

Grimmia bernoullii C. Müll. - Bull. Herb. Boiss. 5: 200. 1897.

Type: Guatemala, Quezaltenango, leg. Bernoulli & Cario No. 115, lectotype, designated by Muñoz (1999), PC!; isolectotype GOET!

Distribution: Am.1,2,4

Description

Grimmia bernoullii grows in loose, not very hoary, greyish-green to olive-green patches, leaves imbricate when dry, erecto-patent when moist, broadly ovate-lanceolate, costa broad below, disappearing in mid-leaf, not projecting on dorsal side, hair-points short, denticulate, margin plane, occasionally slightly incurved above. The distal areolation is 2-3-stratose, mid-leaf cells irregularly rounded with slightly incrassate walls, basal marginal cells short-rectangular with thickened transverse walls, basal juxtacostal cells elongate with incrassate walls. The sexuality is dioicous, capsules on a long and straight seta are occasionally present, they are exserted, cylindrical, with mitrate calyptra and erect-subulate operculum.

Discussion

Grimmia bernoullii has been confused with *G. ovalis* (Hedw.) Lindb. It differs in a straight subulate operculum with a mitrate calyptra, and ovate, imbricate leaves, with plane margins. In *G. ovalis*, the operculum is obliquely rostrate, the calyptra is cucullate, the leaves are ovate-lanceolate, loosely appressed, and the margins are incurved above. Deguchi (1987) recorded *G. ovalis* from Peru but remarked that the leaves of his plants closely resemble those of *G. laevigata*. However, because the leaf areolation deviated from this species, he regarded his plants to be *G. ovalis*. His description and drawings, however, clearly show that he found *G. bernoullii*, a taxon that probably had escaped from his attention. Muñoz (1999b) also described and drew *G. bernoullii* as *G. ovalis*, a taxon that does not occur in South America. *G. bernoullii* is discussed in detail in Greven (1999a).

Specimens examined

Guatemala. Quezaltenango, leg. Bernoulli & Cario nr. 115, 119, 1866-1878, GOET! **Mexico.** Suelo, Zacatecas, Cerra de la Buffa, leg. A. Cardénas, 09-06-1979; Pueblo, track Tlachichuca to Hidalgo, boulder in pine forest, alt. 3010 m, leg. H.C. Greven nr. M140, M 142, 04-12-1997; Pueblo, Tlachichuca, Palinque, boulder along road, alt. 3000 m, leg. H.C. Greven nr. M 145, 05-12-1997; Pueblo, Tlachichuca, El Cachon, boulder along road, leg. H.C. Greven nr. M 138, M 139,

M 144, 05-12-1997; Pueblo, Tlachichuca, Paso National, boulder along road, alt. 2835 m, leg. H.C. Greven nr. M 141, 05-12-1997; U.S.A. New Mexico, Lincoln Co., Sacramento mts., near top of Monjeau Peak, T 10 S R 12 E S 24, alt. 9500 ft, leg. R.D. Worthington nr. 31576, 20-08-2002, COLO!

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.
- Greven, H.C. 1999a. A synopsis of *Grimmia* in Mexico, including *Grimmia mexicana* **sp. nov.** The Bryologist 102: 426-436.
- Müller, C. 1897. Bryologia Guatemalensis ex collectionibus domin. Bernoulli & Cario Bull. Herb. Boiss. 5: 200.
- Muñoz, J. 1999. A revision of *Grimmia* in the Americas: 1: Latin America. Ann. Missouri Bot. Gard. 86: 131-133.