



RESEARCH COMMUNICATION

Asystasia dalzelliana var. *alba* (Acanthaceae), a new variety from southern Western Ghats of Kerala, India

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Abstract

Asystasia dalzelliana var. *alba*, a new variety of the family Acanthaceae is described and illustrated from the southern Western Ghats of Kerala, India. The new variety differs from the typical variety with respect to color of flowers and lack of black blue bands on the anthers. Critical notes along with conservation status of the new variety are provided.

Keywords

Anchal forest range, capsule, polygonal seeds, whitish stamens

Introduction

The genus *Asystasia* Blume (1) belonging to the family Acanthaceae is represented by more than 70 species, distributed in the Old World (2). The genus is distributed chiefly in India and Africa (3). It includes perennial herbs and under shrubs. At present, 9 species and 2 varieties of the genus are known to occur in India of which 6 species are reported from Kerala (4, 5).

As a part of ongoing research programme of the first author, extensive field explorations were carried out in various districts of the state of Kerala. During one such field exploration from May 2020 to August 2021, authors collected specimens from the outskirts of Anchal forest range of Kollam district of Kerala. A total of 30 specimens were examined from various populations distributed in the locality. After critical analysis of *Asystasia* specimens at BSI, CAL and TBGT [acronyms after Thiers (6)] and perusal of relevant literature (5, 7, 8-10), revealed that the material represents a hitherto unrecognized variety of *A. dalzelliana*. The same is described here with illustration.

Materials and Methods

The present investigation is based on field surveys, examination of herbarium specimens at BSI, CAL and TBGT [acronyms after Thiers (6)] and literature consultation. The geographical distribution map was prepared using QGIS 3.24 version.

Taxonomic Treatment

Asystasia dalzelliana Santapau in Kew Bull. 3(2): 276. 1948 var. *alba*. V.S.A. Kumar & V.S. Deepalekshmi, var. *nov.*, differing from *dalzelliana* principally in the whitish corolla and lack of black blue bands on the anthers (Table 1).

Table 1. Comparison between *Asystasia dalzelliana* var. *alba* and *A. dalzelliana*

Charac- ters	<i>Asystasia dalzelliana</i> var. <i>alba</i>	<i>A. dalzelliana</i>
Flower	1.5–1.9 cm, white with faint violet shade on lower middle lobe	2–2.5 cm, lilac with dark violet blotches on lower middle lobe
Anther	White, no black blue bands	White with vertical black-blue bands

Type

INDIA, Kerala, Anchal, Kollam District, V.S. Deepalekshmi & V.S. Anil Kumar 7725 (holotype UCBD!; isotypes TBGT!, CALI!)

Erect diffuse herbs or undershrubs 40–50 cm high. Stem terete branched, glabrous. Leaves opposite, simple, petiolate, exstipulate; lamina ovate to elliptic, 3.5–11 X 3–6.2 cm, base cuneate, apex acuminate, entire, pubescent along adaxial surface of lamina. Petiole terete, green, 2–2.5 cm long, slightly pubescent. Inflorescence 9–12-flowered, 1-sided raceme, peduncle green, 5–6.4 cm long terete. Flower 1.5–1.9 cm, white with faint violet shade on lower middle lip. Pedicel green, 0.2 cm long. Bracts 3, ciliate, minute, middle bract 0.2 cm, lateral bracts 0.1 cm. Bracteole absent. Sepals 5, valvate, free, 0.7–0.9 X 0.1–0.2 cm, acute, adnate to the base. Corolla funnel-shaped 1.5–1.9 X 0.5–0.7 cm, lobes 5, connate to the base up to half of the length forming a tube, pubescent on outer surface, bilabiate; lobes rounded and curved outwards. Stamens 4, included, oblong-lanceolate epipetalous, connate in pairs, 0.6–0.8 cm long, filaments white, glabrous; anthers basifixed, white, ovoid, cells loosely packed along the slits. Gynoecium 1–1.3 cm, stigma smooth, not lobed, style white, 0.8–1 cm. Ovary green, densely pubescent with non-glandular hairs. Fruit bilocular capsule, pubescent, clavate, apex acuminate, 2.6–2.8 X 0.3–0.4 cm, each locule with 2 seeds. Seeds brown, polygonal, ca 0.5 X 0.3 cm, moderately irregular surface. Funicle distinct (Fig. 1, 2).

Habitat

It grows in forest outskirts under shade, with a very limited number of individuals. Each population spreads over an area of nearly 4–5 m²; alt. 100 m.

Phenology

July to November

Distribution

Asystasia dalzelliana var. *alba* is known only from the type locality, at about 100 m elevation. It prefers moist shady habitat and usually grows associated with *Chromolaena odorata*, *Centrosema pubescens*, *Dicanthelium acuminatum* and *Mimosa pudica* (Fig. 3).

Conservation assessment

Five populations have been observed, each with about 9 mature individuals, occupying an area of less than 1 km². The seedlings are very few and prone to severe grazing and ground clearing. Following the IUCN Red list criteria (11), *Asystasia dalzelliana* var. *alba* is assessed as Critically En-

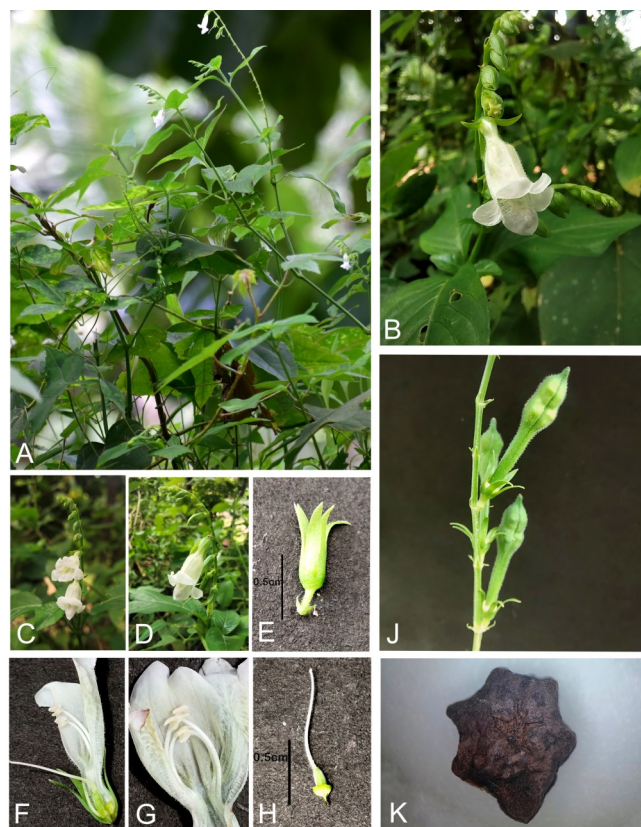


Fig. 1. *Asystasia dalzelliana* var. *alba*. A. habitat, B. inflorescence, C. corolla front view, D. inflorescence, E. sepal, F. L.S of flower, G. opened corolla, H. gynoecium, J. fruit, K. seed. Scale bar. E, H = 1cm.

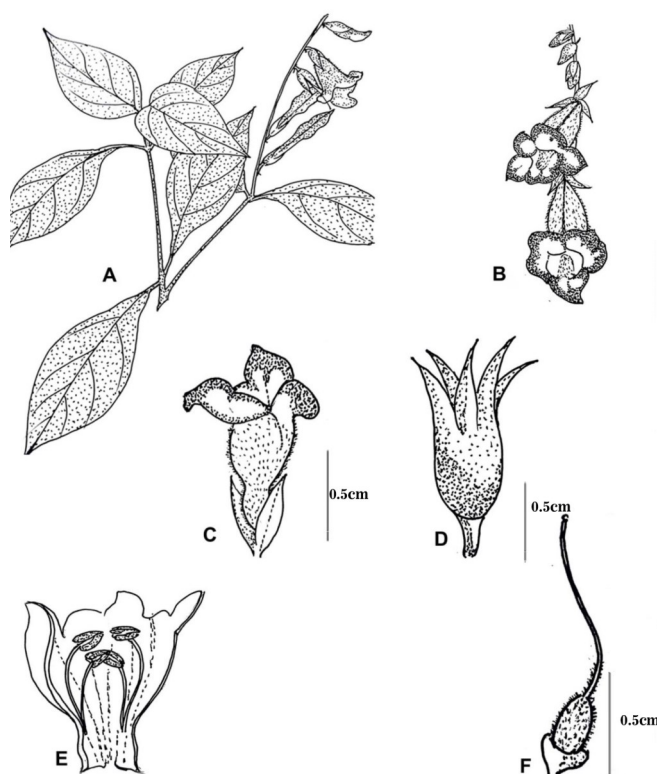


Fig. 2. *Asystasia dalzelliana* var. *alba*. A. habit, B. inflorescence, C. flower, D. sepal, E. opened corolla, F. gynoecium

dangered (CR) in the category [B2a, b(iv)].

Etymology

The epithet corresponds to the color of flowers.

KOLLAM DISTRICT

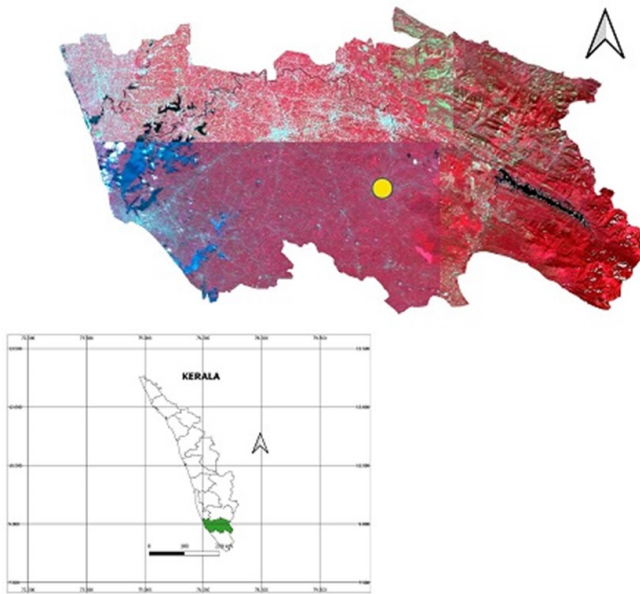


Fig. 3. Distribution of *Asystasia dalzelliana* var. *alba* in Kollam district, Kerala.

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Authors contributions

The authors contributed equally to the present work.

Compliance with ethical standards

Conflict of interest: Authors do not have any conflict of interests to declare.

Ethical issues: None

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