SUGGESTIONS FOR CAPTURING HOLE-NESTING BIRDS

By RICHARD B. FISCHER

THE various hole-nesting birds offer unusual opportunities for detailed studies to both the bird-bander and the life history student. Many of these people are engaged in fascinating and very valuable work, for example, on the roles of the sexes in incubation and feeding. What little data we have on the changing of mates among birds *(e.g.* LeRoy Wilcox's material, not yet published, on the Piping Plover *(Charadrius melodus* (Ord.)) impress one with their penetration into an absorbing field of research. To aid and, I hope, encourage others to undertake studies of pairs of birds and their families rather than isolated individuals, I offer herewith the chief methods of capturing hole-nesting birds which I have used and developed during the past several years.

My favorite device is a manually operated shutter which closes the hole behind a bird that has entered its nest cavity. I wish I could acknowledge the inventor of this simple though ingenious device, but neither Geoffrey Gill, who first showed it to me, F. C. Lincoln, nor anyone else I have spoken to or corresponded with knows who first used it. As described in *Ebba Nus* (Fischer, 1940), the shutter is shaped like a solid figure nine. However, I have found that one with a rectangular shape works just as well and is more quickly and easily made. This shutter, cut from any thin piece of wood, usually measures two by six inches. A hole for a nail is drilled through it an inch or two from the center, and a very long string is fastened to the short end. To install, place a short nail in the hole and fasten the shutter to the front of the bird house in such a position that it may be manipulated to open or close the entrance hole. The shutter will pivot freely if the nail is smaller than the hole, and if it is not nailed rigidly to the house. By running the string through a staple fastened below the house, one can move the shutter up and down by pulling in a horizontal plane. I usually attach the shutter so that it rotates in a counter-clockwise direction when closing the entrance hole. A small nail partly driven into the house above the hole will prevent the shutter from swinging too far and reopening; sometimes, owing to the construction of the house, this is unnecessary. Since the end that covers the hole is longer and consequently heavier, this advantage is gained: should a bird escape, simply release the string, and the shutter will fall down of its own weight, reopening the hole. This obviates walking up to the house to open it by hand, thereby exciting the parents anew. Reference to Figure I will make this description much clearer.

Note that I fashion a shutter from any old board I find lying around, and that any suggestion of woodworking ability is a flattering coincidence. Oftentimes, when no board is available, I split a slab from

a dead branch and use it instead. After you have done it a few times, this shutter can be made and ready for operation within five minutes. Since the devices are so quickly and easily constructed, I usually make them on the spot and, after banding the birds, nail them fast to the house so that they cannot be turned. Then the shutters are ready for use at any time, and it is not necessary to wait for the birds to become accustomed to them.

When operating the shutter, forty or fifty feet is a good distance to stay from the house; concealment is also advisable. When possible, it is best to install the device the day before you intend to capture the birds.

After trapping a bird in its house, I used to place an insect net over the nest box and then turn the shutter to permit the bird to fly out into the net. This resulted in many captures but occasional escapes; birds that did escape became wary and difficult to retrap. Dr. C. Brooke Worth tells of capturing House Wrens *(Troglodytes a. aedon* (Vieillot)) at night by placing a milk bottle over the entrance hole and then frightening the bird into the bottle. Borrowing from Dr. Worth's technique, I now use a milk bottle in conjunction with the shutter and it works splendidly. In addition, the bottle serves as a fine, escape-proof cage when standing up. For birds the size of a bluebird or larger, a jar should be used. Should a bird refuse to emerge, emphatic tapping on the back of the house will produce the desired results.

The manually operated shutter can be employed to capture birds nesting in holes in trees and buildings as well as in bird boxes, but its success then depends upon the circumstances under which it is used. Its size, shape and movement will be determined by the conditions present. Figure II shows how the shutter may be adapted to trap nesting woodpeckers. When a bird is found nesting in the top of a hollow stub, the shutter cannot be used. But one can often get around the problem of birds using natural cavities by erecting houses for them. I have done this with gratifying results at my summer station in Beaver Kill, New York.

Although I have used the device only on the Flicker *(Colaptes auratus luteus* (Bangs)), Tree Swallow *(Iridoprocne bicolor* (Vieillot)), House Wren, and Bluebird *(Sialia s. sialis* (Linnaeus)), the results attained indicate its success with many other species. Indeed, I have often thought of trying it on kingfishers *(Megaceryle a. alcyon* (Linnaeus)) but was always prevented from doing so because in each case it was distinctly to the bird's advantage if certain fishermen did not know the location of their nesting sites. If a stake were driven into the bank parallel to the kingfishers' burrow, and the shutter (made to resemble a stone or perhaps coated with sand) were pivoted on this stake, it seems to me that it should work successfully.

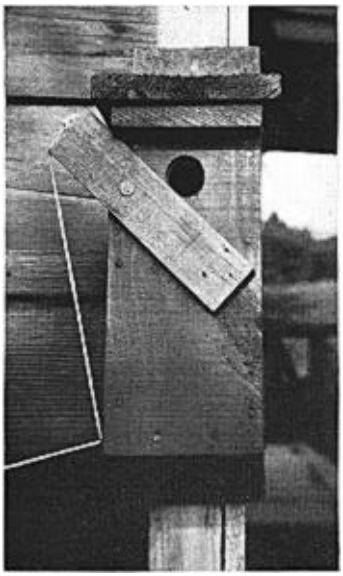

FIG. 1. A manually operated shutter ready for use.

FIG. 2. The shutter adapted to trap birds nesting in natural cavities.

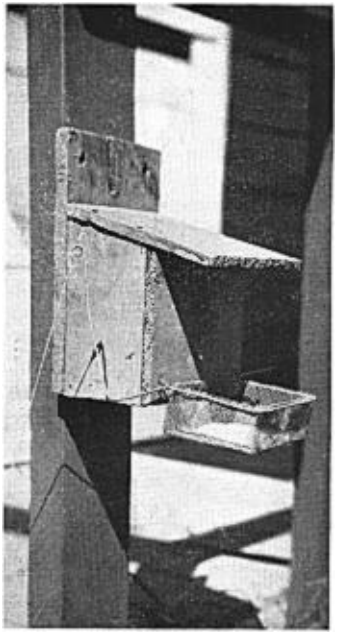

FIG. 3. This wire box will capture birds that do not enter their nests to feed the young.

FIG. 4. A long-handled net having a deep sac is useful in capturing Cliff Swallows.

It sometimes happens that a bird has young in the nest which are so well grown that they come to the entrance hole as soon as the parent arrives with food. The adult clings to the rim of the hole and may insert only its head to pass the food to the young. When these conditions are met, the shutter device is both useless and dangerous. I first encountered this problem in connection with large-scale banding of House Wrens. Knowing there must be some way of capturing these birds, I thought about the problem for days and finally hit upon a solution. From a piece of fine screening I made a small square box four inches on a side and two inches deep. Around the top, which was open, I fastened a long piece of coat hanger wire to three sides. The ends of this wire were then bent as shown in Figure III. The device was fastened to the front of a bird house with two staples, one on either side of the wire box. A pull on the draw string will close the box on the parent bird feeding its young. This cage works exceptionally well, and may be used in place of the shutter described above. Perhaps the little box could be adapted to capture birds nesting in the top of a stub, a situation in which the shutter cannot be used.

On a barn just inside of the town of Livingston Manor, New York, is a Cliff Swallow *(Petrochelidon a. albifrons* (Rafinesque)) colony of about eighty pairs. This is by far the largest colony in the area, there being a very good reason for its size. Many years ago, the owner of the barn, Mr. James Zieley, fastened boards to the side, up under the eaves, to provide the birds with good supports for their nests. Other banders should try to enlarge their colonies by doing this. During 1941 and 1942, I succeeded in capturing a small number of adults with an insect net.

It seemed to me that if I had a net that could be shoved up into the eaves from the ground below, and which would fit in between the projecting roof timbers, I would be able to do some large-scale trapping. I made such a net for the 1943 breeding season. The rectangular frame for the netting measured seven by thirty-two inches, the thirty-two inch length being determined by the fact that the roof beams on Mr. Zieley's barn were slightly more than thirty-two inches apart. The ends of the wires were bent at right angles to the plane of the net frame, in the middle of one of the thirty-two inch sides. Each end of wire had two loops bent into it which were aligned with corresponding loops in the other end so that both might be bolted to opposite sides of a broom handle. One end of the handle was threaded so that others might be added by means of pipe couplings, thus enabling the bander to lengthen or shorten his net handle as he wished. Its sac was four feet deep. This net is illustrated in Figure IV.

Although the net was not tried out until most of the swallows had young in their nests, its success was most encouraging. In a few hours I had captured twenty-seven adults, four of which were returns from

1941; none of these birds were taken in 1942, when I had the much less efficient insect net. Incidentally, two of these returns were adults when banded, one was an immature, while the fourth was a nestling. Had I worked on this colony before the eggs had hatched, the results would have been impressive, for incubating birds, instead of flying out when they see the net coming at them, usually withdraw into their nests. After the net is in place, they soon emerge and flutter into it. They can be driven to the bottom of the sac by shaking the net. Getting the birds down without their escaping is accomplished by slowly lowering the sac, keeping its mouth pressed against the side of the barn.

It probably would be more convenient to capture hole-nesting birds on their nests after dark instead of making and operating the devices which I have described. However, there is a serious objection to trapping most of these birds at night; namely, if a bird with eggs or newly hatched young should escape from you or fly out of its nest, the consequences might be unfavorable and discouraging to both the birds and you. Nevertheless, I have thus far found it safe to capture Bank Swallows *(Riparia r. riparia* (Linnaeus)) and Rough-winged Swallows *(Stelgidopteryx ruficollis serripennis* (Audubon)) at night because they will remain in their dark tunnels when returned to them. Since my experience with these and other species that nest in tunnels has been limited, I should be happy to hear from readers whose experience indicates that this is actually a safe (or unsafe) method.

The procedure is merely to approach the nest holes very quietly and quickly plug them up with grass or stones. A coarse-meshed net—I use a trout landing net—is then held against the burrow and, while you or your helper shines a light on the hole, the plug is carefully removed. If a bird does not come to the mouth of its tunnel and jump into the net, it can be coaxed by making a squeaking sound with the lips, or "persuaded" with a long twig. After being banded, a bird or pair of birds is returned to its burrow and the entrance plugged again. Flashlight batteries are difficult to obtain at present, but their life can be considerably prolonged by carrying a gasoline or kerosene lantern and using the flashlight only when necessary. When all the birds have been banded, extinguish the lights and, after waiting five minutes or more, remove the plugs and quietly withdraw.

Herbert A. Houston (1942) used a somewhat similar method to trap Bank Swallows. He plugged their holes after dark with stones, and banded a considerable number of birds when he returned the following morning.

If this brief paper has prompted you to try your hand at capturing hole-nesting birds, and I hope it has, then you might wish to read about the methods and suggestions of other banders. Some of this literature has been assembled below in the additional references.

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THE SWALLOW-TAILED KITE IN THE NORTHEASTERN STATES

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MOST authors of works dealing with birds of the Northeastern States say that the Swallow-tailed Kite *(Elanoides forficatus forficatus* (Linn.)) is a rare bird in this area. None have attempted to define the use of the word *rare* and it might mean anything from one record to twenty-five. Such terms as rare, uncommon, common, unusual, *ad infinitum*, are purely relative and require some further qualification. At least if writers in the past had given some definite figures to qualify the word *rare* we would have some indication as to the relative abundance or scarcity of the Swallow-tailed Kite. Bent (1937:52) has attempted to give all the records for this bird, but has missed some of them. The object of this paper is to give all the records for the Swallow-tailed Kite in the Northeastern States and to consider the possible causes for the occurrence of this bird in this area.

To date the Swallow-tailed Kite has been recorded thirty-three times in the Northeastern States. In this study the Northeastern States means the following States: Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey and Pennsylvania. With four exceptions, all of these records are sight identifications. As Cruickshank (1942:129) has stated, this species is so unmistakable