

Grimmia nutans Bruch - Flora 12: 390-392. 1829.

Type: Turkey, Izmir (Smyrna), leg. Fleischer, lectotype, designated by Muñoz & Pando (2000), H-SOL!; isolectotype, NY!

Synonyms: *Grimmia meteorae* C.C. Townsend, *G. verticillatula* Thér. & Trab.

Distribution: Afr.1. As.5. Eur.

Description

Grimmia nutans grows in large, dense, glaucous, not very hoary cushions on damp slanting, frequently wateroverflowed neutral to basic rock. The leaves are loosely appressed to imbricate-twisted when dry, the lower leaves erecto-patent, the upper leaves rigid and subsecund when moist, ovate-lanceolate, tapering to an acute piliferous apex, keeled above, the costa is stout and strongly projecting at dorsal side, the hair-points are short to rather long and slightly denticulate, the margins are plane or recurved below. The distal areolation is unistratose with bistratose ridges and 2-3(4) stratose margins, the mid-leaf cells are quadrate with rounded angles and thin straight walls, the basal marginal cells are quadrate with slightly thickened transverse walls, the basal juxtacostal cells are quadrate, hyaline with thin straight walls. The sexuality is autoicous. Capsules, exerted on cygneous setae are usually present, they are ovoid to oblong-ovoid, smooth with an obliquely rostrate operculum.

Discussion:

Grimmia nutans is characterized by stiff subsecund leaves, smooth cell walls, cygneous setae and autoicous gametangia. Since its description in 1829, it has not been reported, probably because this subtropic, hygrophytic species does not occur in the Austrian and Swiss Alps and in the Pyrenees. In 1987, it was found near Kalabaka in Greece and described as *G. meteorae* (Townsend 1989). A few years later, it was encountered in Gran Canaria (Pico de las Nieves) in a small periodic stream, at an altitude of 1600 m (Dirkse & Greven 1994). In December 1993, I found it in Cyprus, growing in gullies, on damp rock at the north slope of Mt. Kionia in the eastern part of the Troodos mountains. The empty urns, bleached by the sun, contrasted sharply with the large glaucous cushions, and young sporophytes were beginning to develop (Greven 1994). Hébrard (2000) described the occurrence of *G. nutans* at six localities in southwest France (Cannet-des-Maures and Mui), and one in the Alpes-Maritimes (Biot). Permanent companions were *G. lisae* and *Bryum gemmiparum*, leading to the description of une Association à *Grimmia nutans* et *G. lisae*. Remarkable in *G. nutans* is the slow uptake of water, caused by the waxy

cuticula. The downward pointing subsecund upper leaves with stout costae and multistratose margins enable rain and melting water to flow down over the plants without harm to the vegetation. Cushions of *G. nutans* produce each year fresh green shoots on top of the stems, and the synonym *G. verticillata*, described from the Moroccan Atlas mountains, refers to this growth form.

Specimens examined

Turkey. Smyrna, leg. F. A. Müller; **Greece.** Thessaly, Kalabaka, Varlaam Monastery Meteora, leg. C.C. Townsend, 10-05-1987; **Canary Islands.** Gran Canaria, Pico de las Nieves, alt 1600 m, leg. G. M. Dirkse 21-03-1989; Gran Canaria, Pozo de las Nieves, alt. 1650 m, damp north-facing volcanic rock, leg. H.C. Greven nr. 1932, 1933, 1934, 1935, 27-02-1996; **Cyprus.** Troodos, Mnt. Kionia, alt 1100 m, leg. H.C. Greven, nr. 2315-2328, 2755, 2756, 2847; **Morocco.** Grand Atlas, ditone Glaoua, supra pagum Zerekten, alt. 1400-1600 m, leg. R. Maire nr. 11498, 1926, S!; **France.** Var, Le Muy, D 25, rochers sec, mais ombrages, leg. R. Skrzypczak nr. 99138, 20-02-1999; Var, Roquebrune-sur-Argens, pres de la Chapelle, leg. R. Skrzypczak nr. 00036, 23-02-2000; Var, Plaine des Maures, Bois du Rouquau, D 48, leg. R. Skrzypczak nr. 05038, 17-02-2005;

References

- Dirkse, G.M. & H.C. Greven 1993. *Grimmia meteorae* Townsend new to the Canary Islands. *Lindbergia* 18: 135-137.
- Greven, H.C. 1994c. The identities of *Grimmia nutans* Bruch, *Grimmia ungeri* Jur. and remarks about other *Grimmiaceae* on the island of Cyprus. *Journal of Bryology* 18: 303-309.
- Hèbrard, J-P. 2000. *Grimmia nutans* Bruch en France méridionale et *Grimmia elatior* Bruch ex Bals. & De Not., respectivement nouveaux pour la bryoflore d'Europe occidentale et de Corse. *Bot. Helv.* 110: 115-124.
- Townsend, C.C. 1989. *Grimmia*: A variety new to the Lebanon and a new species from Greece. The Davis & Hedge Festschrift. Kit Tan (ed.). Edinb. Univ. Press: 45-52.