

Texasophis (Reptilia: Serpentes), an Addition to the Miocene (Clarendonian) of North America

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A new species of *Texasophis* is described on the basis of a vertebra from the WaKeeney local fauna of Trego County, Kansas. The fossil record of *Texasophis*, the earliest colubrid taxon known from North America, is thus extended from the Oligocene (Orellan) of North America and the Miocene of North America (Barstovian) and France (Astaracian) to a later Miocene time (Clarendonian) in North America. This is the largest species of *Texasophis* known, but based on its small size, elongated vertebral form, very low neural spine, and only moderately vaulted neural arch, still appears to have been a secretive or semifossorial form.

THE WaKeeney local fauna of Trego County, Kansas, has yielded the largest Clarendonian Land Mammal Age herpetofauna known (Holman, 1975). The site has been studied intensively by field parties from the University of Michigan (Wilson, 1968) and Michigan State University (1975), but R. J. Zakrzewski and his field parties of Fort Hays Kansas State College have recently collected additional material that included the remains of an unexpected snake, herein described as a new species of the ancient colubrid genus *Texasophis*.

The WaKeeney local fauna comes from a cross-bedded sand deposit that represents a small basin in a stream. The site is on the Lowell Hillman Ranch 705–750 meters S and 22.5 meters E of the NW corner, Sec. 22, R. 22 W, T. 11 S, Trego County, Kansas. The elevation is 676.5 meters. Based on analysis of the mammalian remains of the site Wilson (1968) believed the WaKeeney local fauna should be assigned to the middle or late part of the Clarendonian Land Mammal Age. This is currently interpreted as late medial Miocene.

Texasophis wilsoni n. sp.

Holotype.—Trunk vertebrae, Fort Hays State College Vertebrate Paleontology 3640 (Fig. 1).

Type locality and horizon.—Ogallala Formation, middle or late Clarendonian Age (late medial Miocene) near WaKeeney, Trego County, Kansas. Collected by Richard J. Zakrzewski of Fort Hays State College, Hays, Kansas.

Ethymology.—Named for Richard L. Wilson who studied the mammalian fauna and established

the stratigraphic position of the WaKeeney local fauna.

Diagnosis.—Vertebra differs from those of other species of the genus (undescribed new *Texasophis* species from the Oligocene of Colorado and Miocene of France, and *T. fossilis* Holman of the Miocene of Texas) in the following combination of vertebral characters: 1) it is the largest known form (total length 6.4 mm), 2) its neural spine is well-developed, 3) its neural arch is moderately vaulted, 4) its hemal keel is not widened posteriorly and 5) its hemal keel is narrower than in *T. fossilis*.

Description of the holotype.—In dorsal view: anterior zygosphenal border broken at its middle; neural spine thin, extending only slightly beyond posterior border of neural arch; prezygapophyses with their articular surfaces ovaloid in shape; diapophyses rounded; weakly developed epizygapophyseal spines; and posterior border of neural arch V-shaped. In lateral view: neural spine very low but well-developed; paradiapophyses distinctly divided into dorsal diapophyseal and ventral parapophyseal portions; subcentral ridges straight; and hemal keel distinct. In anterior view: neural arch only moderately vaulted; neural spine low, with a very small anterodorsal tubercle; dorsal border of prezygapophyseal area flat; and neural canal about the same size as the subrounded cotyle. In ventral view: paradiapophyses distinctly divided into rounded dorsal diapophyseal portions and roughened, subovaloid ventral parapophyseal portions; hemal keel very distinct and uniformly wide throughout most of its length; and postzygapophyseal facets roughly

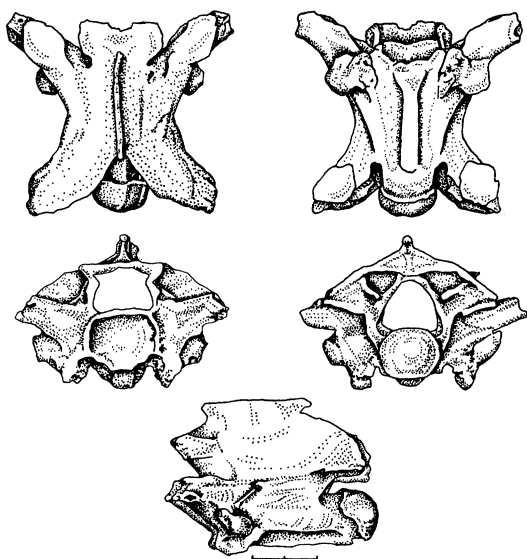


Fig. 1. Holotype trunk vertebra of *Texasophis wilsoni* n. sp. Top left dorsal view; top right ventral view; middle left anterior view; middle right posterior view; bottom lateral view. Line equals 2 mm and applies to all drawings.

ovaloid in shape. In posterior view: neural arch only moderately vaulted; and neural canal slightly larger than rounded condyle.

Discussion.—The genus is the earliest colubrid genus recorded from North America. This record is from the early Oligocene (Orellan Age) of NE Colorado. Another form of *Texasophis* is known from the Miocene (Astaracian Age) of France (Rage and Holman, ms); and a third form, *Texasophis fossilis* Holman is known from the early medial Miocene (Barstovian Age) of SE Texas. The new *Texasophis wilsoni* thus extends the temporal range of the genus into the late medial Miocene (Clarendonian Age) of Kansas.

Based on vertebral morphology, *Texasophis* is

quite distinct and appears separable from all other colubrid snake genera on the basis of its very distinct, straight hemal keel, very low neural spine, and elongated vertebral shape. Very little is known of the herpetofauna of the late Miocene (Hemphillian Age), but there are no records of *Texasophis* from the Pliocene (Blancan Age) or Pleistocene of North America whose herpetofaunas are rather well-known. At present it appears that *Texasophis* may have been a dead-end genus that became extinct sometime after the late medial Miocene.

Texasophis wilsoni is the largest species of the genus known (total vertebral length 6.4 mm), yet this snake appears to have been a semifossorial or at least secretive "ground form." This is based on its vertebral characters which include 1) its small size, 2) its elongate vertebral form, 3) its low neural spine and 4) its only moderately vaulted neural arch. In other words, it had a rather elongate, somewhat flattened vertebral shape.

ACKNOWLEDGMENTS

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