BIRD REMAINS FROM AN OREGON INDIAN MIDDEN

By LOYE MILLER

By invitation of authorities at the University of Oregon, I undertook a general survey of bird remains that were retrieved by workers in anthropology at an Indian campsite on the Columbia River at Five Mile Rapids, five miles east of The Dalles, Oregon. Dr. J. Arnold Shotwell of the University of Oregon first suggested that there might be condor bones in the collection. Dr. L. S. Cressman, under whose guidance the work was carried on, sent me two shipments aggregating approximately nine thousand bird bones or fragments and asked that they be classified as to genus. Results of this study are here presented.

Acknowledgments.—Dr. Cressman has been most cooperative in furnishing material and data such as are at present available. Dr. Shotwell has informed me that the mammal fauna thus far identified includes no extinct species. The excavation was carried out by the Department of Anthropology of the University of Oregon under permit from the National Parks Service and was supported in part by a grant from the National Science Foundation. My indebtedness to these several parties is gratefully acknowledged.

LOCATION, AGE, AND MATERIAL

The Five Mile Rapids Site (WS–4) represents an early Indian village that was seemingly occupied continuously for a great many years and was later covered over by a hard-pan stratum several feet in thickness. Above this hard-pan subsequent fill and changes in culture are indicated. The bird remains are all from the lower deposit and the second shipment all from the part later designated as the condor layer. Dr. Cressman and his advisers consider the age to be at least 9000 years. Carbon–14 tests have lately been completed that indicate slightly less than 8000 years. The site is situated in what is today designated as the Great Basin faunal area.

The specimens came to me in packages representing sections and levels as they were retrieved in the "dig." A package might contain one fragment or it might contain fifty. The material from each package was spread out upon a tray, classified, recorded and returned to its container. There were 51 packages in the first shipment of 3000 bones and 69 packages in the second of 6000 bones.

Except for fracture, the bones are well preserved, colored warm brown and somewhat mineralized. Heated in the Bunsen burner flame they gave off some white smoke but very little odor. Surface markings were as sharply defined as in a freshly prepared specimen, although seldom was an unbroken bone encountered.

DISCUSSION

Approximately nine thousand bones were identified as to genus or species and there developed some interesting "pictures of the past." Surprisingly few species were represented with any degree of frequency. Gull (*Larus* sp.) bones were in every sizable package and usually in quantity. Cormorants (*Phalacrocorax*) occurred in 89 packages, and 105 contained Bald Eagle (*Haliaeetus leucocephalus*). The next species in abundance, to my surprise was the California Condor (*Gymnogyps californianus*) which appeared in 53 packages. Only two bones were recognized as duck and seven as goose. Twelve packages yielded the Raven (*Corvus corax*), twelve the Turkey Vulture (*Cathartes aura*) and five a magpie (*Pica*). One bone was that of a coot (*Fulica americana*) and one a buteonid hawk, and most surprising of all, there was a single bone of the extinct vulture *Coragyps occidentalis*.

Less than a dozen bones in all showed signs of immaturity; these represented raven, crow, hawk, falcon, and goose. There must have been little or no nesting ground near the site during the season of occupation by the Indians. In the Gulf of California on a spring cruise, I found the natives crossing some ten miles of gulf waters by canoe to gather eggs and young of boobies, pelicans, and even Ospreys for food. Howard (1929) found the young of cormorants very abundant in the Indian midden at Emeryville on San Francisco Bay, California. Had young birds been more available at the Oregon site, their bones would surely have been present in the collection. Those that were found were well preserved. Were the Indians too nearly satisfied with the spring run of salmon to travel far afield or had they limited means of travel?

The total lack of wading birds (Charadrii, Gruidae, Ciconiiformes) and of the divers (Gaviidae, Colymbidae) would strongly suggest the absence of lagoon or marshy country in the near vicinity. Small molluscs that were found in the midden are considered to be indicators of "semi-permanent lagoon-like bodies of water" (Cressman, personal note) but such bodies must have been too small in size or too ephemeral in nature to attract appreciable quantities of wading birds. Cormorants and gulls are not necessarily indicative of lagoon waters. Cormorants often fish in fairly active water, coming ashore on beaches to sun or to roost.

Gulls would be attracted in considerable numbers by cast up carcasses of post-breeding salmon or by human refuse. A sizable mob of gulls assembled about a large salmon carcass would offer a fairly easy target for the human hunter using throwing stick, sling stone or bow according to his stage of development in armament. The great mass of gull bones strongly suggests the use of nets that would increase the percentage of catch from such a mob.

Like the gulls, the Bald Eagle is well known as a scavenger with a special predilection for fish. The species perhaps occurred in considerable numbers along the margins of the Columbia River as it occurs today along certain beaches in Alaska. Large size of the measurable eagle bones from the kitchen midden indicates Alaskan affinity systematically. Striking aspects of the whole avifauna are the great abundance of a few species and the high degree of fragmentation of their bones. As in the case of the condor material, not only are the long bones broken but the short, stout bones such as the coracoid and tarsus have been broken in such manner as to suggest considerable force purposefully applied.

Eagles and condors were of great significance in the rituals of some California Indians. Condor nests were even hereditary property among the Diegueño Indians. Young were taken from the nest, reared in captivity and sacrified at annual rituals (Kroeber, 1925:676). Actual slaying of the sacrificial bird among certain Arizona tribes today is accomplished by wringing the neck in order to avoid shedding any of its blood. Later the heart might be taken out and eaten to impart strength and courage. The foothills Indians of California used the Golden Eagle in mourning ceremonies. The slain bird was passed back and forth from one clan to another with much dancing and expressions of grief, but I have been unable to learn whether or not mutilation resulted.

It has occurred to me that fragmentation of many of the bird bones might have been the work of Indian dogs or of other carnivores that had become camp hangers-on. Canid jaws and teeth have been identified among the mammal remains. On the other hand the fragile bones of the Magpie, Sparrow Hawk, and Screech Owl have been recovered in perfect condition. The slender limbs perhaps offered too little flesh to attract either man or beast.

Only two bone fragments in the entire collection show any suggestion of contact with fire and this suggestion is most uncertain. Nor is there any trace of gnawing by

rodents such as occurs in many cavern deposits or on bones that have lain exposed for any length of time.

REMARKS ON CERTAIN SPECIES

Gymnogyps californianus. California Condor. Indian middens from western Oregon have yielded condor remains (A. H. Miller, 1942) in limited quantities but eastern Oregon belongs in the Great Basin faunal area where condors are unknown in historical time. Subfossil remains in Nevada, New Mexico, and Texas have represented the genus but sparingly. In these cases also there is an uncertain association with several extinct species as well as with Basketmaker types of human artifacts.

The remains here discussed are surprisingly abundant, some bones were complete, others easily restored and all were unweathered. The exact specific identity is open to some question. *Gymnogyps amplus* was described from the California Pleistocene on the basis of its broad tarsometatarsus (L. Miller, 1911:390). A generation later all the Pleistocene remains of *Gymnogyps* were assigned to the species *amplus* by Fisher (1944) who considers it probably the ancestor of our Recent bird. He bases his opinion on characters of the skull—an element regrettably imperfectly represented in Indian middens thus far. Limb and body elements of the two species were not recognizably different according to Fisher. I am not in complete agreement with him as to his major conclusion.

The type specimen of *G. amplus* is a tarsometatarsus that is "very broad as compared with *Gymnogyps californianus* (Shaw); foot set inward on the shaft so that the median line of the shaft falls outside the center of the foot" (Miller, 1911:390). In 1941 I re-examined this specimen in comparison with the great series of Pleistocene condor bones in the Los Angeles Museum but no specimen was found that duplicated the great width of tarsus seen in the Shasta bird. The only tarsi recovered from the midden are very definitely of the *californianus* type, so I am recording them as such, although it is freely admitted that there may have been a slightly different facies of condor inhabiting the Great Basin area during late Pleistocene or very early Recent time. Some of the Indian midden bones are larger than any in our limited series of Recent material but others are smaller. The Pleistocene material has a marked tendency toward larger size.

Subfossil condor remains have been discovered in the main by archeologists. The suggestion is that condors have been of interest to the American Indian from Basketmaker time down to the present and all the way from western Texas to Oregon (Howard and Miller, 1933; Wetmore and Friedmann, 1933).

Coragyps occidentalis. Two fragments (nos. 1640 and 1545) were sorted out of the general mass and designated as cathartid. Placed later in juxtaposition they were found to fit perfectly together making up an almost complete right humerus. The distal articulations beyond the brachial depression are wanting but the strongly curved shaft which readily distinguishes *Coragyps* from *Cathartes* is immediately recognizable. The bone is stouter than some of those of *Coragyps occidentalis* from Rancho La Brea but it is a perfect match for others in the series.

This species, widely distributed in Pleistocene time, has been found in cave deposits, sometimes almost certainly associated with Basketmaker artifacts at deeper levels but giving place at upper levels to *Cathartes aura* or *Coragyps atratus*. It is of great interest to find it here even though so sparingly represented. The state of preservation is the same as that of the other bird bones. The species seems to have dropped out along with the Pleistocene camel, horse and ground sloth at about the time of man's first appearance in the southwest.

Cormorants. It is not out of order to find cormorants all through the interior of our

western states wherever there is water even in small bodies. I have taken the Double-crested Cormorant (*P. auritus*) in the Mojave Desert at a reservoir less than 100 feet long. This is the only species of cormorant found today on our inland waters and probably is the one represented in this collection. Our small series of skeletons at hand shows much size variation even in birds of the same sex. A few rather large bones occur among the great mass of cormorant remains from the midden but I hesitate to ascribe them to the large Alaskan subspecies.

Table 1

Frequency of Occurrence of Avian Types in Packages

Species	Packages in shipment I	Packages in shipment II	Total
Cormorant	46	43	89
Goose	4	3	7
Duck	2	1	3
Condor	14	39	53
Coragyps	1	....	1
Turkey Vulture	5	7	12
Bald Eagle	45	60	105
Prairie Falcon	1	....	1
Sparrow Hawk	3	3	6
Buteonid Hawk	....	1	1
Coot	1	....	1
Gull	49	57	106
Screech Owl	2	....	1
Raven	7	5	12
Crow	....	7	7
Magpie	2	....	2

Gulls. Great numbers of coracoids, and humeri, some tarsi, a few beaks and metacarpi dominate the gull picture. For some reason not evident, femora and tibiae seem less abundant. All these elements vary considerably in size and of course there is no association within the matrix. More than a dozen species of gulls occur along the coast in winter, two of the smaller of which breed on fresh waters of the interior. Gabrielson and Jewett (1940) report that the large Glaucous-winged and Western gulls may wander up the Columbia into the basin region. There is thus a chance of at least four species being represented in the scrambled mass of gull bones. Specific designation was therefore considered unwise.

Owls. It is surprising to find only two owl bones in the entire collection. A humerus is not distinguishable from that of the Screech Owl (*Otus asio*). These small owls of one race or another are distributed over the entire state where cover is available. I heard the characteristic notes in June of 1899 while camped at the junction of Cottonwood Creek and the John Day River. The presence of the bones thus suggests that there may have been some timber along the Columbia River at the midden site, since these birds are generally restricted to fairly dense cover or to cliff crannies.

The larger owls appear commonly in legends and ceremonials of western Indians. Howard (1929) found fairly abundant remains representing three genera in the Emeryville midden. Petroglyphs on the stones near The Dalles depict Horned Owls in several different poses, including flight. Were these artists of a later culture than the people who accumulated the midden?

Magpie. The California Indians used magpie feathers commonly in ceremonial re-

galia. Why are magpie bones (*Pica*) so rare in this midden? Three bones were found in one packet and two in another and, notably, they are less broken than those of larger birds. The slender tibiotarsus and coracoid are intact.

SUMMARY

An Indian mound of early age near The Dalles, Oregon, yielded 9000 bird bones assignable to sixteen species only four of which occur in numbers. One of these four is *Haliaeetus leucocephalus* and one is *Gymnogyps californianus*.

A single bone represents the extinct species *Coragyps occidentalis*.

Gymnogyps is here first recorded from the Great Basin faunal area in the historical period. It is a type of bird that appears to have interested primitive man from very early times.

One striking feature is the total absence of waders, divers, and gallinaceous species.

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