

NOTES ON THE SLATE-COLORED JUNCO

By R. O. BENDER

During the past two years 103 Juncos, *Junco h. hyemalis* (Linnaeus), have been taken at a rural banding station near Bridgeton, N. J., mostly during the months of January and February although a few were taken in December, March, and April. Some of the observations which were made are considered to be worth recording.

Ninety-eight individual Juncos were weighed on a platform balance accurate to ± 0.05 gram providing a total of 169 recorded weights. The average of all weights was 21.25 grams, the range 18.2 to 24.9 grams, the standard deviation 2.2, and the coefficient of variability 10.35 per cent which is high when compared with values recorded in the literature for closely related species. Miller (1941), for example, reports a coefficient of variability of 5.2 per cent for 100 breeding male *J. oreganus montanus* Ridgway having an average weight of 17.7 grams and one of 5.5 per cent for 35 breeding male *J. o. thurberi* Anthony having an average weight of 17.58 grams. On the other hand, Walkinshaw (1945) reports that female Field Sparrows, *Spizella p. pusilla* (Wilson), vary in weight from 10.8 to 15.0 or ± 16 per cent from the average compared with ± 15 per cent for the Junco weights reported herein. Linsdale (1928) reports coefficients of variability for four races of the Fox Sparrow, *Passerella iliaca* (Merrem), as 8.41, 6.21, 5.60, and 5.33 per cent compared with 13.16 for man and 10.11 for the mouse, *Peromyscus*. The conditions under which the Junco weights were obtained would tend to give extremes in range since the larger proportion of the individuals was taken during severe weather at a banding station where food was abundant.

Only 26 of the 103 birds handled could be determined as males with any degree of certainty and then only on the basis of the almost total absence of rusty plumage. The average weight of these 26 birds was 20.99 grams which in view of the standard deviation for all weights of 2.2 is not significantly different from that average. Attempts were made to correlate weights with temperature and with snowfall. No correlation was found which probably has no significance in view of the artificial food supply provided at the banding station. It was anticipated in view of the work of de Bont (1947), Wolfson (1940, 1945), and others that the weight would increase with advancing season, but this was not found to be the case. Every effort will be made to obtain sufficient late spring data to determine whether increased weight due to fat deposition occurs in free living Juncos prior to migration.

Some of the data showing variations in the weight of individual Juncos from capture to capture, and in a few cases from one year to the next, are set forth in Table I.

TABLE I
VARIATION IN THE WEIGHTS OF INDIVIDUAL JUNCOS

Band No.	Sex	Dates and Weights in Grams
39-51560	♂	Jan. 18, 1947—21.6: Feb. 22, 1947—21.0: Mar. 22, 1948—19.5
39-51561	♂	Jan. 5, 1947—20.2: Jan. 14, 1947—21.6: Feb. 6, 1947—21.4: Mar. 7, 1948—21.6
39-51566	—	Jan. 5, 1947—21.5: Jan. 22, 1947—21.5: Feb. 6, 1947—24.2
39-51567	—	Feb. 1, 1947—22.8: Feb. 4, 1947—21.6: Feb. 22, 1948—23.4
39-51572	—	Jan. 18, 1947—22.7: Feb. 5, 1947—20.9: Feb. 7, 1947—22.2
39-51573	—	Jan. 29, 1947—21.9: Feb. 2, 1947—22.0: Feb. 1, 1948—22.3
39-51575	—	Jan. 29, 1947—20.3: Dec. 27, 1947—22.1: Mar. 13, 1948—21.0
45-3954	♂	Feb. 1, 1947—21.3: Feb. 2, 1947—20.9: Feb. 22, 1947—23.3
45-3955	—	Feb. 2, 1947—18.2: Feb. 6, 1947—21.2: Mar. 13, 1948—20.5
45-3958	—	Feb. 2, 1947—20.0: Feb. 6, 1947 (a.m.)—20.8, (p.m.)—21.8: Feb. 7, 1947—20.8: Feb. 22, 1947—20.9
45-3965	—	Feb. 8, 1947—21.0: Flew into window, died of injuries Jan. 11, 1948—22.1
46-34803	—	Dec. 15, 1947—19.5: Feb. 22, 1948—24.6: Mar. 14, 1948—22.7
46-34804	♂	Dec. 15, 1947—20.4: Feb. 22, 1948 (a.m.)—20.2, (p.m.)—21.5
46-34805	—	Dec. 20, 1947—22.7: Jan. 18, 1948—23.8: Feb. 7, 1948—23.8: Mar. 14, 1948—21.0: Apr. 4, 1948—21.8
46-34808	—	Dec. 28, 1947—20.5: Jan. 18, 1948—22.4: Feb. 21, 1948—21.3: Feb. 29, 1948—21.7: Mar. 7, 1948—21.2: Mar. 14, 1948—19.7
46-34817	—	Jan. 17, 1948—24.9: Jan. 19, 1948—21.9: Feb. 7, 1948—23.3: Feb. 8, 1948—21.9
46-34819	—	Jan. 18, 1948—21.7: Jan. 19, 1948—19.7: Feb. 8, 1948—20.0
46-34820	—	Jan. 18, 1948—22.6, 21.7 (a.m.): Jan. 24, 1948—21.7: Feb. 22, 1948—19.1
46-34821	♂	Jan. 18, 1948—22.3, 21.6 (a.m.): Feb. 8, 1948—20.4: Mar. 7, 1948—22.4
46-34823	—	Jan. 18, 1948—24.1: Jan. 31, 1948—23.3: Feb. 7, 1948—22.7: Mar. 13, 1948—21.5
46-34825	♂	Jan. 18, 1948—24.0: Jan. 24, 1948—22.7: Feb. 8, 1948—21.3: Feb. 22, 1948—19.5: Feb. 23, 1948—20.9: Apr. 24, 1948—20.5
46-34830	—	Feb. 7, 1948—23.9: Feb. 22, 1948—22.7: Feb. 23, 1948—21.3

These data show that fluctuations in weight of five per cent take place within one day; they do not show any trend toward a weight higher or lower than the group average but rather fluctuate around that average. 45-3955 had the lowest weight of any Junco handled to date on the day it was first banded, four days later its weight was normal and it lived at least a year longer which indicates that its original weight, as low as it was, did not indicate disease or old age. 46-34817 having a weight when first banded of 24.9 grams which was the highest recorded weighed a normal 21.9 grams two days later. It thus appears that fluctuations in weight of the order obtained in this study are due to variations in food content of the body at the time of weighing.

A few other observations were made which may be of interest. Junco 45-3964 captured on February 6, 1947 lost its tail as a result of careless handling during banding. It was recaptured again on March 1, 1947 at which time the replacement tail feathers measured 51 mm. versus a normal length of 65-70 mm. Recaptured again on April 4, 1947 the tail had reached its normal length. The rapid growth of new feathers was surprising. Junco 45-3958 had a slight hook on the tip of the upper mandible with a residual growth at the base of both mandibles,

although the feet showed no sign of disease. This bird repeated four times in 20 days, appearing to be in good health each time, with no evident signs of wear on the hooked upper mandible. Junco 46-34826 had a small reddish spot on the upper mandible approximately 2 mm. in diameter, the only instance of this kind observed to date. Another unusual specimen, 46-34818 captured on January 18, 1948 and not seen again, had a few white feathers making a white band about 5 mm. wide across the back of the neck. It was not quite symmetrical, extending a little further on the right side, when viewed from above, than on the left.

Seven of the 60 (11.6 per cent) Juncos banded during the winter of 1946/47 returned the following winter. Beals and Nichols (1941) did not obtain any returns at Elmhurst, Long Island, from 1609 Juncos banded while Wharton (1941) did have 8 of 347 (2.30 per cent) return at Summerville, S. C. No explanation for the higher percentage of returns at Bridgeton can be offered at the present time.

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HOW MUCH DOES A TRAP CAPTURE?

By CHARLES H. BLAKE

Having experienced some difficulty in the design and siting of traps owing to lack of concrete information on performance, I venture to suggest some ways in which this lack may be remedied.

We need to know for each trap a figure for which I borrow the term "coefficient of capture," designated by *C*. This is the ratio of the number of birds actually captured, *c*, to the number entering the zone of