

## A New Species of *Phragmites* (*Gramineae*) from Ladakh, India

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*Phragmites bhattacharyyae* Kandwal, Uniyal & S. Rajeshwari (*Gramineae*) is described from Ladakh, northern India. This new species is also illustrated and compared with closely allied species of this genus.

**Key words:** *Arundineae*, *Gramineae*, India, Ladakh, NW Himalaya, *Phragmites*.

The genus *Phragmites* Adans. (*Gramineae*) of tribe *Arundineae* Dumort. is represented by ca. four species in the world. Cosmopolitan in distribution, the species of the genus are found commonly growing along marshes and river-sides (Clayton and Renvoize 1986). In India the genus is represented by two species (Bor 1960, Karthikeyan et al. 1989), viz. *P. karka* (Retz.) Trin. ex Steud. and *P. australis* (Cav.) Trin. ex Steud. both mainly differing in their leaf blades, primary panicle branches, and the size of glume and rhachilla hairs.

During routine identification in herbarium of the Botanical Survey of India, Northern Regional Centre, Dehra Dun (BSD) the authors came across some interesting specimens of *Phragmites* from Ladakh (Jammu & Kashmir), India which differed morphologically from other species of the genus and could not be assigned to any of the known species. Further critical study, along with the scrutiny of literature (Hooker 1897, Bor 1960, Cope 1982 and consultation of herbarium specimens of *Phragmites* at DD and BSD confirmed this to be hitherto an undescribed species. The same is described and

illustrated here as *Phragmites bhattacharyyae*, sp. nov. The distinction between the present taxon and its closely allied species is shown in Table 1.

***Phragmites bhattacharyyae*** Kandwal, Uniyal & S. Rajeshwari, sp. nov. [Fig. 1]

Haec species *Phragmites karka* (Retz.) Trin. ex Steud. affinis, sed culmis 30–70 cm altis, laminis foliorum ad 9 cm longis, apicibus argute acutis, subter scabridis, paniculis ad 14 cm longis, ramis subter dense spiculatis; pilis rhachillae 10–15 mm longis, glumis inferarum, 4–4.5 mm longis, apice fassis, lemmatibus 13–15 mm longis, postice scabridis, paleis apicea incisuratis, antheris 1.5–2 mm longis differt.

**Type:** India. Jammu & Kashmir, Ladakh, Upshi, Indus valley. 7 Sept. 1970, alt. 3500 m, U. C. Bhattacharyya 41053 (BSD–holotype, isotype).

Rhizomatous perennial herb, up to 70 cm high. Culms erect, glabrous, 10–15-nodded; internodes 1–3(–4) cm long, glabrous. Culm-sheath 2–4 cm long, striate, glabrous, tightly clasping the culms; lower sheaths clearly

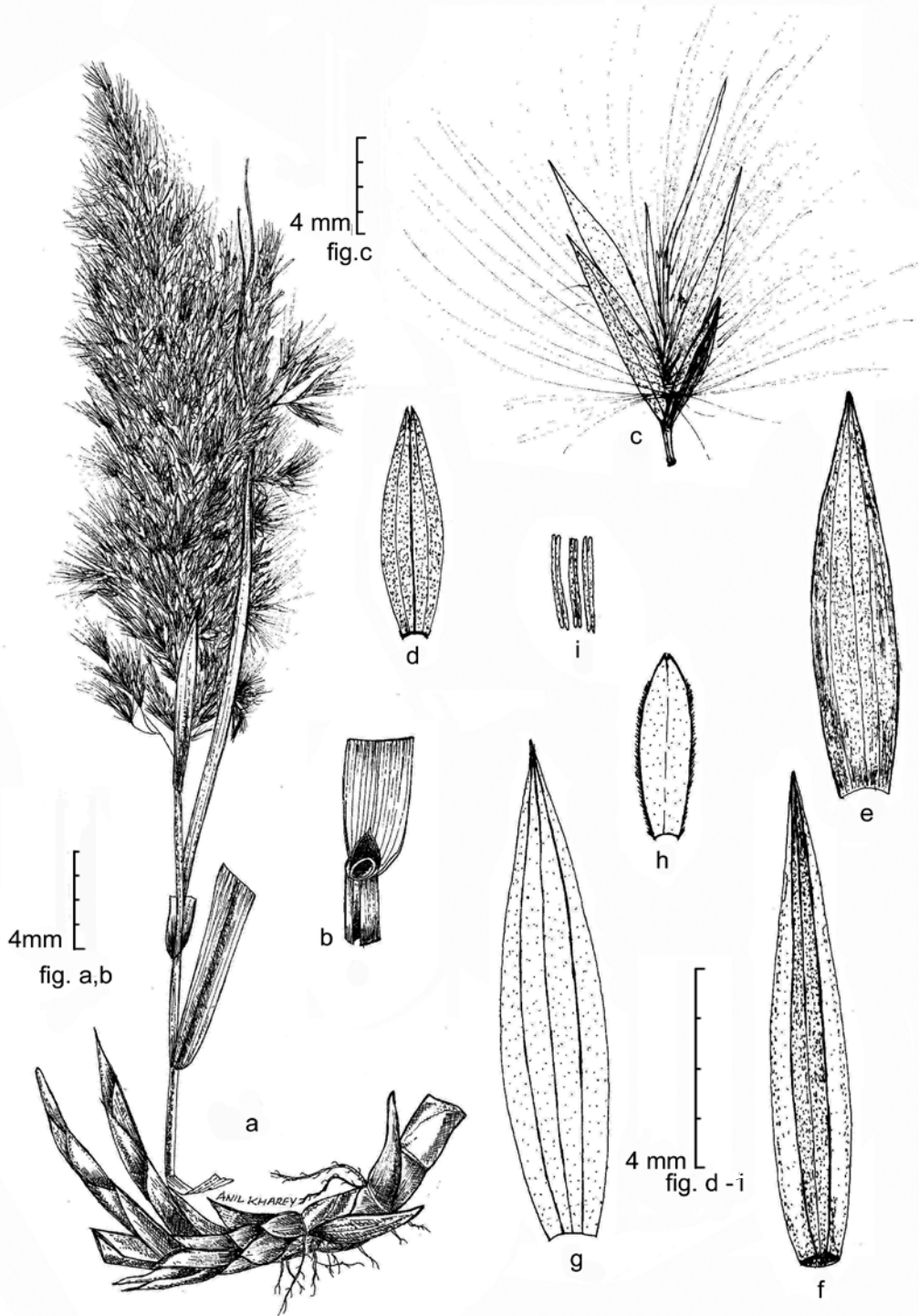


Fig. 1. *Phragmites bhattacharyyae* Kandwal, Uniyal & S. Rajeshwari, sp. nov. a. Habit. b. Ligule with part of leaf and leaf sheath. c. Spikelet, d. Lower glume. e. Upper glume. f-g. Lemma (dorsal and ventral view). h. Palea. i. Anther.

Table 1. Comparison between *Phragmites karka* (Retz.) Trin. ex Steud. and *P. bhattacharyyae* Kandwal, Uniyal & S. Rajeshwari in morphological characters

	<i>P. karka</i>	<i>P. bhattacharyyae</i>
Culm	higher than 1 m	up to 70 cm long
Leaf-blade	30–80 cm long, glabrous, soft, attenuate at apex	up to 9 cm long, scabrid beneath, hard, sharply pointed at apex
Panicle	30–50 cm long, 10–20 cm wide, branches bare of spikelets for some distance from their base.	up to 14 cm long, 3–5 cm wide, branches bearing spikelets almost to the base
Spikelet	9–12 mm long, rhachilla hairs 4–7 mm long.	15–20 mm long, rhachilla hairs 12–15 mm long
Lower glume	2–3 mm long, not cleft at apex	4–4.5 mm long, cleft at apex
Floret	7.5–12 mm long, palea entire at apex	13–15 mm long, scabrid at the back, palea slightly notched at apex
Anther	ca. 2.2 mm long	1.5–2 mm long

overlaps the base of upper culm-sheath. Culm sheath and leaf blades joint with a yellow band which break easily deciduous. Leaf blades 4–9 cm long, 0.4–0.6 cm wide, scabrid beneath, rolled or flat with infolded margins; tip spinescent or sub spinescent, up to 7 mm long. Ligule 4–6 mm long, acuminate, membranous, fimbriate on maturity. Panicles 5–14 cm long, 3–5 cm wide, effuse, obovate-lanceolate in outline, branches full of spikelets for some distance from their base; peduncles glabrous below inflorescence. Spikelets 15–20 mm long, laterally compressed, unawned, 5–6-flowered, florets similar in shape and sexe. Rhachilla 0.5 to 1 mm long, hairy; hairs 10–15 mm long, silvery-white. Pedicels 2–9 cm long. Glumes distant at base; lower glume 4–4.5 mm long, ovate or oblong- elliptic, smooth; tip cleft. Upper glume 7, smooth, 8 mm long, 3-nerved, lanceolate or elliptic, obtuse or acute, minutely toothed. Lemmas ca. 1.3 cm long, 3-nerved, scabrid on back, tip acuminate. Palea 3–3.5 mm long, tip notched, margins scabrid. Anthers 3, 1.5–2 mm long. Caryopsis not seen.

Additional specimens examined: Ladakh, Upshi, Indus valley, 20 Aug. 1980, alt. 3500m, U. C. Bhattacharyya 71741 (BSD); Ladakh, Phyang (Leh), no date, M. V. Viswanathan 54693 (BSD).

Flowering: August to September.

Habitat: A high-altitude rigid grass in open and stony slopes, sometime also found growing near the river banks in sandy soil with stones.

IUCN Conservation Status: Not evaluated.

Distribution: India. North-West Himalaya, Jammu & Kashmir (Ladakh).

Etymology: This species is named in honour of Dr. U. C. Bhattacharyya, the collector of the type specimen.

Notes: *Phragmites bhattacharyyae* is closely allied to *P. karka* in morphological characters having rhizomatous perennial habit, erect culms and spikelets with more than two fertile florets but differs in having dwarf habit with culms 30–70 cm in height, leaf blades up to 9 cm long, scabrid beneath with sharply pointed tips, panicles up to 14 cm long with branches full of spikelets for some distance from their base, rhachilla hairs 10–15 mm long, lower glume 4–4.5 mm long cleft at apex, lemma 13–15 mm long, dorsally scabrid, palea notched at apex, and anthers 1.5–2 mm long.

**Key to the species of Indian *Phragmites*:**

1. Grass up to 70 cm high; palea notched.....  
..... *P. bhattacharyyae*
1. Grass much higher than 1 m; palea entire.....  
..... 2
2. Primary panicle branches bearing spikelets  
almost to the base; lower glume lanceolate ....  
..... *P. australis*
2. Primary panicle branches naked below; lower  
glume elliptic..... *P. karka*

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M. K. カンダル, B. P. ユニヤル, S. ラジェシュワリ: インド・ラダック産ヨシ属 (イネ科) の1新種

インド・ラダック地方からイネ科ヨシ属の新種 *Phragmites bhattacharyyae* Kandwal, Uniyal & S. Rajeshwari を記載した。本種はセイタカヨシ *P. karka* (Retz.) Trin. ex Steud. に似るが、稈が高さ 30–70 cm と草丈が小さく、葉身は長くとも 9 cm で下面は粗澁で先端

が鋭く、円錐花序には基部から多数の小穂が付き、基毛は長さ 10–15 mm、下位の包穎は長さ 4–4.5 cm で先端が裂け、護穎は長さ 13–15 mm で背側が粗澁、内穎は先端が陥入し、葯は長さ 1.5–2 mm である点で異なる。

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