

included and have been so designated.—ROBERT S. ARBIB, JR. and FREDERICK W. LOETSCHER, JR., *New Haven, Conn.*

**Pre-Columbian Bird Remains from Venezuela.**—In 1933 Dr. Edward W. Berry, Professor of Paleontology the Johns Hopkins University, conducted excavations in northern Venezuela during which there were obtained quantities of bird bones that have been submitted to me for identification. The region examined is near Lake Valencia (indicated on some maps as Tacarigua or Maracay), principally at a point known as Los Tamarindos near the end of the peninsula of La Cabrera, which extends into the lake on its north side.

According to information supplied by Dr. Berry there are here four wave cut terraces between the present water level and an elevation above it of 45 to 50 feet, indicating a considerable extension of the lake in prehistoric times. The deposits begin with a surface layer of humus of varying thickness, of terrestrial formation, followed by series of deposits of sands and gravels, diatomaceous earths, Planorbis marls, and layers of organic material. Excavation through these has yielded abundant evidence of prehistoric human occupancy in the form of pottery fragments and burials. With such material, and also separately from it, are bones of various vertebrates including the birds presently to be mentioned. While some of these birds were killed by early Indians others appear to have been deposited through natural means. Some of the bird bones were obtained from the waste dumps of earlier excavations and are of unknown origin. The majority were collected during careful stratigraphic studies by Dr. Berry's party, beginning in the superficial layers of humus at a depth of three feet, and extending into lower levels in lake bed deposits ranging from six to eleven feet below the surface. Some bird remains were found in delta deposits in a sand pit known as Cascabel about three and three-fourths miles west of the present shore line on what had formerly been an island in the enlarged lake. Others came from debris accumulated in water beneath pile houses, now forming a slight mound on a low flat two and one-half miles southeast of the lake on the Hacienda Tocarón. These were found from one-fourth meter to one meter below the surface.

Dr. Alfred V. Kidder 2d, of the Peabody Museum at Harvard University, who worked in the Valencia region in 1934 has distinguished in this area two human cultures<sup>1</sup> one supposed to be of a people of Carib affinity who inhabited the area at the arrival of the Spanish, whose remains are found in the surface of humus area, and another, older, of the Arawak group, that, according to Dr. Kidder, dates back at least to 1000 A. D.

The bird bones examined are brown in color, varying somewhat in shade, and while not fossilized are free from organic material. Their actual age is not definite but there is no question that they are several hundred years old and some of them may be considerably older.

Dr. Berry is certain that the older beds at Lake Valencia are Pleistocene but the line of separation between these and the deposits of the Recent period is still to be ascertained. Pleistocene and later invertebrates and plants from these deposits have been discussed by Charles T. Berry.<sup>2</sup> It is possible that birds of Pleistocene age may be found in the deeper layers.

Following is a brief account of the bird material. Except in one form identification is made to species without regard to the subspecies now recognized as ranging in this area.

<sup>1</sup> Science News Letter, February 23, 1935, p. 117; Science, vol. 81, March 1, 1935, p. 222.

<sup>2</sup> Journ. Washington Acad. Sci., vol. 24, 1934, pp. 387-395; idem, p. 500.

From three feet below the surface in the humus layer at Los Tamarindos, which in point of antiquity antedates the time of the Spanish discovery (as no glass beads or iron objects are found among the human artifacts), the following birds are identified: Brazilian Cormorant (*Phalacrocorax olivaceus*) and the Horned Screamer (*Anhima cornuta*).

In the deeper layers, from six to eleven feet from the surface, the following were obtained: Pied-billed Grebe (*Podilymbus podiceps*), Brazilian Cormorant (*Phalacrocorax olivaceus*), Cocoi Heron (*Ardea cocoi*), Egret (*Casmerodius albus*), Wood Ibis (*Mycteria americana*), Gray-breasted Tree-duck (*Dendrocygna autumnalis discolor*), Fulvous Tree-duck (*Dendrocygna bicolor*), White-faced Tree Duck (*Dendrocygna viduata*), Black-collared Hawk (*Busarellus nigricollis*), Red-winged Hawk (*Heterospizias meridionalis*), another Hawk of the genus *Buteo*, Curassow (*Crax alberti*), Purple Gallinule (*Ionornis martinica*), Gallinule (*Gallinula chloropus*), Rusty Dove (*Leptotila verreauxi*), a large Macaw (*Ara* sp.), an Amazon Parrot (*Amazona* sp.), a small Paroquet of uncertain genus, and the Cayenne Owl (*Rhinoptynx clamator*).

The midden deposits at the Hacienda Tocorón yielded the following: Brazilian Cormorant (*Phalacrocorax olivaceus*), an Ibis (*Guara* sp.), Horned Screamer (*Anhima cornuta*), Gray-breasted Tree-duck (*Dendrocygna autumnalis discolor*), White-faced Tree-duck (*Dendrocygna viduata*), Baldpate (*Mareca americana*), Muscovy Duck (*Cairina moschata*), Limpkin (*Aramus scolopaceus*), and a Gallinule (*Gallinula chloropus*).

In the sandpit at Cascabel there was found a humerus of the White-faced Tree-duck (*Dendrocygna viduata*).

The Baldpate, represented by a left humerus lacking the head, has not been recorded previously, so far as I am aware, from Venezuela. The other birds are those that are to be expected in this locality, the majority being forms that frequent aquatic or marshy habitats.—ALEXANDER WETMORE, *U. S. National Museum, Washington, D. C.*

**On Paired Ovaries.**—The persistence of but a single ovary, the left, is the normal condition in birds, though there are well known exceptions. The work of Gunn,<sup>1</sup> Kummerlöwe,<sup>2</sup> Fitzpatrick<sup>3</sup> and many others, but especially that of Gunn, has brought out the fact that bilateral development of ovaries is not uncommon in Hawks. In the genera *Accipiter*, *Circus* and *Falco* the bilateral condition may be as common as the unilateral condition. Occasional instances were recorded of the presence of paired ovaries in quite unrelated species as Grebe, Fulmar, Duck, Swan, Grouse, Rail, Gull, Woodcock, Owl, Thrush, Rook and Sparrow.

While in Madagascar and New Guinea, collecting birds for the American Museum, I noted the bilateral development of ovaries in some species of Hawks, but not in others, and also found this condition not unusual in certain Parrots and Lories. Its occurrence in Parrots and Lories has apparently not been recorded. In the species I examined the right ovary varied from one-fourth the size to nearly the same size as the left. In some cases the right ovary showed some enlargement but in no instance did this enlargement approach a breeding condition. Rudiments of a right oviduct were found but in no instance did it appear functional.

The following is a list of the species in which I observed right ovaries present. (The number of specimens examined of the Madagascar species was not kept carefully.)

<sup>1</sup> 1912, Proceedings Zoological Society, London, pp. 72, 73.

<sup>2</sup> 1931, Zeitschr. f. mikroskop.-anatom. Forschung, 24, pp. 614-621.

<sup>3</sup> 1934, Wilson Bulletin, XLVI, pp. 19-22.