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(Inland)

Occurrence of White in the Wing Coverts of Dark-eyed Juncos

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Character states that distinguish a subspecies may be expected to occur to some degree in populations of adjacent subspecies. In the Dark-eyed Junco (*Junco hyemalis*), the subspecies *aikeni* has "middle and greater wing coverts usually tipped with white, forming two distinct bands" (Ridgway, 1901). Ridgway made no mention of white in the wing coverts of other entities in *Junco*. In a detailed study of color characters in *Junco*, Dwight (1918) wrote, "We do not, for example, ever find red coverts in Canada or white ones forming a wing-band anywhere else than in the Black Hills [= *aikeni*] although occasional specimens of *Junco* from elsewhere may have coverts slightly tipped with white." The most exhaustive study of characters in *Junco* is that of Miller (1941). He pointed out that not only is the amount of white in the wing of *aikeni* itself highly variable (none in 5 of 86 males, p347), but that some white occurs in individuals of other races. In *mearnsi* to the west of *aikeni* he found 1.82% with white in the wing coverts, in *caniceps* to the southwest he found 1.29% so marked (p. 240), and in the wide-ranging *hyemalis* he found 2.66% (3.50% in males and 1.19% in females, p315). Miller placed these 4 races in 4 different species.

While banding *J. h. hyemalis* at Beckleysville, Baltimore County, Maryland (coordinates 393-0764), I became aware some years ago of white-flecked wing coverts. For the past ten years I have recorded the incidence of this trait but have not differentiated birds by sex. A bird was scored as positive if it had one or more greater or middle wing coverts with a terminal white fleck regardless of the fleck's size. It is possible that a few birds may have been erroneously scored positive on the basis of coverts abnormally retained from the juvenal plumage. Results are shown in Table 1.

Table 1. Incidence of white in wing coverts of *Junco hyemalis hyemalis* at Beckleysville, Baltimore County, Maryland.

Year	Number banded	Number with white	Percent
1975	169	3	1.78
1976	200	3	1.50
1977	184	3	1.63
1978	283	7	2.47
1979	264	5	1.89
1980	237	1	0.42
1981	170	1	0.59
1982	130	6	4.62
1983	191	9	4.71
1984	281	14	4.98
TOTAL	2109	52	2.47

I cannot explain the variability from year to year. However, the overall percentage fits well with that of Miller, which was derived from the examination of 1556 skins from many parts of the range of *hyemalis* (sensu stricto). Since I have no reports of my birds from other places, their provenance is unknown, but it seems safe to assume that they are predominantly from eastern populations far removed from the range of *aikeni*. It would be interesting to obtain data on the incidence of this trait in populations closer to that range.

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(Eastern)

Mist netting breeding female American Redstarts

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Procedures for capturing male warblers during the breeding season are more straightforward than those for females. Mist nets are set up in a male's territory and the species' song is broadcast to entice him into one of the nets (Johnston 1965). However, female warblers behave very differently from males (Ficken 1963) and their capture requires different techniques. In this paper, we present some suggestions for efficient mist netting and handling of female American Redstarts (*Setophaga ruticilla*), based on the capture of more than 100 females in six years near St. Andrews, New Brunswick, Canada.

The purposes of capturing and color banding female warblers are the same as those for males. For instance, color banding our population of American Redstarts enables us to recognize each individual and study social behavior, reproductive success, mate choice and territorial fidelity. In addition, biological data such as morphological measurement, plumage characteristics or ectoparasites are available from captured birds.

The appropriate mist-netting technique for female warblers is somewhat dependent on both the goal of the research and the stage of the female's breeding season. For instance, if a researcher's primary interest is gathering data on the bird's reproductive success, he must also be concerned that catching and banding the females may disturb their nesting activities and he should use techniques to minimize that possibility. Female American Redstarts have certain behavior patterns that are characteristic of the different stages in their breeding cycle

(Ficken 1963). The mist-netter should try to be aware of what reproductive stage the female is in and try to tailor the capture techniques to take advantage of the female's behavior.

The first opportunity for capture occurs when the females settle after their migration and "pair formation" (Ficken 1963) takes place. During this period, females can often be caught in the same mist net sets used to capture territorial males (Johnston 1965). Females will frequently investigate a male's song, perhaps either as a means of assessing the male's quality or as a result of following a male around his territory (Ficken 1963). To take advantage of this responsiveness, we often try to catch females in the male's territory by continuing to play the tape after catching a territorial male. In 1980, we tried to capture male American Redstarts by using a mounted male decoy together with a recording. However, we noted little improvement in capture efficiency over using just the recording. We have yet to determine if either a male decoy (Johnston 1965) or that of a predator (Root and Yarrow 1967) may be useful in attracting females.

Once the female has selected a male, she explores his territory with him in order to locate a suitable nest site. Ficken (1963) called this the "pre-nest-building" period. During this time, a series of nets strategically placed throughout the central part of the territory will often catch the female as she moves about the territory or she may be caught in the same net with the male.