

Addition to the host plants of *Oberonia* Lindley (Orchidaceae) species: a conservation aspect

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Abstract

A new host species of *Oberonia* (Orchidaceae) is recorded from the Barsuan Range, Bonai Forest Division, Sundargarh, Odisha, India. The new host plant will be helpful in the conservation of the genus *Oberonia* in mining impacted areas. The photographs and GPS coordinates are provided for authentication.

Résumé

Une nouvelle espèce hôte d'*Oberonia* (Orchidaceae) est enregistrée dans la chaîne de Barsuan, division forestière de Bonai, Sundargarh, Odisha, Inde. La nouvelle plante hôte sera utile à la conservation du genre *Oberonia* dans les zones touchées par l'exploitation minière. Des photographies et les coordonnées GPS sont fournies pour authentification.

Keywords: Conservation, epiphyte, orchid species, restoration.

Mots clés : conservation, épiphyte, orchidées, restauration.

Introduction

The Odisha state is one of the major parts of Eastern Ghats. It is situated at the Eastern part of the peninsular India and surrounded by the Bay of Bengal in the East. The western and northern portions are parts of the Chota-Nagpur Plateau. The state enjoys a great floral and faunistic wealth, with various landscapes.

Bonai Forest Division is situated in the Northern part of the state, lies between 21° 39' to 22°8' N latitude and 84° 30' to 85° 23' E longitude covering an area of 2934.21 km² in Sundargarh district. Vegetation of the area is represented by North Indian Tropical Moist Deciduous Forest, Northern Tropical Dry Deciduous Forest and Northern Tropical Semi Evergreen Forest. As it shows a significant diversity in the vegetation, the region is also rich with many orchid species. These orchids play an important role in ecological balance. They are more important for the study areas having mining impacts (Debata *et al.*, 2017; Kumar *et al.*, 2021b). Odisha State is the home of about 160 species of orchids belonging to about 50 genera. Among them, 75 species are terrestrial, 83 species are epiphytic and 2 species are saprophytic; among them 2 species are endemic: *Eria meghasaniensis* (S. Misra, 1988: 49) S. Misra (1989: 69) and *Habenaria panigrahiana* S. Misra (1981: 213). Orchids are used as herbal medicinal agents by many traditional healers. They are indicators of climate change through their flowering and pollination patterns (Misra, 2014 and 2007; Kumar & Kumar, 2021; Kumar *et al.*, 2021a). *Oberonia* Lindley is a less explored genus in India as well as in Odisha. The genus was described by John Lindley in 1830 (Chowlu *et al.*, 2012 and 2014). In India, about 68 *Oberonia* species have been reported, mainly found in the North-Eastern regions (Devi *et al.*, 2018), among them, about 6 species are found in Odisha (Kumar *et al.*, 2021a). The genus is characterized by fleshy, flat, ensiform leaves, sub-erect or drooping inflorescence with many densely arranged flowers. The flowers have usually sub similar sepals and petals, a short column and 4 pollinia (Devi *et al.*, 2018). The present paper highlights the importance of host plants in the conservation of epiphyte orchid species in mining impacted areas. The addition of the host plant to the genus *Oberonia* will be fruitful for future restoration works.

Methodology

A survey was carried out under the project entitled “Survey and identification of orchid flora with host trees and locations” for the year 2021-2022 at Barsuan Range, Bonai Forest Division, Odisha state, India (Figure 1). Line transect method is adopted in modified form (Buckland *et al.*, 2007) and 60 km was covered with 10 meter both sides. GPS coordinates of each kilometre is recorded with orchid diversity and their host plants.

Results and discussion

During the survey for identification of orchid flora with host trees in study areas, authors have observed many epiphytic Orchid species belonging to *Vanda*, *Acampe*, *Luisia*, *Pholidota*, *Oberonia*, *Dendrobium*, *Bulbophyllum*, *Aerides*, *Cymbidium* etc. in diverse host plants like *Shorea robusta*, *Schleichera oleosa*, *Careya arborea*, *Diospyros melanoxylon*, *Ficus religiosa*, *Diospyros montana*, *Buchanania lanzan*, *Syzygium cumini*, *Terminalia elliptica*, *Terminalia bellirica*,

Terminalia chebula, *Madhuca longifolia*, *Lagerstroemia parviflora*, *Mangifera indica*, *Artocarpus heterophyllus* etc. On 27th November 2021 in Phuljhar area of Barsuan range (21°55' 12" N, 85° 10' 32" E, elevation 558 m), authors have observed a beautiful patch of many *Oberonia* species on the stem of *Combretum roxburghii* Sprengel (1825: 331) (Figure 2), a very vigorous climbing shrub, commonly known as “Atundi”.

Studies have revealed that *Oberonia* species are generally reported with host trees like *Shorea robusta*, *Carpinus viminea*, *Terminalia myriocarpa*, *Lagerstroemia speciosa*, *Gmelina arborea*, *Cryptocarya amygdalina*, *Careya arborea*, *Terminalia bellirica*, *Terminalia chebula*, *Syzygium cumini* etc. throughout India (Devi *et al.*, 2018; Jalal & Jayanthi, 2018). Literature survey indicated that no reports are available for *Oberonia* with host plant as a climber (*Combretum roxburghii*). Therefore, it can be concluded that it is a new addition in the host plants of *Oberonia* species.

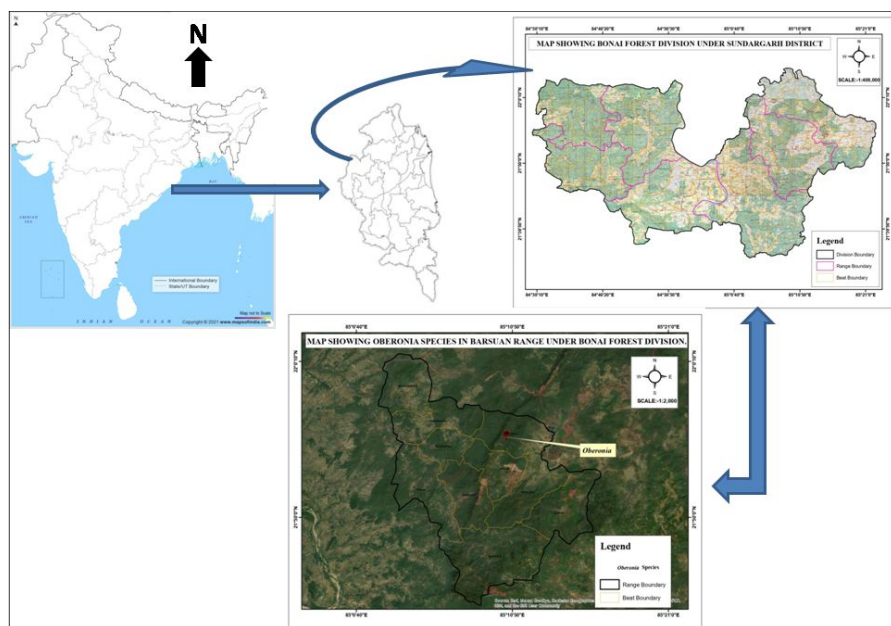


Figure 1: Geographic location of *Oberonia* species collected

Conclusion

The findings bring attention towards the conservation of such lesser known *Oberonia* species through the conservation of its host species. As the study area belongs to the mining impacted area, the restoration of such host plants is needed

to mitigate the negative impacts of mining as well as for the conservation of locally less frequent epiphytic orchid species like *Oberonia*. The present finding will be helpful to restore the *Oberonia* and other orchid species in mining impacted areas globally.



Figure 2: Study work and *Combretum roxburghii* with *Oberonia*

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