

fall to find the Woodhouse Jay the commonest bird on the Hopi Mesas (altitude about 6000 feet), north of the Little Colorado River, many miles from the nearest piñon tree. On October 14, several of these jays were observed feeding about the school grounds at Hotavilla, an Hopi Indian village. The species was also commonly seen on the 15th, 16th and 17th at Oraibi, Shungopovi and Mashongnovi, and Polacco, respectively.

At Hotavilla juniper trees (*Juniperus occidentalis monosperma*) were growing near the school on land reserved for Government employees, which accounts for the presence of these trees near the village. Only fruit trees grow near the other villages. Juniper and piñon trees have for centuries been used for fuel or building material by the Hopi Indians, so that now all trees, other than fruit trees, have been destroyed for miles around. The surrounding country is very sparsely covered with grasses and "rabbit brush", the greater part being bare rock and sand.

At each of these villages the jays were rather tame, feeding about corrals, and on one occasion a jay was seen perched upon the roof of an Indian house. With the exception of several jays observed at a waterhole, never more than two were seen together. It is interesting to note that this species has been observed under rather similar conditions in October and November at Fruitland, New Mexico (F. M. Bailey, *Birds of New Mexico*, 1928, p. 478). These observations in the Hopi country cover a narrow strip along the road, some 25 miles long, in which at no place is found the normal habitat of the Woodhouse Jay.—LYNDON L. HARGRAVE, *Museum of Northern Arizona, Flagstaff, Arizona, February 10, 1932.*

Additional Records of Birds from Cavern Deposits in New Mexico.—As a result of further archeological investigation in New Mexico, Mr. Edgar B. Howard of the University Museum, University of Pennsylvania, has submitted bones of birds for identification from the same cavern that last year yielded remains of the California Condor (see *Condor*, xxxiii, 1931, pp. 76-77). The cave in question is located about fifty miles west and somewhat north of Carlsbad, New Mexico, in the upper part of Rocky Arroyo, which comes out of the Guadeloupe Mountains. The bird remains, according to notes supplied by Mr. Howard, were found at levels from two and one-half to eight feet below the surface, associated in part with human materials of the Basket-maker group, and in part obtained at deeper levels where man-made artifacts are lacking. Bird bones occurred below those of any other vertebrates.

Of particular interest in the collection are further fragmentary remains of the California Condor (*Gymnogyps californianus*), including a premaxilla of very large size, parts of two ulnae, and a bit of a sacrum. The premaxilla is larger and more robust than in the skeletons at hand for comparison but is equalled by specimens from the Pleistocene asphalts of Rancho La Brea in California according to comparisons kindly made for me by Dr. Hildegard Howard. The present bones are especially important in their verification of the former range of this condor in New Mexico; and their presence with numerous bones of other birds removes any supposition that the condor remains might have been transported here by human agency.

In the present collection there is the coracoid of a Black Vulture (*Coragyps atratus*) that marks an extension of range for that species, since in modern times this bird has been recorded only west to western Texas, and has not been found in New Mexico. This single bone therefore is the first record for the species from the state in question. This brings to mind that fifteen years ago in examining bird bones collected at Hawikuh Pueblo, 17 miles southwest of Zuñi, New Mexico, I found a section of a metacarpal of a vulture that agreed in form with the Black Vulture. This bone was so fragmentary that I did not venture on its evidence to announce the occurrence of this species. With the specimen from near Carlsbad in hand it may however be properly put on record. There is indicated a considerable range for the Black Vulture beyond the limits at present known for it. It is proper to state that Hawikuh Pueblo according to present information was occupied from about the middle of the fifteenth century to 1670, being much more recent than the Guadeloupe cave deposits, which as will be explained presently must go back at least two thousand years.

The Plumed Quail (*Oreortyx picta*) is represented by one entire, and one broken, metatarsus, a coracoid, and a tibio-tarsus, all in excellent condition. This is another species not known previously from New Mexico, as it ranges now from Washington and western Nevada through California into Lower California. The cave material

does not differ from modern skeletons as shown in two in the U. S. National Museum, and five loaned for comparison by Dr. J. Grinnell from the Museum of Vertebrate Zoology. The occurrence of this quail in New Mexico is as remarkable as the presence of the California Condor in the same deposits.

In addition to the species mentioned, the deposits contain remains of the Lesser Prairie Chicken (*Tympanuchus pallidicinctus*), Turkey (*Meleagris gallopavo*), Turkey Vulture (*Cathartes aura*), Cooper Hawk (*Accipiter cooperi*), Swainson Hawk (*Buteo swainsoni*), Prairie Falcon (*Falco mexicanus*), Great Horned Owl (*Bubo virginianus*), Short-eared Owl (*Asio flammeus*), a Flicker (*Colaptes* sp.), and the Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*). The Turkey Vulture, represented by the distal half of a humerus, has the size of *Cathartes aura septentrionalis*.—ALEXANDER WETMORE, U. S. National Museum, Washington, D. C., January 23, 1932.

A Robin Roost in Oakland, California.—Bird students living in the vicinity of Oakland have had this year an opportunity to witness one of the most remarkable gatherings of a feathered species that it has been the fortune of the present writer to study—and right at our door, so to speak. Many of us are familiar with Lake Merritt and the surrounding Lakeside Park, and with the various birds that can be seen and studied therein. If a person happened to be in the park during the past winter season and stayed until dark in the vicinity of the enclosure where the ducks are fed, he could not fail to have noted the remarkable flight of incoming robins and to have watched them gather in the nearby area until wonder was roused as to how so many birds could hide in so small space.

The writer heard some of the boys mention the large number of robins that were coming to the park, but he did not realize the import of the statement until he actually witnessed the gathering. I made up my mind to try to estimate the number coming in to spend the night, and accordingly the next evening I went to the park and selected a point where the sky could be scanned in most directions. From the previous observation I had determined that the majority of the incoming birds arrived from the direction of the hill areas to the eastward.

About 3 p. m. on January 10, 1932, a few birds arrived, coming in high up; small detachments continued to arrive until 4 p. m., after which the flight increased by large numbers until about 5:25 p. m. when no more birds could be seen arriving. At first it was easy to actually count all the birds arriving at this center of activity. Soon it was necessary to divide the horizon into thirds, then tenths, and later into twentieths, so as to be able to estimate the number of arrivals. Singly, in two's and three's, in small flocks and in immense flocks they arrived—mostly high up in the air. By turning the binoculars toward the hills they could be made out as far as the glass could distinguish objects of their size.

The flock formation was not regular; some scattered, some close together. Arriving in the vicinity the birds would commence to drop rapidly toward the trees selected for the night. With partially closed wings they would almost fall into the park. The downward fall would be checked occasionally with a quick opening of the wings, but it did not take much time on the part of the birds to reach a level where a final swoop would enable them to light in a tree or on the intervening plots of grass.

Soon the trees bare of foliage were thickly dotted with birds even though the roosting trees having foliage received a large share of arrivals. Some went to the water basin in the vicinity to bathe and drink. The grass was thickly dotted with birds getting a last few worms before retiring. Here was a case of the "late bird catches the worm". I counted about two hundred birds in an area twenty by one hundred and fifty feet. At the close of the day not a bird was in sight. All had gone to the trees and bushes which had foliage; not one was roosting in the trees that were bare of foliage. The area covered by the trees and bushes used as a roost by the robins was about an acre and a half.

As to the count, I finally arrived at a total of 165,000 birds. It hardly seems possible that so many birds could arrive in the time taken up by the incoming flight or that the foliage selected for the roost could hold such a host of birds. This is an estimate, of course, but I believe it is as accurate as can be obtained.

I sent two of the boys through the trees at dusk, and the way the robins flew out was astounding. They soon settled back, however, and soon all was serene again. One could hear a clicking sound as if the birds were snapping their bills, but this was probably the final restlessness before sleep.