

BIRD-BANDING

A JOURNAL OF ORNITHOLOGICAL INVESTIGATION

VOL. VIII

OCTOBER, 1937

No. 4

A FURTHER ANALYSIS OF SOME BANDING RECORDS OF THE EASTERN RED-WING¹

By FRED MALLERY PACKARD

THE SPRING MIGRATION

CERTAIN phases of the life-history of the Eastern Red-wing (*Agelaius p. phoeniceus*) as disclosed by the banding records of the Austin Ornithological Research Station have been discussed in a previous paper¹. Further study of those records has produced additional information about this race, some of which is summarized in this article. The material covers a period of six years, from June, 1930, to July, 1936. 1765 Red-wings were banded, with 266 returns.

Flocks may be studied as units in the field, all the birds watched, and general conclusions drawn about their movements. Broad observational accounts of the spring migration such as Allen presents² are hard to obtain from banding records alone. Such records present fragmentary histories of individuals captured at random from the flocks some time after they arrive. Some of their actions subsequent to arrival can be traced in those birds which repeat during the season. Thus certain facts that observation alone could not discover are disclosed by a study of banding histories.

In his discussion of the spring migration, Allen divides the arriving Red-wings into three groups: "vagrants," the irregular vanguard of the migration; "migrants," those birds which are passing through the area; and "residents," those which remain in the vicinity throughout the spring. By carefully watching the flocks as they flew over or into the Renwick marsh at Ithaca, he determined the status of each group.

Allen assumed that all the birds which followed a certain visible behavior in the swamp were migrants, and that all these moved on to other localities. The Austin records show unsuspected variation in the behavior of the migrating birds on Cape Cod. Some were apparently true migrants: they were caught but once, and did not repeat. Others lingered for a few days or even a month, repeating during that period, and then left: these also were migrants. A third group stayed in the vicinity from the time of their arrival through the nesting period, as true residents. A large fourth group was composed of individuals that were trapped once or twice on arrival,

¹Contribution No. 29 of the Austin Ornithological Research Station.

and then disappeared, exactly like migrants; but these returned after an interval varying from two months to two weeks, some to nest nearby, others to disappear again.

The records of the banding at North Eastham show this fourth type of activity to be very common. Those records are too numerous to tabulate, but those of D. R. Griffin, operating a sub-station at Barnstable, thirty miles to the south, have been used to construct the accompanying graph.

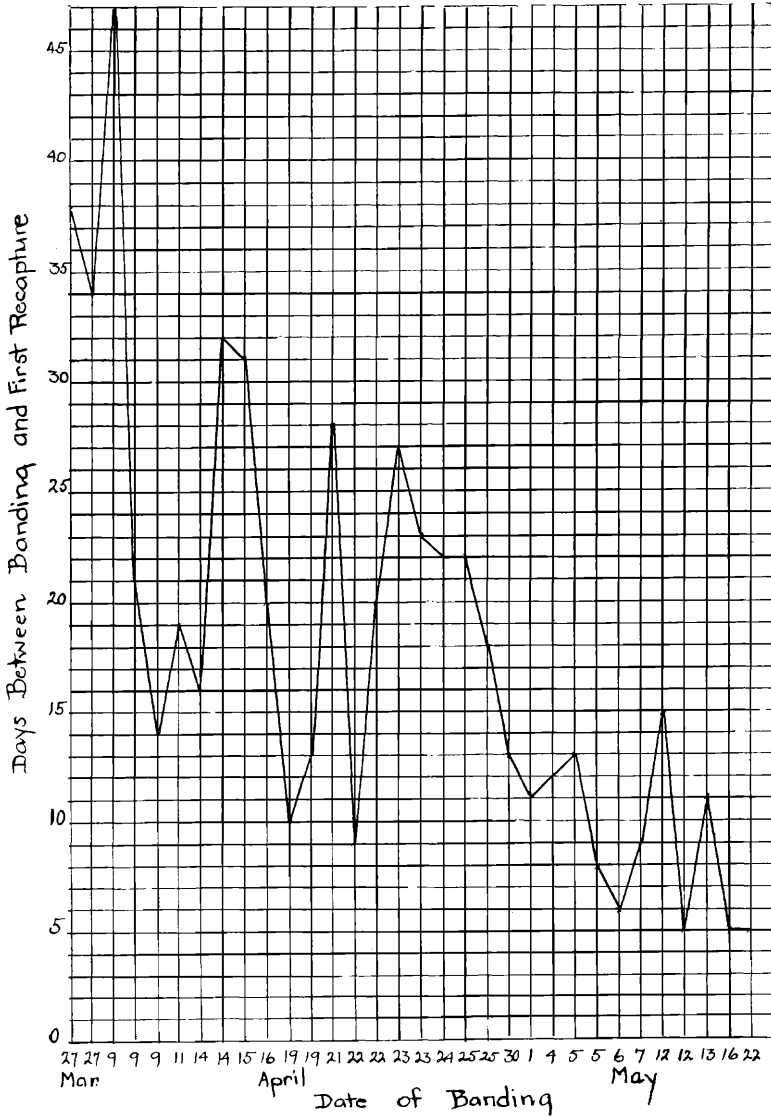
Griffin banded 142 Red-wings at Barnstable between March 27th and May 22d, 1934, during which time forty-three of the males repeated once or more often there. Thirty-two of these are featured in the graph, which shows the number of days intervening between the banding date and the first subsequent recapture of each bird.

The ordinate represents the date upon which the individual birds were banded. Varying numbers of birds were banded on different days, so the progression of the dates is irregular. Line A connects the dates of the first recapture of the individual birds; each abscissa, therefore, shows the number of days after banding during which there was no recapture of the bird which it represents. There were eleven males which repeated more or less regularly after banding, which are not shown. The graph suggests several things:

(1) That the status of the birds in the flocks is not as uniform as Allen and other observers have believed. The "vagrants" of March 27th both returned, probably to nest. A number of birds from the migrating flocks returned, others (99) moved on. (2) That there may be a period of wandering before the territory is established and nest-building begun. The gap between the coordinate and line A suggests this strongly. Probably this applies only to some of the birds, while others establish territories at once. (*Cf.* remarks on the Truro and Eastham colonies in the previous paper¹). (3) That the period of wandering is longer among the earlier arrivals than among those reaching the area nearer the nesting season.

Cape Cod is a peninsula, and most of the Red-wings that pass through the station at North Eastham probably do not fly beyond Race Point at Provincetown. Instead, they turn back from that point, because of the cessation of the migratory impulse, or their refusal to cross the large body of water lying to the north. Between North Eastham and Race Point, at the tip of Cape Cod, are extensive marshes supporting large colonies of Red-wings.

The records, then, both at Barnstable and at North Eastham, have shown a peculiar but constant variation in the actions of some migrating Red-wings—namely, a period of absence after their arrival in the area where they are subsequently to nest. The conclusions drawn from this fact are, (1) that some arrivals stake their territories at once, but not near any convenient trap; (2) that some may wander in other areas before returning to nest; and (3) that



Graph Showing the Period of Absence from the Traps of male Red-wings at Barnstable, Massachusetts, after their first capture in the spring of 1934.

others may return after reaching Race Point through lack of inclination to go farther.

The dates for the spring migration are based entirely on the banding records, and the status given the individual birds depends on the number and arrangement of the repeats.

Vagrants do not occur every year, but when they do they precede the true migrants by a month. They may linger for several days, or even a month, but are gone by the time the regular migrants arrive. All the birds arriving in March and April that did not repeat at all have been considered migrants. If they repeated at more or less frequent intervals to the middle of May, or if they returned in middle or late May after an absence from the traps, they have been considered residents. The status of those arriving in later May, including a very large number of non-repeaters, cannot be determined; Allen's dates would indicate that they are all residents, which is unlikely. Known residents, as determined by the repeats, arrive with the migrants. Many of them show a fourteen-to-thirty-one-day gap between the first capture and the second.

MIGRATION OF MALE RED-WINGS

Vagrants arrive irregularly, about the second week in March. (They are recorded for late February, but not banded.) The migrating flocks of adult males arrive between the fourth week of March and the end of May, concentrating the first week (mostly migrants) and the fourth week (more residents) of April. Fewer adult males are caught in May than in April, and no peaks are recorded then.

Except in a few cases migrant adult males cannot be distinguished from residents. There are many non-repeaters, but some of these may be guarding territories and are never recaptured. Others are migrants. Some, arriving as migrants, return to breed later in the season. Birds believed to be residents arrive as early as March 21st.

Migrant immature males arrive from the fourth week in March to the end of May. The migration is slow at first, but the tempo increases to the 9th of April, slackens a little, and culminates in a peak about April 20th, followed by a gradual decrease. In 1931 a second peak came on April 30th. In 1934 they arrived in a wave, April 1st to 3d, coming in numbers until the 19th, then decreasing. There are no recorded peaks in May.

Most of the April arrivals appear to migrate farther. Noble and Vogt have pointed out³ that the unmated birds are more likely to leave the marsh during the nesting season than those breeding, and so should be expected at the traps then. The number of June captures is surprisingly low, but the truth of their conclusion is evinced by the fact that all the males caught in June are recorded as imma-

tures. Resident immature males arrived between April 4th and May 24th.

MIGRATION OF FEMALE RED-WINGS

Vagrants arrive irregularly, from March 1st to 29th. Migrants and residents arrive from mid-April to the end of May. They come slowly at first, increasing until a peak is reached in the third week of May, then decreasing. The period of absence following arrival is found to be as common amongst the females as amongst the males, and follows the same pattern.

It has not been proved that any of the adult females start south immediately after the first breeding. It is very possible, however, since there are several cases where females have been caught as repeats for several days between June 9th and 27th, and not during July. Also the reduction in the number of females of the ponds and marsh at the station after the first breeding is finished is very noticeable to the observer. It has been shown¹ that on Cape Cod the southward migration is earlier than on the mainland.

The dates of capture of females in July are between the 6th and the 25th, the peak being around the latter date. These are probably those birds which nested twice. There are no August records of adult females.

THE RETURN DATES

The fact that the first flocks of many species of birds "arrive" on or about the same date in the spring in successive years is well established. The correlated question whether the *individuals* of these species follow as rigid a schedule has been little considered.

One hundred sixty-three records of Red-wings returning in two consecutive springs are analyzed in the following table:

TABLE 1

Number of birds first trapped the same date as preceding year.....	4
" " " " " 1 to 7 days apart.....	39
" " " " " 8 to 15 " ".....	37
" " " " " 16 to 21 " ".....	27
" " " " " 22 to 28 " ".....	23
" " " " " 29 to 35 " ".....	15
" " " " " 36 to 37 " ".....	18

The date of the "return" in banding does not necessarily indicate the date of arrival, which often precedes the day of capture. Nevertheless, the table shows that most of the birds do return about the same time in consecutive years, but that they probably do not follow as exact a schedule individually as they do as a species.

LONGEVITY

Averages compiled from the 266 returns show that 16 per cent of the total number of Red-wings banded survived one year, 7 per cent two years, 4 per cent three years, 2 per cent four years, and 0.3 per cent five years after banding. When graphed, these records yield a smooth curve, suggesting a steadily decreasing survival rate. However, it gives very little clue to the age they normally attain, for the age at banding varies. The oldest males in the records are two banded as adults in April, 1931, and taken yearly through 1936. As it requires at least two years to attain to adult plumage, these birds were hatched in 1929, or earlier, thus being at least seven years old. Several females lived five years after banding.

LITERATURE CITED

1. PACKARD, F. M.
An Analysis of Some Banding Records of the Eastern Red-wing. *Bird-Banding*, vol. VII, no. 1, January, 1936, pp. 28-37.
2. ALLEN, A. A.
The Red-winged Blackbird: A Study in the Ecology of a Cat-tail Marsh. *Abstract Proc. Linn. Soc. New York*, nos. 24 and 25, 1914.
3. NOBLE, G. K. and VOGT, W.
An Experimental Study of Sex Recognition in Birds. *Auk*, vol. LII, no. 3 July 1935, pp. 278-286 plates.

 SOME RETURNS OF BANDED BIRDS¹

By MAY THACHER COOKE

THE present paper deals with a miscellaneous group of species, those for which a comparatively small number of returns have been received. This makes possible a careful study and getting the complete return data on any one bird. Included also are the returns of several supposedly sedentary species, which have yielded data of unusual interest. Among these are several cases in which the banded bird did not report at the traps for several years. This may have been accidental or may indicate some local migration.

The return files do not, of course, contain the record of individuals that are constant boarders at the traps. These are to be found in

¹The word "return" in this paper is used in conformity with the system adopted by the United States Biological Survey in filing its banding records. This system manifestly is not based on the varied and important ornithological phenomena resulting from the recaptures of banded birds at the place of banding or elsewhere. Attention is called to this matter in order that foreign readers of *Bird-Banding* (and also not a few readers in the United States) may understand that the author is not attempting a complete analysis of the ornithological data presented.

It is suggested that those who are interested in banding terminology should read a paper written by Mabel Gillespie entitled "Suggestions for a Revised Bird-Banding Terminology," appearing in this Journal in 1930, Vol. I, pp. 14-19.—*The Editor*.