

## FROM FIELD AND STUDY

**How Does the Ruby-crowned Kinglet's Crown Work?**—The elusive brilliant crown-patch of the male Ruby-crowned Kinglet (*Corthylio calendula*), the first glimpse of which brings such a thrill for the amateur bird student, was displayed with unusual distinctness as I looked down on a bird from a second-story window. Momentarily the brilliant patch was seen to narrow into a slit, as if closed over by the feathers on either side, like the shutting of an iris diaphragm with an elongated aperture. Might this be the mechanism of revealing and concealing the crown patch, rather than a simple raising and lowering of the crown feathers?—FRANCES CARTER, *Berkeley, California, January 22, 1939.*

**Duration of Colonies of the Cliff Swallow.**—Near the close of his interesting paper on "The Swallows at the Life Sciences Building" (Condor, vol. 39, 1937, pp. 206-210), Joseph Grinnell remarks, "I cannot recall any relatively permanent cliff swallow colony, either on rock surfaces or on buildings. Colonies have come and gone. Two or three years of occupancy of any one exact site has seemed to be the limit."

This view, which is explicitly said to be based upon memory, is in such contrast to my own impression, which also depended largely on memory, that it surprised me greatly. The greater part of my experience with Cliff Swallows (*Petrochelidon albifrons*) was obtained in Nova Scotia, especially in the southwestern part of that province, during the years from 1909 to 1918. Colonies of these birds, nesting chiefly on barns, were then common in Yarmouth County, Nova Scotia, and, I understand, still are so. Except when destroyed by evident and irresistible agencies, these colonies seemed to me to be relatively permanent.

In order to obtain a more substantial and definite factual basis for an opinion concerning this matter, I have corresponded with two residents of Yarmouth County, namely, Mr. E. H. Rogers, of Arcadia, and Mr. Charles H. Butler, of Chebogue Point, who have colonies of Cliff Swallows nesting on their barns.

Under date of September 25, 1938, Mr. Rogers writes, with reference to his colony of Cliff Swallows: "I don't know how long they have been here. They were here as long ago as I can remember, which must be a good sixty years, as I am now sixty-eight years old. At that time there was a lot of the birds. About fifty years ago I counted the nests in the eaves of my barn. There were 254 nests. A few years later my barn roof began to leak. The water would run down and soak the nests and they would fall down. They kept going that way until there were only four or five pairs left. About five years ago I shingled my barn and was in hope that my birds would come back, but they do not increase very rapidly. I did not count them this year, but I think there were about fifteen pairs."

Under date of October 19, 1938, Mr. Butler writes that, before answering my inquiry, he consulted Reverend W. A. Robbins, of Shelburne County, Nova Scotia, whose father was born on the farm now occupied by Mr. Butler and lived there all his life. Reverend Mr. Robbins said that Cliff Swallows nested annually, throughout his father's life-time, on the barn on this property. Mr. Butler adds: "This summer has been the same; in fact, I think there was a much larger colony than ever before, as this 85-foot barn can boast of 150 nests in a row and I found that several pairs had gone over to another barn, some 150 yards away, and built their nests and raised their broods. . . . You will see by the number of nests that there must have been at least 150 pairs and I am safe in saying that swallows have been coming to this barn well on to ninety or a hundred years. This barn is a very old building and has been repaired many times; about five years ago I had the whole front torn out, new sills and doors put in, and then shingled up within one foot of all their nests; we were about a week doing the job, and these birds came and went and fed their young and paid little attention to us."

It appears that the duration of Cliff Swallow colonies is different in geographical regions so dissimilar as California and Nova Scotia, the colonies in the last-named region having often much longer duration than those in the first-named. This difference may be due to different inborn behavior patterns in different geographical sections or clans of the Cliff Swallow species, or it may be correlated with differences in parasites or with a difference between the climates of the regions concerned. That it is due to the known pronounced difference in climate seems to me most probable.—HARRISON F. LEWIS, *Ottawa, Canada, December 27, 1938.*

**Nesting Habits of the Western Red-tailed Hawk.**—During the spring and summer of 1937, I watched a nest of the Western Red-tailed Hawk (*Buteo borealis calurus*) by visiting it nearly every day. It was located upon a pinnacle three miles north of Price, Utah. This pinnacle

was near a mesa on which grew a heavy stand of piñon and juniper. Located at the extreme base of the Book Cliffs, this mesa has an altitude of about 5900 feet, an annual precipitation of 10.6 inches, and an annual mean temperature of 47.8 degrees F.

Formerly about six pairs of hawks built nests on pinnacles within two hundred feet of one another, but boys were able to remove the young from all the nests but one. Remnants of these nests of other years are yet to be seen. This last one, over fifty feet above the sidehill, was inaccessible, but it could be looked into from the rim of the adjacent mesa. The air-line was not over thirty feet; a pair of binoculars brought the scene nearer.

On March 20, 1937, the hawks began to re-line with juniper bark the nest they had been rebuilding with sticks. This nest was reconstructed upon the debris of six or more nests of as many previous years. April 12, one egg was deposited in the nest and the second and last egg appeared April 14. Incubation began after deposition of the last egg. During the interval between the laying of the first egg and the last, a hawk was on the nest occasionally but not at all times, although both parents were always near. The mate of the incubating bird always flew from a nearby pinnacle. Parts of a rabbit were often on the edge of the nest.

At 7 p.m., May 17, the first young was half out of the bluish-white shell. The second hatched either on the evening of May 18 or the morning of May 19. Early afternoon of the 18th the nest contained one young hawk and one egg, but at the same hour the next day there were two young hawks and the headless body of a large blow snake. Both adults flew in circles over the nest and were constantly calling while I was near.

The incubation period, counting from the deposition of the first egg until it hatched, would be 35 days. Bent, in his "Life Histories of North American Birds of Prey . . . (Part 1)" (U.S. Nat. Mus., Bull. 167, 1937, p. 170), gives 28 days as the incubation period for this species. Neither Bent nor Bendire (quoted by Bent) mention a specific case or state their method of reckoning of the time of the incubation period. Even though one counted from the date of the deposition of the last egg until the hatching of the first bird, the incubation period would be greater than 28 days.

These young hawks were watched almost daily until the morning of July 2 when they were seen to fly from the nest for the first time. Their food consisted of rabbits (*Lepus californicus deserticola* and *Sylvilagus* sp.) and blow snakes (*Pituophis catenifer deserticola*). Once a large branch of joint fir, *Ephedra nevadensis*, was seen in the nest. Its purpose is unknown, but it is supposed that bits of it served as food, as the nest did not need repairing and the branch was too small to offer shelter by shading the birds from the hot sun. Not long after their first flight, the hawks were seen to take a dust bath in the soil of the nearby mesa.

This pinnacle with its nest crashed to the sidehill below after a heavy rain during the last week of March, 1938. The nest had again been relined with juniper bark and seemed about ready for the first egg.—ROSS HARDY, Dixie College, Saint George, Utah, December 20, 1938.

**An Unusual Nesting Site of the Western Tanager.**—All accounts of the nesting habits of the Western Tanager (*Piranga ludoviciana*) to which we have had access state that it builds well out on horizontal limbs at heights varying from 12 to 60 feet above the ground. Grinnell and Storer (Animal Life in the Yosemite, 1924, p. 496) cite, as an exception to this rule, a case in which a pair of Western Tanagers built their nest in a rose bush within 10 feet of the earth. J. K. Jensen (Auk, vol. 40, 1923, p. 464), in recording the presence of 12 nests in Santa Fe County, New Mexico, says that most of the nests were placed far out on horizontal limbs of the Douglas fir, 10 to 12 feet above the ground, then adds, "Only one nest was placed in a scrub oak." No other exceptions to the usual habit of placing the nest well above the ground appeared in the literature we consulted. It seems desirable, therefore, to record one more exception, one that is even a greater departure from the usual selection of nesting sites than those cited by the writers mentioned above.

During the early forenoon of July 30, 1938, while fishing on the Middle Fork of the Stanislaus River, we left the immediate edge of the stream for a short distance to follow a trail that led through a heavy stand of Douglas fir. As we approached an outcrop of rock that formed a small overhanging ledge a female Western Tanager flushed from the small recess (about four feet long and a foot deep) beneath this ledge. She flew to the bough of a fir tree a few feet away, and thinking that she had been foraging on the ground we scanned the surrounding trees for a nest or young birds but saw neither. In a few seconds the male bird joined his mate and both scolded mildly. We continued on down-stream and the female, paying no attention to us, remained in the fir tree. The male followed us for nearly two hundred yards, scolding moderately from the tops of nearby dogwood bushes, or ignoring us occasionally while he dashed out over the stream in pursuit of some insect.

About noon we were returning to our car upstream when we approached the ledge again. This time the female flew while we were a dozen feet away. A slight movement at the point from which