

Grimmia herzogii Broth. - Biblioth. Bot. 87: 55. 1916.

Type: Bolivia, Yanakabastion, 4500 m, leg. Th. Herzog No. 3826, lectotype, designated by Deguchi (1987), JE!; isolectotypes H-BR!, PC!; syntypes (Herzog 3579) H-BR!, JE!, PC!

Synonyms: *G. trollii* Herzog

Distribution: Am.4

Description

Grimmia herzogii grows in dense, olive-green cushions, breaking up readily, falling apart into clusters and single shoots. The leaves are ovate to ovate-lanceolate, mostly suddenly narrowed into hair-point, the costa is weak and slightly keeled, the hair-points are short and denticulate, the margins are recurved at middle on one or both sides. The distal areolation is unistratose, only bistratose at apex and margins, the mid-leaf cells are quadrate with rounded angles and slightly thickened walls, the basal marginal cells are quadrate with thickened transverse walls and the basal juxtacostal cells are rectangular with thin to slightly thickened and nodulose walls. The sexuality is autoicous, the seta straight to slightly twisted, and the usually present capsules are exserted, oblong-ovoid, smooth with a conic to rostrate operculum.

Discussion

Grimmia herzogii is endemic to the South American Andes. In 1999, I found it commonly occurring on outcrops around Lake Titicaca, on the border of Bolivia and Peru. In the field, it can be recognized by compact cushions with thin stems and small ovate leaves. The cushions break up easily, falling apart into clusters, showing from above to below three colours: green, yellowish, and brown. Muñoz (1998) synonymized *Grimmia herzogii* erroneously with *Grimmia longirostris*. Greven (2000) showed that, although related to this species, it deviates by ovate, weakly keeled, thin-nerved leaves, only bistratose in the apex, and irregular, isodiametric, rather thin-walled mid-leaf cells. Delgadillo & Villaseñor (2002) confirmed this by cluster and ordination analysis.

Specimens examined

Bolivia. Road from Potosi to Uyumi, 50 km from Potosi, 4020 m, Greven Bol. 31; An Felsen eines Gipfels der Janaka Bastion, alt. 4500 m, leg. Th. Herzog nr. 3826, July 1911, FH!, JE!; Im oberen Chocayatal, alt. 4400 m, leg. Th. Herzog nr. 3579, July 1911, L!; Curahuara, leg. K. Troll nr. 58, JE!; Copacabana, along Titicaca

lake, Horca del Inca, astronomic observatory, built by Pre-Columbian culture, alt. 3880 m, leg. H.C. Greven nr. Bol. 29, 30, 32; Cochabamba – Oruro, boulder along road, alt. 4100 m, leg. H.C. Greven Bol. nr. 54, 55, 60, 15-05-2005; Road Potosi– Uyuni, near Visicia, leg. H.C. Greven Bol.nr. 56, 59, 9-05-2005; Road nr. 1, Oruro–Potosi, near Thola Palco, leg. H.C. Greven nr. Bol. 57, 15-05-2005; South of Oruro, between Poopó and Pazña, conglomerate wall, alt. 3705 m, leg. H.C. Greven nr.Bol. 58, 16-05-2005;

Peru. Puno, road to Copacabana, 5 km outside Puno, 3600 m, Greven Peru 20 ; Puno, road to Cusco, 5 km outside Cusco, 3915 m, Greven Peru 19 ; Road from Puno to Cusco, after 20 km, Chulpas Estructura Funeraria Kolla, 3865 m, Greven Peru 51;

References

- Deguchi, H. 1987. Studies on Some Peruvian Species of Grimmiaceae. *In*: H. Inoue (ed.), Studies on Cryptogams in Southern Peru: 19-74. Tokai Univ. Press Tokyo.
- Delgadillo, C.M. & J.L.R. Villaseñor. 2002. The status of South American *Grimmia herzogii* Broth. (Musci). *Taxon* 51: 123-129.
- Greven, H.C. 2000. *Grimmia herzogii* Broth., a misunderstood South American endemic. *The Bryologist* 103: 760-761.
- Herzog, Th. 1916. Die Bryophyten meiner zweiten Reise durch Bolivia. *Bibliotheca Botanica* 87: 55.
- Muñoz, J. 1998. Materials toward a revision of *Grimmia* (Musci, Grimmiaceae). Nomenclature and taxonomy of *Grimmia longirostris*. *Ann. Miss. Bot. Gard.* 85: 352-363.