

## ***Arundina graminifolia* (D.Don) Hochr (Orchidaceae)-a new addition to the Flora of Tripura**

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### **ABSTRACT**

*The bamboo orchid, Arundina graminifolia is described from Tripura for the first time. The species is distributed only north Tripura district of the state. It is especially available on the hilly landslide at higher altitude, cold and moisture rich, rocky places. The blooming period of the species is very long.*

**Key words:** New addition, Flora of Tripura, *Arundina*, Endangered.

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### **INTRODUCTION**

Orchids are widely popular for their long lasting, beautiful flower. *A. graminifolia* a reedly terrestrial tropical orchid species generally grows in clumps. It is available in newly developed habitats of anthropogenic origin, such as road cuts and abandoned farm fields [1, 2] and mostly occur in limited areas, its natural habitat being steep, rocky sites or open grassy areas [1]. This tropical Asiatic genus extends from India, Sri Lanka, Nepal, Thailand, Vietnam, the Ryukyu Islands, Malaysia, Singapore, China to Indonesia, Philippines and New Guinea [3, 4]. The rhizome of the plant is used as antibacterial agent and its root decoction is commonly used for the ailments of diabetes, tumor, hyperliposis and hepatitis. The phenolic compound of this orchid has antihepatitis and antiHIV activity [5].

### **MATERIALS AND METHODS**

#### **Study area**

Tripura is a small state of India, which situated in the North Eastern regions of India and geographically in between 22°56' N to 24°32' N and 91°09' E to 92°20' E. It occupies an area of about 10,491.69 km<sup>2</sup>. The total forest cover is 6292.681 km<sup>2</sup> which is approximately 60% of the total area of the State. The forest cover is comprised of tropical forest trees (including rubber, bamboo and palmoil trees). Due to its tropical geographical position and favorable environmental condition it is too rich in terms of its floral and faunal diversity. The temperature of the state ranges between 6° to 37°C and the annual rainfall was recorded as 1700 to 2200 mm.

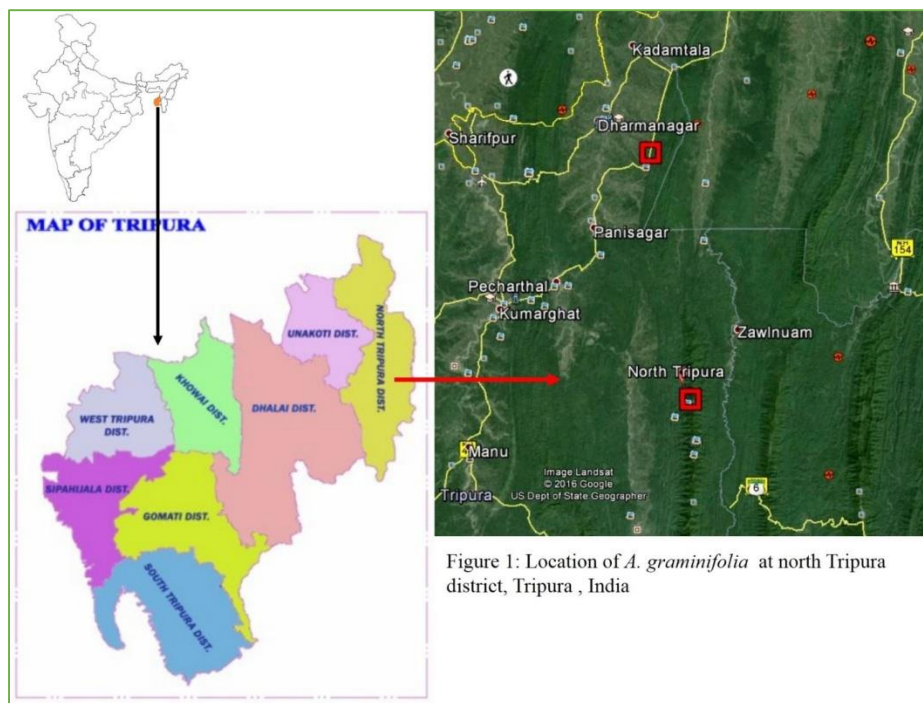


Figure 1: Location of *A. graminifolia* at north Tripura district, Tripura, India

An extensive field visit was made throughout the state Tripura for floristic survey. Fresh specimen, including flowers, was collected from the field and identified with the help of relevant taxonomic literature [6, 7, 8] and confirmed by the Botanical Survey of India, Eastern Regional Centre, Shilong. The specimen was also matched with the Kew herbarium catalogue – online database (<http://www.kew.org/herbcat>, 2006), specimen number of matched sheet is K000943823. Collected specimens were made into herbarium sheets following Jain & Rao [9] and deposited in the Department of Forestry and Biodiversity, Tripura University.

## RESULTS AND DISCUSSION

The present study observed that one orchid species which were not reported by the earlier worker or didn't mention in the flora of Tripura. Hence the species has been reported first time and considered as a new record for Tripura. This species is belonging to orchidaceae under the genus *Arundina* of Monocotyledon group. The plant is described below with correct name, synonyms (if), family, brief description, habitat, flowering phenology, locality and medicinal uses.

### TAXONOMIC TREATMENT

#### Synonyms

*Arundina affinis* Griff.; *Arundina bambusifolia* [Roxb] Lindley; *Arundina chinensis* Blume; *Arundina densa* Lindley; *Arundina densiflora* Hook. f.; *Arundina graminifolia* var. *revolute* (Hook. f.) A.L. Lamb; *Arundina maculata* J.J. Sm.; *Arundina speciosa* var. *sarsinorum* Schltr.

**Common name:** Bamboo Orchid (English)

#### Description

Terrestrial, perennial, gregarious, plants about 60-100cm, pseudobulbs of arundina grow close together, bearing many grass like leaf with overlapping sheaths, rhizome short, branched. Stem reedly, erect, rigid, enclosed by leaf sheath, terminal floral scape. Leaves distichous, amplexicaul, sessile, lanceolate, acute, thick, linear, keeled, grass like, upper surface lustrous, dark green adaxially, and yellowish green abaxially, about 7-20 cm revolute margin, scape erect. Inflorescence terminal raceme, one or two branch at the base. The inflorescence is held well above the plants and carries 2-3 flowers at its tips. One or two opening at a time, and each lasting three to five days. Flower about 7cm, bractate, bract sterile, scale like, triangular, yellowish green, conduplicate, ovate, persistent, rosy colour, flower lip brightly purple, centre of labellum yellowish blotch. Sepal narrowly elliptic- lanceolate, acute. Petals 5, about 3.5cm, ovate- elliptic, 20- 40 x 10-15mm, entire, acute, lip sessile, 25-45x 10-25mm, trumpet-shaped, broadly ovate, margin wavy, lateral lobes erect. Column length about 20-25mm, erect, embracing, triangular, rounded apex, bilobed, mid

lobe sub-square, white, slightly curved inwards, anther cap about 3mm, hemispheric, white, anther semi ovoid, stigma slightly convex, present under rostellum, pollinia 8, unequal, creamy. Fruit cylindrical, ridged capsule.

**Flowering & Fruiting time:** August-June

**Ecology:** Sand-stone and semi-rocks tillas, soils having moisture.

**Distribution:** India (Meghalaya, Tripura, Assam, Nagaland, West Bengal), Thailand, the Philippines, Sri Lanka, Vietnam, Malaysia, New Guinea, China to Indonesia, Nepal and Singapore.

**Medicinal uses:** The rhizome is used for the controlling bacterial activity and the root decoction is also used for controlling diabetes, tumor, hyperliposis and hepatitis [7].

**Location:** Jampai Hill, Bagbasa North Tripura.

**Status:** Locally rare.

**Collection No.** CS-18

**Accession No.:** CSIR 0048.



**Figure:** *Arundina graminifolia* (D. Don) Hochr – a-Habitat; b- Twig, C- Plant in flowering stage; d- Abaxial surface of leaf; e- Adaxial surface of leaf; f- Image of complete flower; g- Floral parts; h- Gynoecium; i- Sterile bract; and j- Anther cap.

## CONCLUSION

*Arudina graminifolia*, the presently reported threatened orchid frequently observed in clump in different rocky spaces in Jampai Hill and Bagbasa of North Tripura District. Our investigation does not report its occurrence in other district of the Tripura although distribution of this species was recorded in Meghalaya of North east India. Our field survey and distributional pattern of the species in different specific areas in North east India provide that its distribution was completely restricted in the hilly and rocky land slide. Our result may be helpful for the preparation of the complete flora of Tripura in future.

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