



## *Eriocaulon pradeepii*, a new species of Eriocaulaceae from South India

Puthur Varghese ANTO\* and Ashok RESHMA

Department of Botany, St. Thomas' College, Thrissur, Kerala, India – 680 001.

\* Corresponding author's tel: +9446230315; email: pvabotany@yahoo.co.in

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**ABSTRACT:** *Eriocaulon pradeepii*, a new species of Eriocaulaceae from Kayambovum, Thrissur, Kerala, India, is described and illustrated here. The new species is closely allied with *E. cristatum*, but differs in having subequal petals and seed morphology.

**KEY WORDS:** Eriocaulaceae, *Eriocaulon pradeepii*, India, New species.

### INTRODUCTION

Eriocaulaceae commonly called Pipeworts family. This family consist of 11 genera distributed in tropical and sub-tropical regions of the world. The members of this genus are acculescent herbs with head inflorescence, diplostemous stamens, free petals of staminate and pistillate flowers and black gland in petals in most of species. Heads are monoecious with staminate and pistillate flowers intermixed. The head contain two types of bracts, outer involucrel bracts and inner one bears flower called floral bracts. The genus contains 485 species and 40 infraspecific taxa (Govaerts 2014). In India, the genus is represented by 80 species (Ansari and Balakrishnan 2009). In the recent years, 12 more new species was published as *Eriocaulon epedunculatum* (Yadav *et al.*, 2008), *E. baramaticum* (Shimpale *et al.*, 2009), *E. wayanadense* (Vivek *et al.*, 2010), *E. malabaricum*, *E. pykarensense* (Nampy *et al.*, 2011), *E. madayiparensense* (Swapna *et al.*, 2012), *E. cheemenianum* (Biju *et al.*, 2012), *E. kannurensense* (Sunil *et al.*, 2013), *E. gopalakrishnanum* (Rashmi and Krishnakumar, 2014), *E. manoharanii* (Sunil and Naveen Kumar, 2015), *E. vandaanamense* (Sunil *et al.*, 2015), *E. parvicephalum* (Darshetkar *et al.*, 2017).

During floristic exploration in Thrissur District, Kerala, the authors collected an interesting species of *Eriocaulon* from grasslands of Kayampoovum. A critical study with available literature revealed that the specimen is distinct from hitherto known species and therefore it is described and illustrated here as a new species.

### TAXONOMIC TREATMENT

*Eriocaulon pradeepii* Anto & Reshma, *sp. nov.*

**Figs. 1 & 2**

**Type:** INDIA. Kerala, Thrissur, Kayampoovum, Altitude 10°41'1"N, 76°23'1"E, 5 Aug. 2016, Anto & Reshma 4202 (holotype: CALI!, isotype: CAL!, MH!, BLAT!, India).

Acaulescent annual herbs, root stock absent. Plant

3–10 cm high. 5–8 leaves per plant, 0.5–2.3 cm, four to six nerved, rosulate, linear, acute at apex. Peduncle solitary, slender, upto 9 cm long, sheath upto 2.5–3 cm, acute apex. Inflorescence hemispherical, white in color. Receptacle globose, hairs present. Involucrel bracts 1.3×0.7 mm, hyaline, straw colored, glabrous, apex entire, ovate. Floral bracts 1.5×1 mm, straw colored, oblanceolate, tip acuminate, hairs densely arranged towards the tip, base broad, hairs arising from the base. Staminate flowers 2 mm long; sepals 3, obovate, connate into spathe of 1.5×1 mm size 3 lobed, hairy towards the apex. Petals 3, equal, black gland dotted, hairy towards the apex, anthers 6, black or brown colored. Pistillate flower 1.5 mm in length; sepals 3 equal, 0.8 mm long, hyaline, gland absent, hoary towards the apex; petals 3, 0.7 mm long, subequal, black gland dotted, hairy towards the apex. Ovary sessile, style 1.2–1.4 mm, stigma trifid. Seeds are oblong and oblique. The length of seed is 330 nm and width is 230 nm. Appendages are ribbon like. Elongated thickened ridges with 5 narrow lines are passing vertically throughout the seed surface.

**Phenology:** August–November

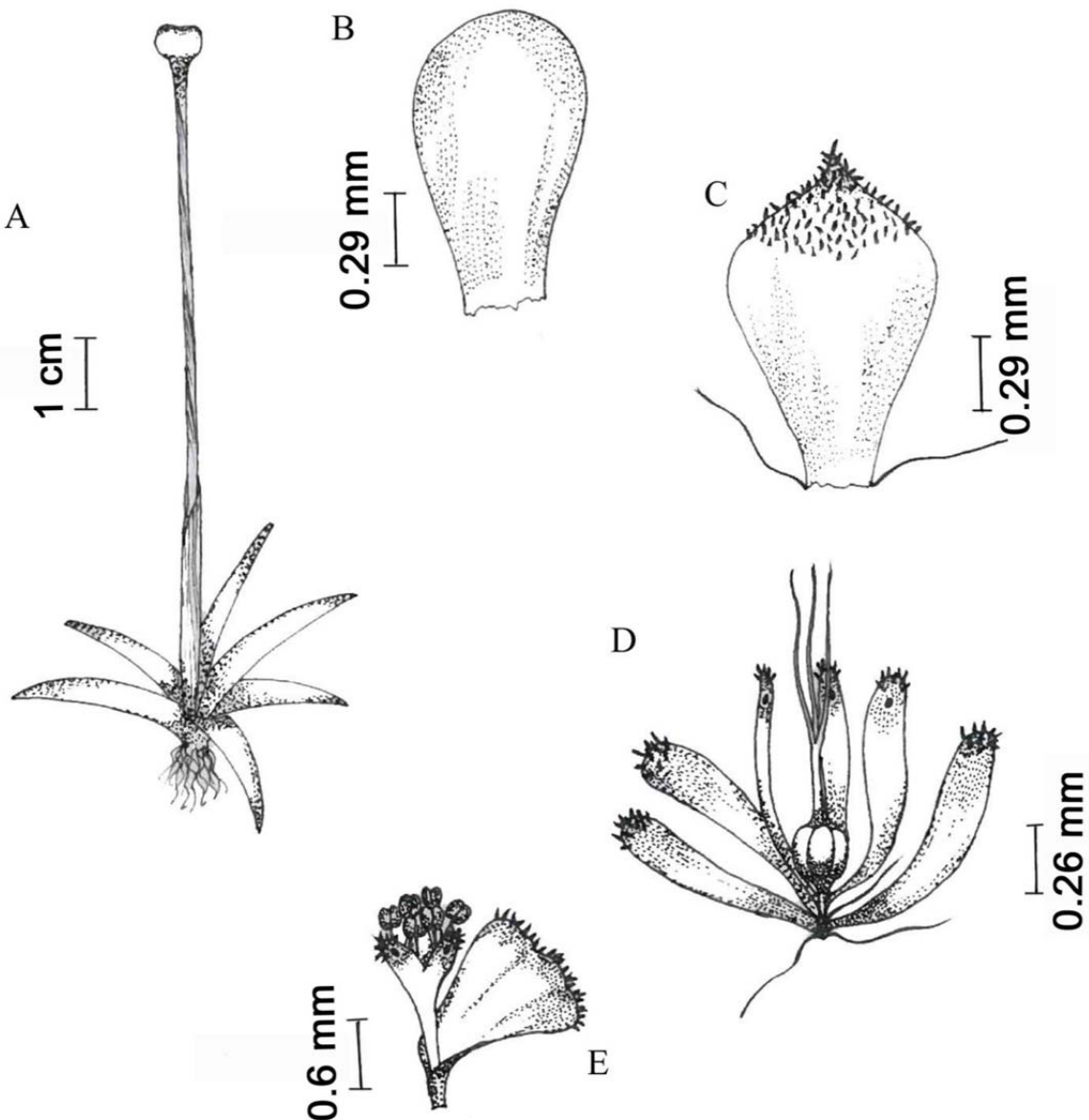
**Habitat and ecology:** Low grass land with rocky regions. It associated with *Drosera burmannii*, *D. indica*, *Utricularia sp.*, *E. quinquangulare*.

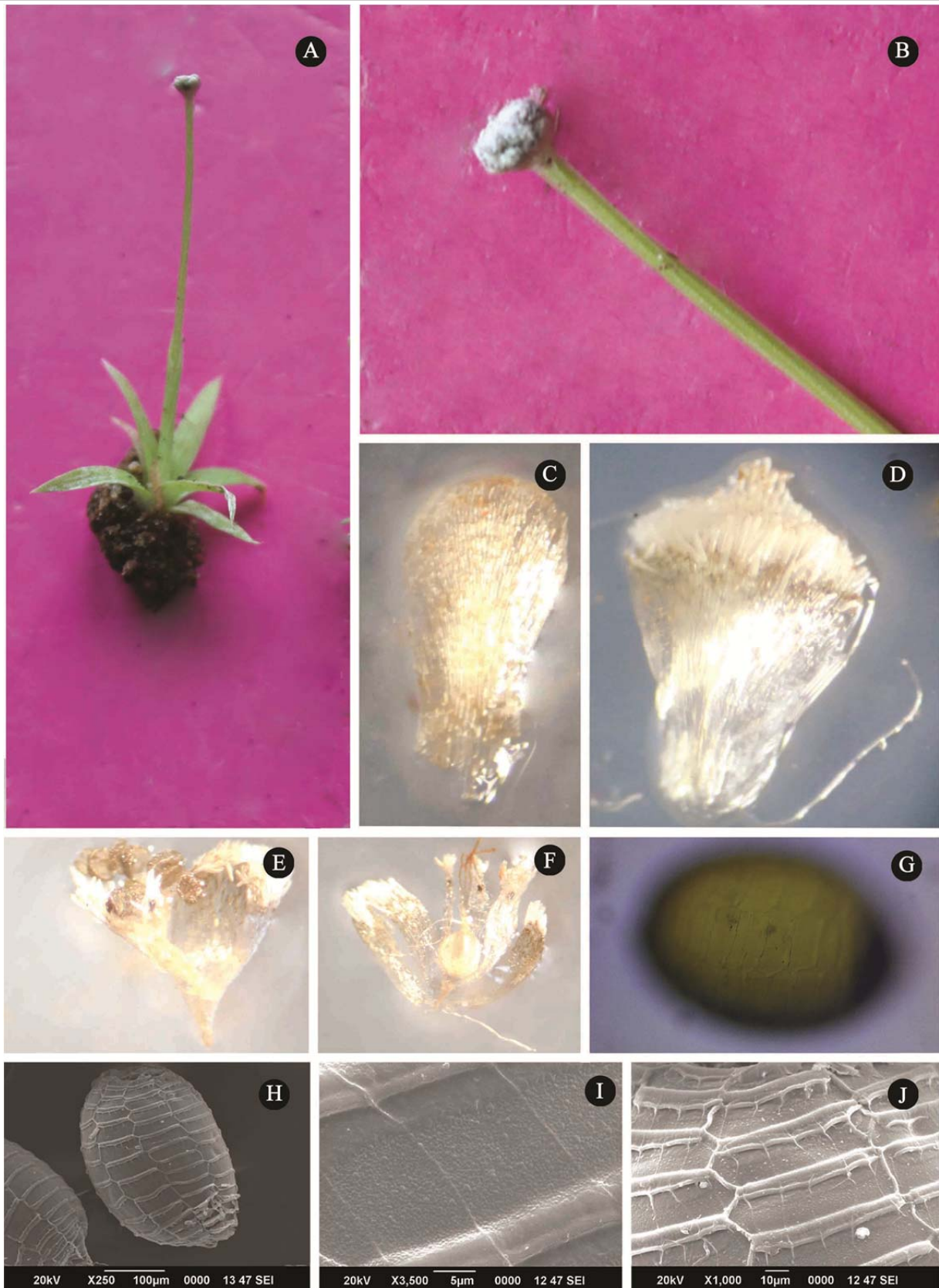
**Etymology:** The specific epithet *pradeepii* is given in honour of Dr. A.K. Pradeep, Department of Botany, Calicut University Kerala, India.

**Note:** *Eriocaulon pradeepii* Anto & Reshma is similar to *E. cristatum* Martius, in vegetative characters. They resemble in having single inflorescence and white coloured head. The new species show similarity to *E. quinquangulare* Linn. in floral characters. Both the plants having straw coloured, hyaline involucrel bract. Pistillate flowers contain 3 sepals and 3 petals, petals contain black gland. Staminate flowers with 3 petals and 6 black or brown anthers. In spite of these similarities the new plant differs from other species in having unique seed characters. The difference among the species is given in table 1.

**Table 1.** Differences between, *Eriocaulon pradeepii* Anto & Reshma, *E. quinquangulare* Linn var *martiana* (Wallich) Fyson and *E. Cristatum* Martius var *mackii* Hook. F.

Characters	<i>E. pradeepii</i>	<i>E. quinquangulare</i>	<i>E. cristatum</i>
Altitude	113 m	113 m	1200-1800 m
Root stock	Absent	Absent	Present
Leaves	Acute	Acuminate	Linear, obtuse
No of inflorescence	One	More than ten	One
Involucral bract	Hyaline, straw colored, ovate	Hyaline, straw colored, oblong, obovate	Oblong, obtuse, Straw colored
Staminate flower	Sepals 3, obovate, anther 6 black	Sepals 3, obovate or cuneate, anther 6, black	Sepals 3, connate at least at the base, anther 6, black
Seed	Transversely elongated cells thickened ridges with 5 narrow lines	Transversely elongated cells rectangular or ribbon like appendages	Transversely elongated cells vertical radial walls thickened forms zig-zag ridges.

**Fig. 1.** Illustration of *Eriocaulon pradeepii* Anto & Reshma. A. Habit. B. Involucral bract. C. Floral bract. D. Female flower. E. Male flower.



**Fig. 2.** Photographs of *Eriocaulon pradeepii* Anto & Reshma. **A.** Habit. **B.** Head enlarged view. **C.** Involucral bract. **D.** Floral bract. **E.** Male flower. **F.** Female flower. **G.** Seed-microscopic image. **H-J.** SEM image of seed (**H.** 250 times enlarged. **J.** 1000 times enlarged).



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