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Siliceous biota (radiolarians and sponges) and the Late Devonian biotic crisis: The Polish reference

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The radiolarian species *Astroentactinia paronae*, *A. stellata, Trilonche echinata, T. grandis, T. nigra, Haplentactinia inaudita*, and *H. rhinophyuosa* are common in late Frasnian to early Famennian rhythmic, calcareous-marly sequence of the southern Holy Cross Mts., Poland. They are known also from coeval abundant siliceous biota assemblages from the carbonate shelf of East European Platform including more than 150 taxa of radiolarians. However, in ecological terms, the moderately diverse Polish microfaunas (34 species of 12 genera) are more similar to these from Kolyma and Alaska, also marked by abundance of sphaerical entactiniids and near-absence of bilateral-symmetric Ceratoikiscidae and Palaeoscenididae. A succession of two distinctive siliceous sponges associations is established in the incipiently submerged Holy Cross carbonate platform: from an ephemeral, diverse, mostly rigid-skeletal lithistid-hexactinosan foreslope assemblage (initial phase of the late Frasnian Kellwasser Crisis), to long-lasting, basinal loose-skeletal hexactinellid-demosponge faunas (appearing abundantly just prior the Frasnian-Famennian boundary in the late *Palmatolepis linguiformis* Zone). Such regional blooms of marine siliceous biotas, parallel to temporary retreat of calcareous biota, are demonstrated worldwide for the Kellwasser Crisis. These suggest probable causal links with cooling pulses and at least regional, volcanically induced eutrophication.

Key words: Radiolaria, Porifera, palaeoecology, mass extinction, Frasnian, Famennian, Devonian, Poland.

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