

Notes on some vanishing taxa of Tripura, India

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Abstract

The current communication highlights 29 rare and threatened plant species of Tripura which are vanishing gradually due to anthropogenic activity. The plants are arranged alphabetically with their scientific name, small description, occurrence, their population status and the major threats. This kind of threatened plant list is very useful to evaluate the sustainable resource utilization and initiative towards the threatened species conservation aspects.

INTRODUCTION

Biological recording and mapping of endangered taxa is of utmost importance for countries like India where modern agriculture and destruction of natural habitat are leading to the elimination of wild species and weed races (Maheshwari 1980). A number of economic plant species are included in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) for export restriction and strict control of Trade (Anon. 1976). Northeast India is falling within the IUCN recognized Himalaya Hotspot whereas India itself is a megadiversity country. The pre-independent Princely State of Tripura was once an abode of rich tropical forests inhabited by a wide variety of wild life. The indigenous tribal populations living in the hills have traditionally derived their livelihood from floral and faunal resources of the state. However, the increasing human activities, as also the repeated influx of immigrants from across the international borders, have resulted in growing damages of plant genetic resources. Due to several anthropogenic pressure and overexploitation for root, rhizome, tubers, seeds, fruits, flowers, leaves, bark and ultimately for timber many plants have already extinct and many of them are facing serious threat to their survival.

Tripura is a small state of the North Eastern Region of India situated between 22°56' and 24° 32' N latitude and between 90° 09' and 92° 20'E longitude. It is bounded on the North-West, South and South-East by Bangladesh, whereas in the East it has a common boundary with Assam and Mizoram. The climate of Tripura is characterized by intermediate temperature and highly humid atmosphere. The year may be divided into four seasons. December to February is the cold season which is followed by summer (March- May), June to September is the monsoon and October to November is the post monsoon period. The cold weather starts by the end of November and continues up to February with daily maximum temperature of 26° C and minimum 8 – 4° C. During summer (April – May), maximum temperature reaches 38° C. Humidity remain high throughout the year. In the summer the relative humidity ranges between 50 – 75% while in monsoon it remain over 85%. Due to maximum precipitation and high humidity Tripura is floristically very rich and covered with largely ever green and moist deciduous forests.

In the present paper different types of vanishing taxa have been enumerated alphabetically and their occurrence, ecology, population status, causes of threat has been identified. The threatened and rare taxa are cited in the text mainly based on last ten years personal botanical exploration and observation by the first author. The plants enumerated here have been carefully studied in the field, examined and identified with the help of various publications (Hooker 1872 – 1897; Kanjilal *et al.* 1934 – 1940; Prain 1903; Saldanha & Nicolson 1976; Deb 1981, 1983; Bennet 1987). Voucher specimens (*Exsiccatus*) have been cited for all the species enumerated below. Herbarium specimens have been deposited in the Herbarium, Botany Department, Tripura University.

THREATENED AND RARE TAXA

Angiopteris evecta (Frost.) Hoffmann [Angiopteridaceae]: Stem globose, stipes large and fleshy.

Occurrence: Occurs rarely in forest patches of Champaknagar, Sonaachari, Teliamura, Jampui and Dumbur; threatened.

Ecology: Grows in moist areas near streams and shady forest floor.

Major threats: Habitat destruction.

Exsiccatus: Champaknagar, **Datta 696**.

Acorus calamus L. [Acoraceae]: An aromatic and rhizomatous marshland herb.

Occurrence: In some areas of South Tripura and Bamutia; rare.

Ecology: Grows in marshy places.

Major threats: Over exploitation of rhizomes for medicinal purpose and habitat destruction.

Exsiccatus: Belonia, **Majumder 524**.

Alpinia allughas Roscoe [Zingiberaceae]: An erect perennial rhizomatous herb.

Occurrence: Trishna Sanctuary and Damchara; rare.

Ecology: Grows in swampy areas.

Major threats: Over exploitation of pseudostem to use as vegetable and medicine.

Exsiccatus: Barpathari, **Majumder 781**.

Alpinia galanga (L.) Willdenow [Zingiberaceae]: An erect perennial rhizomatous herb.

Occurrence: Trishna Sanctuary and forest floor in some unprotected forest; threatened.

Ecology: Grows in shady forest floor.

Major threats: Over exploitation of rhizome for oil extraction and as condiment; flowers and pseudostem are eaten by tribal people.

Exsiccatus: Gandhigram, **Saha 703**.

Amorphophalus bulbifer (Roxburgh) Blume [Araceae]: Tuberos herb with large globose bulbils produced at the forks of leaves.

Occurrence: Sipahijala Sanctuary, Bagma and Konaban forest; threatened.

Ecology: In the forest floor.

Major threats: Bulbils and stem used as vegetable and medicine.

Exsiccatus: Tephania, **Majumder 596**.

Aristolochia tagala Chamisso [Aristolochiaceae]: A climber with long tubular brown perianth.

Occurrence: Kalaban forest, Jampui ranges and Ambassa; rare.

Ecology: On bushes and trees in forests.

Major threats: Habitat destruction and over utilization of roots for medicinal purposes.

Exsiccatus: Joyalikhmar, **Majumder, 572**.

Cannarium strictum Roxburgh [Cannariaceae]: A large deciduous tree with root buttresses.

Occurrence: Very few population found in the forest of Ambassa and Dharmanagar; rare.

Ecology: In the hilly forest.

Major threats: Over exploitation for timber and resin.

Exsiccatus: Dharmanagar, **Datta 683**.

Costus speciosus (Koenig) Smith [Zingiberaceae]: Tall rhizomatous herb with white flowers.

Occurrence: Forest floor of Baramura, Charilum and Gargi; threatened.

Ecology: Grows in wet semi-open places.

Major threats: Rhizome is edible and of medicinal importance.

Exsiccatus: Baramura, **Saha 742**.

Cyathea gigantea (Wallich *ex* W.J. Hooker) Hottum [Cyatheaceae]: A graceful and interesting tree fern.

Occurrence: In some restricted localities of Barmura, Longtharai, and Chaghari Tilla; threatened.

Ecology: Prefer moist places.

Major threats: Habitat destruction.

Exsiccatus: Longtharai, **Majumder 510**.

Dalbergia lanceolaria L. f. [Fabaceae]: A large deciduous tree.

Occurrence: Restricted in the forest of Sonamura Sub Division; rare.

Ecology: Occurs in mixed deciduous forest.

Major threats: Over exploitation for its good quality timber.

Exsiccatus: Sonamura, **Majumder 615**.

Dischidia rafflesiana Wallich [Asclepiadaceae]: Epiphytic climber with pitcher like leaves.

Occurrence: Restricted in the forest of Trishna, Damchara and Kailasahar; rare.

Ecology: Grows on tree trunks and larger branches in moist climate.

Major threats: Destruction of host plants.

Exsiccatus: Tulamura, **Majumder 538**.

Drosera burmannii Vahl [Droseraceae]: A beautiful rosette insectivorous plant.

Occurrence: Found only in the Tripura University campus; rare.

Ecology: In moist places.

Major threats: Habitat destruction.

Exsiccatus: Suryamaninagar, **Saha 789**.

Elaeocarpus prunifolius (C. Mueller) Masters [Elaeocarpaceae]: Large deciduous tree.

Occurrence: Forest of Kalaban and Trishna; threatened.

Ecology: In deciduous forest.

Major threats: Over exploitation for its soft timber.

Exsiccatus: Kalaban, **Datta 602**.

Entada pheseoloides (L.) Merrill [Mimosaceae]: A gigantic liana with longest pod.

Occurrence: Forest of Trishna, Tepania and Bagma; very rare.

Ecology: Climbing in mixed deciduous forests.

Major threats: Over utilization of its seeds and habitat destruction.

Exsiccatus: Trishna, **Majumder 501**.

Haematocarpus thomsonii Miers [Menispermaceae]: A rare primitive plant.

Occurrence: Restricted in the deep forest of Kamalpur; rare.

Ecology: In shady areas.

Major threats: The blood red globose fruits extensively used by tribal people as medicine.

Exsiccatus: Kamalpur, **Datta 670**.

Hedychium coronarium Koenig [Zingiberaceae]: Perennial rhizomatous herb with large white fragrant flowers.

Occurrence: Teliamura and Ambassa; rare.

Ecology: In shady semi-open forest floor.

Major threats: Habitat destruction.

Exsiccatus: Teliamura, **Majumder 503**.

Helminthostachys zeylanica L. [Helminthostachyaceae]: Large perennial pteridophyte, rhizome underground.

Occurrence: Ambassa; rare.

Ecology: In moist forest floor.

Major threats: Habitat destruction.

Exsiccatus: Ambassa, **Datta 678**.

Homalonema aromatica Schott [Araceae]: An aromatic rhizomatous arum-like herb.

Occurrence: Restricted to Jampui Ranges and Dharmanagar; rare.

Ecology: In the forest of hilly tracts.

Major threats: Over exploitation of rhizome for medicinal as well as for vegetable.

Exsiccatus: Dharmanagar, **Datta 666**.

Hydnocarpus kurzii (King) Warberg [Flacourtiaceae]: A large evergreen tree.

Occurrence: A very small population found in Jampui Hill Ranges; threatened.

Ecology: Found in evergreen forests on the hills.

Major threats: Habitat destruction.

Exsiccatus: Sipahijala, **Saha 796**.

Kaemferia galanga L. [Zingiberaceae]: A small rhizomatous herb; pseudostem very short.

Occurrence: Sipahijala and Ishanchandra Nagar forest; rare.

Ecology: Moist forest floor.

Major threats: Over utilization of its rhizome for condiment and medicine.

Exsiccatus: Ishanchandra Nagar, **Majumder 525**.

Morinda angustifolia Roxburgh [Rubiaceae]: A bushy shrub.

Occurrence: Kailasahar, Amarpur; threatened.

Ecology: In the forest outskirts.

Major threats: Extensive use of roots by Chakma community for dyeing their clothes yellow.

Exsiccatus: Amarpur, **Datta 626**.

Morinda tinctoria Roxburgh [Rubiaceae]: A small tree.

Occurrence: In the forest of Dharmanagar; threatened.

Ecology: In open forest.

Major threats: Extensive use of roots by Chakma community for dyeing their clothes yellow.

Exsiccatus: Dharmanagar, **Majumder 500**.

Ophiorrhiza lurida Hook.f. [Rubiaceae]: A small herb.

Occurrence: Much restricted, found only at Kumarghat; rare.

Ecology: On the moist hilly tracts.

Major threats: Habitat destruction.

Exsiccatus: Kumarghat, **Datta 607**.

Ophiorrhiza tingens C.B. Clarke ex C.E.C. Fischer [Rubiaceae]: A small woody herb.

Occurrence: Much restricted, found only at Kailasahar; rare.

Ecology: On the hilly tracts.

Major threats: Habitat destruction.

Exsiccatus: Kailasahar, **Saha 710**.

Polyalthia simiarum (Bentham & Hook.f.) Hook.f. & Thomson [Annonaceae]: A large deciduous tree.

Occurrence: In the forest of Chailengtha and Jampui ranges; rare.

Ecology: In foot hills region.

Major threats: Over exploitation for its soft timber.

Exsiccatus: Chailengtha, **Datta 644**.

Rauvolfia serpentina Bentham ex Kurz. [Apocynaceae]: An undershrub.

Occurrence: Very small population occur in shady forest floor of Bagma and Trishna; rare.

Ecology: In shady forest floor.

Major threats: Over utilization and destruction of the natural habitat.

Exsiccatus: Bagma, **Saha 729**.

Saraca asoca (Roxburgh) de Wilde [Caesalpiaceae]: A small tree.
Occurrence: In the forest of Kalaban Samukchara and Choraibari; rare.
Ecology: In moist deciduous forest.
Major threats: Habitat destruction and extensive bark collection for medicine.
Exsiccatus: Kalaban, ***Majumder 545***.

Semecarpus anacardium L.f. [Anacardiaceae]: A medium deciduous tree.
Occurrence: Forest of Konaban, Ishanchandranagar; rare.
Ecology: In dry deciduous forest and also in open land.
Major threats: Habitat destruction.
Exsiccatus: Konaban, ***Datta 645***.

Strychnos wallichiana Benth [Loganiaceae]: A woody climber.
Occurrence: In the forest of Longtharai hill ranges; rare.
Ecology: On the hilly tracts.
Major threats: Extensively used for arrow poisoning by the tribes.
Exsiccatus: Longtharai, ***Datta 636***.

DISCUSSION AND CONCLUSION

The present communication reported 29 rare and threatened plants of Tripura. These include 11 herbs, 8 trees, 4 climbers, 3 pteridophytes, 1 shrub, 1 climbing epiphyte and 1 insectivorous plant. Among these 20 plants are treated as rare and 9 plants are threatened. Plants like *Acorus calamus*, *Angiopteris evecta*, *Cyathea gigantea*, *Cannarium strictum*, *Drosera burmanni* and *Rauvolfia serpentina* etc. are struggling very hard to survive in their natural habitat. The extensive collection of *Acorus calamus*, *Entada phaseoloides*, *Kaemferia galangal*, *Morinda angustifolia*, *M. tinctoria*, *Rauvolfia serpentina* and *Strychnos wallichiana* from their wild habitat for medicinal plant market will, very soon, put them into critical category. This can be restricted by enhancing their cultivation and generating awareness for conservation as these are all red listed plants. Thus indiscriminate deforestation and several other anthropogenic pressures are gradually causing damage to the habitat of some species like *Hydnocarpus kurzii*, *Helminthostachys zeylanica*, *Hedychium coronarium*, *Dischidia rafflesiana*, *Semecarpus anacardium* etc. The situation is serious and sending alarm to undertake appropriate *ex situ* and *in situ* conservation measures.

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