

**Grimmia mauiensis H.C. Greven – Grimmias of the World,
Backhuys Publishers, Leiden , p. 148-149. 2003.**

Type: U.S.A., Hawaiian Islands, Maui, Haleakala National Park, White Hill, alt. 3000 m, hidden under volcanic rock, 20 May 2001. H.C. Greven & M.J.H. Kortselius, H 59, holotype, NY; isotypes BISCH, BM, herbarium H.C. Greven.

Description

Grimmia mauiensis grows in glaucous-green, rather loose, not very hoary patches, the leaves are of \pm uniform length throughout stem, incurved to crisped when dry, patent when moist, linear to oblong-lanceolate, sharply keeled above, tapering to acute apex, the costa is projecting on dorsal side, the hair-points are short, frequently curved, smooth to weakly denticulate, the margins are plane to recurved on one side below. The distal areolation is unistratose, only at margins above bistratose, the mid-leaf cells are rectangular with sinuose and incrassate walls, the basal marginal cells are rectangular with thin smooth walls, the basal juxtacostal cells are rectangular with thin smooth walls. The sexuality is autoicous, and capsules on seta which are arcuate when dry and straight when moist are usually present, they are ovoid, 1.0 mm long, with some stomata at base of urn, the operculum is conical, the peristome teeth orange, papillose, split to half way, spores \pm 10.0 μ m, yellowish, smooth

Discussion:

Grimmia mauiensis (in the protologue as *mauiense*) is a peculiar shade-loving Hawaiian endemic, only known from extremely dry lava desert near the summit of the volcanoes Haleakala and Mauna Kea. In this habitat, at first sight no bryophytes occur. However, protected from direct sunlight, hidden under rock, on deeply shaded soil of weathered lava, flat patches of *G. mauiensis* can be found. The species has evolutionary possibly developed from *G. longirostris*, because sporophytes of both species are comparable. However, the gametophytes differ by their only 5 mm high plants, including sporophytes, with incurved linear to oblong lanceolate, crisped leaves, unistratose upper lamina, only margins bistratose, and homogeneous basal areolation with rectangular thin-walled cells. The perigonia are born on 3-4 mm high stems, arising from interwoven mats of rhizoids, from which also stems with perichaetia arise, so the autoicous character is disputable. It is important to remark that *G. longirostris*, which is very common at White Hill and Mauna Kea, growing in open areas at short distance from *G. mauiensis*, expresses

its common habitus, 20-30 mm high stems with perigonia formed on top of 10-15 mm long branches, arising from stems with perichaetia; transitions to *Grimmia mauiensis* were not found.

Specimens examined

U.S.A. Hawain Islands, Maui, Haleakala Nat. Park, White Hill, alt. 2990 m, H.C. Greven H 60; Hawaiian Islands, Hawaii, Mauna Kea, alt. 4000-4100 m, H.C. Greven H 62; Hawaiian Islands, Hawaii, Mauna Kea, alt. 3200 m, Arts No. Haw. 17/01.