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A Review on Medicinal Plants used in Snake Bite and Centipede Bite by Folk Healers of Andaman and Nicobar Islands, India

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Abstract

Andaman and Nicobar Islands situated in the Bay of Bengal are having a total geographical area of 8249 Sq. Km. Out of which 7171 Sq. Km. (92%) is forest area. These forests are well known for their unique biodiversity of flora and fauna. These islands are also recognized for native aboriginal tribes as well as convicts and other migrant population settled over here since many years. They have provided healthcare facilities by Andaman & Nicobar Administration through district hospital, primary healthcare centres, community healthcare centres etc. Even though, the native tribes and other peoples are still having trend to consult traditional folk healers for common ailments as well as snake bite and centipede bites as it a significant health concern among them. All over India, many ethnic tribal groups have systematically exploited the plant resources and their uses in different diseases. But, ethnic groups of Bay Islands remain unexploited due to inaccessibility and other unfavourable conditions of these Islands. Hence a review was made on medicinal plants used in snake bite and centipede bite with their therapeutic preparation, route of administration and other details as per the folk healers of these islands. It was noted that, in a total 40 plant species are used in the management of snake bite and centipede bite in these islands. Folk healers mostly practice the application of leaves with paste on site area and very few preparations are administered internally.

Keywords: Medicinal Plants, Tribes, Andaman & Nicobar Islands, Snake, Centipede, Bite

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Introduction:

The Andaman and Nicobar archipelago is consisted of 572 small and big Islands, islets and rocks which are aligned north to south in a form of broken chain, in the Bay of Bengal. They are also divided into two groups, viz. Andaman group of Islands and Nicobar group of Island having a total geographical area of 8249 Sq. Km. out of which 7171 Sq. Km. i.e. 92% is forest area (forest statistics 2013). It includes tropical evergreen forest, littoral forests, mangrove forests, bamboo and cane brakes etc. The overall climate is topical and having 70-80% humidity. These emerald islands are endowed with a very rich variety of flora and fauna.

Total population of the A & N islands is 3,79,944 (as per 2011 census) which includes 28,530 tribal population and rest of the population includes ex-convicts and their descendants, the Moplahs, East Bengal refugees, settlers

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from various states of mainland India and thus, it is known as small-India. The original inhabitants of these Islands are six tribes namely the Great Andamaneses, the Onges, the Jarawas, the Sentineleses, the Shompens and the Nicobarese. These aboriginal tribes are mainly dependent upon the plants resources for their traditional health care practices were as other migrant population also depends on local folk healers to get the cure of various common ailments including snake bite and centipede bite.

Many ethnic tribal groups of India have systematically exploited the plant resources and there are numerous studies on the importance of various plants for treating snake bite by them in different parts of India. However, most of the times ethnic groups of Bay Islands remains unexploited due to inaccessibility and other unfavourable conditions of these Islands. The review on use of medicinal plants in snake bite and centipede bite was collected from the various published articles especially on ethno-botanical-medical studies conducted in the Bay Islands. The data are presented in tabular form as under which includes the scientific name of plant, mode of preparation, and route of administration (Table-1).

Table No.1 Ethno-medicinal plants of Andaman and Nicobar Islands used in snakebite and centipede bite.

S. N.	Plant name and family	Habit	Part used	Preparation	Route of Administration	Used in
1	*Alocasia macrorrhizos* (L.) G. Don [ARACEAE]	Herb	Leaf, plant slap	Slap	Topical	Cb
2	*Annona reticulata* L. [ANNONACEAE]	Small tree	Leaf	Paste	Topical	Sb
3	*Annona squamosa* L. [ANNONACEAE]	Small tree	Leaf	Paste	Topical	Sb
4	*Azadirachta indica* A. Juss. [MELIACEAE]	Tree	Leaf, bark	Paste, decoction	Topical and oral	Sb
5	*Boesenbergia rotunda* (L.) Mansf. [ZINGIBERACEAE]	Herb	Rhizome, leaf	Paste	Topical	Sb
6	*Breynia vitis-idaea* (Burm.f.) C.E.C. Fischer [EUPHORBIACEAE]	Shrub	Leaf	Paste	Topical	Sb
7	*Camellia sinensis* (L.) O. Ktze. var. *Sinensis* [THEACEAE]	Tree	Leaf	Decoction	Topical	Cb
8	*Colocasia esculenta* (L.) Schott [ARACEAE]	Tuberous herb	Leaf, stem	Paste	Topical	Cb
9	*Costus speciosus* (Koen) J.E. Sm. [COSTACEAE]	Rhizomatous herb	Rhizome, stem, leaf	Paste of Rhizome	Topical	Sb
10	*Crotalaria pallida* Aiton. [FABACEAE]	Shrub	Leaf	Paste	Topical	Sb, Cb
11	*Cucurma longifolia* L. [ZINGIBERACEAE]	Herb	Root	Paste	Topical	Sb
12	*Datura metel* L. [SOLANACEAE]	Undershurb	Leaf	Paste	Topical	Sb
13	*Dendrobium crumenatnm* Sw. [ORCHIDACEAE]	Orchid	Leaf	Paste	Topical	Sb
14	*Desmodium gangeticum* (L.) DC. [FABACEAE]	Shrub	Whole plant	Decoction	Oral	Sb
15	*Eclipta alba* (L.) Hassk. [ASTERACEAE]	Herb	Whole plant	Juice	Oral	Sb

16	*Ficus fulva* Reinw. ex Bl. [MORACEAE]	Tree	Leaf	Paste	Topical	Sb
17	*Gliricidia sepium* (Jacq.) Walp. [FABACEAE]	Small tree	Root	Paste	Topical	Sb
18	*Justica sumatrana* Kurz [ACANTHACEAE]	Undershrub	Leaf	Paste	Topical	Sb
19	*Lannea coromandelica* (Houtt.) Merr. [ANACARDIACEAE]	Tree	Bark, leaf	Decoction	Oral	Sb, Cb
20	*Lasianthus andamanicus* Hk.f. [RUBIACEAE]	Shrub	Fruit	Fruit	Oral	Sb
21	*Leea indica* (Burm.f.) Merr. [LEEACEAE]	Shrub	Leaf	Decoction	Oral	Sb
22	*Leea macrophylla* Roxb.ex Hornem. [LEEACEAE]	Small tree	Twings	Paste	Topical	Snake repellent.
23	*Mallotus philippensis* (Lam.) Muell. Arg. [EUPHORBIACEAE]	Tree	Leaf	Paste	Topical	Sb
24	*Mallotus tanarius* (L.) Muell. Arg. [EUPHORBIACEAE]	Tree	Leaf	Paste, Decoction	Topical, oral	Sb
25	*Microsorum punctatum* (L.) Copel [DENNSTAEDTIACEAE]	Epiphytic Fern	Leaf	Paste	Topical	Sb
26	*Momordica charantia* L. [CUCURBITACEAE]	Twiner	Leaf	Paste	Topical	Sb
27	*Morinda citrifolia* L. var. *bracteata* (Roxb.) Hook.f. [RUBIACEAE]	Tree	Root, leaf	Paste	Topical	Sb
28	*Murraya koenigii* (L.) Spreng. [RUTACEAE]	Small tree	Leaf	Paste	Topical	Sb
29	*Oroxylum indicum* (L.) Kurz [BIGNONIANCEAE]	Tree	Leaf	Paste, decoction	Topical, oral	Sb, Cb
30	*Phyllanthus amarus* Schum. ex. Thonn [EUPHORBIACEAE]	Herb	Whole plant	Juice	Oral	Sb
31	*Piper betle* L. [PIPERACEAE]	Twiner	Leaf	Paste	Topical	Cb
32	*Piper betuloides* L. [PIPERACEAE]	Climber	Leaf	Paste	Topical	Cb
33	*Pongamia pinnata* (L.) Pierre [FABACEAE]	Tree	Leaf, root, bark	Paste	Topical	Sb, Cb
34	*Rhizophora apiculata* Bl. [RHIZOPHORACEAE]	Tree	Leaf, bark	Paste	Topical	Sb
35	*Senna occidentalis* (L.) Link. [CAESAPINIACEAE]	Shrub	Leaf	Juice	Oral	Sb, Cb
36	*Sida acuta* Burm.f. [MALVACEAE]	Under shrub	Leaf	Juice	Oral	Sb
37	*Solanum erianthum* D. Don [SOLANACEAE]	Shrub	Leaf	Paste	Topical	Sb
38	*Solanum melongena* L. [SOLANACEAE]	Herb	Leaf	Paste	Topical	Sb
39	*Tylophora indica* (Burm.f.) Merr. [ASCLEPIADACEAE]	Twiner	Leaf	Paste	Topical	Sb
40	*Urena lobata* L. [MALVACEAE]	Herb	Leaf	Paste	Topical	Sb

Note: Sb=Snake Bite, Cb=Centipede bite

Discussion:

The Tribes of Andaman & Nicobar Islands are having huge knowledge of medicinal plants and its applications in various common ailments raring from cuts and wounds to Centipede bite and Snake bite. The elder persons of the community are mostly engaged in health care practices and they have acquainted this traditional knowledge from their forefathers and they use to transfer it orally to their next generation as they do not have any written documentation of such information. Thus, this traditional knowledge of health and disease existed since a long time in these tribes. As indicated from the above table a total of 28 medicinal plant species were used by these tribes in the treatment of Snake bite, 5 species used in centipede bite and 6 species used in snake bite as well as centipede bite whereas a single species used as snake repellent. It also depicts that most of species i.e. 32 species (80%) were used for topical application either in the form of paste or decoction for washing the site area whereas the remaining species are used internally.

Conclusion:

It is known fact that, leads obtained from medicinal plants in snake bite treatment practiced by various ethnic groups of India, had paved the path for isolation and characterization of novel, pharmacologically active principles and validated for their use in patients with snake bites. Likewise, there is also a need of exploration of medicinal plants used by ethnic groups of Andaman and Nicobar Islands in snake bite for development of novel medicine.

Conflict of Interest

None Declared

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