

Monogenean parasites: what can COI barcoding reveal?

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An attempt was made to predict the biodiversity of polyopisthocotyleans (Monogenea; Platyhelminthes) parasites of marine fish from the southern Mediterranean. From 2016 to 2019, fishes were obtained from local fishermen in three localities: Bouharoune, Zemmouri, and Cap Djinet, Algeria. A combined morphological and molecular approach was used for the depiction of new species and for critical review of known species or genera that remains taxonomically challenging. We present herein three species belonging to three different families: Microcotylidae, Gastrocotylidae and Diclidophoridae. Within the Microcotylidae, we discovered two new species, *Microcotyle visa*, and *Microcotyle isyebi*. The latest is a cryptic species that can be distinguished from its congeners only on the basis of sequences of cytochrome c oxidase subunit I (COI). Among the Gastrocotylidae, we recovered *Allogastrocotyle bivaginalis*, the sole species of *Allogastrocotyle*; we barcoded it (COI) and reported it for the first time in the Mediterranean. The *Diclidophoridae* *Cyclocotyla bellones* stands out by its way of life. It is a hyperparasite that attaches itself to the dorsal face of marine tongue-eating isopods, themselves parasites of the buccal cavity of fishes. We provide for the first time, molecular barcoding information of a hyperparasitic monogenean, the parasitic crustacean host *Ceratothoa parallela*, and the primary fish host *Boops boops*.

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