

Outlineoffungi.org – Note 1552 *Phlebia*

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Phlebia Fr.

The genus *Phlebia* was established by Fr. (1821) with *Phlebia radiata* Fr. as the type species, is a large, cosmopolitan genus characterized by the effused or partly pileate basidiomata with a subceraceous to subgelatinous texture when fresh, membranaceous to coriaceous when dry, hymenophore smooth, tuberculate, phlebioid, odontoid, merulioid or poroid, a monomitic (rarely dimitic) hyphal structure generally with clamped hyphae, the embedded generative hyphae very difficult to observe, narrowly clavate basidia, and colorless, thin-walled, smooth, allantoid to ellipsoid basidiospores, which are acyanophilous, inamyloid and non-dextrinoid (Duhem 2009, Bernicchia and Gorjón 2010, Singh et al. 2010, Westphalen et al. 2010, Gorjón et al. 2012, Binder et al. 2013, Duhem 2013, Kaur 2017, Shen et al. 2018, Huang and Zhao 2020, Huang et al. 2020a, 2020b, Zong and Zhao 2021). Currently, about 100 species have been accepted in the genus worldwide (Chen et al. 2021, Zhao et al. 2023).

Recently, mycologists employed molecular data on the genus *Phlebia sensu lato* to establish a phylogenetic frame for the classification of this genus, which indicates that *Phlebia sensu lato* is polyphyletic (Larsson 2007, Justo et al. 2017). Earlier, molecular systematics placed *Phlebia* in the polyporoid clade, and later the phylogenetic research among corticioid homobasidiomycetes suggested that the genus *Phlebia* should be located in the phlebioid clade with related genera *Ceriporia* Donk and *Gloeoporus* Mont (Hibbett and Thorn 2001). Additionally, the phlebioid clade was divided into three subclades that were interpretable also in terms of morphology, which indicated that *Phlebia sensu stricto*, *Mycoacia* Donk, and *Mycoaciella* J. Erikss. & Ryvar den were mainly referred to *Phlebia sensu lato* (Larsson et al. 2004).

Larsson (2007) studied the classification of corticioid fungi, which revealed that *Phlebia* clusters into the family *Meruliaceae* within the order *Polyporales*. Mycologists focused on the phylogenetic study of European *Ceriporiopsis* Domański taxa, which revealed that *P. radiata* and *C. gilvescens* (Bres.) Domański grouped together at the base of the combined data of the LSU, and mtSSU, but the taxa between *Phlebia* and *Ceriporiopsis* were left to be resolved in the future (Tomšovský et al. 2010). Justo et al. (2017) revised the family level classification of the order *Polyporales* by using a multigene dataset, which showed that *P. radiata* belonged to the family *Meruliaceae* and grouped with related genera *Aurantiporus* Murrill and *C. gilvescens*, in which the species of *Phlebia sensu lato* were found in three different families: *Phanerochaetaceae*, *Irpicaceae*, and *Meruliaceae*. Therefore, it was suggested that extensive molecular sampling was essential to establish sound generic concepts in *Phlebia sensu lato*, based on a combination of morphological features and molecular evidence (Zhao et al. 2023). Huang and Zhao (2020) have run a phylogenetic analysis, which showed that *Phlebia* species clustered into phlebioid clade with three new *Phlebia* species viz. *P. fuscotuberculata* C.L. Zhao, *P. tomentopileata* C.L. Zhao, and *P. tongxiniana* C.L. Zhao from southern China.

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