

On the Occurrence of *Plagiobryum zieri* (Dicks. ex Hedw.) Lindb. in Western Himalaya

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ABSTRACT

Plagiobryum zieri (Dicks. ex Hedw.) Lindb. inhabitant of higher altitude has been recorded for the first time from Uttarkashi, Uttarakhand of the Western Himalaya earlier known from Sikkim (Eastern Himalaya). About 25 species of *Plagiobryum* are known worldwide. A morpho-taxonomic account of Western Himalayan plants of *Plagiobryum zieri* is provided.

Keywords: *Plagiobryum zieri*, Govind Wildlife Sanctuary, Western Himalaya.

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INTRODUCTION

Genus *Plagiobryum* Lindb. was established by Lindberg (Oefvers K. Vetenskakad Foerh. 20: 606, 1863). The genus was earlier placed in family Bryaceae but Spence (2014) proposed its transfer under Family Rhodobryaceae. Gangulee (1974-77) has described *Plagiobryum zieri* (Dicks. ex Hedw.) Lindb. from Sikkim, while Chopra (1975) described *P. demissum* (Hook.) Lindb. and *P. zieri* from Sikkim. Both the species are found at higher altitude. Shaw (1982) reported that *P. zieri* is rare in the Northern Hemisphere but widely distributed in other areas. The genus *Plagiobryum* is very close to *Bryum* in having elongated distal leaf cells and quadrate proximal cells. Pedersen and Hedenäs (2005) transferred 15 species of *Bryum* viz., *B. algovicum* Sendtn ex Müll. Hal., *B. archangelicum* Bruch. & Schimp, *B. bimum* (Schreb.) Turner, *B. capillare* Hedw., *B. cyclophyllum* (Schwägr.) Bruch & Schimp., *B. donianum* Grev., *B. lisa* De Not., *B. meesioides* Kindb., *B. orthothecium* Cardot & Broth., *B. pallens* Sw., *B. palleescens* Schwägr., *B. pseudotriquetrum* (Hedw.) P. Gaertn. et al., *B. purpurascens* (R. Br.) Bruch & Schimp., *B. uliginosum* (Brid.) Bruch & Schimp. and *B. wrightii* Sull. to *Plagiobryum* on the basis of Molecular data and morphology. According to Plant list there are about 25 species of *Plagiobryum* worldwide, while about eight species of *Plagiobryum* are known from India in the present state of our knowledge. During recent investigation on the bryoflora of Govind Wildlife Sanctuary, Uttarkashi, Uttarakhand, *P. zieri* has been reported for the first time from Western Himalaya. Recently, Sahu and Asthana (2016) have also provided an account of mosses of GWLS, Uttarkashi (Uttarakhand).

MATERIALS AND METHODS

Plant specimens have been collected from Obra Jeri, GWLS (Map 1), Uttarkashi, Uttarakhand. The specimens have been deposited in the Bryophyte Herbarium, CSIR-National Botanical Research Institute, Lucknow (LWG).

TAXONOMIC DESCRIPTION

Plagiobryum zieri (Dicks. ex Hedw.) Lindb. in Oefv. K. Vet. Ak. Foerh., 19: 606 (1863). (Fig. 1).

Plants silvery green to white above with pink tinge below, erect, 8-10 mm long, julaceous with several sub floral innovation, highly branched, reddish brown rhizoids present on stem

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surface. Stem in cross section 200-208 µm wide, cortical cells smaller and slightly thicker than medullary cells polygonal, 20-24 × 8-12 µm wide; medullary cells polygonal 20-44 × 20-28 µm wide. Leaf marginal cells narrower. Leaves appressed to the stem when moist, closely imbricate, broadly lanceolate, concave, base decurrent, 1-1.1 mm long and 0.6-0.8 mm wide, upper leaves larger, costa excurrent or ending below the apex,



Map 1: Map showing distribution of *Plagiobryum zieri* (Dicks. ex Hedw.) Lindb. in India.

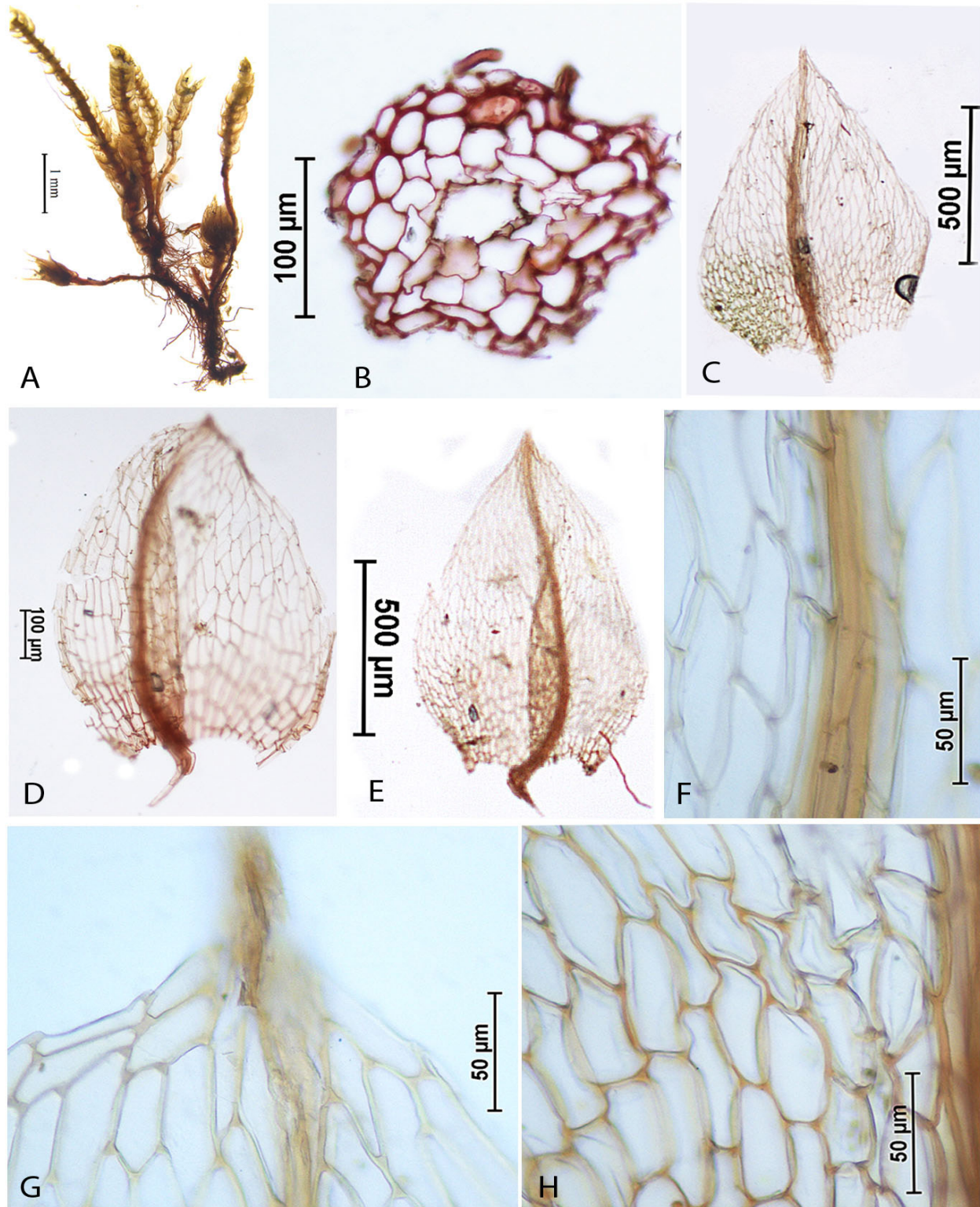


Fig. 1. *Plagiobryum zieri* (Dicks. ex Hedw.) Lindb.: A: Habit; B: Cross section of stem; C-E: Leaves; F: Median Leaf cells; G: Apical Leaf cells; H: Basal Leaf cells.

40 µm wide at base, margin entire; apical leaf cells rhomboidal to rectangular, 80-120 µm×16-28 µm wide; median leaf cells rhomboidal, 60-80×16-24 µm, basal leaf cells rectangular, 40-68×16-28 µm. Sporophyte not seen.

A comparative study of *Plagiobryum zieri* with the *P. demissum* has revealed that *Plagiobryum zieri* is distinct from *P. demissum* by elongated leaf cells (60-120×4-12 µm) and silver green colour of plants with pink tinge.

Specimens examined

India: Uttarakhand, Uttarkashi, GWLS, Obra Jeri, 16-10-2016, 2950 m, on soil, Leg. Dayanidhi Gupta, 306371A (LWG).

Distribution

India (Sikkim) British Isles, Caucasus, Central Asia, China, Europe, Green Island and Iceland, Guatemala, Korea, Japan, North Africa, North America, Siberia (Nyholm, 1958; Chopra, 1975; Smith, 1978; Gangulee, 1974-77; Crum and Anderson, 1981; Shaw, 1982).

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