



Two species of Amaryllidaceae, new distributional record for Tripura, North East India.

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Abstract: The present studies provided the new distribution record of two species, *Hymenocallis littoralis* and *Crinum latifolium* of Amaryllidaceae from Tripura. These species, so far have not been recorded previously from Tripura. Both the species have ethnomedicinal usages. The plants were collected, identified with the help of various flora and available database. This communication highlighted brief description, proper citation, medicinal uses, distribution pattern, phenological observation, and photographs of the species.

Key words: Amaryllidaceae; New records; Tripura; Ethno-medicinal usage.

Introduction

Tripura, foot Himalayan state of North-East India is well known for its rich floral and faunal diversity. It is situated in between 22° 56' N to 24° 32' N latitude and 90° 09' E to 92° 20' E longitude with a forest cover about 60% out of the 10497.69 sq. km of the total land area of the state. The average annual rainfall of the state ranges from 1700mm to 2100mm and temperature varies from 7°- 37°C. Physiographically the state is hilly terrain with distinct five hill ranges running parallel to each other from North-South, which supports lavish growth of plant diversity. About 86% of the species occurring in the state are widely distributed in India and neighboring countries. The remaining 14% plant species are comparatively restricted in distribution in Tripura (Deb, 1983). Now, the extensive field survey is conducted throughout the state to prepare a medicinal plant database of the state. During our survey throughout the state and consultation with the relevant literature it was observed that so far two species namely, *Hymenocallis littoralis* (Jacq.) Salisb. and *Crinum latifolium* L. of Amaryllidaceae have not been reported from Tripura. Therefore, the present study clearly indicates the new addition of these species to the flora of Tripura.

The family Amaryllidaceae includes more than 75 genera and about 1100 species in which the genus *Hymenocallis* contains about 70 species (Zhong 2013). Only one species, *Hymenocallis littoralis* was reported from Southern part of India by BSI, but its distribution in Tripura was missing. *Hymenocallis* is distributed throughout the state in Tripura as both as ornamental and in wild state.

Crinum is one of the largest genera in the family Amaryllidaceae, represented by 113 species, 2 sub-species and 4 varieties in the world (Govaerts,

2014). The genus *Crinum* is represented by 15 species in India, of which 4 are endemic to Western Ghats, viz. *C. brachynema* Herb., *C. malabaricum* L. Lehak & S.R. Yadav, *C. wattii* Baker, *C. woodrowii* Baker ex W. Watson. (Yadav, 1997; Gaikwad & Yadav, 2004). But in Tripura only two species viz. *C. defixum* Ker Gawl. and *C. pretense* Herb. were documented under the family Amaryllidaceae by D. B. Deb, (1983). The presence of *C. latifolium* has not mentioned so far.

Methodology

The intensive survey was done on the distribution, population status, ecology and their use of medicinal flora in the state of Tripura. The voucher specimens were collected and standard taxonomic methods have been used for drying, and further processing of the specimens (Jain & Rao, 1977) for the preparation of the herbarium sheets, which were deposited in the Department of Forestry and Biodiversity, Tripura University with a proper voucher specimen number for the preparation of medicinal database of the state. The fresh plant specimens have been identified using regional flora (D. B. Deb, 1981 & 1983) and other published research works, relevant online e-flora (eFlora of China), Flora of Telangana (Pullaiah, 2015).

Hymenocallis littoralis (Jacq.) Salisb.:

Terrestrial, upright, perennial herbs with underground large onion like bulbs, often rhizomes, about 1-1.5 m high. Leaves fleshy, basal rosette, simple, linear-lanceolate, entire, venation parallel, 6-12 cm wide and 25-70 cm long, erect or arching, distantly spreading, bright green, deciduous, apex acute. Inflorescence umbellate cymes, bracteate, subtended by spathe-like bracts, inflorescence borne on a leaf less long scape, scape

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green, ribbed, two ridges. Flowers 21-25 per inflorescence, sessile, sequentially opening; perianth tube green, about 8-10 cm long, actinomorphic, bisexual, hypogynous, slightly diverging, large, perianth adnate basally into long tube, surrounded by funnel shape staminal corona, mouth of corona about 3 cm wide, tepals 6, petaloid, tepals linear, about 10 cm long, extending from base of corona, free portion reflexed or ascending, imbricate. Stamen 6, basally connate into the funnel form corona, filaments long about 5 cm, filament base inserted on corona margin, filaments base white and apex greenish, filaments erect- slightly incurved, filiform, anthers long, about 2-2.5 cm long, 2 celled, versatile, introse, vertical dehiscing, pollen yellow- orange. Ovary inferior, carpel 3, syncarpous, 3 chambered ovaries with 2 ovules in each chamber, placentation axile, style about 20 cm long, exerted, laterally deflexed, filiform, stigma 1, capitate.

Synonym:

Pancratium littorale Jacq.;
Pancratium littorale Jacq.;

Hymenocallis tenuiflora Herbert,
Hymenocallis adnata Herb.;;
Pancratium staplesii (Sweet)Steud.;;
Troxistemon littorale (Jacq.) Raf.

Availability status: Locally available

Locality: Throughout the state

GPS location of collected place: Suryamaninagar (23°45'47.17" N; 91°16'09.37" E).

Altitude: 83 ft.

Exsiccate: Suryamaninagar, *Dipán Sarma, C.S.128*; dated 28. 04. 2016.

Ecology: It grown in the road side dry and damp or moist area, cultivated as an ornamental plant for its pleasant flowers.

Phenology: Flowering and fruiting is March-July.

Distribution: Origin from Central America and Southern Mexico and reported to Argentina, Brazil, China, Colombia, French, Guinea, Liberia, Mexico, Peru, South India, United States.

Uses: The plant is ornamental. The plant is frequently cultivated in the garden. Bulbs paste is used for the treatment of wounds.

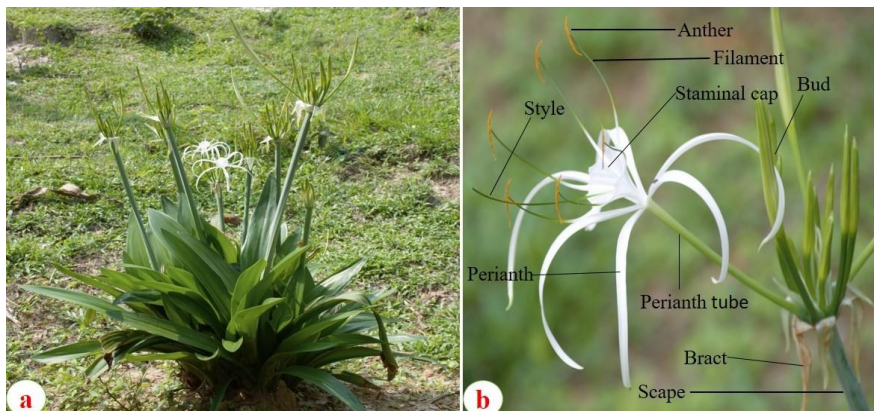


Plate 1: *Hymenocallis littoralis* (Jacq.) Salisb.: a- Habitat; b-: Different floral parts

***Crinum latifolium* L.:** Terrestrial, perennial, a stout herb, with large tunicate bulbs, stoloniferous, ovoid, rosette like, clothed with old leaf sheath. Leaves simple, fleshy, coriaceous, smooth, entire margin, linear-lanceolate, about 45-100 cm long, wide about 3-6 cm, equally disposed, concave, parallel venation, apex acute. Inflorescence in umbellate cymes, subtended by large spathe-like bracts, inflorescence borne on a leaf less long scape, scape green, smooth, ribbed, two ridges. Spathe 2, pink coloured, triangular, smooth, coriaceous, apex shortly acute or obtuse, about 7x5 cm, over lapped at base. Flowers 10-14 per inflorescence, with linear bracts, sessile, sequentially opening; actinomorphic, bisexual, hypogynous, slightly diverging, large, fragrant. Bracts linear, apex obtuse, pale red, about 4-6 cm long. Perianth adnate basally into long tube, salver shaped, tepals 6, petaloid, tepals linear- lanceolate, about 10x 2 cm, corona absent, apex mucronate-apiculate, outer side of tepal pink, inner side

pinkish white, imbricate; perianth tube pale reddish, cylindrical, about 10 cm long, pink coloured. Stamen 6, basally connate into the perianth throat, filaments long about 7 cm, filaments base white and apex reddish, filiform, anthers long, about 2-2.5 cm long, 2 celled, black coloured, versatile, vertical dehiscing, pollen yellow. Ovary inferior, carpel 3, syncarpous, 3 chambered ovary with 2 ovules in each chamber, placentation axile, style about 20 cm long, pink coloured, exerted, filiform, stigma 1, capitate.

Synonym: *Amaryllis insignis* Ker Gawl; *Crinum esquirolii* H. Lev.; *Crinum jemenicum* Dammann; *Crinum cochinchinense* M. Roem.

Availability status: Locally rare, probably endangered in Tripura.

Locality: Brajendranagar, Udaipur.

GPS location of collected place: Brajendranagar (23°34'13.87" N; 91°33'56.12" E).

Altitude: 156 ft.

Exsiccate: Brajendranagar, Udaipur, *Dipan Sarma*, *C.S.130*; dated 16. 05. 2016.

Ecology: The plant is grown in the damp, forest covered area.

Phenology: Flowering and fruiting is May- July.

Distribution: Asia-Temperate China, China South Central China, Tropical Asia; Bangladesh, Sri

Lanka, Indo-China, Andaman Island, Myanmar, Nicobar Island, Thailand, Vietnam, India (Assam, Kerala).

Uses: Leaves are used for the treatment of tumor, piles and fistula and earache. Tribal traditional healers believe *C. latifolium* extend life span.



Plate 2: *Crinum latifolium* L.: a- Habitat; b-: Different floral parts

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