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The causal agents of 'entomophthoramycosis' belong to two different orders: a suggestion for modification of the clinical nomenclature

An interesting and comprehensive review of mucormycosis and entomophthoramycosis in the March 2004 supplement of *Clinical Microbiology and Infection* described the clinical manifestations and treatments of mycosis caused by species of the Mucorales and Entomophthorales [1]. As in other recent reviews of zygomycosis [2,3], the authors treat the two fungal genera *Basidiobolus* and *Conidiobolus* as both belonging to the order Entomophthorales [1]. However, this should be modified in accordance with more recent accepted knowledge about fungal taxonomy. Here, we briefly outline the recent status of medically relevant fungi and suggest how this knowledge should be implemented in the clinical nomenclature.

The 'true' fungi have been divided historically into four phyla, the Ascomycota, Basidiomycota, Chytridiomycota and Zygomycota, based on morphological and cytological characteristics [4]. However, while molecular analyses during the last two decades have supported the taxonomic status of the Ascomycota and Basidiomycota, orders within Chytridiomycota and Zygomycota cluster between each other, and therefore cannot be considered to be natural taxons [5–7]. One of the problematic orders of the Zygomycota is the Entomophthorales, which contains members found in two phylogenetically distinct groups, one of which contains *Basidiobolus*, which is related closely to some chytrids, while the remaining entomophthoralean genera, including *Conidiobolus*, form another distinct group that is related closely to other zygomycetes such as Mucorales [6]. A further indication of a close link between *Basidiobolus* and the flagellated Chytridiomycota is the presence of the procentriole, the basal part of a flagellum, in *Basidiobolus* [8]. This evidence has resulted in the delineation of the order Basidiobolales, containing the single genus *Basidiobolus* [9]. At present, available data also suggest that the pathogenic agents causing mucormycosis are all members of the Mucorales [10].

The paraphyletic nature of the Entomophthorales, as defined previously, containing both *Basidiobolus* and *Conidiobolus*, offers a partial explanation of the highly different clinical manifestations of basidiobolomycosis and conidiobolomycosis, and of their differences in susceptibility to antifungal agents [1,3,11]. Accordingly, a differentiation in the treatment strategies for the two mycoses, which until now have been uniform [1,3], deserves to be considered. Previous difficulties with identification based on morphological characteristics [1,3] can be overcome by precise and quick identification of *Conidiobolus* and *Basidiobolus* using PCR with taxon-specific primers [12]. We therefore recommend that the clinical nomenclature should reflect the modern phylogeny, and that the term 'entomophthoramycosis' should be restricted to mycosis caused by *Conidiobolus* spp., while mycosis caused by *Basidiobolus* spp. should be described as 'basidiobolomycosis'.

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