



ISACHNE BHATII, A NEW SPECIES OF POACEAE FROM THE LATERITE PLATEAU OF NORTHERN KERALA, INDIA.

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ABSTRACT. *Isachne bhatii*, a new species of poaceae collected from the lateritic hillocks of Kalliad, Kerala, India is described and illustrated. It is allied to *Isachne clarkei* in having spikelets of same size and shape, two similar florets in the spikelets, pilose upper glume and lemma but differs in having ribbed internodes, glabrous leaves, shorter pedicels, glabrous lower glume and white cottony mass at the base of lemma and palea.

Key words. India, *Isachne bhatii*, Kerala, New species, Poaceae

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INTRODUCTION

The genus *Isachne* R. Br. (Poaceae) is widely distributed in the wet areas of the tropics and subtropics with 110 species [1]. Prakash and Jain [2] reported 29 species from India including 18 endemics. After that 3 new species were added to list of *Isachne* R. Br in India. They are *Isachne henryi* [3], *Isachne jayachandrani* [4] and *Isachne kannurensis* [5]. This marshy genus is commonly growing in the wetlands such as paddy fields, river banks and seasonal ponds seen in lateritic hillocks.

During floristic explorations in the lateritic hillocks of Northern Kerala, the authors collected an interesting specimen of *Isachne* R Br. On critical analysis, it was found out to be quite different from all of the known taxa and is described and illustrated here as new species.

TAXONOMY

Isachne bhatii Biju, Josekutty & Augustine J. *sp. nov.* Figure 1.

Type: INDIA. Kerala: Kannur District, Kalliad lateritic plateau, N 12°16'28.5", E 075°14'05.6", 82 m, 23 August 2014, Biju & Jomy 2491 (holo: CAL, iso: MH).

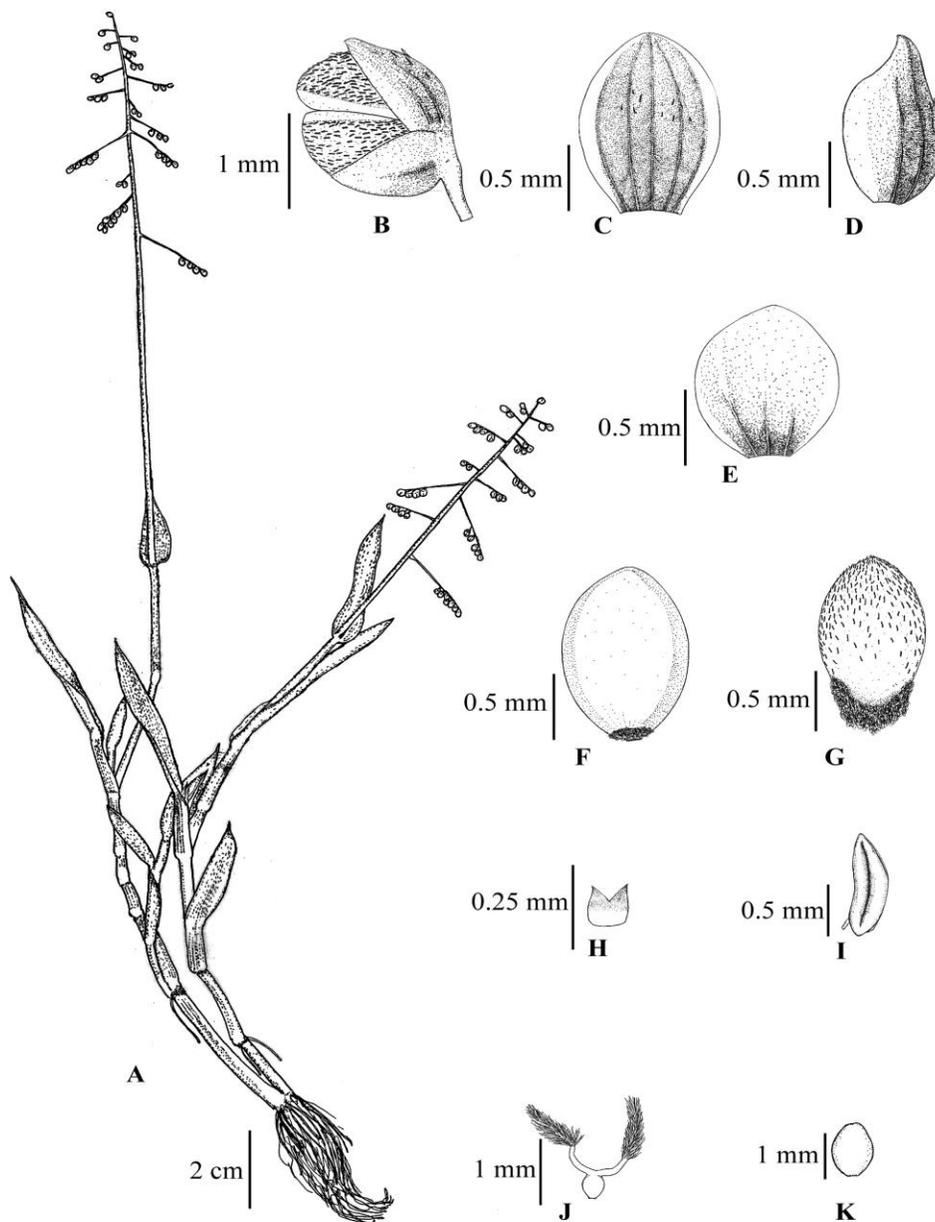


Fig. 1. *Isachne bhatii* A, Habit; B, Spikelet; C, Upper glume dorsal view; D, Upper glume lateral view; E, Lower glume; F, Palea with basal white cottony mass; G, Lemma with basal white cottony mass; H, Lodicule; I, Stamen; J, Carpel; K, Grain.

Diagnosis

Isachne bhatii Biju, Josekutty & Augustine J. is allied to *Isachne clarkei* Hook. f. but differs in having ribbed internodes, glabrous leaves, shorter pedicels, glabrous lower glume and white cottony mass at the base of lemma and palea.

Description

Glabrous annual, decumbent, rooting from the base and basal nodes; culms 12–20 cm long; nodes glabrous; internodes 1.2–3.5 cm long, longitudinally ribbed, fistular, expanded at base. Leaves linear-lanceolate, 2.5–6.5 × 0.4–1 cm, glabrous, nerves many, midrib obscure, margins spiny, acute, round-attenuate, ligules absent; leaf sheath 1–3 cm long, glabrous, slightly detached from the stem at the top; panicle exerted from the upper most sheath, 7–12 × 2–3.8 cm, branches 10–15, 0.5–2.5 cm long, glandular, smooth, spikelets 1–7; spikelets secund, ovoid-elliptic, 1.3–1.5 mm long, pedicel short, 0.2–0.6 mm long, glabrous, eglandular; florets 2, similar, bisexual; lower glume elliptic, 0.8–1 mm long, 0.6–0.9 mm wide, obtuse, faintly 3 nerved, glabrous, purplish red; upper glume elliptic, 1.1–1.35 mm long, 0.9–1.1 mm wide, obtuse, 5 nerved, minutely pilose, obtuse, shorter than lemma, purplish red; lemma elliptic, 1.3–1.5 mm long, 1–1.2 mm wide, obtuse, hyaline, margins involute, densely pilose on the dorsal side, white cottony mass at the base; palea elliptic, 1.2–1.4 mm long, 0.9–1.1 mm wide, glabrous, hyaline, obtuse, margins involute, white cottony mass at the base; lodicule 2, oblong, 0.12–0.15 × 0.08–0.1 mm, greenish, bilobed at the apex; stamens 3; anther purplish, elliptic-oblong, 0.8–0.9 mm long, 0.2–0.3 wide; filament hyaline, 0.4–0.5 mm long; ovary elliptic-obovoid, 0.25–0.35 × 0.15–0.23 mm, glabrous; style 0.5–0.6 mm long; stigma plumose 0.8–0.9 mm long. Grain ovoid-elliptic, 1–1.2 × 0.6–0.8 mm, greyish brown.

Etymology

The new species is named for honoring the famous taxonomist Dr. K. Gopalakrishna Bhat, who has specialized in the study of grasses in India.

Similar species

Isachne bhatii is similar to *Isachne clarkei* [6], but differs in many characters. Table 1.

Distribution, Habitat & Ecology

Isachne bhatii Biju, Josekutty & Augustine J. is restricted in seasonal ponds in the lateritic hillocks of Kalliad, Kerala, India. The plant grows in wet areas around the seasonal ponds in association with *Isachne miliacea* Roth., *Cyperus halpan* L., *Rhynchospora wightiana* Steud, *Geissaspis tenella* Benth., *Eriocaulon lanceolatum* Miq. ex Koernicke., *Murdannia semiteres* (Dalz.) Sant.

Flowering and Fruiting

July – December.

Conservation status

Isachne bhatii Biju, Josekutty & Augustine J. is restricted in distribution to a seasonal pond in the lateritic plateau of Kalliad, Kerala, India. Hence it can be considered as an endemic species, demanding high conservatory attention. Lateritic hillocks in Kerala are facing high level of habitat destruction due to many anthropogenic activities like building construction, mining and dumping of wastes. Uncontrolled tourism and over grazing are other impacts adversely affecting the survival of these kind of narrow endemic species. It is high time measures were taken to conserve these fragile ecosystems.

Table 1. The distinguishing characters of *Isachne bhatii* and *Isachne clarkei*

character	<i>Isachne bhatii</i>	<i>Isachne clarkei</i>
culms	Spongy, base of the internode expanded, ribbed.	Not spongy, internodal base not expanded, not ribbed
Leaf lamina	Linear-lanceolate, glabrous	Elliptic, pilose
Leaf sheath	Glabrous, sheath loosely covered at the basal internodes	Pilose, sheaths tightly covered
Ligule	Absent	Present, 1-1.5 mm long
Panicle	7-12 cm long, branches oblique, spikelets secund	1.5-8 cm long, branches horizontal, spikelets distichous
Pedicels	Pedicels very short, 0.2–0.5 mm long, eglandular	Pedicels longer than spikelets, glandular
Upper glume	5 veined	7 veined
Lower glume	Glabrous	Sparsely hairy
Lemma & Palea	White cottony mass present at the base	White cottony mass absent

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