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changes

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ABSTRACT

Several mass extinctions are known from the history of life, but knowledge about "minor" biotic crises remains incomplete. The Ladinian is the second stage of the Middle Triassic epoch. Available reconstructions of the diversity dynamics of fossil organisms across the entire Triassic allow the proposed Ladinian biotic crisis to be investigated. Total biodiversity curves (both the conventional curve and that based on sampling standardization) fail to identify the crisis, but this may be explained by low resolution data or "noise". In fact, the global generic diversity of ammonoids, brachiopods, and tetrapods declined significantly (by 1.1–2.5 times) during the Ladinian, as did the species diversity of conodonts. Bivalves radiated, but their origination rate also decreased during the Ladinian. Land plants were apparently unaffected. Based on the representative regional record for the Northwestern Caucasus, the number of macroinvertebrate genera dropped by ~7.5 times, and brachiopods almost totally disappeared; foraminifers were also affected significantly. Thus, the proposed biotic crisis appears to have been selective. It appears the Ladinian biotic crisis was a relatively long-term event, and its magnitude is comparable to that of other "minor" mass extinctions, e.g., those of the Silurian, Early Jurassic, or end-Cenomanian. There are several possible explanations for what caused the Ladinian biotic crisis. It is possible that global climate cooling was responsible, although it is unclear why the palaeobiogeographical differentiation was not favourable for a biotic radiation. A eustatic explanation for the drop

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