

**Grimmia incurva Schwägrichen - Spec. Musc. Frond. Suppl. 1(1): 90. 1811.**

**Type:** Austria, Grosz Glockner, lectotype, designated by Deguchi (1978), G!; syntype B.

**Synonyms:** *G. contorta* (Wahlenb.) Arnott, *G. curvifolia* Lindb., *G. hagenii* Kaurin, *G. torngakiana* Bras. & Hed., *G. uncinata* Kaulf.

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

**Description**

*Grimmia incurva* grows in green to blackish, usually rounded cushions, but sometimes in flat patches, on acidic rock at high elevations, usually on protected places, between ors on the underside of rocks. The leaves are incurved and moderately contorted when dry, spreading when moist, oblong- to linear-lanceolate, tapering to a slender, acuminate, often hyaline apex, they are keeled above and the costa projects on dorsal side, the hair-points are short, often only a hyaline point, occasionally long and denticulate, the margins are plane or recurved below on one side. The distal areolation is unistratose with bistratose margins and apex; the mid-leaf cells are rectangular, with incrassate, nodulose walls, the basal marginal cells are elongate with thin walls and the basal juxtacostal cells are elongate with slightly sinuose and incrassate walls. The sexuality is dioicous. Emergent to exerted obloid, yellowish capsules on arcuate setae with rostellate operculums are occasionally present.

**Discussion**

*Grimmia incurva* is a skiophilous, montane to alpine species, easily known by its rounded dark-green cushions with linear, contorted leaves and hair-points only visible by hand-lens, having more the habit of *Dicranoweisia crispula* than that of a *Grimmia*. There are two forms which may occur in the same area: forma *longifolia* Chal. and forma *brevifolia* Chal., the latter forming small, blackish, compact cushions with short, erect leaves, hardly contorted when dry. While the green loose cushions of fo. *longifolia* usually occur in protected habitats, like the underside of overhanging rocks, the dense and black cushions of fo. *brevifolia* can be found in more exposed habitats. Forma *brevifolia* has never been found with capsules and in the field, it may be confused with small *Racomitrium* species; under the microscope the differences are, however, clear. Two related taxa are *Grimmia afroincurva* Broth and *G. milleri* Hastings & Greven. The first is endemic to Afro-Alpine habitats and the second endemic to eastern North America. These two taxa

are autoicous and always richly provided with capsules. The differences with *G. incurva* are described in Hastings & Greven (2007), and in the discussion to these species.

### **Specimens examined**

**Austria.** Oetztal, Kühtai, Drei Seen Hütte, alt. 2311, leg. H.C. Greven, nr. 2147, 2147, 2670; Oetztal, Sölden, Geislacher Kogel, alt. 3056 m, leg. H.C. Greven, nr. 2149, 2150, 2151, 2152, 2669; Hohe Tauern, Heiligenblut, Kl. Fleischtal. Zirmsee, alt. 2560 m, leg. H.C. Greven, nr. 3039, 3043; Defreggental, Staller Sattel, alt. 200 m, leg. Fl. van Gelder; Carinthia, Kreutzeckgruppe, Naszfeldriegel, alt. 2190 m, leg. H.C. Greven, nr. 3040; Carinthia, Kreutzeckgruppe, Radlberger alm, alt. 2087 m, leg. H.C. Greven, nr. 3041; Carinthia, Kreutzeckgruppe, Radlberger alm, Hoher Stand, alt. 2087 m, leg. H.C. Greven, nr. 3038 m; **France.** the Vosges, Le Grand Ballon, alt. 1420 m, leg. H.C. Greven, nr. 2770, 2771; Puy-de-Dome, Super Besse, leg. Ph. de Zuttere, nr. 20778; **Germany.** Harz, Wernigerode, Hohnenkamm, alt. 850 m, leg. Koppe; Bavarian Alps, Gr. Arber, alt. 1400 m, leg. Lauer; **Scotland.** Clova Mnts, leg. J. Hulton; Glas Maol, leg. J. Murray; Kincardineshire, Cloch-maben, leg. G.E. Hunt; Angus, Czenlochrn Glen, leg. U. Duncan; Clova Mnts, Forfar, Loch Brandy. leg. J.B. Duncan; Caerns, Bethesda, Caerned Llewelyn, alt. 1000 m, leg. D.A. Rattcliffe; **Slovakia.** Vysoke Tatra, Slieszky dom, alt. 1850 m, leg. H.C. Greven, nr. 2153, 2154, 2155; **Sweden.** Jämtland, Trostviken, Brackfjället, leg. A. Hülphers; Jämtland, Undersäkers, Lillsylen, alt. 1700 m, leg. E. von Krusenstjerna; Jämtland, Are, Ariskulans lapp, alt. 1420 m, leg. F. Ahlprengren; Jämtland, Kall, Strädalen, alt. 600 m, leg. T.G. Halle; **Switzerland.** Graubünden, Piz Grialetsch, alt. 3131 m, leg. G. M. Dirkse. Wallis, Saastal, Saas Fee, alt. 2050, leg. Lauer.

### **References:**

- Hastings, R.I. & H.C. Greven. 2007. xxxxxx  
Greven, H.C. 1995. *Grimmia* Hedw. in Europe. Backhuys Publishers, Leiden, The Netherlands.  
Jones, G.N. 1933. Grimmiaceae. *In*: Grout (ed.), Moss Flora of North America Vol. II, Part I: 1-66. Newfane, Vermont.