TECHNIQUES OF HOUSING AND MAINTAINING A LARGE PIGEON COLONY¹

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We describe here some techniques for the housing and maintenance of pigeons which were developed in conjunction with a research program requiring a colony of about 100 animals.

HOUSING

Figure 1 is a 10-bird housing unit which provides at least 1 cubic foot of space for each bird. It is a modified 10-hole laying nest (intended for hens) which can be purchased from Montgomery Ward for \$14.50. The unit itself is made of galvanized metal. The doors are 8- by 9-inch pieces of Masonite, with holes 2.5 inches in diameter cut in them, which are mounted with back-flap

hinges. The door latches are made of cable clamps. Beneath each door is mounted a tray of galvanized metal containing three holes into which are set two plastic cups, for water and grit, and a muffin tin for grain. (The muffin tins, which come in trays of 12, are broken loose easily with hammer and tap.) Two such 10-bird units are hung, one above the other, on a plywood panel, 64 inches wide and 72 inches high, which is braced against a wall with two-by-fours in the manner illustrated. Less than 30 running feet of wall thus is adequate for a colony of 100 animals.

The metal floor of each cubicle is covered with folded newspaper which is changed only if it becomes damp. The water cups are washed two or three times each week. The housing units are cleaned in rotation. A single extra unit is used to replace one of the units in use, which is itself cleaned and used to replace another unit in use, and so forth. The only difficulty thus far

¹This work was supported by Contract NONR 2829(01) with the Office of Naval Research.

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Fig. 1. A 10-bird housing unit.

Fig. 2. Patterns of weight gain and loss in three birds on an initial daily and a subsequent weekly weighing schedule. (The central set of data, for a rather small bird, illustrates about the poorest control yielded by the method.)

encountered in housing pigeons (adult White Carneau males obtained from the Palmetto Pigeon Plant) under these conditions is that the animals may peck at each other occasionally through six small holes in the walls separating the cubicles. The difficulty is remedied easily by covering the holes with adhesive tape.

FEEDING

To maintain 100 animals at some fixed percentage of the satiated body weight by the ordinary method requires a considerable amount of time. Fortunately, good control of weight is possible by a method which requires that each animal be weighed only once per week. The one weighing establishes the amount of food to be given each day for the remainder of the week.

The procedure is this: For 5 days after its arrival at the laboratory, each animal is given free feeding, whereupon its satiated weight is determined. Then, it is fed 5 grams per day until its weight has fallen below the 80% level. Since, in our experience, the 80% level is not reached for 12 or 14 days, daily weighings are not necessary for the first 10 days of deprivation. For 10 days after the animal's weight has fallen below 80%, it is weighed daily and fed the amount of food required to bring its weight to 80%. Then, the average daily feeding is computed and that amount is fed each day for the

rest of the week. On the next weighing day (7 days later), the animal is given whatever food is necessary to restore its weight to 80%, and the daily feeding for the remainder of the week is calculated. For example, suppose that an animal which has been receiving 10 grams per day is found to be 17 grams underweight on weighing day. Since it has been losing 1 gram per day, the amount to be fed daily during the next week is increased to 11 grams. If the animal has been gaining weight, the amount to be fed is decreased in like manner.

Representative data for three pigeons are plotted in Fig. 2. The points show the number of grams under or over the prescribed weight on each weighing day, both during the early stage of daily weighing and during the subsequent stage of weekly weighing. The method seems to be quite satisfactory. It minimizes a tendency toward a cyclical fluctuation in weight which tends to develop with daily weighing and corresponding daily adjustment in food intake. The only special problem presented by the weekly method is that of allowing for the food eaten during experimental sessions. With 4-second access to food per reinforcement, the average intake is about 3 grams for 20 reinforcements, and we use that value in making corrections.

Received January 17, 1961