

On diphymyces (Laboulbeniales, Ascomycota) in Malaysian Borneo

Abstract

Background Laboulbeniales (Fungi, Ascomycota) are microscopic ectoparasites of Arthropoda. Since many Laboulbeniales are known to be host-specific, wet tropical areas with high arthropod diversity are likely to house a high diversity of Laboulbeniales, as well. In this paper, we reveal the presence of the genus *Diphymyces* I.I.Tav. in Malaysian Borneo. After fieldwork in disturbed and pristine tropical rainforest in Borneo, representatives of this genus were discovered that did not match the description of any of the fourteen known species. Methods Insects were collected with dry pitfall traps baited with Limburger cheese. Fungal material was studied and described using morphology-based methods. Key results A new species, *Diphymyces sabahensis* Haelew. & Pfster, is described and illustrated. Hosts for this species are recently described taxa in *Ptomaphaginus* Portevin, 1914 (Coleoptera, Leiodidae, Cholevinae, *Ptomaphagini*), representing a new host genus for *Diphymyces*. Other, morphologically distinctive records of *Diphymyces* were found; on one host specimen they co-occur with *D. sabahensis*. These divergent thalli are remarkable in their restricted occurrence on the metatibiae, and thus may represent a morphological variant of *D. sabahensis*. A review of all described species of *Diphymyces*, with hosts and geographical distribution, is also presented in tabulated form.