

Grimmia crassiuscula Greven & Feng -

Herzogia 27: 137-140. 2014.

Type: CHINA. Inner Mongolia, Helan mountains, Mt. Halawugou, 38° 50' 177'' N - 106° 00' 580'' E, alt. 1910 m., leg. Xue-Liang Bai 13029-1, June 2013; (HIMC, herbarium H.C. Greven). **Paratype:** China, Inner Mongolia, Bairin right banner, Hanshanlinchang, 43° 59' N - 118° 18' E, alt. 1928 m., leg. Xue-Liang Bai 4078, 10 July 1991 (HIMC).

Distribution: As. 3

Description

Grimmia crassiuscula forms small, loose, light green, succulent mats, light brown below. Stems erect, 5.0–7.0 mm, but green upper part only 2.0–2.5 mm, central strand absent. Leaves concave, appressed when dry, spreading when moist, broadly ovate-lanceolate with cucullate apex, 1.1–1.3 x 0.5–0.7 mm.; margins plane, same thickness as lamina; hair-points absent; proximal stem leaves brown, muticous; medial laminal cells bistratose, chlorophyllose, rounded to quadrate, straight, thick-walled, 6–8 x 9–10 µm; basal areolation pellucid, juxtacostal laminal cells rectangular 9–10 x 20–24 µm, thin-walled; basal marginal laminal cells short-rectangular, 9–10 x 16–18 µm, straight, with slightly thickened transverse and thin lateral walls; costa not clearly defined, only a bubble between ventral and dorsal epidermis, with some sieve tubes and companion cells, stereids absent, disappearing in upper part of leaf.

Discussion

By its muticous leaves with cucullate apices, *Grimmia crassiuscula* can only be confused with *Grimmia unicolor* Hook., and by male plants of *Grimmia tergestina* Tonn. In this last species, male plants have usually leaves with short hair-points, but at high altitudes, plants with muticous leaves have been found frequently. In Europe, such male *G. tergestina* plants were described as *G. limprichtii* Kern and in China as *G. obtusifolia* Gao & Cao. Male plants of *Grimmia tergestina* differ from *G. crassiuscula* by erect, ovate leaves with costa reaching to the summit and predominant unistratose lamina. In *G. crassiuscula*, the leaves are spreading, ovate lanceolate, the costa disappears in mid-leaf, and the lamina is bistratose. However, more important is the difference with *G. unicolor*, the only *Grimmia*, recorded from China, with cucullate leaf tips. The occurrence of *G. unicolor* in China is questionable and so far, the authors have not seen Chinese material of *G. unicolor* that corresponds with the type specimen.

Based on European material, the differences with *G. crassiusculus* are significant. *Grimmia unicolor* is a stenotypic, taxon with branched, 3-5 cm high stems and 1.8 - 2.0 mm long leaves, central strand present. The species grows in dark green to blackish mats on damp, usually, slanting rock walls. The leaves are sheathing with prominent shoulders; above the shoulders, the lamina is narrowly ligulate and the apex is obtuse, the costa is strong in the leaf base, running up to just below the apex, the distal areolation is extremely opaque, 3-4 stratose.

References

Greven, H.C. & Feng Chao. 2014. *Grimmia crassiuscula* **sp. nov.** (Grimmiaceae) from China and its separation from *Grimmia tergestina* and *Grimmia unicolor*. *Herzogia* 27: 137-140.