**DISENTANGLING THE EVOLUTION OF CLIMATIC PREFERENCE IN *TREBOUXIA***

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*Trebouxia* is one of the most abundant and best-studied clades of lichen-associated algae, with substantial sequence data having accumulated over the past 20+ years. Here we summarized publicly available ITS sequence data and modeled the tempo and mode of *Trebouxia* lineage diversification, together with the evolution climatic preference. We placed *Trebouxia* in a temporal framework to identify the historic occupation of various climatic regimes, while also considering this in the context of paleoecological data and associated mycobiont lineages. We then use this synthesis to identify strengths and limitations in our knowledge of this clade, and propose a path forward to document the remaining diversity in this clade.