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Comparative study of the fore-limb of the Early Triassic cynodont *Thrinaxodon liorhinus*. Exploring burrowing anatomy.

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Therapsids were severely affected by the Permian-Triassic mass extinction event and only a few lineages were able to survive. One of the main behavioural responses that most likely aided in Therapsid survival across the extinction event was burrowing. Several fossils of the therapsid, *Thrinaxodon* were found in curled up position and assumed to have died in a burrow, leading to the idea that this taxon was perhaps a digger. To date, limb structure of *Thrinaxodon* has not been systematically compared to extant burrowing specialists. Besides exhibiting potential burrowing adaptations, the limbs of *Thrinaxodon* have been described as exhibiting a transitional phase between classic sprawled limbs of reptiles and mammalian parasagittal postures. The forelimb (humerus, radius and ulna) of *Thrinaxodon liorhinus* is compared with cursorial forms such as the reptile *Varanus*, and mammals *Felis domesticus* and *Thylacinus cynocephalus*, as well as with digging mammals, *Vombatus* and *Lasiorhinus*. This series of nested comparisons permits interpretation of the functional morphology of the fossil *Thrinaxodon* as being more similar to a cursorial or digger animal. New insights into the behaviour of the fossil *Thrinaxodon* are discussed by describing and completing morphometric analyses on forelimb skeletal elements. These results advance present understanding of *Thrinaxodon* limb structure, mobility, habitat and ecological preference.

Submit a paper for peer review (SA Journal of Science)? (Yes / No / Maybe)

Maybe

Primary author: Ms IQBAL, Safiyyah (University of the Witwatersrand, Evolutionary Studies Institute)

Co-authors: Dr ABDALA, Fernando (University of the Witwatersrand, Evolutionary Studies Institute); Dr CARLSON, Kristian (University of the Witwatersrand, Evolutionary Studies Institute)

Presenter: Ms IQBAL, Safiyyah (University of the Witwatersrand, Evolutionary Studies Institute)

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