ABSTRACT

This study evaluates the phylogenetic relationships and the taxonomic *status* of internal groups of Opheliidae (Annelida; Polychaeta) by means of a cladistic analysis which includes 9 of the 10 genera currently recognized. A total of 74 species were analyzed: 63 opheliids and 11 outgroup taxa (9 scalibregmatids, 1 arenicolid and capitellid). The monophyly of Opheliidae was weakly supported. Cirriform branchiae and palpodes, features that supposedly characterize the family, are also seen in other polychaete groups and there are no morphological evidences that suggest they are non-homologous. One of the three traditionally recognized subfamilies of Opheliidae, Travisiinae, is monophyletic, containing exclusively *Travisia* with epipodial lappets and absence of parapodia as synapomorphies. The Travisiinae are sister-group of another clade made up by the remaining genera and defined by branchiae inserted dorsally to the notopodium and lateral and ventral furrows. The present analysis indicates that *Lobochesis* should be synonymized with *Euzonus* (as already suggested by other authors), making the latter monophyletic. *Polyophthalmus* is also monophyletic and nested within *Ophelia*. *Ophelia* is paraphyletic and contains another internal clade, made up of *Ophelina, Armandia* (both paraphyletic), *Ammotrypanella* and *Tachytrypane,* defined by the presence of lateral and ventral furrows along the whole body. Therefore, most genera of the family are not monophyletic, which suggests the need for changes in their current taxonomical *status* in order to reflect actual phylogenetic relationships. The same idea also applies to the subfamily system, since Opheliinae becomes non-monophyletic if Ophelininae is kept valid. In Chapter II, the opheliid species are catalogued.

Keywords: Opheliidae, Polychaeta, Systematics, phylogeny, Cladistics, catalogue.