

Inoceramid bivalves are one of the main marine invertebrates of the Late Cretaceous. Starting in the 'mid' Cretaceous (Albian-Cenomanian) and lasting almost to the end of the period, they were experiencing real booming, in global scale. They become extinct with the end of the Cretaceous, surviving a very serious crisis already in the mid-Maastrichtian, for unknown reasons (sometimes, this mid-Maastrichtian crisis is regarded as their final extinction, however, there is no good reason to exclude from Inoceramidae the genus *Tenuipteria*, which lasted till the end of the Stage.) Inoceramids are famous of their huge sizes (the size of the largest specimens is estimated for 3 metres in length - see Kauffman et al. 2007) and mass occurrence.

For decades, inoceramids are regarded as being a group with very wide biogeographic distribution: it is claimed that up to 75% of inoceramid species could have been cosmopolitan (global in distribution). Additionally, the group is thought to be extremely rich taxonomically (at the species level) and evolving exceptionally fast. It is difficult to combine in a single clade all of these features. Consequently, either inoceramids were exceptional indeed, or their current understanding is inadequate.

The aim of the project is to demonstrate the latter. Based on available data-bank (completed by the author) it is suggested that cosmopolitan distribution of inoceramid species is a characteristic feature of the group during only short intervals in the group history. Otherwise, inoceramid species were limited in their occurrence to a single / maximum two biogeographic provinces. It seems then that the intervals in inoceramid history dominated by cosmopolitan species is not the 'regular state' of the group. This state appears during very specific oceanographic conditions. The reason of their inadequate interpretation was the lack of the standardised taxonomic interpretation of inoceramids for all biogeographic regions, gaps in their recognition, and inadequate methodology.

In a frame of this project, inoceramid record from 4 biogeographic units (Euramerican biogeographic region; Weddellian Province, North-Pacific Province, and East-African Province), with good or very good inoceramid record, will be analysed with application of the same procedures. The record will be subdivided into as many as possible time intervals and combined then to construct the scheme of changing biogeography through time (biogeographic dynamics). Also, taxonomic richness and structure of inoceramid faunas (biodiversity) will be analysed.

Because inoceramid taxonomy is mostly phenetic, their biogeography will be analysed with the application of mathematical-statistical methods which do not require the rigorous taxonomy (phenetic biogeographic methods; and classification of areas based on contained taxa).

Proving that at the species level inoceramids were cosmopolitan during short lived intervals, characterised by very specific oceanographic conditions, may potentially be very important in paleoceanographic studies. Knowing precisely inoceramid succession and their biogeographic and evolutionary history, it may be possible to suggest that something 'exceptional' was happening to the world-ocean. The results of the project should also give better understanding of biogeography, biodiversity and of the evolution of Inoceramidae; better understanding of biogeographic-evolutionary processes in general, and finally, enable proper estimation of inoceramid potential in time correlations, in global scale.