

Nepenthes khasiana: the pitcher plant needs attention for conservation

Unique biogeographical partitioning with high rainfall and plenty of sunlight makes North East India remarkably rich in floral diversity. The region is also called the 'cradle of flowering plant'. The *Nepenthes* sp., popularly known as tropical pitcher plants or monkey cups, is a genus of carnivorous plants (Figure 1). The popular name of this species, i.e. monkey cups refers to the fact that monkeys have been observed drinking rainwater from these plants. The plant species can incorporate hundreds of individual insects of different species¹. *Nepenthes khasiana*, the only representative of the genus *Nepenthes* in India, belongs to monotypic family Nepenthaceae and is a rare, endangered, dioecious member of the carnivorous plants found in NE India². The 'insectivorous plants' possess an extraordinary habit of adding to their supplies of nitrogenous salts by capturing and digesting the proteins of trapped insects. To catch the insects, they have developed curious mechanisms like closing of traps, formation of attractive pitchers, using sensitive sticky hairs or grabbing with tentacles, thereby ensnaring the unwary insects^{3,4}. The plant species is endemic to Meghalaya and is distributed throughout the state from West Khasi hills to East to West Khasi hills, Jaintia hills and East,



Figure 1. *Nepenthes khasiana*.

West to South Garo hills from 1000 to ca. 1500 m altitude² ([http://en.wikipedia.org/wiki/Nepenthes khasiana](http://en.wikipedia.org/wiki/Nepenthes_khasiana)). It is a protected species, classified as 'Endangered' and is included in the Appendix-I of CITES and Negative List of Exports of the Government of India^{3,5}. Among the various medicinal properties of the plant, the digestive juice of the unopened pitcher plant *N. khasiana* Hook. (Nepenthaceae) is used as an eye-drop for cataract and night blindness⁶. Recently, hypoglycemic and hypolipidemic effect of *N. khasiana* Hook in rat was studied^{7,8}. It is an endangered medicinal plant of eastern India⁹ and is included in the Botanical Garden List of Rare and Threatened Species of India compiled by the International Union for Conservation of Nature and Natural Resources¹⁰. The causes of biodiversity loss in NE India are human population growth coupled with unsustainable patterns of consumption, increasing production of wastes and pollutants, deforestation, urban development, developmental projects, road laying and modern agriculture. Habitat destruction, decimation of species and fragmentation of large contiguous populations into isolated small and scattered ones have rendered them increasingly vulnerable to inbreeding depression, high infant mortality and susceptibility to environmental stochasticity, ultimately leading to extinction¹¹. The conservation of *N. khasiana* is imperative because it is on the verge of extinction. Multiplication of this ecologically and economically important wild plant through seeds and cuttings (macropropagation) is difficult¹². In spite of this an effort has been made for its *ex situ* conservation. *N. khasiana* from Shillong has been grown, maintained and conserved for the past 37 years in the National Orchidarium and Experimental Garden of Botanical Survey of India, Yercaud³.

However, further research is needed for pitcher plant conservation.

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