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A Note on \textit{Mitrastemon yamamotoi} (Mitrastemonaceae): a Root Parasite of Rare Occurrence in North East India

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Summary: \textit{Mitrastemon yamamotoi} Makino (Mitrastemonaceae) is the only species of the genus found in the state of Meghalaya, North East India. The present study is a recollection of the species for the second time after a gap of about 45 years. In addition to its detailed taxonomic description, habitat characterization, threats operating on the species and related conservation implications are also discussed.

The genus \textit{Mitrastemon} is represented by two species, i.e., \textit{Mitrastemon matudae} Yamam. and \textit{M. yamamotoi} Makino. The former is found in Central America, and the latter in tropical and subtropical Asia. The genus belongs to the family Mitrastemonaceae, grows as herbs and lives as parasites on roots of some trees. In India, the genus is represented by only one species i.e., \textit{Mitrastemon yamamotoi}, and it is found only in Khasi Hills of Meghalaya (Meijer and Veldkamp 1993).

\textit{Mitrastemon yamamotoi} is a unique root parasite and is considered a good example of transpacific distribution. It was first reported by Makino in 1909 from Japan as \textit{Mitrastemma yamamotoi} (Makino 1909), and was later corrected as \textit{Mitrastemon yamamotoi} (Makino 1911). In India, this species was first collected in 1969 by Rao and Balakrishnan from Mawsmai forest in East Khasi Hills of Meghalaya (Rao and Balakrishnan 1972). Since then the species has not been collected from the state (Nayar and Sastry 1990). The species was listed as ‘Rare’ by Walter and Gillett (1998) and is classified as ‘Endangered’ in the Red Data Book of Indian Plants (Nayar and Sastry 1990). Even in Japan the species is considered ‘Rare’ (Makino 1911). In the present study, a detailed distribution, plant description, habitat characterization, threat operating on the species and conservation measures that need to be adopted are discussed, so as to prevent the species from extinction in India.

During a recent floristic exploration carried out in Cherrapunjee and adjoining areas in East Khasi Hills district of Meghalaya, we came across this interesting species. After a critical examination, comparison with the original description and available literature (Makino 1909, 1911, 1928, Hayata 1913, Matuda 1947, Rao and Balakrishnan 1972, Huang and Gilbert 2003) as well as comparison with the herbarium specimens of Botanical Survey of India, Eastern Circle, Shillong, its identity was confirmed as \textit{Mitrastemon yamamotoi}. The vegetation of the area, where the species was collected falls under subtropical broadleaved wet-hill forests (Champion and Seth 1968). The dominant canopy trees of the forests include Castanopsis tribuloides (Sm.) DC., Castanopsis kurzii (Hance) Biswas, Echinocarpus murex Benth., Elaeocarpus spp., Lithocarpus dealbatus Rehder, L. elegans (Blume) Hatus. ex Soepadmo, Quercus glauca Thunb., Syzygium spp. and Schima khasiana Dyer. Whereas, the sub-canopy layer is dominated by Casearia glomerata Roxb., Coffea khasiana Hook. f., Eurya spp., Macropanax dispermus (Blume) Kuntze, Microtropis discolor (Wall.) Meisn.,
deforestation for small timber and fuel wood collection, medicinal plant collection for commercial purposes, forest fires and mining of coal, limestones and sand (Upadhaya et al. 2013). The ever increasing forest fragmentation is changing the microclimatic conditions of the forests, hence making the environment unfavorable for the growth of this species. Moreover, because of its parasitic nature, cultivation of this species seems to be very difficult (Nayar and Sastry 1990). So far no conservation measures have been taken for the species in India. In order to conserve the species from extinction from the country, these forest patches in which the species occurs needs strict protection. In addition, regular monitoring of the population is needed.

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References

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ド稀産の寄生植物—ヤッコソウ（ヤッコソウ科）
ヤッコソウ Mitrastemon yamamotoi Makino（ヤッコ
ソウ科）はインドでは北東部のメガラヤ州 Khasi Hills
でのみ知られていたが、最近になって同所で 45 年ぶり
に採集された。これが二度目の報告となる。本稿では、
新しく得られた材料にもとづいて、ヤッコソウの詳しい
記載、生育地の特性、種の現況と保全への方策を示した。
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