



High-resolution variation of ostracod assemblages from microbialites near the Permian-Triassic boundary at Zuodeng, Guangxi, South China

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After the end-Permian mass extinction (EPME), the marine environment was considered extremely toxic, which was mainly due to the anoxic, high-temperature conditions and ocean acidification. Thus, the ecosystem contained few organisms. We describe a new ostracod fauna from the microbialites-bearing Permian-Triassic (P-Tr) strata at Zuodeng, Guangxi, China. One thousand and seventy ostracod specimens were extracted from forty-eight samples. Fifty-three species belonging to fourteen genera were identified. Ostracods, primarily from the Family Bairdiidae, were extremely abundant in the microbialites and presented simultaneous Paleozoic and Meso-Cenozoic affinities overall the section, which suggests that the ostracods were opportunists able to survive within this special microbial ecosystem with sufficient food and scarce competitors and predators rather than undergoing a rapid and early recovery after the EPME. The similarities and differences among the ostracod faunas in the microbialites at the P-Tr boundary sections around the Paleo-Tethys indicate that there was a long-distance dispersion of ostracods. However, the faunas still maintained endemism at the specific level. Previous studies have regarded microbialites as whole units, and it is difficult to detect environmental changes within a microbialite interval based on paleoecological groups of (super) families. In this study, high-density sampling was applied to identify changes of abundance, diversity, and composition of assemblages of ostracods. The changes of five dominant species through the section exhibited a six-stage evolutionary trend, which indicates that the microbialite environment was not entirely constant but fluctuated during the post-extinction interval.