Issues of basidiomycetes

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Fungal diversity—in this issue

This issue includes two review papers, the first on ectomycorrhizal fungi and the second on the importance of culture collections to plant pathogen taxonomy, which also applies to basidiomycete groups. There are also four major papers on various basidiomycete groups.

The first paper reviews ecological studies of ectomycorrhizal fungi. By looking at different methodologies to study the ecology of these important organisms the authors conclude that the same conclusions can be drawn when looking at fruiting bodies or mycorrhizal root tips. They however found that in 73% of the reviewed studies (27 out of 37) a greater species richness was found by fruiting body surveys than by methods based on sampling of the root tips. They conclude that fruiting body surveys are important in order to gain rapid and still valuable information on ecosystems over a wide spatial and temporal range and strongly recommend their use in long-term ecosystem monitoring projects.

The second review paper looks at the importance of culture collections in modern day taxonomy especially related to plant pathogens but this can also be applied to basidiomycetes. The paper concludes that culture collections are becoming very important in studies of plant pathology and that when describing new species or designating epitypes of neotypes, authors should deposit cultures in at least three

international culture collections. The paper shows examples in selected genera of fungi where this has become essential. The paper also reviews culture collection methods and makes recommendations for storage of the fungi.

Paper three looks with basidiomycetes from Thailand dealing with the genus *Micropsalliota* using a combination of morphological and molecular data. The genus is shown to represent a monophyletic lineage in the Agaricaceae sister to *Hymenagaricus*. They provide a treatment of 23 taxa of *Micropsalliota* from Northern Thailand, of which 13 taxa represent new distribution reports for Thailand and 10 represent new taxa. Paper four deals taxa in the genus *Lactarius* which are similar to *Lactarius volemus* combining a critical morphological scrutiny with a multiple gene genealogy based on LSU, ITS and rpb2 nuclear sequences. Twelve strongly supported monophyletic clades and six terminal branches are discernable in all phylogenetic trees and represent 18 phylogenetic species. Six of the monophyletic clades can be morphologically distinguished and are described as new species while the other species are discussed.

Paper five looks at the genus *Macrolepiota* in China on the basis of morphology and DNA sequence data. Six species are recognized, of which two are new species. All are described and illustrated with line drawings, and a key is provided to those recognized species. This may have important implications on this edible genus as one species is presently cultivated in Thailand and the other five species may be cultivatable.

Paper six is a monograph on the Hymenochaetaceae of China. The paper provides an account of the Chinese species of Hymenochaetaceae based on most recent phylogenetic analysis. One hundred and seventy species from 23 genera are recognized; descriptions are provided based on the Chinese collections. Keys to genera and species are given. This monograph is a significant contribution to this important medicinal group of fungi.

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