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## BONES OF BIRDS FROM THE CIEGO MONTERO DEPOSIT OF CUBA

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Bones of birds collected from deposits in springs at the Baños de Ciego Montero, Cuba (thirty miles from Cienfuegos) by Mr. Barnum Brown and Prof. Carlos de la Torre in 1910 and 1918, comprise fragmentary material which though in small amount is of considerable importance. After examination of the remarkable mammalian forms that come from these same deposits, it is to be regretted that conditions did not permit the preservation of a greater amount of material representative of the prehistoric avifauna of Cuba, since in the few remains available there are two species that have not been found in modern times in the island.

The specimens examined are dark and stained, except the bones of the domestic fowl, which are light in color and obviously of recent intrusion. The older bones are supposed to be of Pleistocene age.

Following is a list of the material identified.

### Ardeidæ

#### *Casmerodius albus* (Linnæus)

The egret is included on the basis of a left coracoid that shows a certain amount of abrasion, and the broken proximal end of a left tibiotarsus. The coracoid is not so heavily stained as some of the other fragments but appears to be of ancient deposit.

The coracoid of the present species may be recognized among those of other North American and West Indian herons (save possibly *Ardea occidentalis*, of which no skeleton is available at present) by the presence of a pneumatic foramen situated at the proximal inner angle of the bone immediately above the excavated articular surface that attaches to the sternum. A depression that surrounds this foramen is elongate-elliptical in outline and is about four millimeters in length. The amount of ossification in the bottom of this depression varies, so that the opening is sometimes single or more often divided in the various specimens that have

been examined. In the bone from Ciego Montero two small openings lead to the interior. The depression for the foramen is concealed when viewed from in front by a slight expansion at the base of the bone but is readily seen from the inner side or from behind.

Current practice includes the egrets of the World as geographic races of one wide-ranging group distinguished by differences in size, length of the dorsal plumes, and less certainly by the color of the soft parts, distinctions all more or less variable. After careful comparison of a skeleton of *C. albus timoriensis* from eastern Borneo, with a series of *egretta* from the United States, I am unable to find skeletal characters, save of size, that definitely separate these two. In *timoriensis* the transpalatine process is somewhat more produced and the distal portion of the lachrymal more attenuate, but certain specimens of *egretta* approach it in these respects. Skeletons of the other forms are not available at present.

The bones from Ciego Montero resemble in size those of the egret found today in Cuba and may be called *Casmerodius albus egretta*.<sup>1</sup> Barbour<sup>2</sup> states that this bird in recent years has been greatly reduced by plume-hunters.

#### ***Ixobrychus exilis* (Gmelin)**

The upper half of a right humerus comes from a least bittern similar to the modern bird.

#### **Ciconiidae**

##### ***Jabiru mycteria* (Lichtenstein)**

The jabiru is represented by the upper third or more of a right tarso-metatarsus and the lower end of a left tibio-tarsus broken off above the condyles. These fragments are well preserved and are uniformly stained so that they appear dark brown.

This species during historic times has been known to range from southern Mexico south through Central and South America as far as Argentina, and has been recorded accidentally as far as south central Texas. It has not been known from the West Indies, so that the bones under discussion constitute a new record, not alone for Cuba but for the entire group of the Antillean Islands.

<sup>1</sup>The question of the subspecies of egrets has been treated recently by the following authors: Hartert, Jourdain, Ticehurst, and Witherby, *Hand-List of British Birds*, 1912, p. 123; B. O. U. *List of British Birds*, Second Edition, 1915, p. 193; Oberholser, H. C., *Auk*, 1919, pp. 557-558; Hartert, *Vög. Pal. Faun.*, vol. 2, March, 1920, pp. 1236-1239.

<sup>2</sup>Barbour, Thomas, *Birds of Cuba*, Mem. Nuttall Ornith. Club. No. 6, June, 1923, p. 28.

Sellards<sup>1</sup> has described a stork-like bird from Vero, Florida, as *Jabiru weillsi*,—remarking that the allocation of the species to the genus *Jabiru* is provisional,—from wing bones which are said to be longer than in *Jabiru mycteria* and to exhibit differences in form. Its distinctness in point of size may be open to question since Dr. Sellards gives the total length of his type specimen, a humerus, as 280 millimeters, while there is in the collection of the U. S. National Museum a skin (Cat. No. 212,989) of an adult male of *Jabiru mycteria* with humeri preserved intact in which a careful measurement (made without removing the bones from the skin) gives a humeral length of 280 millimeters, exactly equivalent to that recorded for the bird described as an extinct form.

### Anatidæ .

#### *Anas platyrhyncha* (Linnæus)

A left femur with the head gone and the distal end somewhat broken is identical in form with that of the modern mallard duck. Barbour<sup>2</sup> remarks that the mallard has been recorded only by Gundlach, who noted a flock near Cárdenas in 1850, but that the species must appear from time to time since it is known to the professional hunters of Mariel and Lake Ariguanabo.

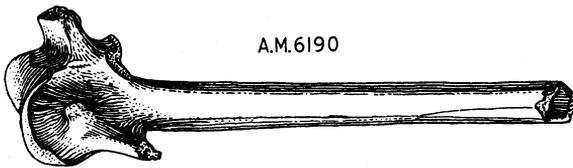


Fig. 1.



Fig. 2.

Fig. 1.—Inner view of left metacarpal of *Geranoaëtus melanoleucus*. (Natural size.)

Fig. 2.—End view of trochlea of left metacarpal in *Geranoaëtus melanoleucus* (Natural size.)

### Accipitridæ

#### *Geranoaëtus melanoleucus* (Vieillot)

The greater part of a left carpo-metacarpus (Amer. Mus. No. 6190) with the distal end and the greater part of metacarpal 3 missing (Figs. 1 and 2<sup>3</sup>) is exactly similar to *Geranoaëtus melanoleucus* and is identified as

<sup>1</sup>Eighth Annual Rep. Florida State Geol. Surv., 1916, pp. 146-147, Pl. xxvi, Figs. 1-4.

<sup>2</sup>Barbour, Thomas, Birds of Cuba, Mem. Nuttall Ornith. Club, No. 6, June, 1923, p. 35.

<sup>3</sup>Drawings made by Sydney Prentice.

that species. There is associated with it the unguis phalanx of a buteonid of the proper size to belong to this same species.

This record adds another species to the Cuban bird-list hitherto unknown from that island or in fact from anywhere in the West Indies, the range of this eagle today being confined entirely to South America where it is common from northern Argentina south to the Strait of Magellan and occurs northward in the mountains to Colombia and Venezuela.

An eagle of similar form is recorded by L. H. Miller<sup>1</sup> from Pleistocene deposits in Hawver Cave, California. In a previous paper<sup>2</sup> I have cited Doctor Miller as authority for the definite occurrence of *melanoleucus* at the point indicated, but learn that I have misinterpreted the meaning of the author quoted (compare pages 75 and 92-93 in his account), since he has written me, under date of November 4, 1926, that the "material was not to my mind sufficiently perfect to record the species as a fossil. . . . It may be the species *melanoleucus* . . . but . . . might be something else." The present writer takes this opportunity to point out his error in citation of Doctor Miller's paper.

#### Phasianidæ

##### *Gallus gallus* (Linnæus)

The domestic fowl is represented by a nearly complete cranium that is light in color and evidently modern. In point of time it has no apparent connection with the other avian remains as it is obviously of recent deposit.

#### Rallidæ

##### *Gallinula chloropus* (Linnæus)

The distal end of a right tibio-tarsus represents a Florida gallinule of small size being equal in dimension to the female in this species.

#### Psittacidæ

##### *Ara tricolor* Bechstein

The proximal half of a right metacarpal apparently belongs to the Cuban macaw. The second metacarpal is broken near the middle, while the third is missing entirely, save where fused with the second. The processes and condyles at the proximal end of the bone show more or

<sup>1</sup>Univ. Calif. Publ. Geol., vol. 7, October 12, 1912, pp. 75, 92-93, 95, 97, 114.

<sup>2</sup>Ann. Carnegie Mus., vol. 16, April 10, 1926, p. 406.

less wear and abrasion. This fragment agrees in general characters with the metacarpals of such macaws as are at hand for comparison. It represents a form larger than *Ara severa* but smaller than the large species of the genus. No skeletal material of *Ara tricolor* is at hand but from an examination of skins it would seem that the bone is of the proper size. On these grounds, then, it has been called *Ara tricolor*.

The fragment of bone preserved has no indication of the external groove for the reception of the tendon of the *extensor digitorum communis*. In other macaws examined, with the exception of *Ara chloroptera*, this groove is evident for about the distal three-fifths of the bone. The lower surface of the third metacarpal at its extreme proximal end (where it is fused with the second metacarpal) is more roundly ridged and less flattened than in the other macaws at hand. Otherwise the fragment from Ciego Montero presents no notable differences in form when compared with *Ara severa*, *A. ararauna*, *A. chloroptera*, and *A. macao*.

