maintained on a standard food diet (sunflower and other plant seeds plus conditioners and other supplements such as oyster shells) in that holding cage over the previous winter (1967-68). In June 1968 they had been transferred to the *beta confinement* (semi-wild) enclosure (Mitterling, L. A. 1966. Bird-Banding 37: 123-125).

Captured Jays were moved from Glastonbury where they were captured at the blueberry patch to the University of Connecticut, and released in the holding cage. Each Jay was given water and a vitamin supplement, plus some of the food from the feeding troughs or platforms, after identifying leg tags had been attached to them. At the time when blueberry damage assessment was started, many adult Jays were plucking berries from the bushes, and apparently returning to the nesting site with them, presumably to feed nestlings or fledglings. All of the captured Jays used were classified as "Hatching Year" (or immature).

The first four birds taken to the holding cage all died within 72 hours. It was assumed that more than the normal stress and strain, associated with handling and transporting, caused their death. Also, such a simple explanation as moisture deficit did not seem to be responsible.

The next 11 Jays captured were placed into two groups. Five were placed in the holding cage with an ample supply of blueberries mixed with the standard food. The remaining six Jays were placed in the *beta confinement* enclosure with Homer an adult Jay, and only the standard food although apples were present on the trees in that enclosure.

The five Jays in the holding cage were alive and had adapted to confinement 10 days later when mixing fresh blueberries with the standard food ceased. Within 72 hours all six Jays released in the *beta* enclosure had died.

Following the above experience, another 11 Jays were captured and moved to the University of Connecticut. One escaped before tagging and another after. A third died while putting leg tags on it. The remaining eight were placed in the *beta* enclosure with the Second Year or adult Jay with an abundance of blueberries mixed with the standard food. Two of the remaining eight died; one within 8 hours and the second within 48 hours. Fresh blueberries were provided daily to this group for one week after placing them in the enclosure.

Four of the five placed in the holding cage are alive as of this writing and have adapted to confinement. The one which died, did so about three weeks after being taken off the blueberry diet, so it is assumed that it too had adapted. Five of the eight placed in the *beta* enclosure are presumably still alive. Two of them died as previously noted and the third was found dead about six weeks after confinement and after it had been taken off the blueberry diet. The word "presumably" used above relates to the fact that vandals entered the premises and threw apples on top of the 20′ enclosure causing one section to break away from its retaining stringer. All five birds, plus Homer, escaped.

Two factors were involved in the decision to discontinue the study when the second or latter group had been placed in the *beta* enclosure. First, the limited number of cages, and, second, the majority of Jays available for capture would have been exposed to a much greater variety of foods other than blueberry. It is probable that some in the last group had been anyhow.

The evidence, however, would indicate that many of the young Jays from the Glastonbury, Conn. location, were sufficiently "familiar" with the blueberry that when it was mixed with a "strange" food source they could or would adapt to that "strange" food. Without the blueberry as a "familiar" feed to entice them to adapt, they did not survive. Whether it was basically a factor concerned with moisture, food or its combination is still unresolved and open to question. Very possible the adverse effect resulted from going to a diet of dry seeds from a diet of fruit, rather than resulting from deprivation of blueberries as such.—Lloyd A. Mitterling, Plant Science Department, University of Connecticut, Storrs, Connecticut 06268.

**A Nest-Box Trap for Starlings.**—During the spring of 1968, we used nest boxes to study the breeding behavior of Starlings (*Sturnus vulgaris*) in Denver, Colorado. Because the study required that individual Starlings be marked early in their nesting cycle, an effective means of capturing the birds was needed. Kessel (1957) and others caught them by hand while they roosted in boxes during winter and early spring. Royall (1966) and Collins and de Vos (1966) also caught

them by hand, but while the birds were on the nest. Hilton (1958) and Gromme (1942) used trap doors operated by pullstrings to capture nesting Starlings. None of these methods appeared satisfactory for our study, so the automatic trap described here was devised.

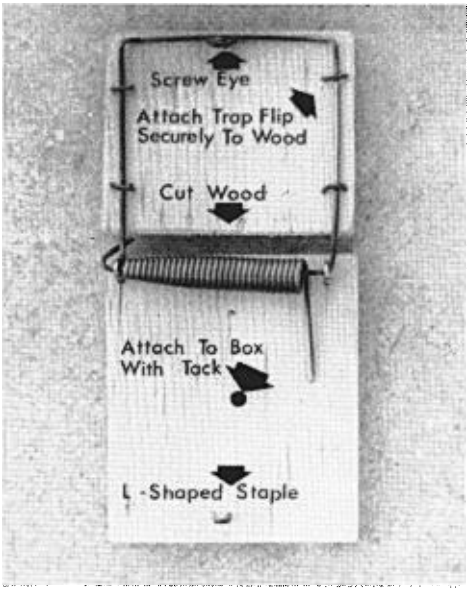


Fig. 1. Converted Museum Special mousetrap.

A Museum Special mousetrap is the basis for the trap door (fig. 1). All parts of the trigger mechanism, with the exception of the staple that secures the trigger arm, are removed. At this point, the staple is cut in half so that only an L-shaped hook remains. The snap-wire is folded into the "set" position, and the wooden base is cut in half near the coiled spring. The snap-wire is released and the shorter piece of the base is fastened to it with small staples. A small screw eye is attached to this piece of the trap, and positioned so that when the trap door is "set" it is close to and in line with the L-shaped staple (fig. 2).

A small nail passing through the screw eye and the L-shaped hook now forms the trigger when the trap is set. The trap is tripped by a string that passes from the nail through a hole drilled in the side of the box to a stiff cardboard treadle inside the box (fig. 2). The trap is positioned over the nest box entrance and attached with a 5/8-inch-long roofing tack, which allows it to be turned away from the hole when not in use.

Trap doors were installed on 30 nest boxes of the design used by Kessel (1957). Starlings began visiting the boxes in early March, and within a few days 30 had been caught and color-banded. Because of the kind of test we were conducting, we deactivated the trap door after one Starling was caught in each box. However, we could have taken several from single boxes if the traps had been left operative.

This trap has several advantages over capture methods described by other researchers. First, for nesting studies, birds can be captured when they first visit a box rather than risking nest desertion by disturbing them after laying or incubation has begun. If the captured birds fail to nest in the boxes where they were caught, they are apt to use another nest site in the immediate area (Kessel 1957). Second, all Starlings that express an interest in breeding by visiting nest boxes can theoretically be captured, whereas only a small number of the birds that actually breed in a given locality can be caught while at roost in the boxes

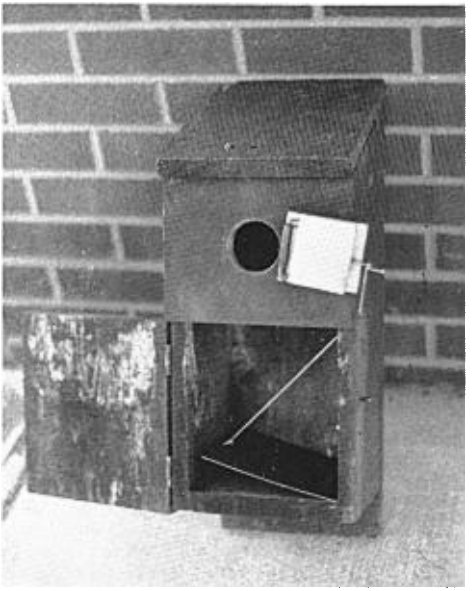

Fig. 2. Nest-box trap used for Starlings with trap door in set position.

(Kessel 1957). Finally, the trap is inexpensive (when nest boxes are already available), simple to construct, and automatic so that it does not require constant attendance.

This trap also can be used as a banding tool in the spring after communal roosts have dispersed and Starlings become difficult to capture by conventional methods. We often found groups of four or five Starlings investigating individual boxes, and Kessel (1957) states that they visit all nest sites in an area before selecting one. A large percentage of the birds that first visit the boxes are adults (Kessel 1957), which are difficult to catch and band at any time of year.

The trap may prove effective for controlling local damage to gardens or fruit trees by a few resident Starlings. It may also be used to remove Starlings locally in order to make the nest boxes available for more desirable species of native birds (Gromme 1942). We believe it also could be used to capture other species of box-nesting birds, such as Wood Ducks (*Aix sponsa*). —Richard W. De Haven and Joseph L. Guarino, U. S. Bureau of Sport Fisheries and Wildlife, Denver Wildlife Research Center, Denver, Colorado 80225.

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