

mainly in urban sections of Boston, Cambridge, Belmont, Brookline, Waltham, etc., I should estimate the loss at anywhere up to 75 per cent. In other words I believe that where I saw, in 1915, a flock of 13 to 14 birds together, I would have expected in 1922 to see only 3-4.

My conclusions are borne out by statements of others. In November, 1917, an observer in Weston, located on a poultry farm where feeding conditions were favorable, reported that there were "fewer Sparrows than formerly." An observer from Lexington commented in 1922 on the scarcity of this very common species which reached its climax, I believe, in the summer of 1922. At this time the down-town section of Boston was almost free from these pests so that on July 27, I considered it worthy of note that I had seen three in Winthrop Square. Since this time I have every reason to believe the birds have come back slowly and during the present winter I have watched for them carefully. In Weston, there are several flocks, not large or well distributed; in Boston I can usually find 25-30 without difficulty, but I do not believe they compare in numbers with, say, eight years ago.

My personal reaction to the cause of this change inclines toward the theory that some disease of overcrowding has attacked the species. Of course, the natural adjustment to the food supply would tend to cut down the numbers owing to fewer horses in the city. This removes a very fertile food supply but does not in the least account for the reduction in numbers on the hen farm. One would expect to find them more abundant on such a place if there were less food elsewhere.

I should be very interested to find whether the observations of others in this and in more distant localities agree with mine and to know if any diseased birds have been found or collected. It appears to me that there must be still a great abundance of food available—for example the flock of Pigeons on Boston Common is much more numerous than a few years ago and yet the Sparrows are not. Again, the Sparrows were less common a year and a half ago than now, although conditions of food and climate were probably the same. Is this one of those cycles in the bird world which for no apparent reason raises or lowers a species in relative abundance, or is it just the delayed and natural adjustment of an introduced species to American conditions?—WARREN F. EATON, *Weston, Mass.*

Notes on the Purple Finch (*Carpodacus purpureus purpureus*).—The following notes are based on my bird banding records made at Sault Ste. Marie during the years 1922-1924. During 1922 I banded 248 Purple Finches; during 1923, 1092 with 33 returns, while this year to date (July 20, 1924) I banded 697 with 83 returns.

Average date of first spring arrival at feeding station, nine records, April 7, earliest March 7, latest April 22.

Average date of last to leave in the fall, eight records, Oct. 28—earliest Oct. 18, latest Nov. 17.

Early in Feb., 1923, a small flock of about six was seen in town feeding

on mountain ash berries and on Feb. 22 saw a male at Brevort Lake about 50 miles southwest of Sault Ste. Marie, also feeding on mountain ash berries. Feb. 24, 1924, one male was reported in town. These are all our winter records to date.

The first arrivals are mostly crimson males. My records for nine years show a crimson male to be the first in to feed every year but one. My banding records show for first five days of banding: 1922, out of eight banded, seven were crimson males; 1923, out of 32 banded, 25 were crimson males; and this year out of 16 banded, 13 were crimson males.

In the fall there is a tendency for the sexes to flock separately. Several times late in the fall flocks of from twenty to thirty, all crimson males, have dropped in for from a few hours to a day or two and then moved on. The following is from my 1922 notes: "Have not had a crimson male at house from Aug. 23 to Oct. 4," and my banding records show that after Aug. 7 I banded no crimson males although I trapped and banded 111 birds.

At least some of the Purple Finches that summer in this locality go as far south in winter as Tennessee, as is shown by No. 118,680, a young male or female, banded Sept. 4, 1923, which was found dead May 1 at a farm house three and a half miles south of Sparta, Tenn.

June is the nesting month, and I have had young in window box being fed by the old birds as early as June 15, but the great majority of young birds show up from July 1 to 15.

Many males mate and nest before acquiring the crimson plumage. I have frequently had young birds in my window box being fed by old birds, both of which were in the brownish-gray plumage.

First signs of moulting are noticeable about July 1 and moulting birds are present well into September. In fact I have seen a number of birds in October with outer tail feathers but half grown out.

Most bird books give this bird a rather bad reputation, "Of doubtful utility," "the most confirmed bud-eater of all our birds" etc., etc. I have three old apple trees on my lot, one of them just beside my bird bath and within a few feet of my traps. Since 1916 the birds have been in and out of these trees from early spring to late fall and have done no harm. Last year more of the birds were here than ever before and my trees never had more or better apples, hardly a wormy one in the lot. I doubt if their budding does any harm, certainly not to apples in any event.

The following report on plumage should be considered simply as a preliminary report. To make a definite report will require my records for the balance of this year and probably a check on returns next year.

Adult Male.—Most, if not all, do not acquire the crimson plumage until two years old and then it is not the perfect plumage of the old male. I believe the very bright crimson males are at least four years old.

Birds banded as adult males early in 1922 that returned this year are all in very bright crimson plumage.

Birds banded in the spring of 1922 as young males or females that were

crimson males on their return in 1923, on their return this year are bright but not so highly colored as the birds that were crimson males early in 1922.

The birds banded early in 1923 as young males or females that returned this year as crimson males have not so much crimson and it is not so bright.

In the spring the skin at the sides of the mouth of crimson males is from yellowish to deep yellow. As a rule the more highly colored the bird the deeper the yellow. When moulting this skin becomes bright deep orange to red and in many the color extends to the roof of the mouth, later the color fades and late in the fall is from orange to orange-yellow. The first old male I noticed with skin at sides of mouth red I thought had struck a wire of the trap and that the mouth was bleeding.

Immediately after moulting the crimson males are very much lighter in color. Many, particularly on the rump, much nearer "Old Rose" color than crimson. They soon darken but up to the time they leave are not as dark or rich in color as the spring birds.

Female and Young Male.—These birds all have the same general appearance but vary much in shading,—from quite dark brownish-gray, through lighter coloring showing no olive or yellowish cast, to birds quite light showing olive or yellowish up to quite dark birds with a distinct olive or yellowish cast.

The shadings on rump vary much more than the balance of plumage— from rump as dark as back with no yellowish, to rump considerably lighter than back with no yellowish, then from rump with just the faintest yellowish tinge (so faint on some you are doubtful if there is any) to a very distinct and bright yellowish-olive.

I am pretty well satisfied that the darkest birds showing no yellowish are old females and those at the other extreme with very bright yellowish olive rumps are young males. In between there is a vast range of shading and I do not believe the young males can be picked out. I find very few birds showing any decided chin markings and then it is a brownish-buff or tan rather than olive-yellow. The yellowish or olive-yellow rump, except in a very few cases where it is unusually bright, my records show, is no proof the bird is a male.

Nos. 76,193, 59,682, 78,425, 59,606, 76,159, 78,423, 76,188 and 78,185 banded last year showed no decided yellowish on rump and no tan on chin. I took them to be adult females. This year however they all returned as crimson males.

No. 18,091, banded July, 1922 as a young male or female, returned May 21, 1923 with rump quite yellowish. Put down as probably a young male. It returned May 9 this year, with no yellowish on rump.

No. 103,653, banded August 7, 1922 as young male or female, returned May 14, 1923, with no decided yellowish; I thought it probably a female but it returned May 21 a crimson male.

Last fall I noticed quite a number of birds not only with more or less yellowish on rump but with broad markings of brownish-buff or tan on the

breast and sides. It reminded me of iron rust and looked as though the color had run down the shaft staining the whole feather. I thought these birds were surely young males until returns came in this year, *i. e.*

No. 119,889, banded October 10, 1923, showing all these markings, returned May 13 showing no yellowish on rump and no broad markings breast and sides.

No. 118,823, banded September 19, 1923, returned May 12 still showing yellowish on the rump, but the breast and side markings were gone.

No. 85,417, banded September 26, 1923, returned May 18 with no yellowish on rump and no broad markings breast and sides.

No. 30,622 banded July 11, 1922 as young male or female. September 25, 1923 rump yellowish and broad markings breast and sides. Returned May 19, without these markings, probably an adult female.

To show the great variation in the markings of the young birds I record the following, and as only birds trapped before June 1 are reported, there can be no possibility of the plumage being at all affected by moulting.

No. 76,205 banded July 11, 1923 as young male. One feather on back and two on rump slightly tinged red. Repeated July 22 showing a few more red feathers. On return May 23, rump slightly yellowish, but no more red than on July 22, 1923.

No. 119,944 banded April 22, crimson male except rump bright yellowish-olive.

No. 119,956 banded April 27, no yellowish on rump, one feather on throat and one on upper breast tinged red.

No. 120,914 banded May 7, no yellowish on rump, a few feathers of chin reddish tan.

No. 74,410 banded May 12, rump distinctly yellowish, one feather reddish.

No. 87,308 banded May 12, fine reddish feathers on back, scapulars and wing coverts. Would not be noticed except in hand. Rump just a faint tinge of yellowish.

No. 76,610 banded May 12, decidedly yellowish tinge all over. Fine reddish tan feathers on chin.

No. 212,254 banded May 12. Fine reddish tan feathers on chin, no yellowish on rump.

No. 135,727 banded May 13. A few reddish feathers on back, wings and rump. No yellowish on rump.

No. 135,751 banded May 15. No yellowish on rump. A few feathers on throat tinged red.

No. 135,788 banded May 16. Decidedly yellowish all over.

No. 135,823 banded May 17. A number of brownish-buff or tan feathers on breast.

No. 135,845 banded May 17. Some feathers on bend of wings and one feather on rump reddish. Throat and breast brownish buff or tan. No yellowish on rump.

No. 135,846 banded May 17. Upper tail coverts bright yellowish.

No. 135,880 banded May 18. No yellowish on rump. Chin brownish-buff or tan.

No. 135,885 banded May 18. Very yellowish rump. One reddish feather chin.

No. 135,904 banded May 18. A few reddish feathers rump and upper tail coverts. No yellowish on rump.

No. 135,917 banded May 19. Yellowish rump. A few feathers breast tinged reddish.

No. 135,919 banded May 19. A number of reddish feathers rump. Throat slightly tinged, brownish-buff or tan. No yellowish on rump.

No. 135,949 banded May 20. No yellowish on rump. Throat tinged brownish-buff or tan.

No. 268,273 banded May 21. Some very bright yellowish feathers rump. Two reddish feathers upper tail coverts.

No. 137,212 banded May 26. No yellowish on rump. A few reddish feathers back right eye.—M. J. MAGEE, 603 South St., Sault Ste. Marie, Michigan.

Notes on the Breeding of the Carolina Junco (*Junco hyemalis carolinensis*) in the Mountains of North Carolina.—It has been my custom for several years past to spend a certain amount of time in the mountains of western North Carolina, and the bird life of this region has always claimed my attention, and many interesting observations have been made from time to time in connection with the breeding of birds which frequent the higher ranges of the Blue Ridge Mountains.

If I were called upon to name any one species that seems to typify the country in general, I would unhesitatingly chose the Carolina Junco as the representative.

This form was named and described by Mr. Brewster in 'The Auk,' for January, 1886, p. 108, and the type locality given as Black Mountain, Buncombe Co., North Carolina. The writer's family has a summer home three miles from Black Mountain, a station on the Southern R. R. eighteen miles east of the city of Asheville, and it is in this locality that much of the bird work which I have done in the state has been carried on. However, there is another region between ninety-five and a hundred miles northwest of Black Mt. where I have seen and studied the Carolina Junco in much greater numbers, and where it is really to be found in multitudes during the breeding season. This locality lies in the county of Watauga, and contains the summer resort of Blowing Rock, which is well known over the East for its magnificent scenery. It is here that the following notes were made, and I doubt whether another spot in the state has its equal for the opportunity of the observation of this form.

The village of Blowing Rock has an altitude of 4000 to 4600 ft. and could rather be termed *on* the mountains than *in*, as it is built on the crest of a very high ridge and the beautiful motor road which connects it with the Southern R. R. at Lenoir, N. C., presents twenty-two miles of