

**„PALEOECOLOGICAL REMARKS ABOUT THE LATE CRETACEOUS
FORAMINIFERIDS FROM THE FRYDEK — TYPE MARLS (SUBSILESIAAN UNIT,
POLISH OUTER CARPATHIANS)”**

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Abstract: Foraminiferal assemblages from the Campanian to the Maastrichtian deposits of the Frydek - type marls have been studied within the Lanckorona - Żegocina Zone in the Wiśniowa and Rajbrot tectonic windows (the Subsilesian Unit, Polish Outer Carpathian). The microfauna from the both places partly consist of the same species, but there are a few taxa which occur only in materials from the Wiśniowa tectonic window. In majority samples planktonic and benthic calcareous foraminiferids are predominant.

Key words: Lanckorona - Żegocina Zone, Frydek - type marls, foraminiferids, paleoecology.

Geological setting

The Lanckorona - Żegocina Zone belonging to the Subsilesian Unit (Polish Outer Carpathians) extends from the Skawa River in the West to the Rajbrot village in the East (Skoczylas - Ciszewska, 1960). That structure consists of small tectonic windows that occur at the front of the Magura Nappe overthrust. One of them is the Wiśniowa tectonic window occurring in the middle part of this zone, and the most eastern part of this structure is formed by the Rajbrot tectonic window.

The Frydek - type marls which appear within above mentioned tectonic windows have been studied. Deposits of these marls from both localities are mainly pelitic beds built up of grey, marly claystones, rather hard with intercalations of thin- and medium bedded sandstones and exotic blocks. However, marls from Rajbrot are a little softer than ones from Wiśniowa and they contact with the adjacent Żegocina marls and variegated sediments (Gasiński et al., 1999) Studied foraminiferids come from the Frydek - type marls, that have been collected from the Podlesie and Kluzówka creeks (the Wiśniowa tectonic window) and from the Uszwica and Boczny creeks (the Rajbrot tectonic window).

Micropaleontological comments

Examined foraminiferal associations consist of planktonic (even up to 65%) and benthic calcareous as well as agglutinated species. Besides foraminiferids there have been found ostracods, fragments of echinoids, sponge spicules. The age of the Frydek - type marls has been established mostly on the base of the planktonic foraminiferids. Marls appear in the Wiśniowa tectonic window are considered as the Late Campanian and the Early Maastrichtian (Robaszyński, Caron, 1995, Brandys, 2000b). Whereas, marls from the Rajbrot tectonic window have been defined as the Campanian - Late Maastrichtian (Gasiński et al., 1999, Brandys, 2000a).

There have been recognized a lot of the same taxa in sediments from both places. The planktonic species belong to *Heterohelix*, *Globotruncana*, *Rugoglobigerina*, *Hedbergella*, *Globigerinelloides*, *Globotruncanella* genera. However, only within microfauna from Rajbrot have been found characteristic planktonic taxa such as: *Racemiguembelina fructicosa* (Egger), *Rosita contusa* (Cushman), and *Abathomphalus mayaroensis* (Bolli) that indicate on the latest Maastrichtian age of the examined marls (Brandys, 2000a). There is a similarity in the compositions of the benthic foraminiferids, but within studied materials from the Rajbrot tectonic window have been recognized a number of tubular forms (mainly *Rhabdammina*) and quite a lot of representatives of *Nothia*. While deposits from the Wiśniowa tectonic window include only a few specimens. Moreover, when taxa belonging to the agglutinated benthic foraminiferids genera like: *Ammodiscus*, *Dorothia*, *Gerochammina*, *Glomospira*, *Rzehakina* are very scarce in marls from Wiśniowa, they occur in a relatively large number within marls from Rajbrot. Nodosariids and calcareous benthic foraminiferids (for example: *Lenticulina*, *Gyroidina*, *Gyroidnoides*, *Osangularia*) have been found in the Frydek - type marls from both places and their number is comparable and relatively abundant. Moreover, among studied microfauna only from the Wiśniowa tectonic window characteristic taxa have been recognized: *Reussella szajnochae* (Grzybowski) and *Daviesina minuscula* (Hofker).

Paleoecological remarks

The quantitative analysis of the studied microfauna from the Frydek - type marls from the Wiśniowa and Rajbrot tectonic windows have been done. It shows that planktonic foraminiferids taxa are predominant in many samples from both localities.

The relation between keeled and non - keeled planktonic foraminiferids has been also studied. The presence of non - keeled epipelagic taxa is predominant among studied materials from both places. That indicates that examined Frydek - type marls were deposited in the shallow water environment - the lower part of the shelf or/and the upper continental slope (Sliter, 1972). The existence of *Reussella szajnochae* (Grzybowski) and *Daviesina minuscula* (Hofker) - which is characteristic taxa for rather cold water environments, within deposits from Wiśniowa area has not been taken into consideration due to their scarcity.

Conclusions

The microfauna from the Frydek - type marls occurring in the Wiśniowa tectonic window corresponds to the studied foraminiferal assemblages from deposits recognized in the Rajbrot tectonic window. Foraminiferids indicating on the Late Campanian and the Early Maastrichtian age of marls from Wiśniowa area consist of many the same species of foraminiferids as those found within marls from Rajbrot area.

Thus, Frydek-type marls from both localities disclose not only lithological but also microfaunal resemblance. It implying that these sediments were deposited in the similar shallow marine environments at the same period of time.

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