

THE PARTIAL HISTORY OF A PAIR OF NESTING
JUNCOS

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THE Slate-colored Junco (*Junco h. hyemalis*), while more numerous as a spring and fall migrant, is a fairly common summer resident at Wells River. Censuses of three different tracts, comprising in all 118 acres and containing much territory suitable for the nesting of this species, revealed seven nesting pairs in 1928. The pair under observation nested about five hundred feet from my banding station. The nest was located on the edge of a narrow strip of woodland fringing a steep hillside. It was placed under a bunch of old leaves, which overarched and protected it from the rain. The nest itself was a depression in the leaf-mould lined with pine-needles and dried grass and set so deep that the top was just even with the ground. The nest was discovered on May 25th by flushing the female, and it contained four partially incubated eggs. It was well located for observation, a trodden cow-path passing within about two feet, so that the dangers incident to a new path leading directly to the nest were avoided.

On June 5th, three of the eggs hatched. The fourth never hatched and remained in the nest after the young left. The natal down of the young corresponded to the "dark gull gray" of Ridgway's Color Standards and Color Nomenclature. Little change took place during the next twenty four hours but the pteryxlæ showed as a darkening of the skin, and more notice was taken of what was going on outside the nest. On the 7th, the dark area was well defined on the capital, humeral, spinal, and femoral tracts: of the ventral but a trace could be seen on the sides of the breast just in front of wings, while primaries and secondaries showed well-defined follicles under the skin. Crural and caudal tracts could not be seen. The natal down appeared longer and very much lighter. On the 8th, the primaries were half an inch in length, while follicles of the alar, spinal, femoral, and ventral tracts were about one eighth of an inch long. Natal down had become "pale gull gray." Eyes could be opened almost wide but were kept closed for greater part of the time. The follicles were slate gray. On the 9th, the bill, which had been yellow, was noticeably darker except the tomia and angle. The feet were also darker. The primaries had lengthened one quarter of an inch and other tracts showed corresponding increase. The

eyes could be opened wide and the birds uttered weak, squealing notes when touched. On the 10th, primaries and secondaries had gained another quarter inch in length and the vanes were bursting from their sheaths. Similar development was apparent in ventral, spinal, femoral, and to a lesser extent, in the erural tracts. Capital and caudal tracts had not reached this stage. The eyes were now kept open, and the edges of the bill were darkening except at angle. On the 11th the vanes showed still further development in the tracts already mentioned, while those of the caudal were beginning to show slightly. On the 12th the young began to present quite a junco-like appearance. The abdomen was now the only area not covered by the sprouting feathers. At this time the vanes had not emerged from their sheaths in the circumocular region. On the 11th bands bearing the numbers B37351-53 were affixed. At that time we noted that B37351 was larger and browner than its companions. As we had some difficulty in making them remain in the nest on the 11th, no attempt was made to take them from the nest for examination after that date. On the 14th the three left the nest. B37351 was the first, leaving at 6.15 A.M. The nest was vacant at 8.45. We saw the departure of B37351. After sitting on the edge of the nest for awhile it mustered courage to start. Fluttering along the ground for a few feet, it launched into the air and flew rather heavily to a bush, where it alighted. In attempting to reach a second shrub it miscalculated and nearly overshot the mark, but a few seconds of rapid fanning of the wings enabled it to regain its balance and it was then able to alight.

This individual was successful in avoiding the dangers of its new environment, but the other two, we fear, were not, as they were never seen after their first flight from the nest. Their fate is problematical, but the most likely explanation was that they fell prey to a Cooper's Hawk, which was occasionally seen in the vicinity and which disposed of a male Purple Finch only some fifteen feet from the Junco's nest.

The first night was spent about two hundred feet from the nest in some small pines. At 6.15 A.M. on the following day B37351 had reached a point some four hundred feet away. On the 17th the distance had increased to five hundred feet, but on the 18th it returned to within one hundred and twenty-five feet of its former home.

The tail, which was very short at the time it left the nest, appeared full-grown by the 17th, and the white outer tail-feathers showed conspicuously. Flying had improved, but

lack of skill was still shown, especially in the management of the tail. Opportunity for observation ended on the 18th, as we were away for a fortnight. On July 4th, a young banded Junco, undoubtedly B37351 was seen alone some five hundred feet from the nest and an equal distance from the place where last seen.

On July 3rd the second nest was discovered some four hundred and fifty feet from the first nest. It was placed at the base of a small pine and was somewhat protected from rain by the trunk and thick branches. Material and construction were similar to that of the former nest, and it contained four eggs. A cow-path passed conveniently near also, and some time was spent watching the behavior of the birds during the period of incubation.

The female displayed some regularity in leaving the nest in search of food. On three days she was seen to leave between 8.30 and 9.00 A.M. Indeed, she was almost clock-like in her schedule. On the 10th of July she left at 8.30 A.M., returning at 8.50. Leaving on the 14th at 8.42, she returned at 8.53, and on the 17th departure and return took place at 8.43 and 8.49 respectively. At only one other hour of the day did we find her off the nest, but as we found her facing different directions, she probably left at other times.

Her flights in search of food were short, for she usually fed on the ground at distances varying from thirty to one hundred and fifty feet, but once, in company with the male she went some three hundred feet, the maximum distance probably.

The male was not much in evidence during the incubation period, not appearing when the female scolded intruders unless the annoyance was long-continued, when he appeared and joined with his mate in the effort to drive away the disturber. Occasionally he was seen in the vicinity of the nest when danger did not threaten.

No singing was heard after the discovery of the first nest until the 18th of June, four days after the young left the nest. On July 6th a male Junco was heard singing near the second nest, but as the singer was in a spruce having a thick growth of branches, we were unable to determine presence or absence of a band. Singing continued until the 15th.

On the 18th we discovered that disaster had overtaken the nest. The eggs were gone, but the nest was intact and no bits of shell could be seen. This undisturbed condition suggested the possibility that a snake had been the culprit; a theory that was strengthened a few days later when we saw

the male trying to frighten away a rather large striped snake (*Eutainia sirtalis*).

On the 19th the male was heard singing again near the nest, and the female scolding. On the 20th the male was singing, this time from a tree on the opposite side of the narrow tract of woods. The female was flitting about from tree to tree of the group of small evergreens, nervously exposing her outer tailfeathers and uttering the soft lispings note frequently heard during migration from members of a group. Owing to the dense foliage, the exact nature of her activities could not be determined, but we strongly suspected further nest-building. It was not until July 28th, after careful search several times during the intervening period, that the third nest, containing three eggs, was discovered. The female had become so accustomed to our visits that she no longer found them very disturbing, and it was only when we were almost upon the nest that she would leave. This nest was built at the base of a small pine, the crooked trunk furnishing some protection from rain. Material and construction resembled that of the other nests. This nest also seemed to be ill-fated, for on August 6th it was empty, the eggs having disappeared during the preceding night. As part of the nest-lining had been torn out and left a foot or so away, the marauder was evidently a mammal this time. Cats have been rare visitors to the locality, and it seems likely that skunk or squirrel wrought the destruction. No trace of the parent birds could be seen, and many subsequent visits have failed to find them, so it seems evident that they abandoned the territory.

There remains to be described the parents' behavior toward the young, of which we hoped to learn more with the later broods, but of which we learned something with the first. With the hatching of the eggs, the male became more attentive, warning of the approach of danger and helping to feed the young. On June 7th we watched the nest from 10.45 to 11.45 a.m., and during that time ten trips with food were made, six of these by the female and four by the male. The female brooded the young from five to ten minutes after five visits, and the male after one. In addition to the four visits when the young were fed, the male came five times to the edge of nest, but, finding the female with the young, flew away, and only once did he return immediately, whereupon the female vacated. The female came once with food while the male was at the nest, but waited until he left, which he did almost immediately. The periods of time between visits were unequal. Food could be secured very quickly and a limited

territory seemed to provide it. The open pasture to the north and the deciduous shrubbery to the east were scarcely entered, but to the south and west, where pines and hemlocks predominated, the food-supply seemed to be largely obtained. Part of the area had been burned over by a ground fire early in the spring, and that, especially, was favored. Probably the greater part of the supply was obtained at a distance varying from thirty to one hundred and fifty feet from the nest, in the tract covered by coniferous growth. The maximum distance at which we saw them was three hundred feet away, and that was but once.

The parents' day was a long one. On June 7th the female entered the nest for the night at 7.40 P.M., Eastern Standard Time, and on June 13th, the first activity began at 3.47 A.M. The nest was kept under observation from 3.22, and no bird was seen to leave the nest nor did the first call-note come from that vicinity, but from shrubbery several feet away. At 3.47 the female came to the nest. We wondered whether the female spent the night away from the nest, perhaps to accustom the young to being alone in preparation for the approaching departure.

It was while the parents were caring for the young in the nest that their identity was discovered. We observed soon after the nest's discovery that both parent birds were wearing bands. A sparrow-trap placed near the nest caught both, and the male was found to be wearing A7999, affixed April 24, 1928, while the female carried A87460, attached on May 10, 1928. Both birds repeated several times, the male until May 15th and the female until May 21st. The male Junco, A7999, was one of sixteen banded during the period of April 24-30. Except for one or two pairs which have nested in the locality where A7999 did, Juncos appear at my station only during migration, so I think it safe to say, that A7999 received its band at approximately the time of its arrival. Except for A7999 and A87460 the species disappeared from my station on May 3rd.

There are many gaps in the record, but in future seasons we hope at least to fill in some of them.

Wells River, Vermont
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