

one season. Mrs. Harding's Return-3 (see this *Bulletin*, Vol. III, No. 1, p. 21)¹ emphasizes the tendency to return to a given wintering area even in New England for several years, a tendency which is quite marked in the South, where White-throats winter in abundance. (See Wharton's note in the *Bulletin* for October, 1927, p. 107). Of ninety-five banded in 1926, he had returns in 1927 of seven, or 7.368 percent. At Thomasville, Georgia, Baldwin had returns in 1917 of four birds out of six banded in 1916, or 66.66 percent (see *The Auk*, Vol. XXXIX, p. 216). In other words, the banding-records to which I have had access indicate that White-throats, however devious and uncertain their path to their wintering-grounds, tend rather strongly to pass the winter in the same locality. If we had the good fortune to possess a record of nesting birds for a series of years, I doubt not that this species would measure up to many others in returning to the same locality to pass the summer.

DOMESTIC VICISSITUDES OF BLUEBIRDS

BY HELEN J. ROBINSON

IN the spring of 1927 I established a chain of four Bluebird nesting-boxes. Box A was at my home station at Brewer, Maine; B was on a farm six miles east; C was on another farm a quarter of a mile beyond in the same direction; and D was on an abandoned place about an eighth of a mile south of C. I found a fifth nest, E, in a natural tree cavity on a farm three miles southeast of my station. All the nesting-boxes could be opened easily, and by means of a detachable pull-string shutter could be used as traps. Every box was taken by Bluebirds, and in two cases a second box was required for the second brood. The resulting five chapters of Bluebird history, some complete in every detail, some short and broken, are alike of interest. The following brief introductory outline gives a general survey of the nesting activities of the different families, and will aid in a clearer understanding of facts given later:—

¹This issue contains a note recording the return-4 of this bird, see p. 29.

<i>Pair A—Double-brooded</i>			
	<i>Brood I</i>		<i>Brood II</i>
Building	April 14 to 21		June 12 to 14
Laying	April 24 to 28 (4 eggs)		June 17 to 21 (5 eggs)
Hatching	May 13 and 14 (3 young)		July 4 and 5 (4 young)
Young flying	May 29, 30 and 31		July 20
<i>Pair B—Double-brooded</i>			
Building	April ? to 26		June 21 and 22
Laying	May 1 to 4 (4 eggs)		— (3 eggs)
Hatching	May 18 and 19 (4 young)		July 11 or 12 (3 young)
Young flying	—		July 28
<i>Three Single-brooded Pairs</i>			
	<i>Pair C</i>	<i>Pair D</i>	<i>Pair E</i>
Building	—	May 14 to 16	—
Laying	—	May 20 to 26 (6 eggs)	—
Hatching	June 19 (5 young)	About June 9 (6 young)	June 18 and 19 (5 young)
Young flying	July 3	After June 22	After July 4

In studying the different family histories, I made pair A the standard of comparison because the nesting of that pair proceeded without accident or more than normal delay. Pair A reared two broods of young, which grew to maturity about the place; the fledglings were clean and healthy, and apparently met with no trouble of any kind. The other four nesting pairs were not so fortunate in raising their young; delays in nest-building and accidents occurred in every family, and three pairs succeeded in rearing only one brood each. It would be interesting to know if this approximate ratio prevails everywhere.

A survey of the circumstances attending the nesting of each pair reveals the various causes of their delayed nesting. Pair B raised brood one successfully, but were delayed a week in their second nesting because of a misplaced entrance, which an interested but mistaken friend had made too near the floor of the box. The fault was remedied, and at once the female took possession and began to build.

Box C, placed in position in mid-April, was untenanted for so long that about the last of May I stopped visiting it. On June 19th, however, I found it occupied by two anxious parents and five newly-hatched youngsters.

Pair D built at first under the eaves of a shed, in an Eave Swallow's nest, then unoccupied. After a heavy rain, and about the time the Eave Swallows arrived, a great outcry was made by the Bluebirds, and the nest was found on the ground,

with three of its five eggs broken. The nest, by the way, was near a barnyard, and was made mostly of horsehair, tufts of cattle-hair, and brown hen-feathers. Two days after the disaster I found a pair of Bluebirds prospecting about Box D, which was perhaps two minutes' flight from the shed, and which hitherto had been unoccupied. In two more days they had built a nest, and four days later the female began to lay. Under the circumstances it seemed probable that the pair at Box D was identical with the pair which had lost the shed nest. When the eggs appeared, I compared them with the unbroken eggs of the first nest, and found that they were alike in size and shape, and smaller than those laid by my other Bluebirds.

Pair E furnished another case of questionable identity, and an instance of several weeks' delay, caused by accident to the young. On May 21st we found a pair of birds, presumably Pair E, in a large bird-house in a farmer's orchard. The young were crying for food, and must have been at least a week old. Five days later, on going to band them, I found them all dead in the box. The parents had disappeared. Upon removing the nest, I found in the furthest corner a second brood of dead nestlings, which had perished long before the other brood. There is little doubt that both broods were victims of the blood sucking larva fly (*Protocalliphora*). When I again visited the place on June 18th, I found a nest of young Bluebirds hatching in a natural tree cavity, a few hundred feet from the original bird-house location, and they were believed to be the original Pair E.

I banded all the young of every brood, a total of thirty, and also eight adults. The behavior of the mature birds after being banded varied considerably. The male of Pair A was trapped in the box during his first prospecting, and stayed away a day and a half. After that he visited the box often and showed no apprehension whatever. The female was banded when she was brooding her young, and afterward was handled frequently. She did not become tame, but when I approached the box she never left her young unprotected, always staying on the nest until I took her off or went away. As the season progressed and she reared her second brood, she became more and more apprehensive. Haymakers were about the orchard when the young were nearly ready to fly, and, perhaps owing to her nervous fears, some of the fledglings left the nest one day sooner than had those of the first brood.

The female of Pair B, though shy, was surprised on the nest with newly hatched young, and banded, but she never allowed herself to be taken a second time. The male, which had not

been near when I banded his mate, was taken two days later. The female of Pair C was banded, but I was unable to trap her mate.

Pair D was shy also, but I finally trapped and banded the female about the time she began to incubate. The male was much disturbed, and repeated efforts later to trap him failed. When I went to band the young of this brood, I obtained an interesting sidelight on his character. Before banding the young, I attached the shutter and retired to wait for him to enter the box with food. Instead, however he sat on a branch high above the box and scolded. His mate sat near him. After this had gone on for some time, a second female flew up, her beak full of nesting material, and went into the box which housed the six well-grown young birds. After a pause she came out, and with the straws still in her beak, sat in the entrance. Then she went in and stayed. I dropped the shutter, and upon taking her out, found her still holding a bit of straw in her beak. While I examined and banded her, the male made a great show of concern, and at her release he flew away with her across the road. The other female had meanwhile disappeared, but presently returned with food. Back came the male, and after warning her away he went on guard patrol in the tree containing the box. If a female appeared, the male diverted her course away from the bird-house. After an hour we were forced to leave, and at our next visit the place was deserted. Throughout the performance the first female showed no sign of jealousy, but merely seemed intent on caring for her young.

Pair E nested in a tree cavity which had to be fitted with a mesh-wire cover before I could prevent the escape of the adult birds. I finally took the female, but the male had become thoroughly alarmed and time was lacking in which to capture him.

The female of Pair A was watched closely while her first brood was hatching, with results which were noted in my journal as follows: "Hatching, May 13. First (still wet), 4 P.M. Second (wet), 5.30 P.M. Third, May 14, from 11 A.M. to 12.45 or 1 P.M. Bird much on nest, May 15 and 16."

It is interesting to compare the hatching data with records of the exact time when the young left the nest, thus: "May 29, nestlings photographed at noon. One flew then; was returned to box, but left it at 2 P.M., in care of male parent. Two young in nest night of May 30. One gone May 31, at 7.45 A.M. Third warbling constantly, 31st, A.M., fed very

rarely. In door at 11 A.M. Gone at 4.30 P.M. No sounds from the family."

XANTHOCHRISM IN THE PURPLE FINCH

BY C. L. WHITTLE

ON THE 17th of July, Mrs. Whittle banded an olivaceous Purple Finch (*Carpodacus p. purpureus*) No. A28748 at Peterboro, New Hampshire. This bird had a well-marked patch of primrose-yellow feathers on its under parts, occupying an approximately oval area about one and one-half inches long by three-quarters of an inch wide occurring partly on the flank and partly on the abdomen. In addition, the under tail-coverts were buffy, one of the few instances of this kind noted by me on a Purple Finch. The angle of commisure was of an orange-color, one of the manifestations accompanying the molt of the adult Purple Finch. The word "adult" is used advisedly, for during five years of active banding I have never observed a known bird-of-the-year to exhibit this accompanying phenomenon, which often includes the entire lining of the mouth. The sex of the bird is unknown, and also its age, except that it was not a bird-of-the-year as shown by its abraded plumage. Mention should be made of the fact that whereas an orange-color at the angle of the gape appears only during the post-nuptial molt, the occurrence of yellow there, which is common on a majority of the Purple Finches captured during the early part of April, does not appear to be so directly connected with a condition of molt. What was probably another case of the same kind occurred on an olivaceous Purple Finch banded April 4, 1927, regarding which my record-card reads: "Solid bright buff patch one-half inch across on right side; none on the left side." No feathers were collected, however.

Buffiness and bright yellow olive are common on the upper parts of many birds of this race, the latter usually appearing of greatest intensity on the rump of old females, and the former usually regularly placed on the sides of or including the breast of both young and old birds, especially noticeable on old birds in fresh post-nuptial plumage, when they can hardly be distinguishable from juvenile birds. Such buffy color is also not infrequently irregularly placed on the breast, one example being a well-marked band nearly one-half inch wide crossing it diagonally.