

FIRST REPORT OF PROTOCERATOPSIDAE (NEOCERATOPSIA) FROM THE LATE CAMPANIAN JUDITH RIVER GROUP, ALBERTA, CANADA

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Protoceratopsians are known from associated skeletal material in North America from the early Maastrichtian of Montana (*Montanoceratops*) and the late Maastrichtian of Alberta and Wyoming (*Leptoceratops*). Protoceratopsid material has been recovered from microvertebrate assemblages in Alberta from the Santonian (Milk River Formation) and the Maastrichtian (Scollard Formation). We report here the first occurrence of a protoceratopsian from the late Campanian (Dinosaur Park Formation) of Alberta. The specimen is a left dentary lacking the caudal margin and the coronoid process. Fifteen alveoli are preserved with some *in situ* teeth which bear strong medial ridges asymmetrically placed mesiad, and possessing the characteristic occlusal plane of $>60^\circ$. The dentary is deep with a curved ventral border similar to that seen in *Leptoceratops gracilis*. Protoceratopsids have not been recovered from any of the over 26 screen washed microvertebrate sites in the Judith River Group despite an extensive collection effort. This suggests that protoceratopsids may have been almost completely ecologically excluded from the wet, coastal environments of these Formations which were preferred by the larger ceratopsians.

Protoceratopsians have been suggested to originate in Asia based on the restricted geographic and temporal (late Early Cretaceous) distribution of their putative ancestral taxa the Psittacosauridae, as well as their abundant late Cretaceous Asian fossil record. The presence of protoceratopsians in the Santonian of North America rivalling the oldest published records for Asia (*Microceratops*) suggests that the protoceratopsians could have originated *in situ* in North America and dispersed to Asia where they flourished in the dry inland environments. The rarity of protoceratopsian fossils in North America could simply be attributed to the lack of arid and semi-arid, eolian-dominated environments for these dinosaurs on this continent.