

**Grimmia maunakeaensis H.C. Greven – Grimmias of the World**  
**Backhuys Publishers, Leiden , p. 150-151. 2003.**

**Type:** U.S.A., Hawaiian Islands, Hawaii, Mauna Kea, 4000-4100 m, hidden under volcanic rock, 28 May 2001. H.C. Greven & M.J.H. Kortselius, H 50. holotype NY; isotypes BISCH, BM, herb. H.C. Greven.

**Decription**

*Grimmia maunakeaensis* grows in grey hoary patches to extremely hoary dense cushions, the leaves are appressed when dry, erectopate to spreading when moist, oblong-lanceolate, keeled above, suddenly contracted to hair-point, the costa is projecting on dorsal side, the hair-points are strong, flattened below, sharply denticulate, the margins are plane to recurved below. The distal areolation is unistratose, only at margins above bistratose, the mid-leaf cells are short-rectangular with incrassate, weakly sinuose walls, the basal marginal cells are rectangular with slightly incrassate smooth walls, the basal juxtacostal cells are rectangular with slightly incrassate smooth walls. The sexuality is dioicous, and capsules on 1.0 mm long, straight setae are occasionally present, they are obloid, 1.0 mm long, smooth, some stomata at base of urn absent, the operculum is obliquely rostrate

**Discussion**

*Grimmia maunakeaensis* (in the protologue as *maunakeaense*) is a peculiar shade-loving Hawaiian endemic, only known from extremely dry lava desert near the summit of the volcanoes Haleakala and Mauna Kea. Here, it grows in deep cracks and fissures, even on the under-surfaces of lava blocks. The plants were usually without fruit, and because on capsule-bearing plants no androecia were found, it is acceptable that the species is dioicous. The dense, white-hoary cushions of *G. maunakeaensis* are comparable with those of *G. plagiopodia* and *G. tergestina*, however, these species are photophytic, have immersed capsules and different leaves. In *G. montana*, extremely hoary dense cushions can sometimes be formed. However, this species is also photophytic, has clearly exserted capsules and the cell pattern in the basal part of the leaf is not uniform. The most commonly occurring Hawaiian *Grimmia* species, *G. longirostris*, is autoicous and usually provided with sporophytes, it is also photophytic, has ovate-lanceolate leaves, the basal part of the leaf is not uniform, the distal part of the leaf is opaque by bistratose cells, the urns are cylindrical, the seta is 2-4 mm long.

### **Specimens examined**

**U.S.A.** Hawain Islands, Hawaii, Mauna Kea, 4000-4100 m, H.C. Greven H 51, H 52, H 53, H 54; Hawaii, Mauna Kea, alt. 2928-4026 m, Vitt 15005, BISCH 479685; Hawaii, Mauna Kea, alt. 13.300 ft, O. & I. Degener & T. Picco No. 31.330, L, dupl. from NY; Hawaii, Maui, Haleakala Nat. Park, White Hill, 3000 m, H.C. Greven H 56, H 57, H 58; Hawaii, Maui, Haleakala Nat. Park, Kalahaku Overlook, W. crater rim, 3107 m, Hoe 3514, BISCH 479740.