

With the net in place it is necessary then only to wait near stake (G) until the desired birds pass beneath the net where they may be captured by releasing line (F). Often the capture may be speeded by cautiously herding them toward the net, however, this is accomplished most satisfactorily by an assistant and is not usually necessary. Once caught, small wading and swimming birds should be disentangled swiftly since the weight of the net may soon drag their heads under water.

The above method has certain inherent disadvantages which precludes its use for capture of large numbers of birds for banding purposes, however, its advantages for selective capture, in small numbers, of specific species is apparent and, as in my own case, it has proven to be an inexpensive and simple method for ensuring capture of desired laboratory animals.

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A PLASTIC WING TAG FOR INDIVIDUAL IDENTIFICATION OF PASSERINE BIRDS

BY ALBERT E. HESTER

Movements of passerine birds in local areas may be studied by the use of numbered plastic wing tags. This unique method of banding enables ornithologists to identify individual birds in the field and thereby facilitate studies of population dynamics and movements.

The standard method for individual identification of passerine birds has been the use of colored leg bands (Butts *in* Hickey, 1943). By this technique, however, the bird must be seen at close range; thus, some of the banded birds may be missed even in intensive studies and only the investigators are likely to obtain information from sighting these birds. Imping of feathers may be done to identify individuals (Wright, 1939), but the method is time consuming, allows few combinations and observations are limited to the investigators in order to obtain reliable information. Dyeing methods (Wadkins, 1948) may also be used but they, too are time consuming, allow few combinations and are of use only between molts. "Back-tagging", a method of attaching a visual marker over a bird's back, has been used to identify gallinaceous birds (Blank and Ash, 1956, and Labisky and Mann, 1962). I found backtags on starlings (*Sturnus vulgaris*) to be inadequate after several experiments were conducted using these birds as subjects. The same would probably be true of other passerine birds. The chief difficulties were (1) the backtags were difficult to attach properly to birds of this size, (2) they interfered with flight if large enough to have numbers painted on them, and (3) this method of banding was too time-consuming when working with large numbers of birds. Plastic wing tags in different color combinations were first used by Knowlton, Michael and Glaz-

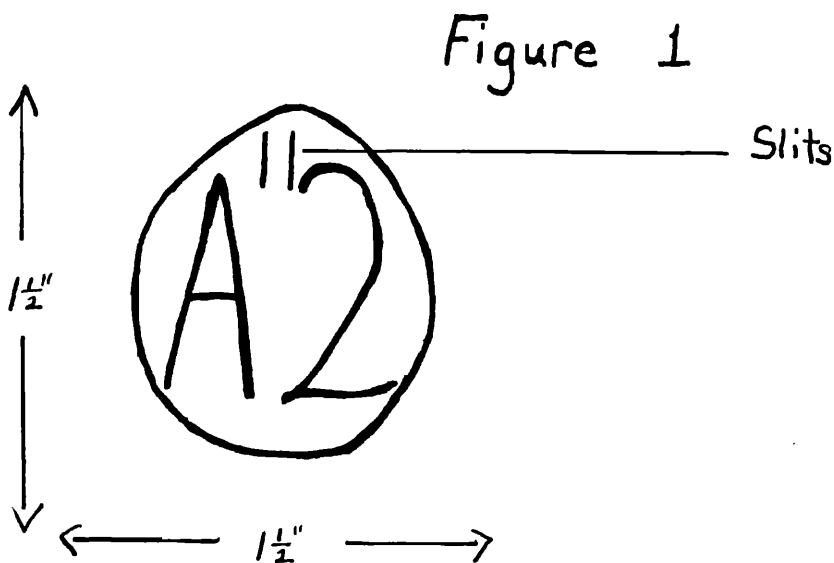


Figure 1: Actual size of wing tag showing the numbers and slits through which the wing band is inserted.

ener (1963) to identify individual wild turkeys (*Meleagris gallopavo intermedia*). Recently patagial wing tags have been adapted for use on waterfowl (Anderson, 1963),

METHODS

Flexible, plastic coated, nylon fabric, dual faced, was used for the wing tag. This material is available in 3" x 36" strips of eight different colors (The Safety Flag Co. of America, P. O. Box 1005, Pawtucket, Rhode Island). A strip of fabric $1\frac{1}{2}$ " x $1\frac{1}{2}$ " was patterned for each wing tag. Two parallel slits $\frac{1}{4}$ " long and $\frac{3}{16}$ " apart (Figure 1) were cut into the strip near the edge that was to be proximal.

Through the slits a No. 3 poultry wing band, 2" x $\frac{1}{4}$ " (National Band and Tag Co., Newport, Kentucky) was inserted. Numerals and letters were painted on the tag with vinyl plastic finish (Ram

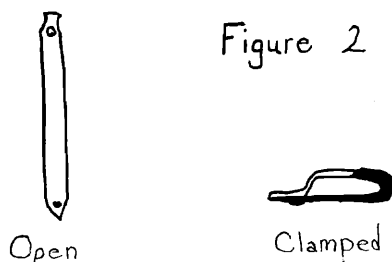


Figure 2: Wing band in open position and in clamped position as it appears on the bird.

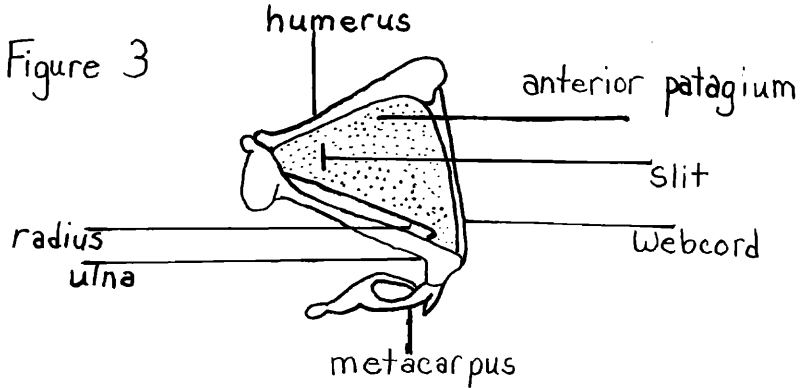


Figure 3: A spread left wing showing the slit in the anterior patagium through which the band is inserted.

Cote Products, 1139 W. 69th St., Chicago, Illinois).

For attachment to a bird's wing the feathers covering the anterior patagium were parted in order to expose the entire area to view. A small slit large enough for the poultry tag was cut through the anterior patagium (Figure 3). The location of this slit proved important for if it were too close to the webcord of the patagium the band tended to fold under the wing and the tag became hidden. The band was inserted and locked distally with sealing pliers (style No. 1-890S, National Band and Tag Co., Newport, Kentucky). Locking the tag distally prevented damage to the patagium in the fastening process. The wound was first treated with flexible collodion containing 25 percent ethyl alcohol. This material however dried quickly



Starling with wing tag attached.

and interfered with easy application. An isopropyl alcohol spray, Medi-Quik (Lehn and Fink Prod. Corp., Bloomfield, N. J.) was also used. This disinfectant was easy to apply and gave satisfactory results. Observations of recaptured birds indicated that the wounds healed within a week.

DISCUSSION

Two hundred and twenty-eight individuals including Robins (*Turdus migratorius*), Starlings, Blue Jays (*Cyanocitta cristata*) and Common Grackles (*Quiscalus versicolor*) were banded using this technique. Information about the banding program was distributed through newspapers both during the banding season and following. As a result 183 sightings, their locations and the dates were recorded by myself and reported by birdwatchers from July 1 to Dec. 13. This gives an indication of the value of a banding program in which amateur ornithologists may participate and in which their observations are useful in the scientific investigation.

The colors "Rocket Red" and "Blaze Orange" (The Safety Flag Co., P. O. Box 1005, Pawtucket, Rhode Island) formed the best background for black numerals. I experimented with other colors of the plastic-coated nylon and with a red vinyl plastic finish for numbers but I found them all inferior to the red and orange with black numerals. I could not see any of the other color combinations as far as these and they were definitely not as noticeable at close range. The numerals and letters could be read up to fifty yards with the unaided eye. Using 7 X 50 binoculars I was able to read the numerals at a distance of one hundred and ten yards on a clear, sunny day.

Permanency of the wing bands is second in importance only to making possible individual recognition. Once placed on a bird these tags will probably remain for the lifetime of the bird. This method may make possible the accumulation of much more knowledge about life histories of birds and allow participation in the collection of scientific information from living birds by those who do not band birds or actively participate in scientific investigations.

Observations on birds carrying wing bands indicated that the tags in no way restricted mobility. Furthermore, nearly all birds apparently showed a complete disregard for the bands. Five starlings shook their bodies as though emerging from water immediately after banding. These were the only observed behaviors attributed to the presence of the tags. Sufficient data are not available to evaluate the effect of the tags on both predation and migration. No instances of predation on the wing-banded birds was observed and records of extended sightings of individual birds do not bear out the idea of selective predation on these birds. Further study of these two factors will be necessary, however, before a complete evaluation of the tagging system can be accomplished.

ACKNOWLEDGEMENTS

Special thanks are due Laurence N. Ellison who demonstrated the technique of wing banding wild turkeys, Dr. William G. Sheldon of the Massachusetts Cooperative Wildlife Research Unit, who sug-

gested the possibility of wing tagging as a method of tracing bird movements, and my wife, Jeanne, who assisted in all phases of the study. This study is supported by Hatch Funds from the Agricultural Experiment Station, University of Massachusetts.

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THE COMPARATIVE FEEDING BEHAVIOR OF WINTERING EVENING GROSBEEKS AND PURPLE FINCHES

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INTRODUCTION

During late February and March, 1963, while engaged in a banding program, I studied the feeding behavior of wintering Evening Grosbeaks (*Hesperiphona vespertina*) and Purple Finches (*Carpodacus purpureus*), at Springvale, Me. (York County). The birds were observed from a distance of three feet on a window feeder (12 by 17 in.). The hours of observation ranged from 6 A.M. to 5 P.M., for a total of about thirty hours. The feeder was well stocked with sunflower seeds at all times.

DISCUSSION

The Evening Grosbeaks and Purple Finches start arriving at the feeder at dawn; on March 7, the first birds were on the feeder at 6:15 A.M. As the days progressively lengthened, the birds appeared earlier in the morning. The heaviest feeding by both species occurred early in the morning, from 6:30 to 8 A.M. The largest flocks were also seen at this time. The Purple Finches were much more constant in their feeding, with very slight fluctuations in their numbers throughout the day. The Evening Grosbeaks, on the other hand, traveled more during the day and made sporadic visits to the feeder for shorter lengths of time, but when at the feeder, they consumed a larger amount of food and at a far more rapid rate than the finches.