Editorial

Teleostean otoliths are calcified structures that are unique among vertebrates in the sense that they are not parts of skeleton but specialised acellular concretions of calcium carbonate of the inner ear in bone fishes. Otoliths are used as indicators of fish age because of differentiated daily and seasonal growth (Curin-Osorio and coauthors, this issue), and indicators of the life history of fishes through the analysis of their chemical microelements (Morat and coauthors, this issue). In addition, the species-specific character of otoliths is also used in many fields such as sensory biology, palaeontology, archaeology and feeding ecology, since they often are the only remains of a fish that can be used to identify species or populations. One of the main questions that remain to be answered is which otolith morphological characters are determined by genetic factors and which by environmental factors. The featured article by Teimori and coauthors (Teimori A., L.A.J. Jawad, L.H.Al-Kharusi, J.M.Al-Mamry and B. Reichenbacher; Late Pleistocene to Holocene diversification and zoogeography of the Arabian killifish *Aphanius dispar* inferred from otolith morphology) in this volume of *Scientia Marina* shows how otoliths can help to understand phylogenetic relationships based on quantitative, and hence objective, morphometric characters. The development of otolith morphological methods to determine phylogenetic and biogeographic relationships in fishes is suitable especially in palaeontology studies, where the use of genetics is often not possible. The results have revealed that otolith morphological characters that are under genetic control are strikingly different from those that are under the influence of environmental factors. A clear spatial structure of the populations is detectable, suggesting that the environmental flexibility of *A. dispar*, vicariance events during the last glacial maximum (21000-18000 BP), dispersal in the course of the early Holocene sea-level rise, and Holocene to present-day interruption of gene flow at the Strait of Hormuz have shaped the intraspecific differentiation of *A. dispar*. We can conclude that Cyprinidontiforms living in salt water pools in desert areas are ideal for testing biogeographic, evolutive and phylogenetic hypotheses because of their spatial distribution in truly isolated populations.

This issue of *Scientia Marina* also offers you scientific articles on the biology and ecology of a range of organisms belonging to several invertebrate groups and also fishes of commercial importance. There are also articles related to modelling, to beach management and to marine protected areas. In addition, you will also find the biography of Andrés Maldonado by B. Alonso and J.I. Díaz. Maldonado was director of our home institution, the *Institut de Ciències del Mar*, from 1987 to 1991, at a time marked by the expansion of our research areas beyond biological and fisheries oceanography into marine geology and physical oceanography.

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