

## New Record of an Endemic *Arthraxon* P. Beauv. from Lateritic Hillocks of Northern Kerala

### Review Article

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#### Abstract

*Arthraxon raizadae* Jain, Hemadri & Deshp. (Poaceae) an endemic species in Maharashtra, Goa and Karnataka, is reported for the first time from the lateritic plains of Kasaragod district in northern Kerala. The species was first described by Jain, Hemadri & Deshpande from Mahabaleshwar, Maharashtra. The present collection figured its extended distribution and forms new record to Kerala. Nomenclature, a brief description along with illustration and photograph are provided to facilitate easy identification of the species.

**Keywords:** *Arthraxon*; Poaceae; Endemic; Laterite

#### Introduction

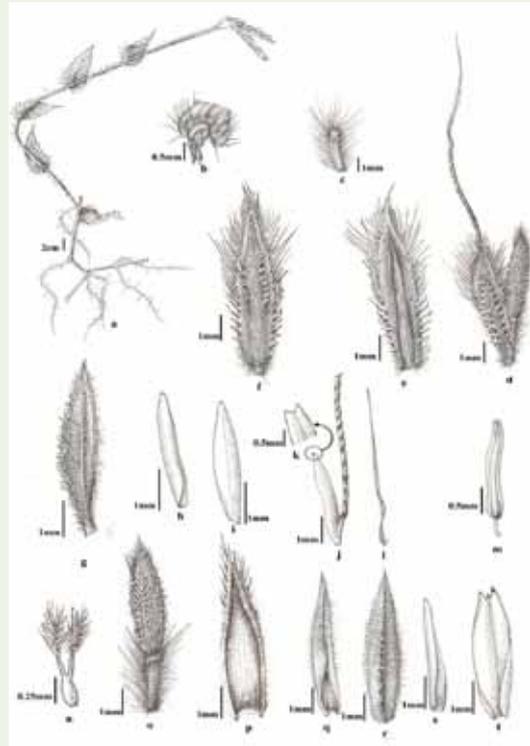
The genus *Arthraxon* was described by P. Beauv. It belongs to the tribe Andropogonoideae of Poaceae with about 27 species [1] and mainly distributed in Old World Tropics. In India the genus is represented by 15 species and 2 varieties [2] of which 2 species are endemic to the Western Ghats [3].

During the floristic explorations in lateritic regions of northern Kerala, authors could collect few grass specimens from Palathadam, near Kannur University Campus, Nileswaram, a floristic diverse lateritic area in Kasaragod district. Detailed examinations and critical studies of the specimen showed it to be the genus *Arthraxon*. Specific checking and observations were identified and confirmed it as *Arthraxon raizadae*. The species was first described by Jain, Hemadri & Deshpande from Mahabaleshwar and is endemic to Maharashtra (Satara, 1972), Karnataka [4] and Goa [5]. So the present collection figured its extended distribution and forms new record to Kerala.

Nomenclature, a brief description along with illustration and photograph (Figures 1, 2) are provided to facilitate easy identification of the species. *Arthraxon raizadae* [6 -12, 5].

#### Description

**Annuals:** Culms decumbent to geniculate, 30-80 cm high, nodes bearded, rooting at lower nodes. Leaves ovate-lanceolate, 2.5-3 x 1-1.5 cm, rounded or amplexicaulous at base, margin coriaceous, undulate,  $\frac{3}{4}$  part with bulbous-based hairs and finely serrate towards apex, scabrid on both surfaces with bulbous based hairs: leaf sheath 2-4 cm, ribbed, bulbous-based hairs thickly at base and towards apex, margins ciliate; ligules 1-1.5 mm long, membranous with fimbriate margin. Racemes digitate, strictly 2 in number, each 4-6 cm long, joints sub-crustaceous, sub turbinate to linear-clavate, 3-3.5 mm long, densely ciliate. Sessile spikelets oblong-lanceolate, 6-7 x 1-1.5 mm long; callus densely bearded. Lower glume oblong-lanceolate, chartaceous to sub-coriaceous, acuminate to aristate at apex, 7-nerved, dorsally tomentose, keels with 2 rows (marginal and sub-marginal) of broad-



**Figure 1:** *Arthraxon raizadae* Jain, Hemadri & Deshp.: a.Habit, b. Ligule, c. Joint of raceme, d. Spikelet pair, e & f. Lower glume (adaxial & abaxial), g. Upper glume, h & i. Lower lemma (lateral & abaxial), j, k & l. Upper lemma with bifid apex & basifixed awn (twisted column & barbellate bristle), m. Stamen, n. Pistil, o. Pedicelled spikelet, p. Lower glume of pedicelled spikelet (adaxial), q & r. Upper glume (adaxial & abaxial), s. lower lemma, t. upper lemma



**Figure 2:** *Arthraxon raizadae* Jain, Hemadri & Deshp.: a. Leaf sheath base with tuft of tubercle-based hairs, b. Ligule, c. Raceme, d. Spikelet pair, e & f. Lower glume (abaxial & adaxial), g. Lower glume (broad-based spicules with stiff hairs), h. Upper glume, i. Upper lemma with basifixed awn, j. Pedicelled spikelet

based spicules provided with bundles of stiff hairs above  $\frac{3}{4}$  from the base, broad-based spicules without bundles of hairs present on submarginal nerves at middle. Upper glume chartaceous, elliptic-lanceolate, 5-6 x 1-1.5 mm, keeled, 3-veined, dorsally pubescent throughout, dense pilose along the keel with small spicules, margins hyaline, retorsely ciliate. Lower lemma linear oblong, delicate, hyaline, 1-nerved. Upper lemma linear, elliptic to lanceolate, boat-shaped, 1-nerved, hyaline, shortly notched at apex with subacute lobes. Awn dorsal, from just above base; awn geniculate, 14-16 mm long, column twisted, up to 8 mm long; bristle barbellate, ca. 7 mm long. Lodicule truncate, hyaline. Stamens 3, 3-3.5 mm long. Ovary narrowly oblong, stigma plumose. Pedicelled spikelet slightly obliquely oblong-lanceolate, pedicel up to 2 mm long, tomentose. Lower glume, 5-5.5 x 1-1.5 mm, slightly keeled along the margins, 7-nerved, marginal nerves with long sharp spicules than inner, in between densely setose, spicules with only single stiff hair (up to 2 mm long) considerably longer upwards on lateral nerves towards apex. Upper glume elliptic-lanceolate, 4-4.5 x 1.5-2 mm, chartaceous, 3-nerved, margin folded, hyaline, dorsally keeled, midrib shortly speculate, strigose throughout. Lower floret epaleate, empty. Lower lemma oblong-lanceolate, 2.5 x 0.5 mm, subacute at apex, hyaline, 1-nerved. Upper floret epaleate, staminate. Upper lemma elliptic-lanceolate, 3 x 0.7 mm, shortly cleft at apex, hyaline, 1-nerved (Figures 1 ,2)

**Flowering and Fruiting:** October-November.

**Distribution:** Endemic to India: Maharashtra, Goa, Karnataka & Kerala (Kasaragod district: Palathadam, Nileswaram).

#### Habitat and Ecology

*Arthraxon raizade* has been collected from Palathadam, laterite area in Nileswaram, Kasaragod district of Kerala state, India. Significantly small population growing in open areas on lateritic rocky plateaus with thin layer of top soil, in association with species such as *Ischaemum indicum* (Houtt.) Merrill, *Danthonidium gummeei* (Bhide) C.E. Hubb., *Bhidia fischeri* Sreek. & Shetty, *Dimeria sp.*, etc. It is possibly surviving in very fragmented populations of a narrow range of distribution. The species is being subjected to the pressure of habitat modifications/destruction due to nearby mining activities.

**Note:** van Welzen reduced the specific status of *Arthraxon raizadae* as variety of *A. lanceolatus*, *A. lanceolatus* var. *raizadae* (Jain, Hemadri & Deshp.) van Welzen. Recent works like The Plantlist, World Checklist of Selected Plant Families, Worldfloraonline etc. treated *A. raizadae* as an accepted name.

**Specimens Examined:** INDIA: Maharashtra, Mahabaleswar, Satara district, dt 25 December 1969, *Hemadri*, 98585F, (BSI!); Kerala: Kasaragod district, Palathadam, near Kannur University Campaus, Nileswaram, 12° 16' 30.15" N & 75° 09' 58.81" E, ca. ±75 m, October 2013, T. Shaju & M. P. Rijuraj 78453(TBGT).

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