

## **The Triassic faunal recovery in the Dolomites (Southern Alps, Italy)**

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The study of the Triassic faunas is of increasing interest in order to trace the general course of rediversification in the marine environments after the end-Permian mass extinction. Studies carried out during the last decades (see references in Friesenbichler et al. 2021) demonstrated that the most important phase of recovery of the biota occurred in the Middle Triassic, after a complex and protracted Early Triassic lag phase. These studies highlighted also the role played by the resurgence and diffusion of the carbonate platforms in the increase of general diversity and in the change of the taxonomic composition of the associations.

The Dolomites (Unesco WH) are one of the most intensively investigated regions of the world from a geological point of view. The dynamics and evolution of their Triassic carbonate platforms, in particular, have been the subject of a vast literature. These deposits are also renowned for their palaeontological richness, making the Dolomites an exceptional reference area for the understanding of the Triassic faunal recovery. Extremely rich and diversified faunas dating back to the late Anisian are known since the 19th century and are currently under study by the proponents. The abundant and beautifully preserved fauna of the San Cassiano Formation (late Carnian) is also celebrated for its high taxonomic diversity. On the other hand, the Ladinian marine biota contrasts for its relatively poor palaeontological documentation. In this context, a late Ladinian Fossil-Lagerstätte recently discovered at the foot of Monte Pelsa (Civetta Group, Belluno Dolomites, also Unesco WH) may help to fill this gap. Preliminary studies (Tintori 2019; Dominici et al. 2021) show that the so-called "Pelsa-Vazzoler assemblage" is characterized by a much higher diversity, both taxonomical and ecological, than any other coeval Lagerstätte so far known. It includes both marine invertebrates (molluscs, echinoderms, brachiopods, corals, sponges) and vertebrates (fishes). Terrestrial plants and insects are also present in the assemblage. The invertebrates of the "Pelsa-Vazzoler assemblage" are currently being studied by A. Tintori (Institute for Triassic Lagerstätten) and by S. Dominici and S. Danise (Dipartimento di Scienze della Terra, University of Florence). The main aims of the present project are:

- 1) taxonomic analysis of the remaining fauna in order to have the most complete picture of the biota and to make a reliable restoration of the tropical environment in the carbonate platform-to-basinal settings of the area during the Ladinian.
- 2) study of the main Triassic phase of faunal recovery in the Dolomites based on selected groups with different trophic habit and mode of life.
- 3) large scale palaeobiogeographical comparisons with Fossil-Lagerstätten of other areas in order to understand the role played by the dynamics of dispersal and faunal exchanges on the macroevolutionary events driving the overall trajectories of the recovery.

### References

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