

Hodkinson, B.P., and F. Lutzoni. 2009. Secret alliances: Patterns of association between lichens and non-photobiont bacteria. *Botany & Mycology 2009*, Snowbird, Utah.

Abstract

Non-photobiont bacteria are increasingly regarded as significant players in the ecology of the lichen thallus. However, since lichen thalli are not all created equal, differences in chemistry, photobiont type, mycobiont, growth form, geography, etc., all have the potential to influence the community of lichen-associated bacteria. We have aimed to investigate several disparate types of lichen thalli to determine the similarities and differences between their natural communities of bacterial associates. Fresh lichen samples were collected from across the North American continent (including Central America) and non-photobiont bacterial communities were analyzed using PCR-based methods. The microbiota associated with lichens from Alaska to Central America seems remarkably uniform, indicating that geography is probably not a major factor in bacterial community composition. The preliminary evidence presented here also indicates that there are major bacterial community differences that are correlated strongly with photobiont type. This data supports the notion that different types of lichen thalli act as specialized niches for specific lineages of non-photobiont bacteria, suggesting the possibility of co-evolution between certain lichens and their bacterial associates.