



Short Communication

A morphological variant of *Neomicrocalamus prainii* discovered in hill sides of Shirui, Manipur, India

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Abstract

This paper presents the discovery of a morphologically variant population of bamboo belonging to Neomicrocalamus prainii from Shirui district of Manipur, India. The population showed some morphological similarities with Neomicrocalamus prainii however could not be matched completely with other genus like Melocalamus compactiflorus (Kurz). Benth and Hook F. and Melocalamus indicus Majumdar reported from Manipur earlier hence reported as new variant of Neomicrocalamus prainii. The salient characters are described here.

Keywords: Morphologically, variant, *Neomicrocalamus*, *Melocalamus compactiflorus*, *M. indicus*.

Introduction

The north-eastern region of India is comprised of 7 states and they are Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura. Most of the land part is covered with natural forest and it is about 60 percent of the total geographical area. High biological diversity is closely related with forest. Physiographically this region is comprised of eastern Himalayan, north-eastern hills and plains of Borak and Brahmaputra. Under the influence of Indo-Malayan and Palearctic biogeographic realm the region is characterized by habitat for huge and diversified biota and many of which are endemic to this region. Many wild and primitive species of crops are found here for e.g. rice, maize, banana etc. The region is habitat for some rare and red listed floral and faunal species. The diversity of plants is more particularly in case of gymnosperm, pteridophyte, orchid, rhododendron, bamboo, and from cane families. The entire eastern Himalayan region is considered as priority global 2000 eco-region by WWF due to its high biological diversity.

In the same way conservation international has considered eastern Himalayan hotspot into a wider Indo Burma hotspot. A substantial number of bamboo species belonging to many genera are reported from north-eastern region, this shows that the region is very rich in bamboo diversity. So far 63 numbers of species belonging to 15 genera are reported¹. Reports on total number of species found from north-east region of India varied from time to time it was from 55 species under 15 genera² to 63 species³. Together 88 number of species including both cultivated ones and naturally occurring in hills and reserve forests have been reported till date. In Indian climatic condition and soil types 125 indigenous and 11 exotic species belonging

to 23 genera are found⁴. Therefore it can be considered that roughly 50% of the total bamboo species documented in India is from north-eastern part of the country. The status on number of bamboo species, area under bamboo, total growing stocks are being reported from time to time⁵⁻¹⁰, documentation on state wise distribution of different bamboo species was also done¹¹. Bamboo species found in Manipur are studied by different researchers¹²⁻¹⁷.

So far bamboo biodiversity is concerned, Manipur comes first with 53 species followed by Arunachal Pradesh having 50 species¹⁸. From time immemorial to the present day bamboo is an essential part of the life of people of Manipur. One cannot imagine the life without *Wa* or bamboo and their products. The uses of bamboo are found in ancient Manipuri mythological books such as Panthoibi Khonggul, the Poireiton Khunthokpa, the Thanga Chinggoirol and the Yumsharol etc.

Researches on bamboo show that there is a large variation in species level as well. Documentation and recording of any new variations within the species are considered very important for scientific world to know about their existence. However most of the variations are mostly of phenotypic in nature and due to climate, altitude or any other edaphic factors.

Methodology

During a field tour to Shirui district of Manipur a population of climber bamboo was observed along hill side climbing over trees and completely covering trees with its thick foliage mostly tufts of green leaves at the tip of thin branches hanging downward. Very thin wiry culms, leaves, rhizomes, culm sheaths etc were collected from field. Comparison of

morphological characters was done with earlier published reports, literatures, herbarium, and also digital herbarium in internet. Presently the collected specimen is preserved in herbarium centre of Rain Forest Research Institute, Jorhat, Assam along with record of morphological data.

Results and discussion

This wild bamboo was observed in Shirui district of Manipur. No particular use of the bamboo was known. The relevant observations regarding the growth characteristics in wild were made. The population was sparse and not found anywhere in nearby area other than Shirui. The salient characteristics shows that the culms are very thin wiry (Figure-2F), scrambling, very long about upto 200ft, and of 5–25mm in diameter, Mature culms are solid and sub solid on smaller culms, young culms are green and yellowish green in colour however mature one are grayish brown, glossy, glabrous, nodes with prominent black coloured woody ring, flat (Figure-1C) internodes 35–40cm long, branches many in tufts, large buds develops into a branch which has similar growing habit and dominant branch is as thick and long as main culm (Figure-1C). Culm sheaths light brown, scabrous cylindrical, distally purple-brown spotted on outside when young, changing to straw colour on maturity, lower portion is very hard and rough but upper part is papery and thin, margins glabrous; ligule not noticeable, auricles and oral setae not present; blade remains persistent, vertical, tapering and has needle like projection, Leaf sheaths 2–4 cm, blackish brown

(Figure-2D), glabrous or slightly pubescent; ligule 1–1.5mm; petiole like base very short and almost absent up to 1mm, auricles and oral setae absent; leaves are variable in size from 5–9cm long, 0.8mm–1.5cm broad. Leaf blade lanceolate, 4–12 × 0.5–2cm, apex softly acicular (Figure-2D). Young shoots smooth, light purple to pinkish in colour (Figure-1A). Phenology not known. When compared its morphological characters with other climber bamboo (*Dinochloa*) such as *Melocalamus compactiflorus* (Kurz) Benth. and Hook. F.¹⁹ and *Melocalamus indicus*²⁰ found in Manipur it was observed that it differs from *Melocalamus compactiflorus* on absence of silvery pubescence below the nodes, having glossy internodes whereas internodes are rough in *M. compactiflorus*, almost flat nodes and blackish brown leaf sheath. Dissimilarity with *M. indicus* on having persistent culm sheaths, absence of purple brown spots when young, absence of white scurfy intermodal region. The discovered bamboo showed some similarities with *Neomicrocalamus prainii* (Gamble) Keng F. and Wen²¹. Like culms are thin wiry, slender, internodes glossy and smooth, Culm sheath thin papery, cylindrical. Leaves varied in size from small to very small. Internodes with well marked ring and flat. However, unlike *Neomicrocalamus prainii* leaf sheath is blackish brown when young and petiole is very short or almost absent (Figure-2D). Distribution of *N. prainii* was reported from Meghalaya and Nagaland of North east India earlier²². It was also reported from southern Tibet and western Yunnan of China^{23,24}.



Figure-1: A: Young emerging shoot, B: Mature culm, C: Culm with dominant branch.



Figure-2: D: lanceolate leaves, E: Branching, F: Long wiry culm.

Conclusion

Since maximum similarities are observed with genus *Neomicrocalamus* and species *prainii*, hence, this is placed as new variant of *Neomicrocalamus prainii*.

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