

PREHISTORIC ELK REMAINS FROM CRANBERRY PRAIRIE, MERCER COUNTY, OHIO¹

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ABSTRACT. A nearly complete elk (*Cervus elaphus*) skeleton was excavated in a peat and marl deposit on the Ron Stucke farm, Cranberry Prairie, Mercer County, Ohio. Although elements in the molluscan fauna indicate a late Pleistocene age, a radiocarbon date of 9370 B.P. \pm 70 yr was obtained from a bone sample. Unusual features of the adult skeleton are extreme dental wear on the lower first molars; incomplete ossification of the scapula; and a hole punched through the left scapula, probably due to a prehistoric hunting weapon.

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INTRODUCTION

In November 1981, Ron Schwieterman, of Cranberry Prairie, Mercer Co., Ohio, unearthed part of an elk (*Cervus elaphus*) skull and a large antler rack on the Ron Stucke farm, while excavating for a drainage ditch near Vandebush Run, southwest of the village of Cranberry Prairie, SE1/4, SE1/4 Section 26, Granville Twp., Mercer Co., Ohio. Schwieterman contacted Joyce Alig, Director of the Mercer County Historical Society, Celina, who in turn telephoned David Dyer of the Ohio Historical Society's Department of Natural History. Dyer visited the site, confirmed the importance of the discovery, and made arrangements to excavate the remainder of the skeleton the following spring. On 4 May 1982, the authors, along with Mrs. Alig and Mike Lamm, Celina, Ohio, supervised excavation of the elk. Labor and excavating equipment donated by the Cy Schwieterman Excavating Co. of Cranberry Prairie, enabled the crew to remove all of the skeleton before spring planting the following day made further excavation impossible.

RESULTS

A backhoe was used to locate the skeleton. In the process, part of the pelvis was

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removed by the backhoe, further disturbing the burial, but the remainder of the skeleton was excavated by trowelling. Earlier disturbance by the laying of plastic drainpipe was clearly evident. Virtually all of the skeleton was recovered, however, except for a few bones of the feet and tail. Prior to its discovery, the skeleton had suffered little post-mortem disturbance, as many of the bones, including those of the extremities, were found in close anatomical position. In excavating the left scapula, which lay horizontal in the marl, a small hole, 2.0 \times 1.2 cm, in the infraspinous fossa was noted (fig. 1). Although particular care was taken in excavating and removing the scapula to ensure finding the piece removed, this was not located. Excavation at the Cranberry Prairie site was limited to 4 May 1982, as the site was to be planted the following day.

The skeleton was found approximately one meter below the surface, beneath a black peaty loam, resting at the top of a tan to light brown marl deposit at least 3.5 m thick. The site lies along the southern edge of the St. Johns Moraine, in what clearly was a late Wisconsinan/post Wisconsinan lake. The St. Johns Moraine has been dated at ca. 14,000 B.P. (Dreimanis and Goldthwait 1973).

Megascopic plant remains noted in the marl layer included abundant impressions

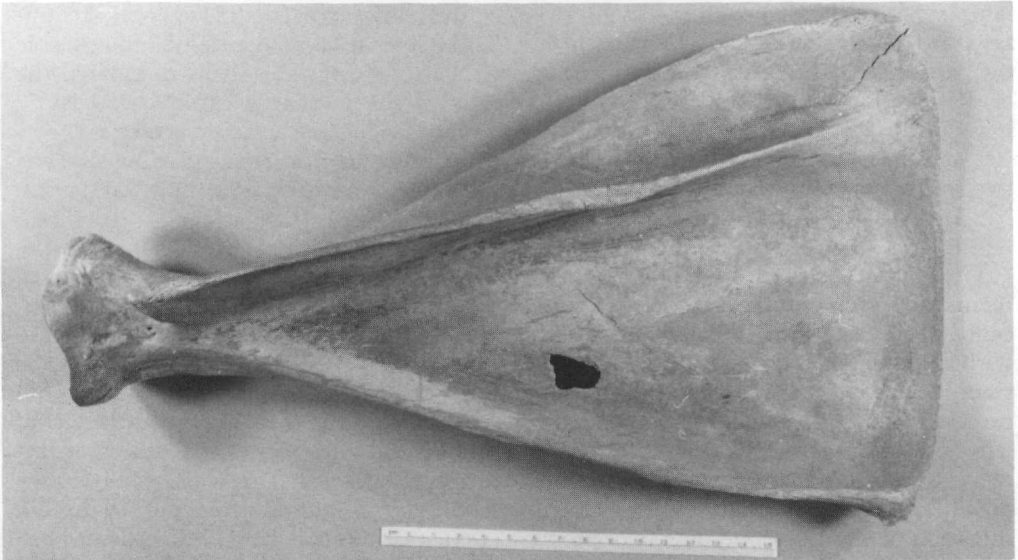


FIGURE 1. Left scapula of a prehistoric elk (*Cervus elaphus*) from Mercer Co., Ohio, with a hole in the infraspinous fossa.

of *Typha latifolia* leaves, as well as fragments of *Larix laricina* (identified by G. W. Burns, Ohio Wesleyan University, Delaware, OH) and *Betula* sp. wood. A washed sample of the marl yielded the molluscan species listed in table I and discussed below, in addition to *Chara* oogonia, *Potamogeton* and *Nelumbo* seeds, and ostracod carapaces. Above the marl layer lay up to 1.5 m of reddish brown to black peat, in sharp contact with the marl, containing much more abundant plant re-

mains, including *Larix* logs up to 0.5 m in length. A modern soil is developed in the peat, and plowing has disturbed the upper 0.45 m of soil and peat.

A bone sample consisting of a thoracic vertebra and several rib fragments from the elk skeleton were submitted to Dicarb Laboratories (DIC-2555). This sample yielded a radiocarbon date of 9370 B.P. \pm 70.

Molluscan remains were abundant throughout the marl deposit, and grab

TABLE I
Gastropod species from the Cranberry Prairie Marl, Mercer Co., Ohio.

Species	Sample 1 (1.5 m)		Sample 2 (4.5 m)	
	Number	Percentage	Number	Percentage
<i>Valvata tricarinata</i> (Say)	187	15.04	310	25.70
<i>Amnicola gelida</i> Baker	632	50.84	229	18.99
<i>Amnicola leightoni</i> Baker	331	26.63	207	17.16
<i>Gyraulus altissimus</i> (Baker)	49	3.94	115	9.54
<i>Helisoma anceps striatum</i> (Baker)	26	2.09	154	12.77
<i>Helisoma campanulatum</i> (Say)	2	0.16	31	2.57
<i>Physa heterostrophha</i> Say	16	1.29	160	13.27
Total	1243	99.99	1206	100.00

samples were taken from the marl directly associated with the elk skeleton and from the base of a backhoe trench made just east of the elk find, approximately 4.5 m below the surface. Identified gastropod species and their relative abundance in these two samples are presented in table 1.

DISCUSSION

Geological occurrence of the *Cervus* remains in a premorainic lake deposit adjacent to the St. Johns moraine, associated with fresh-water gastropod species now extinct, tamarack (not now growing in Mercer Co.), and birch wood all indicated a late Wisconsinan age for the elk. A perplexing feature was the hole that had been punched through the left scapula. Determination of a radiocarbon date of approximately 9370 B.P., however, indicates that the elk lived considerably later than the close of the Pleistocene and easily was contemporaneous with early man of the Paleo-Indian or Early Archaic periods. The possibility of injury inflicted by another bull elk during rutting (Leslie and Jenkins 1985) cannot be dismissed, but there are no known reports of comparable skeletal trauma in elk or deer. The hole noted in the left scapula of the *Cervus* specimen shows no evidence of healing and closely resembles injuries found in the scapulae of various quadrupeds (including elk) hunted in Mesolithic Europe (Noe-Nygaard 1974), and it is believed that the Stucke elk very probably was wounded by an Early Archaic Indian, wandered into the shallow promorainic lake existing at the Cranberry Prairie site, and died. Other wounds not evident skeletally may have been present. Goslin (1961) describes a similar occurrence from a bog in Logan Co., Ohio, in which a projectile point remained lodged in the elk skeleton. Precise age of the Logan Co. elk has not been determined.

Presence of early Archaic man in the inhospitable Black Swamp area of northwestern Ohio is indisputable, though evidence is not common. Some workers (Pratt n.d.) believe that the Black Swamp region

at this time actually "represented an upland forest area which became inhospitable only after rising lake levels inundated the bulk of the present western lake basin." Regardless of the precise ecological scenario, it seems clear that a shallow lake was present at Cranberry Prairie as late as ca. 9300 B.P.

Another unusual feature of the Stucke elk is the atypical tooth wear displayed on both mandibles (fig. 2). Based on general tooth wear, the elk is estimated to have been 8-10 years of age at death. The lower first molars, however, in striking contrast with the wear shown on the rest of the mandibular teeth, are almost completely worn away. This condition has been reported as a rare occurrence in living elk populations (Shaw 1981) but has not been described previously from fossil or subfossil specimens. It probably is more common than has been reported, as Linsdale and Tomish (1953) describe it in detail in a herd of mule deer: excessive recession of the crown of the first mandibular molar is due to its relatively greater age and greater height; prominence of the first molar results in greater initial wear to produce conformity with the maxillary tooth row. Once the balance of wear is upset, it is never regained, as the less worn upper fourth premolar and upper first molar gouge deeply into the less resistant, enamelless lower first molar and can lead to tooth loss, infection, starvation, and death. Also unusual, considering the advanced age of the Stucke elk, is the incomplete ossification of the medial border of the scapula, though probably simply an individual case of neoteny.

Although statistically significant differences in species abundance occur between the two molluscan samples (table I), these differences do not seem to be related to specific ecological factors such as changing temperature, increase in vegetation, or decreasing depth of water. Of particular interest, however, is the occurrence of *Ammicola gelida* Baker, *A. leightoni* Baker, *Gyraulus altissimus* Baker, and *Helisoma anceps striatum* Baker, all forms extinct in



FIGURE 2. Mandibles of a prehistoric elk (*Cervus elaphus*) from Mercer Co., Ohio, with extreme wear of the first molars.

Ohio and reported thus far only from late Pleistocene (Wisconsinan Stage) deposits (Baker 1928, LaRocque 1966-70). These species may have continued to live in relict populations in post-Pleistocene times. These species, as well as the other identified in the samples, are typical of lake marls.

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