

## GENERAL NOTES

**A New Problem for Bird-Banders.**—The bird-bander is quite naturally interested in the value of his labors. The immediate results of his work are obvious; among other things he is contributing to our knowledge of the variations which exist within a species, the length of life of individuals, and of the conditions of mating. From the standpoint of general biology the work of the bird-bander is important since it adds a vast amount of detailed information on one of the major and most specialized of the vertebrate classes. In addition, bird-banding data can add to the material useful in the study of the history of races of animals as a whole. The conditions which bring about change or differentiation of a species are of utmost interest to the student of scientific natural history. It is logical to assume that if differentiation is to occur, deviates must first arise, they must mate with similar deviates, and they must transmit the deviation to their descendants. We have very little information concerning one of these steps. *Does mating occur with similar deviates?* that is, do like tend to mate with like? is there a tendency toward selective assortment at the time of mating? An impartial analysis of this factor can only be made by an exact mathematical analysis of a large body of observations.

The writer is at present engaged in this problem and is confronted with the difficulty of obtaining a large number of suitable measurements on birds. The cooperation of bird-banders would make possible the early completion of this research.

The data required must consist of uniform measurements of mated pairs. It is of the utmost importance that the observer be certain that the two birds involved are really mates. If possible, weight measurements are of value. The use of scale No. 651 made by the Central Scientific Company, 79 Amherst Street, Cambridge, Massachusetts, has been found particularly valuable. The information of cooperating members should include the date of measurement, locality, sex, and a list of the various characters studied.—C. M. POMERAT, Department of Biology, Clark University, Worcester, Massachusetts.

**Starling-Banding in Central Ohio during the Winter of 1932-33.**—

A total of 15,402 Starlings have been banded in the Columbus region from 1927 to April 1, 1933, by the cooperative efforts of various members of the Wheaton Club. More than six thousand (6215) of these were banded during the winter of 1932-33 as follows: Dec., 1584; Jan., 702; Feb., 1895; and Mar., 2034. George Wolfram and C. Conklin banded 1460 of these during six bandings in cupolas of barns near Canal Winchester. The remainder, or 4755, were banded by the writer, assisted by two students, William Ireland and Walter Fassig, during eighteen bandings in or near Columbus. Most of these birds were captured at night in five towers at the Ohio State Hospital.

A tremendous amount of data has been obtained on migration of the Starling, general habits, winter behavior, food habits, and general physiology. Conclusions reached as a result of the early banding work of 1927 to 1930, (as compiled by Edward S. Thomas), have been further verified. Various phases of the work will be reported upon as completed.

During twelve bandings throughout the winter at the State Hospital, 5402 birds were captured, 4229 new bands were placed, 808 birds repeated (some 7 or 8 times), and 206 returns from previous bandings were obtained. The percentage of repeats ranged from 5 to 38 (average 14.9) and the percentage of returns ranged from 1.2 to 8.9 (average 3.8).

To aid in the study of the dissemination of the Starling from Columbus, it seemed desirable to band a large number of birds captured in the same evening during the height of the spring migration. Accordingly, on March 3, 1933, the writer obtained three assistants and, banding in two previously undisturbed towers at the State Hospital, succeeded in capturing 1213 birds. This would appear to be some sort of a record catch for one banding attempt, at least for Starling-banding! Needless to say, more than the usual amount of sleep was lost before the night's work was completed.

The following table summarizes the 1932-33 banding work at the State Hospital and shows the fluctuations in numbers of Starlings roosting there, as determined by careful estimates of the birds coming to the roosts and later partially checked by actual count of the birds found in the towers in which banding was done.

STARLING-BANDING, WINTER OF 1932-33, AT THE OHIO STATE HOSPITAL

Date	Birds Present	Birds Handled	Birds Banded	No. of Repeats	Per-cent of Repeats	No. of Returns	Per-cent of Returns	Towers Banded in
Dec. 3	1400	597	544	0	0.0	53	8.9	1, 3
Dec. 12	1200	453	370	46	10.2	37	8.2	1, 3
Dec. 26	1100	261	207	39	14.2	15	5.7	1, 3
Dec. 31	1000	401	368	22	5.5	11	2.7	2
Jan. 16	1000	319	235	70	21.9	14	4.4	1, 2, 3
Feb. 2	1000	631	530	73	11.5	28	4.4	1, 2, 3
Feb. 13	1000	411	302	98	23.8	11	2.8	1, 2, 2
Feb. 21	1200	256	161	86	33.6	9	3.5	1, 2, 3
Mar. 3	2400	1213	1069	70	5.8	14	1.2	4, 5
Mar. 6	1800	404	243	153	37.9	8	2.0	4, 5
Mar. 13	1700	454	300	148	32.6	6	1.3	2, 4, 5
Mar. 18	700	3	0	3	100.0	0	0.0	1, 2, 3, 4, 5
Totals		5402	4229	808	14.9	206	3.8	

The Starling is now the most abundant wintering bird in Ohio and one of the most numerous breeding species. Its rapid spread through the Mississippi Valley region has been most amazing. Because of its numbers, aggressiveness, motility, and omnivorous food-habits, the Starling deserves special attention in economic studies. Its status and possibilities for good and for evil have not yet been thoroughly evaluated in the United States. As yet we know very little compared to what may be learned by well-planned banding-studies of this species. Only 12,258 were banded in the whole country during the fiscal year 1933. This number could easily be multiplied several times. Starling-banding becomes increasingly fascinating as the study progresses and gives one the unusual opportunity of being able to follow the travels of an introduced migratory species. The value of the work would be greatly increased if a number of Starling-banders could operate in localities near a line connecting Memphis, Louisville, Cleveland, Buffalo, Montreal, and Quebec, as a large number of returns have come from those localities. The writer would be pleased to hear from other banders interested in this species.—LAWRENCE E. HICKS, Department of Botany, Ohio State University, Columbus, Ohio.

**The Homing Instinct in the Rough-winged Swallow.**—An opportunity to test the homing instinct of a nesting adult male Rough-winged Swallow (*Stelgidopteryx ruficollis serripennis*) presented itself to the writer during the past breeding season. On April 29, 1933, a pair of Rough-wings was observed inspecting a three-inch drain hole, about four feet above the ground level, in the concrete wall of a bridge spanning Munckinipattus Creek, Glenolden, Pennsylvania. On May 19th one of the pair was seen to