

Some Winter Problems.—Winter in northern parts of the continent is characterized by a reduction in the number of avian species and often by smaller numbers of those present. Partly for that reason and partly because of increased difficulty in the operation of traps, many banders may not be so active during the season of cold. Despite all this, there are interesting problems peculiar to the season whose solution depends upon extensive and concerted efforts. The nature of these would well repay for the difficulties involved.

One of these concerns the seeming periodical increase and decrease in number of certain common species. That the Ruffed Grouse (*Bonasa umbellus umbelles*) and its races goes through regular cycles of relative abundance and scarcity is well established. The writer wonders if this may not be true of passerine birds in general. Records covering twelve years, contributed to *Bird-Love's* Christmas Bird Census, show a wide variation in the numbers of the Black-capped Chickadee (*Penthestes a. atricapillus*). A maximum is reported every third or fourth year followed by a sharp drop and a gradual increase again. Banding records show a somewhat analogous tendency although close correspondence is lacking, but this might be expected where a regular supply of relished food is available. An easily-obtainable food supply due to a mild winter, or a largesse of some items carried over from the preceding summer, might also be factors operating to restrict visitors at a feeding station. I realize the inadequacy of using observations in one locality as a basis for even a tentative statement and it is only with the hope of inducing further investigation that the results of these rather meager observations are given as a subject for further study. Of course cyclical changes might occur in other species, but of winter residents in our locality only the Chickadee is sufficiently numerous to make comparisons easily possible. With summer residents, greater difficulties would exist.

Another problem concerns the occurrence of the irregular winter visitor. We are not thinking of the highly erratic movements of the Crossbills (*Loxia curvirostra pusilla* and allied races and *Loxia leucoptera*), but of the Purple Finch (*Carpodacus p. purpureus*). The Purple Finch is a regular summer resident at Wells River and occasionally a flock spends a considerable portion of the winter there. From January 31–March 15, 1923, Purple Finches visited my traps daily and forty-eight were banded. Again in 1928 daily visits were paid by a flock between February 23 and March 22. During this period fifty-four individuals were banded. That these were not spring migrants is indicated by the sudden cessation of their visits six days before the first migrant, an Eastern Song Sparrow (*Melospiza m. melodia*), was trapped. During both seasons Purple Finches were seen about several weeks before any were trapped. While data from one banding station are too meager for any conclusions, it is interesting to note that from eighty summer resident Purple Finches banded at my station in Wells River, Vermont, three returns have been taken, while from the one hundred two winter visitants only one return was had, that of 39019, banded March 31, 1923 and retaken April 20, 1925.

One cannot help speculating on the causes of the abundance of this species during one winter season and its absence during another. A study by banders throughout a wide area might shed some light on what appear to be erratic wanderings.

There is also the summer resident species that in small numbers attempt to winter, sometimes successfully and sometimes do not. The list of species in this category would vary according to latitude and the severity of the climate. Crows (*Corvus b. brachyrhynchos*) throughout Northern Vermont are absent, or are present in very small numbers during the colder months. Two or three individuals seen in late fall or early winter often disappear after the sub-zero temperatures of January begin. Mr. G. H. Ross of Rutland, Vermont, mentions the disappearance of the Crow from his locality as a winter resident following the severe winter of 1933–34. This might indicate that wintering was a family trait rather than an accident such as late moulting, injury, etc.

The Slate-colored Junco (*Junco h. hyemalis*) is another species that almost disappears from the vicinity of Wells River with the approach of winter. Mid-November marks the disappearance of all but a few individuals or a very small flock. These may be seen for another month, and then Juncos are absent until the first spring migrants appear. Only one individual of this species has been

known to remain here through a winter. During the season of 1928-29 a male was seen frequently about the traps until March 20, 1929, when the first migrant Juncoes arrived.

Here is a field for investigation, difficult but correspondingly fascinating. To learn the factors operating individually to limit winter range would increase our knowledge, for general factors really convey little information. Investigations carried on during winter transform a proverbially dull season into one of intense interest.—WENDELL P. SMITH, Wells River, Vermont, November 28, 1937.

Are Peterboro, New Hampshire, Wintering Chickadees to Any Extent Migratory Birds?—There are several banders in different sections of the United States who are seeking to ascertain if any of the Black-capped Chickadee (*Parus atricapillus*) observed in the fall and winter at banding stations are migratory. In this connection perhaps recent observations and banding results made at my station at Peterboro, New Hampshire during the fall and winter of 1937-38, may be pertinent.

Ordinarily during the last eleven years there are usually from a half dozen to a dozen Chickadees at my station during this period. As the nesting season approaches they practically all disappear, although for the last three years a pair has nested within one hundred feet of the station and during the nesting period both birds came for suet and sunflower seeds. On one occasion their young followed them to the station for two or three days where they were fed on suet after which old and young disappeared until fall. The winter season of 1937-38, however, proved an exception for by November 18, there were many more Chickadees at the station, among them two old banded birds, one of which proved to be at least five years old. The number continued to increase and by December 10, forty-five birds were banded, all on the right tarsus. Young birds could be distinguished from old ones by their lack of fear when handled. By December 29, fifty-four were banded and by January 4, sixty-one were banded, the number banded by January 15 was sixty-eight and a total of seventy-two were banded by January 26. From the 26th of January to February 7, only two new Chickadees appeared and they were banded.

During the period between November 18 and January 16 the birds appeared at the station in waves numbering less than ten although the actual number could not be determined. Mr. Charles B. Floyd (*in litt.*) reports that during several winter seasons he has studied this species in the field near Boston, Massachusetts and that flocks numbering ten are seldom encountered, five or six usually constituting a group. This has been my experience about Peterboro and I have often speculated whether or not these groups were of a family order.

At the height of their abundance all the seventy-four birds, plus the two banded several years ago, entered my shelf trap, 8" x 10" x 10", several times daily after sunflower seeds which they either ate or carried away and hid in the woodshed or in crannies in the back of nearby trees. They had six favorite trees having small horizontal branches where they opened the seeds. They could not carry away two unopened seeds but one or more birds would extract pits and then add an unopened seed and fly away with both. This habit appears to indicate exceptional mental ability.

From late January on there was a gradual falling off in the number of birds at the station and the shrinkage was very marked by February 4, estimated at 75 per cent, including my two old birds wearing colored bands. By late February practically all had ceased to visit the station.

If the conditions existing here, namely, practically complete absence of birds during the nesting season, are paralleled at other stations, it will be very difficult to secure recoveries until next fall. In order to make a beginning in the study of their migratory movements, if indeed there is any, there seems to be at least one method to approach the problem, namely, by instituting a thorough search for their nests, say, within one or two miles from one's station. It should be easy to bait the birds near their nests and follow this by trapping them. Of course, the more extended the search for nests is made the better. If no banded birds are found the fact will stimulate further investigation in this direction perhaps by an organized group of five or six banders operating stations four or five miles apart.—CHARLES L. WHITTLE.