

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.

We thought it best to try to see the behavior of the robins in the early morning when this host of birds was leaving for the distant feeding grounds. Accordingly I went to the lake before daylight on January 24 and waited for signs of life from the clump of trees where I knew there were thousands of robins. On this day the sun was scheduled to rise at 7:22 a. m. It was a clear night and very cold. Frost was on the grass plots and the moon was still above the horizon, being almost full. Not a sound from the trees. The Baldpates and Pintails were whistling on the lake and a little later a Killdeer joined in with its unmistakable cry.

At 5:50 something must have disturbed the robins, for they started to chatter and a few flew out but soon returned to the trees. All was quiet again. At 6:10 a slight indication of dawn was visible in the east and again there was a little disturbance at the roost. Then all was quiet again.

At 6:25 the Coots were heard at the lake. A jack rabbit suddenly appeared on the grass plot not over thirty feet away and after looking the machine over hopped away. Later we saw two of these rabbits chasing each other around the grass plot. At this same time there was another disturbance at the roost and it is possible that a few birds left.

At 6:27 colors began to show in the east; the robins were evidently now awake, judging from the noise at the roost. By 6:35 they were very much awake and by 6:44 they were leaving in one continuous stream for the hills. Flocks of ducks were arriving at the lake from distant feeding grounds and two Black-crowned Night Herons flew to the island.

The robins when leaving mounted higher and higher as they flew. Pairs could be seen occasionally chasing each other as they left, always following the same line of flight, however. By 7:15 the flight was over.

The boys had noticed many robins on the grass plots on a previous morning, but on this morning very few alighted on the grass. Those that did alight did not catch any worms as far as I could see. It then occurred to me that during extremely cold weather, when frost was on the grass, the worms did not come to the surface. I do not know that this is a fact, however.

The number of worms consumed by these robins must be enormous. On every hand you can see the robins pulling large and small worms from the ground. I watched one which had a particularly large worm to get out. He pulled back hard but the worm came out very slowly. Finally the limit of pull was reached by the robin and quickly releasing its hold it took another one lower down and finally the worm came loose. It was swallowed whole and what a wiggly meal it must have been!

Another interesting observation connected with worm pulling by the robins is the action of the gulls. I observed a Glaucous-winged Gull, three California Gulls and one Ring-billed Gull standing on the grass plot amid about eighty robins. Every time a robin would start pulling out a worm a gull would make a run toward him. Of course the robin would let go of the worm and then the gull would gobble it up! This was repeated again and again; but I could not determine whether the Ring-billed Gull followed this practice, as it left soon after I arrived on the scene. Sometimes the worm would come out quickly enough for the robin to get it down before the gull could get on the job. If the worm was too big for the robin to swallow immediately the gull would pursue it, but the robin usually dived under a protecting oak tree or madrone. The gull would not follow there.

It will be interesting to note this spring whether the robins leave for other locations in a body or gradually disappear. Some will stay to breed of course, but the majority will undoubtedly leave for other breeding grounds.—L. PH. BOLANDER, JR., *Oakland, California, February 3, 1932.*

**The Harris Hawk in Ventura County, California.**—In November, 1931, while in Ventura on jury duty, I visited the "Pioneer Museum" which is located in a room of the court house building. In looking over the case of mounted birds I at once noticed a very dark brown hawk with a single white band at the end of the tail. On examining the specimen, which was labeled "Zone-tailed Hawk ♀", I decided that it was a new bird for this county. I asked Mr. E. M. Sheridan, the curator, where it came from, and he said it was mounted by Chas. E. Law at Fillmore. The next day I called on Mr. Law, and he said the specimen was brought to his taxidermy shop on April 9, 1929, by Romaine Young of Bardsdale. Mr. Young said that he had killed the bird while hunting rabbits in Red Rock Cañon, two miles south of Bardsdale.