Grimmia donniana Smith in J.E. Smith et al. - Eng. Bot. 18. 1804.

Type: North Wales, Beddgelert, July 1802, leg. D. Turner, lectotype, designated by Muñoz (1998), BM!
Synonyms: *Grimmia bifrons* De Not., *G. sudetica* Schkuhr.
Distribution: Afr. 1,4. Am.1,2,6. Ant. As.1,2,5. Eur.

Description

Grimmia donniana forms small, densely rounded cushions, dark green to almost black, leaves loosely appressed when dry, erecto-patent when moist, broadly oblong-lanceolate, tapering to acute apex, costa weak below, thickened above, greatly projecting on dorsal side, hair-points short to half length of lamina, smooth to slightly denticulate, margins plane, 2-3 stratose above. Distal areolation bistratose, mid-leaf cells short-rectangular with sinuosel and incrassate walls, basal marginal cells narrowly rectangular with thin smooth walls, basal juxtacostal cells narrowly rectangular with thin smooth walls. Sexuality autoicous, capsules on straight setae are usually present, they are exserted, oblong-ovoid, yellowish with a mammillate to rostellate operculum.

Discussion

Grimmia donniana is characterized by small, rounded, blackish-green cushions, in summertime richly fruiting with exserted yellow-green capsules, sharply contrasting with the dark cushions. It grows from sea-level up to the alpine zone and it has a preference for boulders and stone walls. In the field, it might be confused with *G. montana*, *G. sessitana* and small forms of *G. longirostris* but under the microscope the differences are clear. Especially the oblong-lanceolate leaves with uniform, long-rectangular, pellucid, thin-walled basal cells, sharply contrasting with the short-rectangular strongly sinuosely incrassate mid-leaf cells, distinguish it from other *Grimmia* species, except *G. arenaria* and *G. curviseta*. In alpine habitats occurs a closely related species with immersed capsules, described as *G. triformis* Carest. et De Not. Although the gametophytes cannot be distinguished from *G. donniana*, the sporophytic differences are distinct and justify a treatment at specific level. *G. donniana* is related to *G. arenaria*. The differences are discussed under this latter species, and more detailed in Greven (1994).

Specimens examined

Austria. Stubaier Alps, Umhausen, alt. 1630, leg. H. Lauer, nr. Oes. 26; Hohe Tauern, Heiligenblut, Kl. Fleischtal, alt. 2400 m, leg. H.C. Greven, nr. 3017, 3019,

3020; Carinthia, Kreutzeckgruppe, Radlberger alm, Hoher Stand, alt. 2087 m, leg. H.C. Greven, nr. 3018; **France.** Puy de Dôme, Compains et Besse, road to Chirouzes, leg. Ph. de Zuttere, alt. 1200 m, nr. 20257; The Vosges, Col de la Schlucht, alt. 1200 m, leg. Ph. de Zuttere, nr. 13886, leg. H.C. Greven, nr. 2788; The Vosges, Hohneck, alt. 1300 m, leg. H.C. Greven, nr. 2080; The Vosges, Grand Ballon, alt. 1424, leg H. Lauer, nr. Fr. 213; The Vosges, Le Hundskopf, alt. 1237 m, leg. H.C. Greven, nr. 2764; The Vosges, Lac de Rétournemer, alt. 954 m, leg. H.C. Greven, nr. 2765; The Vosges, Puy-de-Dôme, Mont-Doré, La grande Cascade, alt. 1390 m, leg. Ph. de Zuttere, nr. 20304; **Germany.** Harz, Bad Harzburg, Kl. Burgberg, alt. 483, leg. H.C. Greven, nr. 2083; Harz, Radau Wasserfall, alt. 500 m, leg. H.C. Greven, nr. 2082; **Iceland.** Stykkisholmur, leg. W. Labey; **Norway.** Nordland, Salten, Junkersdalen , leg H. Arnell; Trondhjem, Stören, leg I. Hagen; **Slovakia.** Vysoke Tatry, Sliesky dom, alt. 1850 m, leg. H.C. Greven, nr. 2081; **Wales.** Dolgellau, Cader road, leg. H.C. Greven, nr. 2084; Snowdonia, Llyn Cwellyn, alt. 200 m, leg. H.C. Greven, nr. 2085; Snowdonia, summit Mt. Snowdon, alt. 1085 m, leg. H.C. Greven, nr. 2086; Barmouth, Penybont, alt. 100 m, leg. H.C. Greven, nr. 2090; Llanfachreth, alt. 100 m, leg. H.C. Greven, nr. 2087, 2088, 2089; **Bolivia:** La Paz. boulder along road nr. 3, just south of La Cumbre, alt. 4245 m, leg. H.C. Greven Bol. nr. 51, 52, 21-05-2005; **Canada:** Alberta, Rocky Mts., Lake Louise, Ten Peaks, scree at 2050 alt., leg. H.C. Greven nr. 3009, 3010, 02-07-1998; Alberta, Rocky Mts., Bow Pass, alt. 2100 m, leg. H.C. Greven nr. 3011, 04-07-1998; Alberta, Rocky Mts. Jasper, Whistler Mt., alt. 2050 m, leg. H.C. Greven nr. 3012, 06-07-1998;

References:

Greven, H.C. 1994. *Grimmia arenaria* Hampe in the Mwaddach estuary in North Wales. Journal of Bryology 18: 196-198.

Greven, H.C. 1995. *Grimmia* Hedw. in Europe. Backhuys Publishers, Leiden, The Netherlands.