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### RESEARCH ARTICLE

#### A NEW SPECIES OF ERIOCAULON (ERIOCAULACEAE) FROM LATERITIC PLATEAUS OF SINDHUDURG, MAHARASHTRA, INDIA.

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#### Abstract

The genus *Eriocaulon* L. (Eriocaulaceae) is distributed in tropical and subtropical regions of World. Ansari & Balakrishnan reported 85 species in India, later on 11 species have been described from India and now 96 species recorded for India. During collections from konkan, Western Ghats, India author collected one interesting specimens of *Eriocaulon*. After critical observation and survey of literature it revealed to be a new species. *Eriocaulon gulnarparianum* Sp. nov. described which is allied to *Eriocaulon xeranthemum* Martius and *E. devendranii* Sankar, Ravikumar & Babu, but differs in its leaf length 0.8 mm to 1.5 cm, head 5mm across with involucral bracts, without involucral bracts 2 mm across, floral bracts oblong-oblongeolate, involucral bracts upto 3 mm, acuminate, multifid. Sepals of male flower obtuse at apex, 3 lobed, 2 lobes connate and one free, Petals of female flower spatulate and notched apex, seed with transverse elongated cells with 1-2 appendages which is described with brief morphology, association, photographs and note on identity.

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#### Introduction:-

The genus *Eriocaulon* is monotypic genus of family Eriocaulaceae. Linnaeus (1753) reported only four species (Three from India), later on in 19<sup>th</sup> century, (Brown, 1810; Martius 1832; Wallich, 1832; Royle, 1839, Kunth 1841; Dalzell, 1851; Griffith, 1851; Steudel 1854-1855, Koenig 1856 & 1867 described number of new species from India. In British India, Hooker (1893) given accounts 43 species of which 14 new species. Ruhland (1903) in monographic study shows 47 species from India. Fyson (1919-1922) described 51 species and few varieties for British India. Ansari and Balakrishnan (1994 & 2009) in the revisionary study reported 85 species. Later on Yadav et al. 1998, 2008; Shimpale et al. 2009; Vijaysankar et al. 2006; Shimpale & Yadav, 2010; Vivek et al. 2010, Namphy et al., 2011, Puneekar et al. 2002; Puneekar & Lakshaminarsimhan 2004; Puneekar et al. 2004, Swapna et al., 2012, [Sunil](#) & Naveen Kumar, 2015, Naveen Kumar et al., 2017, Sunil & Pradeep, 2003, Gaikwad & Yadav, 2002, Gaikwad et al., 2002, and many others added new species for India, till date 96 species reported for India.

While exploring lateritic plateaus of konkan regions, author collected an interesting specimens from plateaus of Achirne Village, Salva plateaus, and hills slopes in Vaibhavwadi Village of Sindhudurg in Maharashtra and After critical study and comparison with other species of *Eriocaulon* and scrutiny of literature, it turned out to be quite

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different taxa from known species hence we describe these collection as a new species. The new species is closely allied to *Eriocaulon xeranthemum* Martius a species common throughout India, Myanmar, Nepal and *E. devendranii* Sankar, Ravikumar & Babu, a species endemic to Western Ghats, Kerala

### Taxonomy:-

*Eriocaulon gulnarparianum* Paithane, Bhuktar A.S., Kashetti R.P. & Patil S.B. *sp.nov.* (Fig.1 A-F & Fig.2 a,b,c.)

*Eriocaulon gulnarparianum* is similar to *Eriocaulon xeranthemum* Martius and *E. devendranii*, but differs from the former in having leaf length 0.8 mm to 1.5 cm ( upto 1 cm in *E.devendranii*), head 5 mm across with involucre bracts, without involucre bracts 2 mm across, floral bracts oblong-oblongeolate (oblongeolate in *E. devendranii*), involucre bracts upto 3 mm, acuminate, multifid (spreading in *E. xeranthemum*). Sepals of male flower obtuse at apex (Truncate in *E. xeranthemum*), 3 lobed, 2 lobes connate and one free (three lobed, in *E. xeranthemum* and *E. devendranii*), Petals of female flowers are spatulate and notched apex (unnotched in *E. devendranii* and *E. xeranthemum*), seed with transverse elongated cells with 1-2 appendages (2-4 in *E.devendranii* and *E.xeranthemum*). Type:- India, Maharashtra, Sindhudurg, 13°43.509' N, 79°19.345E, 80 m elevation, 10<sup>th</sup> August 2016, Gulnarpari Patankar and Paithane V.A, Kashetti R. P. and Patil. S. B.1044 (Holotype VH!; isotype BSI, CAL)

Acaulescent herb. Root sock absent. Leaves rosulate, linear, acute, 0.8-1.5 cm long. Peduncles 3-15, up to 3 cm long, glabrous, virgate. Sheath 0.5 -1cm long, glabrous; limb ovate, acute, entire. Head hemispherical or cuneate, ca 5 mm across with involucre bracts, 2 mm across without involucre bracts, straw-coloured. Receptacles convex, glabrous. Involucre bracts erect, not spreading, linear-oblong, acuminate, 2.5-3 mm x 0.2- 0.5 mm, chartaceous, glabrous, straw coloured. Floral bracts oblongeolate, obtuse, sparsely hoary at apex, 0.5-0.7 x 0.2-0.3 mm. Male flowers: Pedicel minute. Sepal 3, obovate, 2 lobes connate into spathe and one free ca 0.9-1.2 x 0.5-0.7 mm; lobes obtuse, hoary at apex, brown turns black at maturity, stipe of corolla 1mm long. Petals 3, minute, equal, acute to sub-acute, with black gland. Anthers 6, black. Female flowers: Sub-sessile, sometimes with short pedicel. Sepals 3, free, two lateral one oblongeolate, obtuse, sparsely hairy at apex, ca 1mm x 0.2mm ; middle one linear, ca 1 mm x 0.1 mm, sparsely hairy at apex. Petals 3, sub-equal, spatulate, one to two petal notched at apex, 0.5-0.7-0.8-1.2 mm long, hyaline, barbet with black gland. Stipitate between sepals and petals. Ovary sessile, ovoid; style 3-fid. Seed oblong-ellipsoide, acute at base, obtuse at apex, 0.5 x 0.2 mm, pale yellow; cells of seed coat transversely elongated, aligned in vertical rows; appendages 1-2 from transverse radial wall, setiform, dilated at apex.

### Etymology:-

The new species named after my under graduate student Gulnarpari Patankar for his valuable collection during exploration and for proving specimens from various localities of Sindhudurg District of Maharashtra State..

Phenology:- Flowering and fruiting in August to October.

### Distribution and Ecology:-

*Eriocaulon gulnarparianum* is currently known from Achirne, Salva plateaus and hills slopes of Vaibhavwadi village, Sindhudurg District in Maharashtra State. It grows on lateritic plateaus and wet rocky hillside, in association with *Utricularia reticulata*, *Glyohochloa acuminata*, *Fimbristylis tetragona*, *Eriocaulon eurypeplon*, *Indopoa pauperula*, *Danthonidium gammiei*, *Drosera indica*, *Trithuria konkanensis*, *Euphorbia concanensis*, *Exacum lawii*, *Eragrostis sp.*, *oldenlandia sp.*

### Conservation Status:-

Achirne and Salva Plateaus are not thoroughly explored therefore we assess the new species and uncontrolled grazing on Salva and mining at Achirne are added impacts of habitat destruction, hence its necessary to conserve these ecosystem.

**Table 1:-** Diagnostic morphological characters of *Eriocaulon gulnarparianum sp. nov.* and allied species.

Sr.No	Characters	Name of Taxa		
		<i>E. devendranii</i>	<i>E.gulnarparianum sp. nov.</i>	<i>E. xeranthemum</i>
1	Involucre bracts	Upto 3.5 mm, acuminate, multifid	Up to 3 mm, acuminate, multifid	2-3.5 mm long, Spreading
2	Floral bracts	Oblongeolate	Oblong-oblongeolate	Truncate
3	Sepals in Male flower	Obtuse at apex, 3 lobed,	Obtuse at apex, 3 lobed, 2 lobes connate, one free, slightly jointed at base	Truncate, 3 lobed

4	Petals in Female flowers	Spathulate	Spathulate, one-two petal with notch	Spathulate
5	Seed Appendages	2-4	1-2	2-4

#### Distribution of allied taxa:-

*Eriocaulon xeranthemum* Martius is common in open moist or marshy lands and in crevices of moist rock from sea level to 700 altitude, known from Maharashtra, Kerala, Karnataka, Andaman and *E. devendranii* Sankar, Ravikumar & Babu (2006) is rare on exposed moist soil and endemic to Western Ghats of Kerala where as described new species is rare on lateritic plateaus of Konkan, Sindhudurg District of Maharashtra State and easily identified by its notched petals of female flower which is distinct characters as compared to all Indian *Eriocaulon* species.

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