

SLATE-COLORED JUNCO SYMPOSIUMINTRODUCTION

This Symposium has been, as you all know, repeatedly delayed. Your Editor trusts that you will find that it has been worth waiting for. The data and observations reported herein represent a contribution from only about five and one-half percent of the EBBA membership. This low response on a species which almost every station takes was very disappointing, just as the volume of information obtained from those who did contribute was gratifying. If you are not keeping records bearing on some phase of the studies discussed in this Symposium you are missing most of the pleasure and practically all of the value of banding! The interest and value of these symposia is directly related to the interest shown by EBBA members!

Your Editor closes this Symposium with a section on suggested future studies, with the earnest hope that not only will those who have contributed to this one continue the good work (which they surely will) but that many other members will be inspired to plan their banding and maintain their records in such a way that the next symposium on the Junco will provide answers to some of the questions raised and data indicating lines of attack which may provide answers to others.

CONTRIBUTING COOPERATORS:

G. H. Parks	Hartford, Conn.	W.M. Davidson	Orlando, Fla.
Mrs. Elinor Dater	Ramsey, N. J.	R.J. Middleton	Norristown, Pa.
B. K. Matlack	Bridgeton, N. J.	H.P. Mahnken	Lambertville N.J.
Wm. Pepper	Philadelphia, Pa.	E.A. Bergstrom	W. Hartford, Conn.
Chas. H. Blake	Lincoln, Mass.	Frank Frazier	Upper Montclair
M. L. Jones	Boone, Ia.	Geoffrey Gill	Huntington, L.I.
A. N. Fast	Arlington, Va.		N.Y.
Mrs. R. E. Lynn	Collegedale, Tenn.	Jas. B. Cope	Richmond, Ind.

TRAPS:

This species is apparently very easy to trap. M. L. Jones remarks that one can trap the Junco in spite of the trap he uses. Frank Frazier sent in the following table:

<u>Trap Type</u>	<u>Juncos</u>	<u>All Birds</u>
Flat, Pull String	42.2%	25%
Mason, Fabian, Gill Sparrow	32.6	30
Trip Step, Potter	24.0	35
Top Opening	1.2	10

College students banding under the supervision of Mr. James B. Cope at Earlham College, Richmond, Ind., consider the Chardonneret and Cohasset as poor for Juncos.

It might be concluded that any ground opening trap will take Juncos.

BAIT:

Small seeds, mixed grains, peanut hearts, bread crumbs, grass seed and water were all reported to be effective. R. J. Middleton's comment on bait is of interest:

"The first flocks to arrive in autumn are rather restless and roving, here one day and missing the next; one has the feeling they are merely transients and must soon press on. When trapped at this time, nearly all are taken where water is used as bait. This continues through October and it is only after the fall migration has about ceased and the colder weather of November comes that they begin to show any interest in traps where small grains are used as bait." On the other hand, Frank Frazier comments that they are not particularly lured by water. Charles Blake says water is effective.

M. L. Jones reports "For the Junco I find 'cow feed' to be tops. My cow feed is pilfered from the supply for the family cow and is composed chiefly of ground corn and oats. They are also very fond of sifted black walnuts (the fine siftings composed of walnut meat particles along with some hulls, etc.) and I also use fine suet siftings and ground sunflower seeds. Whole seeds won't stay put but ground seeds will be left for many hours of contented picking."

REPEATS

The Junco is a very persistent repeater at most stations reporting. As examples: R. J. Middleton has banded 2704 Juncos and has had 5403 repeats. Mr. Frazier banded 375, had 205 repeats. This might be a good place to comment that recording of repeats, while laborious, provides good information on the status of the species - whether transient or winter resident - on length of stay, and on flock association. It should be worth the effort. Bender's

data indicate definite flock association among winter residents, none among migrants. His wintering birds roost in conifers near the traps.

RETURNS

The reported percentage of returns ranges from a low of 1.7% to a high of 11.9%. Return frequency does not appear to be associated with geographical location as it was for the White-throated Sparrow, perhaps because all of the stations reporting have some wintering individuals. Most returns have been for wintering individuals. Weather conditions, discussed under STATUS undoubtedly influence return percentages in some seasons.

Stations having suitable wintering habitats for Juncos, such that they frequent the station regardless of artificial food supplies, certainly obtain higher return percentages than do stations which normally do not provide suitable cover. Middleton's summary of return records is of interest. He reports:

20 Returned 3rd Winter, 10 being taken all 3
 16 " " 4th " " 4
 2 " " 5th " " 5, 1 being taken 4 winters
 4 " " 6th " " 6
 1 " " 7th " " 4 of the 7
 1 " " 8 1/2 years after banding, being present 7 winters, missing one.

RECOVERIES

Only eleven recoveries were reported, shown in the following table:

<u>Band No.</u>	<u>Date Banded</u>	<u>Location Banded</u>	<u>Bander</u>	<u>Date Recovered</u>	<u>Location Recovered</u>	<u>Recovered By</u>	<u>Remarks</u>
46-2160	3/20/49	Hartford, Conn.	G.H.Parks	ca 7/1/49	Guysboro Co., Nova Scotia	-	Trapped, Released
141-1314	1/27/48	Vineland, N. J.	B.K.Matlack	2/2/48	10 mi. N. of Vineland, N.J.	-	-
141-1381	2/9/48	" "	"	12/28/48	Newtonville, N.J.	-	-
A-138073	1/7/30	Wyncote, Pa.	Wm. Pepper	11/9/30	Springfield, Mass.	-	Shot
A-138065	12/25/29	" "	"	2/5/31	Wendell, N. C.	-	"
36-100345	2/13/37	" "	"	1/25/37	Gholsonville, Va.	-	"
36-100302	1/28/36	" "	"	4/12/38	Shelbourne, Nova Scotia	-	Cat
43-10331	10/27/43	Beltsville, Md.	W.M.Davidson	1/13/45	Hartford, Conn.	E.C.Wadstom	-
H-70425	2/24/33	Silver Springs, Md.	"	3/10/34	Beazley, Va.	R.Tignor	-
	11/11	Belchertown, Mass.	-	3/15	Norristown, Pa.	R.J.Middleton	
	4/3	Norristown, Pa.	R.J.Middleton	4/8	Rahway, N. J.	H.O.Havemeyer	

These limited recoveries suggest that East Coast Juncos migrate between the Alleghenies and the ocean. The two recoveries from Nova Scotia also suggest that Juncos summering in Nova Scotia winter in the middle Atlantic coastal area. Perhaps a more important conclusion would be that extensive color banding of breeding populations in Nova Scotia could be expected to result in recoveries or sight records in the middle Atlantic coastal plain, including southern New England.

AGE AND SEX

Several banders commented on the relationship between age and the proportion of white in the outer tail feathers. For example, G. H. Parks writes: "I have before me a collection of 21 sets of Junco tail feathers, each set consisting of the three outer feathers from the right side of the tail. Of these sets 17 came from birds whose heads and breasts were so dark as to indicate adulthood. Of these "adult" sets, 9 of the outer feathers are completely white; each of the other 8 shows a trace of gray near its base. Of the second feathers, only one is completely white, the other 16 show from a trace to conspicuous gray areas. Of the 17 third feathers only four show white over more than one-half of the area and three show but a mere trace of white.

Three of our sets were collected from returning Juncos. Each of these birds was banded as an apparent adult (judging by head and breast coloration) and returned approximately one year later. All three sets of feathers are strikingly similar, outer a trace of gray near the base; second, approximately one-fifth of area gray near the base (two also show a trace of gray along inner edge near tip); third about as much white (along vane near tip) as there was gray on the second feather.

In only one of these instances do we have the sets of feathers from both trappings for comparison. These sets, collected on November 20, 1949 and January 27, 1951, show that, over this period, the gray on the outer and second feathers became less conspicuous while the white area on the third feather increased, but still does not cover more than one-third of the total area of the feather."

A. E. Bergstrom writes: "A very rough check on the bulk of our Juncos during the current season showed one with the three outer tail feathers on each side, and part of the fourth set, white (presumably an adult male - plumage very dark gray - which tends to corroborate the indications from the tail feathers). 141 Juncos had two and one-half pairs of outer tail feathers white, only four seemed to have two pairs white but none on the third pair, and 38 had approximately one and one-half pairs white. These birds seem to be all winter residents, not migrants; while some trapping was done all fall, no Juncos were taken before November 11, and many November and December birds are still repeating regularly. It is hard to believe that only full adults have white on the third pair of tail feathers since this would tend to indicate about a four to one preponderance of full adults over birds of the year, in a species with the typical short life span of small passerines. A four to one preponderance of males over females would also be remarkable, although it is conceivable that the females move south later or stay somewhat farther north."

The one thing which is clearly indicated is that much more data is needed to correlate the amount of white in the tail with either age or sex. The postulation that the amount of white in the tail increases with increasing age for either sex seems to be in accordance with the known facts. It may also be related to the sex of the bird, if so, the disparity described by Mr. Bergstrom becomes understandable.

No data or comments were received on sex determination.

Mr. Middleton's data on returns show one individual at least eight and one-half years of age, the oldest record to be submitted for this Symposium.

STATUS

The following summary table lists arrival and departure dates for the stations reporting:

<u>Location of Station</u>	<u>Bander</u>	<u>Earliest Fall Date</u>	<u>Latest Spring Date</u>	<u>Dates of Peak Abundance</u>
Wyncote, Pa.	Wm. Pepper	Oct. 10	May 2	-
Phila. Pa.	"	Oct. 15	Apr. 22	-
Lincoln, Mass.	C.H. Flake	Sept. 28	Apr. 29	Nov. 29 & Mar. 30
Boone, Ia.	M.L. Jones	Sept. 27	May 1	Late Mar.-Early Apr.
Arlington, Va.	A.H. Fast	Nov. 3	Apr. 28	
Norristown Pa.	R.J. Middleton	Oct. 1	End of Apr.	
Upper Montclair NJ	F. Frazier	Oct. 11	Apr. 29	April
Huntington L.I.	G. Gill	-	-	November

Mr. C. H. Blake reports that some 90% of the Juncos appearing at his station are migrants. His classification followed these definitions:

- Fall Migrants - Arriving on or before Dec. 14 and leaving not later than Jan. 3. Remaining not more than 42 days.
- Winterers - Arriving on or after Oct. 26 and remaining more than 46 days or leaving after Jan. 3. Latest arrival for winterers is Feb. 17.
- Spring Migrants - Arriving on or before Feb. 28.

He estimates the mean length of stay of fall migrants to be three and one-half days; spring migrants two days; and winterers thirty-five days. Some members may wish to review their data with the objective of establishing similar classifications and estimates for their stations.

Mr. M. L. Jones comments that the greatest movement seems to be in late March in southern Iowa and early April in northern Iowa. The southward migration seems to spread quite generally throughout October.

Mr. R. J. Middleton writes that "Rarely do any of the October birds repeat in the traps and never do we get any returns from them in subsequent years. One may assume that the first fall arrivals of this species are probably those that started the southward journey first, and will continue to lead the migration parade all down the line to the southern limit of their winter range. Likewise in late spring when those that remained here to winter move north as milder temperatures prevail, again we have those late flocks coming through, among them we capture an occasional one of the early fall arrivals from the previous season. These are not included in the tables of returned birds, only those that were taken from one winter to another are so classified"

"Juncos roam over all the neighboring farming country and some may remain in the general vicinity throughout the winter without again visiting the traps unless a snowfall covers their natural food supply. When one leaves out the early fall arrivals and also disregards the late spring flocks one finds that the general winter group is here between the middle of November and April 1st, a period of four and one-half months. There are a few individuals that become consistent repeaters in the traps and may remain through part of April, but the main winter group is nearly all gone early in the month.

"We have only nineteen birds that the records prove were present over one hundred days; all were banded in late November or early December, the longest record being 148 days, two having remained for this length of time.

"One should always keep in mind that an early or very late snowstorm and a heavy average snowfall not only increases the winter's total capture but may bring the birds in near the traps from nearby fields earlier and also keep them here later than normal."

It is apparent that the Junco is both a transient and winter resident in the area covered by the reports to the Symposium.

WEIGHTS

No data were submitted.

GENERAL

Mr. G. H. Blake reports having handled five birds having or showing the effects of leg injuries; two with beak injuries; one which died in his hand at third repeat; one with a small swelling under the chin; one with a conspicuous projection four - five mm. long x two mm. wide from right flank just in front of leg and with a conspicuous tuft of feathers; and one which was flightless when first released on Oct. 28, 1949, which could fly four feet on November 1, about ten feet on November 2, 20 - 30 feet and gain altitude on November 5, and flew normally on November 10. He has banded 895 Juncos.

Mr. Frank Frazier has taken (among 375 Juncos) one with a greatly over-sized lower mandible, and one with a missing left leg, only a stump remaining. One of his birds was killed by a dog near the station and another by a Sharp-shinned Hawk three feet from a trap. He found no evidence of ticks or lice on Juncos handled. With respect to fright he writes "I have had only one bird act unusually frightened. This bird was caught in a Howe trap and at my approach fell to the ground, turned over on its back and fluttered tremulously. I put it in a darkened cage overnight with food and water. It seemed alright in the morning so I banded and released it. It flew off well enough but had a little difficulty making a landing on a branch. There it stood for a minute or two, then flew out of sight. Ten minutes later it was caught in a Mason trap. At my approach it again flopped over on its back and fluttered. I kept it in a darkened cage for ten minutes. It seemed recovered and was released. This was on January 16, 1951. It repeated in a Gill Sparrow Trap January 21 and seemed especially excited before I got it in my hand ... but not more than excited. It repeated again on Jan. 22 and 23 in a Fabian and a Flat trap and on these two occasions acted like any other Junco."

Mr. Howard Mahnken trapped an unusual Junco on Feb. 10, 1951. The head, neck, throat, and upper breast were dark in color but the sides were very pink.

Mr. E. A. Bergstrom calls attention to a subject which has received too little attention. He writes:

"The Junco is a good species to observe in an effort to determine just what governs the number of ground feeding birds coming to the feeding station in winter. The question is not what makes

them come to a particular feeder or trap after being a few feet away, but what brings them to the vicinity of a particular station, out of a winter range of perhaps a half a mile across, or what leads the birds to shift ranges in mid-winter. It is necessary to assume that food is available in the banding traps constantly, though operation of the traps without a break is probably not vital to a solution. The most important single factor seems to be snow cover, as the absence of many birds at the traps when the ground is entirely bare and the great numbers present when heavy snow covers most weed seeds are widespread phenomena. Do the birds come in greatest numbers the day before a major snowstorm, during the storm, or the first clear day afterwards? Much depends on the depth of snow cover before the storm and whether some traps are on a sheltered porch or otherwise readily available during the storm itself. Our best recent day was Dec. 31, 1950, a raw day with ground almost bare but with some snow flurries. We handled 67 individual birds of which 38 were new, almost all Juncos. On Jan. 6 with ground bare and temperatures in the 40's (F) the total take was three repeat Juncos. On the 7th more than four inches of snow fell, quite steadily during daylight hours. Some traps were available all day and others well into the afternoon (covered with burlap bags) but the days take was only 57 individuals (only 14 new). The following day, bright and sunny, promised very large numbers but only 47 individuals (18 new) were taken. Other factors that may warrant attention in determining just when birds like the Junco flock around a banding station is the presence of high and low pressure weather areas, and even the "Solunar" Theory of Mr. John Alden Knight. The latter is supposed to tell when birds come to a feeder as well as when fish bite. While it is based on some curious calculations, I have not seen any clear proof that it does not work."

SUGGESTED FUTURE STUDIES

The following list of questions is intended to influence members banding reasonable numbers (30 per season or more) to plan their activities so that answers or suggestions for additional studies may be obtained. It is thought that each problem is capable of a solution by banding procedures.

1. What is the relative number of transients and winter residents at my station?
2. What is the average length of stay of each?
3. Do transients return through my station in same season? In subsequent seasons?
4. What is the size of the Juncos winter range?
5. Do Juncos change winter ranges in any one season? From one season to another?

6. How does weather affect the number of Juncos taken? The percentage of new to banded birds taken?
7. How does the white in the tail change with age? (Many banders have return records for two or more years.)
8. (For banders in summer range) Is there any correlation between coloration (including white in the tail) and sex? Are there any reliable external criteria for sex determination?
9. Do transients move in well-defined flocks composed of at least a hard core of the same individuals? Do winter residents?
10. Are Juncos commonly parasitized by lice? Ticks? Other parasites?
11. What is the frequency of crippled individuals? Those showing unusual fright reactions? Do these vary from year to year?
12. What is minimum quantity of food required for survival? How is this related to temperature?
13. What habitat type is optimum for banding Juncos?
14. What is average age of the Junco? The average life expectancy at any age?

A sufficient number of Juncos have been banded, and taken as repeats and returns, to provide positive answers to most of these questions - IF adequate observations had been made and suitable records kept. Each of these questions represents a segment of a much larger problem of broad general interest to Biological Science. As an example, accurate records of the variations in percentage of birds showing unusual fright reactions should shed some light on the broader problem of numerical periodicity.