

Grimmia pilifera P. Beauvois - Prodr. Aethéogam: 58. 1805.

Type: U.S.A., Pennsylvania, near Lancaster, leg. Muhlenberg, lectotype (labelled as *G. pensylvanica*), designated by Cao & Vitt (1986), G; syntype, G.

Synonyms: *Grimmia atroviridis* Card., *G. elatior* var. *squarriifolia* Dix. & Thér., *G. eury-basis* Dix. & Sak., *G. hisauchii* Okam., *G. kirienensis* Gao, *G. pensylvanica* Schwägr., *G. tenax* C. Müll.

Distribution: Am.1, As.1,2,3,5

Description

Grimmia pilifera grows in robust, rigid, dark- or blackish-green to brownish, loose, tufts, leaves are erect and scarcely contorted when dry, erect-spreading when moist, keeled, the lower oblong-lanceolate and shortly awned, becoming lanceolate, long-acuminate, and long-awned above, costa is excurrent, projecting at dorsal side, hair-points are short in lower leaves, long in upper leaves, denticulate, margins are recurved on one or both sides, occasionally plane. The distal areolation is bistratose and opaque, at margins 3-4 stratose, mid-leaf cells are irregularly rounded with incrassate walls, basal marginal cells are subquadrate with thickened transverse walls, basal juxtacostal cells are elongate, yellowish with incrassate and nodulose walls. The sexuality is dioicous, the seta is short and straight, capsules are occasionally present, they are immersed, oblong-ovoid, smooth with subulate operculum and mitrate calyptra.

Discussion:

Grimmia pilifera grows in robust, dark green to blackish-green, fragile, somewhat loose cushions on acidic rock. It has a disjunct distribution because it occurs in North America and Asia but has never been recorded from Europe. The species is characterized by small rigid leaves, narrowly lanceolate with an ovate, somewhat sheathing base, suddenly narrowed into the subulate upper part, and capsules on short setae, immersed in the perichaetial leaves. The lamina is bistratose in the upper half of the leaf, the margins thickened in 3-4 cell layers in the upper part. Deguchi (1978) even noted margins with 4-6 cell layers in plants from Japan. In the southern states of North America, *G. pilifera* is replaced by *G. arizonae*, a closely related taxon, differing by a light green/ brown colour, long hair-points, flexuose stems, broadly lanceolate leaves, plane leaf apex, and upper leaf margins not thickened, Greven (1999).

Specimens examined

U.S.A., Massachusetts, Mt. Tom, leg. Lesq. & James nr. 4622, 30-05-1886, FH; Minnesota, Taylers Fall, St. Croix Rouge, leg. Holzinger, 10-08-1895; Tennessee, Servier Co., Smokey mts., near Chimneys, alt. 3500 ft, leg. A.J. Grout nr. 257. 08-01-1933, FH; Illinois, Crawford Co., Onondaga cave, on limestone rock, leg. P. Preston nr. 56, 12-01-1934, FH; Arkansas, Montgomery Co., Little Missouri Falls recreation site, Quachita Nat. Forest, alt. 1250 ft, leg. M.G. Manuel nr. 1155, 02-10-1971, PERTH 4168992; Virginia, Giles Co., Cascades recreation area, 3 miles northeast of Pembroke, rock along Little Stoney Creek. alt. 2300 ft, leg. W. R. Buck, 23-06-1978, NY; **Nepal**. Khumbu valley, entrance Sagarmatha Nat. Park, alt. 2950 m, leg. H.C. Greven, 07-02-2000; Khumbu valley, one km south of Namche Bazar, 2852 m, leg. H.C. Greven, 16-02-2000; Khumbu valley, Jorsale, alt. 2780 m, southeast facing sunny rock, leg. H.C. Greven, 16-02-2000; **Japan**. Honshu, pref. Yamanashi, Mt. Notori-Narata, Hayakawa-cho, Minamikoma-gun, alt. 1300 m, leg. H. Deguchi nr. 13321, 01-08-1974; Honchu, pref. Nara: Sannoko-Myojin fall, Kawaki-mura, Yoshino-gun, alt. 500 m, leg. H. Deguchi nr. 9074, 01-03-1972; **China**., NW Sichuan, Minshan Range, Nanping Co, Valley of R. Bai-shu, 2 km south of Linjiang, leg. T. Koponen, 14-09-1991; Shensi, Miao-wan-san, Mt. Pao-ki-scen, leg. Father Hugh, 1898, BM;

References

- Cao, T. & D.H. Vitt. 1986. A taxonomic revision and phylogenetic analysis of *Grimmia* and *Schistidium* in China. Journ. Hattori Bot. Lab. No. 61: 123-247.
- 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. 1999. A synopsis of *Grimmia* in Mexico, including *Grimmia mexicana* sp. nov. The Bryologist 102: 426-436.