

Research Article

***Eriocaulon lanceolatum* var. *bhatkalense* var. Nov. (Eriocaulaceae)- A New Variety From The Western Ghats, India**

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Abstract

A new variety of *Eriocaulon* is described and illustrated from the low altitude monsoon vegetation of the Western Ghat region of Karnataka, India. This variety is distinct in the obovate leaves, 2 or 3 male flower sepals, presence of glands at the tip of petals.

Keywords: *Eriocaulon*; Western Ghats; Variety; Bhatkal plateau

Introduction

The genus *Eriocaulon* L. (Eriocaulaceae), with about 400 species (Mabberley, 2008), is distributed in tropical and subtropical regions of the world. Ansari & Balakrishnan (2009) have reported 85 species and - varieties of *Eriocaulon* in India. Since then, 12 more species have been described from peninsular India

(Manudev et al., 2015). Our floristic studies on the monsoon flora of the low altitude coastal lateritic plateau in the Bhatkalplateau, Uttara Kannada district, Karnataka state, India, resulted in the collection of an *Eriocaulon* species. Review of literature and comparison with the herbarium catalogue (Kew, world check list) indicate that this is new variety of the *E.lanceolatum*.

Eriocaulon lanceolatum var. *bhatkalense* var. nov. K.Rashmi and G.Krishnakumar sp.nov. (Figure: 1, 2)
Eriocaulon lanceolatum Miq. ex Körn. *Eriocaulon kasaragodense* R.Ansari, V.J.Nair & N.C.Nair.
Eriocaulon lanceolatum Miq. ex Körn. ssp. *pilosum* Moldenke.

Type: India, Karnataka, Uttara Kannada District, Bhatkala, Bhatkal is located at 13.97°N 74.57°E., 3m A.S.L., 12 Sept 2016, K.Rashmi and G.Krishnakumar, 1450 (holotype: CAL, isotypes: MH, Herbarium, Department of Applied Botany, Mangalore University).

Description

Annual herbs, up to 20cm height, root stock absent. Leaves 2-3.5×0.5-1.8cm, 20-26 nerved, smaller than sheaths, rosulate, obovate or lanceolate, acute at apex, 18-20 nerved, glabrous on both surface, margin hairy. Peduncle 1-7, up to 15cm long, pubescent, very soft, 4-angled. Spathe up to 5cm, 7-8- nerved, hairy with lanceolate limb, limb 5.2mm long, acute at apex, entire. Capitula hemispherical, slightly lax. Ca 5mm across, white. Receptacle conical, sparsely setose. Involucral bract 1.2×2.0mm, spreading, crenate at apex, obovate to orbicular, concave, hairy towards apex, hairs thin, hyaline. Floral bract 1.2×1.2mm, slightly keeled, cuneate, grey, densely hairy, towards apex, hairs thick, shiny, white. Staminate flowers up to

4mm long; pedicels Ca 0.4mm, hairy at base; Sepals 3, connate into a spathe of Ca 1.5×3.2mm, concave, 3-lobed, lobes broad, glabrous, grey. Anthophore ca 0.8mm long; Petals 3, minute, each with a black gland at the tip, hairy at the top of glands, hairs thick, short, white. Staminodes 3, closely arranged at the base of petals. Anthers 6, black; filament up to 4mm long, triangular at base. Pistillate flowers with pedicels up to 0.5mm long, hairy; Sepals 2 or 3, equal, Ca 1.6×1.5mm long, free, oblanceolate, acute at apex, membranous, grey, hairy at the margin towards apex; corolla stiped, Ca 0.15mm long; Petals 3, each with a black gland at the tip, equal, hairy, hairs two types: thin, longer, hyaline hairs on the upper half of the petals and thick, shorter, white hairs at the top of glands. Ovary trilobed. Seeds ca 0.4×0.15mm, dark brown, obovate, slightly apiculate at apex, cells of seeds coat transversely elongated, aligned in vertical rows, projections from the center of transverse radial walls, some cells without projections, setiform, minutely dialated at apex, Figure: 1, 2.

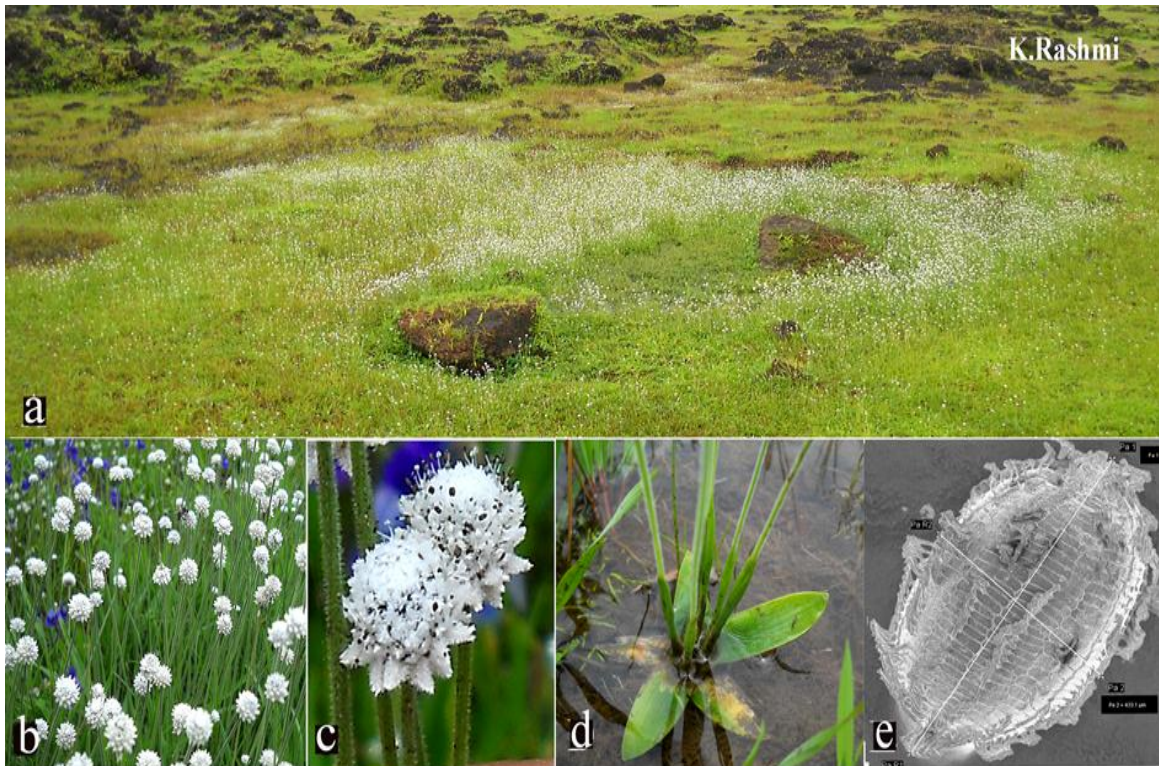


Figure 1: *Eriocaulon lanceolatum* var. *bhatkalense* var. Nov. a & b Habitat, c. Inflorescence, d. Leaf and leaf sheath, e. SEM image of seed

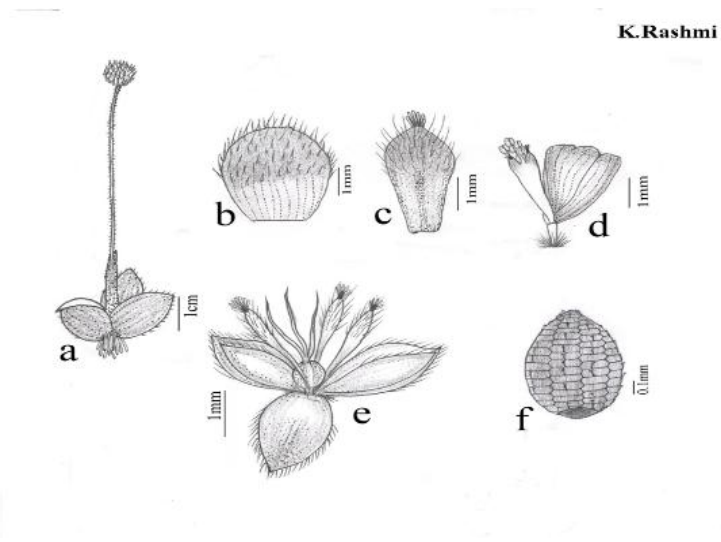


Figure 2: *Eriocaulon lanceolatum* var. *bhatkalense* var. Nov. a. Habit sketch, b. Sepal, c. Petal, d. Male flower, e. Female flower, f. Seed

Etymology: The specific epithet *bhatkalense* is after the type locality, the Bhatkal plateau in the Western coast of Karnataka state.

Habitat: Bhatkal plateau covers about 425 Hectares of area. It has richest laterite floristic diversity when compared to any other major plateaus of coastal region of Southern Western Ghats region. *Eriocaulon lanceolatum* var. *bhatkalense* is part of this herbaceous vegetation. It grows luxuriously associated with *Eragrostis indica* Link, *Eriochloa acuminata* (J.Presl) Kunth, *Utricularia reticulata* Sm. etc.,

Conservation Status: So far *E. lanceolatum* var. *bhatkalense* var. nov. has been collected from only Bhatkal plateau. Due to Acacia plantations, mud roads and conversion to housing sites population of the species is considerably reduced. Also these large acres

of land had been identified by the government in Uttara Kannada district for distribution among the poor. In southern coastal region of Western Ghats, this kind of laterite plateau with great floral diversity is seen only in Madayaipara plateau region of Kerala state. However, further field studies are required for a status assessment of this species. Hence, it is categorized as 'Data Deficient' (DD) under IUCN categories and criteria (IUCN 2014).

Additional Specimens Examined

India, Karnataka, Uttara Kannada District, Bhatkala. Rashmi K and Krishnakumar G 1503 dated 20 Sept. 2016 (in flower), Rashmi K and Krishnakumar G 1505 dated 20 Sept. 2016 (in fruit). Deposited in the Herbarium, Department of Applied Botany, Mangalore University, India.

Table 1: Comparison of *Eriocaulon lanceolatum* var. *bhatkalense* with *Eriocaulon lanceolatum* var. *lanceolatum*

Character	<i>Eriocaulon lanceolatum</i> var. <i>bhatkalense</i>	<i>Eriocaulon lanceolatum</i> var. <i>lanceolatum</i>
Leaves	2×1.8 cm, hairy at margin	9×1.5cm, hairy at margin, glabrous or sparsely pilose
Involucral bract	Hairy	Hispid
Male flower: Pedicel	Hairy at base	Glabrous
Sepal	Glabrous	Glabrous or sparsely pubescent towards tip
Petal	Glands at the tip of petal	Glands below the margin of the petal at apex
Female flowers: Sepal	2 or 3, Broad	3, Narrow
Petal	Glands at the tip of petal	Glands below the margin of the petal at apex
Seed	Dark brown, Appendages dialated at apex	Purple, Appenages bifurcated at apex

Eriocaulon lanceolatum is endemic to Western Ghats (Kerala, Karnataka, Maharashtra) (Ahmedullah and Nayar 1986, Ansari and Balakrishnan 1994, 2009; Cook 1996). In Kerala it is reported from Bekal. In Maharashtra it is reported from Pune, Khandala, Mumbai, Gaganbavda, Sindhudurg, (Lakshminarasimhan, 1996), Kolhapur (S. Punekar in litt. 24 January 2011). In Karnataka it occurs in South and North Canara (Anshi National park and Nigundi). The distribution of this species in Gujarat is doubtful (Cook, 1996).

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