

***Arthraxon hispidus* (Thunberg) Makino [Poaceae]: a new record for the flora of Manipur, India**

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Abstract

Arthraxon hispidus (Thunberg) Makino (Poaceae) has been reported for the first time from Manipur. A detailed description and illustration are provided for its easy identification.

Key words: *Arthraxon hispidus*, Poaceae, new record, Manipur.

While working on the grass (Poaceae) flora of the valley districts of Manipur, India, the first author collected one interesting specimen from the study area, which after critical morpho-taxonomic investigation and herbarium (CAL) consultation identified as *Arthraxon hispidus* (Thunberg) Makino. Perusal of different relevant literature (Bor 1940, 1960; Deb 1961; Singh 1987; Singh 1990; Shukla 1996; Moulik 1997; Khan *et al.* 2007; Kabeer & Nair 2009) revealed that the taxa was not hitherto recorded from the state of Manipur. So, this species is reported here as new record for the flora of Manipur State. A detailed description with updated nomenclature, illustration, phenology, habitat and distribution is provided.

Taxonomic treatment:

Arthraxon hispidus (Thunberg) Makino in Bot. Mag. (Tokyo) 26: 214. 1912. Bor, Fl. Assam 5: 378. 1940; & Grasses Burma, Ceylon, India & Pakistan 99. 1960; Karthikeyan *et al.*, Fl. Ind. Enum. Monocot. 184. 1989; Shukla, Grasses N. E. India 66. 1996; Moulik, Grasses Bamboos India 1: 259. 1997; Noltie, Fl. Bhutan 3(2): 814. t. 59 (e-h). 2000; Kabeer & Nair, Fl. Tamil Nadu Grasses 365. 2009. *Phalaris hispida* Thunberg in J.A.Murray, Syst. Veg. ed. 14: 104. 1784. *Arthraxon ciliaris* P. Beauvois, Ess. Agrostogr.: 111. t.11.f.6. 1812; Hooker *f.*, Fl. Brit. India 7: 145. 1896; *Arthraxon micans* (Nees) Hochstetter, Flora 39: 188. 1856; Bor, Grasses Burma, Ceylon, India & Pakistan 101. 1960; Moulik, Grass. Bamboos India 1: 260. 1997. *Batratherum micans* Nees, Edinb. New Philos. J. 18: 182. 1835. *Arthraxon quartinianus* (A. Richard) Nash in N.L.Britton *et al.* (eds.), N. Amer. Fl. 17: 99. 1912; Bor, Grasses Burma, Ceylon, India & Pakistan 102. 1960; Blatter & McCann, Bombay Grasses 78. t. 49. 1984; Sreekumar & Nair, Fl. Kerala Grasses 41. 1991; Moulik, Grasses Bamboos India 1: 261. 1997. *Alectoridia quartiniana* A. Richard, Tent. Fl. Abyss. 2: 448. 1850. [Fig.1]

Vernacular name: *Wanamanbi nakuppi* (Manipuri)

Annual herb, tufted, mat forming. Culms 10 – 60 cm high, decumbent, rambling, smooth; nodes pubescent, basal ones rooting; internodes 3 – 8 cm. Leaf blade ovate to ovate-

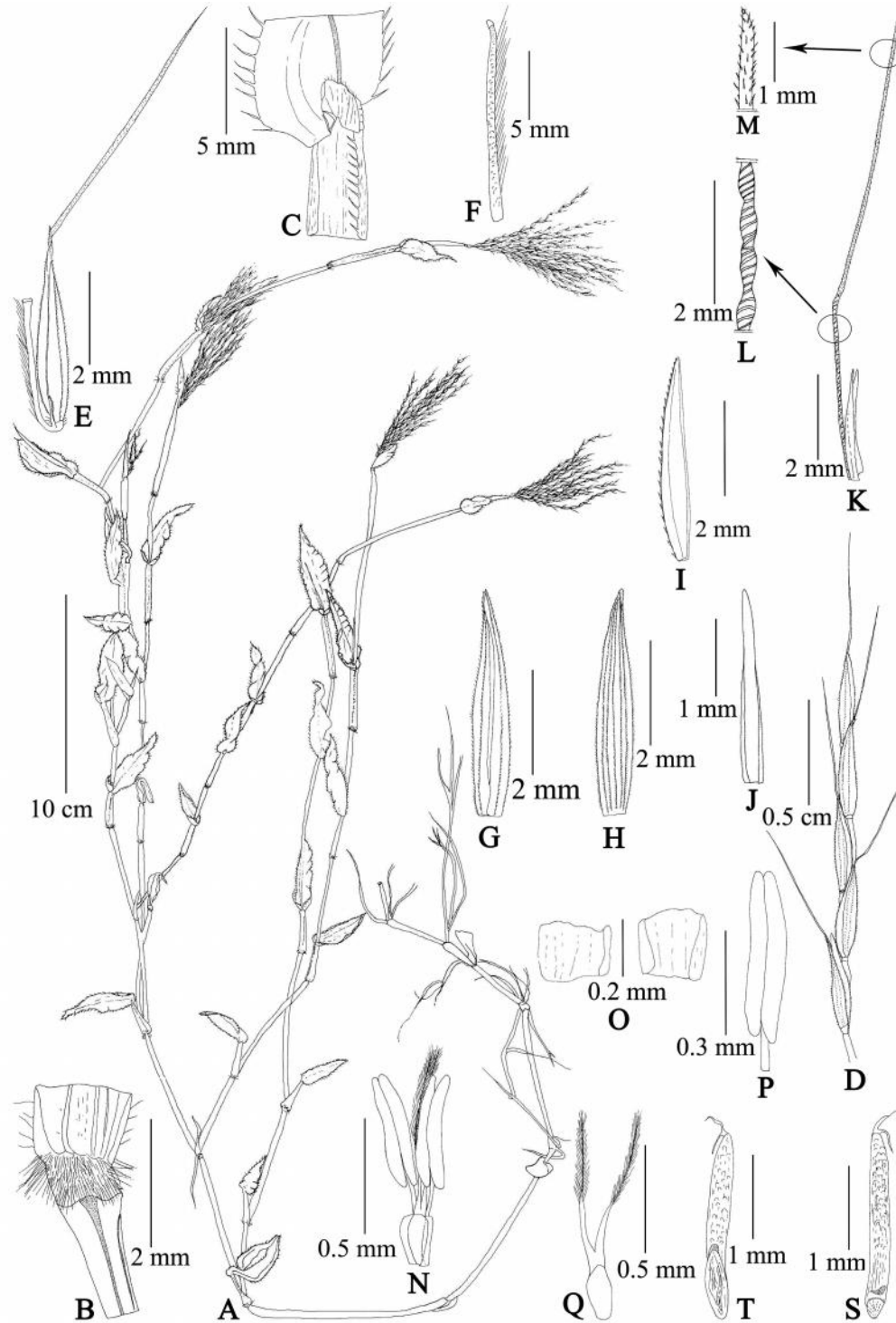


Fig.1. *Arthraxon hispidus*: **A.** Habit; **B.** Node; **C.** Ligule; **D.** Raceme; **E.** Paired spikelets **F.** Pedicellate spikelet; **G.** Lower glume (Adaxial); **H.** Lower Glume (Abaxial); **I.** Upper Glume; **J.** Lower Lemma; **K.** Upper Lemma with awn; **L.** Column; **M.** Bristle; **N.** Stamens and pistil with lodicules; **O.** Lodicules; **P.** Stamen; **Q.** Pistil; **R.** Caryopsis showing embryo (Abaxial); **S.** Caryopsis showing hilum (Adaxial).

lanceolate, 2 – 5 x 0.4 – 1.5 cm, acute to acuminate at apex, rounded to semiamplexicaul at base, scabrid to sparsely hairy on both sides, thick, more or less undulated, serrulate, ciliate at margin; cilia tubercled at base; ligule ovate 0.5 – 2 mm, membranous, ciliolate at apex; leaf sheath 1.5 – 3.2 (–6.5) cm, glabrous, keeled towards apex with prominent nerves, tuberculate hairy abaxially, hairy at one margin. Inflorescence of 2 – 4 subdigitate racemes; peduncles 3 – 10 cm, sparsely hairy, greenish. Racemes 3 – 47, short, 1.5 – 5.5 cm, greenish purple. Spikelets paired, articulating, entire along rachis joint; sessile spikelets fertile, pedicelled spikelet sterile; callus glabrous to bearded; rachis joints solid, 2.2 – 4 x 0.1 – 0.3 mm, filiform to linear, slender, alternate, glabrous to hairy at margins; hairs 0.2 – 1.2 mm; pedicel 0.5 – 2 mm, filiform to linear, slender, glabrous to hairy, white. Pedicelled spikelet reduced to short barren pedicel only. Sessile spikelet 3 – 6 x 0.6 – 0.9 mm, laterally compressed, lanceolate to oblong-lanceolate, obtuse to rounded at base, awned, purplish green to brownish at maturity. Lower glume 3 – 5 x 0.5 – 0.8 mm, lanceolate to ovate-lanceolate, acuminate to obtuse at apex, concave abaxially, subcoriaceous to chartaceous, purplish green, 5 – 7-nerved, nerves scabrid; margins rolled towards inner side. Upper glume 3.2 – 6 x 0.4 – 0.7 mm, lanceolate to ovate-lanceolate, boat-shaped, acute to acuminate at apex, chartaceous to subcoriaceous, sparsely long hairy, greenish purple, 3-nerved, 1-keeled towards apex, keel scabrid. Florets 2, both epaleate, lower barren, upper hermaphrodite. Lower lemma oblong-lanceolate to ovate-lanceolate, 1.5 – 3.7 x 0.2 – 0.6 mm, acute at apex, membranous to chartaceous, hyaline to purple tinged at apex, glabrous, nerveless. Lower palea absent. Upper lemma ovate-lanceolate, 1.5 – 3.7 x 0.3 – 0.5 mm, more or less folded, acute to acuminate at apex, chartaceous, hyaline, faintly 0 – 2-nerved, sometimes 1-keeled, awned; awn abaxial, 8.5 – 12 mm overall, basifixed, geniculate; column twisted, 3 – 5.3 x *ca.* 0.3 mm, rugose, glabrous; bristle 4 – 6.7 x 0.2 mm, barbellate. Upper palea absent. Lodicules 2, truncate, 0.2 – 0.3 x 0.1 – 0.2 mm, membranous, hyaline. Stamens 2; anthers 0.4 – 0.6 x 0.1 – 0.2 mm, brown; filaments 0.2 – 0.4 mm, filiform. Ovary oblong-elliptic, 0.2 – 0.3 x 0.1 mm, acute, greenish; style 0.3 – 0.4 mm, green; stigma plumose, 0.3 – 0.7 mm, purplish brown. Caryopsis 1.6 – 2.4 x 0.2 – 0.4 mm, oblong-ellipting to oblanceolate, acute at apex, acute to rounded at base, greenish brown; hilum 0.1 – 0.3 mm; embryo basal, 0.5 – 1 mm.

Flowering & Fruiting: September – February

Habitat: Roadside drainage, moist shady places to wetlands between 600 – 800 m.

Distribution: India (Assam, Arunachal Pradesh, Bihar, Gujarat, Karnataka, Kerala, Maharashtra, Manipur (present report), Meghalaya, Nagaland, Rajasthan, Tamil Nadu, West Bengal.); Central and East Africa, Madagascar, Mauritius, America, Asia, Australia.

Specimens Examined: India, Manipur, Thoubal district, Khangabok, 24° 37.428' N & 94° 0.942' E, 716 m, 23.10.2013, *K. Tilotama Devi 11284*; Imphal East district, Bamon Kampu, 24° 46.235' N & 93° 58.678' E, 783 m, 2.11.2013, *K. Tilotama Devi 12018*; Bishnupur District, Loktak, 24° 30.262' N & 93° 47.265' E, 770 m, 04.11.2013, *K. Tilotama Devi 12026*; Imphal West district, Takyel, 24° 48.357' N & 93° 54.603' E, 781 m, 13.11.2013, *K. Tilotama Devi 12047* (Deposited at CAL, ASSAM and herbarium of Dept. of Life Science & Bioinformatics, Assam University, Silchar).

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254 Record of *Arthraxon hispidus* from Manipur
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