

Are ancient Triassic reptiles older than we previously thought?

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Fossil findings represent one of the most important materials for disentangling the history of life on Earth. Reptile bones of different age and of a number of different animals and plants are found throughout paleontological quarries around the world, and represent an important link to past biodiversity. Archosauromorpha is a group of ancient reptiles, which includes today's crocodiles, birds, and their extinct relatives such as non-avian dinosaurs, pterosaurs and many other more basal groups. A group of basal archosauromorphs that extended for almost 200 million years, and went extinct some 20 million years ago is Choristodera. These semi-aquatic reptiles covered a wide range of body types and ecological niches. Due to their long stratigraphical range and diversity they represent an important group from early tetrapod history. The time of origin of the group is still speculative and preceded with long timespans when the animals were known to be alive, but are not represented in the fossil record. In order to add information to gaps in the fossil records during the long temporal range of the group, new discoveries and descriptions of early choristoderan taxa are needed. I have described long bones (femurs) of a choristodere-like animal from the Late Triassic of Poland (around 204 million years ago), thus adding information to the basal archosauromorpha and possibly shifting back the time of choristodera origin. The description was conducted after an extensive literature review and bone histology analysis, which was done for the first time for choristodera group. By comparing the long bones from Poland to the earliest known choristodere material to date from England (around 201 million years ago), and to other more basal groups of Archosauromorpha, I was able to assign the material to Choristodera. The lack of cranial material, the fact that there were only three bones discovered from this enigmatic animal, and some unusual features of the bones do not allow me to assign the material to any known species of Choristodera. However, this discovery possibly shifted back the known range of choristoders for a few million years deeper into Triassic. This description along with the histology sections of such an important group of tetrapods that are choristoders is of great significance, not only for the Triassic tetrapod communities, but for tetrapod evolution, development, ecology and life history in general.

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