

BIRDS FROM THE MIDDLE PLIOCENE OF MCKAY, OREGON

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A collection of avian fossils submitted for identification by Dr. J. Arnold Shotwell provides the first knowledge of the birds of the Middle Pliocene from the Great Basin. Previous information on the Pliocene avifauna of that region is scanty and limited to deposits from the upper and lower portions of the epoch (L. Miller, 1930, 1944; Wetmore, 1933). The material was collected by Dr. and Mrs. Shotwell in tuffaceous sandstone on the east bank of McKay Reservoir, about five miles south of Pendleton, Umatilla County, Oregon. It is preserved in the Museum of Natural History, University of Oregon.

The mammals of the McKay Reservoir local fauna have been described by Shotwell (1955, 1956). This fauna bears a close similarity to that of Hemphill County, Texas, the type locality of the Hemphillian provincial age. The mammals also show affinities to the Middle Pliocene (Plaisancian) faunas of North China and France. The ecological environments are centered about a fresh-water pond, with neighboring grassland and woodland communities.

The fossil birds from the reservoir fit the ecological associations postulated from the study of the mammals, since they include two ducks, a quail, and a sandpiper, the latter possibly a grassland form. As far as identifiable, all genera occur in the present avifauna of Oregon but are represented by extinct species, whereas the Great Basin avian localities of Blancan age (Upper Pliocene) contain a high proportion of living species. The present collection therefore affords additional evidence that living species of birds have a time span extending no farther back than the Upper Pliocene (Brodkorb, 1955).

Comparative osteological material was loaned by the authorities of the United States National Museum, Museum of Vertebrate Zoology, and the University of Kansas Museum of Natural History. Certain measurements were furnished by Dr. Alexander Wetmore and Glen E. Woolfenden. The photographs were taken by Robert D. Weigel.

Family Anatidae

Genus *Nettion* Kaup

Wetmore (1944) has already remarked on a difference between *Nettion* and *Querquedula* in the distal end of the carpometacarpus. In the proximal end of the bone, *Nettion* differs further in having a very shallow carpal fossa, whereas in *Querquedula* the fossa is deeply excavated.

Nettion bunker Wetmore

This species was previously known from two carpometacarpi from the Upper Pliocene of Kansas and Arizona (Wetmore, 1944). Four specimens from the McKay Reservoir are referred to this teal, extending its time range to the Middle Pliocene and providing information on additional parts of the skeleton.

Carpometacarpus.—Proximal portions of left (Univ. Oregon no. F-3602) and right (F-4147) carpometacarpi are stouter than in *N. carolinense*. Measurements of the four carpometacarpi now known are given in table 1. The heights through the first metacarpal of the National Museum and University of Kansas specimens were kindly supplied by Alexander Wetmore and Glen E. Woolfenden.

Coracoid.—A left coracoid (F-2675), lacking both ends, is somewhat larger than the corresponding element in *N. carolinense*; least width of shaft is 3.7 mm.

Tibiotarsus.—The proximal portion of a left element (F-4091) agrees with *Nettion* in having the anterior cotyla of the inner articular surface broader than the anterior cotyla of the external articular surface; the reverse condition holds in *Querquedula*. The fossil differs from *N. carolinense* in being larger and in having the inner cotyla deeper, although not as deep as in *Querquedula*. Width of head through articular surfaces is 6.7 mm.

Table 1

Measurements in Millimeters of Carpometacarpus of *Nettion bunkerii*

Specimen	Length	Proximal width	Proximal width of second metacarpal	Height through first metacarpal
U. Kansas 3982 (type)	35.0	4.3	3.6	9.1
U.S.N.M. 10936	.....	4.3	3.7	9.5
U. Oregon F-3602	.....	4.3	3.5	9.3
U. Oregon F-4147	.....	.....	3.5	.....

Nettion bunkerii needs comparison with the earlier named *Nettion eppelsheimense* (Lambrecht, 1933) from the Lower Pliocene of Germany. The latter is described as being more robust than *N. crecca*. *Nettion bunkerii* seems to be slightly larger than *N. eppelsheimense*, as the width of the shaft of the coracoid of that species is given as 3.5 mm.

Anatidae, indeterminate

A left ulna (F-4148), lacking both ends, is indeterminate but resembles the ulna of *Aix sponsa*. It probably represents an undescribed species.

Family Phasianidae

Subfamily Odontophorinae

Genus *Lophortyx* Bonaparte

Excavation on anconal surface of humerus below caput humeri large and extending under internal tuberosity; medial bar at angle of 120 degrees to shaft; ratio between distal and proximal widths of humerus 75.27 to 81.40 per cent; ratio between depth of caput humeri and proximal width of humerus 37.23 to 40.70 per cent; ratio between distance from proximal end of brachialis anticus to distal end of internal condyle and distal width of humerus 75.34 to 81.43 per cent.

Lophortyx shotwelli, new species

Holotype.—Proximal portion of left humerus, University of Oregon Museum of Natural History, no. F-3611, from Middle Pliocene (Hemphillian) of east bank of McKay Reservoir, Oregon. Collected by J. Arnold Shotwell and Genevieve Shotwell, summer, 1950.

Referred material.—Proximal portion of left humerus (F-2553) and distal portions of two left humeri (F-2543 and F-3183). The type is blackish, whereas the three referred specimens are cream-colored, a suggestion that at least three individuals are represented.

Diagnosis.—The humerus agrees in size and proportions with the humeri of the three living species of *Lophortyx*, but differs as follows: caput humeri more rounded and less produced proximally; bicipital crest rounded and not produced distal to ligamental furrow; area between internal condyle and entepicondyle excavated; entepicondylar prominence more distal in position; distal portion of internal margin, between entepicondyle and entepicondylar prominence, nearly straight (concave in living species).

Measurements.—Proximal width of humerus, 9.4 mm.; distal width, 7.1–7.3; depth of head, 3.7; distance from proximal end of brachialis anticus to distal end of internal condyle, 5.5.

The four previously recognized fossil species of Odontophorinae include *Colinus hibbaridi* Wetmore (1944) from the Upper Pliocene of Kansas, *Cyrtonyx cooki* Wetmore (1934) from the Upper Miocene of Nebraska, *Cyrtonyx tedfordi* L. Miller (1952) from the Upper Miocene of California, and *Miortyx teres* A. H. Miller (1944) from the Lower Miocene of South Dakota. The new species is smaller than any of these quail; it also differs in generic characters.

Family Scolopacidae

Genus *Bartramia* Lesson

Carpometacarpus with distal ends of second and third metacarpals fused for distance about equal to length of condyles; distal end of third metacarpal curved and decidedly shorter than second metacarpal; posterior margin of third metacarpal slightly concave before its fusion with second metacarpal;

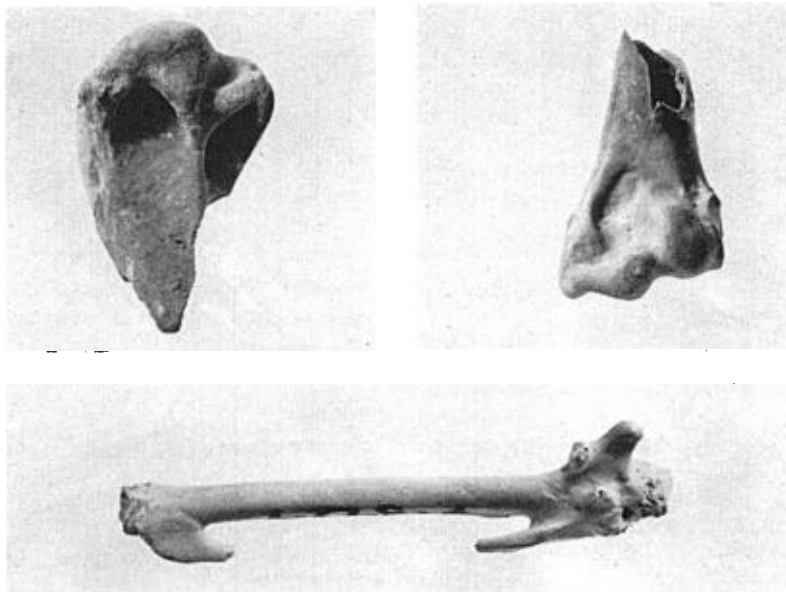


Fig. 1. Upper left, *Lophortyx shotwelli*, holotype, no. F-3611; upper right, *Lophortyx shotwelli*, referred specimen, no. F-3183; lower, *Bartramia umatilla*, holotype, no. F-3727. All specimens three times natural size.

a slight but distinct intermetacarpal tuberosity near proximal end of intermetacarpal space; shaft of second metacarpal gently curved to meet first metacarpal, the projected curve extending along anterior face of first metacarpal; pollical facet and proximal edge of first metacarpal at an angle of about 60 degrees to shaft of second metacarpal; anterior edge of first metacarpal at an angle of about 45 degrees to shaft of second metacarpal.

***Bartramia umatilla*, new species**

Holotype.—Right carpometacarpus, University of Oregon Museum of Natural History, no. F-3727, from Middle Pliocene (Hemphillian) of east bank of McKay Reservoir, Oregon. Collected by J. Arnold Shotwell and Genevieve Shotwell, summer, 1950.

Diagnosis.—The carpometacarpus is much smaller than that of Recent *Bartramia longicauda*, being but slightly larger than in *Lymnocyptes minimus*; pollical facet with tuberosities reduced; process of first metacarpal with edges rounded rather than angular.

Measurements.—Length, 23.5 mm.; proximal width, 2.4; distal width, 2.4.

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