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About the taxonomic status of aspidochirotid holothurians inhabiting the *Posidonia oceanica* meadow in the Algerian area *[oral presentation]*

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Aspidochirotid holothurians provide important marine ecosystem services enhancing nutrient cycling and local productivity in *Posidonia oceanica* meadows through their bioturbation and deposit feeding activities.

The Aspidochirotidae comprise a diverse assemblage of holothuroids, most of which occur in the Mediterranean Sea. The systematic study was carried out by using modern molecular systematic methods. Phylogenetic analyses from the fraction of mitochondrial gene (16S mDNA) sequenced for 169 individuals (6 species sampled in various localities of the Algerian shallow water areas) clarified taxonomic uncertainties, species relationships.

The results enabled us to differentiate six sampled holothurian forms [*Holothuria (Holothuria) tubulosa*, *Holothuria (Roweothuria) poli*, *Holothuria (Holothuria) stellati*, *Holothuria (Panningothuria) forskali* and both morphotypes of *Holothuria (Platyperona) sanctori*]. This study has led to a definitive test of species boundaries in the Mediterranean species and showed that: (1) The two color morphs of *Holothuria (P.) sanctori* that have been debated in some of the literature are genetically identical and thus represent the same species; (2) *Holothuria (H.) stellati*, whose confusion was always admitted, is a genetically distinct and well defined species and presents characteristics which characterize it as well on the morphological and genetic levels; (3) *Holothuria (H.) tubulosa*, the most common species, and the "best known" species in the Mediterranean Sea, is not one species, but two cryptic species that have not been previously recognized or even suspected. Few specimens of holothurians analyzed in our collection have given unusual DNA sequences. However, it is clear that one specimen will probably represent either another species previously unknown, or a hybrid between two known species [i. e. *H. (R.) polii* and *H. (H.) stellati*].