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RESEARCH ARTICLE

Isachne kannurensis sp. nov. (Poaceae) - a New Species from Lateritic Hills of Kannur, Kerala, India

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Abstract

Isachne kannurensis Sunil, Ratheesh, Sujana & Sreekumar (Poaceae), a new species from the lateritic hills of Kannur District, Kerala, India, is described and illustrated. It is closely allied to *Isachne confusa*, but differs by having annual habit, long, glabrous leaf sheath and broad leaf lamina, long-exserted peduncle, large panicles, small spikelets, florets with rachilla extension, slender long pedicels and small pubescent lemmas.

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Introduction

The genus *Isachne* R.Br. (Poaceae) is with about 90 species (Mabberley, 2008) is distributed in tropical and sub-tropical regions of the world, but mainly in Asia. Sreekumar and Nair in their Floristic Studies of Grasses (1991) reported 29 species for India and 8 species in Kerala. Later floristic explorations in India have resulted in the additions of few more species, namely *Isachne veldkampii* (Bhat and Nagendran, 1983), *I. henryi* (Srinivasan and Sreekumar, 1988) and *I. jayachandrani* (Gopalan and Chandrasekaran, 2000).

During a recent floristic exploration in the lateritic hillock in the midland of Kannur District, Kerala, an interesting specimen of *Isachne* R. Br. was collected at an altitude ± 200 m and were found to be quite distinct from the hitherto known species and detailed study revealed their novelty. It is described and illustrated here as a new species.

TAXONOMIC TREATMENTS

Isachne kannurensis Sunil, Ratheesh, Sujana & Sreekumar **sp. nov.** (Figs. 1 & 2).

Type: INDIA. Kerala. Kannur District, Kanai Kanam, alt. ± 200 m, 24 September, 2012, Sunil, Ratheesh Narayanan & Nandakumar, 4258 (Holotype, CAL; Isotypes, MH: MSSH).

Annuals. Culms erect to decumbent, more or less ribbed, 12–40 cm high; nodes glabrous, lower ones rooting. Leaf blades 0.8–3 x 0.6–1.7 cm, broadly ovate to ovate-lanceolate, striate, base cordate, amplexicaul, overlapping, margins ciliate with tubercle-based hairs, apex acute, nerves 10–16 pairs, prominently raised, sparsely hirsute above on nerves towards apex; leaf sheaths 0.3–2.3 cm long, more or less ribbed, glabrous; ligule absent. Panicles 2–8.5 x 1.5–6 cm, many flowered, pyramidal; peduncle long-exserted, 3–13 cm long, more or less ribbed;

branches 8–26, 0.8–3 cm long with glandular bands, spreading. Spikelets 0.8–1 x 0.8–1 mm, globose-obovoid; pedicels slender, 1–4 mm long with glandular bands. Lower glume 0.7–0.8 x 0.5–0.6 mm, ovate-elliptic, obtuse at apex, chartaceous, greenish-purple, 3- nerved, with few setose hairs on dorsal side towards apex. Upper glume 0.8–0.9 x 0.5–0.6 mm, ovate-orbicular, obtuse or rounded, rarely acute at apex, chartaceous, green-purple, margins hyaline, 3–5-nerved, with few setose hairs on dorsal side. Florets 2, similar in shape, size and texture, bisexual, 0.7–0.8 x 0.4–0.5 mm, ovate-elliptic, obtuse at apex; rachilla extension ca. 0.1 mm long in between florets; callus shortly bearded. Lower lemma 0.7–0.8 x 0.4–0.5 mm, plano-convex, ovate-elliptic, apex obtuse, margins incurved, coriaceous, nerves obscure, appressed pubescent. Lower palea like lemma but flat with involute margins, 0.7–0.8 x 0.4–0.5 mm, ovate-elliptic, obtuse at apex, coriaceous, sparsely appressed pubescent. Upper lemma 0.7–0.8 x 0.4–0.5 mm, plano-convex, ovate-elliptic, obtuse at apex, margins incurved, coriaceous, nerves obscure, appressed pubescent. Upper palea like lemma but flat with involute margins, 0.6–0.7 x 0.3–0.4 mm, ovate-elliptic, obtuse at apex, coriaceous, sparsely appressed pubescent. Lodicules 2, oblong, hyaline. Stamens 3; anthers 0.6–0.7 mm long, cream- coloured. Ovary 0.15–0.2 mm long, ellipsoid; style 0.2–0.3 mm long; stigma 0.6–0.7 mm long, plumose.

Flowering & Fruiting: September to November.

Etymology: The specific epithet is derived from the type locality, Kannur District in Kerala State, India.

Habitat & Distribution: This species grows in large colonies at an altitude of ± 200 m, in semi marshy areas of lateritic area. It is so far known only from two localities of north-eastern part of Kannur District in Kerala. The species appears with the onset of the south-west Monsoon (July-August).

Additional specimen examined (Paratype): INDIA. Kerala: Kannur District, Aravanchal, 28 September 2013, Sunil, Ratheesh Narayanan & Sujana MSSH 1235 (Herbarium of M S Swaminathan Research Foundation, Wayanad).

Conservation status: The species is having restricted distribution in lateritic plateau of north-eastern part of Kannur District, Kerala and the habitat is prone to mining, land conversion, and grazing. It grows in association with *Ischaemum mangaluricum*, *Oryza rufipogon*, *Utricularia reticulata*, *Fimbristylis* sp., *Exacum sessile*, *Canscora diffusa*, *Rhamphicarpa longiflora*, *Geissaspis tenella*, *Eriocaulon xeranthemum*, *Rotala malabarica* etc.

Notes: *Isachne kannurensis* Sunil, Ratheesh, Sujana & Sreekumar morphologically allied to *Isachne confusa* in having small spikelets, ovate leaf lamina with amplexicaul base and pectinately ciliate margins but differing in its annual habit, long, glabrous leaf sheath and broad leaf lamina, long- exerted peduncle, large panicles, small spikelets, florets with rachilla extension, slender long pedicels and small pubescent lemmas. A more detailed morphological comparison of these two species is given in **Table 1**.

Table 1. Diagnostic morphological characters of *Isachne kannurensis* and *Isachne confusa*

<i>Isachne kannurensis</i> Sunil, Ratheesh, Sujana & Sreekumar	<i>Isachne confusa</i> Ohwi
Annuals	Perennials
Leaf blades broadly ovate, 6–17 mm broad	Leaf blades ovate or ovate-lanceolate, 2–7 mm broad
Leaf sheaths up to 23 mm long, glabrous	Leaf sheaths up to 8 mm long, with long tubercle- based hairs
Peduncle long- exerted, 3–13 cm long	Peduncle not long- exerted
Panicles 2–8.5 cm long, 1.5–6 cm wide, branches up to 3 cm long	Panicles 1.5–3.5 cm long, up to 2.5 cm wide, branches up to 1 cm long
Pedicels slender, 1–4 mm long	Pedicels stout shorter than or equalling spikelets
Spikelets 0.8–1 mm long	Spikelets 1.2–1.3 mm long
Florets 0.7–0.8 mm long	Florets 1–1.1 mm long
Rachilla extension ca. 0.1 mm long	Rachilla extension absent
Lemmas 0.7–0.8 mm long, appressed pubescent on back	Lemmas 1–1.1 mm long, minutely white- granular on back and glabrous, margins scurfy- pubescent

Fig. 1. *Isachne kannurensis* Sunil, Ratheesh, Sujana & Sreekumar A. Plant, B. Spikelet, C. Upper glume, D. Lower glume, E & F. Lower lemma, G. Upper lemma with rachilla extension side view, H. Palea dorsal view, I. Palea ventral view, J. Pistil, K. Leaf base without ligule. Drawings by Jayesh P. Joseph from live specimens.

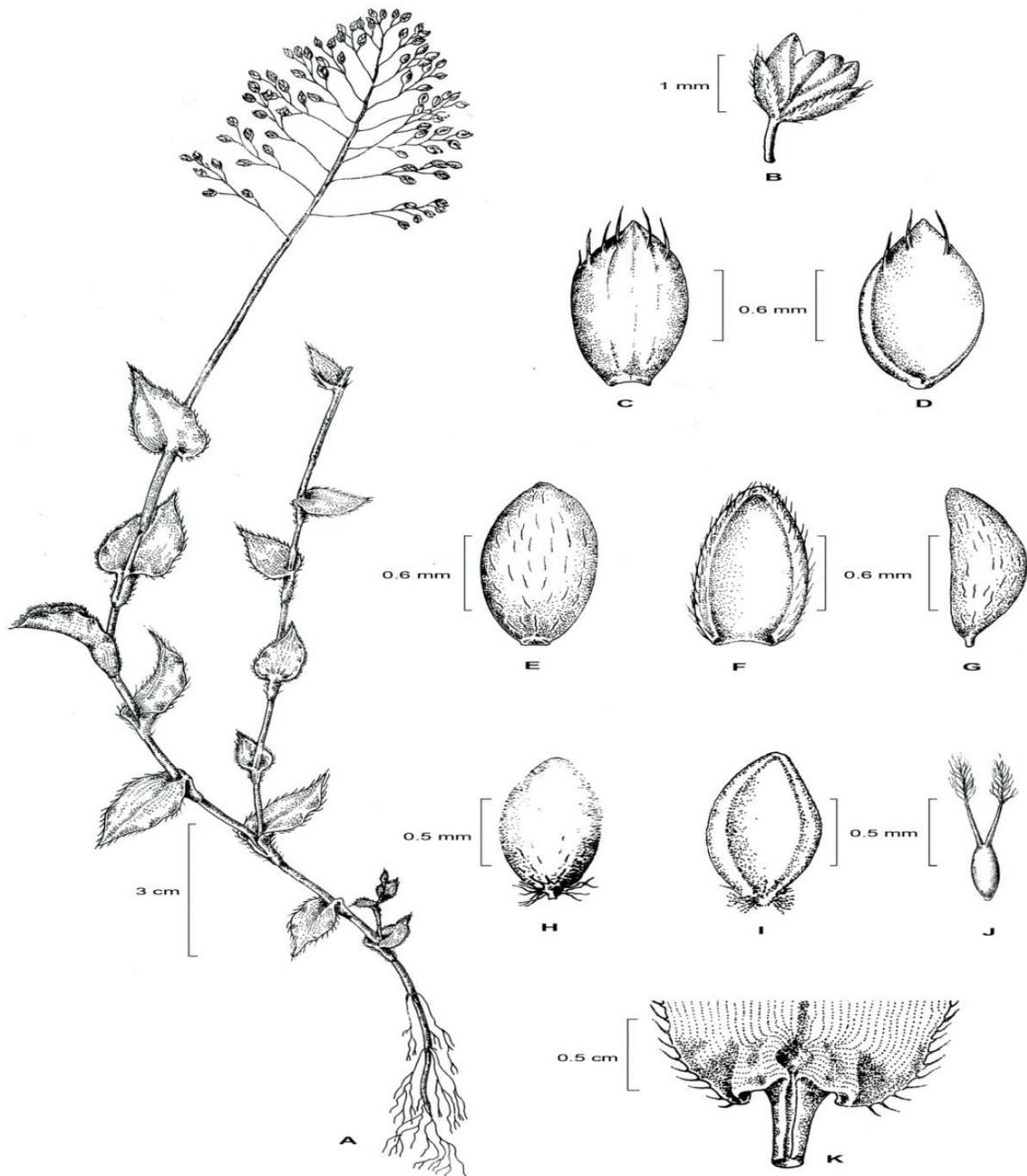


Fig. 2. *Isachne kannurensis* Sunil, Ratheesh, Sujana & Sreekumar. A. Plants growing its habitat; B. Single plant; C. Leaves; D. Inflorescence



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