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## NESTING HABITS OF THE LEUCOSTICTE

WITH SIX ILLUSTRATIONS

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In 1919, W. L. Dawson spent many days in the Sierras in the vicinity of Mammoth Pass, California, hunting nests and collecting sets of eggs of the Sierra Nevada Rosy Finch (*Leucosticte tephrocotis dawsoni*). All but one of the several nests which he records finding (Birds of California, 1923, pp. 162-175) were in wells and crevices on the cliffs, most of which were reached after great effort, attended by considerable danger to life and limb. This led Mr. Dawson to believe that leucostictes nest most frequently on the cliffs. Grinnell and Storer (Animal Life in the Yosemite, 1924, p. 433) make mention of not having found any nests during their studies in the Yosemite region, having "considerately left this accomplishment for someone with marked cliff-climbing predilections. . . ."

Mr. Wheeler and I are not cliff-climbers, but we were anxious to make a study of the leucosticte. With this purpose in view we camped in Tuolumne Meadows, Yosemite National Park, in the spring of 1939. On the 29th of June, near Saddlebag Lake in Mono County, we saw a leucosticte fly up over the rock-covered slope toward the foot of a cliff. It was carrying a tuft of white material in its bill. We labored up the rock-slide in the general direction the bird had taken. When we had reached a point nearly a half-mile up the slope, a number of rosy finches were observed flying from point to point on the cliffs and large boulders. Here we took a position for more careful observation. After waiting a considerable time, a bird was again seen carrying something white in its bill, but quickly disappeared over a slight ridge of rock. We crossed over this and stepped quietly from rock to rock until near the place where the bird disappeared. Just a few feet farther down the slope, the bird flew up and away across the rock-slide.

Careful search revealed nothing, so we crossed a small snowfield to a little elevation overlooking the area. About twenty minutes later the finch returned, and through our glasses we saw it disappear under a flat rock, the location of which we carefully noted (fig. 37). Quickly we recrossed the snowfield, crouched behind a large boulder about twenty feet from where the bird was last seen, and waited. Presently the leucosticte flew out, but without the tuft of white. As soon as she had gone, I carefully reached back through the narrow space between the rocks. Not more than twelve inches from the opening, but out of sight, my fingers touched the nest. The nest was empty and the lining which was made of the seeds from willow catkins was still damp and fresh. While we were near the nest the pair of leucostictes came and flew about, uttering plaintive cries of distress. After a short time, they flew away and did not return during the half hour we were near the nest.

On July 9 we returned to the nest, anxious to see if a set of eggs had been laid. We feared that the birds, disturbed by our previous visit, might have deserted. After the

long climb up the rock slope we were greatly cheered to see a bird flying up toward the location. When we reached the site of the nest we set up our cameras and prepared to take pictures. Only the female was near the nest. Each time she came, she flew about, alighting here and there close by, before she entered the crevice to brood her eggs for



Fig. 37. Nesting site of Sierra Nevada Rosy Finch, near Saddlebag Lake, Mono County, California. Nest situated under large flat rock in center foreground. The bird entered through the triangular opening.

Photos by H. D. Wheeler and Ruth Wheeler.

a few minutes. In an effort to keep her in front of the camera a moment, I held my hand over the opening to the nest. The bird flew close and finally brushed against my hand while trying to push her way to the nest.

She seemed to find her way with such accuracy to the nest hidden in this vast waste that we decided to test her sense of location. While she was away, we set up a slab of rock near the rock that covered her nest. When she returned, she looked about in bewilderment, uttering perplexed cries and peering under every rock near by and into the crevices between the rocks. It was not until we removed the slab that she found her nest again.

In order to photograph the nest in location and thus add to the knowledge of the habits of these elusive birds, we removed the flat rock which covered the nest. Four pure white eggs lay on the smooth lining (fig. 38). Although entirely white, the shell was almost translucent in places, causing it to have a faint pinkish tinge. The crevice between the rocks, in which the nest was placed, was filled with trash until it was level



Fig. 38. Nest and eggs at site shown in figure 37; July 9, 1939.

with the opening, not as a wren fills a nesting hole with a rough pile of sticks, but packed down and smooth like a floor. Bits of pine buds and tips of needles were woven in with tiny sticks and small pieces of vegetation. The nest, which was sunken into the middle of this floor, was made of coarse grass, and then lined with fine grass like the pikas gather and pile into their little haycocks to dry between the rocks. Last of all was an inner lining of the soft willow fluff that we had seen the bird bringing on our previous visit. A tan feather which we did not identify was stuck into the edge as a finishing touch.

To the south of Ellery Lake in Mono County, a great cirque of granite rocks rises and snow lies all summer in patches near the base of the cliff. Down from this cliff stretches a long rock slide which ends in the water of the lake. *Leucostictes* had been seen feeding near the lake at dusk, and this region to the south appeared to be a good location for study. On July 6, 1939, we climbed the rock slide and located a nest under

a rock up near the edge of the snow field. The five young birds were quite large and made their presence known by squealing loudly when they were fed. This nest was placed on a bed of sandy gravel which had evidently been deposited between the rocks as the snow receded in the spring. Both parents were feeding the young, flying up from



Fig. 39. Cirque near Ellery Lake, Mono County. Locations of three leucosticte nests are marked by black dots, one in large boulders (shown in fig. 41), one on ridge of rock slope, and one in cliffs to right.

the meadow far below with labored flight. Although they rested frequently on the upward journey they made the trip back down to the meadow in a long swooping flight.

While observing this family, we heard the distant squeal of baby birds being fed. We located the sound as coming from high up on the cliff where we saw birds fly frequently to the upper end of a long chimney. We decided, after some observation, that a nest must be located in this crevice with nearly grown young in it. The spot was well chosen and was apparently inaccessible from either above or below.

In the course of several trips we made up the mountain south of Ellery Lake, we observed a leucosticte fly over a distant ridge of great rocks and disappear. We determined to find a nest in that region if possible, as that habitat, consisting of great boulders loosely thrown together, was different from either of the formations where the previous nests had been found.

When we reached the large rock which had been our land-mark as we crossed the steep slope, we waited until a leucosticte came flying up the mountain. The bird flew past us and disappeared among the huge boulders. Here the problem was more difficult than finding a nest in the smaller rocks, for the great pieces of granite leaned upon each

other at all angles and small caverns led back under the precariously tilted rocks. As we climbed about, a rock settled against another with a grating sound and almost instantly a bird flew out of an opening under a great stone which lay in a horizontal plane upheld by other rocks. My husband squeezed through the small opening from which the bird had flown and slid down into a cave. When his eyes became accustomed



Fig. 40. Adult rosy finch near nest.

to the dim light, he saw, on a long ledge formed by the upper surface of one of the boulders, the nest of the leucosticte. Five tiny birds huddled together in the low flat nest. The cave which was the home of this family was about twelve feet wide and twenty feet long. The floor was very rough, being composed of boulders, some of which reached to the ceiling. One rock about seven feet thick served as the covering of the cave. Having located the nest, my husband remained perfectly still. Presently the female came in, went directly to the nest and began to feed the little birds (fig. 41). The male finch came in at that moment and stood quietly by while she continued feeding. Then he took his turn and fed each youngster.

After the birds had left, I entered the cave and waited. Finally I heard the faint scratching of the feet of the finch as she entered the cave. I turned my head toward where she was hopping along the ledge near the opening, but she flew away, greatly startled. In a few moments she came again but took fright when I turned only my eyes to look at her. The difficulty seemed to be that the bird had to pass within about four feet of me before she could reach her nest. The third time I heard her alight on

the rock at the entrance to the cave I closed my eyes. I sat motionless as I heard her feet patter across the rock. After a few moments all was quiet. When I opened my eyes, she was sitting on her nest with her eyes fixed on me (fig. 42). Although extremely nervous, she brooded her young for several minutes before she slipped off the nest and left the cave.

We spent nearly three hours watching these finches during the afternoon. It was very cold, as a chilling draft blew from back under the rocks in the dark recesses of the cavern. Ice stood in the depressions of the floor. We made careful observation of the movements of the birds and found that it was about 45 minutes between the visits of the parents to the nest. They came together only the first time, each coming separately thereafter. We felt that their coming together was merely a coincidence. Each



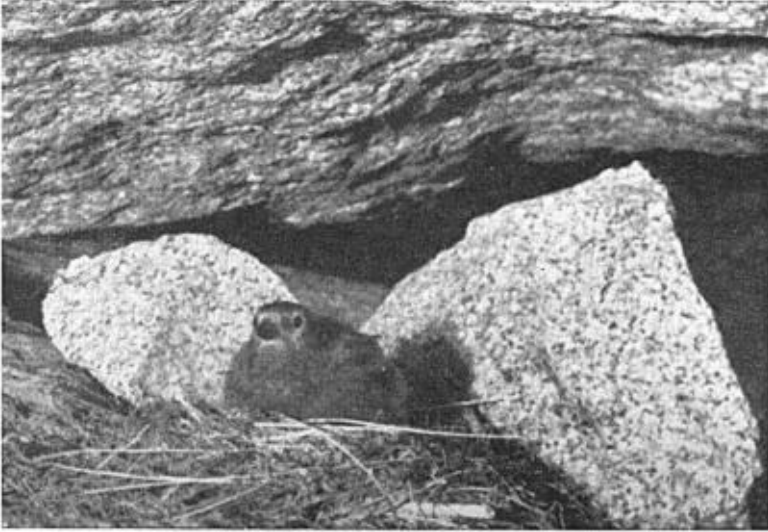
Fig. 41. The parent entered the cave and fed the five young birds; nest near Ellery Lake.

parent arrived at the nest with its throat distended with food, carrying enough to feed each of the five young, sometimes going around the circle again and feeding each baby twice. After feeding, the male hesitated only a moment and then flew away, while the mother slipped on to the nest and brooded the young birds for a few minutes.

Once when the mother came, she crept on to the nest at once and began to hover the young birds without feeding them. She may have done this because she was distressed by our presence. But the young birds were hungry and they began to lift their heads and cry for food. With outstretched necks they lifted her off the nest and pushed her aside. With a timid glance at us she began to satisfy their hunger.

We returned the next day and spent several hours more in the cave. The birds came at about the same intervals as during the previous afternoon. We took several photographs as they fed their young. They did not seem to be as shy as they were the day

before. The last picture we took was of the mother sitting on the nest brooding the young. After taking the pictures we crept very slowly and cautiously from the cave while she remained on the nest.



On the 30th of July, we returned through Tioga Pass again and camped at Ellery Lake long enough to climb the long rock slide to the cave where the rosy finches nested. We found the nest empty. On the whole mountainside, only two or three leucostictes could be seen.

*Angwin, California, January 10, 1940.*