



Lichen Chemistry: Spot Tests and TLC in Lichen Identification with Scott LaGreca and Thorsten Lumbsch

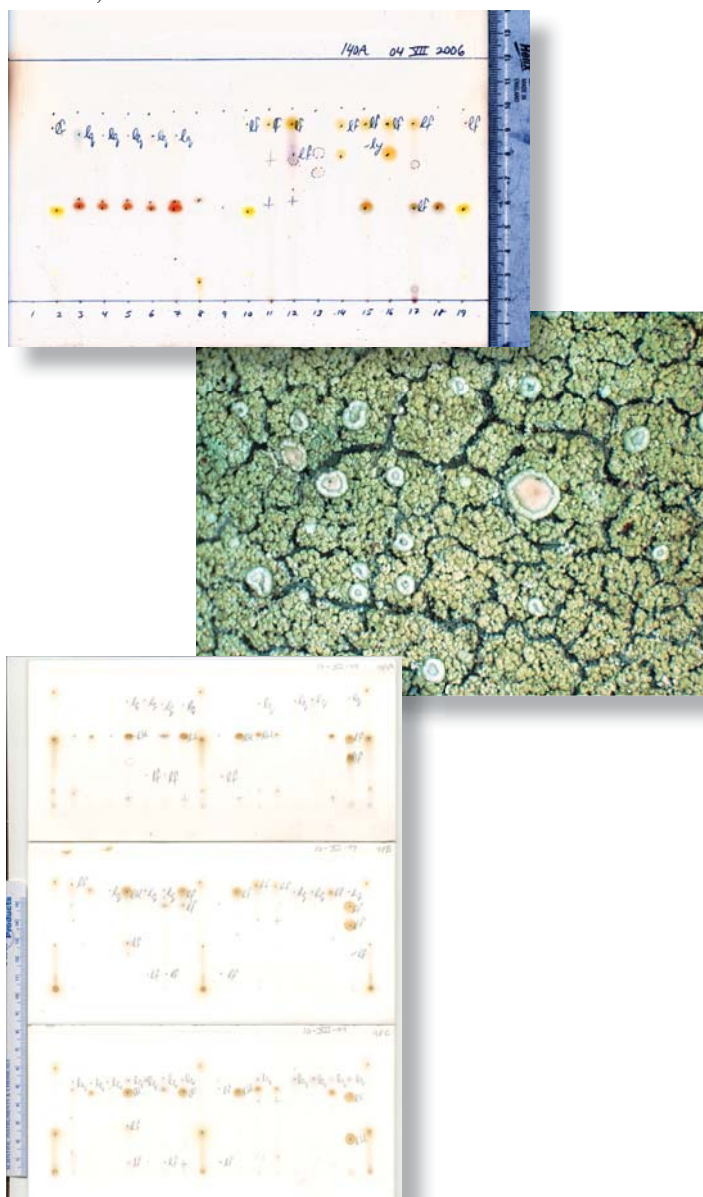
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Lichens are notoriously difficult to identify. This is complicated by the fact that some groups of lichen species share the same (or very similar) morphology. In addition, lichen specimens collected in quadrats during site surveys and biomonitoring can sometimes be poorly developed, and impossible to key out using morphological characters. In both of these situations, chemistry can add critical information for making a species diagnosis. Lichenized fungi produce secondary products (mainly, phenolic acids) which occur nowhere else in the natural world. These unique compounds can be detected using a variety of methods. In this seminar, students will learn the basics of lichen chemistry, and how to diagnose lichen compounds using spot tests, crystal tests, and thin-layer chromatography (TLC). Relevant literature and lichen-compound-identification software will be introduced. Lichen specimens for analysis will be collected during short field trips, and others will be provided by the instructors, but students are welcome to bring their own samples for chemical analysis.

Dr. Scott LaGreca (slagreca@berkshireremuseum.org), Natural Science Coordinator at Berkshire Museum in Pittsfield, Massachusetts, is a lichenologist specializing in chemotaxonomy (especially the genera *Ramalina* and *Lecanora*), the lichens of Bermuda, and the lichen flora of the northeastern United States. Scott has authored over 20 papers on lichens and bryophytes. He is a research associate at the Farlow Herbarium of Harvard University, and the NY State Museum in Albany, NY, and is a former Curator of Lichens at the Natural History Museum, London.

Dr. H. Thorsten Lumbsch (tlumbsch@fieldmuseum.org) is Chair of the Department of Botany of the Field Museum of Natural History in Chicago. He is an expert on the molecular systematics and diversity of lichen-forming fungi, as well as lichen chemotaxonomy. Thorsten has authored (or co-authored) nearly 300 articles and book

contributions on lichens. He also serves as the Editor for the international journal *Nova Hedwigia*, and sits on the editorial boards of many other journals. His studies have taken him all over the world collecting lichens, including Europe, North America, Australia, Africa, South America and Antarctica.



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