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## An Assessment of Lichens Diversity from Bhimashankar Wildlife Sanctuary, Maharashtra, India

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### ABSTRACT

The present study recorded 58 species of lichens belonging to 27 genera and 17 families from seven localities of Bhimashankar Wildlife Sanctuary, Maharashtra, in Western Ghats. The study added 24 species new to the lichen biota of Maharashtra. The lichen genera *Graphis* and *Pyrenula* with six species each and *Hemithecium* and *Porina* with 5 species each exhibit their dominance in the area. Among the different localities the area around Bhimashankar temple showed maximum diversity represented by 37 species followed by route to Manchar and Gupt Bhimashankar Cave area represented 16 species each. The dominance of Graphidioid community in the area indicates the open thinned out forest as well as the presence of smooth bark trees in the sanctuary.

### INTRODUCTION

India is one of the mega diversity centers of world (Rajmohana, 1999) with two biodiversity hotspots such as Western Ghats and Himalaya. Western Ghats, apart from having rich flora and fauna also exhibit rich diversity of lichens represented by approximately 1500 species, of which nearly 15% is endemic. Among several interesting protected areas in the Western Ghats Bhimashankar Wildlife Sanctuary (BWLS) exhibits its prominence with rich floristic diversity that offers diverse habitats for growth of different lichens. Geographically, BWLS situated at the border of Pune and Thane district of Maharashtra between coordinates 19.132°N and 73.554°E (Fig. 1). The sanctuary covers an area of 131 km<sup>2</sup> and altitude ranges from 340-1208 m. The name of sanctuary is based on Bhimashankar temple located inside the sanctuary. The flora of the sanctuary is dominated by plants such as *Bilshmiedia dalzellii*, *Carallia brachiata*, *Diospyros malabarica*, *D. montana*, *D. sylvatica*, *Mangifera indica*, *Myristica malabarica*, *Olea dioica*, *Syzygium cumini* and *Symplocos racemosa*.

The lichens of Maharashtra are extensively studied since last three decades and are included in several

monographs and revisionary studies from India. Makhija et al. (2014) presented a comprehensive list of 288 lichens belonging to 68 genera from Maharashtra. Although a total of 108 species under 39 genera of lichens are known from Pune district the collection from BWLS are scarce. Therefore, the aim of the present study is to prepare a comprehensive list of lichens from BWLS with fresh collections as well as from earlier published record.

### MATERIALS AND METHODS

Seven major localities (Table 1) of the sanctuary were surveyed in the year 2015 and more than 300 specimens were collected. The specimens were identified by studying their morphology, anatomy and chemistry. The morphology of the taxa was studied under stereo-zoom binocular microscope. The details of thallus anatomy and fruiting bodies were studied by compound microscope. The colour test were carried out on cortex and medulla with usual chemical reagents such as aqueous potassium hydroxide (K), Steiner's stable paraphenylene diamine (PD) and aqueous calcium hypochlorite (C). Thin layer chromatography was performed for identification of the lichen substances in solvent system A following the techniques of Orange et al.