

Grimmia hartmanii Schimper - Syn. Musc. Eur.: 214. 1860.

Type: Sweden, Värmland, 1854, leg. S.O. Lindberg, lectotype, designated by Geissler & Maier (1995), BM!

Synonyms: *Dryptodon brotheri* (Broth.) Warnst., *Grimmia borneensis* Dix. & Herz., *G. brotheri* Lindb. ex Broth., *G. hartmanii* var. *montenegrina* Breidl. & Sysz., *G. hartmanii* var. *meridionalis* Loeske.

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

Description

Grimmia hartmanii is a skiophilous species, growing in large green mats with ascending, dichotomously branched stems, bearing clusters of mulberry-shaped gemmae, borne on deformed leaf apices. Preferent habitats acidic boulders in woodlands, often close to streams. Stems 2-8 cm, central strand absent. Leaves spreading, slightly contorted when dry, upper leaves usually falcato-secund when moist, broadly lanceolate, tapering to an acuminate apex, keeled above with firm costae, projecting on dorsal side; hair-points characteristic, short and denticulate, the margins are usually recurved on one side. Distal areolation unistratose, only at margins bistratose, mid-leaf cells quadrate to short-rectangular, with incrassate and sinuose walls, basal marginal cells quadrate with thickened transverse walls, basal juxtacostal cells linear with incrassate, slightly sinuose walls. Sexuality dioicous, sporophytes extremely rare, exerted on straight seta, clavate-obloid, smooth, with rostrate operculum.

Discussion

G. hartmanii is a lowland species principally, occurring up to \pm 2000 m in the mountains. Although it usually can be found in densely shaded habitats, in areas with a high air-humidity, it can establish itself in exposed habitats, e.g. in North Wales, I found it frequently at sea level, on stone walls in meadows, and at high elevations in the Pyrenees, it occurs on erratic blocks in the open air. Remarkable was a rich occurrence at the Hundsbach (Germany, Rheinland-Pfalz, Eifel, 05-05-2005); here, the plants were not only growing on shaded boulders along a woodland stream, but also epiphytically on trunks of *Carpinus*. Greven (2008) described the first record of *G. hartmanii* from the Netherlands. The species was already collected in 1903 but stored in L. as *G. trichophylla*. It was not recognized during a herbarium revision (Rubers 1989), probably because the gemmae were detached from the leaf tips and spread inside the cushion. *G. hartmanii* resembles some species of *Racomitrium* more closely than those of its own genus, but may be recognized by the usually spreading falcato-secund upper leaves, the characteristic

hair-points and the terminal clusters of brown gemmae, which are conspicuous and usually present. Capsules of *G. hartmanii* are reported from Belgium, Norway, the Caucasus and Central and Mediterranean Europe, and North America. *Grimmia hartmanii* var. *montenegrina* Breidl. & Szysz. was described from Albania. It occurs in Mediterranean and Eastern European countries principally. The plants are more robust than var. *hartmanii*, especially by longer stems, leaves not falcato-secund, costa bluntly winged, and gemmae usually absent. I have seen such plants from several Mediterranean countries, from Cyprus and especially from Corsica, where this variety is very common in woodlands at Col de Vergio, Col de Vizzavone, Mte. Cinto and Mte. d'Oro. Sporophytes, extremely rare in var. *hartmanii*, are occasionally produced in var. *montenegrina* (Arnaudoff, 1911). Exothecial stomata present, peristome teeth smooth, so far unknown in any *Grimmia* Hedw. species. A related species is *Grimmia brachydictyon* Cardot, described from Japan. Muñoz & Pando (2000) synonymised it with *G. hartmanii*, but there are significant morphological differences and I agree with Deguchi (1978) that *G. brachydictyon* is a good species, endemic to Japan.

Specimens examined

Austria. Carinthia, Weiszbriach, Weissensee, alt. 950 m, leg. H.C. Greven, nr. 3036; Carinthia, Kreutzeckgruppe, Radlberg, alt. 1100 m, leg. H.C. Greven, nr. 3037; **Belgium.** Luxembourg, Chiny, bord de Sémois, leg. Ph. de Zuttere; Luxembourg, Auby, au bord d'Alleines; Luxembourg, Maissin, conflu l'Our et Lesse, leg. Ph. de Zuttere, nr. 19767; Luxembourg, Twigny, au bord de Couvan, leg. Ph. de Zuttere, nr. 17944; Namur, Oignies, au bord de l'Alysse, leg. Ph. de Zuttere, nr. 18600; Namurs, Willergie, Bourseigne, leg. Ph. de Zuttere, nr. 20496; Namur, Annevoie, Rouillon, leg. Ph. de Zuttere, nr. 20182; **Corsica.** Col de Vizzavone, alt. 1160 m, leg. H.C. Greven, nr. 2924; **France.** The Vosges, Col de Baganelles, alt. 850 m, leg. H.C. Greven, nr. 2768; The Vosges, Lac de Gérardmer, alt. 600 m, leg. H.C. Greven, nr. 2769; Ardennes, Haybes, leg. Ph. de Zuttere, nr. 18627; Ardennes, Hargnies, ravin du Risdoux, leg. Ph. de Zuttere, nr. 20174; Puy-de-Dôme, Mont-Doré, sommet Puy de la Tache, alt. 1620 m, leg. Ph. de Zuttere, nr. 20380; Puy-de-Dôme, Comparis, Baguet, leg. Ph. de Zuttere, nr. 20256; Pyrenees, St. Engrace, alt. 675 m, leg. H.C. Greven, nr. 2136, 2138; Pyrenees, Port de Larrau, alt. 1400 m, leg. H.C. Greven, nr. 2140; **Germany.** Thüringen, Ruhla, leg. H.C. Greven, nr. 2133, 2134; Harz, Bad Harzberg, alt. 500 m, leg. H.C. Greven, nr. 2139; **Hungary.** Dobogőko, Szerkövek, alt. 900 m, leg. H.C. Greven, nr. 2659; **Sweden.** Bredforsen, Lower Dalälven, leg. H.C. Greven, nr. 2132, 2135; **Wales:** Dolgellau, Llanelltyd, alt. 150 m, leg. H.C. Greven, nr. 2141, 2143;

Dolgellau, Abergwynant glen, leg. H.C. Greven, nr. 2130; Snowdonia, Llyn Idwal, alt. 120 m, leg. H.C. Greven, nr. 2142.

var. *montenegrina* Beck. et Szysz

Corsica. Mte. Cinto, alt. 1590 m, leg. H.C. Greven, nr. 2926, 2927; Mte. d'Oro, alt. 1050 m, leg. H.C. Greven, nr. 2925; Col de Vergio, alt. 1650 m, leg. H.C. Greven, nr. 2928; **Cyprus.** Troodos, alt. 1500 m, leg. H.C. Greven, nr. 2129, 2130; **France.** Pyrenees, St. Engrace, alt. 650 m, leg. H.C. Greven, nr. 2137; **Montenegro.** Perucina potok, alt. 1200 m, leg. Glowacki; **Turkey.** Prov. Rize, Ikizdere-Ispir, alt. 2000 m, leg. Stainton & Henderson; Prov. Giresun, Yeraz kemal, alt. 1600 m, leg. Davis Dodds; Trabzon, Sumela monastery, alt. 1180 m,

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