

A second point requiring comment is the supposed difference between the sexes in number of molts and plumages. Jollie states that, in their first year, males have one complete body molt more than females. This is difficult to believe, since the number of molts and plumages has not, to my knowledge, been found to differ between male and female in any other cardueline. The first winter plumage of female Red Crossbills is almost (or quite?) indistinguishable from the adult female plumage. How, then, is one to ascertain from study skins the number and sequence of molts and plumages with sufficient accuracy to warrant reaching the important biological conclusion that a marked sexual difference exists in the molts of this species? This might be solved through a study of living captive birds. In the absence of such a study, I regard the alleged sexual difference in molt as unproved.

The facts set forth by Jollie can, in my opinion, be explained best as follows: In *L. c. bendirei* and *L. c. sitkensis*, the juvenal plumage is followed by the first winter plumage, which in males is either red (= "second immature") or a variable orangish-yellow (= "first immature"), the latter phase perhaps tending to be more streaked on the belly. In *L. c. bentii*, the orangish-yellow first winter plumage occurs in some populations (Baily, Denver Mus. Nat. Hist., Mus. Pictorial No. 9, 1953:35-37) but seems much less common or perhaps is lacking in others (Tordoff, *op. cit.*). The color of this first winter male plumage may be affected by diet. A partial prenuptial molt, which usually replaces red feathers with greenish feathers, results in the first nuptial plumage. Subsequent molts probably include only an annual postnuptial molt and an annual incomplete prenuptial molt, as in many other carduelines. Females probably have a similar molt sequence, even as immatures.—HARRISON B. TORDOFF, *Museum of Natural History, University of Kansas, Lawrence, Kansas, September 1, 1953.*

**Incubation in the Chestnut-backed Chickadee.**—In three of the past four years, Chestnut-backed Chickadees (*Parus rufescens*) have nested in a bird house in my yard in San Francisco, California. A hinged roof on the house has made frequent observations possible. Bent (U. S. Nat. Mus. Bull. 191, 1946:387) states that "The exact period of incubation does not seem to have been determined for this species. Dawson (1923) and Bowles (1909) both state that incubation begins when the first egg is laid, as the sizes of the embryos in a set of eggs vary considerably. Perhaps the bird does not incubate all through the laying period, but she covers the eggs when she leaves the nest, which keeps them warm . . ."

In none of the three nests that I observed was incubation carried on at all until all the eggs had been laid. They were placed underneath the nesting material at the bottom of the bird house, but it is doubtful that this would have kept them very warm. At any rate, the eggs all hatched within about 15 hours of each other.

In the first of the three nests which I observed (1950, 7 eggs), incubation was begun on April 11. Three eggs had hatched by 8:00 a.m. on the morning of April 24. By 4:00 p.m., two more had hatched. The sixth egg hatched the following night. The seventh egg did not hatch. The incubation time in the nest, then, was 13 days for the first three eggs, and about 13½ days for the others.

In the next nest (1951, 6 eggs), incubation was begun on April 21, and the first eggs hatched during the night of May 3 or the morning of May 4. Five of the eggs had hatched by the evening of May 4. The sixth egg did not hatch. This, also, was 13 days for the first eggs to hatch, and about 13½ days for the rest.

The last egg was laid in the third nest (1953, 4 eggs) on April 15, and incubation was started then. The first egg hatched by 7:30 a.m. on April 29; two more hatched by 5:30 p.m. The fourth egg did not hatch. This is at least 14½ days for the first egg and 15 days for the other two. It is thought that the birds nesting this year were making their first attempt at nesting, as their actions were quite unlike those of birds nesting in previous years.—JOEL T. HEDGPETH, *San Francisco, California, September 3, 1953.*

**Caspian Terns Nesting at San Diego Bay.**—Observation of a nesting colony of Caspian Terns (*Hydroprogne caspia*) at the extreme south end of San Diego Bay, California, is reported herewith. A search of the literature has revealed no prior nesting record for this species in San Diego County, California, although such records have been published for the Salton Sea, in Imperial County, and for Scammon Lagoon, Baja California (Willett, Pac. Coast Avif. No. 21, 1933:79).

The present colony was noted by the writer and a group of observers from San Diego State College on May 18, 1953. Its appearance was strikingly similar to that described by Miller (Condor, 45,

1943:220) and De Groot (Condor, 33, 1931:188) at San Francisco Bay. Both the San Diego and the San Francisco colonies had located their nests on the flat tops of earthen dikes forming basins used by commercial salt works. Behavior of the birds at San Diego was almost identical with that noted by Miller and De Groot, as was nest construction, numbers of eggs, action of the newly-hatched birds, presence of small fish dropped by the parent birds near the nests, and the presence of small regurgitated pellets of fish scales.

A few differences, however, should be noted to add to the cumulative record of this bird in California. The San Francisco colony was concentrated along a dike that was much wider than that utilized by the birds at San Diego. Here, the nesting site was a dike averaging not more than four feet in width, so that the nests were staggered in rather uniform fashion along about 300 yards of the dike and in many places were placed practically on the edge of the dike. This no doubt accounted for the many dead young (approximately 30) which were found among the clods on the muddy beach at the base of the dike. In San Francisco a strong prevailing wind apparently accounted for numerous eggs found at the water's edge below the dike. This was not the case at San Diego. However, many of the nests—with eggs and young—were found on the beach itself, some of them placed as much as six feet from the base of the dike.

Another item of difference was an apparent gradient in the hatching time of the eggs within the colony at San Diego. Most of the nests at the south end of the dike still contained eggs at the time the observations were made. However, as the observers stepped carefully among the nests and proceeded northward through the colony, it was seen that the more northerly sets had hatched earlier. Finally, it was seen that there was a perfect series, ranging from the unhatched eggs, through a zone of nests containing eggs that were hatching at the time of the visit, and another group of nests where all eggs had hatched a few hours before the visitors appeared, and so on, up to the extreme northern end of the colony, where the birds were at least a week old and many were making their first attempt at swimming.

In addition to the bay smelt and shiner perch noted by Miller as common food for the young, the adults of the San Diego colony also provided black perch (*Embiotoca jacksoni*).

Unfortunately, circumstances prevented the taking of a census, and the writer can submit only a rough estimate of the population of the San Diego colony on May 18: approximately 100 nests and 250 adult birds. Many of the dead young examined had been banded.

During the three hours spent at the colony no evidence of predators was noted, with the exception of one California Gull (*Larus californicus*), which flew toward the colony and was driven off by a group of the adult terns.

Mr. Merrel A. Taylor guided the observers to the colony and reported that he had seen the same species nesting at the location in 1952.—D. L. EMBLEN, *San Diego, California, September 18, 1953.*

**Copulation of Anna Hummingbirds.**—On Sunday, August 30, 1953, at about 2:00 p.m., my husband and I were gardening at our home in the Montclair District, Oakland, Alameda County, California. Perched on the clothesline, singing, was a male Anna Hummingbird (*Calypte anna*). Each day for the previous ten days a male Anna Hummingbird had been perching in about the same place and singing, presumably the same male hummingbird. During the same ten days, a female Anna Hummingbird was frequently observed collecting tent caterpillar webs from our infested oak tree (*Quercus agrifolia*). The web gathering was resumed by the female this Sunday while the male continued his singing on the clothesline, twenty feet away. Suddenly the female flew from the oak tree and perched on another clothesline immediately over our heads. Instantly the male left his perch to hover over and then mount the female. During the few seconds of copulation the male's wings fluttered rapidly, while the female remained perched. Immediately after copulation, the female returned to the oak tree and the male to his perch on the clothesline. Although I did not note dates, there was courtship behavior by two Anna Hummingbirds in our yard just prior to August 30. After August 30, I occasionally saw the female in the oak tree and the male was on his usual perch and singing daily until September 27, when I noted that his song was shortened and not as frequent as on earlier dates. It was also during the period after August 30 that the male became very aggressive. For the first time in our garden an Anna Hummingbird succeeded in banishing an Allen Hummingbird. This he did fiercely and repeatedly.—BETTY TROUSDALE, *Oakland, California, January 21, 1954.*