

A New Species of *Poa* L. (Poaceae) from Ladakh, India

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A new grass, *Poa chushualana* Rajeswari, R.R. Rao et Arti is described from Ladakh, Jammu and Kashmir State, India. Its affinities with *Poa tibetica* Munro ex Stapf is discussed. The pollen morphology of the new species in comparison with its closely allied *Poa tibetica* is also worked out.

The genus *Poa* with ca 200 species (Clayton and Renvoize 1986) is cosmopolitan but well represented in temperate regions particularly of the northern hemisphere. In India, the genus is represented by 60 species, of which 32 are recorded from the state of Jammu and Kashmir (Bor 1960). The species of the genus exhibit enormous variations both morphologically as well as cytologically. During the course of a systematic study of the grasses of Jammu and Kashmir in India the authors came across an interesting specimen from Ladakh resembling *Poa tibetica* Munro ex Stapf. Further critical study of the specimen including pollen morphology revealed that it is a distinct species hitherto undescribed. The same is described here with necessary illustrations and photomicrographs.

Poa chushualana Rajeswari, R. R. Rao et Arti, sp. nov. (Fig. 1)

Poa tibetica Munro ex Stapf proxime affinis, sed a qua differt, ligulis 1–2.5 mm longis, paniculis inferiores, 2–3 ramosis, spiculis 3–5 floriferis, lemna leviter lanata, palea medio tuberculata, antheris usque ad 3 mm longis.

Typus INDIA: Jammu and Kashmir, Ladakh, Chushual, 5500 m, M.V. Vishwanathan 55015, 24 August 1975 (holotypes – CAL; isotypus – BSD).

Etymology The specific epithet of the new taxon denotes the type locality Chushual in Ladakh, Jammu and Kashmir.

Description Stoloniferous, up to 25 cm high. Culms smooth, geniculately ascending, clothed at the base with the remains of old sheaths. Leaf blade 3.5–12.5 × 0.1–0.3 cm, folded, acute, tapering to a very stout point; margins scabrid. Ligule 1–2.5 mm long, obtuse. Panicle contracted, interrupted, 3–5 branched at the lower nodes. Spikelets 5.5–5.8 mm long, oblong, ovate-elliptic or slightly wedged, florets 3–5; lower glumes 2.5–3 mm long, lanceolate or elliptic, 1-nerved, denticulate at margin: upper glumes 3.5–4 mm long, broadly ovate, 1–3-nerved, denticulate, ciliate on the margins especially at basal portion or glabrous; tip minutely 2-toothed, scabrous. Lemmas 4–4.5 mm long, elliptic-ovate, 5-nerved, subacute or acute, hyaline at tip and margins, ciliate on the keel and marginal nerves, slightly woolly at the base, asperulous on dorsal surface. Paleas 3–3.3 mm long, 2-keeled, 2-nerved, 2-toothed at tip; keels prickly at middle and scabrid at both the ends. Anthers 2.5–3 mm long. Grain not seen.

Flowers and fruits June–October.

Habitat and distribution It grows on wet soils

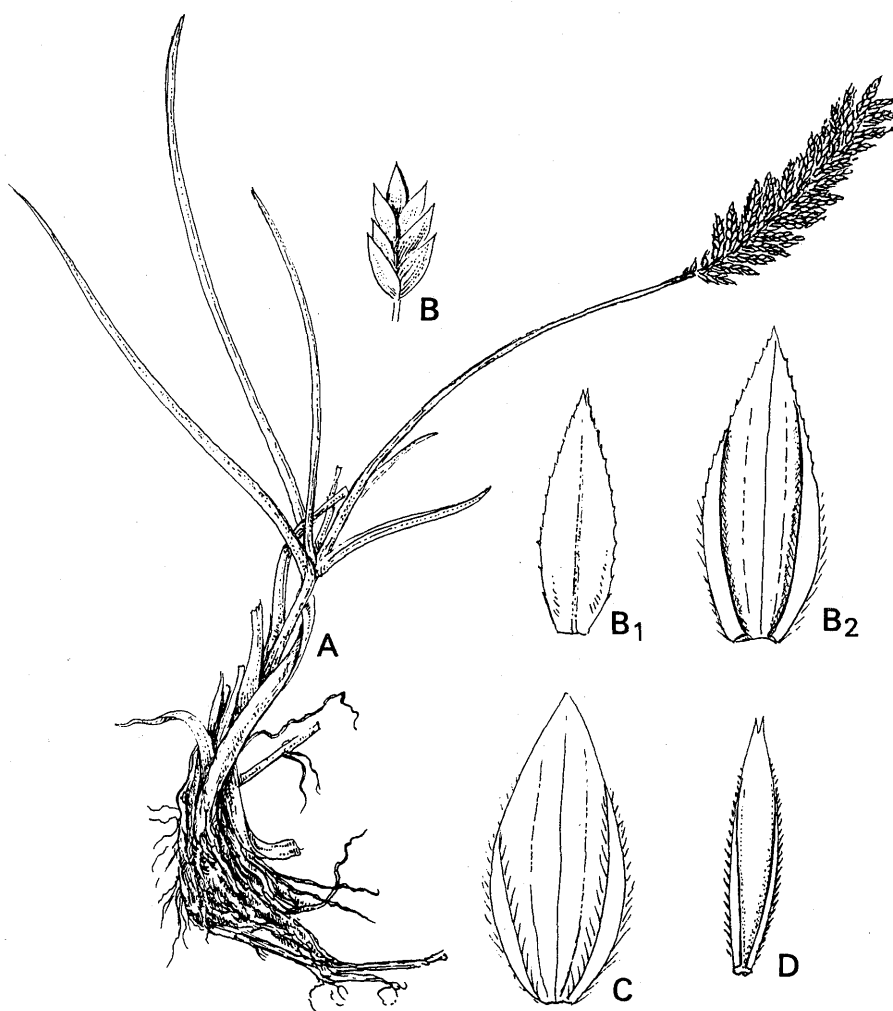


Fig. 1. *Poa chushualana* Rajeswari, R.R. Rao et Arti. A. Habit. B. Spikelet. B₁, B₂. Glumes. C. Lemma. D. Palea.

along the river banks at 5500 m. India: Jammu and Kashmir: Ladakh.

Pollen morphology

Poa chushualana Rajeswari, R.R. Rao et Arti (Fig. 2: A, C, E)

Grains monoporate, spheroidal, 30 μm diam. (range 29–33 μm). Pore operculate, surrounded by a thin, flattened, ill-defined, smooth annulus, poral diam. 3.5 μm , margin circular, uneven, operculum smooth. Exine 1.5 μm thick, surface faintly sparsely granulate,

granules of low relief evenly spread.

Poa tibetica Munro ex Stapf (Fig. 2: B, D, F)

Grains monoporate, spheroidal, 35 μm diam. (range 34–37 μm). Pore operculate, surrounded by a thin, flattened, well defined, granular annulus, poral diam. 3.5 μm , margin circular, granulate, operculum surface granulate, granules grouped in ill-defined patches. Exine 1 μm thick, surface conspicuously densely granulate with granules of high relief which, at places, are covered by discontinuous tectum.

Discussion

The present species is closely allied to *Poa tibetica* Munro ex Stapf in having culm bases clothed by remains of old sheaths, spiciform panicle, denticulate,

ciliate upper glumes, lemmas hairy on the keel and minutely prickly marginal nerves and paleas but differs as follows:

	<i>Poa chushualana</i>	<i>Poa tibetica</i>
1. Habit:	Stoloniferous, up to 25 cm high	Rhizomatous, up to 65 cm high
2. Leaves:	Folded, more or less setaceous; margins scabrid, pubescent on both surfaces	Folded; margins and upper surface scabrid
3. Ligule:	1–2.5 mm long, subacute	2–4.5 mm long, lacerate.
4. Spikelet:	5.8–6.5 mm long, oblong, ovate-elliptic or slightly wedged, florets 3–5; lower glumes 2.5–3 mm long; upper glumes 3.5–4 mm long, broadly ovate, 1–3 nerved, scabrous, margins denticulate above, ciliate at base or glabrous	6–7 mm long, oblong-elliptic, florets 3–4; lower glumes 2.8–4.5 mm long; upper glumes 3.5–5.5 mm, toothed at margins
5. Lemma:	4–5.25 mm long, elliptic ovate subacute, slightly woolly at base	4–4.5 mm long, oblong or elliptic, acute, without any wool at base
6. Palea:	Prickly at middle and scabrid at both ends	Prickly below and toothed above
7. Anther:	2.5–3 mm long	1.5–2.5 mm long
8. Pollen:	30 μ m diam., surface faintly sparsely granulate	35 μ m diam., surface conspicuously densely granulate

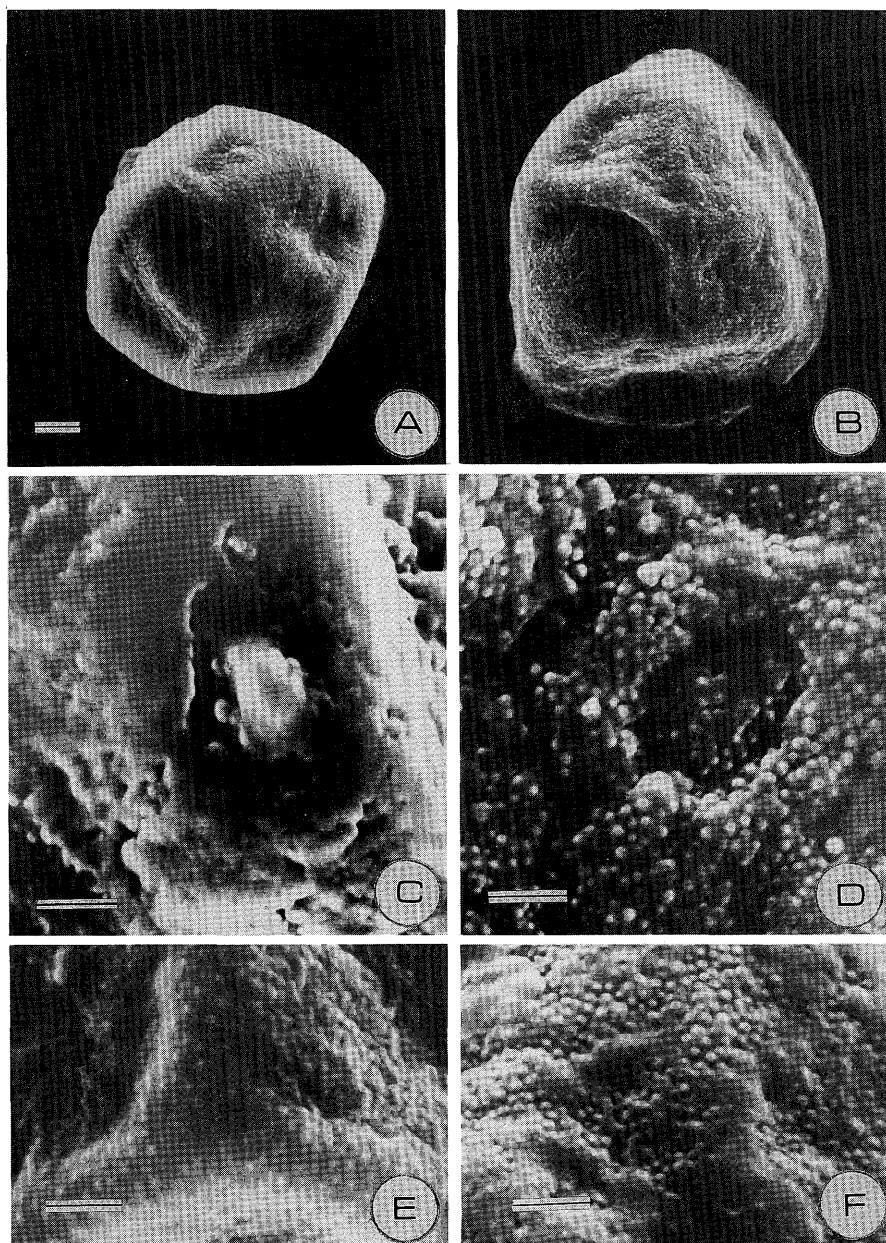


Fig. 2. Scanning electron micrographs. *Poa chushualana* (A, C, E), pore with smooth annulus and operculum (C), surface faintly sparsely granulate (E). *Poa tibetica* (B, D, F), pore with granulose annulus and operculum (D), surface densely granulate. A-B: Scale lines = 2 μm , C-F: Scale lines = 1 μm .

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S. ラジェスワリ, R. R. ラオ, G. アーティ: イ
ンド・ラダックからのイチゴツナギ属 (イネ科)
の1新種

インド, ジャンムー・カシミール州のラダック
地方からイチゴツナギ属の1新種 *Poa*
chushualana Rajeswari, R. R. Rao et Arti を記載
した. 本種は *P. tibetica* Munro ex Stapf によく似
ているが, それとは, 葉舌が長さ1-2.5mm, 花

序はより小さく2-3回分枝し, 小穂は3-5花か
ら成り, 護穎の基部にはわずかに軟毛があり, 内
穎はイボ状の突起がやや目立ち, 葯は長さ3mm
に達する点で区別される. 種小名は基準産地
Chushual にもとづく. 2種の花粉形態の記載を
行った.