When and why did fish invade freshwaters?

Olga Otero*[1]

[1]Palevoprim, UMR 7262 – Université de Poitiers, Centre National de la Recherche Scientifique – France

Résumé

The modern freshwater ichthyofaunas mainly include bony fishes (actinopterygians), and also sharks and rays. They all root in marine groups that invade continental areas since the Cretaceous and along the Cenozoic. Moreover, during the Mesozoic, several extinct taxa also entered the freshwaters including coelacanths and ganoid fishes. The fossil record documents these invasions, and in the case of extinct taxa, it is the only evidence of them. A review of these ecological transitions throughout the Meso-Cenozoic shows that they occurred throughout the time. However, the Cretaceous seems to be a particularly favourable time for them, especially as otophyses, the clade that dominates freshwater environments worldwide today, are diversifying. The analysis of these invasions in their phylogenetic context enables us to identify taxa that colonised freshwater several times over the course of time and in different regions, such as certain rays (e.g., *Dasyatis* s.l.), cichlids (with the success that we know in the lakes of the East African rift), or puffer fish (*Tetraodon*). The discussion focuses on the apparent simultaneity of certain invasions and on the palaeoenvironmental and biological contexts that seem to favour them.

Mots-Clés: ecological transition, invasion, Mesozoic, Cenozoic, vertebrate, freshwater

*Intervenant