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Research article

Chrysopogon hamiltonii (Hook.f.) Haines (Poaceae: Andropogoneae) - Addition to the flora of Telangana, India

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Abstract: The present study is the addition of *Chrysopogon hamiltonii* from Poaceae as a new record to the grass flora of Telangana. In addition to this, ecology and distribution have been provided.

Keywords: Distribution - Ecology - New record - Poaceae.

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INTRODUCTION

The genus *Chrysopogon* Trin., comprises ca. 48 species, distributed in tropical and subtropical regions of the Old World to Pacific, South-central and Southeast North America, and Cuba in the Carribean (Clayton *et al*. 2006 onwards). In India, it is represented by 23 species (Kellogg *et al*. 2020, Prasanna *et al*. 2020, Nagaraju *et al*. 2021) and 14 species were reported in the Eastern Ghats (Pullaiah 1997, Kabeer & Nair 2009, Pullaiah & Karuppusamy 2020). Among 14 species recorded from Eastern Ghats, 12 are reported from Andhra Pradesh; 6 are from Odisha (Saxena & Bramham 1996), 9 species from Tamil Nadu (Kabeer & Nair 2009) and 3 species from Telangana (Pullaiah 2015, Reddy & Reddy 2016) and recently *Chrysopogon serrulatus* added to the flora of Telangana by Nagaraju *et al*. (2021).

During the floristics explorations of Telangana state, the authors collected specimens of an interesting grass species from Amrabad Tiger Reserve, Nallamalais, Nagarkurnool district, Telangana. After a critical study, it was identified as *Chrysopogon hamiltonii* (Hook. f.) Haines of Poaceae. The perusal of relevant literature (Pullaiah 2015, Reddy & Reddy 2016) revealed that this species was not reported from Telangana. Hence, the present collection of *Chrysopogon hamiltonii* from Telangana is a new distributional record to the flora of Telangana state. A detailed description and photo plate are provided to facilitate its easy identification.

MATERIALS AND METHODS

An intensive and extensive floristic survey was conducted from 2012 to till date in the Eastern Ghats of Telangana. The plant specimens were collected at Jalpenta and Pedda Uty areas of Kollapur Range, Amrabad Tiger Reserve and made herbarium following the standard method (Jain & Rao 1977). The mounted specimens were identified with the help of available literature (Pullaiah & Karuppusamy 2020). The phenological record of the plants, habitat and associated species were noted. Herbarium specimens were deposited at Telangana State Herbarium (TBGH), Dr. B.R.R. Government Degree College, Jadcherla for future reference.

OBSERVATIONS AND RESULTS

After a critical study, the specimens were identified as *Chrysopogon hamiltonii* (Hook. f.) Haines (Fig. 1). A scrutiny of relevant literature has revealed that the species is not reported from Telangana state (Pullaiah 2015, Reddy & Reddy 2016, Reddy 2018). Hence, the present distribution of this grass species forms new distributional record for the Telangana State. Rao *et al*. (2012) reported the present species as new distributional record for South India, but it was collected from Samrajyam Konda near Gorantla, presently which is in Andhra Pradesh State.

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Figure 1. **A**, Habitat; **B**, Inflorescence; **C**, Ligule; **D**, Pedicel; **E**, Pedicelled Spikelet; **F**, Lower Glume; **G**, Upper Glume; **H**, Lower Lemma; **I**, Upper Lemma; **J**, Anthers; **K**, Sessile Spikelet; **L**, Lower Glume; **M**, Upper Glume; **N**, Lower Lemma; **O**, Upper Lemma; **P**, Anthers; **Q**, Gynoecium.

Key to the species of *Chrysopogon* in Telangana

1. Pedicels half the length of sessile spikelet or longer:
    2. Pedicels glabrous or nearly so ……..….. ***Chrysopogon aciculatus***
    2. Pedicels villous with rusty hairs or pale hairs:
        3. Lower glume of the pedicelled spikelet with a long awn, upper glume not or very short awn ……. ***Chrysopogon hamiltonii***
        3. Both glumes of the pedicelled spikelets awned ……...……. ***Chrysopogon orientalis***
1. Pedicels shorter than half the length of sessile spikelets:
    4. Upper glume of sessile spikelet shortly ciliate in upper quarter …...……. ***Chrysopogon serrulatus***
    4. Upper glume of sessile spikelet with long golden hairs in lower two thirds …..... ***Chrysopogon fulvus***

TAXONOMIC TREATMENT

Chrysopogon hamiltonii (Hook. f.) Haines, Bot. Bih. Orissa, 1036. 1924; Bor, Grass. India. 117. 1960; Moulik, Grass. And Bamb. India 1: 241. 1997.

Andropogon hamiltonii Hook. f., Fl. Brit. India. 190. 1897.

Perennials; culms erect, tufted, stout, to 1.5 m high. Nodes glabrous. Leafs heaths 5–15cm, compressed, keeled, glabrous. Ligules 0.25 mm, membranous, a rim of hairs. Leaf blades 15–32 × 0.5-1.0 cm, linear-lanceolate, base cordate, apex acute, glabrous, scaberulous on midrib, margin spinulosely serrulate, cilia tubercle based. Panicle 10–25 cm long, effuse. Spikelets in triplets, one sessile and two pedicelled. Sessile spikelets 5.5–6.0 × 1.0–1.3 mm, narrowly elliptic, awned, awn 7–10 cm long; callus long villous, 2.5–2.8 mm, bearded with rufous hairs. Lower glume 5.0–7.3 × 1–2 mm, lanceolate, rigid, narrowly boat-shaped, coriaceous, scabrid towards apex, margins ciliate, 3-nerved. Upper glume 5.5–7.3 × 1.0–1.5 mm, lanceolate-oblong, coriaceous, rigid, boat-shaped, scabrid towards apex, margins ciliate, faintly 3-nerved, awned; awn 10–14 mm long. Lower lemma 4–6 × 0.5–1.0 mm, lanceolate, hyaline, 2-nerved, ciliate; epaleate. Upper lemma 5–6 × 0.3–0.4 mm, lanceolate, hyaline to a base of awn, awned; awn 7–10 cm long, geniculate; epaleate. Stamens 3; anthers 4.5 × 0.8 mm. Ovary 0.5 × 0.3 mm, oblong. Styles 0.5 mm; stigma *ca*. 2.4 mm long. Pedicelied spikelet 11 × 1.5 mm, lanceolate, awned; awn 11 mm long: pedicel 4–5 × 0.5–1.0 mm long; margins covered with silky hairs. Lower glume 9–11 × 1.4–1.6 mm, elliptic-lanceolate, membranous, ciliate on dorsal side, margins, apex acute, margins inflexed, 5–7-nerved, 2-keeled, awn 10 mm. Upper glume 8–9 × 1–1.2 mm, linear-lanceolate, narrowly lanceolate, membranous, apex acute, 3-nerved, margins inflexed, 2-keeled, ciliate. Lower lemma 8.5 × 1.5 mm, 2-keeled, ciliate, hyaline, elliptic-oblong, apex acute, margins ciliate, 2-nerved; epaleate. Upper lemma 5–6 × 0.6–0.9 mm, linear, hyaline, 2-keeled, apex acute, margins inflexed, nerveless or faintly 1-nerved; epaleate. Stamens 3, 9 × 1 mm.

Habitat: Rare on hill slopes along with other grasses like *Sehima nervosum* (Rottler) Stapf, *Heteropogon contortus* (L.) P. Beauv. ex Roem. & Schult., *Dichanthium foveolatum* (Delile) Roberty, *Cymbopogon* spp.

Flowering and Fruiting: September to December.

Specimens Examined: Jalpenta, Pedda Uty, Kollapur Forest Range, Nagarkurool District, Telangana, A. Ramakrishna & B. Sadasivaiah 3774.

Distribution: World: Asia tropical- India (Clayton *et al*. 2006). INDIA: Andhra Pradesh, Bihar, Telangana.

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