

A CLAW OF *Megalonyx* (GROUND SLOTH) FROM MINNESOTA

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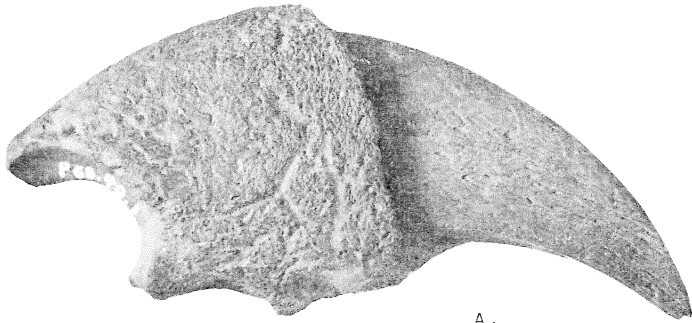
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An extremely well preserved, unguis phalanx representing the type-species *Megalonyx jeffersoni* (Desmarest) is herein reported as the first positive occurrence of this form in Minnesota. Interest in this specimen also stems from its location within the glaciated region. The specimen was found by Mr. Mel Hanson of the Park Board Department of the City of Minneapolis, Minnesota, in a pile of peat soil, which had been excavated for landscaping purposes, from a post-glacial horizon in S.E. $\frac{1}{4}$ Sec. 5, T. 29N, R. 23W, Ramsey County, Minnesota. The writer is grateful to Mr. Hanson who kindly turned the specimen over to The Science Museum for its paleontological collections.

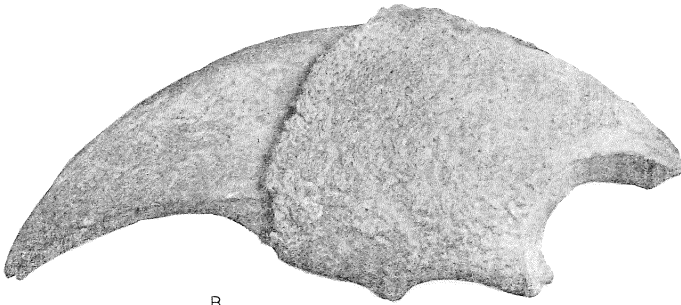
DESCRIPTION

Megalonyx jeffersoni (Desmarest)

Specimen Under Consideration: SMVP P68.40.1, a single bone (unguis phalanx) of *M. jeffersoni*. Measurements of this specimen indicate it to be the unguis phalanx of the third digit of the pes, although a great deal of similarity of form exists between it and the corresponding element of the manus. According to Hay (1914), the length of the third or median unguis phalanx of the manus is about one-sixth shorter than its counterpart in the pes. He does not state if these measurements were made along the upper curve of the bone or not. In any event, this difference would suggest that the present specimen is of the hind foot. Plate 1 (A - B) shows right and left lateral views of this specimen. Sections of the present claw core are shown in Figure 1 (A - B). These compare favorably with sections of the third unguis phalanx of the pes as described by Hay (1914).



A.



B.

PLATE 1

- A. *Megalonyx jeffersoni* (DESMAREST). SMVP P68.40.1.
RIGHT LATERAL ASPECT OF III UNGUAL PHALANX, X $\frac{1}{2}$.
- B. *Megalonyx jeffersoni* (DESMAREST). SMVP P68.40.1.
LEFT LATERAL ASPECT OF III UNGUAL PHALANX, X $\frac{1}{2}$.

The present specimen consists of a large laterally compressed claw core, which, at its proximal end or base, forms an articular fossa for reception of the next proximal phalanx. This fossa is formed by two semicircular grooves that are separated medially by a ridge of much the same curvature, only having a smaller radius. The length of the specimen, along its superior curve (longest curvature) including the base, is 223 mm. Its maximum depth about midpoint is 81.5 mm. Only a very minor portion of the tip of the core is missing, apparently due to secondary fracturing. For somewhat less than half of its length, the core is sheathed by a bony covering that appears to be nearly intact and uncrushed except for slight chipping along the open upper median surface. The sheath stands away from the sides of the core 7 to 9 mm. at the outer edge where the claw itself emerged. Both the claw core and the sheath are highly impressed with vascular canal patterns. Plate 2, B, shows the two prominent ventral foramina that are characteristic of ground sloths. These openings enter directly into the sheathed compartment, one on either side of the core and continue forward along the floor in an open canal to the edge of the sheath. A large tuberosity for muscle attachment occupies the anterior half of the ventral side of the sheathed area just in front of the above-mentioned foramina. Texture and the rich brown hue of the bone surfaces, as present here, are typical of vertebrate remains found in peat deposits of this region.

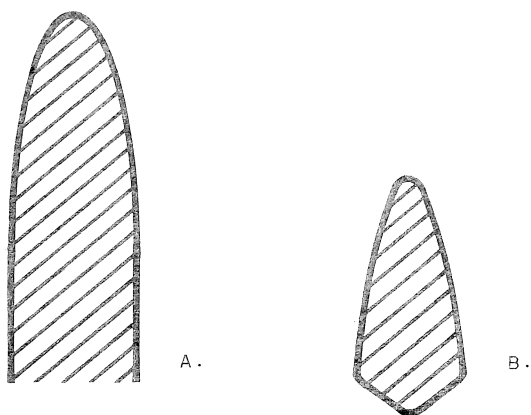
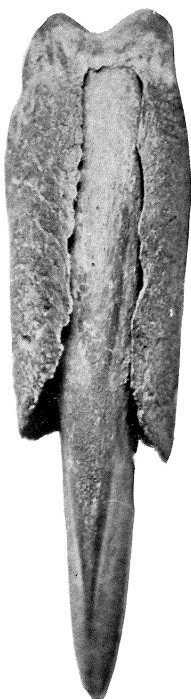


FIGURE 1

- A. *Megalonyx jeffersoni* (DESMAREST). SMVP P68.40.1.
CROSS SECTION OF CLAW CORE AT MIDPOINT. X 1.
- B. *Megalonyx jeffersoni* (DESMAREST). SMVP P68.40.1.
CROSS SECTION OF CLAW CORE NEAR TIP. X 1.



A.



B.

PLATE 2

- A. *Megalonyx jeffersoni* (DESMAREST). SMVP P68.40.1.
DORSAL ASPECT OF III UNGUAL PHALANX. X $\frac{1}{2}$.
- B. *Megalonyx jeffersoni* (DESMAREST). SMVP P68.40.1.
VENTRAL ASPECT OF III UNGUAL PHALANX. X $\frac{1}{2}$.

DISCUSSION

The excellent state of preservation of the present specimen suggests that little or no transportation was involved prior to deposition, although there is some evidence of transported peat associated with lakes in this area (Stone 1966). Its original position was in a peat deposit of uncertain thickness occupying one of numerous kettle holes left in the underlying Twin Cities formation by melted ice blocks that remained after final withdrawal of the active ice. Peat deposits in this area are common and vary tremendously in thickness. The ice at this locality probably melted out about 12,000 years ago; it may have melted out as late as 11,500 years ago (H. E. Wright, Jr., verbal communication, 1968). Unfortunately, the exact level from which the specimen came cannot be determined because of the circumstances of the find. Judging from finds of other fossil bones in similar deposits, one might anticipate the presence of associated remains; however, highway construction, during a several months' time-lapse since this specimen was found, has rendered further investigation of the site unproductive.

Numerous gravel pits of glacial outwash chiefly, around the State, occasionally yield extinct vertebrate remains. One such specimen was reported by Hay (1924) and tentatively identified as a caudal vertebra of *Megalonyx jeffersoni* for lack of a more suitable allocation. No actual comparisons could be made by Hay as corresponding elements of *M. jeffersoni* were unknown; hence, specific and even generic validity of his determination is uncertain. Hay's assignment would seem to have been the best alternative in light of the probability of this occurrence being postglacial in age.

Xenarthrans are recorded from many localities across the continent both as isolated specimens and as parts of local faunas (Hay 1923, 1924, 1927; Hibbard 1958). A conservative number are known from glaciated regions; and of these, only a few fall within the limits of Wisconsin glaciation. As far as known, *Megalonyx* is the only genus that has been identified. Two reports of *Megalonyx* - one from near Fairbanks, Alaska (Stock 1942) and one from the Northwest Territories, Canada (Stock and Richards 1949) - are the most northern occurrences thus far. These are of somewhat doubtful age but would surely be postglacial or of some interglacial time in that they were forest-dwelling types and were associated with other forest-dwelling types. Both specimens, the former a phalanx and the latter a tooth, are presumed to be correctly determined as *Megalonyx*.

Because of proximity to the "driftless" area of Minnesota and neighboring States, the present occurrence of ground sloth may

have been a relatively early deposition within the peat horizon. Final invasion by temperate forest forms, such as *Megalonyx*, of glaciated areas came relatively fast on the heels of climatic amelioration, and perhaps of most significance here is that future faunal correlations between nonglaciated and recently glaciated regions may be aided to some small extent.

REFERENCES

- Hay, O. P. 1914. "Pleistocene Mammals of Iowa." U. S. National Museum Pub. Wash. D.C.: 1-662.
- _____ . 1923. "The Pleistocene of North America and Its Vertebrated Animals from the States East of the Mississippi River and from the Canadian Provinces East of Longitude 95°." Carnegie Inst. Wash. Publ., No. 322: 1-499.
- _____ . 1924. "The Pleistocene of The Middle Region of North America and Its Vertebrated Animals." Carnegie Inst. Wash. Publ., No. 322 A: 1-385.
- _____ . 1927. "The Pleistocene of the Western Region of North America and Its Vertebrated Animals." Carnegie Inst. Wash. Publ., No. 322 B: 1-346.
- Hibbard, C. W. 1958. "Summary of North American Pleistocene Mammalian Local Faunas." Mich. Acad. Sci., Arts., Lets., Vol. XLIII: 1-32.
- Stock, C. 1942. "A Ground Sloth in Alaska." Science, (n.s.) 95, 552-553.
- Stock, C. and Richards, H. G. 1949. "A *Megalonyx* Tooth from the Northwest Territories, Canada." Science, 110, 709-710.
- Stone, J. E. 1966. "Surficial Geology of the New Brighton Quadrangle, Minnesota" Univ. of Minn. Press, Geol. Map Ser. GM-2: 1-39.