Nelumbo *Vol 58, (100-103) 2016*
DOI : 10.20324/nelumbo/v58/2016/105916

ISSN (Print) : 0976-5069
ISSN (Online) : 2455-376X

Arundinaria faberi (Poaceae): a new record of bamboo from India

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अरून्डिनेरिया फैबेरी (पोएसी) : भारत के लिये वेणु (बांस जाति) का एक नया अभिलेख।

मनीष के. कंडवाल एवं पी. सिंह

सारांश

अरून्डिनेरिया फैबेरी रैन्डल, वेणु (बांस) की पोऐसी कुल (उप कुल बैम्बूसी) की एक उच्च हिमालयी बौनी जाति है, इससे पूर्व यह चीन की स्थानिक जाति थी। वर्गिकी अध्ययनोपन्त इस जाति को भारत के लिये प्रथम बार अरूणाचल प्रदेश से अभिलेखित किया गया है।

ABSTRACT

Arundinaria faberi Rendle, an alpine dwarf bamboo of family Poaceae (sub family: Bambuseae), earlier endemic to China is recorded here for the first time from India (Arunachal Pradesh).

Keywords: *Arundinaria*, Arunachal Pradesh, Bamboo, India, Poaceae

INTRODUCTION

The genus *Arundinaria* Michaux of Family *Poaceae* (sub family Bambuseae) is distributed in tropical, temperate and sub alpine regions of the world (Clayton & Renvoize, 1986; Zu, 2006). It forms thickets in forest, grasslands and inhabited places (Clayton & Renvoize, 1986) and is characterized by lectomorph rhizome, small shrubby habit, panicle of raceme inflorescence and spikelets with proximal incomplete florets (Clayton & Renvoize, 1986).

Andre Michaux described the genus *Arundinaria* with one species *A. macrosperma* in 1803 (Munro, 1866). Munro (1866) included 29 species (Seethalakshmi & Kumar, 1998) in the world, while Gamble (1896) in the Bambuseae of British India included 28 species of *Arundinaria* only in Himalayan region and estimated 47–50 species in the world. Chi-Son and Renvoize (1989) while revising the genus in South East Asia and Africa split it into 8 genera with 42 species. Only 2 species, viz., *A. baviensis* Balansa and *A. racemosa* Munro were retained under the original genus *Arundinaria* and all other species were transferred into 7 other genera, viz., *Thamnocalamus* Munro, *Sinarundinaria* Nakai, *Racemobambos* Holttum, *Chimonobambusa* Makino, *Indosasa* McClure,

Received: 22.08.2016 Accepted: 4.10.2016 Date of Publication: 30.12.2016

Sinobambusa Nakai, *Acidosasa* Chu & Chao (Chi-Son & Renvoize, 1989). Presently 29-35 species (Clayton & Hartman, 2002; Clayton & al., 2006) are treated under the genus *Arundinaria* found worldwide from South to East Asia (India, China to Japan), Europe and North America (Gamble, 1896; Clayton & Renvoize, 1986; Clayton & al, 2006). 11 species (Shukla, 1996) are found to occur in India as well in North East India (Shukla, 1996).

During the exploration of grasses an interesting dwarf bamboo was collected by one of the authors (MKK) from Siang district of Arunachal Pradesh. Critical study of the specimen followed by scrutiny of literature (Gamble, 1896; Hooker, 1896; Clayton & Renvoize, 1986; Shukla, 1996; Zu, 2006) confirms its identity under the genus *Arundineria* Michaux. Further study (Munro, 1866; Gamble, 1896; Hooker, 1897; Shukla, 1996; Zu, 2006; Bhaumik & al., 2006) reveal its identity as *Arundinaria faberi* Rendle, a high altitude dwarf bamboo, endemic to China (Zu, 2006; Clayton & al., 2006). *Arundinaria faberi* is characterized by culms 30–60 cm high, 0.3–0.6 mm in diameter, without leaf sheath auricle. Spikelet rhachilla visible between lemmas (Clayton & al., 2006 onwards; Zu, 2006). The species, earlier reported from sub alpine coniferous forest of China (Zu, 2006), is unknown to Indian bamboos (Munro, 1866; Gamble, 1896, Hooker, 1897; Bor, 1940; Hiroshi, 1966; 1971; Deb, 1983; Jain, 1986; Biswas, 1988; Karthikeyan & al., 1989; Shukla, 1996; Seethalakshmi & Kumar, 1998; Noltie, 2000; Chowdhery & al., 2009; Naithani, 2011). Hence it is reported here for the first time from India with a detailed description, field photo (Plate 1) and illustration (Plate 2).

Arundinaria faberi Rendle, J. Linn. Soc., Bot. 36: 435. 1904; Zu in Fl. China Poaceae. 22: 114. 2006.

Perennial. Rhizomes elongated, leptomorph. Culms erect, 30–60 cm long, 2–4 mm in diameter, woody. Internodes terete, green, yellow when old, hollow, 8–20 cm long, slightly glaucous, glabrous. Sheath scars flattened or slightly prominent. Culm sheaths shorter than internodes, glabrous on surface; outer margin hairy. Ligule a glabrous or ciliate membrane, truncate; 0.5 mm long; auricle absent. *Pseudo petiole* 0.5–1 mm, glabrous. Leaf-blades lanceolate; 2–7 cm long; 2–5 mm wide, glabrous, base rounded, surface scaberulous; rough abaxially; glabrous. margins scaberulous, apex acuminate, venation with distinct cross veins. Inflorescence racemose to paniculate, 4–6 cm. Spikelets 3–12 or more; 20–25 mm long, comprising 4-10 florets with reduced floret at apex,

Plate -1: *Arundinaria faberi* Rendle A. Habit. B. Close up of inflorescence.

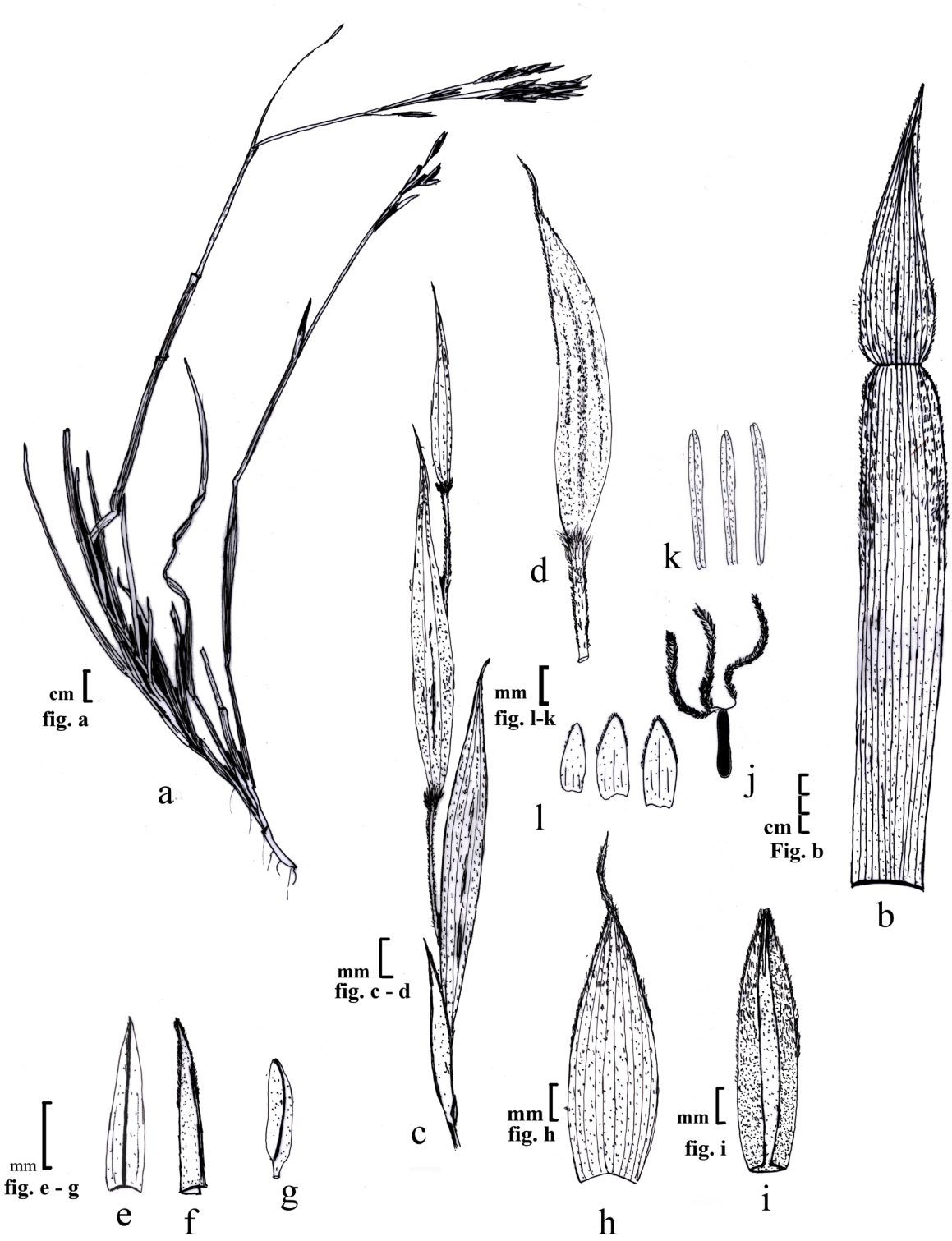

Plate -2: **Arundinaria faberi** Rendle, **Fig. a–l** : **a**. Habit; **b**. Leaf blade and leaf sheath; **c**. Spikelets; **d**. Floret with rhachilla; **e - f**. Upper glume; **g**. Lower glume; **h**. Lemma; **i**. Palea; **j**. Ovary; **k**. Anthers; **l**. Lodicules.

pedicel up to 15 mm long; florets (4 or) 5-6, purple-red; rhachilla internodes 3–5 mm long scabrous to pilose, visible on spikelet, thickly pilose at the tip near the base of each floret. Glumes 2, Chartaceous, much shorter than spikelet; Lower glume ovate, 1–1.5 mm long, 1 nerved; Upper glume ca 5 mm long, ovate-lanceolate, acute, 3 nerved; lemma 8–14 mm long, ovate-lanceolate, long mucronate 7 nerved, surface puberelous, margins densely pubrelous; palea ciliolate 7–8 mm long, bifid, keels ciliolate in upper half; lodicules 3, ovate, anterior 2 larger. Anthers 3, purple-red. Ovary ellipsoid, glabrous; style 1; stigmas 3. Caryopsis slightly curved, purple-brown or brown, oblong.

Flowering and *Fruiting:* June-September.

Distribution: Temperate, Asia-India, China.

Habitat: A sub alpine bamboo grows on high altitude meadows making mats like formations.

Specimen examined: India: Arunachal Pradesh, West Siang District, near third lake, Track 1 from Track Junction, Menchuka, 3600 m, 26 August 2014, *Kandwal,* 38745(ARUN).

ACKNOWLEDGEMENTS

One of the Author (MKK) is thankful to Head, Botanical Survey of India APRC, Itanagar for the facilities provided during the study and to the Indian Army, ITBP and district authorities of Siang district of Arunachal Pradesh to permit for the exploration work in the restricted area and help rendered by them during the exploration work.

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