

out the time she was being studied, and became especially tame as her nesting progressed toward completion. I regret the fact that repeated unsuccessful attempts to secure film defeated my desire to make a photographic record of these observations.

99 Warrenton Avenue, Hartford, Connecticut.

SOME INTERESTING NEST HABITS OF THE EASTERN BLUEBIRD (*SIALIA SIALIS SIALIS*)

BY T. E. MUSSELMAN, SC. D.

My first purpose in erecting Bluebird boxes in quantity was purely one of conservation. As boxes increased, however, I began to appreciate the possibilities of wholesale banding of mothers and nestling birds. Whether I banded several hundred or a thousand young birds was merely a matter of the time involved in running eight routes; one forty miles, one fifty, one seventy, and the remainder of lesser lengths. (An additional route of seventy boxes will be added between Quincy, Illinois, and Edina, Missouri, in 1946.)

Never has a year passed that some new and interesting information has not been gleaned. One year it was the effect of cold and rainy weather on nestlings; another year it was cowbird parasitism; again there were irregular types of eggs; then a cold snap killed several thousand eggs, advancing the incubation period three weeks. The bluebirds were thus thrown into direct competition with House Wrens for nest sites with the resultant increase in egg destruction by piercing. Most interesting were the occasional incidents which showed the bluebird's confidence in man, the love of its nest box, and its determination in spite of adversity to bring forth its little family of birds.

Years ago I erected a box on a sturdy white oak fence post. Termites and rot eventually ruined most of the other posts, making replacement necessary. The owner renewed the fence with wire and iron but left the one post on which the bluebird box was nailed. Termites worked on. Eventually the wood crumbled about the upper box nails. A bluebird had already taken possession, and built her nest. When the box finally swung, it hung by the lower nail, the entrance being an inch from the bottom. The female returned, reconstructed a shallow nest between the entrance and the reversed top and had laid four eggs when I discovered the accident.

I removed nest and eggs; returned the box to its former upright position; wired it safely to the post; then replaced the nest and eggs eight inches down in the box. Within five minutes the parent returned, she complained a bit; inspected the box carefully; then took possession. She laid a fifth egg and eventually matured a brood of five.

Another farmer when rebuilding his fence, removed a box with five eggs, carried it twelve feet away and nailed it to a 4 x 4 post supporting an advertising signboard. The mother discovered her box and took possession although it was nailed higher than bluebirds normally build. Evidently three of the eggs were addled for she matured but two birds.

As I approach a box during nesting season, I use a little net on a five-foot pole which I place over the entrance hole. It prevents the escape of an occasional nervous mother. Generally the female is brooding patiently and after removal and banding, she can be returned to the eggs. About 20% will remain without flushing after the entrance obstruction is removed.

During but one year have cowbirds used my boxes. Often I run a route of one hundred and fifty boxes without finding a parasitic egg. However, in 1945 I found the largest number (7) when running the 268 boxes on the Meredosia Route. Occasionally inquisitive small boys have difficulty returning a top to a box. If it is not replaced, leaving the nest exposed from above, the cowbirds do not hesitate to enter. On several such occasions I have found three parasitic eggs in a single nest. Cowbirds seem to fear entering a box through a side entrance, however.

Never have I found a starling using one of my boxes although once I discovered an immature starling in a box with four baby Blues. Whether a mother starling layed an egg then deserted the nest, or because of necessity she entered the box and laid her egg with those of the bluebird, I shall never know. When I discovered the mixed family, four skinny, dirty little bluebirds were huddled in the grass nest below, and the well fed foster brother was sitting on them, grabbing the major part of the food as it was brought in by the foster parents. He was clean, they were covered with offal and scaly dust.

I removed the offender, killed him, then washed each baby bluebird in a neighboring creek. After cleaning the box, I rebuilt the nest with dry bluegrass, and returned the babies. A week later, I found them clean, healthy, and about ready to fly.

In 1944 after three days of drenching rain, I discovered a box with a dead baby, two wiggling birds badly in need of food and warmth, and a fourth baby too young to desert the nest (probably ten days of age) had actually crawled from the box and had dropped to the ground. The interior of the box was a stinking quagmire. Some rain had driven in, and could not escape as the drainage hole in the bottom was filled with dirt. The parents were in great distress. They complained, dipped and snapped their bills at me as I approached.

Again I removed the birds, disposed of the dead one; rebuilt the nest with dry grass; returned the two cold babies; and captured the third little bird which had fluttered into the tall wet grass. So great was

the mother's distress that she entered the box without any apparent notice of the readjustment. Feeding and brooding soon restored the three babies to their normal condition.

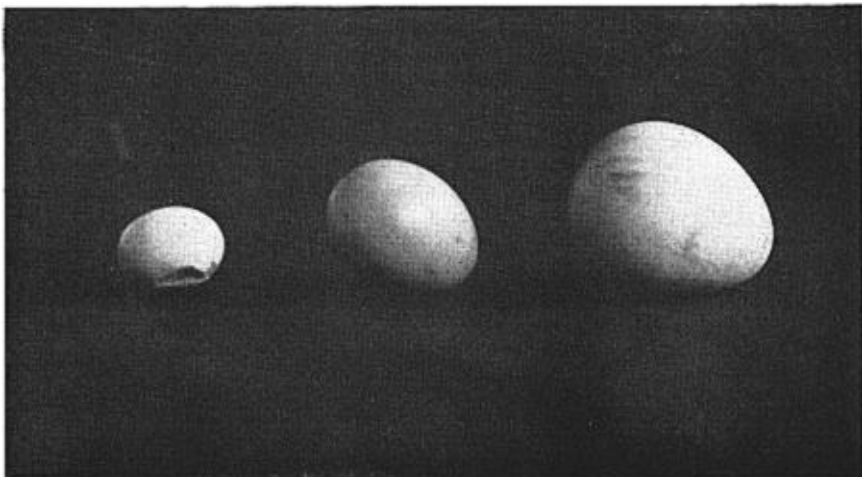
Although I have rebuilt nests, changed egg complements, and adjusted boxes, I have yet to experience a desertion on the part of a bluebird mother.

After the April freeze in 1940, many strange nest adjustments were noticed. Hundreds of frozen complements were deserted. New parents eventually took possession of the boxes. Often they built a flimsy grass nest through which the other eggs could be seen. Therein they laid their eggs directly above the old complements.

In one such nest, six eggs were covered by a well built nest. Two females deposited a total of nine eggs. The shape of the eggs suggested one had laid five and the other four. One eventually deserted. At any rate I took four eggs and redistributed them in other nests that had small complements without apparently inconveniencing the foster mothers or causing them to desert.

At Quincy the bluebirds normally lay four, five or six eggs during the first complement; and three, four, or five eggs during the second. During 1945, I found what I considered the only seven egg set I have ever seen during the twelve or more years I have interested myself in these birds.

Normally albinistic eggs number from three to five per cent. In



Variation in Bluebird Eggs
Left to right: Peewee Egg, Normal Egg, Jumbo Egg.

1942 we had a year of egg abnormalities. My Hamilton route had an eleven per cent yield of albinistic eggs during the first nesting with a normal yield during the second.

Seldom do mothers rebuild in my boxes. I sometimes find them nesting in boxes on other routes fifteen or twenty miles away. That year I found three peewee eggs as shown in the enclosed photograph and one jumbo egg. In no other year has a similar phenomenon occurred. The peewee eggs had no yolks. The amount of yellow blown from the jumbo egg suggested a double yolk.

The normal bluebird nest is a simple creation composed largely of dry bluegrass with the inclusion of an occasional horse hair on chicken feather. In 1945 a bluebird which built in box 36 on the Hamilton route, reverted to the thrush characteristic of using mud to hold other materials together. The basic structure was of grass but the upper edges were plastered to the box with a thin layer of mud and the corners were rounded with mud until the nest was similar to that of its red-breasted cousin, the robin. This banded female later travelled to box 34 about one-half mile south on the same route, and constructed a second nest similar in every detail to that which she formerly had built in box 36. She took off a normal five bird family.

If there is as much variation in the habits of other birds as many of us have discovered since we started the intensive study of bluebirds, certainly there is a world of opportunity for bird banders and nature students to do interesting and valuable scientific research in the field of life histories of other North American birds.
Quincy, Illinois.

RETURNS OF BANDED BIRDS: SOME RECENT RECORDS OF INTEREST

BY MAY THACHER COOKE

The selection of interesting records for publication has become very much a problem of rejection, so many interesting records are being received.

As in previous papers of this series, an asterisk before the number indicates that it was known to be a bird of the year when banded.

LEACH'S PETREL (*Oceanodroma leucorhoa*)

36-144455, banded at Kent Island, N. B., July 17, 1938, by D. R. Griffin, was taken from its nesting burrow at the same place on July 17, 1944, by Dr. A. O. Gross.

37-138132, banded at Kent Island, N. B., July 21, 1937, by N. Pillsbury and W. Valencourt, was taken from its nesting burrow June 17, 1944.

WHITE PELICAN (*Pelecanus erythrorhynchos*)

*34-705521, banded July 21, 1937, at Kandahar, Sask., by F. G. Bard, went