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Ontogeny and cranial morphology of the basal carnivorous dinocephalian, *Anteosaurus magnificus* from the Tapinocephalus Assemblage Zone of the South African Karoo

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The rocks of the Karoo Supergroup of South Africa preserve a vast array of tetrapod fauna, and eight bio zones have been defined after these fauna. The Tapinocephalus Assemblage Zone of the Beaufort Group accounts for many tetrapod fauna, amongst the highest, the Dinocephalia. Recently a well-preserved juvenile *Anteosaurus* skull was recovered in the Tapinocephalus Assemblage Zone, near Merweville. Although one other specimen of a juvenile *Anteosaurus* has been discovered, this specimen only preserves the anterior portion of the snout. Therefore, a full cranial description and reconstruction of a juvenile *Anteosaurus* has not been possible up until the present study. In 1954 Boonstra synonymized most of the South African anteosaurids with *Anteosaurus magnificus* but could not include a description of a juvenile. In contrast to the specimen of Boonstra the recently discovered juvenile anteosaurid BP/1/7074 is a well preserved and complete skull that offers possibilities for understanding not only the potential differences between juveniles and their adult counterparts, but also the dentition and tooth replacement strategies of *Anteosaurus magnificus*, which are currently unknown. This specimen, which is preserved in approximately forty-five separate elements, has been scanned using Microfocus X-ray Computer Tomography (CT) and will be digitally reconstructed in order to produce a 3D model that can be utilised for comparison. Understanding dentition and tooth replacement strategies of *Anteosaurus magnificus* may also assist in understanding tooth replacement in related groups such as the Titanosuchids, work which was last done by Boonstra in 1962.

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