

## New Synonyms and Deletions for the Moss Floras of Colombia and Ecuador

Steven P. Churchill

Institute of Systematic Botany, New York Botanical Garden, Bronx, N.Y. 10458-5126  
U.S.A.

Abstract. Several new synonyms are recognized for Colombian taxa: *Aongstroemia maculata* = *A. julacea*, *Callicostella acutifolia* and *C. plicatula* = *Thamniopsis diffusa*, *Dicranella mayorii* and *D. peruviana* = *D. hilariana*, *Glyphomitrium lobuliferum* = *Ptychomitrium lindigii*, *Trichostomum novo-granatense* = *T. brachydontium*; and for Ecuadorean taxa: *Grimmia cinerea* = *G. longirostris*, *Grimmia benoistii* = *G. trichophylla*, *Neckera benoistii* = *N. chilensis*, *Orthostichopsis incertus* = *Porotrichendron superbum*, and *Renauldia obovata* = *Neckera obtusifolius*. Additional Colombian synonyms recognized by specialists are listed.

The neotropical Andes contain not only the greatest diversity for mosses in the tropics, but the largest number of superfluous names still to be recognized and deleted. Recently the author had the opportunity to study type collections related primarily to the Colombian moss flora project at several European herbaria (BM, H, and PC). As a result of these studies a number of new synonyms are recognized and the identity of several nomen nuda are established for the moss floras of both Colombia and Ecuador. Taxa are arranged alphabetically by accepted family and genus.

### CALLICOSTACEAE

*Thamniopsis diffusa* (Wils.) Buck

*Callicostella acutifolia* Thér., Rev. Bryol. Lichénol. 10: 14. 1937, syn. nov. Type. COLOMBIA. Valle, Río Yurumangui, 1933, Aubert de la Rue s.n. (holotype, PC!).

*Callicostella plicatula* Thér., Rev. Bryol. Lichénol. 10: 13. 1937, syn. nov. Type. COLOMBIA. Valle, Río Yurumangui, 1933, Aubert de la Rue s.n. (holotype, PC!).

The gametophytic plants of both types in all regards are identical to the type collection of *Hookeria diffusa* made by Seemann (NY!) in Panama. Several members of *Thamniopsis* exhibit stem and branch leaf dimorphism, e.g. *T. killipii* (Williams) Bartr. and *T. pendula* (Hook.) Fleisch. This has led in some cases in the description of new species, as in this instance, where Thériot (1937) emphasized the features of the stem leaves in *Callicostella acutifolia*, and in *C. plicatula* emphasized the branch leaves.

### DICRANACEAE

*Aongstroemia julacea* (Hook.) Mitt.

*Aongstroemia maculata* C. Müll., Flora 58: 529. 1875, syn. nov. Type. COLOMBIA. Ocanna, Cerro pelado, 12,000 ped. [3690 m], 1874, Wallis s.n. (PC!).

Synonymization is based on a fragment and illustration by Thériot of the Wallis collection from the vicinity of Ocaña in the department of Norte de Santander. Diagnostic characters for this species include: stems julaceous, leaves ovate to suboval with erose-denticulate margins, and a broadly acute to rounded apex are. No type material was found at either BM or H-BR.

*Atractyllocarpus longisetus* (Hook.) Broth.

*Dicranum strictiusculum* Hampe, Flora 45: 452. 1862, nom. nud. Based on: Colombia, Bogota La Penna, Lindig 2013 (BM!).

*Dicranum vesiculare* Hampe, Ann. Sci. Nat. Bot., sér. 5, 5: 337. 1866. Type. COLOMBIA. Manzanos, 2700 m, Lindig s.n. (BM!).

Collections at BM fide J.-P. Frahm and/or M. Padberg. The confusion that this taxon has presented to earlier authors, and the rather numerous names applied to it, is well documented by Frahm (1991).

*Dicranella hilariana* (Mont.) Mitt.

*Dicranella peruviana* Broth., Hedwigia 45: 260. 1906, syn. nov. Type. COLOMBIA [stated as Peru]. Rio Amazonas, Leticia, Ule 2359 (H-BR!, holotype).

*Dicranella mayorii* Broth. & Irmisch., Mem. Soc. Neuchatel Sc. Nat. 5: 999. 1914, syn. nov. Type. COLOMBIA. Dep. Antioquia, Alto San Miguel, im oberen Teile des Tales des Flusses Porce, 2500 m, Mayor n. 14-26.IX (H-BR!, holotype).

The type material for both named collections exhibited the features generally attributed to *Dicranella hilariana* (including the occasional recurved leaf margins), particularly given the recent trend to recognize a more variable spe-

cies (cf. Crum & Anderson 1981 and Florschütz 1964), as compared to earlier treatments such as Williams (1913). The type locality for *D. peruviana* is given as Leticia which is presently in Colombia, not Peru. Although this area was disputed in the previous century, at the time Ule visited Leticia it was politically apart of Colombia. Ernst Ule (1854-1915), one of the great plant collectors of Amazonia at the turn of the 20th century, apparently made several moss collections at Leticia, including *Calli-costa bipinnata*, *Isopterygium tenerum*, *Pilosium chlorophyllum*, and *Zelometeorium patulum* (Brotherus, 1906).

## FUNARIACEAE

*Entosthodon bonplandii* (Hook.) Mitt.

*Amphoritheca lutescens* Hampe, Ann. Sci. Nat. Bot. sér. 5, 3: 339. 1865. Type. COLOMBIA. Bogotá, San Fortunato, 2900 m, Lindig s.n. (BM!).

Collection fide Allen Fife, 1989 at BM. Fife (1987) has already described the variability of this rather widespread taxon.

## GRIMMIACEAE

*Grimmia longirostris* Hook.

*Grimmia cinerea* Thér., Rev. Bryol. Lichénol. 9: 9. 1936, syn. nov. Type. ECUADOR. rochers du Condorguachana [4150 m], 4.xi.1930, Benoist 3153 (PC!).

Although the plants were rather depauperate with young sporophytes, the Benoist collection appears to exhibit the gametophytic features attributed to *G. longirostris*.

*Grimmia trichophylla* Grev.

*Grimmia benoistii* Thér., Rev. Bryol. Lichénol. 9: 10. 1936, syn. nov. Type. ECUADOR. Massif du Pichincha, rochers verticaux exposés au Nord, en face au Condorguachana, [3900 m], 30.x.1930, Benoist 3116 (PC!); rochers verticaux sur face du Condorguachana, 30.x.1930,

*Benoist 3117* (PC!).

The Benoist collections, particularly 3116, exhibited all the attributes assigned to this taxon: stem central strand absent, leaves recurved on one side, lamina unistratose and cells distinctly sinuose, hyaline hair point smooth, globular gemmae present, and capsules ribbed when dry (cf. Deguchi 1987).

*Ptychomitrium lindigii* (Hampe) Jaeg.

*Glyphomitrium lobuliferum* Mitt., J. Linn. Soc., Bot. 12: 106. 1869, syn. nov. Type. COLOMBIA. Bogota in loco Boqueron, 8500 ped. [2615 m], *Weir 198* (BM!).

The types of both *Ptychomitrium lindigii* and *P. lobuliferum* exhibited leaf margins serrate and bistratose distally, basal cells weakly to strongly porose, several sporophytes per perichaetium, and calyptra scabrous. Both names will likely be superseded by *P. lepidomitrium* (C. Müll.) Besch. as noted by Howard Crum (in Sharp et al., Moss Flora of Mexico, in press).

#### HYPNACEAE

*Pylaisiella falcata* (B.S.G.) Ando  
*Hypnum spiripes* C. Müll., Bot. Zeit. (Berlin) 15: 582. 1857. Type. COLOMBIA. sin. loc., *J. Triana* in Collect. Lindeniana No. 21 (BM!).

*Hypnum spiripes* was placed in the synonymy of *Pylaisiella falcata* in Churchill and Linares C. (in press) based on the description given by Müller (1857). The opportunity to examine the type at BM confirmed that placement.

#### NECKERACEAE

*Neckera chilensis* Schimp. ex Mont.

*Neckera benoistii* Thér., Rev. Bryol. Lichénol. 9: 30. 1936, syn. nov. Type. ECUADOR. Broussailles, au-dessus de Rumipamba, sur arbres et arbustes, [3000 m], 19.x.1930, *Benoist 2917* (PC!); Quito, sur les arbustes, [2800 m], 12.x.1930, *Benoist 2811* (PC!).

Both Benoist collections exhibited all the fea-

tures assigned to *N. chilensis* - leaves rather flat, not concave, branch and stem leaves differentiated in size, the latter larger, seta elongate, capsules exserted. Thériot (1936) compared *N. benoistii* to *N. jamesonii* Tayl. which is also a synonym of *N. chilensis* (Sastre-De Jesús 1987).

*Neckera obtusifolius* Tayl.

*Renauldia obovata* Thér., Rev. Bryol. Lichénol. 9: 28. 1936, syn. nov. Type. ECUADOR. Pentas orientales du Pichincha [3200-3500 m], sur arbustes, 22.xi.1930, *Benoist 3332* (PC!).

The Benoist collection exhibits all the attributes of *Neckera obtusifolius* - paraphyllia rather abundant, leaves somewhat concave, and single sporophyte that was immersed with a short seta (cf. Sastre-De Jesús 1987). Thériot (1936) even cited *Neckera obtusifolius* among the other Ecuadorean collections gathered by Benoist!

#### POTTIACEAE

*Trichostomum brachydontium* Bruch

*Trichostomum novo-granatense* Broth. & Imsch. in Imsch., Mem. Soc. Neuchatel Sc. Nat. 5: 1000. 1914, syn. nov. Type. COLOMBIA. Dept. Antioquia, Hügel oberhalb America unweit Medellin, 1700 m, 1910, *Mayor n.51a-15.viii* (H-BR!); La Laguna, 2200 m, 1910, *Mayor n. 65.-8.viii*. (H-BR!).

The type exhibited the features of *T. brachydontium* - costa ending in a short, stout slightly reflexed mucro, stereids above and below guide cells with epidermal surface papillose, upper cells pluripapillose, lower cells smooth, long rectangular. This species is rather common in Colombia from open low montane to páramo sites.

*Trichostomum tenuirostre* (Hook. & Tayl.) Lindb.

*Trichostomum raapii* Broth., Mem. Soc. Neuchatel Sc. Nat. 5: 1000. 1914, nom. nud. Based on: Colombia, [Dep. Antioquia] Cordillera Central, Titiribi, 2000 m, 1910, *Mayor s.n.* (H-BR!).

A further collection labeled *Trichostomum raapii* in the Brotherus herbarium includes: Küsten-Kordilläre von Colombia, Primavera, 1.1904, *Raap s.n.* (H-BR!). Both collections exhibited the features attributed to *T. tenuirostre*. The Mayor collection was made along the slopes of the Cauca valley; the Raap collection may have been made in the department of Chocó.

## THAMNOBRYACEAE

*Porotrichodendron superbum* (Tayl.) Broth.

*Orthostichopsis incertus* Thér., Rev. Bryol. Lichénol. 9: 29. 1936, syn. nov. Type. ECUADOR. arbres, forêts à l'O. du Pichincha, [3900 m], 12.vii.1931, *Benoist 4536* ["4596"] (PC!).

Thériot's (1936) *Orthostichopsis incertus* is undoubtedly *Porotrichodendron*. Although the species assigned to this genus are at best ill-defined, the collection by Benoist matches that discussed and illustrated by Brotherus and Herzog (Herzog 1916) as *P. superbum*. The Benoist collection number cited by Thériot (1936) as 4596 appears to be incorrect, the packet records 4536.

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