

Palaeobiogeography of Cretaceous Bony Fishes (Actinistia, Dipnoi and Actinopterygii).

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Dispersal and vicariant patterns have been used as opposite concepts to explain biogeographical histories of organisms. Vicariance has been preferred to dispersal because the former is said to be falsifiable while the latter is regarded as a contingent hypothesis. If included in a temporal framework, however, a sister-group relationship between two taxa could be more parsimoniously explained by a dispersal event if both taxa are not contemporaneous in time.

Published phylogenies of various clades of bony fishes are compared with evolution of the paleogeographical framework during the Cretaceous, and possible causes involved in the observed patterns, such as vicariant events, dispersal events or radiation are suggested. Most Cretaceous patterns concerns east-west events (vicariance and dispersal) rather than north-south events. This is probably because the separation of Laurasia and Gondwana is already underway in the Late Jurassic and affected Cretaceous faunas only weakly. Late Cretaceous dispersal patterns constitute a more common phenomenon than previously expected. It is suggested that the entire autoecology of the fishes is a more significant parameter affecting dispersal ability than only their allegedly capacity to tolerate salt waters.