NOTE

Grimmia funalis (Schwägr.) Bruch & Schimp. (Grimmiaceae; Bryophyta) from India

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ABSTRACT: *Grimmia funalis* (Schwägr.) Bruch & Schimp. (Grimmiaceae) is reported for the first time from India.

KEY WORDS: *Grimmia funalis*, Grimmiaceae, new record, Western Ghats, India.

INTRODUCTION

Grimmia, originally described by Hedwig in 1801, is the largest genus in the family Grimmiaceae and is commonly known as dry rock moss. The genus *Grimmia* is considered to comprise of 71 accepted species. It is especially diverse at high altitudes in the Northern Hemisphere. The southern hemisphere has relatively low *Grimmia* diversity (Munoz & Pando, 2000). In India the genus is represented by eight species *viz*., *G. apophysata* Hamp. ex Gangulee, *G. ovalis* (Hedw.) Lindb., *G. laevigata* (Brid.) Brid., *G. reduncа* Wils. ex Mitt., *G. donniana* Sm., *G. elongata* Kaulfuss, *G. khasiana* Mitt. and *G. macrotheca* Mitt., distributed mainly in the Western and Eastern Himalyas. It was earlier known from Europe, Australia, North America, North Africa, China, Japan and Eastern Nepal (Gangulee, 1969). We could collect *Grimmia funalis*, during our recent survey in the evergreen forests of Parambikulam Tiger Reserve in the Western Ghats of Palakkad district of Kerala state. It has not been recorded earlier from Peninsular India. The present collection of *G. funalis* is hence, a record of its extended distribution range to India. It also turns out to be a new generic record for Peninsular India. Record of this species is of phytogeographical significance, hence reported with photographs. The voucher specimens are deposited in the Calicut University Herbarium (CALI).

TAXONOMIC TREATMENTS

Grimmia funalis (Schwägr.) Bruch & Schimp., Bryol. Europ. 3: 119, fig. 247. 1845. *Trichostomum funale* Schwägr., Sp. Musc. Frond. Suppl. 1(1): 150, plate 37. 1811. *Campylopus funalis* (Schwägr.) Brid., Mant. Musc.: 75. 1819. *Grimmia spiralis* Hook. in Grev., Scott. Crypt. Fl., 4: 203.1826. *Dryptodon funalis* (Schwägr.) Brid., Bryol. Univ. 1: 770.1827. *D. spiralis* (Hook.) Brid., Bryol. Univ. 1: 771. 1827. *Racomitrium funale* (Schwägr.) Hueb., Musc. Germ. 200. 1833. *Grimmia imberbis* Kindb., Bot. Not. 1882: 186. 1882. *nom. illeg*. *Grimmia calvescens* Kindb., Forh. Vid. Selsk. Christiania, 111(6): 19. 1888. *G. hornii* Stirt., Scott. Natural. 10: 218. 1890.

Plants growing in dense, usually hemispherical cushions, seen as cluster with spirally twisted or string like leaves; single shoots, greyish green. Stem 2-5 cm, central strand present. Leaves usually spirally arranged and appressed to stem when dry, patent when moist, lanceolate, 0.5-1.5 × 0.2-0.5 mm, keeled, margins plane or recurved on one side, in female plants awns long and hyaline, tip of the awns in some leaves pointed and entire, forked in some leaves, in male plants very short to absent, costa weak proximally; basal juxtacostal laminal cells elongate, 55-60 × 20-28 µm, thick-walled; basal marginal cells short-rectangular, 40-45 × 22-28 µm, hyaline; median laminal cells short-rectangular, 25-35 × 15-20 µm, extremely sinuose, thick-walled; distal laminal cells 2-stratose. Seta arcuate, 1.5-2 mm. Capsule exerted, yellowish green, obovoid, weakly striate, concealed in awns, peristome teeth orange, split distally, papillose. Calyptra mitrate. The present collection is female plants (Plate 1).

Grimmia funalis (Schwägr.) Bruch & Schimp. is frequently misidentified because it is extremely variable in height, colour, and length of the awns. In optimal conditions, it forms extremely dense, greyish green cushions that break up easily into clusters and straight single plants. A distinctive feature is the string-like appearance of the dried-up shoots, which results from the spiral twisting of the leaves around the stem. The mid leaf areolation with yellowish, short-rectangular,

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Plate 1. A: Habit of *Grimmia funalis*. B: Leaf. C: Dome shaped leaf tip. D: Forked leaf tip. E: Basal maginal hyaline cells. F: Juxtacostal laminal cells. G: Median cells.

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very thick, and sinuose cell walls is characteristic. The formerly recognized taxa such as *G. calvescens* Kindb., *G. imberbis* Lindb. ex H. Moller, and *G. ryanii* Limp. are actually male plants of *G. funalis* (Munoz & Pando, 2000). They grow in separate cushions with muticous to short-awned leaves, deviating greatly from the much taller, long-awned female plants. These male plants might be confused with *G. elongate* Kaulf., which frequently grows in the same habitat, or with *G. caespiticia* (Bridel) Juratzka. However, in *G. elongata* Kaulf. the basal cells are pellucid, straight, and thin-walled or only slightly incrassate. In *G. caespiticia* (Bridel) Juratzka. the basal cells are shorter, tending to be quadrate to short-rectangular, and the leaf apex is cucullate (Munoz & Pando, 2000).

Specimen examined: On rocky patches in grassland. India, Kerala, Palakkad district, Parambikulam Tiger Reserve (1400 m) *MCN 106826* (CALI).

Distribution: It is distributed in Nepal, China, Japan, Europe, North Africa, North America and Australia. Gangulee (1969) reported this species from Eastern Nepal not from Indian region.

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印度的乾岩紫萼苔

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摘要：本文首次報導印度的新紀錄種－乾岩紫萼苔 (*Grimmia funalis* (Schwägr.) Bruch & Schimp.)。

關鍵詞：乾岩紫萼苔、紫萼苔科、新紀錄種、西高止山、印度。

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