

Evolution and palaeoecology of vertebrates from Devonian and Carboniferous carbonate deposits of southern Poland

Popular summary

The first wider research on the fish fossils from carbonate rocks of the Middle Palaeozoic of southern Poland was done in the fifties and sixties of the 20th century. However, they were restricted almost only to the Devonian of the Holy Cross Mountains. Rich collections of fossil fishes, housed today in a few scientific institutions, were assembled then. After a long break, the studies were resumed in the nineties, but they were focused mainly on microfossils of cartilaginous fishes, obtained as a by-product of the search of conodonts, and on the remains of placoderms.

In the recent years, the investigations on Palaeozoic fishes in Poland were broadened both in their geographic and stratigraphic aspects. They concerned not only the Devonian, but also the Silurian and Lower Carboniferous. In addition to the material from the Holy Cross Mts., fossils from the area of Krakow and Sudetes, as well as the boreholes in the Upper Silesia, Pomerania and Lublin region became available. Some of the earlier studied sections in the quarries were renovated due to the resumption or the change of direction of exploitation, and also a few palaeontological outcrops were deliberately prepared. New specimens of the fish groups hitherto unknown from the territory of Poland or insufficiently studied appeared in the collections.

The aim of the project is to create a synthesis of available, but thus far dispersed information on the fish assemblages occurring in the Middle and Late Devonian and in the Early Carboniferous in this area, largely based on the fossils from carbonate rocks. The research will comprise armoured fishes (Placodermi), acanthodians (Acanthodii), cartilaginous fishes (Chondrichthyes) and bony fishes (Osteichthyes). A reconstruction of taxonomic contents of these assemblages and an analysis of their diversity in time and space will be done. The material basis of the research will be as follows: the old collections, requiring revision; relatively new collections, but still unstudied; and finally the specimens recovered during the project. All of the specimens will be – if possible - dated by conodonts. The morphological analysis of the fossils will be done using conventional methods and modern equipment, such as 3D or CT-scanners.