further cooperation we may be able to obtain more knowledge of the life-history of this great enemy of our nestling birds, thereby enabling us to adopt feasible methods for its control.

NOTES ON THE PRENUPTIAL MOULT OF THE TREE SPARROW

BY WENDELL P. SMITH

For several years Tree Sparrows (*Spizella m. monticola*) have wintered at Wells River, Vermont, visiting my station frequently from the time of their arrival in December to the time of their departure in April. Until the melting of the snow in March, the species is with rare exceptions a daily visitor, spending much time in the station area; but with the exposure of the ground, new sources of food-supply are doubtless uncovered, rivalling in attractiveness that supplied in the traps. This results in somewhat lessened frequency and much less time spent at the station.

Another difficulty hampering consecutive observation is the ability of some individuals to find their way out through the funnels of the sparrow trap, coupled with an avoidance of other types of traps.

These records cover a period of three years and deal with thirty-one individuals, but owning to the foregoing reasons, and perhaps others, they are fragmentary. In but one individual (No. 127125) has the process of moult been followed from inception to completion, and in that case daily observations were impossible, so there are many gaps in the record. Nevertheless, these records, despite their incompleteness, may have some value.

Dwight in "The Sequence of Plumages and Moults of the Passerine Birds of New York", p. 198, says of the prenuptial plumage changes of the Tree Sparrow: "First nuptial plumage [and adult nuptial plumage] acquired by wear, the buff edgings of back becoming grayish and the chestnut everywhere slightly paler." New feathers regularly grow on the chin in March, but apparently not in other tracts, and their appearance indicates, as in some other species, additions rather than moult, for they are few in number.

On March 5, 1927, in examining No. 127125, a "repeat", I found one active follicle on the chin. This individual was not taken again until March 22d, when a great many functioning

follicles were found, not only on the chin but also on the throat and cicumocular region. It was estimated that perhaps two thirds of the feathers on the chin and upper throat were involved. On April 1st a few more active follicles were noticed on the forehead. No feathers were observed on chin or throat from which the vanes had not emerged from the shaft, although still far from fully developed. By April 17th, the development of most of the new feathers was complete and only six active follicles were counted—all in the circumocular region. Evidently No. 127125 and the other individuals of the wintering group began their northward migration the night of April 17th, as they were not retaken nor were they seen about the station after that date.

Unfortunately, I was unable to secure a full record of the process in any other individual, yet there are some interesting facts disclosed by the partial records. The inception of the process did not take place at the same time in the different individuals of the wintering flock. The first functioning follicles appeared on No. 43559 on February 16, 1927, but No. 181435, taken the same day, showed none, and it was not until March 1st, that the first few were observed. Wide differences between individuals were noticed throughout the period, but in all those individuals of the wintering groups taken just before their disappearance, April 17th, the process was nearly if not wholly completed.

There seem to be seasonal variations in the time of the beginning of the moult. The first evidences were observed on March 1, 1925, on March 15, 1926, and on February 16, 1927. On all these dates individuals were taken in which no indication of moulting was detected. In one instance, only one of four individuals showed evidence of the process, although, of the others, those taken later showed follicular activity.

In all the individuals under observation, the change was quite extensive on the chin and upper throat, less so on lower throat and circumocular region, and slight on the forehead and the auricular region.

There have been accompanying changes in other parts of the plumage, evidently accomplished by wear, particularly the median gray line of the crown, present in the winter plumage which disappears. The evidences of wear are visible somewhat earlier than ecdysis.

One of the mysteries of the season was No. 495901. This individual was banded on April 17th. Moulting appeared

to be at its height and bare areas were visible on chin and throat.

As stated above, the wintering Tree Sparrows evidently left the night of April 17th. During the two days preceding, the groups (for there were two, one consisting of seven individuals, the other early in the winter of four but later reduced to two, each of which when leaving the station for the roost was seen to keep separate) spent most of the day in the trap area, but after the 17th, none of the species was seen until the 21st, when one individual appeared. On April 29th one Tree Sparrow was seen about the station and was finally caught. It proved to be No. 495901. Examination showed moulting to be practically completed. This individual repeated again on May 2nd, for the last time, and no more Tree Sparrows were seen. Was this individual a migrant, and if so had it begun its northward movement after moulting had commenced? If a winter resident, why had the process been so long delayed? We do not venture the opinion that No. 495901 was the sole representative of the species in the vicinity during the period of April 18th to May 2d, but daily search failed to reveal others.

Moulting is believed to be completed before migration begins. The fact that the wintering groups had completed the moult before disappearance, and also the fact that several individuals banded during April and presumed to be birds of passage revealed no evidence of moulting, seem to harmonize with this theory. We cannot find any category for No. 495901.

The most interesting features of bird-banding are the problems which are constantly arising and which challenge time and thought for their solution.

Wells River, Vermont, August 10, 1927.

IS THERE A NORTHERN RACE OF THE ROBIN?

BY M. J. MAGEE

On October 2, 1924, I sent the Biological Survey the following note on Robins:—

"Most of our adult summer Robins leave [northern Michigan] during the latter part of August. Up to the time they leave they do not show any conspicuous white eye-markings. The Robins that come down from the North later are usually in small flocks and the great majority of the adult birds show a