



Dicynodonts (Therapsida, Anomodontia) from Argentina: the first phylogenetic approach

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Dicynodonts have a long history of record in Argentina where have been collected from several localities and stratigraphic levels spanning most of the Triassic. They are part of the most representative Triassic dicynodonts, the Kannemeyeriiformes, which underwent the last significant diversification of the group, which occurred in the early Mesozoic. Several authors have briefly discussed the taxonomic status of some of the Argentinean taxa, but a comprehensive revision including all materials has only recently been performed, and the validity of all known species assessed. In this revision, phylogenetic relationships of the Argentinean dicynodonts were explored for the first time. The performed phylogenetic analysis included a data matrix of 27 Pangean taxa, and 121 characters from both Permian and Triassic levels. The sampled taxa included all previously known kannemeyeriiforms, as well as representatives of several related groups. The results consist of a partially different phylogenetic hypothesis, compared with previous propositions. The Early Triassic family Shansiodontidae appears to be paraphyletic in relation to the kannemeyeriiformes. In addition, the Argentinean "shansiodontiid" *Vinceria* Bonaparte does not form a monophyletic clade with *Kannemeyeria argentinensis* Bonaparte, which presents a basal position within Kannemeyeriidae. This result indicates that these two taxa are not co-generic as has recently been suggested. The obtained cladogram shows a sister taxon relationship between the large dicynodonts *Ischigualastia* Cox from Argentina and *Jachaleria* Bonaparte from Argentina and Brazil. It also confirms the assignation of *Dinodontosaurus platygnathus* Cox to the dinodontosaurids, as it was originally proposed. Furthermore, the present revision indicates close affinities of the Early-Middle Triassic Argentinean dicynodonts with those of equivalent age from Southern Africa and Brazil. Finally, Late Triassic dicynodonts are restricted to America where Argentinean and Brazilian taxa seem to be closely related.

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