



The continental Triassic faunal succession of southern Brazil

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The south Brazilian Triassic package comprises two second-order depositional sequences: Sanga do Cabral (Early Triassic) and Santa Maria (Middle-Late Triassic) supersequences, separated by an unconformity. The first one includes ephemeral, low sinuosity fluvial deposits developed on a low gradient floodplain. The presence of rhytidosteid amphibians and procolophonids (Procolophon) suggests a late Induan age for this sequence. By its turn, facies association of the Santa Maria Supersequence indicates low-sinuosity fluvial rivers, deltas and lakes. This supersequence can be further subdivided into three third-order sequences as follows: Santa Maria 1 (SM1 -Ladinian), Santa Maria 2 (SM2 - Carnian-early Norian) and Santa Maria 3 (SM3 - probably Rhaetian) sequences. The first one encompasses two distinct biozones: Dinodontosaurus Zone (=Therapsid Cenozoone), basal, dominated by dicynodonts (Dinodontosaurus), cynodonts (Massetognathus) and Rausuchians (Prestosuchus), which is coeval to the Los Chañares Fauna from the Bermejo Basin, Argentina; and Traversodontid Biozone, characterized by an almost exclusive record of traversodontid cynodonts, including Santacruzodon and Menadon, which also occurs in the Isalo II sequence from Madagascar. The SM2 also includes two biozones, from base to top: Hyperodapedon Zone (=Rhynchosauria Cenozoone) with an expressive presence of rhynchosaur (Hyperodapedon), followed by cynodonts (mainly Exaeretodon), basal dinosaurs (Staurikosaurus, Saturnalia) and a total absence of dicynodonts; and Mammalianomorpha Cenozoone (= Ictidosauria Cenozoone) with a fauna dominated by little "ictidosaurian" cynodonts (mainly Riograndia). The presence of Hyperodapedon and Exaeretodon in the Hyperodapedon Zone indicates that it is coeval with the lower fauna of the Ischigualasto Formation, Bermejo Basin, Argentina. On the other hand, the record of the dicynodont Jachaleria in the upper biozone indicates a correlation with the lower part of the Los Colorados Formation, Argentina. Finally, the SM3 is constituted by coarse-grained sediments suggesting high-energy flows. The fossil record does not include vertebrates but only conifer and ginkgo silicified logs, which not provide a precise age to this section.

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