

DNA BARCODING REVEALS BOTH CRYPTIC AND TRUE CIRCUMPOLAR SPECIES IN ANTARCTIC LYSIANASSOIDEA (CRUSTACEA, AMPHIPODA)

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Recent molecular analyses revealed that many so-called 'circum-Antarctic' benthic crustacean species appeared to be a complex of cryptic species with restricted distributions. In this study we used DNA barcoding to detect possible cryptic diversity and to test the circumpolarity of species belonging to the amphipod genus *Orchomene* s. lat. (superfamily Lysianassoidea). The analysis of mitochondrial cytochrome c oxidase I sequences indicated (1) a genetic homogeneity among specimens from remote sampling sites in some species and (2) genetically divergent, cryptic taxa in other species. In addition, the DNA barcoding served as a quick survey for species diversity and enabled us to detect new species within the *Orchomene* complex. The results were confirmed by further analyses based on 28S rRNA sequences.

The detection of cryptic species may modify our current views on the species richness and distributions in the Antarctic Lysianassoidea, the most abundant amphipod group in the Southern Ocean. As polar regions are more affected by climate change than others, research activities leading to biodiversity inventories are of particular importance. This may serve as a basis for monitoring and conservational efforts. In this context, DNA barcoding is a rapid and effective tool.