

Ostracods in the aftermath of the end-Permian extinction: the Meishan GSSP (Zhejiang Province, South China)

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The end-Permian extinction was the most severe suffered by the biosphere during the Phanerozoic. In the marine realm over 90% of species were lost. Ostracods were also deeply affected by these events, with a mean global specific extinction rate of 93%. Little is known about recovery patterns and processes of ostracod faunas in the Early Triassic, but it is assumed to be complete in the late Anisian (Middle Triassic).

The beds surrounding the Permian-Triassic Boundary (PTB) at the Meishan section (GSSP of PTB, Zhejiang Province, South China) have been intensively studied for geo/biochemical, sedimentological and palaeontological markers. However, very few studies focused on the entire early Triassic record at this key section. A high resolution sampling of the late Permian beds (Changhsingian) allowed our team to distinguish 2 main extinction phases for ostracod faunas: the first one relatively abrupt (OME, Ostracod Main Extinction) and the second one more progressive (OFEI, Ostracod Final Extinction Event). Samples of Early Triassic age (Griesbachian) were collected from the entire Yinkeng formation and the base of the Helongshan formation, spanning 4 conodont zones. Very few survivors are found in the first centimetres of the Early Triassic. Most of the Yinkeng formation is barren of ostracods, they “reappear” in the uppermost part of this formation and diversify in the Helongshan formation. These faunas are poorly diversified compared to late Permian ones and several show abundant specimens of *Polycope* (Polycopidae), reaching 100% of genera in one assemblage. Such thriving of *Polycope* specimens has been reported only once at the Pliensbachian-Toarcian transition in Portugal and related to a shifting environment. Recent *Polycope* have been reported from a wide variety of environments (e.g., Antarctica, Bahamas, Brazil, Greece, Greenland, Mexico). The only synthesis on ecological requirements of this family states that they thrive in relatively cold and well oxygenated environments. Consequently, we relate the proliferation of *Polycope* specimens in the Griesbachian of Meishan section to the activation of an upwelling cell of cold and well oxygenated on the margin of the South China Block bathed by Panthalassa.

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