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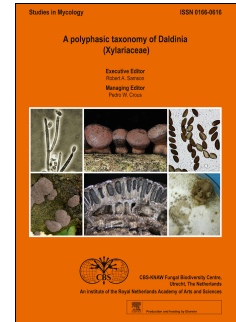
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Hidden diversity in *Thyridaria* and a new circumscription of the *Thyridariaceae*

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Abstract: A multigene analysis of a combined ITS-LSU-SSU-*rpb2-tef1* sequence data matrix was applied to infer the phylogenetic position of the genus *Thyridaria* in the *Pleosporales*. The generic type of *Thyridaria*, *T. broussonetiae* (syn. *T. incrustans*), is situated in a clade currently named *Rousoellaceae*, which becomes a synonym of *Thyridariaceae*. However, *Thyridaria rubronotata* does not belong to this clade, but is here recognised as *Cylothryiella rubronotata* in its own family *Cylothryiellaceae*. The *Thyridariaceae* is here recognised as containing the genera *Thyridaria*, *Rousoella*, *Rousoellopsis*, *Neorousoella* and the new genus *Parathyridaria*. *Rousoella acaciae* is combined in *Thyridaria* and *Rousoella percuteana* in *Parathyridaria*. *Ohleria modesta* and an additional new thyridaria-like genus, *Hobus*, are found to represent isolated lineages with unresolved phylogenetic affinities within the *Pleosporales*. For *Ohleria* the new family *Ohleriaceae* is established. *Melanomma fuscidulum* is recognised as belonging to *Nigrograna*, and three new species are described in this genus. A strain named *Biatriospora marina* clusters with *Nigrograna*. Based on the newly recognised species in *Nigrograna*, morphology and ecology do in no way correlate among these genera, therefore we erect the new family *Nigrogranaceae* for *Nigrograna* and recommend to discontinue the use of the family name *Biatriosporaceae* until fresh material of *B. marina* becomes available for sequencing.

Key words: *Ascomycota*, *Cylothryium*, *Dothideomycetes*, *Melanomma*, phylogenetic analysis, *Pleosporales*.

Taxonomic novelties: **New families:** *Cylothryiellaceae* Jaklitsch & Voglmayr, *Nigrogranaceae* Jaklitsch & Voglmayr, *Ohleriaceae* Jaklitsch & Voglmayr; **New genera:** *Cylothryiella* Jaklitsch & Voglmayr, *Hobus* Jaklitsch & Voglmayr, *Parathyridaria* Jaklitsch & Voglmayr; **New species:** *Hobus wogradensis* Jaklitsch & Voglmayr, *Nigrograna mycophila* Jaklitsch, Friebes & Voglmayr, *N. norvegica* Jaklitsch & Voglmayr, *N. obliqua* Jaklitsch & Voglmayr, *Parathyridaria ramulicola* Jaklitsch, Fourn. & Voglmayr; **New combinations:** *Cylothryiella rubronotata* (Berk. & Broome) Jaklitsch & Voglmayr, *Nigrograna fuscidula* (Sacc.) Jaklitsch & Voglmayr, *Parathyridaria percuteana* (S.A. Ahmed, D.A. Stevens, W.W.J. van de Sande & G.S. de Hoog) Jaklitsch & Voglmayr, *Thyridaria acaciae* (Crous & M.J. Wingf.) Jaklitsch & Voglmayr; **Epitypifications (basionyms):** *Cucurbitaria broussonetiae* Sacc., *Sphaeria fuscidula* Sacc., *Melogramma rubronotatum* Berk.

INTRODUCTION

Besides *Thyronectria* (Jaklitsch & Voglmayr 2014, Checa *et al.* 2015), *Thyridaria* is another genus that Saccardo derived and separated from *Thyridium*. In order to clarify the concept of the genus, the identity and history of its generic type has to be evaluated: *Cucurbitaria broussonetiae* was described by Saccardo (1873). In 1875 (Saccardo 1875a) he described *Thyridaria incrustans* in the schedae of his *Mycotheca Veneta* and based it on *Cucurbitaria broussonetiae*, giving *Broussonetia* as the exclusive host. In the same year (Saccardo 1875b) he established the genus *Thyridaria* with *T. incrustans* as its generic type and *C. broussonetiae* as its synonym. Later, he (Saccardo 1883) listed many different hosts for *T. incrustans* and thus produced a collective name rather than a well-defined name for a single species (see below). As *C. broussonetiae* is older than *T. incrustans*, Traverso (1906, p. 302) noted that Berlese (1894) and Saccardo (1875b) preferred the name *Thyridaria incrustans* contrary to nomenclatural rules and combined *C. broussonetiae* in *Thyridaria* with *T. incrustans* as a synonym. Traverso's (1906) treatment is nomenclaturally correct.

Several authors studied *Thyridaria* or selected members of this genus. Chesters (1938) studied type material of *T. rubronotata* and compared morphology, ascoma ontogeny and a putative asexual morph of fresh material of *T. rubronotata* collected and isolated from *Acer* and *Ulmus* with *Melanomma pulvis-pyrius* and *M. fuscidulum*. He also recognised conspecificity of *T. delognensis* (originally described from *Acer pseudoplatanus*) and *Massaria lateritia* Tul. (described from *Aesculus*) with *T. rubronotata* (originally described from *Ulmus*). He reported synchronous development of pycnidia with ascomata and found that the asexual morph characterised by pycnidia forming slimy masses of amerosporous conidia on phialides lacking conidiophores, is like the aposphaeria-like morphs of *Melanomma*, only that the conidia turn brownish and are thus coniothyrium-like. He accepted the name *Cytoplea juglandis*, originally described as *Phoma ulmicola* Berk., for it. Wehmeyer (1941) monographed *Thyridaria*, accepted fifteen species in the genus and excluded nine species. He examined type material of *T. incrustans* extant in PAD. He reported on the difficulty to distinguish *Thyridaria* from *Kalmusia*, noting that both *Thyridaria* and *Kalmusia* differed from *Thyridium* only in the lack of longitudinal septa in the ascospores. *Kalmusia* was further differentiated by scattered perithecia in an effused stroma from *Thyridaria*, which was characterised by aggregated perithecia or valsoid stromata. However, the latter difference was hampered by an extremely wide variation in the

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