

Some Late Pleistocene Vertebrates from Western Oklahoma

Henry Kirkland, Jr., Janet Dill, and Wendy Selfridge

Southwestern Oklahoma State University, Weatherford, OK 73096

Received: 1991 March 8

Few Pleistocene vertebrates have been reported from western Oklahoma. This paper reports the discovery of fossils of two species of mammals. The specimens, an astragalus of a bison and the broken metatarsal of an extinct horse, were found in a bed of light gray silty clay 7.5 miles south of Weatherford, SW 1/4, NE 1/4, Sec. 18, T11N, R14W, Washita County, Oklahoma. The clay deposit is ca. 18 m long and 2.3 m thick. It rests on red Permian sandstone of the Cloud Chief Formation. There is a gradual color change at the contact of the Pleistocene and Permian sediments. Fossil shells of snails are disseminated through the clay. The fossil mammal bones come from a zone near the middle of the clay bed, 1.2 m from the top and 1.1 m from the bottom. A radiocarbon date, based on bone scraps, is $18,295 \pm 270$ RCYBP (radiocarbon years before present) (Isotopes Inc., Beta No. GX-16060).

The first fossil discovered was the bison astragalus. It is entire and measures: length on lateral surface, 86.2 mm; length on medial surface, 81.3 mm; transverse breadth of proximal end, 53.7 mm; transverse breadth of distal end, 60.2 mm; and anteroposterior breadth at center, 50.1 mm.

The astragalus is of moderate size, too small to be from an adult male of the giant bison, *Bison latifrons* (Harlan) or the steppe bison, *B. priscus* (Bojanus) (1). It was compared with astragali of *B. antiquus* (Leidy), *B. occidentalis* (Lucas), and a 16-year old male *B. bison* (Linnaeus) in the Fossil and Recent Mammal collections at Midwestern State University, Wichita Falls, Texas (2). The fossil is probably not *Bison bison*, which did not appear in the southwestern United States until well after 18,000 RCYBP. Distinguishing the astragali of the other two species may be impossible and the Washita County astragalus is not appreciably different in size or morphology from either.

The horse metatarsal measures: greatest length, 273.3 mm; greatest proximal breadth, 45.2 mm; least medial breadth, 30.1 mm; and greatest distal breadth, 41.5 mm. The measurements are too large for the little horse, *Equus conversidens* (Owen) and approximately equal to those the noble horse, *E. excelsus* (Leidy) (3). The proportions show that the specimen is not of a stilt-legged horse species. A lower jaw may be required for certain identification but the species is probably *E. excelsus*.

The fossil site nearest to the present collecting one, and similar in age (ca. 17,000-19,000 RCYBP), is the Howard Ranch local fauna from near Quanah, Hardeman County, Texas. *E. excelsus* was found there along with remains of a bison, *B. antiquus*. Assignment of the bison to species was hesitant, for no horn cores were found.

ACKNOWLEDGEMENTS

We thank M. Leathers for allowing us to remove the fossils from his land, and Dr. E.T. Green for assisting with soil identification and maps. W. Dalquest aided with identification and encouragement. We also thank Southwestern Oklahoma State University for a Southwestern Faculty Research Grant.

REFERENCES

1. Kurten, F., *Pleistocene Mammals of Europe*, Aldine Publishing Co., Chicago (1968).
2. Miller, W.E., *Bull. Los Angeles County Mus. Nat. History, Science*, No. 10, 72 (Feb. 17, 1971).
3. Dalquest, W.W., and Hughes, J.T., *Am. Midl. Nat.* **74**, 408-414 (1965).