Supplementary Table S3. – Meteorological data used in gradient analysis: To characterise the environmental niche of bryophytes and lichens we used **elevation** data (see table A2) together with interpolated spatial grids of meteorological station data. We interpolated average yearly air temperature and men yearly precipitation from 2014 to 2019 for which we had meteorological station data. We used daily historic data (https://www.chmi.cz/historicka-data/pocasi/denni-data/Denni-data-dle-z.-123-1998-Sb) provided by the Czech Hydrometeorological Institute (CHMI). We predicted for the whole Czech Republic using topographic predictors (Convergence Index, Diurnal Anisotropic Heating, Elevation, Mass Balance Index, Topographic Position Index, Topographic Wetness Index, Vector Ruggedness Measure, and Vertical Distance to Channel Network), and temperatures from ca. 200 stations and precipitation from ca. 500 stations. Based on comparing the root-mean-square error (RMSE) in five-fold spatial cross validation between interpolation algorithms (Inverse distance weighting, Krigging and Random Forest) we decided to use Random Forest for interpolating the air temperatures as it was performing the best RMSE= 0.7°C and Krigging for interpolating of precipitation performing the best RMSE= 60 mm. Mean, minimum and maximum are based on one million randomly-generated points in the Czech Republic.

	Units	Mean	min; max
average air temperature (2014–2019),	°C	9.26	5.34; 11.22
average precipitation (2014–2019),	mm/year	609.4	453.6; 1098.9