

BIRD-BANDING

BY HORACE GROSKIN

Back 144 years ago, in 1803, Audubon, while living on the Perkiomen Creek, near Philadelphia, was curious to know whether young birds born in a certain location would return to the same place the following year, so he marked a number of young Phoebes in a nest by tying a silver wire around their legs, and the following year two of these Phoebes returned to breed in the same location. This was the first record of banding in America.

In Europe, however, 237 years ago in 1710, a banded Gray Heron that had been banded in Turkey several years previously was captured in Germany.

While European naturalists had been making attempts for many years to study the migrations of birds through the banding method, yet it was not very successful until a Danish ornithologist, Mortensen, started banding birds systematically. This resulted in his receiving many reports of his banded birds from various parts of Europe. This experience aroused the interest of other European ornithologists, so that within a few years many banding stations were established. Banding is now carried on in at least 19 countries throughout the world: the United States, Canada, England, Finland, Norway, Sweden, Denmark, Russia, Iceland, Germany, Holland, Belgium, France, Switzerland, Hungary, Bulgaria, Morocco, Japan and India.

In our country banding, started about 50 years ago by a small group of ornithologists, finally resulted, in 1909, in the organization of the American Banding Association, which operated until 1920, and was then taken over by the United States Government, which is now in control of all banding activities in this Country.

The principal object of banding is to study the migrations of birds. The distances birds travel, their destination, the time consumed in travelling from one place to another, whether they return to the same location where they were banded, how long they live, and many other ornithological problems are studied.

For example, one of the problems solved by banding had to do with the relationship between the male and the female House Wren during the breeding period. In the spring of the year, when a pair of House Wrens were seen examining a wren-house that had been occupied the year before, bird lovers usually supposed that this was the same pair that nested and raised a family in this house the previous year. The general assumption was that the mated pair was loyal to each other and remained mated for years. Of course, no one knew that this was positively so, but that was the general impression until S. Prentiss Baldwin, one of the pioneer banders in this country, investigated this matter by banding a number of House Wrens during their breeding periods. Through the repeated captures of these banded birds, he learned that House

Wrens not only commonly changed their mates at different seasons but also that the female Wren often changed her mate after the first brood and that the male also found a new mate for his second brood. Often the male would prove to be the one who was unfaithful by divorcing his first mate between the broods and going off with a new female to nest not very far from his former home. This is an example of one of the problems that could not have been solved except by banding.

The actual work of banding is done principally by banders cooperating with the Fish and Wildlife Service of the United States Government. They are specially licensed to capture wild birds and carry on this work.

At the present time, there are about 1,500 banding stations in North America, a larger number than in any other country in the world. Nearly five million birds have been banded to date. About 350,000 of these birds have been reported as having returned to the banding stations where they were originally banded, or where they were retrapped, or recovered elsewhere.

The banders who operate banding stations do so at their own expense paying all the costs except for the bands which are received from the government without charge. The numbered aluminum bands come in various sizes to fit the legs of different species of birds. Each band is recorded in the files of the Fish and Wildlife Service at Washington. When a band is placed on a bird's leg, the number on the band, the species to which the bird belongs, the age, sex, date and location where the bird was banded is recorded. This record is sent to Washington and a duplicate is retained by the banding station. When a banded bird returns to the place where it was banded after an absence of a season a record is made by the bander and sent to Washington. Should a banded bird be recaptured by another bander or found dead this information is also forwarded to Washington. The original bander is notified where his bird was recaptured or found dead with full details as to location of recapture, date, etc. Under this system, there is a full and complete record of each banded bird on file in Washington and at the bander's station.

The great majority of birds are not unduly alarmed at being trapped and banded as most of them appear to forget their experience within a few minutes. Many birds come back into the traps within a few minutes after being banded and some birds will repeat in the traps four or five times in a day. Some individuals have come back into the traps 35 or 40 times during their stay. A Fox Sparrow was reported recaptured 165 times during one winter, and a Song Sparrow was taken from a trap 106 times in one month. At my station an English Sparrow, captured in a sparrow trap and allowed to remain in the trap as a decoy, put its head in its back feathers and went to sleep.

My banding station is located in Ardmore, Pa. The banding equipment consists of 17 traps, many of which have two to four cells, so that when they are all filled up, 30 to 35 birds are captured at one time. This frequently happens at certain times of the year, when such birds as Purple Finches and Goldfinches come daily in considerable numbers.

In order to attract as large a volume of birds as possible, bait is used freely not only in the traps, but also is placed in eleven feeding devices where birds may obtain food without being trapped. All the traps become free feeders when I leave the premises as I adjust the traps so they do not close. This makes the food inside of the traps become available to the birds. The birds are usually trapped in the early morning before I leave for town and throughout the day on week-ends.

The bait used in the traps and in the free feeders consists mainly of the usual seed mixture of hemp, millet, cracked corn and sunflower seed, suet, bread crumbs, white bread, peanuts, slices of apple, raisins, grapes and various other berries.

The traps used by most banders are very simple wire cages. They are constructed so that a bird cannot injure itself while inside the trap and no animal can injure the bird from the outside. An injured bird has no value to the bander so every care is taken to keep the bird well and in a normal condition throughout the banding operation.

The banding station in Ardmore, Pa. was started in May, 1937. From that time to the present date, I have banded close to 11,000 birds, or an average of 1100 birds a year. The record shows 54 different species of birds. The largest number of any single species banded was the Purple Finch. 4,300 birds of this species is perhaps the largest number of Purple Finches banded by any bander in the eastern States.

The second largest number banded was 1,712 Slate-colored Juncos. This is followed with 1,274 Goldfinches, 1,072 White-throated Sparrows, 461 Song Sparrows, 261 Cardinals, 222 Catbirds, 210 Pine Siskins, 202 Cowbirds, 153 Mourning Doves, 182 Robins, 110 Blue Jays, 105 Starlings, 102 Purple Grackles, 101 Fox Sparrows. The balance of the species banded were under 100 each.

Do the birds come back? After they had migrated and were gone for an entire season, 552 banded birds have come back to Ardmore and were again trapped. Some of these birds returned each year for several years, while others came back only once after a lapse of from two to seven years.

A few examples of these returning birds, taken from my records, will indicate the homing instinct of some of our common wild birds. For instance, of the 31 catbirds that returned to Ardmore, one of these came back each year for five years. An adult female, first banded in May, 1940, returned May, 1941, May, 1942, May, 1943, May, 1944, and again May, 1945. This was an adult bird when first banded in 1940 and was at least one year old, and therefore, was at least six years old the last time it was recaptured.

Another adult male Catbird, banded in May, 1941, returned May, 1942, May, 1943, May, 1944, May, 1945, and again May, 1946. This bird was also at least six years old on its last return.

Sixty-five banded Juncos returned after having migrated north to their breeding area. One of these birds came back five different years, always in

the month of November. This bird was banded in December, 1937, and was retrapped November, 1939; November, 1940, November, 1941; November, 1942, and November, 1943. It was at least 6½ years old in its last return.

Thirty White-throated Sparrows returned after an absence of at least one season. One of these birds came back five times. It was banded in December, 1938, and returned April, 1940; November, 1940, March, 1942, November, 1942, and November, 1943. It was at least 6½ years old.

Twenty-three Song Sparrows returned to Ardmore; one of these was a young male banded in August, 1940. It was born on our property, or in our vicinity, returned to Ardmore about three years later, in May, 1943, and was again retrapped two years after that, in May, 1945, and once more in April, 1946. This bird was about six years old which is a good old age for a bird of this species.

Twelve Blue Jays came back and one of these returned four years. It was banded in June, 1940, returned May, 1941, June, 1942, June, 1943, and June, 1944, and since it was at least one year old in 1940 when banded, it was at least five years old on its last return in 1944.

Forty-two Goldfinches returned after at least one year's absence. One adult male banded April, 1941, came back again April, 1942, and returned once more in April, 1944. This Goldfinch was at least four years old.

Seven Robins returned after their migration, one banded June, 1940, returned three years later, in October, 1943.

Four Brown Thrashers returned and one of these, an adult bird, came back five different years. It was banded in August, 1938, and was recaptured at Ardmore, June, 1940, June, 1941, April, 1942, May, 1943, and May, 1944. It was at least seven years old when it was last retrapped.

Eighty-six Purple Finches returned to Ardmore, after their migration to their breeding grounds in the north. One of these northerly birds came back to Ardmore three different years. It was banded in March, 1941, at which time it was a rosy male and at least two years old, and it returned to Ardmore April, 1942, and again in February, 1944, and once more in February, 1946. This Purple Finch was at least seven years old on its last return.

Another Purple Finch banded December, 1939, came back four years later in December, 1943, and then again three years after that, in February, 1946, so that it was at least eight years old on its last return.

Still another male Purple Finch, banded March, 1941, never was recaptured until six years after it was banded and then it returned in March, 1947. It certainly would be interesting to know where this Purple Finch had been during the six years he was not retrapped at Ardmore.

In addition to the 552 banded birds that returned to Ardmore, another 120 of my banded birds, were retrapped by other banders or found dead. These 120 birds were recovered in ten different states and two Canadian provinces: New Jersey, New York, Massachusetts, Vermont, New Hampshire, Michigan, North Carolina, Georgia, Alabama, Pennsylvania and in New Brunswick and Ontario, Canada.

A few examples of the 120 birds that were recaptured by other banders or found dead, are as follows: A young Robin banded in October, 1939, was recaptured four months later, at Mobile, Alabama, about 1,000 air miles from Ardmore.

Mourning Dove, banded in May, 1941, was shot 5½ years later in southern Georgia, about 800 air miles from Ardmore.

White-throated Sparrow, banded in October, 1938, was shot two months later, December, 1938, at Aberdeen, North Carolina, about 400 miles south of the place of banding.

Goldfinch, banded in April, 1942, was found dead about a year later, in July, 1943, near St. Andrews, New Brunswick, Canada, 800 miles from Ardmore.

Purple Finch, banded in March, 1939, was found dead two months later at Tomiko, Ontario, 750 miles from Ardmore. Tomiko is about 250 miles north of Toronto.

Purple Finch, banded in March, 1939, in Ardmore, was retrapped 33 days later, by another bander at Sault Ste. Marie, northern Michigan, about 1,000 miles from Ardmore.

About three weeks after the Michigan bander captured my Ardmore Purple Finch, I captured one of his Michigan Purple Finches at Ardmore, which was a very unusual occurrence.

Brown Thrasher, banded at Ardmore in July, 1937, was found dead seven years later, in August, 1944, in Haverford, Pa., just about a mile from where it was originally banded. These recoveries of my banded birds, represent but a small number of those listed in my records.

Also, 39 banded birds were recaptured by me at Ardmore, that were banded by other banders in five states: New Jersey, Massachusetts, Maine, Michigan and Pennsylvania.

Some of the most interesting and amazing facts, developed through banding in the study of the migration of birds, is the long distances they travel, and also the time consumed while making their journeys. A young Arctic Tern, about the size of a small gull, was banded in the nest, at Turnevik Bay, Labrador, on July 23, 1928, and less than four months later, on November 14, 1928, it was found dead on the east coast of southern Africa. It had travelled at least 8,000 miles, and was less than four months old when it made this great journey.

During recent years, it was discovered, that these Arctic Terns may not fly directly south to their winter home, but at least some of them come down from the north to about Newfoundland or Massachusetts, and then cross the Atlantic Ocean to the West Coast of Europe, fly south along the West Coast of Africa, and cross the ocean, to the borders of the Antarctic Continent, their winter home. This newly discovered migration route of the Arctic Tern is due to the evidence of the recovery of three banded Arctic Terns. One was banded off the coast of Maine and the other two in Labrador. These birds

were recovered; one, on the southern coast of France, and the other two, on the coast of southern Africa.

One of the most rapid distance flights ever made by a banded bird, was made by one of our shore birds, the Lesser Yellow-legs. This bird was banded at Cape Cod, Massachusetts, on August 25, 1935, and five days later, it was found killed at Martinique, French West Indies. In the five days it had travelled 1,930 miles, an average of 386 miles a day.

Banding records have given us information on how long birds live.

Cardinals show an average life of four to five years according to banding records, although, quite a number live to be much older. A Cardinal banded by Dr. Gainer, in Tennessee, reached the age of 13½ years.

Some of the age records, reported by the members of the Eastern Bird Banding Association are as follows:

Starling, banded by L. E. Hicks, Ohio, lived 10 years and nine months.

White-throated Sparrow, banded by William Pepper, Jr., Pennsylvania, lived eight years and five months.

Slate-colored Junco, banded by Maurice Braun, Massachusetts, lived 10 years and nine months.

Tufted Titmouse, banded by R. A. Middleton, Pennsylvania, lived seven years and three months.

Catbird, banded by F. C. Labahn, Jr., Illinois, lived nine years and three months.

Mockingbird, banded by Mrs. A. R. Laskey, Tennessee, lived eight years and eleven months.

Blue Jay, banded by Dr. H. Bunting, Wisconsin, lived 13 years and eight months.

Purple Grackle, banded by H. D. McCann, Pennsylvania, lived 14 years and four months.

Crow, banded by A. L. Holm, Manitoba, lived 14 years and one month.

Mallard duck, banded by L. V. Walton, Missouri, lived 15 years.

Common Tern, banded by Dr. D. L. Austin, Massachusetts, lived 18 years.

Osprey, commonly known as "Fish Hawk," banded by H. Cleaves, New York, lived to be 21 years old.

The bander, in handling the live bird, often, has the opportunity of noting the difference in the disposition of one individual from another, even though they belong to the same species. Some individuals are very courageous, while others are very timid. My experience with Purple Finches shows that most of them have an unusual amount of courage. They will attack your hand and nip your fingers with their strong bill when you are taking them out of the trap. However, there are some individuals whose reaction is entirely different. They thrash around in the trap for a few minutes, and then resign themselves to their situation, and proceed to eat food. When you take them out of the trap, they make no effort to defend themselves.

It is always a great pleasure, to have one of your birds come back to you, after an absence of an entire season or longer. I remember well, what a thrilling moment it was for me, when one of my Wood Thrushes, that had nested on my property at Ardmore, returned to me for the fifth time. I originally banded this bird in 1938, and now, I was holding him in my hand, on his return, five years later in 1943. I suddenly realized, what a wonderful little creature he really was. This little wild thing had found his way back to my place in Ardmore from the southern part of Mexico, a distance of 2,000 air miles. And that is not all. He had made eleven such trips of 2,000 air miles each, or a total of 22,000 miles.

While holding him in my hand, I thought of his wonderful ability to take care of himself in the many storms that he, no doubt, encountered. I thought of his ability to protect himself against all of his many enemies. I thought of his ability to find all the food he required, and most amazing of all, his ability to find the tiny little spot in this big world called Ardmore where he came back again to raise another family. What could be more wonderful than this? This is the compensation a bander receives for his efforts.