

## HETEROCHRONY IN MOSASAUR EVOLUTION AS SUGGESTED BY GEOMETRIC MODELS OF HUMERI

MASSARE\*, Judy A., The Earth Sciences Dept., SUNY College at Brockport, NY 14420 and Rochester Institute of Vertebrate Paleontology, 928 Whalen Road, Penfield, NY 14526 ; SHELDON, M. Amy, Geology and Geography Dept., University of South Alabama, Mobile, AL 36660 and Rochester Institute of Vertebrate Paleontology, 928 Whalen Road, Penfield, NY 14526.

Mosasaur humeri are wider, shorter, and generally dorso-ventrally compressed compared to humeri of typical terrestrial lizards. Using the *Clidastes* model, a "terrestrial" limb can also be generated by larger changes in the same parameters described above. Heterochrony thus may have been important in the initial divergence of mosasaurs from terrestrial lizards. These results may have a wider application. Vertebrates in general display a wide range of limb morphologies and many limb specializations. Differences in rates and relative rates may be responsible for the wide range of morphologies which are observed.

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Felts, W. J. L. and F. A. Spurrell. 1966. Some structural and developmental characteristics of Cetacean (Odontocete) radii. A study of adaptive osteogenesis. *American Journal of Anatomy*, 118: 103-134.

Rhodin, A. G. J. 1985. Comparative chondro-osseous development and growth of marine turtles. *Copeia* 1985: 752-771.