

Outlineoffungi.org – Note 1551 *Lyomyces*

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Lyomyces P. Karst.

The genus *Lyomyces* P. Karst. is typified by *L. sambuci* (Pers.) P. Karst. It is characterized by the resupinate-to-effused basidiomata with a smooth-to-odontioid hymenophore, a monomitic hyphal system with generative hyphae bearing clamp connections, the presence of several types of cystidia, and with smooth, thin- to slightly thick-walled basidiospores (Karsten 1881, Bernicchia and Gorjón 2010). Based on MycoBank (<http://www.mycobank.org>) and Index Fungorum (<http://www.indexfungorum.org>), *Lyomyces* has registered 55 specific and infraspecific names, and approximately 41 species of *Lyomyces* are currently known (Rabenhorst 1851, Karsten 1881, Karsten 1882, Cunningham 1959, Cunningham 1963, Wu 1990, Hjortstam 2009, Xiong et al. 2009, Dai 2010, Dai 2011, Yurchenko and Wu 2013, Gafforov et al. 2017, Riebesehl and Langer 2017, Yurchenko et al. 2017, Chen and Zhao 2020, Yurchenko et al. 2020, Luo et al. 2021a, 2021b; Viner et al. 2022, Guan et al. 2023).

On the basis of the frequent inclusion of data from DNA sequences in many phylogenetic studies, the classification of the wood-inhabiting fungi has been updated continuously (Yurchenko et al. 2020). These pioneering research studies into the family Schizoporaceae were just the prelude to the molecular systematics period (Guan et al. 2023, Zhang et al. 2024). The genus *Hyphodontia sensu lato* was indicated to be a polyphyletic group, in which the genera *Xylodon* (Pers.) Gray, and *Kneiffiella* P. Karst. included the largest number of species (Yurchenko and Wu 2016, Riebesehl and Langer 2017, Riebesehl et al. 2019). Due to the lack of sequences of some wood-inhabiting fungal taxa, it is difficult to clearly distinguish many genera in this family *Schizoporaceae* using molecular data, therefore, a broad concept of *Hyphodontia sensu lato* was accepted (Yurchenko and Wu 2016, Riebesehl and Langer 2017, Wang and Chen 2017, Riebesehl et al. 2019). On the basis of the nuclear DNA sequence data, six well-distinguished clades as *Hastodontia* clade, *Hyphodontia* clade, *Lagarobasidium* clade, *Kneiffiella-Alutaceodontia* clade, *Xylodon-Lyomyces-Rogersella* clade, and *Xylodon-Schizopora-Palifer* clade, were included based on the phylogenetical studies for *Hyphodontia sensu lato*, in which the genus *Lyomyces* nested within the *Xylodon-Lyomyces-Rogersella* clade (Yurchenko and Wu 2013). The research revealed that *Hyphodontia sensu lato* was divided into six genera, viz., *Hastodontia* (Parmasto) Hjortstam & Ryvarden, *Hyphodontia* J. Erikss., *Kneiffiella*, *Lagarobasidium* Jülich, *Lyomyces*, and *Xylodon*, in which 35 new combinations were proposed, including fourteen *Lyomyces* species (Riebesehl and Langer 2017). On the basis of the sequences of the ITS and nLSU, the phylogenetic analysis clarified that the *L. sambuci* complex divided into four new species (Yurchenko et al. 2017). Riebesehl et al. (2019) clarified the generic concept and their phylogenetic reconstruction of *Lyomyces*, and the species *L. sambuci* was sister to *L. crustosus* (Pers.) P. Karst (Riebesehl et al. 2019). Based on a combination of the morphological and molecular evidence, the fungal diversity of the family *Schizoporaceae* were analyzed, in which six new species were described *L. fissuratus* C.L. Zhao, *L. fumosus* C.L. Zhao, *L. niveus* C.L. Zhao, *L. ochraceoalbus* C.L. Zhao, *L. albopulverulentus* C.L. Zhao and *L. yunnanensis* (Guan et al. 2023, Luo et al. 2021a, 2021).

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