

- PORTMANN, A. 1937. Beobachtungen über die postembryonale Entwicklung des Rosenpelikans. *Revue Suisse de Zool.*, **44**: 363-369.
- 1938. Beiträge zur Kenntnis der postembryonalen Entwicklung der Vögel. I. Vergleichende Untersuchungen über die Ontogenese der Hühner und Sperlingsvögel. *Revue Suisse de Zool.*, **45**: 273-348.
- RAY, M. 1913. Some further notes from the Tahoe region. *Condor*, **15**: 111-115.
- SHELLEY, L. 1935. Notes on the 1934 tree swallow breeding season. *Bird-Banding*, **6**: 33-35.
- 1937. Further tree swallow notes. *Bird-Banding*, **8**: 80-81.
- SIMPSON, G., and A. ROE. 1939. *Quantitative Zoology*. New York: McGraw-Hill. xvii + 414 pp.
- SKUTCH, A. 1949. Do tropical birds rear as many young as they can nourish? *Ibis*, **91**: 430-455.
- STEVENSON, J. 1933. Experiments on the digestion of food by birds. *Wilson Bull.*, **45**: 155-167.
- STONER, D. 1935. Temperature and growth studies on the barn swallow. *Auk*, **52**: 400-407.
- WEYDEMEYER, W. 1934. Tree swallows at home in Montana. *Bird-Lore*, **36**: 100-105.
- 1935. Efficiency of nesting of the tree swallow. *Condor*, **37**: 216-217.
- WINN, H. 1949. Nestling mortality rate of the tree swallow. *Bowdoin Sci. Station Bull.*, **11**: 19-20. (Mimeographed).
- Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts*

GENERAL NOTES

On White-throated Sparrow Plumages. — Nichols' note under this title (*Bird-Banding*, **25**: 60, 1954) leads me to offer my records of two color-banded White-throats (*Zonotrichia albicollis*). One of these in at least its second winter, and the other in at least its third winter, had not yet attained the plain gray breast and unmarked throat patch that I suppose to be typical of fully adult plumage at this season; they had the breast streaked, with a spot in the center, and the throat patch crossed by two dark lines, one running downward from each side of the bill. Both of these birds were spring singers; however, as Odum collected a female in the act of singing on her wintering ground (*Wils. Bulletin*, **61**: 12, 1949), the sex of my birds is still uncertain; a wing measurement of 73 mm. for one of them is also inconclusive.

First bird. WA-O 48-147883 was banded November 11, 1951; its breast was streaked, with central spot, its throat patch bore the two dark lines, all whites were dull or buffy. WA-O spent the winter of 1951-1952 in the neighborhood of my home. On March 18, 1952, it looked patchy, as if molting; on April 1 I recorded its plumage as "pretty bright." Four other White-throats that wintered in unstreaked plumage changed from the dull to the bright phase between March 15 and April 6. WA-O was present through April 22, and on April 6, 9 and 19 I saw it sing.

In the winter of 1952-1953 my only date for WA-O was April 23; I again recorded its plumage as "pretty bright."

In the winter of 1953-1954 WA-O was present from at least December 20 through March 22 in a plumage that included short dark streaks running down from the lower edge of the throat patch, and a distinct central breast spot; I failed to record the appearance of the throat patch itself. I believe I glimpsed this bird once more, on April 8, in "brilliant" (i.e., "high") plumage, but this identification was not beyond error. One unstreaked winterer was gaining "high" plumage on March 27 in this spring.

Second bird. B-AW 21-111612 was banded November 12, 1952; its plumage then was like that in which I first saw WA-O. B-AW wintered. On March 22, 1953, its breast began to grow splotchy and it apparently went into a molt that it completed about April 22 but that left it in merely a cleaner-looking plumage of the dull, streaked type. (In the spring of 1952 a color-banded bird of the streaked type that had wintered went through such a molt between March 20 and April 3, ending with a throat only slightly whiter than before, and with a central breast spot still present, but with a fresher look. This bird did not return in later winters.) B-AW was present through April 29, and I saw it sing on March 24, April 2 and April 22.

In the winter of 1953-1954 I saw B-AW only on April 23 and 29. On the latter date its breast was much streaked, its whites were brighter than those of most mid-winter birds but still only grayish white, and its throat patch bore the two dark lines.

Forbush (*Birds of Massachusetts*, 3: 73, 1929) has this note on White-throat plumage: "Mr. M. J. Magee sends me a record of a banded bird (that he believes was hatched in 1925) that had not attained full adult plumage on May 5, 1927. Some require an extra year, or possibly even more, to assume highest plumage." — Hervey Brackbill, 4608 Springdale Avenue, Baltimore 7, Maryland.

Long-distance Recovery of Barn Owl. — A juvenal Barn Owl (*Tyto alba*), No. 546-06106 that I banded near Kempton, Penna., on June 10, 1953, was "found dead in yard — no visible injury" at Key West, Florida, the following December 10. The distance from Kempton to Key West is about 1,140 miles and, according to the dispersal study of Barn Owls made by Paul A. Stewart (*Auk*, 69: 227-245, 1952), the present record apparently represents the most southerly recovery of a Barn Owl.—Maurice Broun, Kempton, Penna.

Notes on Woodcock Chicks Reared in Captivity.—Four Woodcock (*Philohela minor*) chicks were picked up on a road in the Township of Duane (Franklin County, N. Y.) at 10 a.m. on June 4, 1951, by a local resident who stated that the mother bird had been killed by a car. The brood was turned over to District Game Manager Greenleaf T. Chase at Saranac Lake at 7:30 p.m., but did not accept their first food in captivity until 10 p.m. Thus the chicks, probably in their second day of life, had been without food at least 12 hours.

Chase followed a schedule of seven feedings a day, starting at 7 a.m. and ending about 10 p.m. Pieces of small worms were used at first, but after the second day whole worms were fed.

On June 9 the chicks were transported some 180 miles from Saranac Lake to the senior author's home near Altamont, being without food from 6 p.m. on that date until 2:30 a.m. on June 10. They had been chilled during the trip, but three of them readily accepted worms as soon as offered. The fourth and smallest one finally took a few worms dangled in front of it.

Beginning at 7:30 a.m. on June 10 the chicks were fed each hour until 10:30 p.m., all of them appearing greedy at each feeding. This schedule was maintained with minor variations until the birds were released on June 26.

Each chick was given two worms at a feeding for the next two days, and four per meal on June 14. Thereafter no attempt was made to count the worms consumed. The chicks usually appeared willing to eat more worms than were offered. The worms fed through June 14 were relatively small, averaging perhaps 2½ inches in length and one-eighth inch in diameter. From June 15 on, large "night-crawlers" were included in the diet, these usually being cut into pieces.

After eating several worms, and particularly after swallowing a night-crawler, a considerable bulge was evident on the neck of each chick. This invariably was to the right of the center of the throat and appeared as a lump covered with thin, naked skin. The writhing of the worms within was quite evident. The distension often was apparent for 10 minutes or longer, following a meal. Later, as the down on the neck was replaced by feathers, these bulges became much less noticeable.

A pan of dirt containing worms was made available on June 16 but no attempts at probing were noticed until the following day, the birds then being about 14 days old. During the last few days in captivity they obtained all their food by probing in the dirt-filled pan.

The chicks spent most of the time during the first two weeks in a cardboard carton indoors, occasionally being taken out and placed in a sunny spot in the yard. Thereafter they were kept outdoors in a mesh-wire enclosure on fair days, but were brought inside at night. Upon being placed in the enclosure they would move about busily for a time, picking at an occasional insect or attempting to probe in the dry, hard turf. After a bit they usually settled down singly in the sun with wings partly outstretched and feathers fluffed, or gathered in a group in a shady spot. While wandering about in the pen they frequently exhibited the "bobbing" habit characteristic of many shore-birds.

The development of the primary and secondary feathers first was noted on the fifth day in captivity, at the probable age of 6 days. Down appeared to persist