Transactions of the Illinois Academy of Science
(1987), Volume 80, 1 and 2, pp. 157-159

A NOTE ON THE DISTRIBUTION OF *MERYCHYUS VERRUCOMALUS* STEVENS (MAMMALIA: ARTIODACTYLA)

Jonathan A. Bloom
Department of Anthropology
Southern Illinois University, Carbondale
Carbondale, IL 62901-4502

ABSTRACT

Paleontological investigations were conducted by Dr. Edwin C. Galbreath, Professor Emeritus of Southern Illinois University at Carbondale during the summer of 1981 in Logan County, Colorado. A partial skull and mandible of the Miocene merycoidodont, *Merychyus verrucomalus*, were recovered. Previously, this species has only been recorded for the Miocene of northwestern Nebraska (Stevens, 1970). A description of the Colorado specimen is presented.

The geographic distribution of the late early Miocene merycoidodont, *Merychyus verrucomalus* Stevens (1970), has been extended from its occurence in northwestern Nebraska to northeastern Colorado by Kansas University Museum (K.U.) specimen K.U.-55304. This specimen consists of a partial skull, mandible and a few posteranial fragments from the SW 1/4, NE 1/4, Sec. 27, T. 11 N., R. 53 W., Logan County, Colorado. It was recovered by Dr. Edwin C. Galbreath in 1981 from the silt and nodular zone in the Pawnee Creek Formation, approximately 600 feet east of Quarry A, Martin Canyon Local Fauna. This locality is biostratigraphically equivalent to the Marslandian of Nebraska (Wilson, 1960).

To date, specimens of *M. verrucomalus* have only been recovered from Dawes and Sioux counties, Nebraska (Stevens, 1970). The seven skulls studied by Stevens are all part of the Childs Frick Collection in the American Museum of Natural History (F:A.M.). The stratigraphic position of these specimens lies "aproximately 12 feet below 'upper wavy-bedded sandstone zone,' Middle Hemingfordian Runningwater Formation" (Stevens, 1970:2).

K.U.-55304 consists of a badly fragmented skull lacking the entire right half anterior to the parietal bone. Posterior portions of the right parietal are intact. The left half of the skull is nearly complete, although poorly preserved, missing lateral

fragments of the maxilla, and anterior portions of the nasal bone. The occipital consists of only isolated fragments. The basicranial region is incomplete and badly fragmented.

The sagittal crest is of moderate development, comparable to those illustrated for U.N.S.M. No. 2-10-8-36 listed as *M. elegans* by Schultz and Falkenback (1947: 272) but later referred to *M. verrucomalus* (Stevens, 1970), and for F:A.M. No. 32919 (Stevens, 1970:5). The complete zygomatic arch displays the lateral tuberous flaring of the malar described by Stevens (1970:3) as being the diagnostic characteristic of *M. verrucomalus*. The degree of development of this tuberosity on K.U.-55304 most closely resembles that of the holotype of *M. verrocomalus* (F:A.M. No. 32919), as does the degree of tooth wear on the M^3 (Stevens, 1970:6, fig. 3C). Due to the presence of the malar tuberosity, the arc of the zygomatic arch is markedly concave, a characteristic also noted by Stevens (1970:4).

The partial mandible consists of the anteriorly fused left and right dentary bones. The left dentary is complete but for a small postero-ventral portion of the angular region and I_{1-3}, C, and P_2. The right dentary, having a fragmented ascending ramus, is complete anteriorly from approximately the midpoint of M_3. The right I_{1-3} are missing and M_{2-3} are fragmented and incomplete. The first molar is complete and intact. The right mental foramen is located at the level of the posterior portion of P_3 to the P_{3-4} interdental aspect.

Dental and mandibular measurements were taken as described by Stevens (1970:6) and Von Den Driesch (1976:58-59) respectively. All measurements are in millimeters and were made with a Mitutoyo dial calipers. For comparative purposes, the observed range and number of specimens measured by Stevens (1970:6), which are applicable to K.U.-55304, have been included in Table 1.

Measurements of the left upper and lower third molars on K.U.-55304 fall within the known range of variation of *M. verrucomalus* (Table 1). However, those for P_1-P_4 and M_1-M_3 are approximately 1mm and 2mm shorter, respectively. While bearing the diagnostic feature of the flared zygomatic arch, K.U.-55304 may represent a slightly smaller (or at least shorter-faced) individual of *M. verrucomalus* than in the sample analyzed by Stevens (1970) as indicated by tooth row length.

ACKNOWLEDGMENTS

I gratefully acknowledge Dr. Edwin C. Galbreath, Professor Emeritus, Southern Illinois University at Carbondale, for urging me to prepare and study the specimen.

Table 1. Measurements of *Merychyus verrucomalus*.

	Specimen KU 55304		From Stevens (1970:6)*	
Aspect	Side	Measurement	Observed Range	# of Specimens Measured
Length, M^3	L	21.8	18.5-22.1	6
Width, M^3	L	14.6	14.6-16.1	6
Length, M_3	L	24.4	22.1-26.8	6
Width, M_3	L	10.3	9.0-11.0	6
P_1-P_4	L	31.1	32.2-35.3	5
P_1-P_4	R	31.1	32.2-35.3	5
M_1-M_3	L	46.1	48.3-65.7	6

*Measurements by Stevens do not discriminate side.

REFERENCES CITED

Schultz, B.C. and C.H. Falkenbach 1947 Merychyinae, a subfamily of oreodonts. *Bulletin of the American Museum of Natural History*, Vol. 88: Art. 4.

Stevens, M.S. 1970 *Merychyus verrucomalus*, a new species of oreodont (Mammalia, Artiodactyla) from the Middle Miocene Runningwater Formation, *American Museum Novitates*, No. 2425, pp. 1-11.

von den Driesch, A. 1976 The measurement of animal bones from archaeological sites, *Peabody Museum Bulletin* No. 1.

Wilson, R.W. 1960 Early Miocene rodents and insectivores from northeastern Colorado, *University of Kansas Paleontological Contributions, Vertebrata*, Art. 7, pp. 1-92.