

A MIGRATION STUDY OF CATBIRDS
FROM 1929 TO 1934

By GEOFFREY GILL

SINCE our banding station in Huntington, Long Island, New York, began continuous operation six years ago, Catbirds (*Dumetella carolinensis*) have formed a large proportion of each year's catch. During this period we have banded four hundred and sixty of this species. An accurate analysis of these banding records is handicapped in certain respects by a lack of sufficient repeats and returns. However, by using colored bands and combining field observations with banding work, some progress has been made.

The location and description of our banding station for the years 1929 and 1930 is given elsewhere.¹ The locality was a favorable one both for nesting birds and for a concentration during the molt, as shown by the banding of one hundred and thirty-one of this species.

Our present station, operated since March, 1931, is located about two miles north of the former station, and is situated still more favorably for the capture of this species. It includes an area approximately two hundred feet by sixty-five feet, having on the east several acres of old bush-grown pasture overgrown with a tangle of weeds, maples, oaks, cedars, and wild cherry, scrub apple, and pear trees. The area is being slowly smothered by honeysuckle, poison ivy, smilax, and blackberry vines producing a tangle of briars and thickets making a miniature jungle throughout the summer months. On the north there is a small wooded valley which merges into an extensive planting of Scotch pine, now about thirteen years old. To the west and south the ground slopes into a residential section, containing considerable garden shrubbery. Given sufficient water in which to bathe and drink (supplied by our traps and every neighbor's bird-bath), and a wealth of food in the form of wild berries and insects, this area seems ideal for nesting Catbirds.

TRAPPING

Water attracts this species, white bread is eaten occasionally, and small seedless raisins are much relished. To trap a Catbird is not at all difficult, but, once one is caught, it is a hard task to capture the bird again. The following table illustrates this difficulty:

¹ *Bird-Banding*, Vol. I, 1930, pp. 185-187.

TABLE I

<i>Year</i>	<i>May, June, and July Adults</i>	<i>Individuals Repeating</i>	<i>Total Repeats</i>	<i>Percentage of Residents Repeating</i>
1929	20	4	8	20.00
1930	10	..	..	..
1931	27	4	10	14.81
1932	35	13	38	37.14
1933	10	2	4	20.00

In 1932 colored bands were placed on the first sixty-eight Catbirds banded at this station in an attempt to get more repeats and thus aid the study of their nesting territories. Sight repeats were thereafter added to trap repeats, and it will be seen by glancing at Table I that this method greatly increased the total repeats and repeat-percentage for that year. This table, however, may contain several birds banded in May which were migrants. It is also true that some resident birds, as we have learned by using colored bands, do not enter the traps until August or September, so that one fact is perhaps balanced by the other.

Ample evidence shows that resident Catbirds confine themselves to a restricted area, for during the four seasons spent at our present banding station not one of the one hundred and forty-two Catbirds banded at the old station has been trapped at our present station.

The following data gleaned on their nesting-grounds show several aspects of Catbird migration — the percentage of birds returning (both adults and first-year birds), the order of their arrival in the spring, etc.

RETURNS-1 PERCENTAGE OF SUMMER RESIDENT BIRDS

Charles L. Whittle has published the return ratios of Catbirds banded at Cohasset, Massachusetts.² It is interesting to note the high percentage of returns-1. In his note two other facts stand out — the small number of new individuals banded each year and the fact that colored bands were used. Whittle says that all these birds were resident individuals nesting close to his station. For the sake of comparing my Catbird returns-1 with those of Whittle, I have properly assumed that most adults banded in May and June are residents. The following tables show a remarkable likeness:

² *Bulletin of the Northeastern Bird-Banding Association*, Vol. III, 1927, pp. 58 and 59.

WHITTLE				GILL			
<i>Number Banded</i>	<i>Year</i>	<i>Returns-1</i>	<i>Per cent</i>	<i>Number Banded</i>	<i>Year</i>	<i>Returns-1</i>	<i>Per cent</i>
7	1923	2	28.57	7	1929	2	28.57
11	1924	5	45.45	8	1930	..	..
15	1925	3	20.00	23 ³	1931	7	33.33
19	1926	7	36.84	35	1932	7	20.00
Average percentage: Returns-1, 32.71.				Average percentage: Returns-1, 27.30.			

At the O. L. Austin Ornithological Research Station, North Eastham, Cape Cod, Massachusetts, Catbirds were banded in considerable numbers during the seasons of 1930, 1931, and 1932. Complete records on this species, from the beginning of May to the end of October, when these birds are present, are not available for the entire three seasons, but of the birds banded in 1931, the returns-1 are available, and are as follows:

<i>Number Banded</i>	<i>Year</i>	<i>Returns-1</i>	<i>Per cent</i>
37	1931	10	27.02

Mr. William P. Wharton has also received some comparable returns of this species at his banding station at Groton, Massachusetts. His records are as follows:

<i>Number Banded</i>	<i>Year</i>	<i>Returns-1</i>	<i>Per cent</i>
14	1929	2	14.28
6	1930	1	16.66
4	1931	1	25.00
14	1932	2	14.28

Average percentage of returns - 1, 17.55

Dr. Harold B. Wood, of Harrisburg, Pennsylvania, has also done considerable Catbird banding. His comparable records follow:

<i>Number banded</i>	<i>Year</i>	<i>Returns-1</i>	<i>Per cent</i>
4	1929	1	26.00
4	1930	..	.... (2 birds seen wearing bands)
..	1931	..	..
5 ⁴	1932	1	25.00

Average percentage of returns - 1, 25.00

It will be noted that the average return-1 percentage of the May and June resident Catbirds at the above five stations is almost twenty-six per cent. At these five stations a total of two hundred and thirteen resident birds are considered, three of which died soon after banding and so could not return, and twelve of this number lack the necessary data, owing in one case to the cessation of banding during the following years, and in the other case to the fact that no Catbirds entered the

³ Two birds reported to Washington, D. C., as found dead.

⁴ One bird accidentally killed before migration.

traps the following year although an exceedingly high percentage of returns was known to be present. It is certain that if banding conditions had been more favorable, the average returns—1 percentage of the total returns—1 of these five stations would have been somewhat higher.

While all the residents in any area around a banding station may not be wearing bands, it is probable that not all the resident returns—1 will be seen or trapped. It is reasonable to believe that if all five stations had used colored bands on the resident birds, the return—1 percentage would average at least thirty per cent. If this is true, then it is also fair to conclude that out of the number of adult resident Catbirds banded at any station during their first two months of summer residency, only about thirty per cent will return to their place of banding.

THE CATBIRD'S ORDER OF SPRING ARRIVAL IN
RELATION TO AGE

There are data indicating that the older birds either begin their spring migration earlier than the immatures, or winter farther north, or possibly travel faster from their winter home with fewer and shorter stop-overs. If spring migration is sexually induced, it is probable that the impulse comes earlier in more mature individuals. My records show that the older birds arrive first for the first Catbird captured in 1930 and 1932, and the first, second, and fourth captured in 1933 were returns—1 of resident birds and hence at least two years old.

Further evidence that, the older the bird, the sooner it arrives on its nesting-area, is found in the records of certain Catbirds that have returned for several years at Dr. Austin's station. The returns are as follows:

TABLE IV

Age	Date of Banding	Returning Dates		
		1931	1932	1933
Adult	Sept. 1, 1930	May 28	May 18	.....
?	Aug. 7, 1930	May 23	May 15	.....
Adult	Sept. 14, 1930	May 27	May 17	May 16
Adult	May 18, 1931	.....	May 15	May 16
Adult	May 22, 1931	.....	May 14	May 14

The above records show a fairly consistent earlier arrival of the individual bird as it grows older.

Climatic conditions would affect the dates of the arrival to a great degree, but it is doubtful whether they would affect the order of the arrivals. Improved trapping methods at banding stations from year to year will be helpful in analyzing arrival dates of banded birds.

At Dr. Austin's station there have been a surprisingly large

number of returns of Catbirds banded as birds-of-the-year in 1931 that have returned the first year after banding, so that in Table V we can compare the arrival dates of immature returns with the arrival dates of adult returns in 1932 during the same season at the same place and with the same traps.

TABLE V

	RETURNS OF ADULT AND JUVENILE CATBIRDS										Total
	May 10	11	14	15	16	17	18	19	27		
Adults	2	1	1	4	3	2	2	..	..	..	15
Immature	..	..	..	4	4	2	2	2	1	1	15

This table also shows a well-defined earlier arrival of the adults in comparison with the immature birds.⁵

RETURNS OF FIRST-YEAR BIRDS

The evidence at the four stations considered is conflicting, three reporting very few returns and one a considerable number.

Out of 179 immature birds banded prior to the 1934 season, the five returns are the only ones that have come to my attention.

At the station of Mr. William P. Wharton at Groton, Massachusetts, one nestling Catbird, banded on June 30, 1931, returned to the station on June 18, 1932. Another nestling banded on June 14, 1931, was found dead on May 26, 1932, about three quarters of a mile from the place of banding.

Dr. Harold B. Wood writes that over a period of five years Catbirds banded as nestlings gave no returns. From a total of fifty immatures banded previous to the 1933 season only one, banded by him August 26, 1929, returned.

The returns at Dr. Austin's Station have already been given. (See Table V.)

CONCLUSIONS

Approximately thirty per cent of the resident Catbirds banded during the first two months of their residence have returned again the following year to their banding-place.

⁵ As the status of these juvenile Catbirds returning to their place of birth is not considered here in full, the Austin Ornithological Research Station was asked for further information. Mr. Seth H. Low, representing the Station, replied as follows: "In regard to Catbirds, our records show that at the time of banding the age was not always stated. However, of twenty-two designated as young birds, thirteen were captured here as returns after the 20th of May, and therefore, may be assumed to nest here; eight were taken before May 20th and so may have been either transients or breeders; and one was not caught until September. The majority, therefore, judging from the dates of capture, appear to have returned to nest here."

The presumption that the majority of these birds were on their breeding grounds is very strong since this species reaches its nesting places in Peterboro, New Hampshire, approximately eighty miles north of Cape Cod, by May 15th.—*Editor*.

Catbirds that have reached full maturity have arrived earlier than younger birds.

The data at my station thus far indicate that immature birds seldom return.

The writer wishes to acknowledge the courtesies of Mr. Charles L. Whittle, the O. L. Austin Ornithological Research Station, Mr. William P. Wharton, and Dr. Harold B. Wood, both for furnishing him with valuable banding data from their records and also for allowing him to incorporate them in this paper.

GENERAL NOTES

Bird-Banding in the Antarctic.—It may be unknown to most bird-banders that about twenty-five years ago some bird-banding was practised in the Antarctic. L. Gain, zoologist of the Second French Antarctic Expedition (1908–1910) on the "Pourquoi Pas?" published in the report of this expedition [Deuxième Expédition Antarctique Française (1908–1910), Oiseaux Antarctiques, par L. Gain (1914)] some observations he obtained by banding two species of Penguins (*Pygoscelis adeliae* and *papua*) and one species of Cormorant (*Phalacrocorax atriceps*).

As the results of this banding work were very interesting and most readers may not be acquainted with the original report, I quote Mr. Gain's banding notes in full:

Adélie Penguin (*Pygoscelis adeliae*)

"At the first stay of the "Pourquoi Pas?" at Petermann¹ Island (12 January, 1909) we put on the right tarsus of some young and adult Penguins celluloid bands colored differently, according to the age of the birds, namely violet bands on 50 adult and yellow bands on 75 young birds. In October and November 1909, when the birds were returning to the rookery, we were lucky enough to find back eleven of the adult birds banded nine months before: on November 7th we observed three Adélie Penguins and on November 22nd eight other Adéliés wearing violet bands, which we had put on their right tarsus on January 12th. Possibly there were still more banded birds, but it was difficult to make out, as the birds were pecking and delivering blows with their flippers. We even observed that the banded birds made their nests on the very same rocks as last year. We did not find any yellow bands, so it appears that the young birds do not return to their birthplace and do not breed before two years old."

Gentoo Penguin (*Pygoscelis papua*)

"As with the Adéliés, we desired to know if the Gentoo Penguins also return year after year to the same rookery. To learn this we banded in two different rookeries, more than two hundred kilometres away from each other, some young and adult birds with differently colored bands. At our first stay at Port Lockroy (Wiencke Island) on 28 December, 1908, we put

¹ As I was unable to locate Petermann and Wiencke Islands on any maps I have, I wrote Mr. James L. Peters for the needed information, and I quote his reply in full: "Petermann and Wiencke Islands are both small islands in the so-called Antarctic Archipelago, which is situated south of the southern tip of South America. The approximate latitude and longitude of the two little islands is Lat. 65° S, Long. 64° W. It is quite certain that the *Pygoscelis papua* found there would be the typical form."—EDITOR.