

**Grimmia muehlenbeckii Schimper – Syn. Musc. Eur.: 212. 1860.**

**Type:** Austria, Tirol, Trafoi, leg. Mühlenbeck, holotype BM!

**Synonyms:** *Dryptodon muehlenbeckii* (Schimp.) Loeske, *Grimmia hermannii* Crum, *G. trichophylla* ssp. *muehlenbeckii* (Schimp.) Boulay, *G. trichophylla* var. *muehlenbeckii* (Schimp.) Husn., *G. trichophylla* var. *tenuis* (Wahlenb.) Wijk & Marg.

**Distribution:** Afr.4. Am.1. As.2. Eur.

**Description**

*Grimmia muehlenbeckii* forms dense, blackish-green not very hoary tufts, the leaves are loosely appressed, slightly twisted when dry, erectopate with recurved apices when moist, ovate-lanceolate, tapering to an acute apex, keeled above, clusters of short-stalked gemmae are sometimes present in upper leaf axils, the costa is channeled above, projecting at dorsal side, angled, sometimes bluntly winged, the hair-points are short to long, sharply denticulate, in the perichaetial leaves stout and decurrent, the margins are recurved in mid-leaf on both sides and toothed at transition to the hair-point. The distal areolation is unistratose with bistratose ridges and bistratose margin, the mid-leaf cells are quadrate to short-rectangular with incrassate and sinuose walls. The basal marginal cells are short-rectangular with thickened transverse walls, the basal juxtacostal cells are rectangular and yellowish with incrassate and nodulose walls. The sexuality is dioicous and capsules on an arcuate setae are occasionally present, they are exserted, ovoid, shiny, brown, smooth to slightly striate with rostrate operculum.

**Discussion**

*G. muehlenbeckii* is related to *G. trichophylla* and by some authors conceived as a subspecies or variety of this taxon. Deguchi (1978) treated it as a distinct species, followed by Smith (1992). I agree with their treatment because I have seen many samples from Scandinavia and the Pyrenees, being conspicuously uniform and easily to distinguish from *G. trichophylla* by its blackish dense tufts and small, ovoid, shiny, dark brown capsules with purple entire peristome teeth; the capsules in *G. trichophylla* are obloid, dull, yellowish-brown, and the peristome teeth are orange and cleft. The gametophyte differs from *G. trichophylla* by blackish-green tufts, ovate-lanceolate leaves with stout denticulate hair-points, flattened at base and usually decurrent down margin with some teeth, broadly recurved margins, and costa protruding on dorsal side with angles. Greven (2007) described the first record

of *G. muehlenbeckii* for the Netherlands, the species was found on a granitic boulder in the province of Drente.

### Specimens examined

**Andorra:** Cami d'Ensagents, alt. 2050 m, leg. A. Sotiaux, nr. 11922; Obac de Soldeu, Bose de Collart, alt. 1900 m, leg. A. Sotiaux, nr. 8237; **Austria:** Carinthia, Weiszbriach, Sonnenalpe Nassfeld, Madritschen, alt. 1650 m, leg. H.C. Greven, nr. 3044; Carinthia, Hermagor, Guggenberg, alt. 1090 m, leg. H.C. Greven, nr. 3045; **Corsica:** Mte. d'Oro, alt. 1320 m, leg. H.C. Greven, nr. 2949; Col de Verde, alt. 1410 m, leg. H.C. Greven, nr. 2950; **Estonia:** Isle of Soarema, Poadla, leg. J. Koopman; **Finland:** Aland, Lemland, leg. Möller; Helsinki, Nylandia, leg. M. Loch; **France:** Pyrenees, Ste. Engrace, Zughubignecko, alt. 900 m, leg. H.C. Greven, nr. 2571; **Germany:** Ahreifel, Heckenbachtal above Staffel, alt. 350 m, leg. R. Düll; Böhme, Mertendorfer Steinberg, alt. 400 m, leg. A. Schmidt; Ahrtal, Saffenberg, alt. 300 m, leg. R. Düll; **Greece:** UTM LF 3, 16 km nw above Megapisto, alt. 800 m, leg. R. Düll; **Norway:** alps, leg. Schimper; **Sardinia:** Cucuru Orru, alt. 470 m, leg. H.C. Greven, nr. 2307; Monti del Gennargentu, Punta la Marmora, alt. 1410 m, leg. H.C. Greven, nr. 2308; Fonni, alt. 950 m, leg. H.C. Greven, nr. 2309; Monte Tonneri, alt. 900 m, leg. H.C. Greven, nr. 2310; **Sweden:** Skane, Degeberga, Forsaker valley, leg. H.C. Greven, nr. 2584; Dalarö, leg. M. Huss; Medelpad, Torp, leg. M. Huss.; Stockholm, leg. Schimper.

### References

- Deguchi, H. 1978. A revision of the genera *Grimmia*, *Schistidium* and *Coscinodon* (Musci) of Japan. J. Sci. Hiroshima Univ. Ser. B., Div. 2, Bot. 16: 121-256.
- Greven, H.C. 2007. De ontwikkeling van Grimmiaceae op het Drentse graniet en *Grimmia muehlenbeckii*, een nieuwe sort voor de Nederlandse mosflora. Buxbaumia 77: 49-55.
- Smith, A.J.E. 1992. The taxonomic status of the British varieties of *Grimmia trichophylla* Grev. Journal of Bryology 17: 269-273.