

The latest Permian Red Ammonoid Limestone and the basal Triassic Sponge-Microbial buildups, Time Specific Facies on the Cimmerian margin of Central Iran and Armenia

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Walliser (1984) introduced the term “Time-Specific Facies” (TSF) to refer to unique facies typical of particular narrow intervals, some of which are related to bio-events or to biological crisis. The latest Permian Red Ammonoid Limestone, 4-5 m thick (Leda et al., 2014) is one of these TSF. It was deposited just before the Permian great dying on the Cimmerian side of the Neotethys (Central Iran, NW Iran and Armenia) and records the most complete ammonoid and conodont succession of the late Changhsingian (8 ammonoid horizons and 6 conodont zones, Korn et al., 2015). Absent during Induan time, this TSF come out again during the lower Olenekian on the Gondwana side of the Neotethys, from Timor to Oman (Baud, 2013). This Facies is similar to the condensed younger Triassic cephalopod limestone known as red Hallstatt limestone. The next TSF consists of the Sponge-microbial buildups (SMB) deposited on the same Cimmerian margin just following the end-Permian great extinction up to the basal Dienerian (Early Induan). The main localities are Shahreza (Central Iran, Baud et al., 2018) and Chanakhchi (S Armenia, Sahakyan et al., 2017, Friesenbichler et al., 2018). It differs from the well-known South China Permian-Triassic boundary short-lasting microbialites (PTBms) by longer duration, deeper water deposition, and cohabitation of sponges with microbialites. The unique, oxygenated, deep ramp setting of the Cimmerian margin at the Permian-Triassic transition allowed the expansion of these two TSF.

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