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Preliminary comparative study of middle Anisian vertebrate ichnoassociation from South-Eastern Alps

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Anisian vertebrate tracks from the south-eastern Alps are known since the first decades of 1900s (Abel, 1926). The sedimentary units yielding footprints are characterized by the alternation of limestone influenced by terrigenous supply with mere marine and volcanic layers allowing a precise dating.
In this study, we compare four different ichnoassociations from three different outcrops in the South-Eastern Alps correlating them chronologically and sedimentologically. They were found to be subsequent in time from Lower Pelsonian (Bad Gfrill-Voltago Conglomerate; Todesco, 2007) through middle Pelsonian (Bad Gfrill- Giovo Formation) (Valdiserri et al., 2006) and basal Illyrian (Piz da Peres- Richthofen Conglomerate; Todesco et al., 2008) to the middle Illyrian (Val Duron-Morbiac Limestone; Avanzini et al., 2007).
In all these ichno-associations, Rhynchosauroides, an ichno-genus referable to a lizard - like trackmaker well known in the European Anisian, is dominant. Within this group at least four different morphotypes are known, probably reflecting both intraspecific variation (i.e. sexual dimorphism) and different ichnospecies.
Although the Chirotheridae group, referred to Archosaurian trackmakers Synaptichnium is represented in both Pelsonian ichnoassociation of the Bad Gfrill outcrop, while Chirotherium , Isochirotherium and Brachichirotherium are recognized both in Pelsonian and in Illyrian ichnosites with a incremental presence in the Illyrian
The ichofamiliae Rotodactylidae und Procolophonidae seem well represented in the Pelsonian strata but absent in the Illyrian ones.
The preliminarly comparative analysis of these four correlated ichnosites and the comparision with the yet known ones (Avanzini and Mietto 2008) pointed out the expected predominance of the Lepidosaurian-Archosaurian association typical for the middle Triassic ichnofauna. The incremental presence of the Chirotherian track in Illyrian and the presence of the Procolophonichium just in the Pelsonian ichno-association seem to corroborate the hypothesis of two different ichoassemblages in the late Middle Triassic (Lucas, 2007). Further studies could allow a better understanding of the evolution of the Chirotherian tracks group and the systematics of the Rhynchosauroidae ichnofamily.

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