

# AMERICAN MUSEUM NOVITATES

Number 302

Published by  
THE AMERICAN MUSEUM OF NATURAL HISTORY  
New York City

Feb. 29, 1928

56.82 (118:78.2)

## ADDITIONAL SPECIMENS OF FOSSIL BIRDS FROM THE UPPER TERTIARY DEPOSITS OF NEBRASKA

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Collections secured in the Miocene and Pliocene deposits of Sioux County, Nebraska, by Mr. A. Thomson in work for the American Museum of Natural History during the field seasons of 1926 and 1927, have included three bones of birds that have been placed in the writer's hands by Mr. Barnum Brown for study and identification. The records obtained have added importantly to the fossil avifauna of this region.

Drawings illustrating the crane have been made by Mr. Sydney Prentice.

### Accipitridæ

#### *Geranoaëtus contortus* Wetmore

In the season of 1927 Mr. Thomson collected the lower part of a right metatarsus (Amer. Mus. Nat. Hist., Dept. Vert. Pal. No. 6981) from the lower Snake Creek beds (Upper Miocene) on Olcott Hill, that agrees with the type of *Geranoaëtus contortus* of similar age and is identified as that species. The specimen is heavily fossilized and is black in color except on the trochlea which are gray. It is complete for about the lower third. The smallest transverse diameter of the shaft measures 10 mm. and the transverse breadth across the trochlea is 23.1 mm. It is similar in form to the type of the species and is the second occurrence for the bird.

### Megalornithidæ

#### *Megalornis pratensis* (Meyer)

A fragmentary left humerus from the Pliocene of the Upper Snake Creek formation (Amer. Mus. Nat. Hist., Dept. Vert. Pal. No. 6620) found in Quarry 7 in the Kilpatrick pasture, is in two parts and has slightly less than one third of the shaft missing from the center (Figs. 1 and 2). The upper section lacks the thin plate of the crista superior and the tuberculum internum, with the adjacent surface surrounding the pneumatic foramen. The lower portion is entire. The bone is fossilized

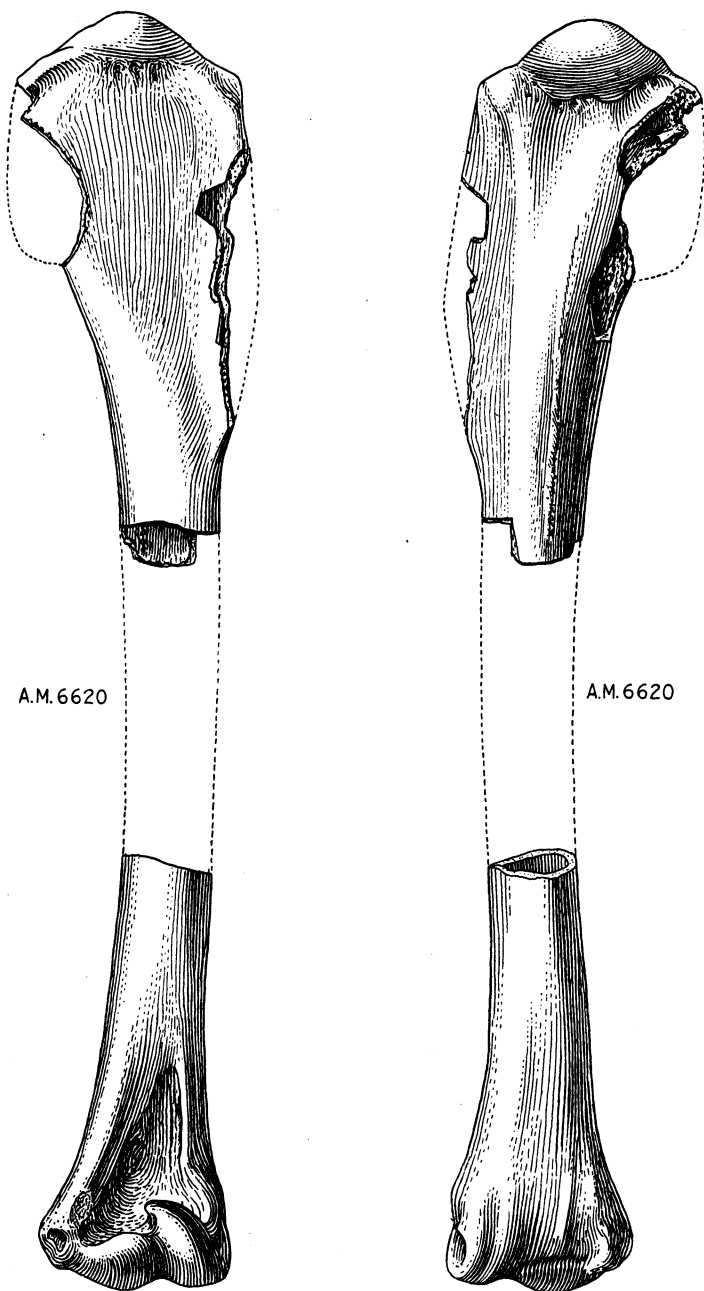


Fig. 1.—Left humerus of *Megalornis pratensis* from the Pliocene of Nebraska, anterior view. (Slightly more than two-thirds natural size.)

Fig. 2.—Left humerus of *Megalornis pratensis* from the Pliocene of Nebraska, posterior view. (Slightly more than two-thirds natural size.)

but has many checks and cracks that have been skilfully repaired so that the original form is preserved. It is dull white in color and shows a small amount of wear on projecting processes, which, however, retain the characters useful in identification.

On careful comparison it is found that the fossil agrees in form and dimensions with the living sandhill crane, being so closely similar to modern material that it may not be distinguished. Following are measurements that may be made from it together with similar dimensions taken from specimens numbered 820, 4355 and 19019, in the osteological collections of the United States National Museum. The sex of the modern birds is not known but it would appear that the first, being larger, is a male, and that the other two are females.

	FOSSIL	MODERN		
		No. 820	No. 4355	No. 19019
Breadth across distal trochlea.....	33.1	34.5	31.5	33.3
Transverse breadth of shaft below center.....	15.3	16.7	14.8	16.0
Transverse thickness at same point...	13.4	13.7	11.8	12.2
Length from upper margin of tuberculum externum to distal margin of crista superior.....	64.8	64.8	58.7	62.1

The gray cranes of North America in modern phase are separated by size into two groups, one containing the so-called little brown crane *Megalornis canadensis* (Linnæus) which nests in the far north and migrates south to Texas, California and Mexico, and the other the sandhill cranes, distinguished from the little brown crane by larger size, which breed from southern Canada south into the United States. Authorities differ as to the relationships of these two groups, some, as Hartert, Oberholser and Peters, considering them subspecifically related and others calling the large and small groups distinct species. In the present connection the writer does not care to enter into the question of subspecific relationships but as a matter of convenience treats the two as separate species.

According to J. L. Peters<sup>1</sup> the name *mexicana* of Müller, long applied to the sandhill crane, must be rejected, as it may not be identified. The next available name is *pratensis* of Meyer based on Bartram's account of the Florida bird. Peters gives the northern sandhill crane, which differs from the Florida form in color but agrees in size, the subspecific name *tabida*.

<sup>1</sup>Auk, 1925, pp. 120-122.

The fossil from Nebraska, which is distinctly larger than the little brown crane, in accordance with the above is identified as *Megalornis pratensis* (Meyer), this being the specific name here accepted for sandhill cranes throughout their range. The fossil has great importance in indicating an extraordinary stability in osteological form since it demonstrates the presence in the Pliocene of a crane identical in humeral characters with the existing sandhill crane, giving this type of bird the longest line of unchanged descent at present known on the North American continent in the class Aves.

L. H. Miller has reported cranes of this type from the Pleistocene of Rancho La Brea and McKittrick, where he has found bones of varying dimensions indicating a possibility of two forms.

In the identification of this fossil I have had occasion to examine critically *Grus haydeni* Marsh<sup>1</sup> named from a fragmentary distal end of a left tibia collected by Dr. F. V. Hayden from "later Tertiary beds" of the Niobrara River, in the upper Missouri region. The exact age of the specimen is uncertain, as it has been ascribed to the Pliocene or questionably to the Pleistocene. From examination of a replica in plaster of the type, it appears that it has no valid characters to mark it from the sandhill crane. In modern bones the outer margin of the outer condyle, viewed from below, has an angular impression on its posterior portion that is not as well marked in the type of *haydeni*. The latter, however, shows wear sufficient to account for the difference. *Grus haydeni* Marsh is, therefore, reduced to a synonym of the modern *Megalornis pratensis*, with the statement that the fossil has the size of the living sandhill cranes.

### Aramidæ

#### *Aramus* sp. indet.

In the season of 1927 Mr. Thomson secured the right tibio-tarsus (Amer. Mus. Nat. Hist., Dept. Vert. Pal. No. 6982) of a limpkin in the Pliocene of the Upper Snake Creek beds on Olcott Hill. The specimen is from a young individual in which the bone had not fully developed so that the head of the bone from immaturity had not yet ankylosed to the shaft, and is missing, and the upper end of the shaft appears spongy. The lower end has the various tubercles and grooves apparently in normal condition: It is slightly smaller and more slender than the average for *A. pictus*, a condition due perhaps to age. It measures 12.1 mm. transversely across the tubercles. This specimen is closely similar to the

<sup>1</sup>Marsh, O. C., *Grus haydeni*, Amer. Journ. Sci., Ser. 2, Vol. 49, 1870, p. 214.

modern limpkin *Aramus pictus* and may be that species. The fact that the bone is highly immature makes certain identification inadvisable so that it is named here to genus only with the hope that more material may come to hand in later excavation. It is apparently typical *Aramus* and not *Aramornis* Wetmore<sup>1</sup> described from the Middle Miocene of this same area.

The present specimen is the second occurrence known for its family in fossil state. The modern *Aramus pictus pictus* is found in the interior of the peninsula of Florida and in the Okefinoke swamp in southern Georgia, and in an allied form *Aramus pictus dolosus* Peters, from Central Mexico south to Panama.

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<sup>1</sup>Amer. Mus. Nov., No. 211, March 11, 1926, p. 1.

