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C. B. Schultz

University of Nebraska-Lincoln

Larry D. Martin

University of Kansas

M. R. Schultz

Institute for Tertiary-Quaternary Studies

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A PLEISTOCENE JAGUAR FROM NORTH-CENTRAL NEBRASKA

C. B. Schultz

and

Larry D. Martin

and

M. R. Schultz

Nebraska Academy of Sciences and
Department of Geology and
University of Nebraska State Museum
University of Nebraska-Lincoln
Lincoln, Nebraska 68588-0339

Museum of Natural History and
Department of Systematics and Ecology
University of Kansas
Lawrence, Kansas 66045

Institute for Tertiary-Quaternary
Studies
Lincoln, Nebraska 68588-0339

A nearly complete skull of an extinct jaguar, *Panthera onca augusta* from the Mullen Assemblage in Cherry County, Nebraska, provides new information concerning North American jaguars. The presence of *Cervalces*, *Symbos*, *Tapirus*, and *Panthera onca* in the Mullen Assemblage seems to indicate an extension of the Pleistocene spruce taiga into north-central Nebraska in the Early to Middle Illinoian.

† † †

INTRODUCTION

The main quarries along the Middle Loup River in north-central Nebraska, north and west of Mullen, were discovered in 1930 and 1931 by Charles Osborn and Louis Luckert. Some of the holotypes of Leidy's taxa (*Equus excelsus*, *Mammuthus imperator*, *Panthera onca augusta*, and *Stegomastodon mirificus*) are thought to be from this locality (Schultz, 1934; Jakway, 1962).

Schultz and Tanner (1957) recognized the complex geomorphology and stratigraphy of this region and Martin (1972) demonstrated that the Mullen Local Fauna was really an assemblage of faunas which range in age from Early Blancan (Rexroadian) to Late Illinoian (Sheridanian). Included with the Late Illinoian component is a nearly complete jaguar skull, University of Nebraska State Museum (UNSM) 1,104. This specimen is from UNSM collecting locality Cr-102 (Cherry County).

The first notice of the jaguar skull, UNSM 1,104, was made by Barbour and Schultz (1945), and this specimen was to be the subject of a longer paper by these authors. Schultz had taken the skull to the American Museum of Natural

History, New York, and compared it with other jaguar specimens from South America and the southern part of North America. Barbour's sudden death in 1949 resulted in a discontinuance of the project. The present authors resumed interest in the skull as part of a general study of fossil cats in the University of Nebraska State Museum (Schultz et al., 1970; Schultz and Martin, 1972).

The oldest name applied to a fossil jaguar in North America is *Felis augustus* Leidy, 1872. Leidy (1872) reported a relatively fragmentary specimen as being Tertiary in age (Loup Fork beds of the Niobrara River). Leidy considered *F. augustus* too large to be a jaguar, but Simpson (1941) was able to show that large size is a characteristic of the North American Pleistocene jaguar which he treated as a subspecies, *Panthera onca augusta*. Simpson was the first person to recognize correctly the presence and distribution of Pleistocene jaguars in North America, and he correctly recognized the relationship of "*Felis augustus*" to other jaguars. The holotype of "*F. augustus*" is a portion of a maxillary with P⁴ collected by the Hayden expedition supposedly on the "Niobrara River, Nebraska" (Schultz, 1934), but additional evidence shows that it was found "on the Loup Fork of the Platte River" (Hayden, 1858, 1862, and 1869; Leidy, 1869). The U.S. War Department maps, attached to Hayden's and Leidy's publications by Lt. G. K. Warren and associates, also confirm this since the exploration party camped near the Mullen Faunal Assemblage quarries for nearly six days from 31 July to 6 August. That is the only locality where fossils are abundant along that section of the Middle Loup River. Leidy's holotypes of "*Elephas imperator*," "*Equus excelsus*" and "*Mastodon mirificus*" are also from the Loup Fork of the Platte River. The University of Nebraska's field parties have explored the entire route of Lt.

G. K. Warren's expeditions since the early 1930s (Schultz and Stout, 1948). There is a possibility that the type of "*Elephas imperator*" may have been found on the south side of the Niobrara River, south of Hay Springs and Rushville, in Sheridan County.

UNSM 1,104 (Figs. 1 and 2) must be close to being a topotype of *Panthera onca augustua* and helps to characterize that taxon. As has been pointed out by Simpson (1941), Leidy's type is not Tertiary in age, but it is Middle Pleistocene and UNSM 1,104 confirms Simpson's age assignment. UNSM collecting locality Cr-102 is a stream channel deposit of Late Illinoian (Sheridanian) age that cuts across and erodes similar Late Blancan (Senecan) deposits. The age assignment of UNSM collecting locality Cr-102 is based on the evolutionary stage of abundant mammoth remains (Schultz and Martin, 1970) as well as the muskrat *Ondatra nebracensis* (Schultz et al., 1972) and other rodents (Koenigswald and Martin, 1984). Simpson treated the North American Pleistocene jaguars as a large northern subspecies, *Panthera onca augustua*, and we have chosen to follow his treatment as have most other workers.

Kurten (1973: Fig. 1) briefly reported on UNSM 1,104 and concluded that it was a female jaguar on the basis of its relatively small size for *P. onca augustua*.

DESCRIPTION

The skull is from a very large jaguar with the skull not much arched. The cranium is elongated as is often the case in *Panthera*. The frontals are broad, flat, and covered with small foramina. The postorbital processes are well developed; the sphenoidal opening large and anteriorly situated; and the basi-cranial region elongate. The auditory bullae extend ventrally about at the same level as the mastoid processes. The length of the P⁴ (27.5 mm) is small for *P. onca augustua* being less than that of the type (33.1 mm) and also for the type of "*Felis veroensis*" (33.4 mm) which is also referable to *P. onca augustua* (Simpson, 1941:9). We have used Toohey's (1959) measurements for the skull (in mm): length from prosthion-basion, 227.8; length from prosthion-staphylion, 108.2;

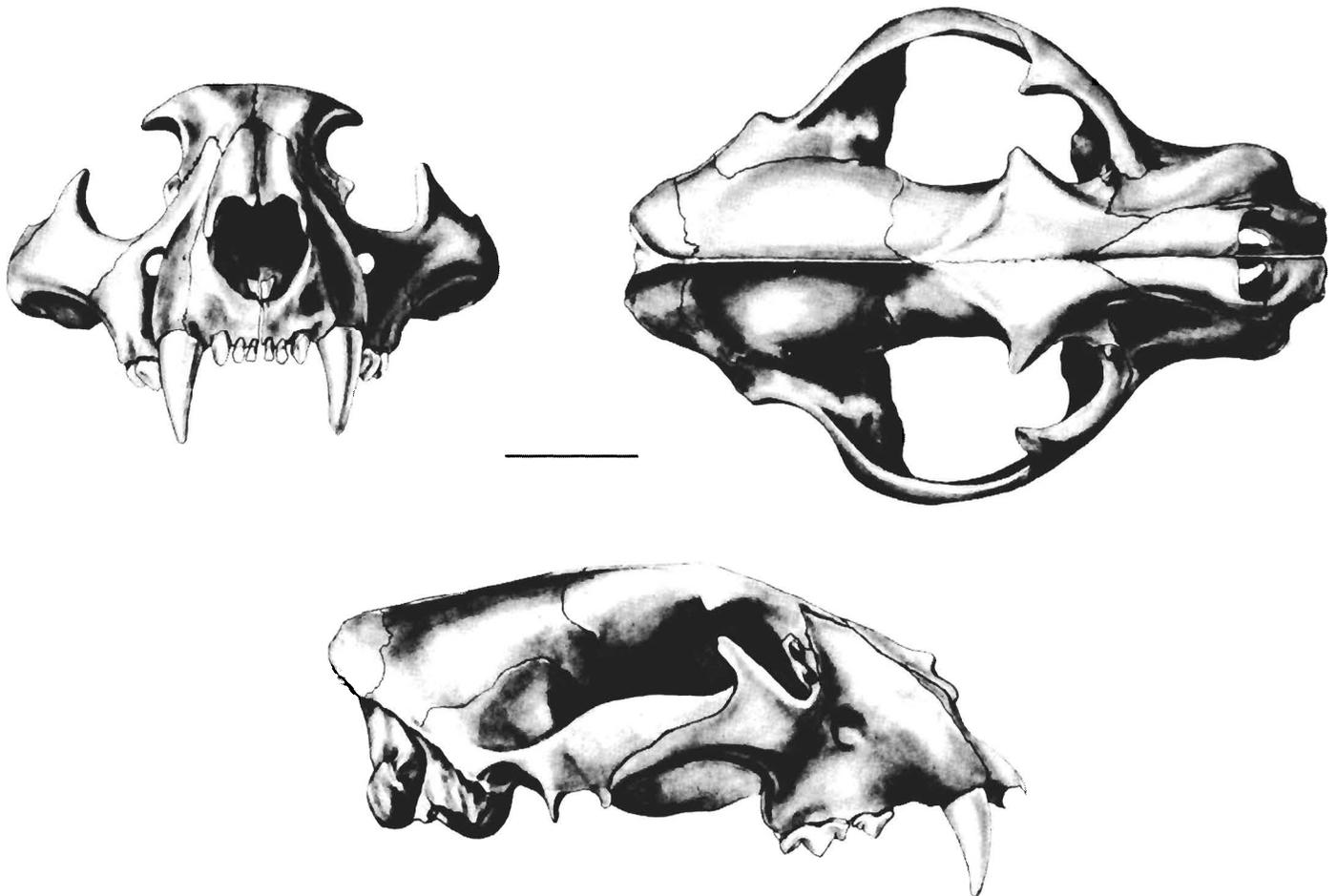


FIGURE 1. Skull of *Panthera onca augustua* (Leidy), UNSM 1,104: anterior, dorsal, and lateral views. Scale = 5 cm.

north and west of the Wisconsinan occurrences (Fig. 3). It seems likely that this is the result of required vegetal-faunal association rather than the direct result of decreasing temperatures.

The Late Irvingtonian (Sheridanian) component of the Mullen assemblage is of considerable biogeographic interest, as it represents an extension of the *Symbos-Cervalces* faunal province (see Martin and Neuner, 1978) into north-central Nebraska in the Late Illinoian. Typical components of this faunal province present include: the extinct tapir, *Tapirus cf. excelsus* (Schultz, Martin, and Corner, 1975); the woodland muskox, *Symbos*; the stagmoose, *Cervalces* [listed as *Alces* by Jakway (1962)]; and the extinct jaguar, *Panthera onca augusta*.

These animals are generally considered part of a Late Pleistocene forest community and may indicate that in the

Late Illinoian the spruce taiga extended into north-central Nebraska.

Modern jaguars hunt both peccaries and tapirs. When the Late Pleistocene distribution of the long-nosed peccary (*Mylohyus*) and the extinct tapir (*Tapirus excelsus*) is examined, it is seen that there is a very close correspondence with the distribution of *Panthera onca augusta* (Fig. 3). The Mullen Assemblage is considerably west of most of these Late Pleistocene records of *Mylohyus* and *Panthera onca augusta*. Illinoian and older records of both jaguars and long-nosed peccaries extend farther west than do the Wisconsinan records. It seems likely from their Wisconsinan distribution that both were forest forms, and the restriction of their range to the east in the Wisconsinan may reflect the development of a more open vegetation in the central Great Plains in the Wisconsinan.

Conversely, there seems to be a fairly direct relationship

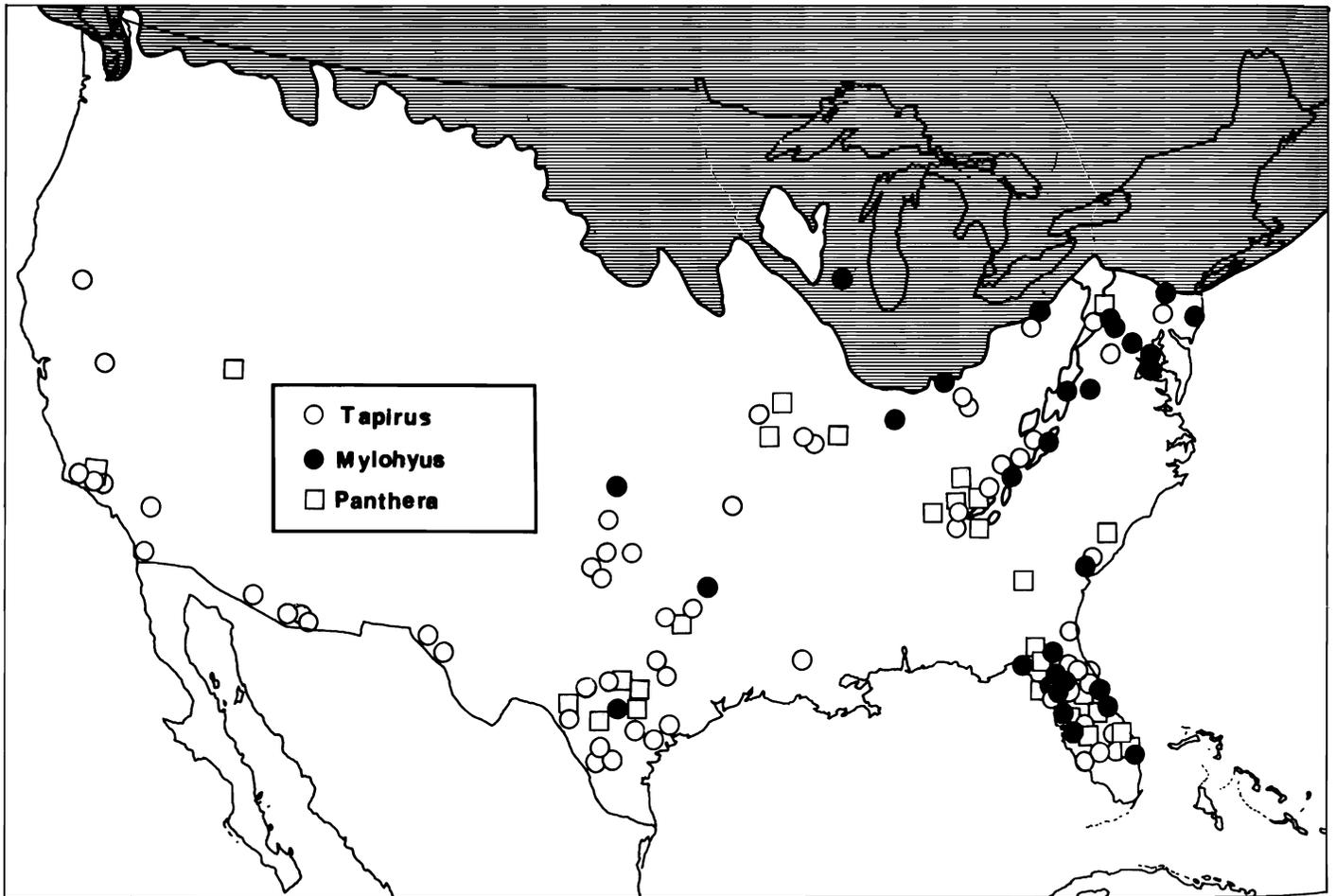


FIGURE 3. Map showing the Wisconsinan distribution of the tapir (*Tapirus*); the long-nosed peccary (*Mylohyus*); and the extinct jaguar, *Panthera onca augusta*. Hatched area represents extreme southern advance of the Continental ice.

between the continental ice margin and the distribution of Pleistocene taiga (Martin and Neuner, 1978: Fig. 1). If the Illinoian glaciations were much more extensive than those of the Wisconsinan, then a greater extent of the *Symbos-Cervalces* faunal province is to be expected in Nebraska.

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