ADDITIONS TO THE GRASSES (POACEAE) OF TELANGANA FROM KAWAL TIGER RESERVE, ADILABAD DISTRICT, INDIA

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Kawal Tiger Reserve, located between 19°15′–19°20′N & 78°32′–79°12′E in Adilabad District of Telangana State, is spread in an area of 893km². The reserve is one of the recently declared tiger reserves (in April 2012). It has a dry deciduous forest type with several small grasslands. In our recent field survey, we could collect three grass specimens, which on critical study were identified as Dimeria orissae Bor, Iseilema holei Haines and Spodiopogon rhizophorus (Steud.) Pilger. A perusal of the literature revealed that these species were not reported from Telangana (Bor 1960; Pullaiah et al. 1992; Pullaiah 1997; Pullaiah & Karuppusamy 2008; Reddy et al. 2008; Kabeer & Nair 2009) and hence reported as new distributional records for Telangana. Each species is provided with a detailed description and images to facilitate identification.

Genus Dimeria R. Br., represented by 39 species in India (Kabeer & Nair 2009), has three species in Telangana (Pullaiah 1997). Dimeria orissae Bor is reported only from Odisha and Tamil Nadu (Bor 1960; Karthikeyan et al. 1989; Kabeer & Nair 2009).

Dimeria orissae


Tufted annuals. Culms erect, 25–60 cm high, nodes hairy. Leaf blades linear-lanceolate, 3–10 × 0.3–0.5 cm, sparsely tubercule-based hairy; ligules truncate, membranous, 0.5mm long; leaf sheaths 1–3 cm long. Racemes 2–3, 3–6 cm long; peduncle up to 20cm long; rachis triquetrous, flat on back, 0.5–0.7 mm wide, winged, ciliate along margins. Spikelets elliptic-oblong, 4.2–4.7 × 0.5–0.7 mm, hairy; callus bearded; pedicel truncate, 0.25–0.3 mm. Lower glumes linear-lanceolate, 3.5–3.7 × 0.3–0.4 mm, acute at apex, ciliate, keeled throughout, keel narrowly winged just below the tip. Upper glumes linear-

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lanceolate, 4.2–4.5 × 0.5–0.6 mm, acute at apex, ciliate throughout, keeled, keel narrowly winged just below the tip. Florets 2, epaleate, lower one barren, upper bisexual. Lower lemma oblong, hyaline, 1.7–2 × 0.1–0.2 mm. Upper lemma linear-lanceolate, 3.2–3.5 × 0.8–1 mm, hyaline, cleft at apex into 2 lobes, awn 11–15 mm long. Anthers 2, 0.75 mm. Caryopsis linear, 2 mm long.

Specimens examined: BSID 3933, 26.x.2013, Indianpalli Range, Kawal Tiger Reserve, Telangana, India (19°10’35.3” N & 78°51’47.9” E) elevation at 231 m, coll. Alok Chorghe, P.S. Annamma & Chandra Mohan; BSID 3962, 27.x.2013, Thadlapet Range (19°05’39.3” N & 79°06’09.1” E) at 194 m, coll. Alok Chorghe, P.S. Annamma & Chandra Mohan (Image 5).

Flowering & Fruiting: September–October.
Habitat: Grassy patches
Occurrence: Rare.
Distribution: Odisha, Tamil Nadu, and now from Telangana.

Genus *Iseilema* Andersson is represented by seven species in India, and three in Telangana. *Iseilema holei* Haines was previously reported from Bihar (Haines 1924) and Maharashtra (Naik 1998).

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**Iseilema holei**

Haines, Bot. Bihar & Orissa 1055, 1924; Bor, Grass. Burma, Ceylon, India & Pakistan 188. 1960 (Images 1b; 3)

Perennials. Culms robust, tufted, 100–150 cm high; nodes bearded; internodes purplish. Leaf blades linear-lanceolate, 20–50 × 0.3–0.5 cm, flat, acute at apex, glabrous, sparsely ciliate at base; ligules ciliate, 2 mm long; leaf sheaths 5–10 cm long, keeled, glabrous, long ciliate at mouth. Inflorescence a dense panicle, terminal and axillary, subtended by spathe and spatheole, spathe 2–5 cm long, spatheole 0.9–1.2 cm long, tuberculate. Racemes solitary, bear three heteromorphous spikelets; lower four involucral spikelets male, one fertile sessile spikelet and two male pedicelled spikelets; peduncle 3–4 mm long, hairy, tuberculate; rachis carrying sessile spikelet 1.2 mm long, sparsely hairy. Involute spikelets lanceolate, 3.7–4.5 × 0.7–1 mm, scabrid throughout, sparsely hairy; pedicel 0.7–1 × 0.2–0.3 mm, hairy above. Lower glumes lanceolate; 3.7–4.5 × 0.7–1 mm, scabrid, 5-nerved, 2-keeled, sparsely tuberculate hairy on keels, apex truncate. Upper glumes lanceolate, 3.6–4.2 × 0.6–0.8 mm, glabrous, 3-nerved, 2-keeled, keels winged, wings hairy. Upper lemmas linear-lanceolate, 2.5–3 × 0.2–0.3 mm, hyaline. Stamens 3, anthers 1.2–1.4 mm long. Sessile spikelets linear-lanceolate, 3.5–4 × 0.8 mm, broader at base and narrowed at apex, awned. Lower glumes linear-lanceolate, 3.5–4 × 0.7–0.8 mm, 4-nerved, 2-keeled, apex truncate, scabrid on upper half and glabrous on lower half. Upper glumes linear lanceolate, 3.4–3.7 × 0.6–0.8 mm, acuminate to aristate at apex, arista up to 0.5 mm long, 3-nerved, 2-keeled. Upper lemmas linear, 2.4–3 × 0.1–0.2 mm, awned; awn geniculate, 13–14 mm long. Upper palea, oblong-lanceolate, 1.8–2 × 0.7–0.8 mm, hyaline nerveless, apex truncate. Caryopsis oblong lanceolate, 1.8–2 × 0.8–1 mm. Pedicelled spikelets linear-lanceolate, 4.3–5.5 × 0.5–0.8 mm, scabrid throughout; pedicel 2 mm long, ciliate. Lower glumes linear-lanceolate, 4–5.3 × 0.6–1 mm, acute at apex, 9-nerved, scabrid, tuberculate on nerves. Upper glumes linear-lanceolate, 4–5 × 0.5–0.7 mm, acuminate at apex, 3-nerved, glabrous, scabrid and tuberculate on nerves. Upper lemmas linear-lanceolate, 3.8–4 × 0.2–0.3 mm, hyaline.

Specimens examined: BSID 3937, 26.x.2013, Indianpalli Range, Kawal Tiger Reserve, Telangana, India (19°10’43.1” N & 78°51’47.3” E) elevation at 246 m, coll. Alok Chorghe, P.S. Annamma & Chandra Mohan (Image 6).

Flowering & Fruiting: September–October.
Habitat: On moist grassy patches
Occurrence: Rare.
Distribution: Bihar, Maharashtra, and now from Telangana.
Genus *Spodiopogon* Trin., is represented by five species in India (Bor 1960; Kabeer & Nair 2009) and hitherto not reported from Telangana. *Spodiopogon rhizophorus* (Steud.) Pilger is distributed in Gujarat, Karnataka, Kerala, Maharashtra, NagarHaveli, Rajasthan and Tamil Nadu states (Karthikeyan et al. 1989; Kabeer & Nair 2009).


Tufted annuals. Culms erect, 90–150 cm high; nodes glabrous, internodes purplish. Leaf blades broadly

Image 2. *Dimeria orissae* Bor: a - Habit; b - Rachis; c & d - Spikelet; e - Lower glume; f - Upper glume; g & h - Upper lemma; i - Caryopsis.
lanceolate, 10–25 × 2–4 cm, acute at apex, apex aristate, sparsely tuberculate hairy on both sides, margin scabrid, pseudopetiolate, pseudopetiole 1–12 cm long; ligules membranous; leaf sheath 6–15 cm long, apex auricled. Panicle densely villous, 6–13 × 2–4 cm, with spathe like sheath below panicle; peduncle 10–20 cm long. Racemes 1–3 per node, 1–4 cm long. Spikelets paired, one sessile, other pedicelled, homogamous, pedicelled spikelets smaller in size. Sessile spikelets oblong-lanceolate, 4–5 × 1–1.5 mm, acute at apex, hairy throughout, hairs pinkish-white. Lower glumes oblong-lanceolate, 4–4.8 × 1.5–1.7 mm, acuminate at apex, 7–9 nerved, hairy, hairs up to 2 mm long pinkish-white in colour. Upper glumes oblong-lanceolate, 3.9–4.5 × 2–2.2 mm, acuminate at apex, sometime saristate, arista up to 0.3 mm long, 9–11-nerved, sparsely hairy. Florets 2, lower male and upper bisexual. Lower lemma oblong-lanceolate, 3–3.5 × 1.6–2 mm, hyaline, truncate at apex, minute hairy. Lower paleas
linear-lanceolate, 4–4.4 × 0.5–0.6 mm, hyaline, acute at apex minute hairy. Upper lemmas lanceolate, 2.8–3 × 0.7–0.8 mm, chartaceous, 2-lobed, 1-nerved, lobes acuminate at apex, awn arise from sinus, geniculate, 6–8 mm long. Upper paleas oblong-lanceolate, 2–2.3 × 0.7–0.8 mm, hyaline, chartaceous, obtuse at apex, sparsely hairy, 5–6-nerved. Stamens 2, anthers 2.3–2.7 mm long. Ovary elliptic-oblong, 0.5 × 0.1 mm; stigma plumose, 2.6–2.8 mm long. Caryopsis elliptic-lanceolate, 1–1.2 × 0.2–0.3 mm.

Specimens examined: BSID 3987, 28.x.2013, Jannaram Range, Kawal Tiger Reserve, Telangana, India (19°09'28.0"N & 079°04'47.5"E) elevation at 250m, coll. Alok Chorghe, P.S. Annamma & Chandra Mohan (Image 7).

Flowering & Fruiting: September-October.
Habitat: Under forest cover
Occurrence: Occasional.
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Distribution: Gujarat, Karnataka, Kerala, Maharashtra, Nagar Haveli, Rajasthan, Tamil Nadu, and now from Telangana.

References


