



Aristida stocksii and *Dimeria bialata* (Poaceae): New records to Eastern Ghats

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Abstract

Two grass species, *Aristida stocksii* (Hook.f.) Domin and *Dimeria bialata* C.E.C. Fisch., endemic to western parts of peninsular India are collected for the first time from Eastern Ghats in Andhra Pradesh. Descriptions, illustrations and microscopic images have been provided for both species.

Keywords: *Aristida stocksii*, *Dimeria bialata*, Eastern Ghats, Grasses, New Records

Introduction

During recent field explorations in the forests of Anantapuramu and East Godavari districts of Andhra Pradesh, falling in Eastern Ghats, we could collect some grass specimens, which after critical study were identified as *Aristida stocksii* (Hook.f.) Domin and *Dimeria bialata* C.E.C. Fisch. Identified specimens were matched with the respective holotype images accessed on Kew Herbarium Catalogue (<http://apps.kew.org/herbcat/navigator.do>). Perusal of literature (Fischer, 1928; Bor, 1960; Sharma *et al.*, 1984, 1996; Deshpande & Singh, 1986; Karthikeyan *et al.*, 1989; Saxena & Brahmam, 1996; Pullaiah, 1997; Moulik, 2000; Kabeer & Nair, 2009; Krishnamurthy *et al.*, 2014; Nayar *et al.*, 2014) revealed that these two grass species are endemic to western parts of peninsular India and so far reported only from the states of Karnataka and Maharashtra (*Aristida stocksii*); Karnataka and Kerala (*Dimeria bialata*) and have not been reported from Eastern Ghats. Therefore, descriptions, distribution and illustrations for both species are provided here.

Aristida stocksii (Hook.f.) Domin, Biblioth. Bot. 20: 338. 1915. *A. funiculata* var. *stocksii* Hook.f., Fl. Brit. India 7: 227. 1896; Bor, Grass. India Burma Ceylon Pakistan: 412. 1960; B.D. Sharma *et al.*, Fl. Karnataka: 318. 1984; Deshp. & N.P. Singh, Grass. Maharashtra: 21. 1986; Karthik. *et al.*, Fl. Ind. Enum. Monocot.: 184. 1989; B.D. Sharma *et al.*, Fl. Maharashtra: 397. 1996.

Fig. 1

Type: INDIA, Konkan, J.E. Stocks 06 (K000032479, image!).

Annual or perennial, tufted. Culms 25–35 cm high, woody at base, glabrous, rounded. Leaf blades linear, to 6 × 0.2 cm, convolute, serrulate at margins, acuminate at apex; veins thickened, scabrid on ventral side; ligules membranous, 0.2–0.3 mm, fimbriate at apex; leaf sheath c. 2 × 0.2 cm, ribbed, glabrous. Inflorescences 15–20 cm long, contracted or slightly lax panicles, twisted when dry. Spikelets with single floret, fertile spikelets pedicelled. Glumes extraordinarily unequal, aristate, membranous, glabrous, 1-veined, scabrid on vein, persistent. Lower glume elliptic-lanceolate, 2.9–3.1 × 0.2–0.3 cm, aristate (arista c. 2 mm long). Upper glume similar to lower glume, to 0.7 × 0.1 mm, aristate (arista c. 1.5 mm long). Fertile lemma elliptic-oblong, subterete, c. 5 mm long, margins convolute, covering most of palea, coriaceous, without keel, 3-veined, articulation between lemma apex and column base; column very long, twisted, to 4.6 cm long, having white long hairs; awns of lemma 6–8 cm long, scabrid. Callus barbed with white hairs, tip of the callus curved, glossy, glabrous. Palea without keels. Anthers 3. Stigma plumose. Caryopses not seen.

Flowering & Fruiting: September–December.

Habitat: Gregarious in alkaline sandy soils in dry deciduous forests. Key associates are *Aristida redacta* Stapf, *Chloris montana* Roxb., *Lophopogon tridentatus* (Roxb.) Hack. and *Melanocenthris jacquemontii* Jaub. & Spach.

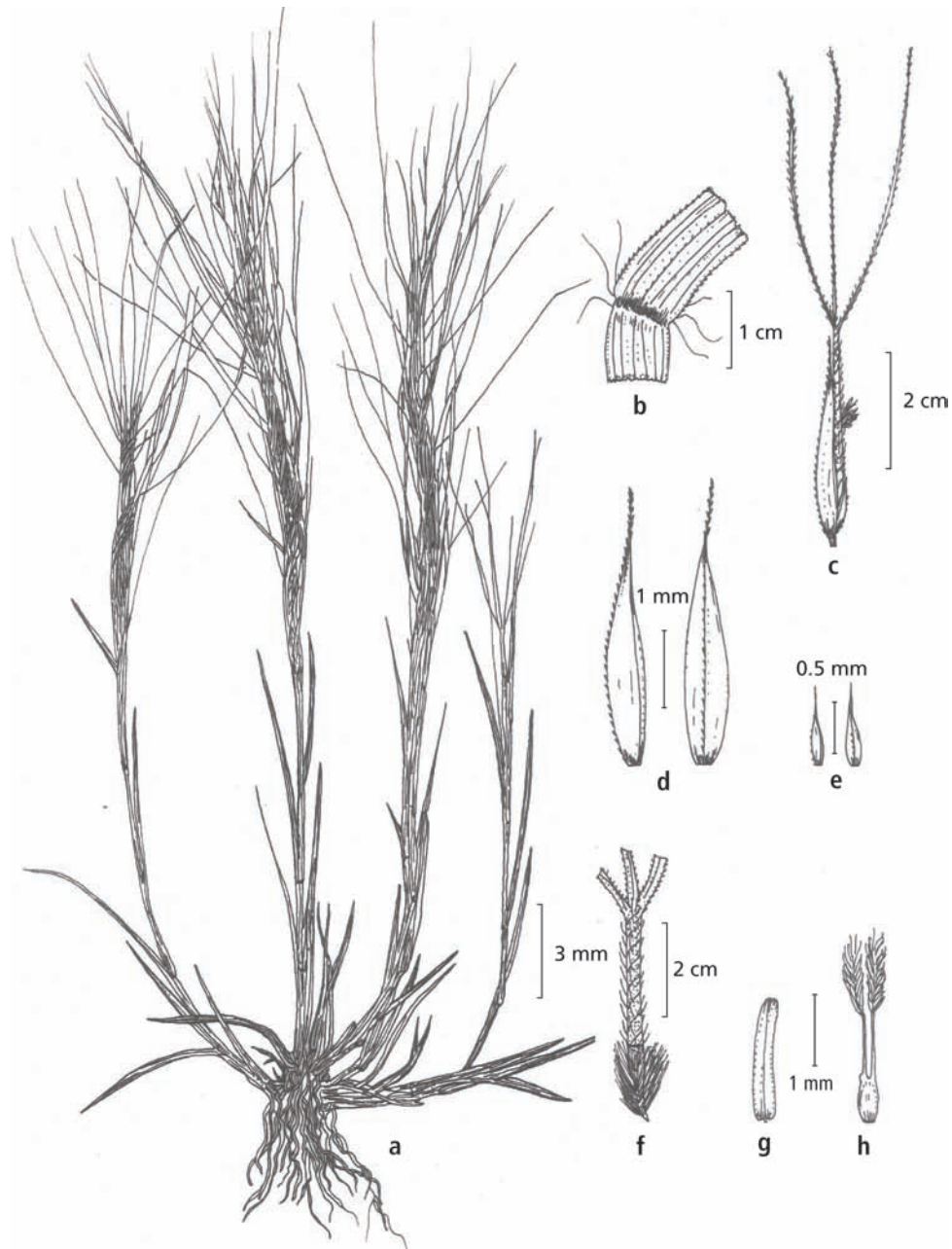


Fig. 1. *Aristida stocksii* (Hook.f.) Domin: a. Habit; b. Ligule; c. Spikelet; d. Lower glume (Side View & Dorsal View); e. Upper glume (S.V. & D.V.); f. Lemma with Column; g. Anther; h. Pistil.

Distribution: India (Andhra Pradesh [Anantapuramu district], Karnataka [Bellary and Belgaum districts], Maharashtra [Akola, Ahmednagar, Aurangabad and Beed districts]). **Endemic.**

Specimen examined: INDIA, **Andhra Pradesh**, Anantapuramu district, Kalasamudram Reserve Forest, 9.11.2015, S. Salamma & M. Anil Kumar 49201 (SKU).

Note: *Aristida stocksii* is closely related to *A. funiculata* Trin. & Rupr., but differs in having glumes of variable length and lemma with lengthy awns.

Dimeria bialata C.E.C. Fisch., Bull. Misc. Inform. Kew 1933: 351. 1933; Bor, Grass. India Burma Ceylon Pakistan: 140. 1960; C.E.C. Fisch., Fl. Madras: 1713. 1928; B.D. Sharma *et al.*, Fl. Karnataka: 327. 1984; Karthik. *et al.*, Fl. Ind. Enum. Monocot: 209. 1989. **Fig. 2**

Type: INDIA, South Kanara, Siradi, November 1908, A.K. Meebold 10548 (K000245785, image!).

Annual. Culms erect, 25–30 cm high; nodes subglabrous. Leaf blades linear-lanceolate, 3–6 × 0.2–0.3 cm, tuberculate-ciliate at margins, pilose with tubercle-based hairs on both sides; ligules c.

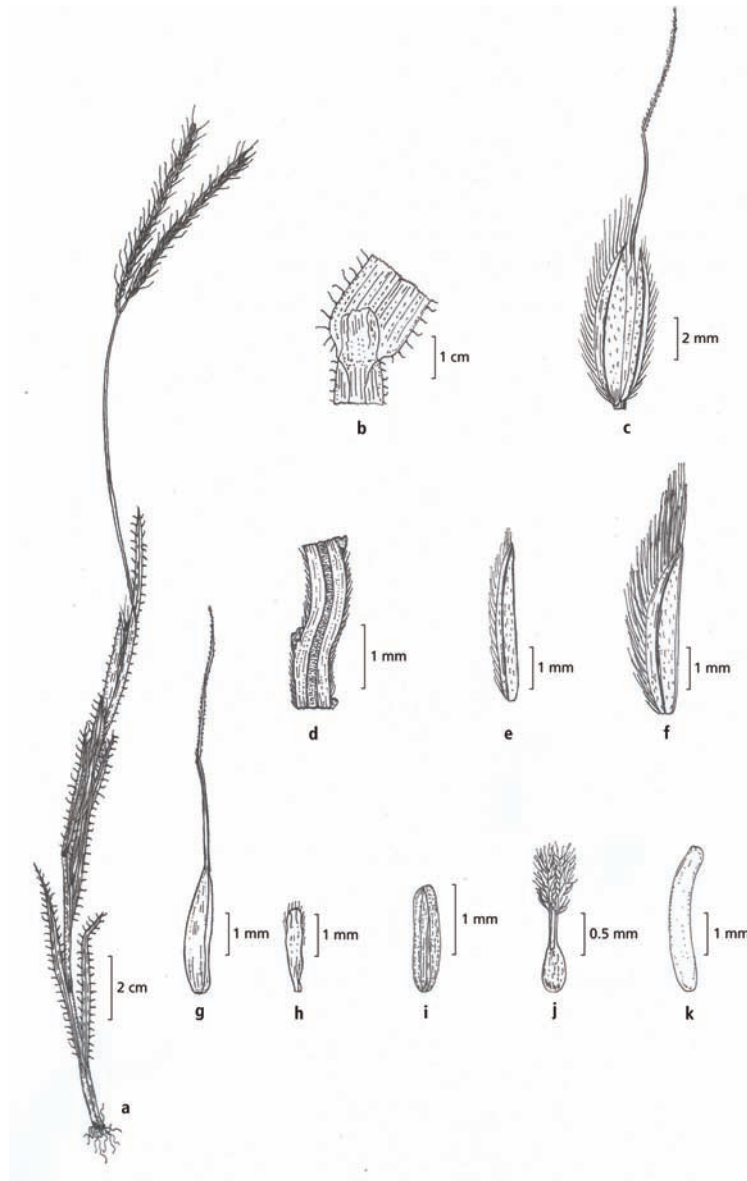


Fig. 2. *Dimeria bialata* C.E.C. Fisch.: a. Habit; b. Ligule; c. Spikelet; d. Rachis; e. Lower glume; f. Upper glume; g. Lemma; h. Palea; i. Anther; j. Pistil; k. Caryopsis.

1 mm long, ciliate-membrane; sheaths keeled, pilose with tubercle-based hairs. Racemes 2, divergent, straight, unilateral, to 4 cm long; rachis c. 1.5 mm wide, flattened, winged, scabrous on margins. Spikelets densely packed, 2-rowed, strongly appressed. Fertile spikelets pedicelled, elliptic, 3.5–4 mm long, laterally compressed, falling entire; callus c. 0.3 mm long, obtuse at base; pedicels reduced to a stump, flattened. Glumes dissimilar, exceeding the floret length. Lower glume lanceolate, 3–3.25 mm long, almost to first length of spikelet, coriaceous, much thinner on margins, 1-keeled; keel narrowly winged all along, ciliate at

margins, acute at apex. Upper glume elliptic, c. 3.5 mm to as long as spikelet, acute at apex, 1-keeled; keel broadly winged all along, ciliate at margins, acute at apex. Florets 2, lower barren, upper bisexual; basal sterile florets barren, without palea. Lemma of lower sterile floret oblong, hyaline. Fertile lemma elliptic, c. 2.5 mm long, hyaline, without keel, 1-veined. Lemma apex dentate, 2-fid, 1-awned; awn from a sinus, geniculate, 9–11 mm long including twisted column; column 2.5–4 mm long, glabrous. Palea minute, c. 1 mm long. Anthers 2, c. 1 mm long. Stigma plumose. Caryopses cylindrical, c. 2 mm long.

Flowering & Fruiting: September–December.

Habitat: Rare in the open habitats of moist deciduous forests. Key associates are *Arthraxon hispidus* (Thunb.) Makino and *Eragrostis pilosa* (L.) P. Beauv.

Distribution: India (Andhra Pradesh [East Godavari district], Karnataka [Chikmagalur district and South Kanara] and Kerala [Kannur district]). **Endemic.**

Specimen examined: INDIA, **Andhra Pradesh**, East Godavari district, Sivakasipuram, near Y. Ramavaram, 14.1.2016, *B.R.P. Rao & M. Anil Kumar* 49203 (SKU).

Note: *Dimeria bialata* is similar to *D. mooneyi* Raizada, but differs in having broadly winged upper glume and narrowly winged lower glume. Authors observed a specimen of *D. ornithopoda* collected from Visakhapatnam district, Andhra Pradesh housed at MH (Acc. No. 42623) with a determinavit label as *D. mooneyii* indicating the specimen with broadly winged upper glume and narrowly winged lower glume, key characters of *D. bialata*.

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