

## Frasnian-Famennian brachiopod extinction and recovery in southern Poland

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The new trench Z-17 situated in the Dębnik anticline (Cracow Region, southern Poland) exposed strata representing the Frasnian-Famennian boundary interval. The latest Frasnian crisis interval is characterized by the fauna of *Ryocarhynchus tumidus* interval consisting of the nominal species, *Barroisella campbelli*, *Biernatella polonica*, and representatives of *Lingulipora*, *Athyris*, ?*Retichonetes*, *Longispina*, *Cyrtospirifer* and *Warrenella*. The first brachiopods that appears immediately above the F-F boundary in the survival interval include the unidentified rhipidomellid, *Praewaagenoconcha* cf. *speciosa*, and *Pampoeclorhynchus geniculatus* sp. nov. The fauna in the succeeding layer is dominated by *P. geniculatus* and *Cyrtospirifer minor*. The earliest Famennian repopulation assemblage consists of representatives of *Barroisella*, ?*Rhysochonetes*, *Praewaagenoconcha*, *Nigerinoplica*, *Schizophoria*, unidentified rhipidomellid, *Pampoeclorhynchus geniculatus* sp. nov., *Chapinella striata* sp. nov., *Crinisarina angelicoides*, and *Cyrtospirifer minor*. Low diversity and low frequency brachiopod assemblages consisting of stunted specimens characterize the succeeding brachiopod intervals spanning the remainder of the *Palmatolepis triangularis* Zone. Basinal dysoxia prevailed in the region for the duration of *Pa. triangularis* Zone. Resumption of aerobic bottom-water conditions is marked by the appearance of brachiopods of the *Dmitria gibbosa* interval (*Pa. crepida* Zone). Resumption of favorable environmental conditions during the recovery interval is marked by an increase in brachiopod diversity recording the beginning of a strong post-extinction re-diversification of the fauna.

**Key words:** Brachiopoda, Frasnian, Famennian, extinction, recovery, southern Poland.

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