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Research Paper

CONSERVATION STATUS OF THE ENDEMIC ORCHID *Eria pseudocalvicaulis* BLATT & MCCANN. (ORCHIDACEAE) IN MEGAMALAI WILDLIFE SANCTUARY, SOUTHERN WESTERN GHATS

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Abstract

Eria pseudocalvicaulis Blatt & McCann is an endemic taxon of Western Ghats. The orchid species appears to be restricted to this area according to past and the present surveys. Major threats to the existence of this species are due to habitat fragmentation, forest fire and might be the invasion species. This species is of conservation concern because of its low numbers of individuals and restricted distribution in the Western Ghats.

Key words: Endemic, Orchids, conservation status, high wavy mountains, Western Ghats.

INTRODUCTION

Orchidaceae is one of the most ecologically and morphologically diverse families of flowering plants. It is the second largest family of flowering plants in the world, comprising of about 779 genera and 22,500 species[1]. Based on their varying habits, orchids are classified as saprophytic (growing on dead and decaying matter), terrestrials (growing on ground) and epiphytic (growing on trees or shrubs). They are very sensitive to habitat degradation and fragmentation. The peninsular region is a part of Indian plate of Gondwanaland and most of the endemic plants of this region are palaeoendemics. A large concentration of endemic species is found in the tropical moist deciduous and tropical semievergreen patches of Western Ghats and to a much lesser degree in Eastern Ghats[2]. Western Ghats starts near the border of Gujarat and Maharashtra, south of the Tapti River and runs approximately 1600km through the states of Maharashtra, Goa, Karnataka, Tamil Nadu and Kerala ending at Kanyakumari. The vegetation type of peninsular India varies from tropical evergreen forest, tropical semi-evergreen forests, sholas, moist deciduous forests, dry deciduous forests, scrub jungles and dry savannah forests. Conservation is "the maintenance of essential ecological processes and life-support systems, the preservation of genetic diversity and the sustainable utilization of species and ecosystems"[3]

In our study area Megamalai wildlife sanctuary the earlier workers Blatter and Hallberg[4] the pioneer have collected 34 species of orchids under genera, including 3 new species and 1 new variety, were collected. The new taxa described were

Chrysoglossum halbergii, Eria pseudoclavicaulis, Odontochilus rotundifolius and *Dendrobium nutans var.rubrolabris*. Among the 34 species, 14 are endemic to the western ghats. After that in Sasidharan et al[5]., have recorded 64 species. The present study is an attempt to give an account of the current status of many orchids species distribution in Megamalai wildlife sanctuary.

SPECIES DESCRIPTION

Eria pseudoclavicaulis Blatt. J. Bombay Nat. Hist. Soc. xxxii. 519.1928; FPM 3:1426.1928; FWG 2:1078.2014

Pseudobulbs in large tufts mostly occurring on forks of large trees and dense in shade. Pseudobulbs clavate, brownish in colour. Leaves dark green , coriaceous, 3-4 per pseudobulb at the top. Inflorescence single flowered, terminal. Peduncle as well as pdicel gland-dotted. Sheaths two, puple. Pedicel 2 cm long. Flowers 2 cm across. Sepals and narrower petals white. Lip white with a fine border of deep violet along the much folded margin. Disc with three ridges, throat densely puberulous and yellowish.

Western Ghats: TamilNadu, Kerala.

Flowering and Fruiting: June- July

Geographical Distribution: It is on the way to High Wavy Mountains near to Theni district, Western Ghats.

Specimen Examined: Botanical survey of India (BSI), Coimbatore, TamilNadu.

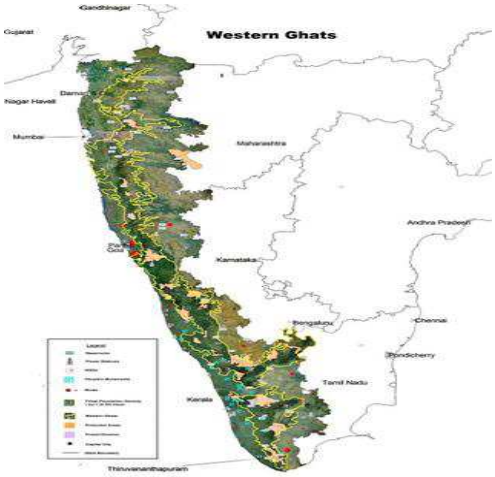
Endemic: India

MATERIALS AND METHODS:

Study area:

The Megamalai wildlife sanctuary (9°31′– 9°51′N and 77°10′–77°30′E) is 600 sq. Km the altitude up to 2000msl . It is otherwise popularly known as high wavy mountains and pachakumatchi hills. It is part of the Western Ghats biodiversity hot spot. The megamalai wildlife sanctuary is located on the border of Kerala and Tamil Nadu, This hill range is adjoining to the periyar tiger reserve, Idukki district of Kerala, and Grizzled Squirrel sanctuary, Srivillipudur in Tamil Nadu, This hill range forms the main catchment of some important perennial rivers of South India. Those are Vaigai, Vaipar and Suruliar. Megamalai wild life sanctuary area is often surrounded by several tea, coffee, and cardamom estates with the patch of dense forest cover. The study area covers the several types of forests scrub, dry deciduous forest, moist deciduous forest, wet evergreen forest, grasslands, savannas, sholas.

The High Wavy Mountains is a complex of several hill estates located in the southern Western Ghats of Theni district of Tamil Nadu. It lies between 9°31′– 9°51′N latitude and 77°10′–77°30′E longitude.



1. Plant in habit; 2. Closeup of Inflorescence.

The frequent field visit to the study area covering all the seasons from 2012-2015 and collected the flowering and fruiting specimens of the orchids species and prepared herbarium by standard herbarium techniques later it is compared with Gamble's flora of the Presidency of Madras[6], Wight Illustrations, recent floras from various states and districts and Kew virtual herbarium[7] through online to confirm the identity up to the species level.

Habitat of *Eria pseudocalvicaulis*

Closeup of Inflorescence.

CONCLUSION

This species is threatened due to its low numbers of individuals and restricted distribution in highwavy mountains. Orchids are usually threatened due to habitat loss, degradation and fragmentation. These can be caused by natural threats, anthropogenic pressures and threats posed by invasive species. New roads, dams, mines, buildings and other developments strongly contribute to habitat loss in this region, not only directly by damaging forests but also indirectly by displacing them. Deforestation activities coupled with the lopping of host plants for fodder, fuel and timber causes the riverine forests to change rapidly.

SUGGESTIVE CONSERVATION STATUS

As mentioned above the endemic orchids are threatened in the study area. For their long term survival in nature, they need to be protected through in situ and ex situ conservation. In situ orchid conservation and habitat preservation is the first line of defense for safeguarding orchid species for the future.

All Pollinators interactions with population genetics and phylogenetic analysis of orchids and pollinators. In situ conservations, Biosphere Reserves, National Parks, Sacred Grooves, Gene Sanctuary and Individual Trees. Ex situ conservations, Field gene banks, Botanical garden, Herbal Garden, in vitro- conservation, Cryo-preservation and DNA conservation.

Urgent need to conduct a population monitoring program together with orchid ecology. We can use this information to design orchid conservation plans for the intact regions of habitat where orchids still thrive.

Establishment of orchid seed bank and germ plasm banks. The conservation of seeds is the most effective means of genetic conservation.

Local people should be made aware of this wealth by means of awareness programs. Orchid conservation areas can be developed for tourists and college students so that they can visit these areas during their educational trips.

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