

DIFFERENTIATION AND PHYLOGENETIC ANALYSIS OF *GORGODERINA*, *GORGODERA* AND *PHYLLODISTOMUM* SPP. BASED ON rDNA SEQUENCES WITH COMMENTS ON THEIR KARYOTYPES AND LIFE CYCLES

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Introduction

Gorgoderina from amphibians and *Phyllodistomum* from fishes show very close morphological resemblance to each other and the validity of these genera has been questioned. On the other hand, micro-morphological differences are interpreted as confirmation of their generic separation.

Material and methods

In this study newly obtained rDNA sequences of some species of *Gorgoderina* and *Gorgoderina*, and karyotypes of *Gorgoderina*, together with known data were included into phylogenetic analysis.

Results

Species of *Phyllodistomum* form three distinct clades in the ITS2 and 28S based phylogenetic trees. One of a clade includes type species *P.folium* and some *Phyllodistomum* spp. together with a well-supported subclade of the *Gorgoderina* and *Gorgoderina* spp. This clade unites only trematodes with cystocercous cercariae developing in Sphaeriidae bivalves. The second *Phyllodistomum* clade is more complicated. Only life cycles of *P.macrocotyle* with microcercous cercaria in *Dreissena polymorpha* and *Phyllodistomum* sp. with rhopalocercous cercaria in *Nodularia douglasiae* were determinate. Larval stages of other adult *Phyllodistomum* included in this clade were not found. This analysis places a branch of *Cercaria duplicata*, parasite of Unionidae, between two clades. Phyllodistomes of Australian sea fishes form the third clade. Karyotypes of *Gorgoderina attenuata* and *G.vitelliloba* have 14 chromosomes in their diploid sets and significantly differ from *Phyllodistomum* with $2n=18$ or $2n=16$ and *Cercaria duplicata* with $2n=18$.

Conclusion

The karyological characters confirm separate taxonomic status of the genus *Gorgoderina*, while the phylogenetic analysis based on rDNA revealed close relations between *Gorgoderina*, *Gorgoderina* and some *Phyllodistomum*, including type species, so generic status of phyllodistomes forming other clades should be revised.

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