

## Redescription of neoceratopsian dinosaur *Archaeoceratops* and early evolution of Neoceratopsia

Hai-Lu You and Peter Dodson

*Acta Palaeontologica Polonica* 48 (2), 2003: 261-272

*Archaeoceratops oshimai* Dong and Azuma, 1997 is a basal neoceratopsian from the late Early Cretaceous of Mazongshan area, Gansu Province, northwest China. Here we provide a detailed description on *Archaeoceratops oshimai* based on both the holotype, which consists of a well preserved, nearly complete skull, partial vertebral column, and partial pelvis, and the paratype, which consists of a partial vertebral column including a nearly complete tail, a partial pelvis, fragmentary hind limb bones, and a complete pes. Cladistic analysis shows that *Archaeoceratops* is the sister group to all currently known Late Cretaceous Neoceratopsia, and Late Cretaceous Neoceratopsia diverged into two clades: the Asian Protoceratopsidae and the North American Ceratopsoidea, indicating a dual evolution for the two major groups of horned dinosaurs in two landmasses of Late Cretaceous. A suite of derived features characterizes Ceratopsoidea, such as a round-shaped external naris, a long caudolateral process of the rostral bone, and ventrally curved premaxillary ventral edge.

**Key words:** Dinosauria, Neoceratopsia, Cretaceous, China, Gansu Province, Mazongshan area.

Hai-Lu You [[hyou@sas.upenn.edu](mailto:hyou@sas.upenn.edu)], Institute of Geology, Chinese Academy of Geological Sciences, Beijing 100037, P. R. China; Peter Dodson [[dodsonp@vet.upenn.edu](mailto:dodsonp@vet.upenn.edu)], School of Veterinary Medicine, University of Pennsylvania, Philadelphia, PA 19104, USA.

This is an open-access article distributed under the terms of the Creative Commons Attribution License (for details please see [creativecommons.org](http://creativecommons.org)), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

