

useful to define new characters or to precise grossmorphological features, internal structure, entire architecture, osseous relationships; but is a complementary one which has to be interpreted only in close reference to the original sample.

THE MIOCENE ECHINOIDS OF POLAND

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The Miocene echinoids of Poland (Paratethys) are coming only from Badenian deposits – Middle Miocene; they are occurring in Central, Southern and South-eastern Poland. State of preservation of specimens is various – from completely preserved tests to their fragments and separate elements. Their collections were examined with great care by Mączyńska in 1977-1988 years. The faunistic assemblages of particular regions are dominated by mollusca, the echinoids of this area is an accessory element, but it is also attracts attention by the variability of forms which represent it. Collected fauna is coming from different facies. Is worthy of notice fauna from Korytnica Basin with *Heterostegina* sands (Holy Cross Mountains, Central Poland) where in great number occur representatives of genus *Echinocyamus* PHELSUM and also *Parasalenia fontannesi* COTTEAU. Also on area Raków-Klimontów Shore (Southern Poland) in finesands deposits of Świniary outcrop occur numerous concentrations of echinoids forming shoals, in which dominated representatives of genus *Psammæchinus* L. AGASSIZ and DESOR, with a majority of their specimens preserved in their lifetime position, frequently with spines and Aristotle's lanterns. The outcrop at Świniary, different from all other Badenian localities in Poland, can be considered unique in Europe.

The assemblage of echinoids from Poland (Paratethys), from the Badenian – Middle Miocene is represented by 27 species and 6 specifically indeterminable which belong to 15 genera.

As indicated by the results of geological-paleontological studies, the Middle Miocene sea was not very deep in the area discussed. The depth of the sea amounted probably about 12 m (at Korytnica Basin), to 30 m in the Płoztocz Region, in some places, 100 m. The water had normal or nearly normal salinity, favorable in particular to the development of malacofauna and the water temperature could reach 25°C. The Middle Miocene species of echinoids occurring in Poland are mostly known from the Miocene deposits of France, Ukraine, Hungaria, Greece and Egypt.