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Narrow endemic and critically endangered species of *Ceropegia omissa* H. Huber from the Agasthyamalai Biosphere Reserve, Southern Western Ghats, India

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Abstract
The present paper provides taxonomy of *Ceropegia omissa*, which is rare species distributed in Agastymalai Biosphere Reserve collected from Upper Kodayar of Tirunelveli district, Tamil Nadu. India. This was collected from Upper Kodayar regions in the Kalakad Hills, highlighting the need to conserve the narrow endemic plant. A detailed description along with phenology, distribution, habitats and photo plate are provided.

Keywords: Agasthyamalai Biosphere Reserve, *Ceropegia*, narrow endemic, Rare, Tamil Nadu

Introduction

The Agasthyamalai Biosphere Reserve (ABR) lies at the southernmost tip of Western Ghats, between 8° 8' to 9° 10' N and 76° 52' to 77° 34' E spreading over the states of Tamil Nadu and Kerala. The Kerala part of Agasthyamalai was first declared as biosphere reserve by the Government of India on 12th November 2001 and its boundaries were later extended to Tamil Nadu on 4th August 2005. The ABR spreads across the districts of Tirunelveli and Kanniyakumari in Tamil Nadu and Thiruvananthapuram, Kollam and Pathanamthitta in Kerala. Of the total reported area of 5,432.72 km^2 of BRs, 2,561.72 km^2 is reported in Tamil Nadu, and 2,871 km^2 is reported from Kerala. The concentration of endemic species is much richer in this centre when compared to other centers of endemism in Western Ghats.

Ceropegia L. is one of the dominant genus of tribe Ceropegieae within the family Apocyanaceae. It contains 473 species distributed in Africa to Northeast Australia (POWO, 2026) [11]. In India, the genus *Ceropegia* predominantly disseminated in peninsular India, exclusively in the Western Ghats and Eastern Ghats and few in the northern and central part of India (Kambale *et al*., 2014) [7]. It is represented by 53 species, 2 subspecies and 6 varieties, of which 37 are endemic to Peninsular India (Ahmedullah & Nayar, 1987) [1]. The major habitats of the genus *Ceropegia* in India include rocky localities, hill slopes, grasslands and shola margins; some of them are dry localities (Kambale & Yadav, 2019) [8]. In India, there are 61 taxa, of which 44 taxa are native to the country (Kambale and Yadav, 2019) [8]. During our field explorations in October 2022 and November 2023, the interesting species of *Ceropegia* were collected from rocky surface. After critical study and scrutiny of available literature, the type specimens were examined after that the species was identified as *Ceropegia omissa*. It is a narrow endemic plant species of the Southern Western Ghats and is also classified as a critically endangered plant species (Prasad *et al*., 2017) [12]. The voucher specimens were kept in the Meenakshi Herbarium, Saraswathi Narayanan College (SNC), Meenakshi Herbarium (MH), Madurai. Tamil Nadu. India.

Taxonomic Treatment

Ceropegia omissa H. Huber, Mem. Soc. Brot. 12: 67. 1957; Ansari, Fasc. Fl. India 16: 27, f. 15. 1984; M.P. Nayar & Sastry, Red Data Book Indian Pl. 1: 65. 1987; S.R. Sriniv. in Henry & al., Fl. Tamil Nadu 2: 83. 1987; A.P. Jagtap & N.P. Singh, Fasc. Fl. India 24: 235. 1999; Karthik. & al., Fl. Pl. India: 163. 2009; Prasad & al. on the verge of extinction, *Cur. Sci.* 112(11): 2189. 2017; Pull. & al., Monogr. *Brachystelma* & *Ceropegia*: 191. 2019; Kamble & Yadav, Tax. Rev. *Ceropegia Rheedea* 29(1): 57. 2019; Jayanthi & al. in A.A. Mao & S.S. Dash, Fl. Pl. India Annot. Checkl. Dicot. 1: 113. 2020; D. Naras. and S.J. Irwin, Fl. Pl. Tamil Nadu: 286. 2021; Jayanthi & A.A. Mao in A.A. Mao & al., Fl. India 17: 91. 2022. *Ceropegia intermedia* Wight var. *wightii* Hook.f., Fl. Brit. India 4: 71. 1883; Gamble, Fl. Madras 5: 858. 1923. **(Plate 1)**

Lectotype: INDIA, Travancore, Courtallum, 1835, *R. Wight* s.n. (K000894272 image!).

Twiner or climber, non-tuberous; stems slender, branched or not, glabrous. Leaves simple, opposite, ovate to lanceolate or linear to lanceolate or oblanceolate, 2–8 × 1–3 cm, acute at base, entire at margins, acuminate at apex, glabrous except veins; veins obscure on both surfaces, hairy when young, glabrous at maturity; petioles 5–10 mm long. Inflorescence axillary, rarely terminal cymose; peduncles slender, 0.5–1 mm long, glabrous. Bract linear, 1–1.5 mm long, entire at margins, acute at apex, glabrous. Calyx 5, deeply 5-lobed; lobes subulate, 2–3 × 0.4–0.5 mm, acute at apex, glabrous, greenish. Corolla 3–3.5 cm long; tubular portion 1.5–2 cm long, slightly curved, inflated at base, 4–8 mm long, corolla lobes oblong to elliptic or oblong to ovate, 1–1.2 cm long, free near base and connate at tip forming dome-shape, glabrous; outer corona bowl-shaped, 5-lobed; lobes further 2-lobed; lobules deltoid or linear, erect, 0.4–0.6 mm long, ciliate, pale yellow with pink strikes; inner corona lobes erect, alternate with outer corona, linear, 2.5–3 mm long, glabrous, whitish-cream. Pollinia yellow, ovate to elliptic, 1–1.2 mm long. Follicles in pairs, slender, 6–7 cm long, glabrous. Seeds flat in immature stage.

Flowering & Fruiting: September–December.
Conservation Status: Critically Endangered (EN) (Prasad *et al*., 2017) [12].

Habitat & Ecology: Rocky areas, 1450–1900 m elevation in associated with *Aeschynanthus perrottetii* A. DC., *Aristolochia indica* L., *Cyperus* sp., *Emilia ramulosa* Gamble, *Gynura travancorica* W.W. Sm., *Henckelia incana* (Vahl) Spreng., *Impatiens travancorica* Bedd., *Senecio ludens* C.B. Clarke. In Tamil Nadu, during present study around 3–5 individuals were observed in Upper Kodayar of Tirunelveli District.

Distribution: INDIA: Kerala and Tamil Nadu. TAMIL NADU: Tenkasi and Tirunelveli–Agasthyamalai Biosphere Reserve.

Specimens examined: INDIA, Tamil Nadu: Tenkasi District, Coutrallum, 1835, *R. Wight* 509 (K!); Tirunelveli District, Agasthyamalai Hills, 1489 m, 30.11.2014, K. Prasad 006442 (BSID!); Sengalteri, 18.09.1914, s.coll., 10875 (MH!); 24.09.1916, s.coll., 13540; 26.09.1916, s.coll., 13643 (MH!); Upper Kodayar, 1800 m, 15.11.2023, Packiaraj *et al. 602* (SNC-MH-Meenakshi Herbarium).

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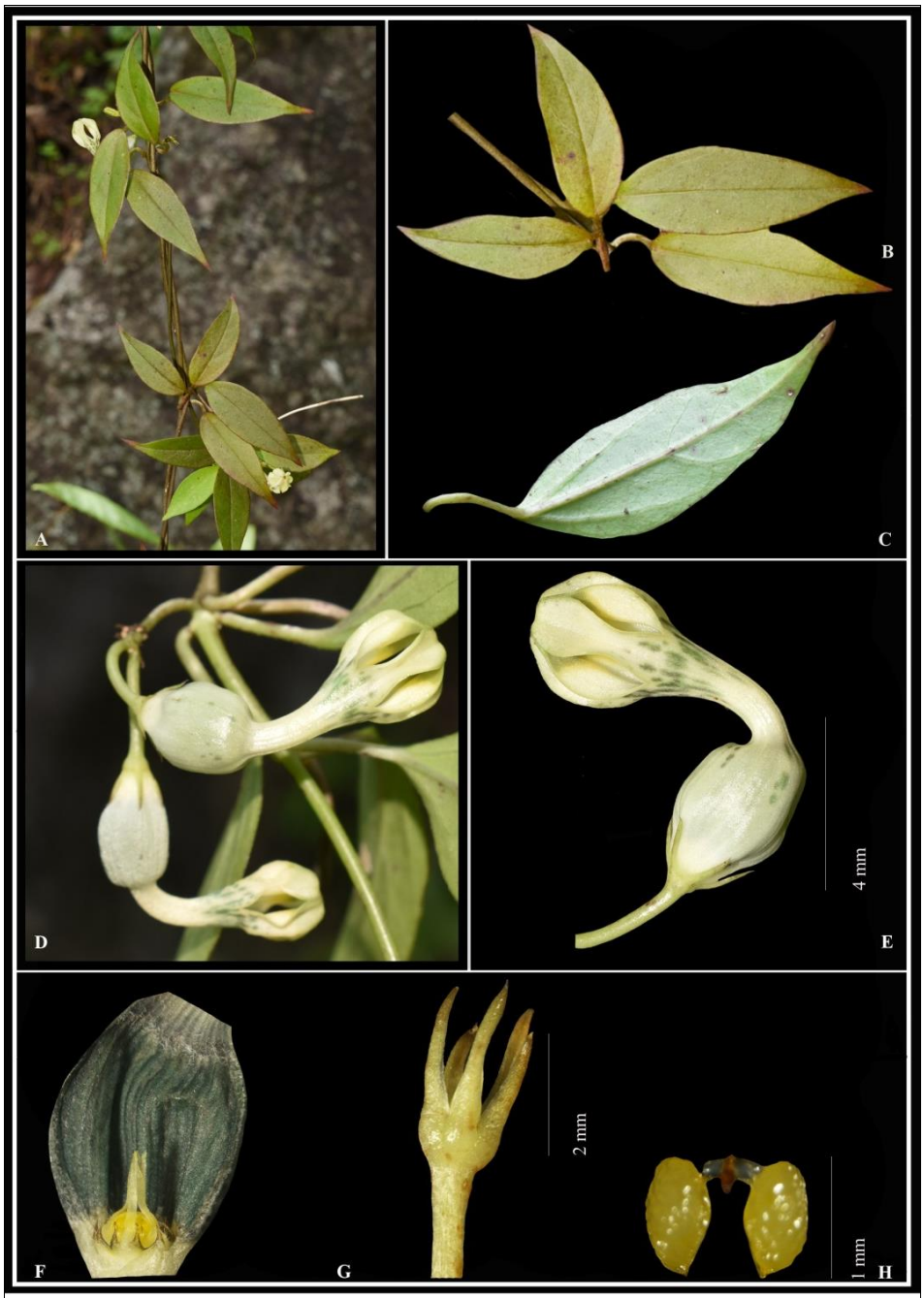

Plate 1: Ceropegia omissa H. Huber: **A. Habit; B.** Leaf adaxial surface view; **C.** Leaf adaxial surface view; **D. & E.** Flower **F.** Corolla spilit open; **G.** Calyx; **H.** Pollinia.

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