

Middle and Late Jurassic tube-dwelling polychaetes from the Polish Basin: diversity, palaeoecology and comparisons with other assemblages

Jakub Słowiński, Olev Vinn, Manfred Jäger, and Michał Zatoń

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This study describes diverse assemblages of serpulid and sabellid polychaetes from various Middle and Upper Jurassic (upper Bajocian to lower Kimmeridgian) deposits of the Polish Basin. Twenty four taxa are reported in total, including two new species (*Cementula radwanskae* sp. nov. and *Filogranula spongiophila* sp. nov.). Abundance, distribution, and colonization patterns of serpulids and sabellids significantly depended on many palaeoenvironmental variables including the nature of the colonized substrate and its overall shape, food supply, and hydrodynamism. The most diverse assemblages have been noted on the Middle Jurassic shells inhabiting soft muddy substrates, on hardgrounds and oncoids, whereas the lowest biodiversity levels have been found on the Middle Jurassic hiatus concretions and Kimmeridgian oyster shell beds. Some species are clearly associated with certain substrate types, whereas stratigraphic interval is not that important. Middle Jurassic mobile rockgrounds (hiatus concretions and oncoids) and hardgrounds are characterized by the most similar species associations, while Middle Jurassic shelly substrates from soft-bottom environments and Upper Jurassic shell beds and sponge build-ups are most dissimilar with respect to the colonizing tube dwelling polychaete taxa. Among the diverse assemblages of the encrusting faunas, serpulid and sabellid tubeworms are the most abundant constituents in the majority of settings, what is explained by their opportunism and ability to effectively outcompete other contenders. In the majority of locations, the most abundant tube-dwelling polychaete is the ubiquitous sabellid *Glomerula gordialis*, followed by the serpulid species *Propomatoceros lumbricalis*. The dominance of these species is congruent with many other serpulid and sabellid communities inhabiting various Jurassic palaeoenvironments.

Key words: Sabellidae, Serpulidae, exrusters, taxonomy, tubeworms, Mesozoic, Poland.

Jakub Słowiński [jakub.slowinski@us.edu.pl] and Michał Zatoń [mzaton@wnoz.us.edu.pl], University of Silesia in Katowice, Institute of Earth Sciences, Będzińska 60, 41-200 Sosnowiec, Poland. Olev Vinn [olev.vinn@ut.ee], Department of Geology, University of Tartu, Ravila 14A, 50411 Tartu, Estonia. Manfred Jäger [langstein.jaeger@web.de], Lindenstrasse 53, 72348 Rosenfeld, Germany.

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