

Mineralisation and evolution in rust-coloured *Acarospora* from a Swedish Mine

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Acarospora species thrive in metalliferous sites and may hyperaccumulate Cu [1]. Many lichen species growing on weathered rocks containing Fe sulphide minerals adopt a rust-coloration. Few attempts have yet been made to characterize their chemical composition. This study aims to determine if the different colours observed in the bright rust-red *Acarospora sinopica* and paler yellow-orange *A. smaragdula* v. *lesdainii* f. *subochracea* are due to different iron compounds and to investigate their phylogeny.

As far as we are aware, this is the first time element signatures, morphological characters and molecular phylogeny are used to test hypotheses of the evolution of metal fixation in lichens [2]. Evidence for Cu complexation with lichen acids suggested tolerance mechanisms [1]. A similar mechanism might occur in the case of Fe.



References

- [1] Haas J.R., and Purvis O.W. (2006) Fungi in Biogeochemical Cycles (Gadd, G.M., Ed.) Cambridge University: Cambridge, 2006; 344-376.
- [2] Crewe A.T., Purvis O.W., and Wedin M. (2006) *Mycological Research* (in press).