LICHENS/Flechten – Ruprecht (AG Comes)

Flechten als Organismen der Extremstandorte werden in unserer Flechtengruppe in der Antarktis und in den subanatarktischen Regionen von Südamerika und in montanen und hochalpinen Gebieten in Österreich untersucht. Der Fokus liegt auf Taxonomie, Diversität, Verbreitung und Spezifität der einzelnen Symbiosepartner zueinander.

Our research team focuses on **ecology, biodiversity, distribution, taxonomy, fungi/algae/bacteria associations** and **conservation** of lichens and biological soil crusts in Austria, Antarctica, subantarctic areas in South America and Arctic areas

Lichens as poikilohydric and less competitive organisms are colonizing areas where the growing conditions for plants are unfavourable, like cold and hot deserts, tree barks, and bare rocks. Our research objects are leading us from Austrian Red List species and lichen communities in populated areas of Europe to untouched regions in Antarctica, South America, from the sea-level to high alpine areas.

Our “methodological toolbox” comprises up-to-date **molecular genetic methods (Sanger, NGS) in combination with classical morphological analysis** to study phylogenetic relationships, species diversity and mycobiont-photobiont specificity (co-speciation, photobiont-switch). In addition we use **biogeographic** and **statistical methods** (network statistics and niche modelling)

Our major project currently focuses on the relative **importance of ecological** (climate-related) **factors** influencing the origin and maintenance of species boundaries in lecideoid lichens from Antarctica and South America, and the selectivity of their symbiotic partnership. Other research projects are addressing conservation arrangements of **red list lichen species in Upper Austria** and the focusing on the effects of climate change in relation to the **bacteria- mycobiont-photobiont** interactions along an elevation and latitudinal gradients in high Alpine and Southern Polar areas.

Our group offers students **education in molecular genetic techniques and data analysis methods,** in a team with our in-house experts and with our partners in collaborating laboratories. For further information, please see our **Master Course “Molecular Co-evolution” (PLUSonline)** in collaboration with Anja Hörger.