

Eriocaulon tuberiferum (Eriocaulaceae) a new record for south India

C. N. Sunil¹, K. M. Prabhukumar²✉, V. V. Naveen Kumar¹, V. P. Thomas³,
R. Jagadeesan¹ and Indira Balachandran¹

¹Post Graduate and Research Department of Botany, S.N.M. College, Maliankara, Ernakulam, Kerala - 683516, India

²Centre for Medicinal Plants Research (CMPR), Arya Vaidya Sala, Kottakkal, Malappuram, Kerala - 676503, India

³Department of Botany, Catholicate College, Pathanamthitta, Kerala - 689645, India

✉Corresponding author: prabhumkrishna@gmail.com

इरियोकोलोन ट्यूबेरिफेरम (इरियोकोलेसी) दक्षिण भारत के लिये एक नया पादप अभिलेख

सी. एन. सुनील, के. एम. प्रभुकुमार, वी. वी. नवीन कुमार,
वी. पी. थॉमस, आर. जगदीशन एवं इंदिरा बालाचंद्रन

सारांश

इ. ट्यूबेरिफेरम को दक्षिण भारत से प्रथम बार अभिलेखित किया गया है जिसका विस्तृत वर्णन, वितरण, चित्रण रंगीन छायाचित्रों के साथ प्रस्तुत किया गया है।

ABSTRACT

E. tuberiferum is reported here for the first time from south India with a detailed description, distribution, illustration and colour photographs.

Keywords: New record, South India.

INTRODUCTION

The genus *Eriocaulon* L. (Eriocaulaceae) is distributed mainly in the tropical and warm temperate regions of the world with about 485 species (Govaerts, 2014). In India, the genus is represented by 97 species with a high percentage of endemism in Peninsular India (Ansari & Balakrishnan, 2009; Sunil & Naveen, 2015; Manudev & al., 2015).

During a floristic exploration in the Western Ghats of India, the present authors collected specimens of

a tuberiferous *Eriocaulon* from the Elivalmala hills of Muthikulam forest in Palakkad district and Shoolamudi hills of Ernakulam district of Kerala. A critical study with herbarium specimens, available literature and comments from experts helped us to conclude that the identity of the collected specimens was *E. tuberiferum* Kulkarni & Desai, which is being considered as endemic species of Maharashtra (Ansari & Balakrishnan, 2009). Hence the present collection of this species from Kerala is an addition to the flora of south India.

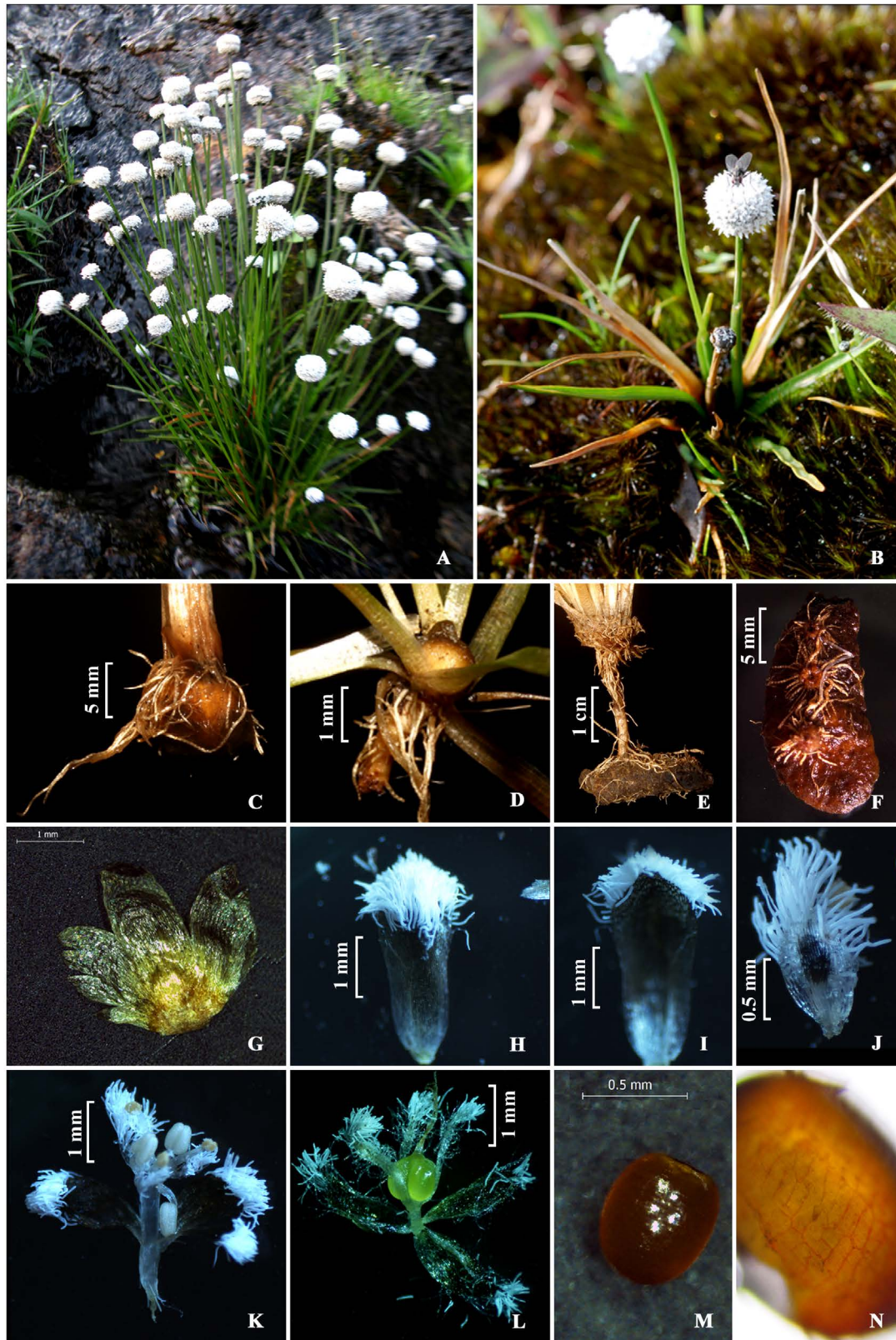


Fig. 1. *Eriocaulon tuberiferum* A. & B. Habit; C. Basal tuber; D. Axillary tuber; E. Rootstock tuber; F. Tuber with 3 scars of rootstock; G. Involutal bract; H. Floralbract-dorsal view; I. Floral bract-ventral view; J. Male flower; K. Male petal lobe; L. Female flower; M. Seed; N. A portion of seed showing seed coat cells.

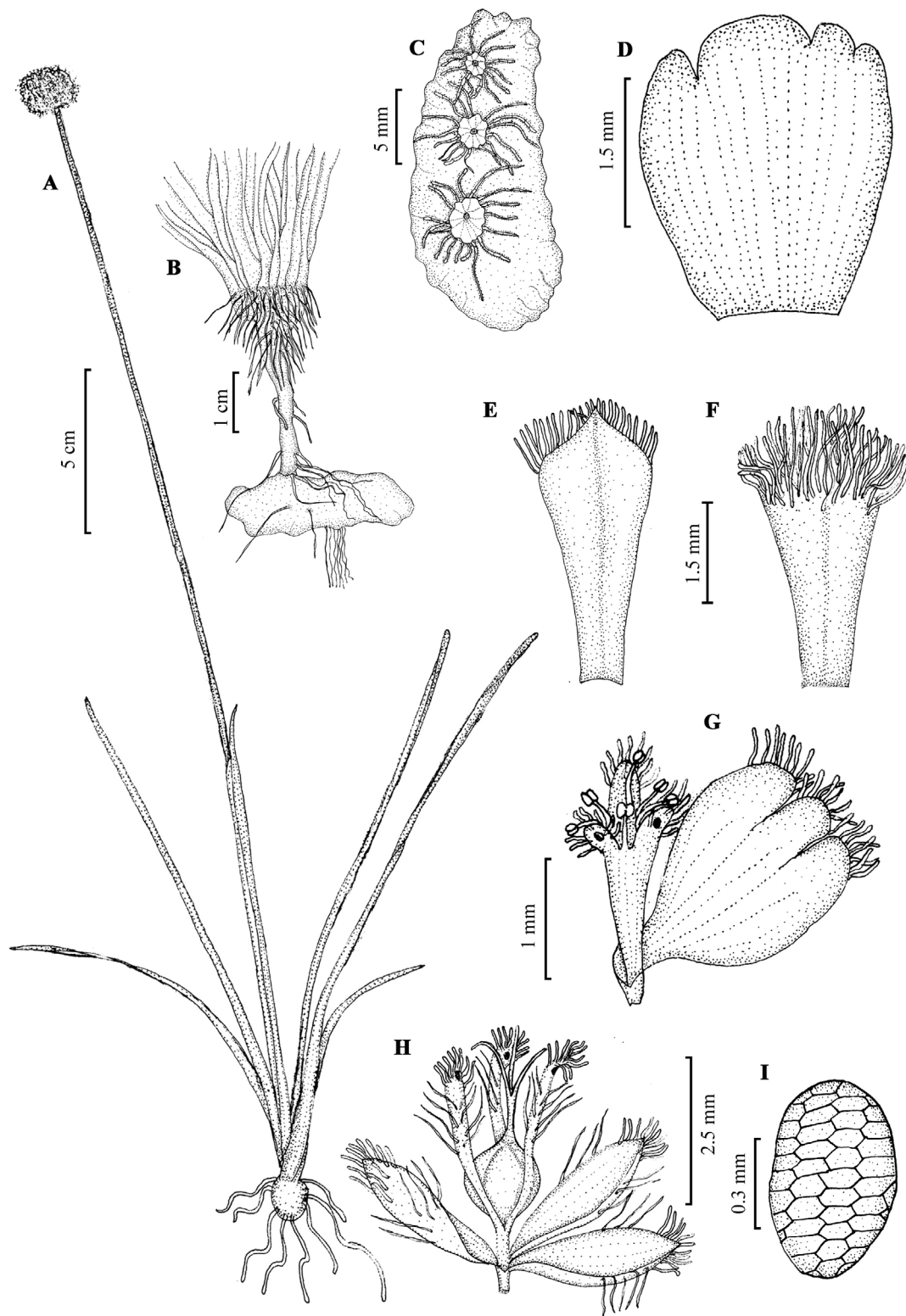


Fig. 2. Illustration of *Eriocaulon tuberiferum*. **A.** Habit; **B.** Basal portion of the plant with rootstock and tuber; **C.** Tuber with 3 scars of rootstock; **D.** Involucral bract; **E.** Floral bract-ventral view; **F.** Floral bract-dorsal view; **G.** Male flower; **H.** Female flower; **I.** Seed.

TAXONOMIC TREATMENTS

Eriocaulon tuberiferum Kulkarni & Desai in J. Bombay Nat. Hist. Soc. 71: 81-84. 1974; Ansari & Balakr., Eriocaulaceae India 146. 2009.

Type: India, Maharashtra, Kohlapur dist., Panhala, 938 m., Kulkarni & Desai 537, 28 July 1968 (CAL).

DESCRIPTION

Acaulescent, perennial, tuberiferous herbs; tubers solitary at the base of the plant and also at the axils of leaves, 0.3–2.4 × 0.3–1.2 cm, subglobose to obovoid-discoïd, easily detachable. Rootstock absent or upto 3.4 cm long and 1–2 mm wide, coriaceous, white. Leaves rosulate, 1.5–12 × 0.1–0.4 cm, linear or linear-lanceolate, margins revolute towards apex, obtuse or acute at apex, sub-succulent, 5–9-nerved, glabrous. Peduncles 1–4 per plant, erect, 8–24 cm long, striate, glabrous. Sheath 3–6 cm long, glabrous, striate; limb 3–6 mm long, ovate, margins hyaline and acute at apex. Heads 6–12 mm across, 4–8 mm long, hemispherical or discoïd, white. Receptacles depressed globose, glabrous. Involucral bracts 2.5–3.2 × 2–3 mm, obovate-orbicular, or obovate, rounded at apex, cleft along upper margins, black, sub-coriaceous, glabrous or sparsely hoary along margins. Floral bracts 2.8–3.4 × 0.8–1.4 mm, oblanceolate, acute to obtuse at apex, black, densely hoary dorsally towards apex. Male flowers: Pedicels 0.3–0.4 mm long. Sepals 3, connate below into a spathe; lobes 3, 1.4–1.6 × 0.8–1 mm, truncate or obtuse at apex, black, densely hoary dorsally towards apex. Corolla white; tube 0.8–1.2 mm long, narrowly campanulate; lobes 3, subequal, lateral ones 0.4–0.5 × 0.3–0.35 mm, ovate, obtuse at apex, hoary with a black gland and the odd one 0.8–1.1 × 0.5–0.7 mm, ovate-oblong, obtuse at apex, hoary with a black gland. Stamens 6; filaments 0.7–1 mm long, hyaline; anthers white. Female flower: Pedicels 0.3–0.4 mm long. Sepals 3, free, subequal, 2–2.5 × 1–1.2 mm, oblong-lanceolate or oblong-elliptic, boat shaped, keel rounded, obtuse to acute at apex, black, hoary towards apex. Petals 3, free, subequal, 1.8–2.5 × 0.4–0.7 mm, oblanceolate, obtuse at apex with a black gland, densely hoary above the middle, hyaline. Stipitate between sepals and petals. Ovary 0.7–0.8 × 0.7–0.8 mm, sub-globose, trigonous; style 0.5–0.6 mm long; stigma 3,

1–1.4 mm long. Seeds 0.6–0.75 × 0.4–0.55 mm, globose to ellipsoid, dark brown; cells of seed coat transversely elongate, aligned in vertical rows; appendages absent.

Flowering and fruiting: September – December.

Distribution and Ecology: The specimens were collected from the open wet rocky mountains of two different localities viz. Elivalmala of Palakkad district and Shoolamudi of Ernakulam district, Kerala. The elevation varies from 1200–2100 m. It grows among mosses in grasslands associated with *Parnassia mysorensis* F. Heyne ex Wight & Arn., *Jansenella griffithiana* (C. Muell.) Bor, *Tripogon ravianus* Sunil & Pradeep, *Utricularia lazulina* P. Taylor, *Utricularia graminifolia* Vahl, *Impatiens henslowiana* Arn., *I. levingei* Gamble ex Hook.f. etc.

Eriocaulon tuberiferum: India. **Maharashtra:** Sindhudurg Dist., Taluk Sawnatwadi, Chaukul plateau, 10 Sept. 2014, R. K. Choudhary & M. N. Datar 29929, 29930 (AHMA); Satara Dist., Kaas plateau, 26 Sept. 2014, R. K. Choudhary, M. N. Datar & D. Ashwini 29933, 29934 (AHMA); Koyana Wildlife Sanctuary, Humbarali, 19 Sept. 2014, P. Pathare 29931, 29932 (AHMA); Sindhudurg Dist., Amboli, 27 August 2015, B. Karthick, A. Kale 29935 (AHMA); Satara Dist., Taluk Patan, Mhavashi, 9 Oct. 2015, R. K. Choudhary, M. N. Datar, D. Ashwini 29936, 29937 (AHMA). **Kerala:** Ernakulam district, Edamalayar Forest Range, Shoolamudi, 10° 13.316' N, 76° 56.512' E, 1216 m, 12 December 2016, C.N. Sunil & Naveen Kumar 7100 (SNMH); Palghat district, Muthikulam, Elivalmala, alt. 2100 m, 22 Nov. 2013, K. M. Prabhukumar 7737 (CMPRI!); 12 Nov. 2016, K. M. Prabhukumar, P.M. Binu Prakash & C.N. Sunil 9857 (CMPRI!); 11 November 2016, C.N. Sunil, K.M. Prabhukumar & V.P. Thomas 4563 (CMPR).

ACKNOWLEDGEMENTS

We express our sincere gratitude to Kerala Forest Department for the permission to conduct scientific works in forests. KMP, RJ and IB are grateful to the authorities of Arya Vaidya Sala, Kottakkal and TATA Trusts, Mumbai for financial assistance. Thanks are also due to Dr. R.K. Choudhary, Dr. M. Datar, Ms. Aswani, ARI, Pune for confirming the identity of the species and for their valuable collections, Dr. K. Prasad, Mr. P.M. Binu Prakash and Mr. Judin Jose, for their support in the field.

REFERENCES

- ANSARI, R. AND N.P. BALAKRISHNAN 2009. The family Eriocaulaceae in India. Bishen Singh Mahendra Pal Singh, Dehra Dun.
- GOVAERTS, R. 2014. World checklist of Eriocaulaceae. Royal Botanic Gardens, Kew.
- MANUDEV, K.M., A.J. ROBI AND S. NAMPY 2015. *Eriocaulon biappendiculatum*, a new species of Eriocaulaceae from the Southern Western Ghats. *Edinburgh Journal of Botany*. 72(2):219–223.
- SUNIL, C.N. AND V.V. NAVEEN KUMAR 2015. A new species of *Eriocaulon* (Eriocaulaceae) from Western Ghats, India. *Webbia: Journal of Plant Taxonomy and Geography* 70(2):211–215.