

trouble in catching the female as I had experienced the year before. The male also showed the same fearlessness in entering the trap as he had shown the previous year. The young were banded after the male bird had been captured and the number on his band read. The nest in 1930 was fifty yards away from the nest used in 1929 and was built about eight feet up in an apple tree.

In 1931 the nest of this Redstart was found again. This year it was built about forty yards from the 1929 nest and about twenty-five yards from the 1930 nest. The male was trapped in a water trap on June 25th. The female and the young were not banded.

A Yellow Warbler (*Dendroica a. æstiva*), C7368, an adult female, was caught and banded together with her four young on June 28, 1929. The male bird was not caught. The nest in 1929 was built in a rambler rose trellis, against the side of a house, about three feet from the ground.

The following year, 1930, C7368 and her mate were found nesting about a quarter of a mile west of their nesting-site of 1929. This nest was situated three feet from the ground in some dense garden shrubbery. On July 1st the female was captured by placing the young under a drop-trap. The male was also captured but owing to an accident he escaped unbanded. Several of the young were banded.

In 1931 the female was again caught in a trap over a birdbath. The mate was not observed at that time. The young escaped unbanded. The pair nested about ten yards south of last year's nest in a climbing rose bush.

This summer I observed several additional banded Yellow Warblers nesting about Wolfville, but was, unfortunately, unable to secure any other information about them.—RONALD W. SMITH, Wolfville, Nova Scotia.

The Roseate Tern, A New Recorded Species from Newfoundland.—In *Bird-Banding* for January, 1932, pp. 33 and 34, Mrs. Ethel M. Crowell reported the recovery of a Roseate Tern (*Sterna dougalli dougalli*), banded by her on Greater Weepecket Island, Massachusetts, as a nestling, July 4, 1929, and recovered (shot) at Tamaline, Newfoundland, July 22, 1931.

The office of Commissioner Harkin of the Department of National Parks of Canada has advised the Bureau of Biological Survey that this Roseate Tern is the first one of this race to be recorded from the island.—C. L. WHITTLE.

RECENT LITERATURE

Handbook of Birds of Eastern North America. By Frank M. Chapman. Published by D. Appleton and Company, New York and London. The 1932 edition of Dr. Chapman's Handbook, long recognized as the standard book on Eastern ornithology, has been completely revised and rewritten, and bears but slight superficial resemblance to the original volume as published in 1895. The pages are the same size, the embossed cover-design is the same, many of the pictures continue to serve the purpose for which they were planned, and in certain instances where the first edition quoted biographies from the literature, these excerpts are again used, as are the life-histories contributed to the book by other authors. But in most other details, the volume before us is new.

A statistical comparison between the first and last editions is of

interest. The 1895 volume contained xiv plus 435 pages, and mentioned about 550 species and subspecies. There were 19 full page plates, of which only the frontispiece was colored. The first *revised* edition appeared in 1912 and contained much new matter, including several colored plates from paintings by Louis Agassiz Fuertes. The completely revised 1932 edition includes xxxv plus 617 pages, and describes about 675 species and races of birds, an increase of nearly 125. There are 29 plates, 8 of them in color.

Much of the growth of the volume is in the introductory chapters, which have increased from 39 pages in 1895 to 124 in 1932. They cover clearly and completely such phases of bird-study as "Why we should study Birds," "A Word to the Beginner" (this "word" takes 26 pages, under the sub-headings "Finding and Naming Birds," "Equipment of the Field Student," "Collecting Birds, Their Nests and Eggs," and lists of ornithological societies and magazines), and "The Study of Birds in Nature," including distribution, migration, voice, nesting, plumage, food, and general activities. The preface also includes a brief "Historical Review" of much interest.

Ornithology has made great strides in the nearly forty years since the first "Handbook" appeared. Branches of bird-study like photography and bird-banding were hardly even dreamed of in 1895. Dr. Chapman devotes several pages to bird-banding in this introduction, and makes frequent references elsewhere to the results of banding activities. His realization of the importance of bird-banding is expressed in his statements that "what collecting was to the ornithologist of the preceding generation, bird-banding is to the ornithologist of today," "bird-banding has become the most important field activity of American ornithologists," and "there is no activity in which the student with limited time and opportunity can engage with greater profit to himself and his science. His field may be no wider than his window-sill and still yield data of value." And in his Historical Review of ornithology Dr. Chapman writes: "It is, indeed, to the bird-banders that we must give first place in any review of the activities of ornithologists during the past two decades—they have developed methods of study of the living birds to which we owe the greater part of our increased knowledge concerning the movements of birds. The post-breeding, northward wanderings of Herons, the surprising differences in direction of the routes pursued by water-fowl banded at the same station, the west to east and return migrations of Evening Grosbeaks, the transoceanic journeys of the Common [Arctic?] Tern, the return of winter visitants to the same locality, the apparent failure of migrants to return to the place of their birth, these, and many other observations, have proved theory or revealed before unsuspected facts concerning the travels of birds. Nor does the value of bird-banding end here; it is an aid to every study of the living bird in which it is important to identify the individual."

The body of the book contains, in addition to many carefully prepared keys for the identification of various groups of birds, brief but clear descriptions of all the species found in eastern North America. The paragraphs on distribution are based on the new A. O. U. Check-List, while the sections regarding the birds' status in different sections have been entirely rewritten and brought up to date. This is also true of the brief but very informative paragraphs on habits. To many the greatest change will be found in the rearrangement of the classification and in the use of scientific and "common" names in accordance with the new fourth edition of the A. O. U. Check-List. To find the hawks separated from the owls, with which they have been associated as "Birds of Prey"

so long, by one hundred pages descriptive of the gallinaceous birds, the cranes, pigeons, parrots, and cuckoos, as well as a very large group which includes under one Order all the shore-birds, gulls, and auks, is a shock to most of us, as it is also to find the last place in the Check-List occupied, not as in the past by the familiar Bluebird, but by the Snow Bunting. Our Robin must now be subspecifically known as the Eastern Robin, and its scientific name, as Dr. Chapman tells us in his introduction, has passed through the successive changes of *Turdus migratorius*, *Merula migratoria*, and *Planesticus migratorius*, and is now back where it started, though amplified into a trinomial *Turdus migratorius migratorius* Linnaeus.

The revised Handbook is almost indispensable to all bird-students in the region which it treats, supplying a tremendous amount of valuable and up-to-date information in clear though brief form. Dr. Chapman has written many other books and pamphlets on a wide range of ornithological subjects, but it is his "Handbook" to which many thousands of students refer when they answer questions with "Look it up in Chapman's."—J. B. M.

The Birds of Oklahoma. By Margaret Morse Nice. University of Oklahoma Press, 1931. This excellent list is a revised and augmented edition of an earlier one prepared by Mrs. Nice and her husband, Leonard B. Nice. The introduction includes sections on "Past and Present in Oklahoma Bird Life," "Itineraries and Reports of Field Workers," and an account of the physical features of the State, which form a background for the list itself. In the systematic list, which is arranged in the order of the new Check-List, following the name of each bird is a brief statement of its status, transient, resident, accidental, etc., with records in the case of rare visitors, followed by notes on migration, nesting, and food, and paragraphs on the habits as observed in Oklahoma. The volume contains in concise form a great deal of information about the birds of Oklahoma, and should be of much value to all bird-students in that region and elsewhere. Besides several maps, it is illustrated with nine half-tones, from photographs, mostly of nests and eggs.—J. B. M.

Check-List of North American Birds. Prepared by a Committee of the American Ornithologists' Union. Fourth edition, 1931.—The "Check-List," as it is always familiarly called, is an essential part of the library of every real bird-student. It is the authority to which all must refer for the accepted classification and nomenclature of our birds, and for the most complete information regarding their distribution.

The science of ornithology has traveled far since 1910, when the third Check-List appeared. Changes in nomenclature and in classification were proposed with such frequency, and the science was in such a state of flux, that the volume was soon out of date, and yet it was not practicable to displace it before systematic ornithology became more stable. Not only were new races being described, but intensive studies of the early literature altered many accepted names on the basis of priority. Anatomical research revealed relationships hitherto unsuspected, but today the science is so far advanced and so well founded that no more changes of major importance in the sequence of families and genera are to be anticipated.

When a book is revised, a comparison of different editions is always interesting. The present Check-List contains 1420 species and subspecies as against 1200 in the third edition, and 951 in the first edition. During

the interval since 1895, when the first edition appeared, there has been a gain of only 43 new species, but of 426 new subspecies. In the case of the Song Sparrow, for example, there are now listed no less than 26 geographical races, while the Fox Sparrow boasts of 16 subspecies, the Screech Owl of 15, Bewick's Wren of 13, and there may be other even more variable species which the reviewer has overlooked.

Undoubtedly the new nomenclature will cause confusion to many of us for some time to come. Many of the scientific names, generic and specific, have been changed, and even the so-called "common" names have in many cases suffered a "sea change" and are no longer familiar. Who in New England, for instance, ever heard of the "Prairie" Marsh Wren as one of our summer residents, except Mr. Bangs, who gave it its scientific name in 1902? On the other hand, it is a relief to some of us to find that distinguishing names like *American Merganser* and *American Crow* have reappeared, that the rare "Common" Cormorant is now the *European Cormorant*, and that our familiar New England Robin can now be known definitely as the *Eastern Robin*, in distinction from the Southern, Northwestern, and Western Robins, and from the only real Robin, the "Redbreast" of Old England.

Another important change is in the omission of the "A. O. U. number," which is now given in brackets, following the name of the bird, in the case of birds which were listed in earlier editions. This was necessitated by the very radical changes in the nomenclatural sequence. A key to the old Check-List numbers is given, as well as a hypothetical list, a summary of changes, additions, and eliminations, and a list of fossil birds. This latter list, which is entirely the work of Dr. Alexander Wetmore, is another indicator of the recent great advances in ornithological science, for whereas the first edition listed 46 fossil forms, the fourth edition, including recent species from the Pleistocene, contains 305 names, an increase of about 560 per cent.—J. B. M.

Der Vogelzug, Vol. 3, No. 1, January 1932. This number opens with an account of the effect of a cold spell in September, 1931, on the migration of swallows in central Europe. It may be recalled that many thousands of swallows were found in a numb or partly numb condition near Vienna and elsewhere and were gathered and cared for by local conservation societies and then shipped south by airplane to Italy to save them from imminent death from cold and hunger. Csörgey writes of the situation in Hungary; Heller in Austria; and Schifferli in Switzerland. The main catastrophe was near Vienna, where a total of eighty-nine thousand swallows were gathered and shipped south. Heller states, as an example of the severity of conditions, that eighty swallows flew into an open window of an occupied sitting room, there to seek shelter from cold and wet. The first airplane shipment revealed a high mortality rate, but in subsequent consignments this was reduced to as low as five per cent.

Lorenz contributes another account of the swallow catastrophe and presents some graphic descriptions of the severity of the weather and food conditions the birds had to face. Among other points he comments on one group of birds so nearly dead that it was almost impossible to arouse them from a sleeplike state, but that finally recovered.

The wide publicity that the swallows received in Europe as a result of the disaster is reflected further in this number by the presence of three other papers dealing with these birds—one by Drost and Rüppell on the migration of German-breeding swallows in other parts of Europe; one by Boley on observations on banded swallows in Dillich and vicinity; and one by Drost and Desselberger on cross migrations of swallows. In

the first-mentioned paper Drost and Rüppell state that European Barn Swallows (*Hirundo rustica rustica*) fly south and southwest from Germany to southern France, to Italy, and to Austria and Yugoslavia, and occasionally east or southeast to Poland. *Delichon urbica*, the Martin, and *Riparia*, the Bank Swallow, do not seem to fly as much to the southwest (to southern France or to Italy), although data are less numerous for these two than for *Hirundo*. In the second paper Boley records a number of interesting facts about *Hirundo rustica rustica*, especially with regard to return records of birds banded as nestlings. Of ninety-four that "repeated" in the same year in which they were banded 67 per cent were retaken within two and a half months in exactly the same place, twenty-eight per cent were found within three hundred meters of their birthplace, three birds were found dead, and one was found two kilometers away, indicating that until they migrate south the young birds do not wander about extensively. Boley also found some evidence of family groups among migrating Swallows. Drost and Desselberger tabulate return records of Swallows (*Hirundo rustica rustica*) banded as young birds and recovered before they left on their autumn migration. Their data indicate, contrary to those amassed by Boley, that young Swallows may wander as such as one hundred kilometers before starting their true migration.

Schüz raises the question as to the time required for White Storks (*Ciconia ciconia*) to reach breeding maturity, and presents some somewhat inconclusive data to the effect that the birds breed in their third year and may possibly do so in their second year.

Schüz also contributes another installment of his tabulation of return records of birds banded in stations outside of Germany. (The previous installment appeared in Vol. 2, No. 3, of this journal, 1931, pp. 127-130.)

Among the shorter articles and notes are some observations of White Storks (*Ciconia ciconia*) on migration in northern Africa and on the Oman coast of Arabia, on German-breeding Barn Swallows wintering in the Gold Coast, etc.—H. F.

Bissonnette's Experiments on the Modification of the Sexual Cycle in Starlings. A series of five papers¹ give the results of these important investigations in which Rowan's experiments with increased and decreased light on Juncos and Crows were repeated on Starlings at Hartford, Connecticut. The first three papers recount the normal course of events, describing how the testis in wild birds increases from its minimum in November to a maximum 1504 times as great in late April, and then decreases again reaching the winter condition in September. The increase is slow in January and February and very rapid from March 19th to April 1st, the maximum being reached April 19th-23d. There was

¹ Bissonnette, T. H. 1930a Studies on the sexual cycle in birds. I. Sexual maturity, its modification and possible control in the European starling (*Sturnus vulgaris*): a general statement. *Am. Jour. Anat.*, Vol. 45, pp. 289-305.

— and M. H. Charnick 1930 II. The normal progressive changes in the testis from November to May in the European starling (*Sturnus vulgaris*), an introduced, non-migratory bird. *Am. Jour. Anat.*, Vol. 45, pp. 307-343.

— 1930 b III. The normal regressive changes in the testis of the European starling (*Sturnus vulgaris*) from May to November. *Am. Jour. Anat.*, Vol. 46, pp. 477-497.

— 1931 a IV. Experimental modification of the sexual cycle in males of the European starling (*Sturnus vulgaris*) by changes in the daily period of illumination and of muscular work. *Jour. Exp. Zool.* Vol. 58, pp. 281-314.

— 1931 b V. Effects of light of different intensities upon the testis activity of the European starling (*Sturnus vulgaris*). *Phys. Zool.* Vol. 4, pp. 542-574.

no parallelism with temperature nor barometric changes, but the "lengthening daily sunlight period appears to be the environmental variable most nearly correlated with this change" (II, p. 327).

"No theory is yet suggested for the cause of onset of regressive stages before maximum daily daylight periods are reached" (III, p. 489). The rapid regression in the testes in early summer "may be the result of lessened effective day length per bird resulting from the reported habit of some males of helping incubation by sitting on the nests in dark places during part of each day" (III, p. 488). "No evidence has been found . . . that males have any second or third period of sexual activity, as shown by renewed spermatogenic activity during the summer" (III, p. 489), yet second and occasionally even third broods are reported.

In the fourth paper the author's findings agree with Rowan's so far as the effect of light is concerned, but differ in regard to exercise. "Increased daily light periods caused increase in spermatogenic activity, reaching complete sperm production in between five and six weeks, even in December, January, and February, when both 'inside' and 'outside controls' remained inactive or nearly so."

"Increased 'work' did not cause increase in spermatogenic activity, but appeared to cause increased pigmentation between the tubules of the testis."

"Reduction in daily light periods . . . by about two hours per day, caused regression of testis activity and decrease of testis size in all cases."

The author concludes "that it is relative light ration as compared with previous rations and not absolute light ration at any time that determines the reaction of the germinal elements of the testis to treatment" (IV, pp. 309-310).

In the fifth paper experiments with different intensities of light showed that the rate of acceleration of spermatogenic activity increased with intensity of light.

W. Schneider² states that in Germany the Starling raises only one brood, and that the male incubates during the mid-day hours.

Bissonnette stresses the fact that this bird is non-migratory, but that is not the case in the Middle West, and also in other portions of its range in this country. Perhaps it might be considered a bird in which the migratory instinct is latent, like some other species where some of the breeding population migrate, while others are resident: for example, the Buzzard (*Buteo buteo*), European Blackbird and Woodcock, and Song Sparrows in central Ohio. In the case of the first two species members of the same brood have differed in status, one migrating, another not.

The work is convincing because of the large number of specimens examined, the great detail in which the histological changes are studied, and finally the author's wide knowledge of related literature, discussed at length in paper V. It would be of interest to know the weights of the birds at the different seasons of the year. It is evident that ornithologists must bestir themselves to clear up some problems in the life-history of this bird, particularly as to the number of broods raised in the vicinity of Hartford at the present time. Finally, why could not like experiments be made on the English Sparrow, which is believed to be thoroughly non-migratory?—M. M. N.

²Mitt. Vereins sächsischer Ornithologen, II, 1927, pp. 72-80.