

BIRD REMAINS FROM CAVE DEPOSITS IN NEW MEXICO

By HILDEGARDE HOWARD and ALDEN H. MILLER

In the course of the past three years the authors have been occupied, as time permitted, with the identification of avian remains from cave deposits situated in the Pyramid Peak range at the southern end of the Organ Mountains of Dona Ana County, New Mexico. These bird bones were taken from two localities on opposite slopes of Pyramid Peak, Conkling Cavern on the east and Shelter Cave on the west. Exhumation of the bones began in 1929 and was continued in the summer season of 1930 by parties from the Los Angeles Museum where the material now is deposited.

Up to the time of this writing only four of the species identified from the caves named have received mention in print. Two of these were described as new: *Geococcyx conklingi*, Conkling Road-runner (Howard, Condor, xxxiii, 1931, pp. 206-209), and *Pyelorchampus molothroides*, a cowbird-like icterid (Miller, Auk, XLIX, 1932, pp. 38-41). The other two species, *Cryptoglaux funerea*, Arctic Owl (better known under the common name of the local subspecies, Richardson Owl, which the remains doubtless represent) (See Howard, Condor, xxxiii, 1931, p. 216) and *Gymnogyps californianus*, California Condor (Science News, Science n.s., LXXI, Apr. 4, 1930, p. xiv), both represent considerable extensions of range compared with the known distribution of these species today.

The entire avifauna of the caves, with all possible identifications completed, now amounts to fifty-eight species. It comprises a few extinct forms but chiefly a large group of species still living. Some of this group are not, however, found in the region under present faunal and floral conditions. Pending a fully detailed report upon the birds from these caves, which will appear later in the Los Angeles Museum Publications, it seems desirable to list briefly at this time all species which we have found present. Thus may be placed on record many species heretofore unknown from pre-historic times, as well as additional information relative to changes in distribution.

In the interim since the first of our material was collected, bird remains from a cave in Rocky Arroyo in the Guadalupe Mountains, "about fifty miles by road west and somewhat north of Carlsbad, New Mexico," have been reported by Wetmore (Condor, xxxiii, 1931, pp. 76-77; xxxiv, 1932, pp. 141-42). These remains were associated with bones of extinct mammals such as *Equus fraternus* and *Tetrameryx*, and many of them were found with human materials of the Basket-maker culture. In both Conkling and Shelter caves the bird bones were associated with remains of extinct mammals and part were also associated with evidences of man (human skeletal remains in the former and materials of the Basket-maker culture in the latter). The indications are, therefore, that at least part of the Conkling Cavern and Shelter Cave bones are approximately contemporaneous with those from Rocky Arroyo. It should be of value, then, while presenting a list of species found by ourselves, to include also in the tabulation Wetmore's findings in this third cave only ninety miles east of the Organ Mountains.

Name	Conkling Cavern	Shelter Cave	Rocky Arroyo
<i>Branta canadensis</i> , Canada Goose	x	..	..
<i>Anser, albifrons?</i> , White-fronted Goose	..	x	..
<i>Dafila acuta</i> , Pintail	..	x	..
<i>Nettion carolinense</i> , Green-winged Teal	..	x	..
<i>Cathartes aura</i> , Turkey Vulture	x	x	x
<i>Coragyps occidentalis</i> , Occidental Vulture	x	..	..
<i>Coragyps atratus</i> , Black Vulture	..	..	x
<i>Gymnogyps californianus</i> , California Condor	x	x	x

Accipiter velox, Sharp-shinned Hawk	..	x	..
Accipiter cooperii, Cooper Hawk	..	..	x
Buteo borealis, Red-tailed Hawk	..	x	..
Buteo swainsoni, Swainson Hawk	x	x	x
*Buteo, albonotatus?, Zone-tailed Hawk	..	x	..
Urubitinga fragilis, Fragile Eagle	..	x	..
Aquila chrysaetos, Golden Eagle	x	x	..
Haliaeetus leucocephalus, Bald Eagle	x	..	..
Polyborus cheriway, Caracara	x	x	..
Falco mexicanus, Prairie Falcon	..	..	x
Falco peregrinus, Duck Hawk	..	x	..
Falco sparverius, Sparrow Hawk	x	x	..
Tympanuchus pallidicinctus, Prairie Chicken	..	..	x
Centrocercus urophasianus, Sage Hen	x	x	..
*Callipepla squamata, Scaled Quail	..	x	..
Lophortyx, sp., Quail	x	x	..
Oreortyx picta, Plumed Quail	..	x	x
Meleagris gallopavo, Turkey	x	x	x
*Porzana carolina, Sora	..	x	..
Fulica americana, Coot	..	x	..
Larus, sp., Gull	..	x	..
Zenaidura macroura, Mourning Dove	..	x	..
Geococcyx conklingi, Conkling Road-runner	x	x	..
Geococcyx californianus, Road-runner	..	x	..
Tyto alba, Barn Owl	..	x	..
Otus asio, Screech Owl	..	x	..
Bubo virginianus, Horned Owl	..	x	x
Speotyto cunicularia, Burrowing Owl	x	x	..
Asio, wilsonianus?, Long-eared Owl	x	..	..
Asio flammeus, Short-eared Owl	..	..	x
*Cryptoglaux funerea, Arctic Owl	..	x	..
*Cryptoglaux acadica, Saw-whet Owl	..	x	..
*Aëronautes saxatalis, White-throated Swift	..	x	..
Colaptes cafer, Red-shafted Flicker	x	x	..
Colaptes, sp., Flicker	..	..	x
*Balanosphyra formicivora, Acorn-storing Woodpecker	..	x	..
*Sayornis saya, Say Phoebe	..	x	..
Otocoris alpestris, Horned Lark	x	x	..
Pica pica, Magpie	..	x	..
Corvus corax, Raven	x	x	..
*Cyanocephalus cyanocephalus, Piñon Jay	x	x	..
*Catherpes mexicanus, Cañon Wren	..	x	..
*Salpinctes obsoletus, Rock Wren	..	x	..
Toxostoma, sp., Thrasher	..	x	..
*Oreoscoptes montanus, Sage Thrasher	..	x	..
Turdus migratorius, Robin	x	x	..
Sialia, sp., Bluebird	x	x	..
Lanius ludovicianus, Loggerhead Shrike	..	x	..
Xanthocephalus xanthocephalus, Yellow-headed Blackbird	..	..	x
Agelaius, phoeniceus?, Red-winged Blackbird	x	..	..
*Molothrus ater, Cowbird	..	x	..
Pyelorhamphus molothroides, Thick-billed Cowbird	..	x	..
*Carpodacus mexicanus, House Finch	x	x	..
Pipilo maculatus, Spotted Towhee	x	x	..
Pipilo fuscus, Brown Towhee	..	x	..
*Calamospiza melanocorys, Lark Bunting	..	x	..
Amphispiza bilineata, Black-throated Sparrow	..	x	..

Fifteen of the species listed above, those marked with asterisks, have never before been identified from prehistoric accumulations. Remains of *Amphispiza bilineata*, although not before so identified, are apparently of such recent entombment as to preclude classification with this group of fifteen. If we hold to that definition of the term fossil which stipulates that the specimen must have come from a geologic horizon earlier than the Recent, we can not positively term members of this group

fossils. The exact age of the two Pyramid Peak caves is as yet undetermined. That they are Quaternary cannot be questioned. But whether late Pleistocene or early Recent is still a matter for consideration. The practical difficulties in delimiting Recent and Pleistocene deposits are often great, since the continuous laying down of materials from Pleistocene through Recent frequently is encountered when there is no evidence as to glaciation or other changes which could serve as guides to age.

In Shelter Cave the dust-like matrix has permitted of no distinction between the earliest and latest deposits except that the evidence of human occupation is confined to the fore part of the cave. In Conkling Cavern, however, the deposits are more or less stratified and there is a definite water-laid stratum separating the upper and lower layers in the cave. We are confident that at least the lower levels at Conkling Cavern are of Pleistocene age, and in all probability some of the remains in Shelter Cave were also laid down during the Pleistocene. However, there is some evidence indicating greater age for Conkling Cavern than for Shelter Cave. This is based upon the occurrence in the former cave of bones of *Coragyps occidentalis* in great numbers, while the modern Turkey Vulture, *Cathartes aura*, is scarce, a condition which is paralleled in the Pleistocene deposits in California. In Shelter Cave, on the other hand, *Coragyps* is absent and *Cathartes* is the abundant form. In the case of the Piñon Jay, *Cyanocephalus cyanocephalus*, listed above, bones have been taken from deep levels in satisfactorily stratified Conkling Cavern deposits, and we are therefore convinced that this species may be added to the list of fossil North American birds.

From among the species in our list that still are living, evidences for changes in distribution should be especially mentioned. The Sage Hen has been recorded from the northern part of the state in earlier years (F. M. Bailey, Birds of New Mexico, 1928, p. 211) but never from southern New Mexico. Its presence in both Pyramid Peak caves is significant in contrast to its absence at Rocky Arroyo. On the other hand, at Rocky Arroyo the Prairie Chicken occurs. This latter species now has become more restricted in its distribution than formerly and is found to the eastward in Texas, although not long ago occurring in the Pecos River Valley of New Mexico. *Cryptoglaux funerea* is not known to occur south of Gunnison County, Colorado, today. The presence of the Plumed Quail, as reported by Wetmore, is important since this quail now extends eastward only as far as western Nevada. Interestingly, his report is confirmed by our identification of bones from Shelter Cave. The Magpie and the Caracara both are forms known today from southern New Mexico on the basis of extremely few records; the former now regularly occurs in northern New Mexico and the latter to the southward in Mexico and Texas.

Out of the entire assemblage of material from the caves, four extinct species have been detected. Two of these, *Geococcyx conklingi* and *Pyeloramphus molo-throides*, are peculiar to the cave faunas. The other two, *Coragyps occidentalis*, a vulture, and *Urubitinga fragilis*, an eagle, were first discovered in the Rancho La Brea Pleistocene asphalt deposits of California and later found in similar deposits at Carpinteria, in the same state. This is the first instance of either species occurring outside of California. It is indeed significant to find these extinct raptors ranging eastward in the past; this especially in view of the discovery of *Teratornis*, the gigantic Pleistocene vulture, in Florida (Wetmore, Smithsonian Misc. Coll., 85, no. 2, 1931, p. 26). The California Condor, which appears to be a somewhat more persistent member of the group of large-sized, waning raptors of Rancho La Brea, ranged with *C. occidentalis* and *U. fragilis* into New Mexico. Its appearance in

the three New Mexican caves here discussed is strongly indicative of regular occurrence in this region formerly. It, like *Teratornis*, ranged to Florida in the Pleistocene. We may surmise that many of these large raptors, best known from California Pleistocene asphalt, formerly spread across the southern United States. Possibly only the lack of such suitable traps as the asphalt pits hides from us the knowledge of a once rich falconiform fauna of the eastern United States comparable to that of California.

Los Angeles Museum, Los Angeles, California, November 7, 1932.