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Endemic climbing genera of North Andaman Islands, India

Asutosh Ghosh

Taxonomy and Biosystematics Lab, Department of Botany,
University of Calcutta, Kolkata, (WB) - India

Abstract

The present study contains the census of endemic climbing plants of North Andaman Islands, India. A total of 130 plots sampled randomly in various forest types recorded 253 climbing plant species, of which 89 were found to be endemic. These 89 species belong to 23 families and 53 genera. Out of these family Asclepidaceae shows more number of plants with 14 species.

Key-Words: Climbing plants, Endemic, North Andaman Islands

Introduction

The biodiversity and endemism is enormously high in tropical forests (Orians & Groom, 2005). Endemic taxa are restricted to specific areas such as oceanic islands, peninsular regions, mountain peaks and unique geographical areas. Moreover, 'botanically interesting' areas are rich in endemics, especially islands (Richardson, 1978). According to Conservational International (CI), Andaman Islands considered as Biodiversity hotspot region (Mittermeier *et al.*, 2004) which contain high concentration of endemic species. Of the 20,074 taxa of angiosperms reported from India (Karthikeyan, 2009), 5752 (29%) taxa are endemic and are distributed in the North-East, Western Ghats, North-West Himalayan and the Andaman and Nicobar Islands (Nayar, 1996).

The endemism of Indian biodiversity is high. The Andaman and Nicobar Islands comprising of 0.03 % of the country's landmass has about 86% of its total geographical area under very fragile tropical rain forest (Subba Rao, 1989). The Andaman rain forests are considered to be equally important as the other two key Indian rainforest areas namely the Western Ghats and Northern Assam. About 2500 species of flowering plants have been described from the islands, of which 223 (14%) are endemic (Magin, 2003).

The Andaman Islands are rich in tree diversity and dominated by Euphorbiaceae followed by Rubiaceae (Padalia *et al.*, 2004; Reddy & Prasad, 2008). Some recent work shows climbing plants diversity in the North Andaman Islands (Ghosh and Mukherjee, 2006; Ghosh, 2013; Ghosh, 2014). However, the comprehensive study of climbing plants regarding their distribution is lacking.

Methodology

The North Andaman is the Northernmost Island of the Andaman region and includes about 70 other smaller islands. It is located between 13°41' N to 12°50' N latitudes and 92°11' E to 93°07' E longitudes, covering an area of 1458 km² and is separated from the Middle Andaman by Austin Strait.

Quantitative inventory of climbers was carried out between January 2001 and September 2004, in a total of 130 quadrat plots (32 m x 32m) in North Andaman forest. Voucher specimens were collected and identified by using regional floras (Perkinson, 1923; Hooker, 1872-1885; Gamble and Fisher, 1921-1935; Mathew, 1991). The specimens were processed as per method suggested by Jain and Rao (1976) and were deposited at the CU Herbarium. Then, was cross checked with other previously recorded species (Dager, 1989; Dager and Jeyamurthy, 1999; Dager and Singh, 1999). Information on endemic genera of angiosperms were also collected from the available literature (Chatterjee, 1939; Rao, 1972, 1979; Chakrabarty & Rao, 1984; Rao & Chakrabarty, 1986; Mathew & Lakshminarasimhan, 1994; ING, 1996 (<http://botany.si.edu/ing/>); Nayar, 1996; Kumar & Coomar, 1999; Ahmedullah, 2000; Govaerts, 2006 (<http://www.kew.org/wcsp/monocots>); Venu, 2006;

*** Corresponding Author**

E-mail: ghoshasutosh@yahoo.in

Mob.: +91-9432241496

Balakrishnan & Chakrabarty, 2007; Mitra & Mukherjee, 2007; Padalia *et al.*, 2004; Reddy & Prasad, 2008; Ghosh, 2014).

Results and Discussion

A total of 253 climbing plants are reported to occur in North Andaman Islands (Ghosh and Mukherjee, 2006). In a critical analysis during survey as well as literature including plant database websites shown that there are only 53 genera are endemic to North Andaman that belongs to 23 families and contain 89 taxa (Table 1). Nearly 35% of the climbing plants are endemic to this Island which is likely to similar with Western Ghats (Nair and Daniel, 1986).

Within these endemic angiosperms, 76 species are from the dicotyledons and 13 species are from the monocotyledons. The most remarkable endemic family is Asclepidaceae (14 species), followed by Convolvulaceae (13 species), Menispermaceae (10 species) and Dioscoreaceae (8 species). These climbing plants are distributed mainly on small Islands, cracks and some on Saddle hills (the highest peak of North Andaman Islands).

There is a need to assess the status of all the taxa on a priority basis. The status of taxa that have been already assessed also needs to be reassessed (Table-1). Majority of the endemic species are threatened due to their narrow habitat and sexuality (Ghosh, 2014). These taxa may get extinct due to the anthropogenic interferences (Rossi *et al.*, 2009; Abeli, 2010).

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Table 1: Endemic climbers and lianas species of North Andaman

S/No.	Name of the Species	Family	Location where sp. found	Voucher No.
1	<i>Acacia andamanica</i> Nielsen	Mimosaceae	Sattra family	1007
2	<i>Adenia cardiophylla</i> (Masters) Engler	Passifloraceae	Ramnagar	1019
3	<i>Aganosma marginata</i> (Roxb.) G. Don	Apocynaceae	Radhanagar	487
4	<i>Anamitra cocculus</i> (L.) Wight & Arn.	Menispermaceae	Ganeshnagar	58
5	<i>Argyreia capitata</i> (Vahl) Choisy	Convolvulaceae	Austin 4	992
6	<i>Argyreia kleiniana</i> (R. & S.) Raiz.	Convolvulaceae	Shyamnagar	40A
7	<i>Argyreia mollis</i> (N. L. Burman) Choisy	Convolvulaceae	Koffedera	724
8	<i>Argyreia osyrensis</i> (Roth) Choisy	Convolvulaceae	Mohonpur	124
9	<i>Argyreia wallichii</i> Choisy	Convolvulaceae	Krishorinagar	1023
10	<i>Caesalpinia andamanica</i> (Prain) Hattink	Caesalpiniaceae	Krishorinagar	715
11	<i>Cajanus crassus</i> (Prain & King) van der Maesen	Papilionaceae	Hathilevel	399
12	<i>Calamus andamanicus</i> Kurz	Arecaceae	Radhanagar	677
13	<i>Calamus palustris</i> Griff.	Arecaceae	Lamia Bay	681
14	<i>Calycopteris floribunda</i> (Roxb.) Lam.	Combretaceae	opp. Kalpong Dam	563
15	<i>Celastrus paniculatus</i> Willd.	Celastraceae	Saddle Hill	703
16	<i>Cissus repens</i> Lam.	Vitaceae	Mohonpur	17
17	<i>Clematis smilacifolia</i> Wall. Subsp. <i>andamanica</i> Kapoor	Ranunculaceae	Saddle Hill	554
18	<i>Clitoria ternate</i> L.	Papilionaceae	Aerial Bay	52
19	<i>Cocculus hirsutus</i> (L.) Diels	Menispermaceae	Ramnagar	982
20	<i>Cocculus pendulus</i> (J.R. & G. Forst.) Diels	Menispermaceae	Kalighat	1002
21	<i>Combretum roxburghii</i> Spreng	Combretaceae	Krishorinagar	687
22	<i>Cosmostigma racemosum</i> (Roxb.) Wight	Asclepiadaceae	Austin 4	1028
23	<i>Cuscuta reflexa</i> Roxb.	Convolvulaceae	Lamia Bay	142
24	<i>Cyathostemma viridiflorum</i> Griff.	Anonaceae	Koffedera	449
25	<i>Cynanchum corymbosum</i> Wight	Asclepiadaceae	Uttra Tikheri	987
26	<i>Daemonorops manii</i> Becc.	Arecaceae	Radhanagar	365
27	<i>Dioscorea alata</i> L.	Dioscoreaceae	Ramnagar	672
28	<i>Dioscorea belophylla</i> Voigt ex Haines	Dioscoreaceae	Saddle Hill 2	569
29	<i>Dioscorea hispida</i> Dennst.	Dioscoreaceae	Swrajgram	789
30	<i>Dioscorea kurziana</i> Hook.f.	Dioscoreaceae	Kalpong	626
31	<i>Dioscorea oppositifolia</i> L.	Dioscoreaceae	Radhanagar	25
32	<i>Dioscorea pentaphylla</i> L.	Dioscoreaceae	Ganeshnagar	72
33	<i>Dioscorea tomentosa</i> J. Koenig ex Sprengel	Dioscoreaceae	Ganeshnagar	480
34	<i>Dioscorea wallichii</i> Hook.f.	Dioscoreaceae	Mohonpur	399
35	<i>Diploclisia glaucescens</i> (Bl.) Diels	Menispermaceae	Saddle Hill	703

36	<i>Dischidia nummularia</i> R. Brown	Asclepiadaceae	Subashgram	4A
37	<i>Dregea volubilis</i> (L. f.) Benth. ex J. D. Hooker	Asclepiadaceae	Paget Islands	30
38	<i>Erycibe expansa</i> Wall. ex G. Don	Convolvulaceae	Ganeshnagar	986
39	<i>Gouania andamanica</i> var. <i>andamanica</i> King	Rhamnaceae	Shibpur	498
40	<i>Gymnema latifolium</i> Wall. ex Wight	Asclepiadaceae	Ramnagar	1013
41	<i>Heterostemma tanjoreense</i> Wight & Arn.	Asclepiadaceae	Kalpong (opp Dam)	705
42	<i>Heterostemma wallichii</i> Wight	Asclepiadaceae	Kalpong	715
43	<i>Hiptage thothathrii</i> Balakr. & Srivastava	Malpghiaceae	Saddle Hill	786
44	<i>Ipomoea eriocarpa</i> R. Brown	Convolvulaceae	Saddle Hill	521
45	<i>Ipomoea nil</i> (L.) Roth.	Convolvulaceae	Saddle Hill	1021
46	<i>Ipomoea pes-tigridis</i> L.	Convolvulaceae	Near Bambu Nala	901
47	<i>Ipomoea sepiaria</i> Roxb.	Convolvulaceae	Ramnagar	115
48	<i>Jasminum angustifolium</i> var. <i>angustifolium</i> (L.) Willd.	Oleaceae	Saddle Hill	580
49	<i>Jasminum arborescens</i> Roxb.	Oleaceae	Saddle Hill	670
50	<i>Jasminum azoricum</i> L.	Oleaceae	Kalpong dam	671
51	<i>Jasminum cordifolium</i> Wall. ex G. Don.	Oleaceae	Saddle Hill 2	627
52	<i>Jasminum lanceolaria</i> Roxb.	Oleaceae	Saddle Hill	599
53	<i>Jasminum multiflorum</i> (Brum.f.) Andrews	Oleaceae	saddle Hill	671A
54	<i>Korthalsia laciniosa</i> (Griff.) Mart.	Arecaceae	Subashgram	92
55	<i>Merremia umbellata</i> subsp. <i>orientalis</i> (H. Hallier) van Ooststroom	Convolvulaceae	Kalpong	624
56	<i>Paramignya andamanica</i> (King) Tan.	Rutaceae	Paget Islands	3
57	<i>Pueraria tuberosa</i> (Willd.) DC.	Papilionaceae	Hathilevel	53A
58	<i>Pycnarrhena longifolia</i> (Decne ex Miq.) Bece.	Menispermaceae	Krishorinagar	508
59	<i>Quisqualis indica</i> L.	Combretaceae	Radhanagar	1034
60	<i>Raphidophora pertusa</i> (Roxb.) Schott	Araceae	Kalighat	35A
61	<i>Sarcostemma acidum</i> (Roxb.) Voigt	Asclepiadaceae	Nabogram	722
62	<i>Sarcostigma kleinii</i> Wight & Arn.	Icacinaceae	Austin 4	645
63	<i>Sphenodesme involucrata</i> (Presl) Robinson	Verbenaceae	Diglipur	703
64	<i>Stephania andamanica</i> Diels	Menispermaceae	Saddle Hill	149
65	<i>Stephania elegans</i> Hook.f. & Thomson	Menispermaceae	Saddle Hill	112
66	<i>Stephania hernandifolia</i> (Willd.) Walpers	Menispermaceae	Saddle Hill	349
67	<i>Stephania japonica</i> (Thunb.) Miers	Menispermaceae	Saddle Hill	249
68	<i>Stixis suaveolens</i> (Roxb.) Pierre	Cappariadaceae	Kalpong	394
69	<i>Strophanthus caudatus</i> (L.) Kurz	Apocynaceae	Saddle Hill	914
70	<i>Strophanthus wallichii</i> A. de Candolle	Apocynaceae	Saddle Hill	248
71	<i>Tetrastigma andamanicum</i> (King) Suesseng	Vitaceae	Ramnagar	304
72	<i>Tetrastigma planicaule</i> (Hook) Gagnepain	Vitaceae	Krishorinagar	633

73	<i>Thunbergia alata</i> Boier ex Sims	Thunbergiaceae	Lamia Bay	65A
74	<i>Thunbergia coccinea</i> Wall. ex D. Don	Thunbergiaceae	Saddle Hill	558
75	<i>Thunbergia fragrans</i> Roxb.	Thunbergiaceae	Saddle Hill 2	90
76	<i>Thunbergia grandiflora</i> (Rottler) Roxb.	Thunbergiaceae	Swrajgram	512
77	<i>Thunbergia mysorensis</i> (Wight) T. Anderson ex Bedd.	Thunbergiaceae	Hathilevel	496
78	<i>Tinospora glabra</i> (Burm.f.) Merr.	Menispermaceae	Near Radhanagar	20
79	<i>Toxocarpus concanensis</i> Hook.f.	Asclepiadaceae	Saddle Hill 2	927
80	<i>Tridynamia megalantha</i> (Merr.) Staples	Convolvulaceae	Saddle Hill 2	989
81	<i>Tylophora capparidifolia</i> Wight & Arn.	Asclepiadaceae	Austin 4	565
82	<i>Tylophora glabra</i> Costantin	Asclepiadaceae	Radhanagar	91
83	<i>Tylophora indica</i> (Burm.f.) Merr.	Asclepiadaceae	Kalpong	622
84	<i>Tylophora zeylanica</i> Dene.	Asclepiadaceae	Subashgram	650
85	<i>Uvaria andamanica</i> King	Anonaceae	Twin Islands	1022
86	<i>Vallaris solanacea</i> (Roth) Kuntze	Apocynaceae	Kalaphar	917
87	<i>Ventilago denticulate</i> Willd.	Rhamnaceae	Koffedera	145
88	<i>Ziziphus oenoplia</i> (L.) Mill	Rhamnaceae	Swrajgram	820
89	<i>Ziziphus oenoplia</i> Var. <i>pallens</i> Bhadari & Bhansali	Rhamnaceae	Sattra family	925

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