The Pitcher Plant

Nepenthes khasiana

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ABOUT THE AUTHOR :

Dr. Mrs. R. P. M. Bordoloi has been engaged in teaching and research for the last twenty years. She was deputed to the Government of Meghalaya as Deputy Director of Public Instruction for a brief period of one year and then to the North Eastern Hill University as a Reader in Botany for another year. She was then recalled by the Government of Assam to fill up a senior vacancy as Professor and Head of the Deptt. of Botany in Cotton College, Gauhati.

Though her line of Specialisation is Phycology, Dr. Bordoloi is greatly interested in rare and unusual plants. Nepenthes Khasiana is the first of the series of carnivorous plants of North East India to come out in print.

Originally from Baghmara area where these pitcher-plants grow, she is married and settled in Assam.

ABOUT THE BOOK :

Nepenthes Khasiana, the pitcher plant of Meghalaya is the only plant of its kind in India. Very endemic, the distribution of some 67 species of these plants is restricted within the tropical belt between the Republic of Malagasay in the south west to New Caledonia in the far east.

The plant has been worked out in detail and presented so to the reader. Method of cultivation of the plant in pots has been suggested and its folk-lore uses are also added in the book.

Nepenthes Khasiana is an asset not only of Meghalaya but of the whole of India. As such and as it is so very endemic, the plant needs protection. The State Government of Meghalaya has moved in rightly in this direction and the plant is now legally protected.

Carnivorous Plants of North East India-I

The Pitcher Plant

Nepenthes khasiana

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INTRODUCTION

Nature has her own mysterious and inexplicable ways of adaptations to suit her own need. Some such adaptations are various methods plants employ to acquire food. Though plants in general are green and can synthesise their own food with the help of chlorophyll, carbondioxide water and solar energy, there are plants that are without chlorophyll, that vital commodity so essential for food preparation in plants. Hence they cannot synthesise their own food and accordingly they have to adopt some other methods for obtaining their food. Parasites and Saprophytes are some such plants. Saprophytes live on dead organic matter and absorb the organic substance directly from the rich substrata by their fine mycelia. Parasites, on the other hand, have special mechanism for sucking in food from their hosts. For food therefore, the parasites and the Saprophytes depend on others. The story is different for the green plants who are independent in this respect and make their own food. The amount of food made by a plant in course of a day is generally enough to see to all its metabolic activities for that period. Yet some plants go out of their way and adopt other medhods of acquiring food material Carnivorous plants are unique in this respect for they have special device for catching insects on which they feed upon and get extra protein food. Why normal healthy green plants that can synthesise their own food the usual way should adopt such a technique for aquiring additional nourishment is beyond any logic and perhaps because of this speciality that we still share the feelings of the naturalists of the eighteenth century who regarded these plants as "*miracula nature*"

There are altogether more than 500 species of carnivorous plants distributed over 15 genera belonging to 6 families (Table I) occuring mostly in the tropical and subtropical belts of the world. The species belonging to the different genera have different mechanisms for catching insects. In all these cases, however, the leaves are involved. It is the leaf in each case which undergoes special modifications to form the traps for catching insects. Thus the leaves undergo modification either part of it or the whole of it to form pitchers, baskets, traps, pit falls etc. for the purpose.

TABLE I

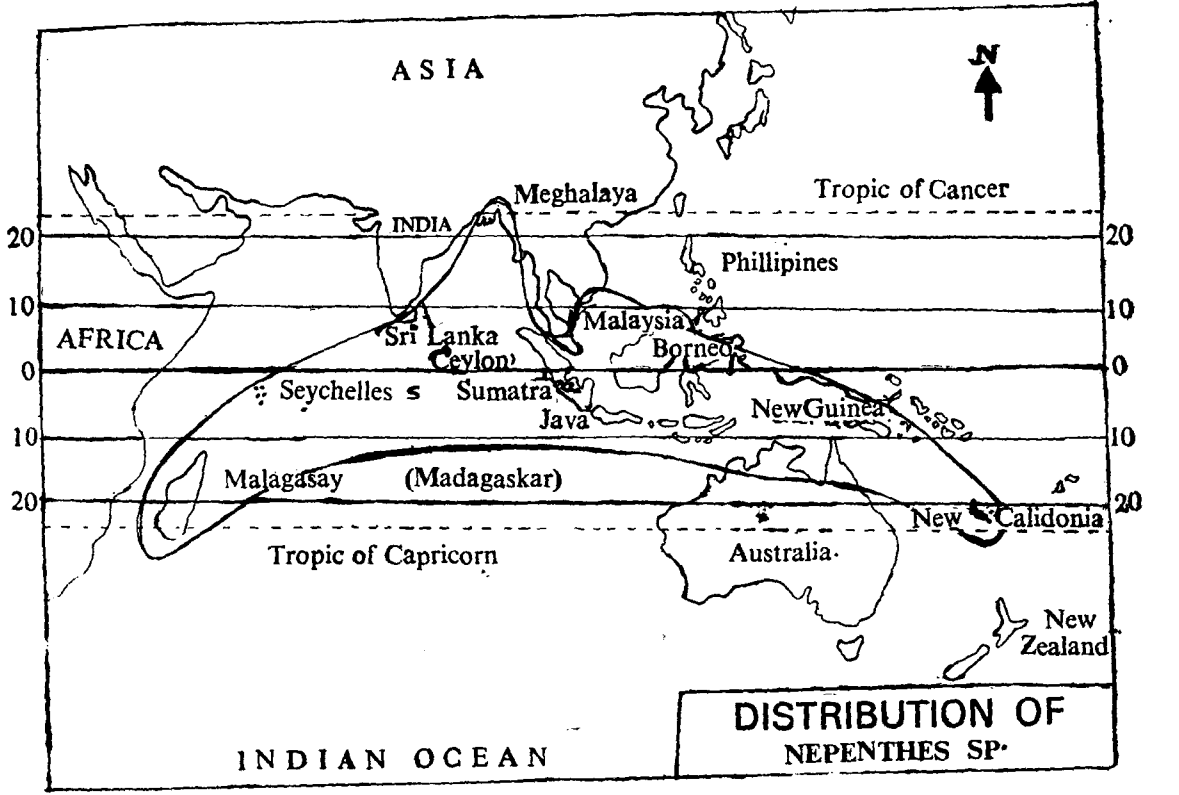
Family and Genus.....	No. of Species	Geographical distribution.
Sarraceniaceae		
Heliamphora	5	British Guiana, Venezuella
Sarracenia	9	Eastern North America, Labrador to S.E. of U.S.A.
Darlingtonia (—*Chrysamphora*)	1	North California & S. Oregon
Nepenthaceae		
Nepenthes	67 (+)	Eastern Tropics to Ceylon and Malagasay & India.
Droseraceae		
Dionaea	1	North Carolina and Northern South Carolina
Aldrovanda	1	Europe, India, Japan, Africa, Qweensland and Australia

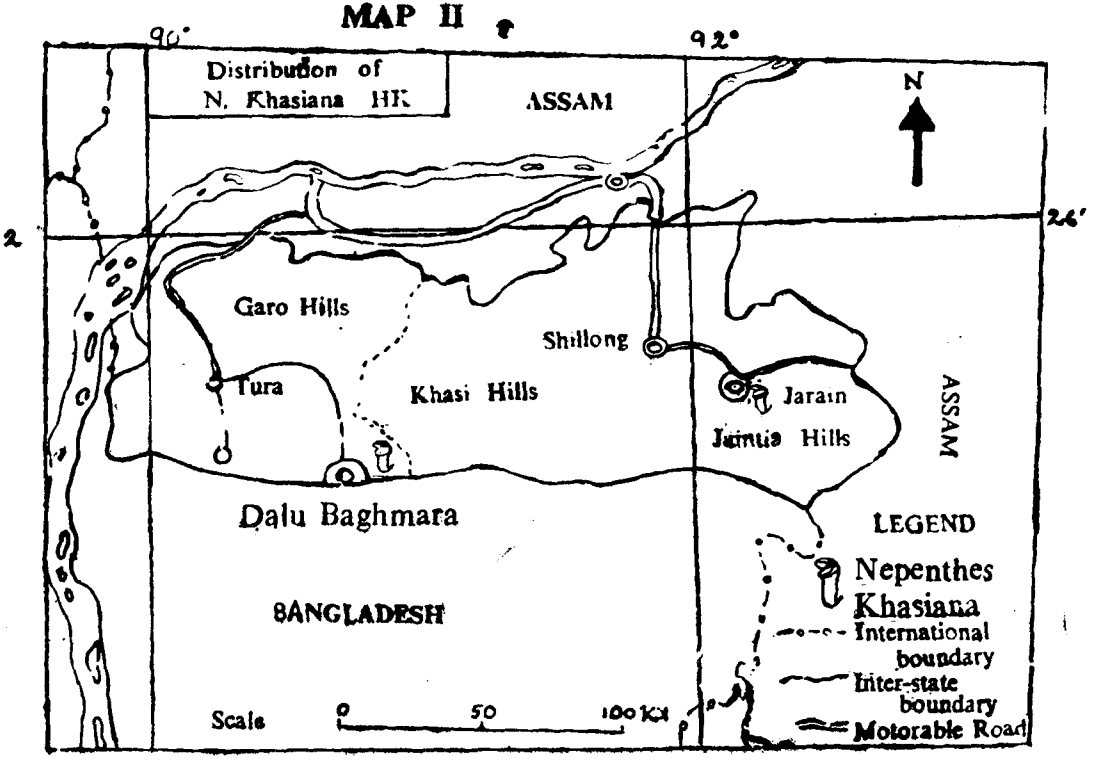
Drosophyllum	.. 1	.. South Portugal, S.W. Spain, Morocco
Drosera	.. 90	.. Ubiquitous
Byblidaceae	.. 12	.. Australia, Northwest to South west.
Bybils		
Cephalotaceae		
Cephalotus	.. 1	.. Australia, Extreme south
Lentibulariaceae	..	
Pinguicula	.. 30	.. Northern Hemisphere of the world.
Utricularia	..275	.. Ubiquitous
Biovularia	.. 2	.. Cuba, Eastern South America
Polypompholyx	2 (4)	.. South & Southwest Australia
Genlisea	.. 10	.. West African and South East American Tropics.

The genus *Nepenthes* belongs to the family *Nepenthaceae* of the Dicotyledonous group of plants. The seytematic position of this genus is shown in Table II. There are 67 species, including the hybrid varieties. This figure however should not be regarded as final as more hybrid varieties are reported from time to time from different areas of the world. These species are commonly known as the pitcher plants. The pitcher plant was first discovered by Governor Flacourt in the middle of the 17th Century. A little later it was reported by Paul Hermann, a physician from Ceylon. Different species of the plant were subsequently reported from various parts of the tropical and sub-

tropical belts of the Eastern Hemisphere. The species *Nepenthes khasiana* was discovered by the celebrated English Botanist, Sir J. D. Hooker and named so in the year 1873, during his plant haunt in this part of the world. The distribution of these plants can now be traced from New Caledonia in the far east through North Australia, Indonesia, Phillipines, Malaysia, India, Sri Lanka (Ceylon), Seychelles Islands and on to Malagasay (Madagaskar) (Map I). This distribution of the remarkable and distinct genus of *Nepenthes* emphesises the close relationship between the Island of Madagaskar and the Indo-Malayan region.

Nepenthes khasiana Hk., the pitcher plant of Meghalaya (India) grows endemically in the Jarain area of the Jaintia Hills and the Baghmara area of the Garo Hills districts of the state (Map II) In both the areas, the growth is luxurient. The cause for endemism is not scientifically investigated. One reason might be the low percentage of germination of seeds in nature. Propagation of the plant is chiefly by young shoots that vevelop from the base of the stem that becomes rhizome-like later on. Micro-climatic studies of these two areas may throw some light on this and this calls for scientific probe into the matter.


ASIA
N
Meghalaya
Tropic of Cancer
INDIA
20
Phillipines
10
AFRICA
Malaysia
Sri Lanka
Ceylon
Borneo
0
Seychelles
Sumatra
Java
NewGuinea
10
Malagasay
(Madagaskar)
20
New Calidonia
Tropic of Capricorn
Australia
New
Zealand
INDIAN OCEAN
DISTRIBUTION OF
NEPENTHES SP.


MAP II
90°
92°
26°
Distribution of
N. Khasiana HK
ASSAM
N
Garo Hills
Shillong
Tura
Khasi Hills
Jarain
Jaintia Hills
ASSAM
Dalu Baghmara
LEGEND
Nepenthes
Khasiana
BANGLADESH
International
boundary
Inter-state
boundary
Motorable Road
Scale
0
50
100 Km