

Outlineoffungi.org - Note 932 *Neogymnomyces*

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Neogymnomyces G.F. Orr

The sexual morph species *Gymnoascus demonbreunii* has been connected with the asexual morph *Histoplasma capsulatum* initially (Ajello and Chen 1967), while it presented no evidence that has a taxonomic relationship with *H. capsulatum* (Orr 1970). Considering *G. demonbreunii* could not be linked to any asexual fungus and comparing the morphological differences with other species in *Gymnoascus*, Orr (1970) established a new genus to accommodate a new genus *Neogymnomyces*. The genus was typified with *Neogymnomyces demonbreunii* (Ajello & S.L. Cheng) G.F. Orr. This species was associated with soil, especially that of avain and chiropteran habitats, as a saprobe in terrestrial habitats in Illinois, USA (Ajello and Chen 1967). It is characterized by spherical, yellowish ascocarps, hyaline, sinuous, anastomosed peridial hyphae with free ends forming simple or branched apical blunt, rounded and swollen appendages, globose or obovate asci and ovoid or elliptical, yellowish or golden ascospores (Ajello and Chen 1967; Orr 1970; Kandemir et al. 2022). Morphologically, *Neogymnomyces* resembles *Arachnietus* and *Pseudoarachnietus* in having ascospores with similar color and shape. While species in *Arachnietus* have snow-white to yellowish-white gymnothecia without appendages, peridial elements similar to the vegetative hyphae and completely encasing the asci in a fragile membrane and ovoid to spherical asci. *Pseudoarachnietus* was described as lacking discrete ascocarps or forming spherical ascal clusters (Schroeter 1893; Kuehn 1955; Orr et al. 1977). In addition, *Neogymnomyces* is phylogenetically distinct from both genera, and based on multilocus (LSU, ITS, *TUB*, *RP60S*, *TEF1*, *TEF3*, *RPB1*, and *RPB2*) sequences data represents a new distinct clade with the genera *Auxarthronopsis*, *Canomyces*, *Currahmyces*, and *Renispora* in a newly introduced family *Neogymnomycetaceae* (Kandemir et al. 2022).

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