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FIVE NEW SPECIES OF BIRDS FROM CAVE DEPOSITS  
IN PORTO RICO.

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During identification of a considerable collection of bird bones secured in Porto Rican Caves by H. E. Anthony of the American Museum, several species new to science have come to light. A complete report on the entire collection is in course of preparation, but as it is not practicable to complete it at the present time the new forms are presented in the following diagnoses. It will be seen that the cave fauna of the island offers avian species as remarkable as those that have been described by Mr. Anthony among mammals.<sup>1</sup>

*Polyborus latebrosus*, sp. nov.

*Characters*.—Metacarpus similar to that of *Polyborus cheriway* (Jacquin)<sup>2</sup> but slightly larger; first metacarpal proportionately higher, more massive especially at the base (when viewed from behind), and with less inward flexure at the tip; proximal end of third metacarpal with surface slightly excavated to form a concavity; excavation anterior to pisiform process more distinctly delimited; inner margin of condyle raised in a distinct crest.

*Description*.—Type, Cat. No. 4921, Dept. Vert. Pal., American Museum Nat. Hist., proximal end of right metacarpus, from cave on the property of Don Gervacio Toraño, near Utuado, Porto Rico, collected July 2, 1916, by H. E. Anthony.

Metacarpus with first metacarpal strong and massive especially at the base; head produced and slightly enlarged at extremity, showing a very slight inward flexure; articular surface for pollex broadened, supported by a basal buttress; a slight notch posteriorly at base marking junction

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<sup>1</sup> The Indigenous Land Mammals of Porto Rico, Living and Extinct. Mem. Amer. Mus. Nat. Hist., N. S., Vol. II, Oct. 12, 1918, pp. 333-435, 20 plates, 55 text figures.

<sup>2</sup> Skeletons of *Polyborus cheriway* used in the present studies come from Florida.



with second metacarpal; two minute foramina on either side at base; a shallow anterior carpal fossa on posterior face; outline of carpal articulation viewed from inner side forming part of an ellipse with axis vertical, the posterior margin forming one side of the ellipse; upper margin here produced in a distinct ridge; posterior carpal fossa slight; pisiform process low; internal ligamentous fossa deeply impressed; a distinct elongate fossa on inner surface anterior to pisiform process, sharply marked by inner extension of margin of third metacarpal as a distinct ridge; base of second metacarpal strong and heavy; lower surface of third metacarpal distinctly excavated so that it is concave.

*Measurements.*—(Of type.) Extreme height (through crest of first metacarpal) 16 mm.; length of first metacarpal 9.2 mm.; diameter of base of first metacarpal (behind expansion for pollex) 2.5 mm.

*Range.*—Known only from cave on the property of Don Gervacio Toraño near Utuado, Porto Rico. (Extinct.)

*Remarks.*—The present species as shown by the characters of the few fragments available seems to stand intermediate between *Polyborus cheriway* (Jacquin) and *P. plancus* Miller. Its discovery marks an extension of range for the genus, as *P. cheriway*, its nearest neighbor in a geographical sense, does not pass in the West Indies beyond Cuba and the Isle of Pines, while on the southward it reaches only to Trinidad and certain small islands near the coast of Venezuela.

***Gallinago anthonyi*, sp. nov.<sup>1</sup>**

*Characters.*—Humerus similar to that of *Gallinago delicata* (Ord), but distinctly larger and longer; ectepicondylar process shorter; crista superior relatively smaller.

*Description.*—Type, Cat. No. 4922, Dept. Vert. Pal., American Museum Nat. Hist., right humerus, from Cueva Catedral, near Morovis, Porto Rico, collected in July, 1916, by H. E. Anthony.

Humerus with head comparatively broad, crista superior relatively low and slightly developed, projecting outward nearly at right angles to shaft, with the projecting margin strongly rounded in outline; fossa subtrochanterica rather shallow; no pneumatic foramen; nutrient foramen situated well above middle of bone 17 mm. from extremity of caput humeri; shaft comparatively strong, much flattened and broadened toward distal end; base of ectepicondylar process low, summit distant 5.6 mm. from extremity of radial condyle (tip of process broken away); depression for brachialis inferior broad and well marked; ulnar condyle elongate.

*Measurements.*—(Of type.) Total length 43.4 mm.; greatest breadth of head 10.7 mm.; lateral diameter of shaft at center 3.4 mm.; intercondylar breadth 7 mm.

*Range.*—Known from Cueva Catedral and Cueva Clara, near Morovis, Porto Rico. (Extinct.)

*Remarks.*—This peculiar snipe is distinctly larger than *Gallinago delicata*

<sup>1</sup> Named in honor of H. E. Anthony, of the American Museum of Natural History.



and shows some affinities with the larger jack snipes found in South America. It seems thus to introduce an element hitherto unknown in the West Indian Fauna.

*Oreopeleia larva*, sp. nov.

*Characters*.—Metatarsus similar to that of *Oreopeleia leucometopius* Chapman from Santo Domingo, but distinctly longer.

*Description*.—Type, Cat. No. 4923, Dept. Vert. Pal., American Museum Nat. Hist., left metatarsus, from La Cueva Clara, near Morovis, Porto Rico, collected in July, 1916, by H. E. Anthony.

External glenoid facet concave, with a high external border near center, rudely elliptical in outline; internal glenoid facet also with high external border, nearly circular in form; intercondylar prominence strong, in form resembling a truncated cone, with the apical surface sloping anteriorly; anterior semilunar groove very slight; anterior surface of bone below head excavated in a long groove that lies mainly on the inner side; both external and internal superior foramina present, the first penetrating through to opposite side; insertion of tibialis anticus tendon slight; outer anterior margin ridged to a point below the anterior groove where the entire bone shows a broad flattened surface; inner crest of talon very slightly indicated; outer crest strong and heavy with the posterior semilunar groove well developed; outer head of talon with one median perforation and two external grooves, that are not closed; posteriorly the talon is produced in a thin sharp ridge that descends rapidly to merge with the body of the bone at the anterior third of its length; junction of talon with shaft marked externally by a low ridge that curves anteriorly; internal margin of bone produced anteriorly as a thin plate that slopes in a curve to join the talon and that has a sharp outer margin; shaft greatly flattened distally; a raised line extending from the crest of the talon down the center of the shaft behind to curve outward finally to the base of the outer trochlea; another less definite line passes to the inner trochlea; inner trochlea produced outward and backward as an angular projection with a flattened lateral point; middle trochlea projecting well beyond other two, rounded in outline, flattened laterally, with excavated sides and a deep median channel; outer trochlea strong and heavy, produced outwardly and posteriorly and excavated behind, where it is also heavily grooved; a large external inferior foramen and a faintly indicated internal one.

*Measurements*.—(Of type.) Total length 39.5 mm., smallest transverse diameter of shaft 2.5 mm., breadth of head 6.7 mm., breadth across trochlea 7 mm., depth through talon 6.5 mm.

*Range*.—Known from Cueva Clara and Cueva Catedral near Morovis, and a cave on the property of Don Gervacio Toraño near Utuado. (Extinct.)

*Remarks*.—The diagnosis given for this Quail-Dove is necessarily brief because of lack of osteological material for comparison, but is sufficient to point out the character of greater length of leg distinguishing



it. It is evidently closely allied to *Oreopeleia leucometopius* Chapman from Santo Domingo and apparently was a Porto Rican representative of the *Oreopeleia caniceps-leucometopius* group of species. The only other species with which *larva* might be confused is *Oreopeleia martinica* from the Lesser Antilles, a species that on the average has a distinctly shorter tarsus according to Mr. Ridgway<sup>1</sup> (from 29.5 to 36.5 mm. irrespective of sex). Exceptional individuals of *martinica* have the tarsus nearly as long as in *O. larva*. These, however, may be readily distinguished from *larva* by the more slender shaft of the metatarsus, a character in which *martinica* agrees with the smaller *Oreopeleia montana*. At least ten or a dozen individuals of *larva* are represented in the material at hand so that it would appear that at one time this Quail-Dove had been a common species.

***Tyto cavatica*, sp. nov.**

*Characters*.—Metatarsus similar to that of *Tyto glaucops* (Kaup) from Santo Domingo, but with internal head of talon larger and much longer, the lower margin more elongated; tubercle for insertion of tibialis anticus tendon heavier.

*Description*.—Type, Cat. No. 4924, Dept. Vert. Pal., American Museum Nat. Hist., proximal three-fourths of a left metatarsus from cave on the property of Don Gervacio Toraño, near Utuado, Porto Rico, collected July 2, 1916, by H. E. Anthony.

Metatarsus with base supporting inner head of talon long, sloping gradually below and truncate in front (crest of talon missing in type); posterior semi-lunar groove deep and narrow; anterior semi-lunar groove shallow; inner glenoid facet moderately impressed and concave; outer glenoid facet smooth without marked depression; entire posterior face of bone deeply grooved; ridge bearing inner head of talon swung over slightly toward center from inner margin, with a marked depression on inner face of the crest; outer side of metatarsus flattened, with angular margins, becoming narrower in a curving line toward head of bone, and expanding again slightly to support outer glenoid surface; anterior surface of bone excavated proximally in an elongate, roughly triangular groove; tubercle for insertion of tibialis anticus long and strong, extending well toward head of bone; lower end of bone with a distinct forward flexure; no osseous loop for extensor digitorum communis tendon.

*Measurements*.—(Of type.) Lateral diameter of head across articular surface 10 mm.; lateral diameter of shaft near center 4 mm.; length of base of inner head of talon 8.7 mm.

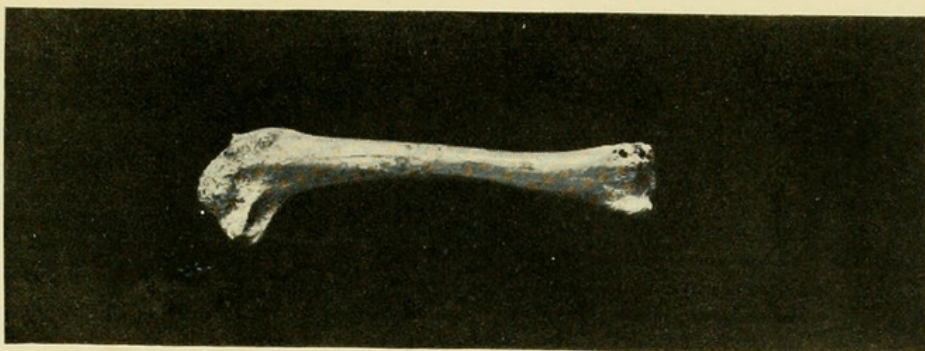
*Range*.—Known only from cave on property of Don Gervacio Toraño, near Utuado, Porto Rico. (Extinct.)

*Remarks*.—This species is known from the proximal ends of right and left metatarsi and parts of two tibio-tarsi all taken in one cave. Apparently two individuals are represented as otherwise the range in pro-

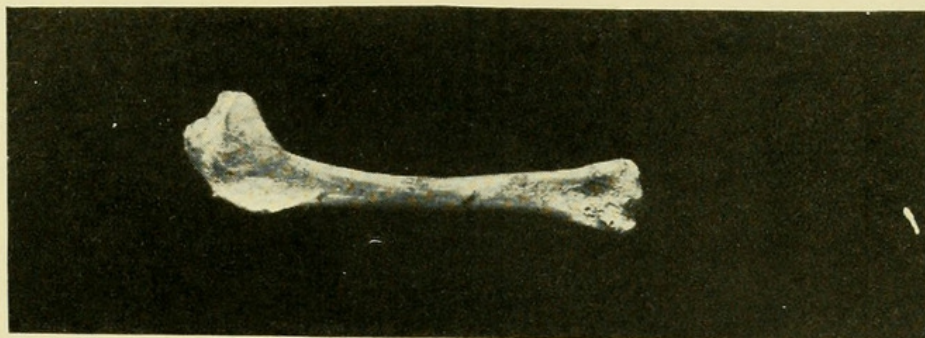
<sup>1</sup> Bull. 50, U. S. Nat. Mus., Vol. 7, 1916, p. 477.



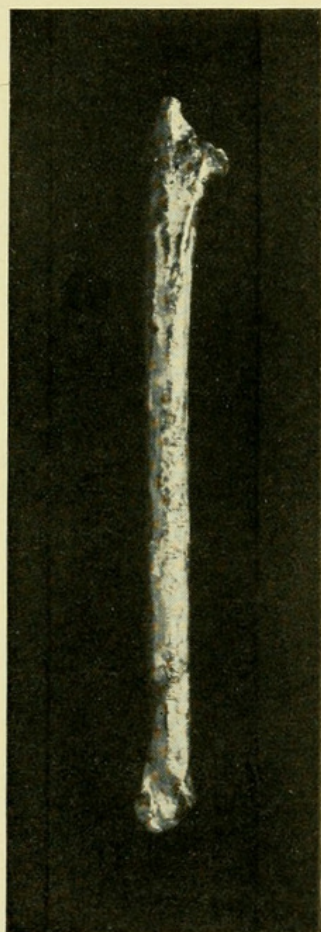
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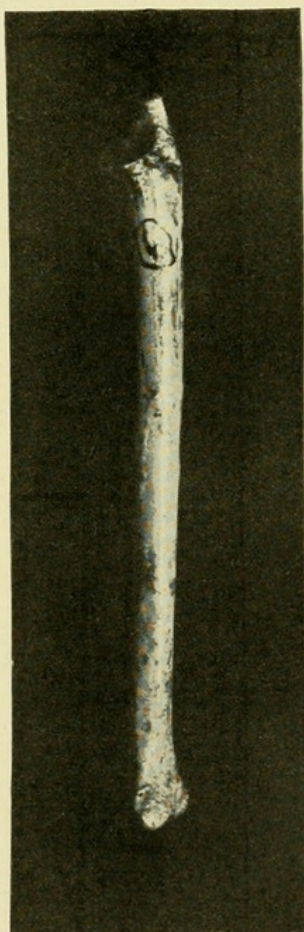
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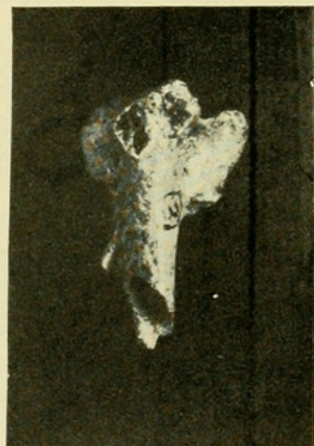
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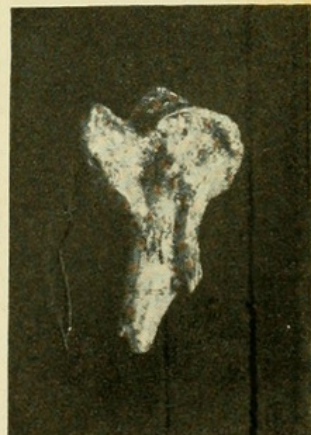
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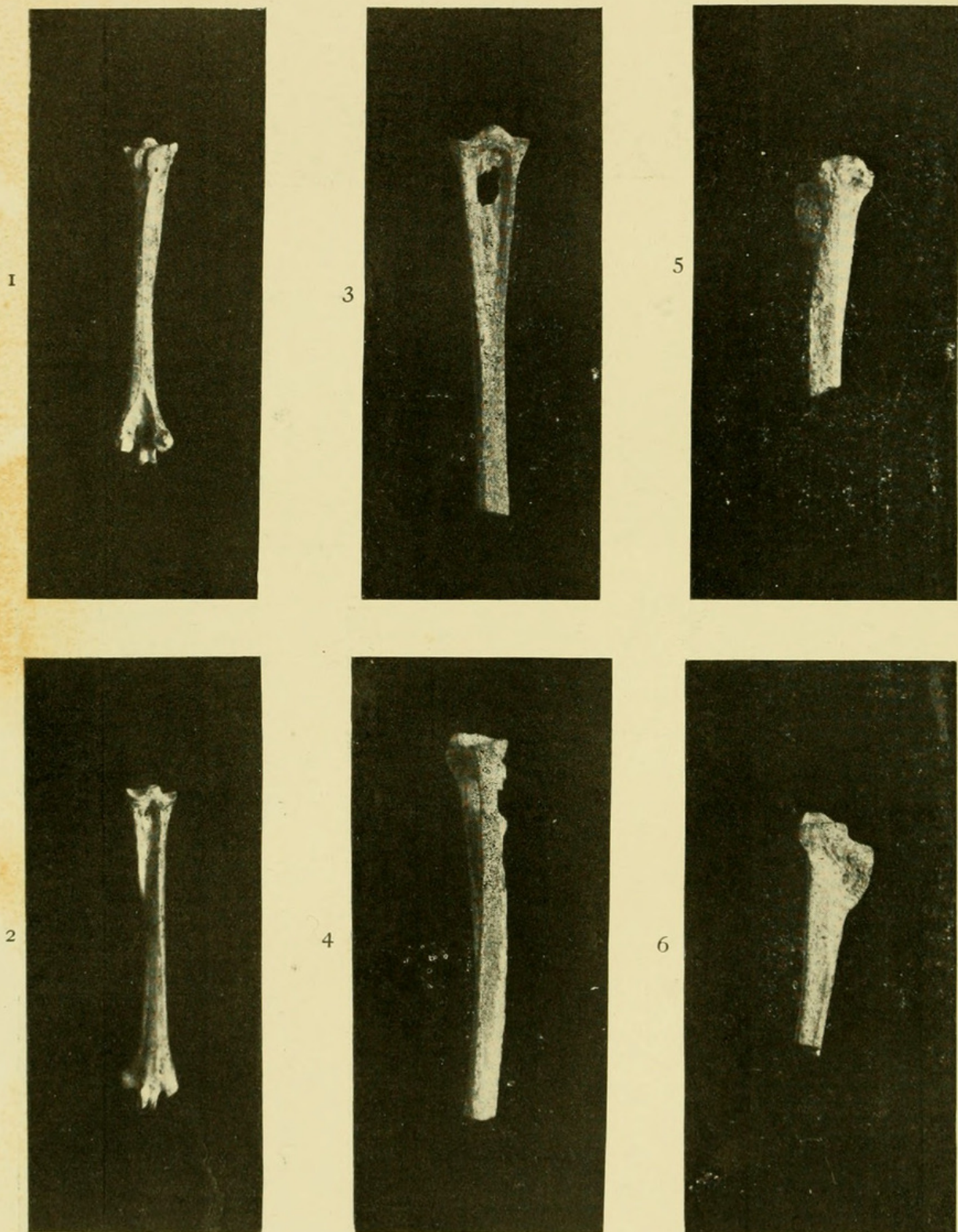


FIGS. 1 AND 2.—Right humerus, type of *Gallinago anthonyi*.

FIGS. 3 AND 4.—Right ulna, type of *Corvus pumilis*.

FIGS. 5 AND 6.—Broken right metacarpus, type of *Polyborus latebrosus*.





FIGS. 1 AND 2.—Left metatarsus, type of *Oreopeleia larva*.

FIGS. 3 AND 4.—Broken left metatarsus, type of *Tyto cavatica*.

FIGS. 5 AND 6.—Broken right metatarsus of *Tyto cavatica*.



Wetmore, Alexander. 1920. "Five new species of birds from cave deposits in Porto Rico." *Proceedings of the Biological Society of Washington* 33, 77-82.

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