

ADAPTATIONS OF CRYPTOENDOLITHIC LICHENS IN THE ANTARCTIC DRY VALLEYS

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In the hostile climate of the mountainous regions in the Antarctic dry valleys the surface of rocks is abiotic. This is probably the result of the rapid rate of alternate freezing and thawing on the rock surface. In contrast, a narrow zone *under* the surface supports a microbial community, composed mainly of cryptoendolithic lichens – a novel type of lichen organization.

The adaptive mechanism of these lichens is not physiological (i.e., is not to extreme low temperatures) but rather morphogenetic. This adaptation enables them to change their growth pattern in order to penetrate the narrow air spaces of the porous rock substrate. By this strategy they evade a harsh environment by taking refuge in a protected niche.

References

- Friedmann, E. I.: 1982, *Science* 215, 1045–1053.
Friedmann, E. I., Friedmann, R.O. and McKay, C. P.: 1982, in P. Jouventin, L. Massé, and P. Tréhen, (eds.), *Colloque sur les Écosystèmes Subantarctiques*, Comité National Français des Recherches Antarctiques, Paris, pp. 65–70.