
**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 exserted 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, Kühai, Drei Seeen 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, Naszfeldriegl, 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, Hohenkamm, 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