

FROM FIELD AND STUDY

Foraging Behavior and Predation by Clark Nutcracker.—The Clark Nutcracker (*Nucifraga columbiana*) is abundant in the Teton and Absaroka mountains of northwestern Wyoming. During the summers of 1951 and 1952, support from the New York Zoological Society enabled me to make observations almost daily at the high elevations of these mountains during the months of June, July and August. Notes concerning the occurrence and activities of nutcrackers were made frequently.

Groups of two to six individuals were seen on several occasions foraging on the cliffs and on the talus slopes below the cliffs. The birds worked together, all progressing in the same direction and each at a different elevation on the cliff or slope. In this way they thoroughly inspected the entire area and then moved off together to another. The object of their intensive search was never clear although presumably they were foraging. Since this activity was observed chiefly during the early hours of the morning it seems possible that they found insects on the rocks which remained there chilled by the cold of the night. Minimum temperatures recorded during July were nearly always below 50°F. and occasionally as low as 38°F.

On July 26, 1951, a nutcracker observed at close range was systematically hiding small black objects, probably seeds, in the debris accumulated on small ledges of a cliff. The bird made a hole with its bill by a thrust or two of the head, regurgitated a small black object to the tip of the bill, thrust it into the hole, and placed a small stone over it. Food stored in such locations is available throughout the winter because snow accumulation on the small ledges is slight and melting rapid if the cliff receives the direct rays of the sun at some time during the day. Food storage seems to be a characteristic habit of members of this family of birds.

In northwestern Wyoming the nutcracker was the chief predator on the Black Rosy Finch, *Leucosticte atrata*. On August 3, 1951, from the top of a high cliff two rosy finches were observed on the talus below. They seemed to be chasing a nutcracker. Presently the nutcracker flew down beside a boulder, seized a rather large object in its bill and flew a short distance with it down the slope to a tree. He was followed by a rosy finch. When the nutcracker dropped the object, it fluttered to the ground, obviously a young bird and probably the young of the interested rosy finches. The nutcracker pursued the young bird into some shrubs while the adult rosy finch flew about excitedly. The young bird was not seen again. Later, when a nutcracker was in the vicinity of the slope, the rosy finches became excited, flying after it and uttering hoarse chirps. They perched near the nutcracker, chirping, or flew around it, but never did they attack the bird. When the nutcracker came too close, the rosy finches retreated. The larger bird never appeared disturbed or even concerned about the presence of the rosy finches. The nutcracker is three or four times the size of a rosy finch but the latter is more agile in the air.

Early on the morning of July 16, 1952, shortly after I arrived to observe a rosy finch nest, a nutcracker flew to the cliff and worked its way to the nest. The nest was situated in a small cavity, only slightly larger than the nest itself, on the face of the cliff about fifty feet from the base and approximately the same distance from the top. The nutcracker fluttered to the nest cavity, put its head in and came out with a white egg. The bird carried the egg to a grassy spot on the cliff and ate it. In the meantime the female rosy finch returned to the nest. The nutcracker again returned and as it flew to the nest the female rosy finch flew off. Another egg was removed while the rosy finches flew about protesting. The female rosy finch did not return to the nest between the taking of the second, third and fourth eggs. The third egg was dropped while being removed and the nutcracker flew after it to the snow below, where it was consumed. Later examination of the spot showed that nothing remained but a few fragments of the shell and a yellow spot on the snow. The entire process was completed in about twenty minutes. About ten minutes later the bird again returned to the nest and pulled it apart, letting the material fall to the base of the cliff. Another ten minutes passed before the female rosy finch returned to the nest site. She did not enter the cavity but stood beside it and looked in. Then she flew down to the nest material on the snow before flying away. A few minutes later she returned and went into the nest cavity, followed by the male. One of the birds was observed begging or displaying, the body held low and the wings fluttering. The rosy finches renested a few days later,

choosing another location on the same cliff perhaps one hundred yards from the site of the first nest. Three young disappeared from this nest shortly after hatching.

Under a slanting rock on the tundra at the top of the cliff was the nest of a Water Pipit (*Anthus spinoletta*) containing two young. Five days after the destruction of the rosy finch nest and eggs the young pipits were found dead. One was still in the nest, the other had been dragged over the edge. The bird in the nest had a single small wound in the back of the head, the other had a single bloody spot on the breast. This was presumed also to be the work of a nutcracker.—NORMAN R. FRENCH, *University of Utah, Salt Lake City, Utah, August 7, 1954.*

New Nesting Records from Boulder County, Colorado.—The Bush-tit (*Psaltriparus minimus*) is a common resident in the cedars and piñon pines of southern Colorado, but it has been observed only infrequently in the north-central part of the state. Jollie (Condor, 47, 1945:81-82) first described the occurrence of wintering Bush-tits in yellow pine forests near Boulder. From February to June, 1954, the writer saw several birds of this species in a foothills habitat about one-half mile south of Boulder. On June 12, in the same location, two parent birds were observed while feeding their young in a yellow pine near the eastern limits of this forest, at an elevation of 5800 feet. The pendant nest was constructed seven feet out on a limb, about thirty feet from the ground in a forty-five foot pine. The pair actively foraged in a large wooded area west of the home tree. On June 20, the nest was empty, and on June 26, the family of two adults and five young was seen in the forest nearby. A second brood was raised in the same nest; the young were being fed there on July 25, and a noisy family group was observed in the pines west of the empty nest on August 2.

Regarding the Golden-crowned Kinglet (*Regulus satrapa*), Niedrach and Rockwell (Birds of Denver and Mountain Parks, 1939:129) state: "Very little information relative to the occurrence of this species in the Denver area is available." During the winter of 1953-54, small flocks of Golden-crowned Kinglets were found in a foothills habitat of yellow pine forests and bushy gullies (elevation 5700-6200 feet) extending two miles south of Boulder, Colorado. One to ten birds were seen on each of several field trips from December 25, 1953, to April 18, 1954. A pair of Golden-crowned Kinglets was observed while feeding young in a nest in Boulder Canyon, one-fourth mile east of Tungsten, at an elevation of 8025 feet, on June 27, 1954. The nest was about twenty feet from the ground, three feet out on a limb of a thirty-five-foot Engelmann spruce. Two other birds of this species were heard in a dense stand of large Engelmann and blue spruces several hundred yards east of this location and were believed to be nesting males.

Regarding the Indigo Bunting (*Passerina cyanea*), Niedrach and Rockwell (*op. cit.*:151), suggest that "this species may be a rare breeder" near Golden, Colorado. During June and July, 1954, a male Indigo Bunting was observed several times in a bushy ravine (elevation 5700 feet) just south of Boulder. The male sang repeatedly from a regular perch, and it was assumed to be nesting.—LOUISE HERING, *Boulder, Colorado, August 10, 1954.*

Frigate Birds Crossing the Isthmus of Tehuantepec.—In a note by Walter W. Dalquest (Condor, 53, 1951:256), it is suggested that Frigate Birds may fly regularly overland from one ocean to the other. This is quite possible since on August 12, 1954, at about noon I was at the Zoological Park in the outskirts of Tuxtla Gutiérrez, in northwestern Chiapas, and saw two adult Frigate Birds (*Fregata magnificens*), male and female, flying overhead. The grounds at our zoo are open fields and I had a clear view of the birds when they approached from the north. The birds were somewhat low and sailing at moderate speed, and after circling twice over the town, they took altitude and headed purposefully due southwest. The day was bright and there was a moderate wind from the northwest.—MIGUEL ALVAREZ DEL TORO, *Instituto Zoológico, Tuxtla Gutiérrez, Chiapas, México, August 10, 1954.*

Record of the Least Flycatcher in Central British Columbia.—Munro and Cowan (A Review of the Bird Fauna of British Columbia, 1947:150) record the Least Flycatcher (*Empidonax minimus*) in British Columbia only from the northeastern section, principally in the Peace River parklands. On June 2, 1934, I took a specimen of this species at Indianpoint Lake in the Cariboo District of the central interior of the province. It was a male with testes measuring 5 mm. and was singing continually, giving a raspy *che-bek* note. This note seemed different from the notes of the