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Tree Flora of Saddle Peak National Park, Andaman, India

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Abstract: An enumeration of all trees of Saddle Peak National Park, Andaman, India was made. There are 188 taxa belonging to 135 genera and 50 families were found within a land area of 36 km². They are enumerated under family names alphabetically. Flora represents 44 (23%) endemic tree species. The nomenclature of the taxa was updated. Information on popular name, vegetation type, place and reference number for each taxon are provided.

Key words: Trees, flora, evergreen, semievergreen, moist deciduous, Saddle peak, Andaman

INTRODUCTION

Knowledge of vegetation and flora of any region is essential for the study of biodiversity and environment. Further, a comprehensive and up to date flora is essential for the study of plants of any area and their utility. Moreover, preparation of the floras of smaller areas like protected areas is a prerequisite for protection and proper management of biodiversity. In order to ensure the protection of all major ecosystems, to minimize the damages to the habitats and to safeguard loss of biodiversity, still there is a need to declare large number of protected areas.

There are few studies were available on tree flora of protected areas of India. So, the present study is carried out in Saddle Peak National Park to account its tree diversity.

MATERIALS AND METHODS

Study Area

Saddle Peak National Park is located in north Andaman on volcanic rock of basaltic to andesitic composition covering an area of 36 km² in between 13° 10' 00" to 13° 12' 00" N latitude and 93° 00' to 93° 02' 00" East longitude. It has highest peak in the Andaman and Nicobar islands with an altitude of 737 m (Mean Sea Level). Saddle peak harbors a wide variety of species due to varied topographic and climatic conditions. It is endowed with a true maritime climate year round with least variation between maximum (30.1°C) and minimum (23.1°C) temperatures. The mean annual precipitation is around 3100 mm unevenly distributed throughout the year. Average relative humidity ranges from 68 to 86%.

Vegetation

Study area represents three main forest types, i.e., Andaman Evergreen (Giant Andaman Evergreens, Andaman Tropical Evergreens, Andaman Hilltop evergreens), Andaman Semievergreen, Andaman Moist Deciduous Forests. Bamboo and Cane brakes form locale specific edaphic types (Champion and Seth, 1968).

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Andaman Evergreen Forests

Giant Andaman Evergreens are regarded as climax formation in lowlands and occur in areas where there is a rainfall of over 3000 mm. It once grew on most of the alluvial soil near banks of streams with deep soil and in the lower valleys. Magnificent buttressed trees festooned with climbers and epiphytes and interspersed with canes and bamboos rose to 30 m and more. Tall Gurjan (*Dipterocarpus alatus*) was common in these forests. However, these forests are almost extinct due to felling of large trees for commercial purposes.

Andaman Tropical Evergreens are multi-storied, closed canopy forests which grow on hilly terrain. They are less luxuriant than the Giant Evergreen with lesser height and lesser density. In evergreen forests of Andaman Islands, three or more strata of vegetation can be found and forest floor does not receive much of the direct sunlight. The Canopy trees are *Dipterocarpus alatus*, *Dipterocarpus griffithii*, *D. turbinatus*, *Planchonella longipetiolatum*, *Hopea odorata*, *Endospermum malaccense*, *Planchonia valida*. The second storey trees are *Baccaurea ramiflora*, *Mangifera andamanica*, *Myristica glaucescens*, *M. andamanica*, *Buchanania splendens*, *Pometia pinnata* and *Xanthophyllum andamanicum*.

Andaman Hill-top Evergreens are stunted, wind-resistant forests. Their physiognomy is greatly influenced by strong winds. Saddle Peak (737 m) presents such unique vegetation in Andaman and Nicobar islands. It is frequently occurs on the slopes and top of hills and sometimes on the steep slopes lower down. A more or less inferior to typical wet evergreen because of exposure to wind and less favorable soil conditions.

Dominant tree species are *Syzygium kurzii*, *Myristica glaucescens*, *Parishia insignis*, *Anacolosia frutescens*, *Dipterocarpus gracilis*, *Canarium manii*, *Dipterocarpus costatus* and *Caryotis mitis*.

Andaman Semievergreen Forest

It is the intermediate type between the Tropical Evergreen forests and Tropical Moist Deciduous Forests. The dominant trees includes both evergreen and deciduous trees-the former predominating. It is usually associated with evergreen forests. It is occurring mostly in the valleys.

Predominant tree species are *Aglaiia lawii*, *Canarium euphyllum*, *Celtis wightii*, *Dipterocarpus gracilis*, *Diospyros pyrhocarpa*, *Horsfieldia irya*, *Lepisanthes rubiginosa*, *Litsea kurzii*, *Mangifera sylvatica*, *Pterygota alata*, *Pterocarpus dalbergioides*, *Pterocymbium tinctorium*, *Pterospermum acerifolium*, *Tetrameles nudiflora* etc.

Andaman Moist Deciduous Forests

This forest type mostly occurs on lower slopes and is characterized by open canopy and seasonal leaf fall. Generally the dominant trees in these forests have very large girth with buttresses and grow more than 20 m height. The forests are important as they yield timber of more economic value. The Padauk (*Pterocarpus dalbergioides*), white Chuglum (*Terminalia bialata*) and Pema (*Lagerstroemia hypoleuca*) are important constituents of the moist deciduous forest.

Predominant tree species are *Pterocarpus dalbergioides*, *Terminalia bialata*, *T. manii*, *Parishia insignis*, *Diploknema butyracea*, *Gmelina elliptica*, *Albizia procera*, *Pterocymbium tinctorium*, *Sageraea elliptica*, *Sterculia villosa*, *Miliusa tectona*, *Semecarpus kurzii*, *Diospyros pyrhocarpa*, *Pterospermum acerifolium*, *Lannea coromandelica*, *Wrightia arborea* etc.

Botanical History

A knowledge of the botanical history of any geographic area is of paramount importance for understanding its phytogeography. In 1839, Helfer, Russian geologist visited the islands with a view to ascertaining mineral resources and also made extensive botanical collections, but these after his murder by aborigines on the North Andaman, were unfortunately mixed up with his Tenasserim plants and all were labelled as Tenasserim and Andaman which resulted in great deal of confusion.

Subsequently, botanists like Kurz, Parish, Prain, King and Rogers made some botanical studies between 1866 and 1903, which together and with his own efforts enabled Parkinson (1923) to bring out a Flora of the Andaman Islands dealing with the woody elements (650 species). Since then, Indian explorers, Thothathri (1959 and 1974), Ellis and Ramamurthy (1964 and 1987), Balakrishnan (1973, 1976-1977), Nair (1973, 1976-1977), Bhargawa (1974), Premmath (1982), Basu (1978), Sinha (1982, 1992), Chakraborty and Kindo (1986), Vasudeva Rao (1982), Ray (1990), Debnath (1991), Sanjappa (1989), Narasimhan (1990-1992), Rao (1999), Sumathi (2000), Sreekumar (2000) and Reddy (2001-2003) made botanical collections from North Andamans.

A preliminary report of angiosperms of Andaman and Nicobar Islands by Vasudevarao (1986), supplementary lists by Lakshminarasimhan and Rao (1996), Mathew (1998), Hajra *et al.* (1999) and Reddy and Dutt (2003) have greatly contributed towards understanding the floristic composition of the archipelago. So far, a total of 2000 indigenous and 500 non-indigenous species of flowering plants are recorded in Andaman and Nicobar Islands. Reddy *et al.* (2004) enlisted 353 endemic taxa, which was based on the published literature and herbarium studies.

Methods

Information from three sources was utilized: specimens deposited in various herbaria, taxonomic literature and field surveys. Field surveys were undertaken during 2001 to 2003 covering all the seasons.

The plant specimens were collected either in the flowering or the fruiting condition, preferably both. At least four specimens of each species with a size of about 25 cm was collected. Each specimen was numbered as it is collected and the detailed notes are entered in the field note book. All the collected specimens were properly processed. Provisional identifications of specimens were made with the help of Gamble's Flora of Presidency of Madras (1915-1936), Parkinson's Flora of Andaman (1923), Hajra *et al.* (1999). Flora of Andaman and Nicobar islands (1999). Later identifications were confirmed with the help of the authentic specimens deposited at Regional Herbarium of Botanical Survey of India, Port Blair. Care was taken for the updation of nomenclature of the taxa based on standard Floras (Sharma *et al.*, 1993; Sinha, 1999; Hajra *et al.*, 1999). Voucher specimens collected were deposited at Central National Herbarium, Kolkata.

Plan of Analysis

The families were arranged according to Bentham and Hooker's system of classification. Taxa were arranged alphabetically under families of Magnoliopsida (*Dicotyledonae*) and Liliopsida (*Monocotyledonae*). Information on vegetation type and reference number (place and species collection number by various collectors) in for each taxon was furnished. Plant collections by BSI Scientists and others available at PBL, BSI, Port Blair and CAL, Central National Herbarium, Kolkata are provided, including present work (CSR). Local names of species provided in paranthesis after botanical name. Species of endemic nature are undelined as Endemic after collection number.

SYSTEMATIC ENUMERATION MAGNOLIOPSIDA (DICOTYLEDONS) POLYPETALAE

Dilleniaceae

Dillenia andamanica Parkinson (Chalta, Karkad)

Tree. Common in moist deciduous and semievergreen forests. Saddle peak foot hill (50 m): CSR 2221. Endemic.

Dillenia pentagyna Roxb. (Sambu, Sambidium)

Deciduous trees to 15 m. Frequent in Moist deciduous forests. Saddle peak foot hill: (50 m): 24-11-2001, CSR 2251.

Magnoliaceae

Magnolia andamanica (King) Raju and Nayar (*Talauma andamanica* King)

Large trees. Rare, in evergreen forests. Saddle peak (250 m): CSR 2491. Endemic.

Annonaceae

Goniothalamus macranthus (Kurz) Boerl. (Batamballi).

Small tree to 6 m. Occasional in moist deciduous forests. Saddle peak (150 m): CSR 2226. Endemic.

Miliusa andamanica (King) Finet and Gagnep.

Small tree to 5 m. Rare, in evergreen forests. Saddle peak (100 m): CSR 2265. Endemic.

Miliusa globosa (DC.) Panigr. and Mishra

Small tree. Occasional, in evergreen forests. Saddle peak, Foot hill (150 m) MKV 8967.

Miliusa tectona Hutch. ex Parkinson (Jangli-sagwan, Jangli-teak).

Trees to 15 m high. Occasional, in moist deciduous forests. Lamia Bay: CSR 2202.

Orophea hexandra Blume

Small tree. Occasional in evergreen forests. Lamia Bay: CSR 2282.

Pseuduvaria prainii (King) Merr.

Small tree. Occasional in evergreen and semievergreen forests. Saddle peak (50 m), Balak 5193; MKV 8979.

Sageraea elliptica (DC.) Hook.f. and Thoms. (Chooi)

Trees, 6-15 m. Occasional in moist deciduous and Semievergreen forests. Saddle peak (100 m), CSR 2663.

Uvaria andamanica King

Trees. Rare, in evergreen forests. Kalpong area: GCB and GSK 12389. Endemic.

Uvaria cordata (Dunal) Alston

Trees. Rare, in evergreen forests. Austin-9: BKS 16224.

Flacourtiaceae

Casearia andamanica King

Small tree. Rare in evergreen forests. Saddle peak: (300 m). MKV 8955. Endemic.

Casearia insularis Vasud. and T. Chakrab.

Small tree. Rare in evergreen forests. Reported from Saddle peak by Vasudeva rao and Chakraborty (500 m). Endemic.

Casearia elliptica Willd.

Small tree. Rare in Moist deciduous forests. Saddle peak: (300 m). CSR 2501.

Pittosporaceae

Pittosporum ferrugineum Ait.

Tree. Rare in evergreen forests. Saddle peak: (400 m), Balak and Nair 4733; (250 m), Balak 5154.

Xanthophyllaceae

Xanthophyllum andamanicum King

Trees to 15 m tall. Occasional in evergreen forests. Interview Island: PLN 15694. Endemic.

Clusiaceae (Guttiferae)

Calophyllum austro-indicum Kosterm.ex P. Stevens.

Small trees. Rare, in stunted evergreen forests at higher elevations. Saddle peak- 2nd Tikri (650 m): Sumathi 17815.

Garcinia andamanica King

Trees. Rare in evergreen forests. Mohanpur: CSR 2503. Endemic.

Garcinia cowa Roxb.ex DC.

Trees. Occasional in inland forests. Saddle peak: MKV 8977.

Garcinia xanthochymus Hook.f.

Trees. Occasional in inland forests. Lamia Bay: Balak 5198.

Mesua ferrea L.

Trees. Rare in evergreen forests. Saddle peak: CSR 2504.

Theaceae

Ternstroemia wallichiana (Griff.) Ridley

Trees to 10 m high. Rare in evergreen forests. Laxmipur: Nair 4870.

Dipterocarpaceae

Dipterocarpus alatus Roxb. (Garjan, Bada Garjan)

Very tall trees. Occasional in evergreen forests. Saddle peak: CSR 2574. Endemic.

Dipterocarpus costatus (Garjan, Chota-patti Garjan)

Very tall trees. Occasional in evergreen forests. Saddle peak: Balak 5382; Balak and Nair 4780.

Dipterocarpus gracilis Blume (*D. turbinatus* Buch.-Ham.) (Garjan)

Very tall trees. Occasional in evergreen forests. Mohanpur: CSR 2520.

Dipterocarpus grandiflorus (Blanco) Blanco (*D. griffithii* Miq.) (Garjan)

Very tall trees. Occasional in evergreen forests. Swamp Island: CSR 2521.

Hopea helferi (Dyer) Brandis

Trees. Very rare, in forests of Saddle peak. Saddle peak (400 m): Balak and Nair 473; Balak 5168.

Hopea odorata Roxb. (Tingan)

Trees. Common, in inland forests. Swamp Island: CSR 2522.

Bombacaceae

Bombax insigne Wall. (Didu)

Trees. Occasional in inland forests. Mohanpur: CSR 2509.

Sterculiaceae

Firmiana colorata (Roxb.) R.Br. (*Sterculia colorata* Roxb.)

Trees. Occasional in inland forests. Kishorinagar: CSR 2456.

Pterocymbium tinctorium (Blanco) Merrill (Papita)

Trees. Common in inland forests. Paget Island: CSR 2018.

Pterospermum acerifolium (L.) Willd. (Makchun, Masanand)

Trees. Common in inland forests. Ariel Bay: Nair 4901; Keralapuram: Balak 5474.

Pterygota alata (Roxb.) R. Br. (*Sterculia alata* Roxb.) (Lakkov)

Trees. Common in inland forests. Point Island: CSR 2126.

Sterculia guttata Roxb.

Trees. Rare in deciduous forests. Kishorinagar: CSR 2457.

Sterculia macrophylla Vent.

Trees. Frequent in semievergreen and moist deciduous forests. Mohanpur: CSR 2512.

Sterculia villosa Roxb. (Chilka)

Trees. Common in semievergreen and moist deciduous forests. Paget Island: CSR 2019.

Tiliaceae

Grewia indandaminca Ellis and Ray

Small trees. Occasional in moist deciduous forests. Saddle peak: Balak and Nair 4797. Endemic.

Elaeocarpaceae

Elaeocarpus tectorius (Lour.) Poiret

Trees. Rare in evergreen forests. Kishorinagar: CSR 2463.

Erythroxylaceae

Erythroxylum cuneatum (Miq.) Kurz

Medium sized trees to 15 m. Rare in inland forests. Kishorinagar: CSR 2464.

Rutaceae

Atalantia simplicifolia (Roxb.) Tanaka

Small trees. Rare in moist deciduous forests. Radhanagar: CSR 2688.

Euodia lunu-ankenda (Gaertn.) Merrill

Trees 12-20 m tall. Rare in inland forests. Radhanagar: CSR 2690.

Murraya paniculata (L.) Jack. (*Murraya exotica* L.)

Small trees. Common in moist deciduous forests. Radhanagar: CSR 2690.

Pleiospermium alatum (Wt and Arn.) Swingle

Trees 5-8 m tall. Common in inland forests. Paget Island: CSR 2020.

Zanthoxylum rhetsa (Roxb.) DC. (*Z. budrunga* (Roxb.) DC.)

Trees. Occasional in inland forests. Mohanpur: CSR 2515.

Simaroubaceae

Ailanthus triphyssa (Dennst.) Alston

Trees. Rare in evergreen forests. Saddle peak (400 m): CSR 2551.

Picrasma javanica Blume

Trees. Occasional in evergreen forests. Saddle peak (50 m): Balak. 5194.

Ochnaceae

Ochna integerrima (Lour.) Merr.

Small trees. Found in moist deciduous and semievergreen forests. Saddle peak: MKV 8957.

Burseraceae

Canarium euphyllum Kurz

Trees. Occasional in inland forests. Radhanagar: CSR 2033.

Canarium manii King

Trees. Rare in evergreen forests. Saddle peak (500 m): Balak 5167; Balak and Nair 4752. Endemic.

Meliaceae

Aglaia lawii (Wight) Sald. and Ramam. (*A. andamanica* hiern) (Laktok)

Trees. Common in semievergreen forests. Point Island: CSR 2127. Endemic.

Aglaia oligophylla Miq.

Trees. Occasional in inland forests. Radhanagar: CSR 2034.

Aphanamixis polystachya (Wall.) Parker (*Amoora rohituka* (Roxb.) Wt. and Arn.)

Trees. Occasional in inland forests. Mohanpur: CSR 2519.

Chukrasia tubularis Jussieu

Trees. Occasional in inland forests. Kishorinagar: CSR 2453.

Trichilia comaroides (Wt. and Arn.) Bentre.

Small trees. Rare in inland forests. Kafeedera: CSR 2155.

Walsura pinnata Hassk.

Small trees. Rare in inland forests. Lamia bay: CSR 2225.

Dichapetalaceae

Dichapetalum gelonioides (Roxb.) Engl. sp. *andamanicum* (King) Leenh.

Small trees. Common in inland forests. Lamia bay: Nair 4849. Endemic.

Olacaceae

Anacolosia frutescens (Bl.) Bl. (Haddiped)

Small trees. Common in inland forests. Lamia bay: CSR 2695.

Icacinaceae

Codiocarpus andamanica (Kurz) Howard

Trees. Rare in semievergreen forests. Saddle peak foot hill: MKV 8972. Endemic.

Sapindaceae

Allophylus cobbe (L.) Raeusch.

Small trees to 8 mm tall. Rare in moist deciduous forests. Saddle peak (100 m): CSR 2228.

Dimocarpus longan Lour.

Trees. Common in inland forests. Lamia Bay: Balak 5454.

Harpullia cupanioides Roxb.

Trees. Scattered in inland forests. Lamia bay: CSR 2213.

Lepisanthes rubiginosa (Roxb.) Leenh. (*Erioglossum rubiginosum* Bl.)

Trees. Common in semievergreen forests. Saddle peak foot hill: MKV 8917.

Lepisanthes senegalensis (Juss. ex Poir.) Leenh.

Trees. Occasional in evergreen forests. Saddle peak (500 m): CSR 2285.

Mischocarpus sundaicus Bl. (Kakda).

Trees to 10 m high. Frequent in evergreen forests. Saddle peak (700 m): Balak and Nair 4794.

Pometia pinnata J.R. and G. Forst. (Chidgandu, Lichu ped)

Trees to 25 m high. Frequent in evergreen forests. Lamia Bay: CSR 2280.

Anacardiaceae

Bouea oppositifolia (Roxb.) Meisn.

Trees to 10 m high. Scarce in evergreen forests. Saddle peak (150 m): CSR 2230.

Buchanania splendens IMiq. (*B. platyneura* Kurz) (Hathpanza)

Trees. Rare in inland forests. Saddle peak (150 m): CSR 2254. Endemic.

Dracontomelon dao (Blanco) Merr. and Rolfo (*D. mangifera* (Bl.) Bl.)

Trees. Frequent in inland forests. Lamia Bay: CSR 2218.

Lanea coromandelica (Houtt.) Merr. (*Odina wodier* Roxb.)

Large deciduous tree. Occasional in moist deciduous forests. Lamia Bay: CSR 2039.

Mangifera andamanica King

An evergreen tree. Common in evergreen forests. Saddle peak (200 m): CSR 2328. Endemic.

Mangifera sylvatica Roxb.

An evergreen tree. Common in semievergreen forests. Saddle peak (100 m): CSR 2241.

Parishia insignis Hook.f. (Lal Dhup)

Trees. Common in inland forests. Durgapur: Balak 5468.

Semecarpus kurzii (Jangli Kaju)

Tree to 15 m. Common in inland forests. Saddle peak (150 m): CSR 2242. Endemic.

Spondias pinnata (L.f.) Kurz (*S. mangifera* Willd.) (Amra)

Trees. Occasional in inland forests. Lamia bay: CSR 2214.

Papilionaceae

Pterocarpus dalbergioides Roxb.ex DC.

Large trees. Common in moist deciduous forests. Lamia Bay: MKV 9008. Endemic.

Mimosaceae

Adenanthera microsperma Teijsm. and Binn. (*A. pavonina* L. var. *microsperma* (Teijsm. and Binn.) Niels. and Guinet (Ooji)

Trees. Common in moist deciduous forests. Saddle peak (100 m): CSR 2250.

Albizia procera I(Roxb.) Bentham(Karai)

Trees. Frequent in semievergreen forests. Saddle peak (150 m): CSR 2722.

Rosaceae

Prunus javanica (T. and B.) Miq. (*P. martabanica* Kurz)

Trees. Rare in evergreen forests. Lamia Bay: CSR 2548.

Combretaceae

Terminalia bialata Steud. (White Chuglam, Safed Chuglam)

A tall trees, up to 30-40 m high. Common in moist deciduous forests. Buchanan Island: CSR 2558.

Terminalia procera Roxb.

Trees to 40 m high. Branches in horizontal whorls. Common in moist deciduous forests. Saddle peak (100 m): CSR 2249. Endemic.

Terminalia manii King (Black Chuglam, Kala Chuglam)

Trees to 40 m high, with a straight clean bole. Common in moist deciduous forests. Lamia bay: CSR 2219. Endemic.

Myrtaceae

Acmena acuminatissima (Bl.) Merr. (*Eugenia acuminatissima* (Bl.) Kurz)

Trees. Occasional in inland forests. Lamia Bay: CSR 2723.

Decaspermum parviflorum (Lam.) Scott.

Trees. Rare in hill top forests. Saddle peak (720 m): PLN 20771.

Rhodamnia dumetorum (DC.) Merr. and Perry

Trees. Rare in hill top forests. Saddle peak (720 m): Ellis 14192.

Syzygium claviflorum (Roxb.) Wall.ex Cowan and Cowan (*Eugenia claviflora* Roxb.)
Trees. Saddle peak: Balak and Nair 4770.

Syzygium kurzii (Duthie) Balakr. var. *andamanica* (King) Balakr.
Trees. Rare in inland forests. Saddle peak: CSR 2560. Endemic.

Syzygium manii (King) Balakr.
Trees. Rare in inland forests. Saddle peak: CSR 2140. Endemic.

Syzygium samarangense (B.) Merr. and Perry
Trees. Occasional in evergreen forests. Lamia Bay: MKV 9014.

Barringtoniaceae

Planchonia valida (Bl.) Bl. (*P. andamanica* King) (Lal Bombay)
Trees. Occasional in inland forests. Saddle peak: PLN 20735.

Memecylaceae

Memecylon collinum Cogn.
Small trees. Saddle peak (650 m): Balak and Nair 4749; RKP 9213. Endemic.

Memecylon edule Roxb.
Small trees to 4 m tall. Rare in inland forests. Saddle peak (300m): CSR 2318.

Memecylon scutellatum (Lour.) Naud.
Small trees. Occurs in hill forests. Saddle peak (600 m): Balak and Nair 4763; RKP 9244; CSR 2316.

Lythraceae

Lagerstroemia hypoleuca (Pema, Jarul)
Large trees. Common in all moist deciduous forests. Lamia bay: CSR 2580.
Endemic.

Datiscaceae

Tetrameles nudiflora R.Br.ex Benn. (Tippok, Pippok)
Trees with buttresses. Occasional in semievergreen forests. Lamia bay: CSR 2567.

Araliaceae

Schefflera venulosa (W. and A.) Harms.
Trees. Rare in evergreen forests. Lamia bay: CSR 2496.

GAMOPETALAE

Rubiaceae

Ceriscoides turgida (Roxb) Tirveng.
Small, deciduous tree. Occasional in moist deciduous forests. Lamia bay: CSR 2499.

Chassalia curviflora (Wall.) Thw.var. *ophioxylodes* (Wall.) Deb and Krishna
Trees to 4 m high. Lamia bay: PLN 15643.

Diplospora andamanica Balak and Nair

Small trees. Balakrishnan and Nair reported it from Saddle peak. Endemic.

Gardenia coronaria Ham.

Trees. Occasional in open moist deciduous forests. Saddle peak (200 m): MKV 8928.

Ixora grandifolia Z. and M.

Small trees. Occasional in inland forests. Saddle peak (250m): CSR 2314.

Ixora thwaitesii Hook.f.

Small trees. Rare in forests. Saddle peak (720 m): Ellis 12745.

Mitragyna rotundifolia (Roxb.) O.K. (Karmi)

Trees. Common in moist deciduous forests. Aerial bay: Nair 4829.

Nauclea gageana King

Trees. Rare, in evergreen forests. Recorded from Saddle peak.

Nauclea purpurascens Roxb.

Small trees. Occasional in inland forests. Lamia bay: CSR 2354.

Psychotria balakrishmanii Deb and Gang.

Small trees. Rare in forests. Saddle peak: MKV 8948. Endemic.

Psychotria kurzii Deb and Gang.

Small trees. Rare in inland forests. Saddle peak (200 m): Balak 5407. Endemic.

Psychotria sarmentosa

Small tree. Saddle peak (400 m): Balak and Nair 4743.

Psychotria platyneura

Small trees. Saddle peak (150 m): RKP 9217; PLN 20751

Rothmania pulcherrima (Kurz) Tirv.

Small trees. Saddle peak: MKV 8926.

Tarenna weberaefolia (Kurz) Balakr. (Webera kurzi Hook.f.)

Trees. Saddle peak: MKV 8942.

Wendlandia andamanica Cowan

Small trees. Rare in forests. Saddle peak: Balak 5173. Endemic.

Myrsinaceae

Ardisia oxyphylla Wall.ex DC.

Small trees. Rare in forests. Saddle peak: MKV 8927; RKP 9238.

Maesa ramentacea Wall.

Small trees. Saddle peak (150 m): CSR 2311.

Sapotaceae

Diploknema butyracea (Roxb.) Lam. var. *andamanensis* Royen (*Madhuca butyracea* Roxb.)

Trees. Occasional in inland forests. Saddle peak CSR 2129. Endemic.

Planchonella longipetiolatum (King and Prain) Lam. (*Sideroxylon longipetiolatum* King and Prain)
(Lambapatti)

Trees. Occasional in inland forests. Saddle peak: CSR 2137.

Planchonella obovata (R.Br.) Pierre (*Sideroxylon ferrugineum* Hk. and Arn.)

Trees. Scattered in littoral forests. Saddle peak: Balak 5158.

Ebenaceae

Diospyros kurzii Hiern. (Lohda, Marbel)

Trees. Common in moist deciduous forests. Saddle peak (250m): CSR 2310.

Diospyros marmorata Parker (*D. oocarpa* auct.non Thw.) (Kala-lakdi)

Trees. Common in moist deciduous forests. Saddle peak (250m): CSR 2145. Endemic.

Diospyros montana Roxb.

Trees. Scattered in moist deciduous forests. Saddle peak, CSR 2072.

Diospyros pilosiuscula (*D. pilosula* Wall.ex Hiern.) (Chotapatti Kendu)

Trees. Common in moist deciduous forests. Saddle peak: Nair 4879.

Diospyros pyrrocarpa Miq. var. *andamanica* Kurz (Gab, Bada Kendu)

Trees. Common in semievergreen and moist deciduous forests. Saddle peak: CSR 2008. Endemic.

Diospyros undulata Wall. ex G.Don

Trees. Occasional in moist deciduous forests. Saddle peak: Balak 5145; MKV 8936.

Oleaceae

Chionanthus terniflora Wall.

Small trees. Scattered in moist deciduous forests. Ramnagar: Balak 5336.

Ligustrum perrottetii DC.

Small trees. Rare in forests. Saddle peak (400 m): Ellis 14199.

Apocynaceae

Alstonia kurzii Hook.f. (Haldi ped)

Trees. Occasional in inland forests. Saddle peak (400 m): CSR 2135. Endemic.

Alyxia reinwardtii Bl. var. *lucida* (Markgr).

Trees. Rare in inland forests. Saddle peak: Balak 5184; Balak 5385.

Hunteria zeylanica (Retz) Gardens

Trees. Rare in inland forests. Saddle peak (200 m): MKV 8931. CSR 2309.

Tabernaemontana crispa Roxb.

Trees. Occasional in moist deciduous forests. Lamia bay: MKV 9010.

Wrightia arborea (Dennst.) Mabb. (*W. tomentosa* R. and S.)

Small, deciduous tree. Common in semievergreen and deciduous forests. Lamia bay: CSR 2130.

Bignoniaceae

Fernandoa adenophylla (Don) Steen. (*Heterophragma adenophyllum* (DC.) Dop.) (Chappal)

Trees. Common in inland forests. Lamia bay: CSR 2767.

Oroxylum indicum (L.) (Kurz)

Trees. Common in moist deciduous forests. Lamia bay: CSR 2768.

Pajanelia longifolia (Willd.) Sch. (*P. rheedii* Wight) (Jhingam)

Trees. Occasional in inland forests. Lamia bay: CSR 2774..

Verbenaceae

Gmelina elliptica Sm. (Emne)

Trees. Scattered in moist deciduous forests. Saddle peak: CSR 2321.

MONOCHLAMYDEAE

Myristicaceae

Horsfieldia glabra (Bl.) Warb. (*Myristica glabra* Bl.)

Trees, ca. 15 m tall. Inland forests. Saddle peak: PLN 20732.

Horsfieldia irya (Gaertn.) Warb. (*Myristica irya* Gaertn.)

Trees, ca. 10 m tall. Common in semievergreen forests. Diglipur: PLN 20722.

Knema andamanica (Warb.) de Wilde

Trees. Rare, in evergreen forests. Saddle peak: Balak and Nair 4732.

Myristica andamanica Hook.f.(Kala Jaiphal)

Trees. Occasional in evergreen forests. Durgapur: Nair 4843.

Myristica glaucescens Hook. f. (Lal Jaiphal)

Trees. Occasional in evergreen forests. Diglipur: CSR 2379.

Lauraceae

Cryptocarya andamanica Hook.f.

Trees. Rare in evergreen forests. Diglipur: CSR 2376. Endemic.

Cryptocarya amygdalina Nees

Small trees. Occasional in evergreen forests. Saddle peak: MKV 8932.

Dehaasia kurzii King

Small trees. Occasional in evergreen forests. Saddle peak: PLN 15631.

Litsea kurzii King

Small trees. Common in semievergreen forests. Saddle peak: PLN 15108. Endemic.

Euphorbiaceae

Actephila excelsa (Dalz.) Muell.-Arg.

Small trees. Common in inland forests. Saddle peak (150 m): RKP 9208.

Aporosa dioica (Roxb.) Muell.-Arg. (*A. villosula* Kurz)

Small trees. Occasional in inland forests. Saddle peak: MKV 8933.

Baccaurea ramiflora Lour. (*B. sapida* (Roxb.) Muell.-Arg.)

Small trees. Frequent in forests. Durgapur: Balak 5463.

Blachia andamanica (Kurz) Hook.f.

Trees. Frequent in moist deciduous forests. Lamia bay: Nair 4916. Endemic.

Bischofia javanica Bl. (Ye- Padauk, Pani Padauk)

Trees. Rare in forests. Lamia bay: Balak 5332.

Breynia vitis-idaea (Burm.f.) Fischer (*B. rhamnoides* (Willd.) Muell.-Arg.)

Small trees. Frequent in open forests. Lamia bay: Sinha 16293.

Bridelia griffithii Hook.f.

Small trees. Occasional in littoral forests. Durgapur: Nair 4922.

Claoxylon indicum (Reinw. ex Bl.) Hook.

Trees to 15 m tall. Inland forests. CSR 2289. Endemic.

Claoxylon rostratum Airy Shaw

Small tree. Saddle peak: Balak 5374.

Cleidion nitidum Thw.

Trees. Frequent, in evergreen forests. Durgapur: Nair 4839.

Cleistanthus myrianthus (Hassk.) (Kurz)

Small trees to 8 m tall; Rare in forests. Laxmipur: Balak 5498.

Croton sublyratus Kurz (*Croton argyratus* Bl.)

Trees. Occasional in forests. Sitanagar: MKV Rao 9035.

Drypetes assamica (Hook.f.) Pax and Hoffm. (*Cyclostemon assamicus* Hk.f.)

Medium sized evergreen tree. Ramnagar: Balak 5353.

Endospermum malaccense Benth. ex Muell.-Arg. (Bakota)

Medium sized evergreen tree. Common in forests. Shyamnagar: CSR 2784.

Euphorbia epiphylloides (Kurz)

Small tree. Occasional in hilltop stunted evergreen forests. Saddle peak (400 m): Balak 5412.

Glochidion air-shawii (Balakr. and Chakrab.)

Trees. Rare and reported from Saddle peak. Endemic.

Glochidion bilobulatum Chakrab. and Gang.

Trees. Rare and reported from Saddle peak. Endemic.

Glochidion hirsutum (Roxb.) Voigt

Small tree to 10m. Occasional in forests. Swarajgram: CSR 2100.

Macaranga tanarius (L.) Muell.-Arg.

Trees. Rare, in evergreen forests. Lamia Bay: Balak 5338. Lamia Bay to Kalipur: CSR 2653.

Mallotus oblongifolius (Miq.) Muell.-Arg.

Trees. Occasional in inland forests. Saddle peak (100 m): CSR 2659. Endemic.

Mallotus peltatus (Geis.) Muell.-Arg.

Trees. Saddle peak (250 m): Balak 5418.

Mallotus philippensis (Lam.) Muell.-Arg.

Evergreen trees to 15 m. Rare in forests. Swarajgram: CSR 2101.

Phyllanthus andamanicus Balakr. and Nair

Small trees. Rare, in Saddle peak. Rare and threatened. Endemic.

Phyllanthus sanjappai Chakrab. and Gang.

Small trees. Rare, reported from Saddle peak. Rare and threatened. Endemic.

Sphyranthera air-shawii Chakrab. and Vasud.

Small tree. Rare, in Saddle peak. Endemic genus to North Andamans..

Suregada multiflora (Juss.) Baill.

Small tree. Inland forests. PLN 15114.

Trigonostemon viridissimus (Kurz) Airy Shaw

Small tree. Occasional in evergreen forests. Saddle peak: Balak 5418.

Urticaceae

Boehmeria nivea (L.) Gaud.

Small trees. Inland forests. Kishorinagar: CSR 2459.

Moraceae

Antiaris toxicaria (Pers.) Lesch

Trees. Occasional in evergreen forests. Kalighat: CSR 2391.

Artocarpus chaplasha Roxb.

Trees. Occasional in evergreen forests. Diglipur: CSR 2390.

Artocarpus gomeziana Wall.ex Trec.

Trees. Occasional in evergreen forests. Kalighat: CSR 2392.

Artocarpus lakoocha Roxb.

Trees. Occasional in evergreen forests. Kishorinagar: CSR 2458.

Ficus exasperata (Vahl)

Small trees. Scarce in inland forests. Kafeedera: CSR 2156.

Ficus nervosa Heyne ex Roth

Densely foliaceous tree to 15 m. Rare, in forests. Saddle peak: Balak 5170.

Ficus obscura Blume var. *borneensis* (Miq.) Corner

Trees. Rare, in forests. Saddle peak foot hill: MKV 8975.

Streblus asper Lour.

Stiff shrub or a tree to 8 m. Common in moist deciduous forests. Saddle peak foot hill: MKV 8978.

Streblus taxoides (Heyne) Kurz

Small trees. Inland forests. Kishorinagar: CSR 2456.

Ulmaceae

Celtis philippensis Blanco var. *wightii* (Planch.) Scop. (*C. wightii* Planch.) (Tej Patti)

Trees. Common in inland forests. Paget Island: CSR 2012.

Celtis timorensis Span. (*C. cinnamomea* Lindl. ex Planch.)

Trees. Frequent in inland forests. Kafeedera: CSR 2160.

Trema orientalis (L.) Blume

Evergreen tree to 15 m. Common in moist deciduous forests. Kafeedera: CSR 2158.

Trema tomentosa (Roxb.) Harms (*T. amboinensis* (Willd.) Bl.)

Evergreen tree to 15 m. Occasional in moist deciduous forests. Kalighat., CSR 2395.

LILIOPSIDA (MONOCOTYLEDONS)

Arecaceae (Palmae)

Areca triandra Roxb. (Jangli Supari)

Small trees. Frequent in inland forests. Kalapahar hills (50 m): Balak 5475.

Caryota mitis Lour.

Tree to 15 m; stem annulate, shining. Scattered in forests. Diglipur: CSR 2354.

Pandanaceae

Pandanus andamanensis Kurz (Kewda)

Much branched shrub or small tree. Rare, in stunted hilltop evergreen forests. Kalpong: 3-12-2001, CSR 2420. Endemic.

RESULTS AND DISCUSSION

Tree Diversity

The presence of 188 tree taxa (under 135 genera and 50 families) within a land area 36 km² is a significant feature of Saddle peak national park. Study area shows a unique representation

of 44 endemic tree species (23%). Though related to the mainland Indian flora, the flora of the Saddle peak shows much affinity with the Myanmar flora and included under Indo-Burma hotspot. Among the non-endemic tree species about 40% are not found in mainland India but extend their distribution to Myanmar and Thailand.

Of the 50 families, Euphorbiaceae represents high number (27) of tree species, followed by Rubiaceae (16), Annonaceae (9), Anacardiaceae (9) and Moraceae (9).

Compared to the available data of other protected areas of India, Saddle peak national park represents high number of tree species. Suresh *et al.* (1996) enlisted 157 tree species from Mudumalai sanctuary, which occupies 321 km². Ramesh (2002) reported 164 species of trees and shrubs from Biligiri Rangaswamy sanctuary, which covers 540 km². Reddy (2001) enumerated 151 and 162 tree species from Etumagaram (806 km²) and Pakhal (839 km²) wildlife sanctuaries, respectively. Reddy *et al.* (2004) recorded 91 tree species from Bhitarkanika national park (145 km²).

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