

New features of the snout and orbit of a therocephalian therapsid from South Africa

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Acta Palaeontologica Polonica 51 (1), 2006: 63-75

I describe the anterior part of the externally poorly preserved skull of a therocephalian from the Karoo Basin in South Africa, using the method of serial grinding. The skull is incomplete, and its estimated length in life is 130 mm. The skull can be assigned to the Akidnognathidae with some confidence. The stratigraphic age of the specimen and its locality are not known, but the surrounding sediment suggests that it may be from the Upper Permian *Dicynodon* Assemblage Zone. It has five or six postcanine teeth, and a poorly developed crista choanalis. The sinuses and canals of the snout are recognized, and it is believed that the sinus positioned posteriorly in the snout (posterior maxillary sinus) is homologous with the maxillary sinus of anomodonts and cynodonts. It also shows similarities to the infraorbital canal of early mammals, such as *Morganucodon*. An anteriorly positioned sinus (anterior maxillary sinus), situated directly behind the canine root, is homologized with the maxillary sinus of gorgonopsians. In addition, I identify the previously undescribed canal (designated anterior maxillary canal), leading from the anterior maxillary sinus antero-dorsally. No evidence for maxilloturbinals was found in contrast to the condition known in the primitive therocephalian *Glanosuchus*.

Key words: Akidnognathidae, Therocephalia, Therapsida, Synapsida, sinuses, serial grinding, Karoo Basin.

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