

## A NEW SPECIES *ERAGROSTIS HENRYI* (POACEAE: ERAGROSTIDEAE) FROM TAMIL NADU, INDIA

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### ABSTRACT

A new species, *Eragrostis henryi*, similar to *E. minor* Host and *E. tremula* Hochst. ex Steud. was collected in the Kanyakumari district, Tamil Nadu, India, and is described and illustrated here.

**Keywords:** Poaceae, *Eragrostis*, New species, Tamil Nadu, India.

### INTRODUCTION

*Eragrostis* Wolf, one of the 77 genera of the tribe Eragrostideae in the family Poaceae, comprises approximately 400 species worldwide (Clayton & al., 2010). They occur in the warmer regions of the world (Clayton & Renvoize, 1986). Bor (1960) reported 39 species for India, while Karthikeyan & al. (1989) recorded 36. According to Kabeer & Nair (2009), 29 of these are present in Tamil Nadu, India, of which 13 are distributed in Kanyakumari, the southern coastal district. There is one view based on phylogenetic studies that *Eragrostis* might not be monophyletic and there are many other segregate genera which are more suited to be placed within this genus. An analysis based on molecular sequence data from *rps 16* and the nuclear gene *waxy* by Ingram & Doyle (2004) in a large sample of *Eragrostis* proved that this genus is monophyletic if its segregate genera such as *Acamptocladus*, *Diandrochloa*, *Neeragrostis* and *Pogonarthria* are also included.

The present authors made a critical evaluation of the *Eragrostis* specimens in the Madras Herbarium (MH) and found some collections from Kanyakumari were wrongly identified as *E. minor* Host. One of the most significant characters of these specimens is the presence of very prominent crateriform glands on panicle branches and pedicels. A thorough search in the descriptions and other data on *Eragrostis* species of the world (Clayton & al., 2010 version) and Bor (1960) revealed that only 16 species of this genus are known to have this feature. These species listed below were studied with the help of available literature and type images from the Herbarium Berolinense, Berlin (B), Botanische Staatssammlung München (M), South African National Biodiversity Institute, National Herbarium, Pretoria (PRE), Kew Herbarium (K), Missouri Botanical Garden (MO), National Herbarium and Botanic Garden, Zimbabwe (SRGH), etc.

*Eragrostis aristata* De Winter (Distrib.: Africa; isotype: *Schweickerdt H.G.W.J.* 2252; PRE0027732-0!), *E. boriana* Launert (Distrib.: Asia; type: *Haires R.Wheeler* W993; K000643415!), *E. crassinervis* Hack. (Distrib.: Africa; illustration of type: *Dinter* 1099; K000365721!), *E. crateriformis* Lazarides (Distrib.: Australasia; holotype: *Latz* 2106!), *E. cylindriflora* Hochst. (Distrib.: Africa, Asia and Australia; type: *G.H.W. Schimper* 772; B 10 0168323!), *E. desolata* Launert (Distrib.: Africa; type: *West* 3638; K000366302!), *E. glischra* Launert (Distrib.: Africa; isotype: *Maukie* 8027; K000366245!), *E. kingesii* De Winter (Distrib.: Africa; isotype: *Kinges H.* 2236; K000365683!), *E. leptotricha* Cope (Distrib.: Africa; isotype: *Smith P.A.* 3657; K000317835!), *E. minor* Host (Distrib.: Europe, Africa, Asia, Australia, Pacific and America; lectotype: *Bück s.n.* in *Herb. Linn.* 87.23 (LINN, holo, microfiche IDC), *E. omahekensis* De Winter (Distrib.: Africa; holotype: *DeWinter B.* 2493; PRE0029092-0!), *E. phyllacantha* Cope (Distrib.: Africa; type: *Story R.* 5035; K000317833!), *E. punctiglandulosa* Cope (Distrib.: Africa; type: *van Rensburg H.J.* 2543; K000366233!), *E. scopelophila* Pilg. (Distrib.: Africa; isotype: *Dinter G.* 2564; M0103455!), *E. subglandulosa* Cope (Distrib.: Africa; type: *Smith, P.A.* 3618; K000317834!) and *E. venustula* Launert ex Cope (Distrib.: Africa; isotype: *Robinson, E.A.* 6821; SRGH0106315-0!). A comparative study of the type images and other relevant literature of the above mentioned species proved that the MH specimen involved is markedly distinct from all other species with crateriform glands and is described here as a new species.

***Eragrostis henryi* C.P. Vivek, G.V.S. Murthy & V.J. Nair sp. nov.**

**(Fig. 2)**

*Type:* India: Tamil Nadu, Kanyakumari district, Near Anjugramam, 25m, 27.03.1979, A.N. Henry 6156 (Holotype: CAL; isotypes: MH).

Resembles *E. minor* Host in the presence of prominent crateriform glands on pedicel and panicle branches, but is distinctly different from it in having narrow, linear and long spikelets with up to 55 florets (Table 1). Moreover the caryopses of this species are laterally flattened to grooved and yellowish green with truncate base unlike the subglobose or oblong and reddish brown caryopses of *E. minor* Host (Fig. 1). The characteristic long, linear, slightly curved and pinkish yellow spikelets of *E. henryi* shows some similarity in appearance to *E. tremula* Hochst. ex Steud. also, but the latter can easily be distinguished by having long, capillary, eglandular panicle branches and pedicels and subglobose to orbicular caryopses (Table 2).

Culms tufted, geniculate, 5 - 20cm high; nodes brownish; internodes c. 3cm long, with glandular circle below each node, glabrous. Leaves, linear to lanceolate, 1-3cm long, apex acute to acuminate, base more or less rounded or subcordate, margins with raised glands, upper surface glabrous, lower surface with glandular dots along the midrib, mouth bearded; leaf sheaths c. 2cm long, glandular on nerves, ciliate along one margin or glabrous, mouth bearded; ligule a fringe of cilia. Panicle ovate to oblong, 3 - 7 × 1.5 - 4cm, primary panicle branches alternate, stiff with prominent crateriform glands, up to 3cm long angled, minutely scabrous or smooth along angles, base and axils glabrous; peduncle c. 4cm long, with a glandular band below the panicle, not viscous, glabrous. Spikelets 1-9 per branch, long, linear to narrow, slightly curved, up to 55 - flowered, 8 - 25 × 1.5 - 2mm, pinkish to yellowish; pedicels short, stiff, with a prominent crateriform gland, angled, glabrous or slightly scabrous along angles: lateral pedicels 1 - 1.5mm long. Glumes deciduous, ovate to lanceolate, apex acute, margins entire, chartaceous, 1-nerved, keeled, slightly scabrous along keel; lower glume 0.8-1mm long; upper glume 0.9 - 1.2mm long. Florets, all fertile, closely arranged on the rachilla, breaking up from below upwards; rachilla slender, zigzag. Lemmas deciduous, elliptic to narrowly ovate, 1 - 1.3 × c. 0.7mm, apex acute to narrowly obtuse when spread, margins entire, chartaceous, 3-nerved, 1-keeled, minutely scabrous along the keel. Paleas persistent, elliptic to oblanceolate, apex acute to obtuse, margins entire, 2-nerved, 2-keeled, scabrous above the middle. Lodicules 2, c. 0.2mm long, apex truncate, white. Stamens 3; anthers up to 0.3mm long; filaments c. 0.4mm long, white. Ovary ovoid, c. 0.2mm long; style c. 0.4mm long; stigmas c. 0.3mm long, white or cream, coloured. Caryopses ovoid, 0.5 - 0.6 × c. 0.3mm, apex acute to obtuse, base truncate, laterally flattened or narrowly grooved, light brown in colour.

*Flowering & Fruiting:* March.

*Distribution:* INDIA, Tamil Nadu, Kanyakumari district.

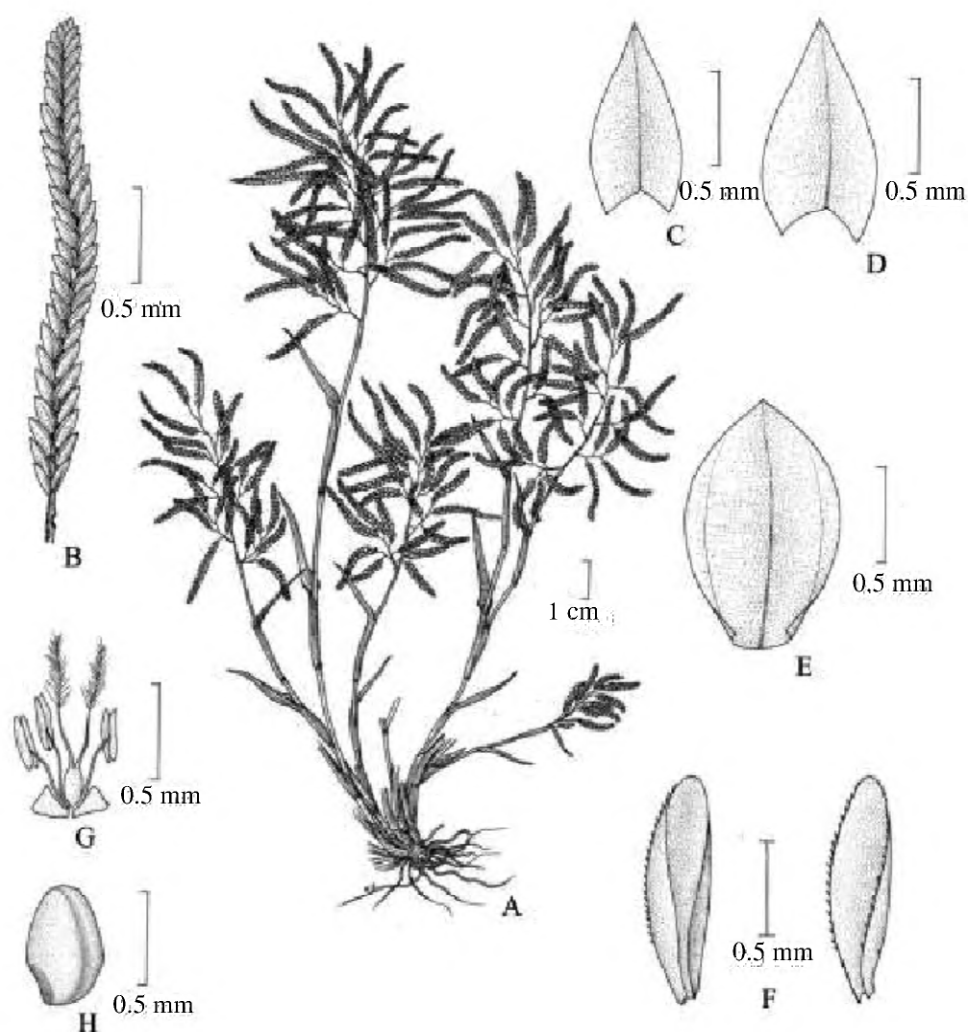
*Habitat:* Commonly grows in sandy soil at an altitude of c. 25m.

*Conservation status:* Data Deficient, so far collected only from the Kanyakumari district of Tamil Nadu.

*Etymology:* The specific epithet is after Dr. A.N. Henry, retired Scientist, Botanical Survey of India, Southern Regional Centre, Coimbatore, who has collected the specimens, in recognition of his outstanding contributions to Indian Botany.



**Fig. 1.** Caryopses of - **A.** *Eragrostis henryi*; **B.** *E. minor*; **C.** *E. tremula*



**Fig. 2.** *Eragrostis henryi* C.P. Vivek, G.V.S. Murthy & V.J. Nair *sp. nov.* : **A.** Habit, **B.** Spikelet, **C.** Lower glume, **D.** Upper glume, **E.** Lemma, **F.** Palea - ventral and dorsal views, **G.** Lodicules, Stamens and Pistil, **H.** Caryopsis

**Table 1.** Differences between *E. henryi* *sp. nov.* and *E. minor* Host

	<i>Eragrostis henryi</i> <i>sp. nov.</i>	<i>Eragrostis minor</i> Host
Panicle	As long as or slightly shorter than the rest of the plant	Distinctly shorter than the rest of the plant
Lateral pedicels	Very short and stiff, not more than 1.5mm long	Up to 3mm long, stiff or slender
Spikelets	Long, linear to narrow, slightly curved, up to 25mm long, 2mm wide, pinkish to yellowish	Ovate to lanceolate or oblong, not curved, up to 9 (-15)mm long, 2.5mm wide, pale green to dark purplish or olive grey
Florets	Up to 55	Up to 16 (-40)
Lemmas	Elliptic to narrowly ovate, less than 1.3mm long, acute to narrowly obtuse	Broadly ovate to subrotund, 1.5 - 2mm long, obtuse
Caryopses	Ovoid, up to 0.6mm long, laterally flattened or narrowly grooved, apex acute to obtuse, base truncate, yellowish brown	Globose to ellipsoid or oblong, up to 0.8mm long, not grooved, both ends obtuse, reddish brown

**Table 2.** Differences between *E. henryi* sp. nov. and *E. tremula* Hochst. ex Steud.

	<i>Eragrostis henryi</i> sp. nov.	<i>E. tremula</i> Hochst. ex Steud.
Culms	Short, up to 20cm high	Loosely tufted, up to 100cm high
Leaves	Glandular along margins	Eglandular
Panicle	Less than 7cm long, not much loose and spreading Primary branches short, stiff with crateriform glands	Up to 30cm long, very loose and spreading; primary branches long, capillary, eglandular
Lateral pedicels	Very short and stiff, not more than 1.5mm long with a crateriform gland	Long, capillary, flexuous, more than 5mm long, eglandular
Glumes	Glandular on nerve	Eglandular
Florets	Up to 55	Up to 100
Lemmas	Elliptic to narrowly ovate, less than 1.3mm long, acute to narrowly obtuse	Broadly ovate to oblong, up to 1.7mm long, subacute
Caryopses	Ovoid, laterally flattened or narrowly grooved, apex acute to obtuse, base truncate, yellowish brown	Subglobose to orbicular or ovoid, yellowish brown

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