

article appeared, a hasty check of the returns has been made and at least eighty records of Chickadees that lived to be five or more years old have been found; several were past seven.

Up to July 1, 1940 about 3,400 return records for Chickadees had been received, but it is doubtful whether these represent more than 3,000 birds since many have returned more than once. (To ascertain the exact figure would require an elaborate check.) These records represent the returns from 21,900 birds banded, more than $13\frac{1}{2}$ per cent, which is quite high. The 80 or more birds known to have lived to at least five years of age represents more than a third of one per cent of all the Black-capped Chickadees banded.

Species that attain full adult plumage at the post-juvenile molt, and are banded principally in winter, are unsatisfactory subjects for longevity studies since it is impossible to know the real age of the bird at the time of banding. It is a fair assumption that the individuals that have returned for five or six years were birds of the year when banded, but it has required five years or more to learn that. It can also be assumed that many of the birds that did not return after one or two years had already lived much of their life-span at the time they were banded.

Before banding returns became available, my impression was that six or seven years was considered to be "ripe old age" for wild birds, at least for the Passerines. It now seems that some of the theories on this subject may have to be revised.—MAY THACHER COOKE, U. S. Fish and Wildlife Service, Washington, D. C.

Observations on Intestinal Worms in a Young Robin, (*Turdus m. migratorius*).—On July 5, 1941, an immature Robin, *Turdus m. migratorius*, was trapped and banded by Beecher S. Bowdish at Demarest, N. J. Since the bird was able to fly, being apparently "on its own" at that time, its age was not estimated, but it could not have been more than about two months old and might not have been more than one. A week later the Robin re-entered the trap and died while being examined, whereupon Mr. Bowdish sent the bird to me for post-mortem investigation.

While the cause of death was not remarkable, being the result of physical injuries sustained in some unknown manner, the incidental finding of five species of intestinal worms in so young a bird was of considerable interest.

Securely anchored to the duodenal mucosa there were about a dozen small Spirurid nematode worms, which in the opinion of Dr. Norman R. Stoll were immature. Throughout the intestinal tract were many mature individuals of a small species of tape worm, while a single large adult tape worm of another species was found in the mid-intestinal region. Several large adult Ascaroid nematode worms were scattered along the entire tract. Finally there were four Acanthocephala near the hindgut, their probosces buried in the mucosa.

The point of chief interest in these findings is that the majority of worms was already sexually mature and producing eggs. Not that it would be surprising to find mature parasites two months—or even one month—after the introduction of larval forms into a definitive host, but the fact remains that this bird must have acquired its internal parasites at a very early stage of its life. What, in fact, was to prevent parasitism from resulting after the very first meal?

With mammals this is not nearly so true, inasmuch as worms—at least—can not be transmitted through direct suckling. But even the tiniest insect, delivered to a newly-hatched Robin, may contain encysted stages of tape worms and Spirurids. Later, when Earthworms are included in the diet, Ascaroid eggs will be conveyed to the fledgling's intestine in the soil contained in the Earthworms. The life history of most Acanthocephala is not surely known, but this group is also disseminated by invertebrate vectors that are eaten by birds.

Infestation of young birds is therefore probably early and multiple in most cases. The fact that death rarely ensues as a direct consequence of such parasitism indicates that even the most fragile fledgling is well equipped by nature to

cope with its guests at the table. As for the latter, their rôle in the above story is as illuminating to the naturalist as are the Robin-considerations involved.—C. BROOKE WORTH, Rockefeller Institute for Medical Research, Department of Animal and Plant Pathology, Princeton, New Jersey.

An Eastern Snow Bunting in its Eighth Winter.—On February 22, 1934, I trapped and banded a Snow Bunting (*Plectrophenax nivalis nivalis*), at my bird banding station near McMillan, Mich., to which I gave band number L 73527. I have retaken the bird on March 7, 1934; January 13, February 3, 15, March 1, 4, 16, 1936; January 27, 29, 30, February 2, 16, March 5, 6, 1938; February 15, March 3, and 4, 1941.

This bird is now in its eighth winter, and in the belief that it might be the longest longevity of this species, I wrote the Fish and Wildlife Service at Washington, D. C., and Mr. F. C. Lincoln replied in a letter dated March 6, 1941, that "Examination of our other Snow Bunting returns shows that you are correct in assuming that yours is the best longevity record for that species." We are safe in noting this bird to now be in its eighth winter, and through my studies on the plumage of this species, I feel sure that it is at least in its ninth winter.

Through my studies, I have not yet found a Snow Bunting with the primary coverts mostly or nearly all black, the outer web of the greater coverts half or more black, nor the inner (9th) pair of primaries all white, and not more than half, if any of the secondaries all white, when retaken in a following winter after banding. With this bird on the date banded, there was light blackish on the end of all but the first pair of primary coverts; the inner pair of primaries and all secondaries were all white; there was no black on exposed parts of any greater coverts, and there was light rusty-like on the middle of outer web of the 2nd and 3rd pairs. The end of the middle and lesser coverts was light rusty-like. On its return date of January 13, 1936, there was a little black on the end of 2nd, 3rd, 4th, 5th, and 6th pairs of primary coverts; and thus, the end of the 7th, 8th and 9th pairs had become white. On the return date of January 27, 1938, the 6th pair of primary coverts had no black on the end. On the return date of February 15, 1941, I found that only the 4th pair of primary coverts had black on the end and that was only on the shaft; the black on the end of the 2nd and 3rd pairs was replaced with light rusty. The end of the middle and lesser coverts were rusty, and this color was extended to the other greater coverts, that is, on the outer web. The 8th right primary was all white.

Also from this bird, are a few notes on the moult, which may be of interest. These are: March 7, 1934. Some new feathers partly grown on chin and some new auriculars. March 16, 1936. Much new plumage partly grown on chin, throat, auriculars and both tibiae. March 5, 1938. Moulting on chin, throat, lores, malar region, auriculars and tibiae.

Up to this time, I have banded 916 Snow Buntings, and from these I have 918 repeat records, 91 returns, and 8 recoveries.—OSCAR MCKINLEY BRYENS, R.F.D. No. 1, McMillan, Luce County, Michigan.