

POSSIBLE AFFINITIES BETWEEN *VARANUS GIGANTEUS* AND *MEGALANIA PRISCA*. *Memoirs of the Queensland Museum* 39(2):232. 1996:- Molnar (1990) described two frontals, and a parietal, of a giant Pleistocene varanid at King Creek, eastern Darling Downs. The material was assigned to *Megalania prisca*, the only varanid of comparable size. This identification is probably correct since undoubted remains of *Megalania* occur in the same deposits.

Molnar (1990) noted that the frontals and parietal of the King Creek varanid exhibited many unusual features, which could not be found in any varanid skulls examined, and were thus presumably derived within varanids. Among these features were the prominent sagittal crest along the median suture between the frontals, and the parallel transverse ridges extending at right angles to this crest. Both these features are also found in *Varanus giganteus* (Fig. 1) and are absent in other species of *Varanus* (Molnar, 1990) and in the nearest outgroup taxa, *Lanthanotus* and *Heloderma* (Rieppel, 1980; Pregill et al., 1986; Estes et al., 1988). They are thus derived within *Varanus* suggesting affinities between the King Creek varanid and *V. giganteus*. Molnar (1990) noted that, in the King Creek varanid as in *V. giganteus* (Fig.1), the sagittal crest and parallel transverse ridges were confined to the frontals, and did not extend onto the parietals. This phylogeny is based on very incomplete material and only two characters.

Megalania prisca, *Varanus giganteus*, *V. salvadori* and *V. komodoensis* are the 4 largest known varanids (Pianka, 1995). Despite the latter two not being Australian natives, all 4 belong to a discrete radiation of Australian monitors, the 'gouldii species group' (Baverstock et al., 1993). If *Megalania prisca* has affinities with *V. giganteus* and thus belongs within the gouldii species group *Megalania* will have to be synonymised with *Varanus*. Relationships within the gouldii species group are not yet well established (Baverstock et al. 1993): there is a distinct possibility that, when relationships within this radiation are resolved, *V. giganteus*, *V. salvadori*, *V. komodoensis*, and *Megalania prisca* will form a clade. If so, this would mean that the four largest varanid species represent a single discrete radiation of giant predatory lizards.

I thank the Australian Research Council for funding, Jenny Clack and Ray Symonds for loan of the figured specimen, and Malcom Ricketts for photography.

Literature Cited

BAVERSTOCK, P.R., KING, D., KING, M., BIRRELL, J. & KRIEG, M. 1993. The evolution of the species of the Varanidae: Microcomplement fixation analysis of serum albumins. *Australian Journal of Zoology* 41: 621-638.

ESTES, R., DE QUEIROZ, K. & GAUTHIER, J. 1988. Phylogenetic relationships within Squamata. Pp. 119-281 In Estes, R. & Pregill, G. K. (eds). 'Phylogenetic relationships of the lizard families'. (Stanford University Press: Stanford).

MOLNAR, R.E. 1990. New cranial elements of a giant varanid from Queensland. *Memoirs of the Queensland Museum* 29: 437-444.

PIANKA, E.R. 1995. Evolution of body size: varanid lizards as a model system. *American Naturalist* 146: 398-414.

PREGILL, G., GAUTHER, J. & GREENE, H.W. 1986. The evolution of helodermatid squamates, with description of a new taxon and an overview of Varanoidea. *Transactions of the San Diego Society of Natural History* 21: 167-202.

RIEPPPEL, O. 1980. The phylogeny of anguimorph lizards. *Denkschriften Schweizerische Naturf. Gesellschaft* 94: 1-86.

M.S.Y. Lee, *School of Biological Sciences, University of Sydney, NSW 2006, Australia; 10 December 1995.*



FIG. 1. Skull of *Varanus giganteus* (University Museum of Zoology, Cambridge R9586) in (A) dorsal, and (B) right laterodorsal view, showing the sagittal crest and dermal sculpture on the frontals between the orbits. Scale bar = 3cm.



Lee, M S Y. 1996. "Possible affinities between *Varanus giganteus* and *Megalania prisca*." *Memoirs of the Queensland Museum* 39, 232–232.

View This Item Online: <https://www.biodiversitylibrary.org/item/123906>

Permalink: <https://www.biodiversitylibrary.org/partpdf/74721>

Holding Institution

Queensland Museum

Sponsored by

Atlas of Living Australia

Copyright & Reuse

Copyright Status: Permissions to digitize granted by rights holder.

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.