NEW ADDITIONS TO THE LANCIAN MAMMALIAN FAUNA FROM SOUTHWEST NORTH DAKOTA

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Category
Taxon: Mammals
Taxon Subcategory: Metatheria
Geological Era: Mesozoic - Cretaceous
Topic: Locality description

Gaining a detailed understanding of the geographic and temporal variations between latest Cretaceous mammalian faunas within the Western Interior Basin requires specimens to be associated with precise stratigraphic data. While those data are available for specimens collected in some geographic areas (e.g., several prolific localities in Montana), only a few mammal-producing localities are documented in such detail from The Hell Creek Formation of North Dakota. Work at two sites in southwestern North Dakota in 2015 by the North Dakota Geological Survey (NDGS) resulted in the discovery of some important new mammal specimens. Those specimens were collected from previously documented localities for which the stratigraphic position is precisely recorded. The most productive site, NDGS L229 (=PTRM V98027) is situated 12.02 meters below the K/Pg boundary and produced 14 mammal specimens that are referable to at least five species, two of which are first occurrences for North Dakota. The first new occurrence is a partial right dentary with preserved m1 of the multituberculate *Essonodon browni*. The other first occurrence consists of six specimens (five isolated lower molars and a partial left maxilla preserving M2 and M3) referable to the marsupial *Glasbius twitchelli*. Another important specimen (NDGS 1719) was collected near locality NDGS L10173 (=PTRM V88002). The bone horizon at that locality is positioned 2.72 meters below the K/Pg boundary, and NDGS 1719 was collected as float approximately one meter below that horizon, marking the lowest possible stratigraphic position. NDGS 1719 is also referable to *G. twitchelli* and consists of a right dentary preserving p2-m4 and alveoli for p1 and the canine, making it the most complete dentary yet referred to that species. NDGS 1719 is stratigraphically the highest mammal specimen referred to a specific taxon yet reported from North Dakota. Both *E. browni* and *G. twitchelli* are considered unique occurrences for the Lancian North American Land Mammal "age," with *G. twitchelli* stratigraphically restricted to the latter portion of the Lancian in areas where good stratigraphic controls are available for paleontological localities. These discoveries expand our knowledge of the Lancian fauna from southwestern North Dakota, aid comparisons to other well-sampled faunas from the Western Interior Basin, and demonstrate that further work is needed to ensure our understanding of the Lancian fauna from North Dakota is comprehensive.