

## **Paris Biota: At the dawn of modern marine faunas?**

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The Permian/Triassic boundary (PTB; ~252 Ma) crisis was undoubtedly the most severe mass extinction of the Phanerozoic, killing over 90 % of marine species, and about 70% of continental vertebrates. This event also marked one of the major faunal shifts of the Phanerozoic with the transition between Sepkoski's Paleozoic and Modern evolutionary faunas. This transition was not instantaneous but took place at least throughout the Early Triassic, if not longer. At the time, the environment was very unstable leading to a succession of smaller scale biotic crises. These are often assumed to have postponed the post-PTB biotic recovery. The most severe of these biotic crises occurred around the Smithian/Spathian boundary (SSB). Unfortunately, although this environmentally-unstable short interval is rather well characterized by geochemical proxies, its fossil record is particularly scarce, leaving a significant gap in the current knowledge on the post-PTB biotic recovery. In such context, a highly unexpected, diversified and complex fossil assemblage dated from immediately after the SSB was recently uncovered in the western USA basin. Named the Paris Biota, its components open a stunning new window on Early Triassic ecosystems and on the rise of modern evolutionary faunas. Comprised of Lazarus and new taxa for the Early Triassic, this assemblage reflects a diversified and complex community in the immediate aftermath of the SSB crisis. It also constitutes a fully recovered ecosystem contrasting with other known Early Triassic faunas. Thus, in the frame of the post-PTB crisis and the immediate aftermath of the SSB, the considerable new information yielded by the Paris Biota will stimulate the already lively debate regarding the modalities and tempo of the PTB biotic recovery.

**Key words:** Early Triassic, Smithian/Spathian boundary, biotic recovery, marine ecosystems, western USA basin.