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Skull structure and evolution in tyrannosaurid dinosaurs

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Tyrannosauridae can be subdivided into two distinct subfamilies-the Albertosaurinae and the Tyrannosaurinae. Previously recognized subdivisions Aublysodontinae and Shanshanosaurinae are rejected because they are based on insufficient material and juvenile specimens. Our results are based upon a phylogenetic analysis using PAUP program (Swofford 1999) of 77 skull characters and seven genera (*Albertosaurus, Alioramus, Daspletosaurus, Gorgosaurus, Nanotyrannus, Tarbosaurus*, and *Tyrannosaurus*); with *Allosaurus* as outgroup. Of the 77 characters used, more than half were parsimony informative. A single most parsimonious tree was obtained with the Tree Length being 88. The analysis of cranial characters and comparison of postcranial features reveal that *Tarbosaurus bataar* is not the sister taxon of *Tyrannosaurus rex* (*contra* Holtz 2001). Their similarities are partially due to the fact that both are extremely large animals. Thus, *Tarbosaurus* should be considered a genus distinct from *Tyrannosaurus*.

Key words: Dinosauria, Theropoda, Coelurosauria, Tyrannosauridae, phylogeny, parsimonious analysis.

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