

Outlineoffungi.org - Note 1392 *Nephridiochytrium*

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Nephridiochytrium Radek & Strasser

Radek et al. (2023) introduced the monotypic genus *Nephridiochytrium* under *Nephridiophagaceae* (*Nephridiophagales*, *Chytridiomycetes*, *Chytridiomycota*) to accommodate *N. forficulae* Radek & Strasser based on morphology and phylogenetic analyses using SSU and LSU sequence data. The type species was isolated from the Malpighian tubes of *Forficula auricularia* in France. Phylogenetic analysis revealed that *N. forficulae* formed a distinct clade within *Nephridiophagaceae*. In the Malpighian tubule, various techniques such as differential interference microscopy (DIC), Giemsa staining, scanning electron microscopy (SEM), and transmission electron microscopy (TEM) are used to observe vegetative plasmodia, young sporogenic plasmodia, and mature sporogenic plasmodia. Young spores have a thin, transparent spore wall with a nucleus positioned near a cell pole or centrally. Some plasmodia contain large mature spores, while others have smaller, younger spores. Giemsa staining reveals residual nuclei of the plasmodium between mature spores. The flattened oval spores have a rim and a central spore opening on one side. In ultrathin sections, the Malpighian tubule displays various stages of infection, including small, uni-nucleate merozoites, vegetative plasmodia with several nuclei, sporogenic plasmodia, and mature spores. The tubule's epithelium contains concretions. Young sporogenic plasmodia consist of young spores with a thin spore wall, one nucleus, endoplasmic reticulum, and mitochondria. Mature sporogenic plasmodia have residual nuclei and mature spores with centrally located nuclei and thick spore walls. A cross-section of a mature spore reveals five layers in the spore wall, while a longitudinal section of a mature spore shows the thin-walled cap of the spore opening (Radek et al. 2023).

References

Radek R, Wurzbacher C, Strasser JF. 2023 – New nephridiophagid genera (Fungi, *Chytridiomycota*) in a mallow beetle and an earwig. MycoKeys 100, 245.

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