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*** START OF THE PROJECT GUTENBERG EBOOK PLIOCENE AND PLEISTOCENE RECORDS OF FOSSIL TURTLES FROM WESTERN KANSAS AND OKLAHOMA ***

Pliocene and Pleistocene Records of Fossil Turtles from Western Kansas and Oklahoma

BY

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Pliocene and Pleistocene Records of Fossil Turtles from Western Kansas and Oklahoma

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By EDWIN C. GALBREATH

In the vertebrate paleontological collection at the University of Kansas Museum of Natural History there are many fragments of turtles that have been collected, generally in connection with the excavation or recovery of other fossils. The generic identification of this material is possible in many instances, and such identifications give new and important geological and distributional records for genera in existence today.

All catalogue numbers refer to the vertebrate paleontological collection in the University of Kansas Museum of Natural History.

Family KINOSTERNIDAE

Kinosternon sp. No. 7729 consists of fragments of marginals, costals, and plastronal elements collected from Edson Quarry, Sherman County, Kansas. The age is middle Pliocene (Hemphillian). No. 7679, consisting of a nuchal, and fragments of marginals, costals, and neurals is from Nye Sink, XI Ranch, Meade County, Kansas, and is of Pleistocene age.

Any fossil record of *Kinosternon* is a welcome find, and these two specimens give new data both as to age and distribution. However, it should be emphasized that these identifications are based on fragments, and are tentative.

Family EMYDIDAE

Pseudemys sp. No. 5613, Sherman County; 6784, Seward County; and 4728, Meade County, are three of many fragments, mainly elements of the nuchal plate and plastron, that were collected from Edson Quarry, Sherman County, Kansas, and from middle and late Pliocene beds in Seward and Meade counties, Kansas, respectively. The species represented cannot be differentiated from species of *Pseudemys* living today. Species of *Pseudemys* are common also in most of the Pleistocene deposits of western Kansas.

Family TESTUDINIDAE

Testudo sp. In general, two recognizable lines of the genus *Testudo* existed in western Kansas during early Pliocene to mid-Pleistocene time—a line of large testudinates with a carapace three to four feet long, and one line of smaller tortoises with a rugose carapace approximately six to nine inches in diameter. Hibbard's *Testudo riggsi* (Hibbard, 1944) is the best known of these smaller turtles.

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Gopherus sp. No. 5935 is from the Pleistocene of Harper County, Kansas, and No. 7677 is from the early Pleistocene of Beaver County, Oklahoma. Each is composed of costals and neurals which may be referred to this genus. Their size indicates an animal considerably larger than any on record, and probably these specimens represent a new species.

Family CHELYDRIDAE

Chelydra sp. No. 6821 is the anterior part of a plastron from the Edson Quarry, Sherman County, Kansas. The age is middle Pliocene. This fragment has been listed three times in print, once merely as Chelonia (having reference to the order) (Adams and Martin, 1931), and twice by Hibbard (1934 and 1939) as *Chelonia* sp. Hibbard's listing was obviously a *lapsus calami* for

Chelydra since he placed the genus in the family Chelydridae.

No. 6479 is part of a costal and marginals from Meade County, Kansas. This specimen was associated with *Aenocyon dirus*, and is Pleistocene in age.

Family TRIONYCHIDAE

Amyda sp. No. 6800 is part of a costal collected in Seward County, Kansas. It is possibly of early Pleistocene age. No. 7568 is part of a carapace from Meade County, Kansas, probably of the same age.

LITERATURE CITED

ADAMS, L. A.

Martin, H. T.

1931. An addition to the Urodele Fauna of Kansas from the lower Pliocene. Univ. Kansas Sci. Bull., 19:289-297, pls. 30-32.

HIBBARD, C. W.

- 1934. Two new genera of Felidae from the middle Pliocene of Kansas. Trans. Kansas Acad. Sci., 37:239-255, pls. 4-6.
- 1939. Notes on additional fauna of Edson Quarry of the middle Pliocene of Kansas. Trans. Kansas Acad. Sci., 42:457-462, 6 figs.
- 1944. A new land Tortoise, *Testudo riggsi*, from the middle Pliocene of Seward County, Kansas. Univ. Kansas Sci. Bull., 30:71-76, 2 figs.

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