



Microbial structures as indicators of energy of paleoenvironment - example from flysch basin (Polish Outer Carpathians, Menilite Formation, Oligocene)

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Microbial structures are often used in reconstructions of paleoenvironment. Because of their specific character and fragility they can be treated as the most sensitive recorders of prevailing physical and/or chemical conditions during depositional process.

To date, few attempts to summarize and/or categorize microbial microstructures were made. Unfortunately, these results were based on samples collected from specific environments, therefore their use was somehow restricted (either: stratigraphically or spatially).

This work introduces results of petrographical studies of samples collected from three sections in the Polish Outer Carpathians. All samples are of the Paleogene age (Oligocene) and belong to the Menilite Formation. This formation is interpreted as result of interplay between pelagic and turbidite sedimentation in the Carpathian flysch basin on slopes, continental rise, basin bottom and submarine ridges. Majority of microstructures observed, show striking similarity to microstructures presented in the most recent model by Ochmański (2007), which combined morphology of microbial structures with energy of depositional environment. Microstructures that differ in appearance from structures presented in that model are explained and related to general continuum (deposition from suspension => traction). Taking into account that

previous dataset was based on samples from the Holy Cross Mountains (Poland), belonging to so-called: “Silurian Graptolitic Shales”, interpreted as sediments of passive margin, it suggests that the cited model is valid for wide range of microbial structures regardless age or general geotectonic setting of the deposits.