

Preface

An organism occurs in a characteristic, limited range of habitats and within this range they are found to be most abundant indicating their specific environmental optimum (Körner 2003). The distribution of organisms is strongly influenced by factors such as elevation, precipitation, moisture, temperature, and nutrients in the substratum (Huang 2010). In last 50 years though considerable attention has been accorded in documenting the taxonomic diversity of lichens in India, investigations of their community ecology have only recently begun, and those so far undertaken, except some instances (Rai et al. 2011, 2012) have not explored the distribution ecology of terricolous lichens as a functional group (Negi 2000; Negi and Upreti 2000; Pinokiyo et al. 2008). With increase in understanding on soil crust lichens, their functional role in maintenance of physical stability, hydrology, and nutrient pool of soil crust is well recognized worldwide (Elbert et al. 2012). The investigations on Indian terricolous lichens were initiated at lichenology laboratory of CSIR-National Botanical Research Institute (NBRI), as an assessment of their diversity in Western Himalaya and their role in soil stabilization in alpine habitats (Rai 2012). The study revealed a substantial diversity of terricolous lichens and found that soil lichens play a very crucial role in the stabilization of soil crust, soil respiration, amelioration of soil temperature, and growth of soil microflora. In the course of study, various patterns and factors of terricolous lichen diversity were observed and the need for a publication dealing with these aspects was realized, leading to conceptualization of this volume.

The Vol. 1 of *Terricolous Lichens in India*, in five chapters discusses lichenology in India with special reference to terricolous lichens (Chap. 1); comparative assessment of biological soil crusts (BSC) development in India with global patterns (Chap. 2); altitudinal patterns of soil crust lichens in India using generalized additive models (*GAM*; Chap. 3); role of novel molecular clades of *Asterochlores* in geographical distribution patterns of *Cladonia*—a dominant soil crust lichen (Chap. 4) and photobiont diversity of soil lichens along substrate ecology and altitudinal gradients in Himalayas (Chap. 5). The volume enumerates various patterns and factors of terricolous lichen diversity in India, as a prelude to Vol. 2 which deals with the taxonomy of Indian soil crust lichens. The book should be of interest to the specialists and also intends to generate interest among ecologists, biologists, natu-

ralists, teachers, students, protected area managers, policy makers, and conservation agencies. We hope that this book will widen the overall understanding of Indian lichens and specifically the terricolous lichens, both for native as well as international workers and would serve as foundation of many more taxonomic as well as applied researches in Indian lichens.

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Himanshu Rai
Dalip Kumar Upreti

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