Lichen and moss diversity at Schirmacher Oasis, Antarctica

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Systematic surveys of the lichen and moss floras of Schirmacher Oasis (Queen Maud Land, continental Antarctic), were conducted to know the pattern of diversity and biogeography in the area. A total of 54 lichen and 12 moss species were documented from Schirmacher Oasis (SO).

Lichens were classified based on their growth form into three groups (crustose, fruticose, foliose), and based on substratum type into four groups (saxicolous, terricolous, epiphytic and ubiquitous). Morphological and anatomical details were used for identification of lichen species. In all study sites most lichens were found on rock, with differences among sites for epiphytic, soil and 'other' substrata. Overlaps between the habitat preferences of some taxa were also observed. The majority of species recorded in both the locations were endemic to Antarctica, followed by the bipolar and cosmopolitan groups. Species restricted to the Southern Hemisphere were the least frequently encountered. The majority of species found at SO were classified as rare, followed by common, occasional and most common. In all areas most lichens were of crustose growth form, followed by foliose and fruticose. *Buellia*, *Caloplaca* and *Lecanora* were the most dominant genera common to the study area, with *Umbilicaria* also being commonly encountered.

The extant moss flora of the Schirmacher Oasis includes six genera which are represented by single species, namely *Ceratodon*, *Syntrichia*, *Grimmia*, *Orthogrimmia*, *Schistidium* and *Plagiothecium*. The other two genera, *Bryum* and *Hennediella*, consist of four and two species, respectively. Relative frequency, density and dominance values of the species showed that *Bryum pseudotriquetrum* is the most abundant and widespread moss while *Bryum orbiculatifolium*, *Grimmia plagiopodia*, *Hennediella antarctica*, *Hennediella heimii* and *Schistidium antarctici* are the most sparsely distributed species in the region. The sub-fossil moss *Pohlia nutans* (10.65 kyr BP) was recorded for the first time from lake sediment cores at Schirmacher Oasis, Dronning Maud Land, Antarctica.