

FROM FIELD AND STUDY

Parasitism in the Road-runner.—On May 5, 1924, while crossing a railroad bridge near McKittrick, Kern County, California, a Raven (*Corvus corax sinuatus*) flushed from beneath it. On exploring I found its nest well placed in one corner of the framework. On examination I found it to contain three eggs of the Raven and one of the Road-runner (*Geococcyx californianus*). These were collected and now constitute set no. 1971 of my collection.

The location of the nest was such that a Road-runner could easily have descended from the top of the bridge into the nest, but it is doubtful if it could have flown to it from beneath. The question naturally arises as to whether the Road-runner was the first occupant and was displaced by the Ravens or whether it laid the egg after the Ravens began operations.

The period of incubation in the Road-runner is 18 days and that in the Raven, 21, as given by Bendire. Apparently if the Road-runner egg was the first to be laid its incubation should have been farther advanced than that of the Raven eggs at the time I took them. This was not the case, for the incubation was practically the same in all the eggs. The floating test given them all before blowing, the time taken to clean them, and the impression given as to their relative stage allow me to state that they were all about one-half incubated. This permits of the conclusion that the Road-runner egg was deposited after the Raven eggs were laid and also that it was done deliberately and with intent to demonstrate its Cuckoo affinities and to emulate the parasitic habits of the tribe.

It is interesting to consider the Road-runner's choice of foster parents for its offspring. It seems likely that the young Road-runner could have thrived on Raven diet, because the food habits of the two species are quite similar. If the Road-runner emerged from the shell in advance of the Ravens it would get a start in life and possibly be able to hold its own until crowded from the nest later on; then it might be able to shift for itself. We can also come to the conclusion that the Raven, of all birds living in the same life-zone as does the Road-runner, is the one and only bird suitable as a foster parent for young Road-runners. But because of the usual inaccessibility of Ravens' nests to the non-flying Road-runner, it is likely that only once in a blue moon will the parasitism be practiced.—J. R. PEMBERTON, *Hollywood, California, September 28, 1924.*

Further Notes on Screech Owls at Buena Park.—In THE CONDOR (XXIII, 1921, pp. 97-98) I sketched my observations on the establishment of *Otus asio quercinus* as a breeding bird in this locality up until June, 1920. Since then it has been observed frequently and at all seasons. On May 25, 1921, I found a juvenile dead on a neighbor's place, and on June 30 saw two full-grown juveniles on our place. July 2, 1922, I captured one apparently just out of the nest and not very strong on the wing, and on August 4 three were seen. April 29, 1923, I discovered a nest in a bark-filled crotch of a large eucalyptus tree beside our driveway, and only about twelve feet from the ground. The nest was well concealed by several years' accumulation of bark and trash and when discovered contained one adult bird and three partly feathered young. These young left the nest about May 27.

This year, 1924, I began to watch the nest early in the spring. On March 14 an adult bird was found dead under the nest tree with some feathers of its own kind in its beak. If this was one of the parent birds the remaining one secured another mate, because on April 23 there were four eggs in the nest. On May 4, I banded five nestling Linnets whose nest was in the same tree and not more than two feet from the owl's nest. Some time between May 4 and May 11 the owl's eggs hatched and on the latter date the young owls were exhibited to members of the Los Angeles Bird Banding Chapter of the C. O. C., who were meeting here. On May 18, I banded the four young and the adult that was in the nest with them at the time, giving them numbers 226191-226195 inclusive. On June 2, while looking at the young early in the evening, one of them climbed out of the nest and fell to the ground. While replacing it in the nest, I was struck on top of the head by one of the adults and scratched enough to draw blood. These young left the nest about June 15. At the present time Screech Owls are