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# *Juglanconis* gen. nov. on *Juglandaceae*, and the new family *Juglanconidaceae* (*Diaporthales*)

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Abstract



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Molecular phylogenetic analyses of ITS-LSU rDNA sequence data demonstrate that *Melanconis* species occurring on *Juglandaceae* are phylogenetically distinct from *Melanconis* s.str., and therefore the new genus *Juglanconis* is described. Morphologically, the genus *Juglanconis* differs from *Melanconis* by light to dark brown conidia with irregular verrucae on the inner surface of the conidial wall, while in *Melanconis* s.str. they are smooth. *Juglanconis* forms a separate clade not affiliated with a described family of *Diaporthales*, and the family *Juglanconidaceae* is introduced to accommodate it. Data of macro- and microscopic morphology and phylogenetic multilocus analyses of partial nuSSU-ITS-LSU rDNA, *cal*, *his*, *ms204*, *rpb1*, *rpb2*, *tef1* and *tub2* sequences revealed four distinct species of *Juglanconis*. Comparison of the markers revealed that *tef1* introns are the best performing markers for species delimitation, followed by *cal*, *ms204* and *tub2*. The ITS, which is the primary barcoding locus for fungi, is amongst the poorest performing markers analysed, due to the comparatively low number of informative characters. *Melanconium juglandinum* (= *Melanconis carthusiana*), *M. oblongum* (= *Melanconis juglandis*) and *M. pterocaryae* are formally combined into *Juglanconis*, and *J. appendiculata* is described as a new species. *Melanconium juglandinum* and *Melanconis carthusiana* are neotypified and *M. oblongum* and *Diaporthe juglandis* are lectotypified. A short description and illustrations of the holotype of *Melanconium ershadii* from *Pterocarya fraxinifolia* are given, but based on morphology it is not considered to belong to *Juglanconis*. A key to all treated species of *Juglanconis* is provided.

**Keywords:** ASCOMYCOTA; DIAPORTHALES; MOLECULAR PHYLOGENY; NEW SPECIES; PATHOGEN SYSTEMATICS

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