NOTES ON RAISING PASSERINE BIRDS IN THE LABORATORY

By W. Patrick Carney

With increasing frequency wild passerines are being used for research purposes. The techniques described in this paper resulted from attempts to raise and hold approximately 250 passerines under laboratory conditions for periods ranging from a few months to more than two years. Although 10 species were held in the laboratory, the majority were American Robins (*Turdus migratorius*) and House Sparrows (*Passer domesticus*). A multiple birdhouse (Fig. 1) was constructed which greatly facilitated the laboratory raising and maintenance of these wild birds.

Nestlings were collected and taken to the laboratory shortly after assuming the juvenal plumage. The young birds were carried to the laboratory in their nests covered with a cloth sack. In the laboratory they were individually banded, taking care to choose a band large enough for the adult leg, and then placed in a cardboard box with sawdust or fine wood chips. The box was warmed day and night with a 60-watt incandescent bulb. A nylon screen was fastened over the top of the box and the lamp set approximately 6-12 inches over the screen. By eye-dropper the nestlings were fed hydrated Gerber's high protein pablum (Gerber Products Co., Tremont, Michigan) every hour from 07:00 to 19:00. Daily, each bird received orally one drop of ABDEC multiple vitamins (Parker Davis and Co., Detroit, Michigan).

When the nestlings were able to walk and hop with ease, they were transferred to the multiple birdhouse (Fig. 1). Sawdust or fine wood chips were spread over the floor of the birdhouse to absorb the watery feces until the birds were weaned. At the same time a finger bowl of laboratory mix was placed in each bird stall; however, a finger bowl with water was only added to each stall when the birds were able to fly to the perches.

Weaning of the birds was attempted after several days in the laboratory when they were considered healthy. The general health and strength of the birds were determined by feeling their breast muscles. If the breast muscles were concave the young birds were usually too weak to attempt weaning. If convex or flat they were considered healthy enough. For three to five hours in the morning healthy birds were pinch-fed a nutritious laboratory mix (Table 1) before each pablum feeding on their regular hourly schedule. This period of combined pablum and laboratory mix feeding was followed by a similar period with only laboratory mix available to the young birds. The green laboratory mix contrasted with the pale yellow pablum, and the beaks and fresh feces of the young birds were examined for signs of self-feeding.

Young birds, considered to be weaned, were isolated and watched closely. Those that failed to wean were again hand-fed pablum for two days before weaning was again attempted. This process was repeated until the birds were weaned.

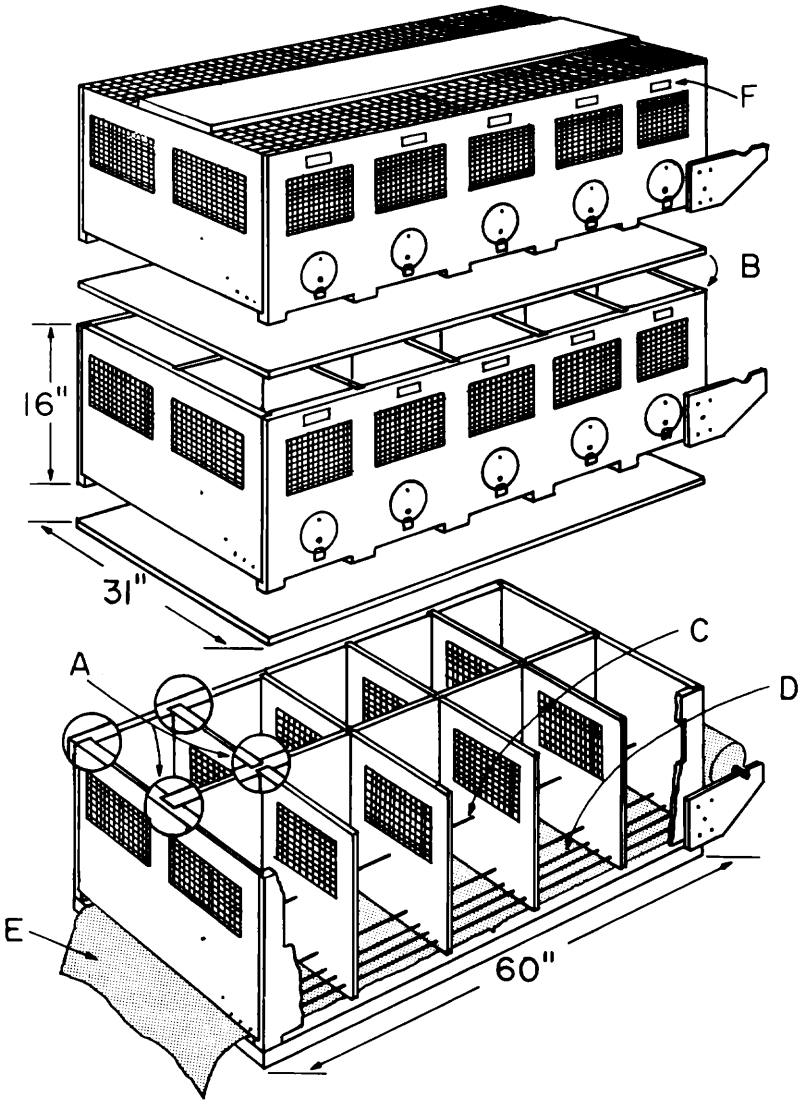

FIGURE 1. Multiple birdhouse for laboratory use.

1. Diagramatic view. A. Note details of joints illustrated on bottom level. B. The top of each level is secured; however, the floor is not. Thus each level can be removed intact to facilitate cleaning. C. Dowels (½ inch) used as bird perches. D. Dowels (¼ inch) used to support finger bowls of food and water. E. Paper used as floor covering for each level. F. Data card holder.

TABLE 1. Laboratory mix,[a] sufficient to feed 50 robin-sized birds for one week.

Pulverized ingredients		Quantity
Wheat		6,800 g
Corn		3,400
Barley		2,270
Oats		2,270
Linseed oil meal		1,135
Skim milk powder		2,270
Alfalfa meal		2,270
Meat meal	±	8,000
Brewer's yeast		2,270
Bone meal		100
Modified wesson salts		100
Table salt		100
Ascorbic Acid[b]	±	70
Total		31,055
Liquid ingredients		
Wesson oil		1,000 cc
Fish oil		1,000 cc
Lard (warm)		500 cc
Total[c]		2,500 cc

[a]Modification of Dr. L. G. Browman's (Department of Zoology, University of Montana, Missoula) laboratory mix No. 35.

[b]Fruit Fresh (Quinton Co., Rahway, New Jersey).

[c]Pulverized ingredients may be prepared in any quantities desired. However, oils and lard should be added proportionally to one week's allotment so that the mix is fresh when served.

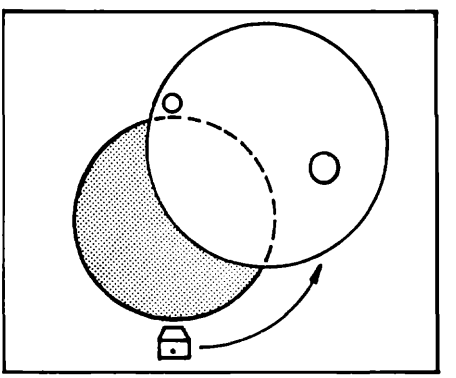

FIGURE 2. Detail of stall door. The round hole prevents escapes since it fits closely around the caretaker's arm when changing food and water or handling birds.

Frequently fledging and adult birds, introduced to laboratory cages and artificial diets, would not self-feed and thus starved to death in three or four days if not assisted. These birds were watched closely for a few hours when first brought to the laboratory to determine whether they would self-feed. If they would not, force feeding with both pablum and laboratory mix was necessary until they adapted to the artificial diet and surroundings.

The multiple birdhouse described herein (Figs. 1 and 2,) proved advantageous for laboratory use. Up to 60 birds were maintained on less than 15 square feet of floor space and all the birds were easily accessible. Cleaning the cages was simple since waste food and fecal material were removed by pulling through clean paper, and periodically the entire assembly was washed, one level at a time. Injuries to birds from cage structures were few and minor.

The birdhouse assembly was mounted 24 inches above the floor to provide ready access to all three levels. Each stall was adequately ventilated and illuminated since there were screened openings on three sides. The width of the paper rolls available is a critical factor in design since shortening the rolls after purchase is difficult. Likewise, the size of individual stalls must be adjusted to the size of birds being utilized. Measurements given in this paper are ideal for birds in the size range of the robins and sparrows.

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