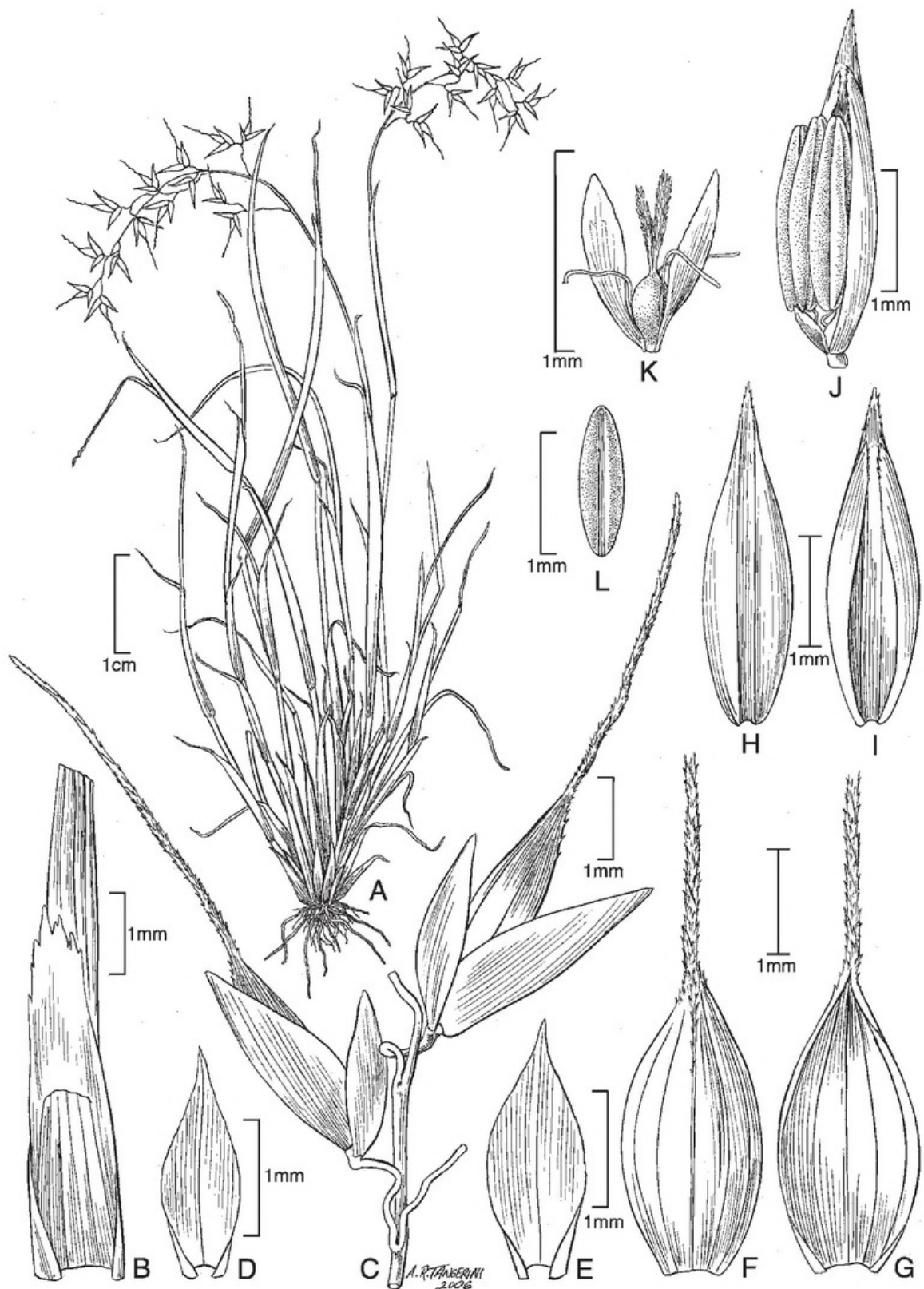


Figure 1. *Agrostopoa wallisii* (Mez) P. M. Peterson, Soreng & Davidse. —A. Plant habit. —B. Sheath, ligule, and blade. —C. Detail of panicle. —D. Lower glume. —E. Upper glume. —F. Lemma, dorsal view. —G. Lemma, ventral view. —H. Palea, dorsal view. —I. Palea, ventral view. —J. Lodicules and stamens enclosed in palea. —K. Lodicules and pistil. —L. Caryopsis. Drawn from H. G. Barclay & P. Juajibioy 7079 (MO, US).

spikelets, the main axis erect, included in the upper cm with 3 to 5 nodes; *lateral branches* 1 to 4(to 5) at the lowest node, spreading, slender, smooth; *longest branches* up to 1.5 cm with up to 7 spikelets; *pedicels* 0.4–3 mm, with distal 0.2–0.8 mm expanded to the tip. *Spikelets* 2.4–3.9 mm, excluding the awns, mostly longer than the pedicels; *glumes* 0.4–0.5 mm wide in side view, 1-nerved, laterally compressed, (colors not determinable from the senescent material available), margins narrowly hyaline from near the base, smooth, apex acuminate to subaristate, keel smooth; *lower glumes* (2–)2.3–2.6 mm, usually distinctly shorter than the upper glume and the floret; *upper glumes* (2–)2.4–3.9 mm, slightly longer or as long as the floret; *florets* 2.4–3 mm; lemmas 2.1–3 mm, laterally compressed, terminally awned, 5-nerved with the lateral and marginal nerves inconspicuous, keeled, keel with fine hooks in the distal 1/8–1/4, sides smooth, green to purple, margins involute at maturity, proximally narrowly hyaline in the distal 1/2, suffused with purple then clear to the edge; *awns* 2.5–5.2 mm, arising from the apex, entered by the central nerve only, hygroscopic, usually slightly sinuous near the middle, loosely twisted in the lower 1/2, minutely scabrous throughout; *callus* not well differentiated, blunt, smooth, glabrous; *paleas* about as long as the lemma or slightly shorter, acute, hyaline throughout or the keels slightly thicker and chlorophyllous, weakly 2-keeled, keels ca. 0.2 mm apart, smooth, margins ca. 0.2 mm wide; *lodicules* ca. 0.3 mm, minute; *anthers* 1.6–2.1 mm; *caryopses* ca. 1.5 mm, ventrally straight and dorsally curved, dark honey brown at maturity.

*Distribution and habitat.* *Agrostopoa wallisii* is endemic to the high-elevation páramos of the Sierra Nevada de Santa Marta. Specimens have been collected on rock outcrops and on dry soils near the headwaters of the Río Ancho at 3500 m in Colombia.

*IUCN Red List category.* *Agrostopoa wallisii* clearly falls within the Data Deficient (DD) category as defined by the IUCN (2001). We have inadequate information to assess the status of this species, since we do not have data regarding its abundance or the extent of its distribution.

*Discussion.* A lectotype at US was selected because the holotype at B was destroyed and we do not know if other original material exists.

*Additional specimen examined.* COLOMBIA. **La Guajira** [as Depto. Magdalena on original label]: Sierra Nevada de Santa Marta, alrededores de cabeceras de Río Ancho, Páramo de Macotama, 10°54'55"N, 73°30'50"W, 3500 m, 18 Feb. 1959, *H. G. Barclay & P. Juajibioy* 7079 (COL not seen, MO 2778513, US 2434347).

**2. *Agrostopoa barclayae*** Davidse, Soreng & P. M. Peterson, sp. nov. TYPE: Colombia. Magdalena: Sierra Nevada de Santa Marta, alrededores de cabeceras de Río Sevilla, 3490 m, 20 Jan. 1959, *H. G. Barclay & P. Juajibioy* 6567 (holotype, MO 5114991; isotypes, COL, US 2434406, US). Figure 2.

Ab *Agrostopoa wallisii* (Mez) P. M. Peterson, Davidse & Soreng habitu perenni, invaginationibus basalibus chartaceis, glumis inferioribus (2.8–)3.4–4.4 mm longis atque superioribus (3.2–)4–4.4 mm longis recedit.

Perennials, loosely tufted with spreading culms, sometimes rooting at the lower nodes; *major roots* ca. 0.25 mm diam.; *culms* 11–29 cm, erect to decumbent at the base in longer culms, smooth; *internodes* 3 to 10, elongated, longer culms with adventitious roots at the lower nodes. *Leaves* in basal clusters or in elongated culms in one to several clusters from the base of branches, originating from the lower 1/3 of the culm; *basal sheaths* papery, with the margins free to within 1–3 mm of the base and overlapping for most of their length, smooth; *ligules* 1–3.1(–3.3) mm, membranous, deeply to shallowly and irregularly lacerate, acute, abaxially smooth, clear or brownish; *blades* 1.5–5 cm, 0.3–0.5 mm wide, to 0.9 mm wide when flattened, folded or slightly involute, thin, margins smooth, apex indistinctly naviculate, faintly scabrous. *Panicles* 2–4 cm with 5 to 20(to 30) spikelets, main axis erect with 2 to 4 nodes, smooth; *lateral branches* with 1 to 3 spikelets, spreading, slender, smooth; *pedicels* 0.7–4 mm, with distal 0.2–0.8 mm expanded to the tip. *Spikelets* (3.5–)4–4.5 mm excluding the awns; *glumes* 0.2–0.3 mm wide in side view, 1-nerved to faintly 3-nerved, laterally compressed, dorsally green to purple, laterally purple, margins hyaline from near the base, apex acute, keel and margins apically weakly scabrous; *lower glumes* (2.8–)3.4–4.4 mm, as long as or slightly shorter than the floret; *upper glumes* (3.2–)4–4.4 mm, as long as or slightly longer than the floret; *florets* 4–4.5 mm; *lemma* keel with fine hooks in distal 1/2, sides inconspicuously papillate, terminally awned, 5-nerved with the marginal nerves inconspicuous, smooth, glabrous, green to purple, margins involute proximally, narrowly hyaline in distal 1/2, suffused with purple then clear to the edge, with sparse hooks toward the apex; apex acute, sometimes with delicate, hyaline lobes ca. 0.2 mm; *awns* 2–5.2 mm, arising from the apex or between the lobes, entered by central nerve only, straight, slightly bent, or sinuous, but never geniculate and not or only slightly twisted at the base, minutely scabrous throughout; *callus* not well differentiated, blunt, smooth, glabrous; *paleas* about as long as the lemma, keels ca. 0.25 mm apart, margins 0.25 mm wide,

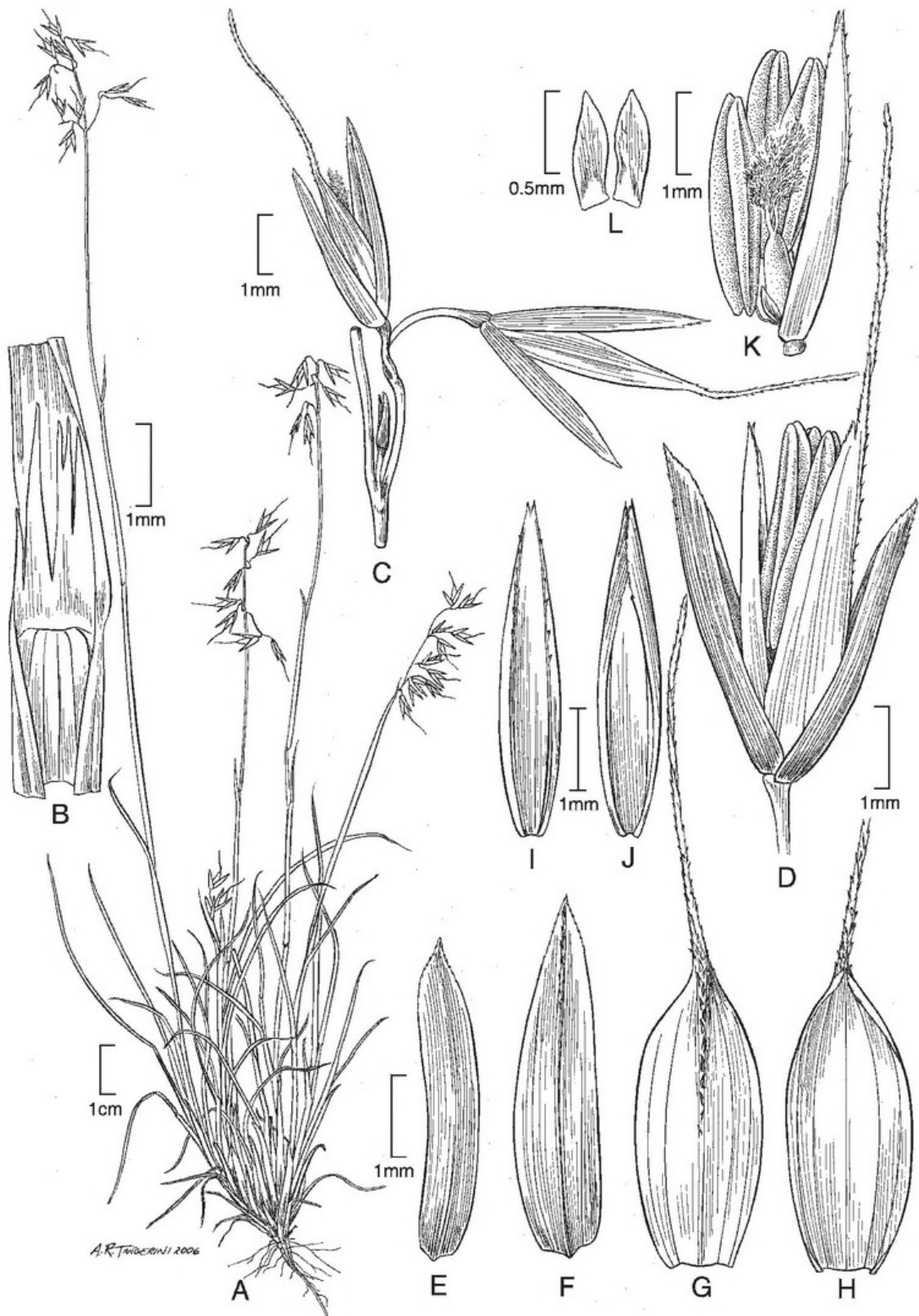


Figure 2. *Agrostopoa barclayae* Davidse, Soreng & P. M. Peterson. —A. Plant habit. —B. Sheath, ligule, and blade. —C. Detail of panicle. —D. Spikelet. —E. Lower glume. —F. Upper glume. —G. Lemma, dorsal view. —H. Lemma, ventral view. —I. Palea, dorsal view. —J. Palea, ventral view. —K. Lodicules, pistil, and stamens enclosed in palea. —L. Lodicules. Drawn from the isotype, *H. G. Barclay* & *P. Juajibioy* 6567 (US).



keels distally and apex with few hooks; *lodicules* ca. 0.5 mm, flat, nerveless, asymmetrically lanceolate with an acute tip; *anthers* 2.1–2.7 mm, caryopsis fusiform, light brown, slightly translucent (suggesting lipid), ventrally sulcate.

**Distribution and habitat.** *Agrostopoa barclayae* is known only from the type locality near the headwaters of the Río Sevilla in the Sierra Nevada de Santa Marta, Colombia, where it was found growing among large rocks in a deep draw bounded by rock outcrops on west-facing slopes.

**IUCN Red List category.** *Agrostopoa barclayae* clearly falls within the Data Deficient (DD) category as defined by the IUCN (2001). We have inadequate information to assess the status of this species, since we do not have data regarding its abundance or the extent of its distribution.

**Etymology.** The epithet honors Harriet G. Barclay, a former professor of botany at the University of Tulsa (1929–1942), long-time botanist of the Rocky Mountain Biological Laboratory, and explorer of the Sierra Nevada de Santa Marta, who collected the type.

**3. *Agrostopoa woodii*** Soreng, P. M. Peterson & Davidse, sp. nov. TYPE: Colombia. Boyacá: Sierra Nevada del Cocuy, Boquerón cf. Cusiri, 4450 m, 31 Dec. 1985, J. R. I. Wood 5268 (holotype, US 3481074; isotype, K). Figure 3.

Ab *Agrostopoa wallisii* (Mez) P. M. Peterson, Davidse & Soreng habitu perenni, invaginationibus basalibus fibrosis, glumis inferioribus 4.4–5.6 mm longis, superioribus 4.7–5.6 mm longis atque lemmatibus mucronatis (non aristatis) mucrone 0.2–0.6 mm longo recedit.

Perennials, completely glabrous, densely caespitose with spreading culms, sometimes rooting at the lower nodes; *major roots* ca. 0.4 mm diam.; *culms* 15–20 cm, erect to decumbent at the base in longer culms, smooth; *nodes* 2 or 3; *internodes* usually 2 or 3, hidden in the basal tuft, longer culms with adventitious roots at the lower nodes. *Leaves* in basal clusters or in elongated culms in one to several clusters from the base with branches originating from the lower 1/3 of the culm; *sheaths* becoming distinctly fibrous in age, uppermost ca. 4 cm, with the margins fused ca. 1/4 the length and overlapping on the upper part, smooth; *ligules* 0.5–2.5 mm, membranous, deeply, irregularly lacerate, acute, abaxially smooth, clear or brownish; *blades* 1.5–4.5 cm, 0.5–0.8 mm wide, up to 1.5 mm wide when flattened, flat or folded or slightly involute on the margins, thin, surfaces and margins smooth, apex abruptly distinctly naviculate, smooth. *Panicles* 2–3 cm, with 8 to 11 spikelets, barely exerted, main axis erect, with 3 to 5 nodes, smooth; *lateral branches*

1 to 3 per node, 0.4–0.6(–1) cm with solitary spikelets, spreading, slender, smooth, capillary, fragile, recurved at the base, with distal 3–5 mm gradually thickened to the tip. *Spikelets* 4.5–5.6 mm excluding the awns; *glumes* 0.2–0.3 mm wide in side view, 1- to 3-nerved, laterally compressed, dorsally green to purple, laterally purple, margins hyaline from near the base, apex acute, keel and margins apically weakly scabrous; *lower glumes* 4.4–5.6 mm, slightly shorter to slightly longer than the floret; *upper glumes* 4.7–5.6 mm, slightly longer than the floret; *florets* 3.7–4.5 mm; lemma keel with fine hooks in distal 1/2, sides inconspicuously papillate, terminally mucronate, 5-nerved with the marginal nerves inconspicuous, surface smooth, glabrous, green to purple, margins involute proximally, hyaline in distal 1/2, suffused with purple then clear to the edge, with sparse hooks toward the apex; apex acute or sometimes with 2 delicate, hyaline lobes ca. 0.1 mm; *mucros* 0.2–0.6 mm, arising from apex or between lobes, entered by central nerve only, straight, minutely scabrous throughout; *callus* not well differentiated, blunt, smooth, glabrous; *paleas* slightly shorter than the lemma, keels ca. 0.25 mm apart, margins 0.25 mm wide, keel apex with few to several hooks; *lodicules* ca. 0.7 mm, flat, nerveless, broadly lanceolate with a slightly irregularly lobed tip; *stamens* 3, rarely 2; *anthers* 1.7–2.2 mm; *caryopsis* ca. 2 mm, fusiform, light brown, firm, slightly translucent (suggesting lipid), ventrally sulcate.

**Distribution and habitat.** *Agrostopoa woodii* is known only from the Colombian type locality of Boquerón cf. Cusiri (Cusiri Pass) in the Sierra Nevada del Cocuy, ca. 100–130 km southeast of Bucaramanga, where it was found growing on bare gravel banks beside a stream in a páramo at 4450 m.

**IUCN Red List category.** *Agrostopoa woodii* clearly falls within the Data Deficient (DD) category as defined by the IUCN (2001). We have inadequate information to assess the status of this species, since we do not have data regarding its abundance or the extent of its distribution.

**Etymology.** The epithet honors the type collector J. R. I. Wood (1944–), a botanist at Oxford University who specializes in Acanthaceae and Lamiaceae, and who has been on many South American collecting expeditions.

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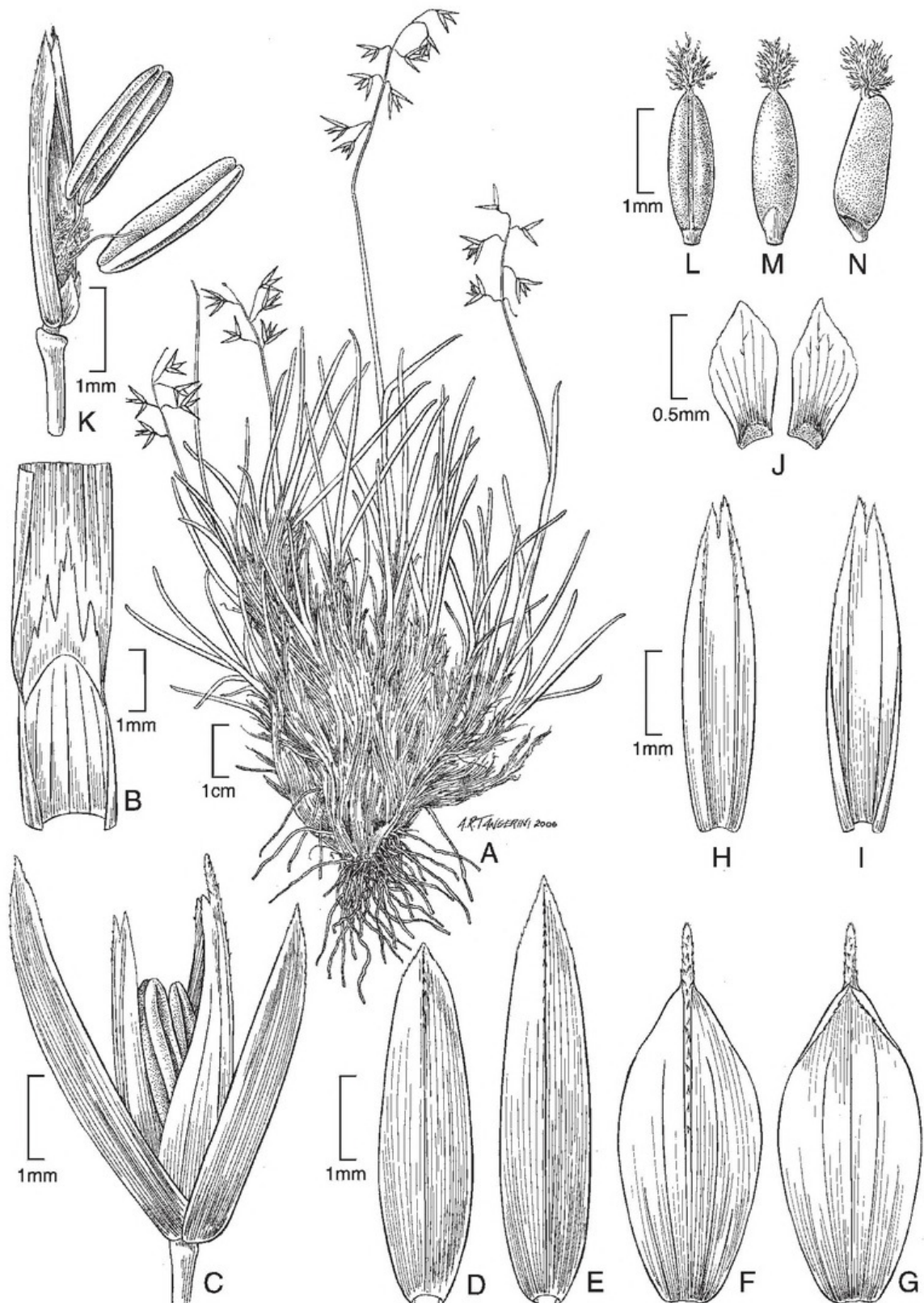


Figure 3. *Agrostopoa woodii* Soreng, P. M. Peterson & Davidse. —A. Plant habit. —B. Sheath, ligule, and blade. —C. Spikelet. —D. Lower glume. —E. Upper glume. —F. Lemma, dorsal view. —G. Lemma, ventral view. —H. Palea, dorsal view. —I. Palea, ventral view. —J. Lodicules. —K. Lodicules, pistil, and stamens enclosed in palea. —L. Caryopsis, dorsal view. —M. Caryopsis, ventral view. —N. Caryopsis, side view. Drawn from the holotype, *J. R. I. Wood 5268* (US).



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