

FROM FIELD AND STUDY

Torpidity in Cave-roosting Hummingbirds.—On the night of April 28, 1958, we examined a small cave at 13,500 feet elevation near Hacienda Antisana, five miles south of Antisana Peak, and about 45 miles southeast of Quito, in Napo Pastaza Province of Ecuador. We were accompanied by Sr. Manuel Giler Morales, Colector y Herborizador de la Direccion Forestal del Ministerio de Fomento, Quito, Ecuador. At 8:15 p.m., ovenbirds, *Cinclodes excelsior*, and hummingbirds, *Oreotrochilus chimborazo*, were found roosting in the cave. Five hummingbirds were collected for identification, three males and two females. The others escaped. Two of the males taken were torpid, clinging, with feathers fluffed, to the rough ceiling of the cave. They squeaked when picked up and showed some poorly coordinated grasping reflexes. One required 10 minutes and the other 13 minutes to revive when held in the hand. None of the birds was in breeding condition. Three were molting. These represent the same genus as the hummingbirds found in a high-altitude cave in Perú by Pearson (Condor, 55, 1953: 17–20). This phenomenon may be a daily occurrence with all hummingbirds of the high Andes. About ten ovenbirds, none torpid, were also roosting in the cave. Two were taken for identification purposes.

At 9:05 p.m., the cave was revisited. Some of the escaped birds had apparently returned. One female and four male hummingbirds were observed at this time; all but one male were in a torpid condition. The cave temperature was 5°C., one-half degree warmer than the outside temperature. Another check of the cave at 6:00 a.m. the following morning, less than one-half hour after the first sign of dawn, revealed no birds. Cave temperature at this time was 3.5°C.

The question arises as to what stimuli arouse the birds from their torpid condition. Considering the time required for their revival, the condition of the cave, and the time of morning it was visited, it seems unlikely that light is the stimulus. Cave temperature, being lower in the morning, could not initiate this. Bartholomew, Howell, and Cade (Condor 59, 1957:145–155) demonstrated that rate of arousal did not vary with environmental temperature for the White-throated Swift and was no different in fed and unfed birds. In the adult Anna Hummingbird studied by them, the rate and extent of arousal decreased as the bird's energy reserves were used up. This seems to abrogate appetite as the stimulus. Perhaps the hummingbirds automatically revive after a certain period of time in torpidity. Such a timing mechanism could only be evolved in the equatorial regions where there is a constant number of hours of darkness throughout the year.

The cave discussed here was near a small stream. It was little more than a large depression in the rocks and measured approximately 10 feet high and 20 feet wide at the entrance; the roof tapered toward the floor at the back, which was 15 feet from the entrance.

Specimens were identified at the Chicago Natural History Museum with the help of Dr. A. L. Rand. Field work in Ecuador was sponsored by the National Science Foundation and the U. S. Atomic Energy Commission.—NORMAN R. FRENCH, *U. S. Atomic Energy Commission, Idaho Falls, Idaho*, and RONALD W. HODGES, *Department of Entomology, Cornell University, Ithaca, New York, August 2, 1958*.

The Second Occurrence of a Brown Booby near Parker Dam on the Colorado River.—On November 20, 1957, Mr. Robert R. Bell, Fisheries Manager of the California Department of Fish and Game collected an immature Brown Booby (*Sula leucogaster brewsteri*) just behind Headgate Rock Dam on the California side of the Colorado River, two miles north of Parker, Arizona.

This immature specimen was prepared as a study skin by Mr. Bell and presented to the San Diego Society of Natural History and is now number 30080 of the Society's collection. When the specimen was given, Mr. Bell informed the writer that this bird had a resting site on a cliff nearby, so evidently it had been observed living in the vicinity before it was shot. He stated that "the stomach when examined contained a large mouthed bass six inches in length and that the organs were of such minute dimensions, an accurate determination of sex was not possible."

This specimen represents the second occurrence of this bird near Parker Dam (Monson, Auk, 63, 1946:96) far up on the Colorado River and a long distance from the normal salt water habitat of the species.

These records mark a most interesting example of the rapid adaptability of birds to follow into new territory where conditions become acceptable for their livelihood. Formerly the Colorado River