



Research Article



Daltonia decolyi Gangulee: New record for Western Ghats, South India

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Abstract

The endemic species *Daltonia decolyi* Gangulee has only been documented from Darjeeling in the eastern Himalayas. It has been recorded for the first time during the current investigation from the Doddabetta region in the Nilgiri Hills (Western Ghats). One of the 34 hot spots for biodiversity in the world, the Western Ghats of India are situated in eight of the warmest "Hot Spots" on the planet. The corticolous, glossy plants, oblong, late leaves with a prominent border, and an erect capsule with double peristome teeth—the endostome and exostome being roughly equal—are the characteristics of this species. The base was bordered with calyptra.

Keywords: Bryophyta, Daltoniaceae, *Daltonia decolyi*, Corticolous, Western Ghats.

1. Introduction

One of the 34 global hotspots for biodiversity, the Western Ghats of India are situated amidst eight of the world's hottest "Hot Spots"¹. The six Indian states of Gujarat, Maharashtra, Goa, Karnataka, Tamil Nadu, and Kerala are where they originate and culminate, with Kanya Kumari marking the tip of the Indian peninsula. Part of peninsular India, the Western Ghats account for the greatest proportion of indigenous flora in India (about 33%) and the biggest source of biodiversity in the country, second only to the eastern Himalaya.

The tiny family Daltoniaceae consists of two genera, *Actinodontium* and *Daltonia*, each with 14 species that are primarily found in the eastern Himalayan region². There are 11 species of *Daltonia* in India^{2, 3}. Ten of these species were restricted to the eastern Himalaya, but two species—*Daltonia marginata*⁴ and *D. reticulata*⁵ were reported from south India. Only one report of the endemic species *Daltonia decolyi* has come from Darjeeling thus far⁶. It is first recorded in the current study from the Doddabetta location in the Nilgiri Hills, which indicates a wide distribution throughout the nation, spanning from north-east India to south India.

2. Materials and Methods

The Nilgiri Hills' Ootacamund (Dodabetta) is where the plants were gathered. Under a Stereoscopic Zoom Binocular Microscope (Carl Zeiss, M140, Germany) and a Leica Binocular Compound Microscope (LEICA DM LB2), the plants (dried herbarium specimens) were examined closely. Temporary slides were made for anatomy and exterior morphology research in 70% aqueous glycerin. A Nikon Camera Lucida at the appropriate magnifications and an Olympus OIC 66116 light microscope were used to create the line drawing illustrations. An oculometer and a stage micrometer were used to collect measurements.

2.1 Taxonomic Description:

Daltonia decolyi Gangulee, Mosses E. India 6: 1473. 1977.

(Plate 1: Figs. 1-15)

Plants yellow green, pleurocarpous, epiphytic, 0.5-1.0 cm long and 1-2 mm wide with leaves; stem circular in cross-section, 0.19-0.22 mm in diameter; one row of exterior cortical cells somewhat copious walled, small, brown in color; inner cortical cells thin walled, large, 17-40 x 19-25 µm; central strand lacking; leaves compactly arranged on stem, oblong-lanceolate, 2.5-4.0 x 0.5-0.9 mm, apex acute; costa single, prominent, covering about 2/3 of leaf length; leaf-cells rhomboidal, 20-45 x 7-11 µm at apex; middle cells 12-22 x 7-11 µm; 3-4 rows of marginal cells elongated, forming distinct border, 56-80 x 3-7 µm; basal cells rectangular, 20-75 x 11-19 µm. Seta upright, scabrous at tip, 6-8 mm long; capsule erect, ovate 1.7-2.1 x 0.5-0.6 mm; peristome teeth double; endostome more or less equal to exostome; calyptra fringed at base; spores 18-24 µm, finely papillose.

Habitat: Plants epiphytic, developing on the bark association with the *Macromitrium hymenostomum*, *Claopodium assuregens*, *Syntrichia fragilis* and *Bryum argenteum*.

Range: Endemic to India⁶.

Distribution in India: Eastern Himalaya: West Bengal: Darjeeling⁴, South India: Tamil Nadu (Nilgiri hills: Ootacamund).

Specimen examined: South India: Tamil Nadu, Nilgiri hills, Ootacamund: Dodabetta, alt. ca. 2600 m, S. C. Srivastava & Party, 7 January, 2006, 18590/06, 18602/06 (LWU).

3. Discussion

Daltonia decolyi is an endemic species that is reported so far from Darjeeling only⁴. In the present study, it is reported for the first time from the Doddabetta locality in the Nilgiri Hills. It is characterized by an oblong lanceolate leaf with a single costa reaching up to 2/3 of the leaf. Capsules are erect with fringed calyptra.

4. Conclusion

Based on the findings of the current investigation, *Daltonia decolyi* Gangulee is being registered as a new record for the Western Ghats, South India.

5. Acknowledgements

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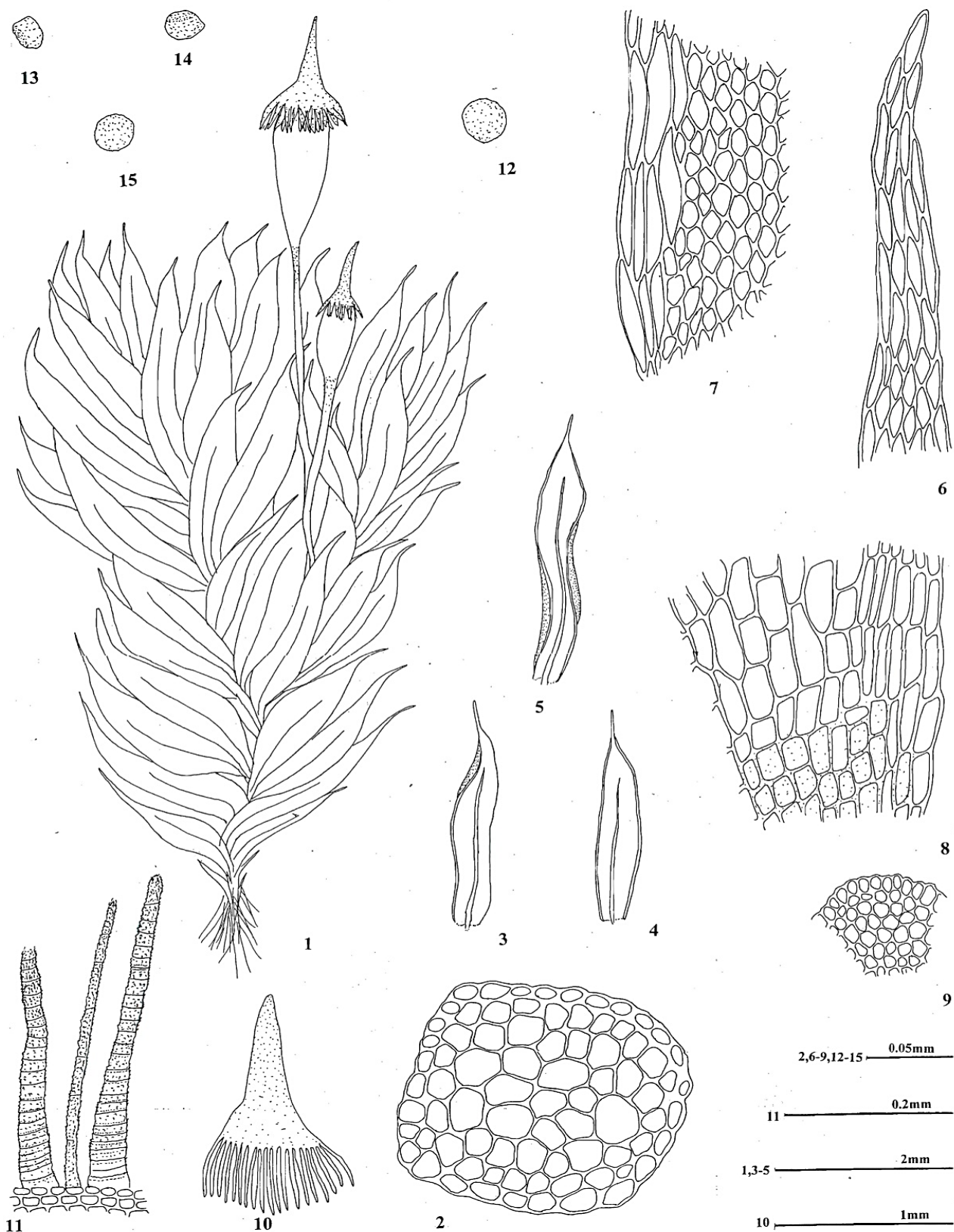


Plate 1; Figs. 1-15. *Daltonia decolyi* Gangulee: 1. Habit of plant. 2. Cross-section of stem. 3-5. Leaves. 6. Apical leaf-cells. 7. Median leaf-cells. 8. Basal leaf-cells. 9. Cross-section of seta. 10. Calyptra. 11. Peristome teeth. 12-15. Spores. All figures drawn from 18590/06 (LWU).

Conflicts of interest

Not Applicable.

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