

ORNITHOLOGICAL LITERATURE ¹

THE IVORY-BILLED WOODPECKER. By James T. Tanner. National Audubon Society Research Report No. 1: xii + 111 pp., colored frontispiece and 20 pls., 22 figs. October, 1942. Paper covers. \$2.50.

We welcome the inauguration of a series of research monographs by the National Audubon Society. That very active and progressive society rightly "considers facts obtainable through scientific research the essential basis for wise policies governing the conservation of wildlife." Ornithologists had strikingly failed to secure the necessary information on this magnificent species, and so the Society itself initiated an intensive study. The extent of the previous neglect of the Ivory-bill is almost incredible. We note that: the latest and most complete study of the Ivory-bill's anatomy was published by Audubon in 1839; the only published record of the weight of an Ivory-bill was by Catesby (1731); the food contents of but three stomachs were ever saved; and neither the incubation nor nestling period had ever been recorded.

As John H. Baker says, the choice of James Tanner was a happy one. This report demonstrates clearly his energy, intelligence, and scientific attitude of mind. From 1937 to 1939 he spent 21 months in the field, traveling more than 45,000 miles and visiting 45 widely separated localities ranging from South Carolina and Florida to Louisiana and Texas. He makes little mention of the physical hardships involved, and few of his readers will realize the labor and risks of such a campaign in southern swamp forests. His thorough coverage of the published material while preparing his report is demonstrated in the accurate bibliography of 153 titles.

The report includes sections describing the bird itself, its habitat requirements and geographical distribution (with 18 maps), the history of its disappearance from most of the original range, its present numbers, its breeding habits, and its conservation. One important section is that devoted to the Ivory-bill's food and feeding habits. Naturally, since it was out of the question to collect specimens, this account suffers from the scarcity of material, but Tanner has by great ingenuity and industry done much to overcome the handicap. For example, he has even attempted (and apparently with considerable success) to analyze forests from a woodpecker's point of view, taking into account the botanical composition of the forest, the proportion of insect-harboring wood, and the insect populations. We should perhaps mention that the locality record of Moseley's Ivory-bill (which Tanner quotes from Cottam and Knappen's food habits paper) is just another example of the errors which appear with such disturbing frequency in the records of the Fish and Wildlife Service. "Bowling Green" is actually just the collector's home town in Ohio and not the Louisiana home of that Ivory-bill (which Moseley took 18 miles north of Holly Ridge, a station on the Vicksburg-Shreveport railroad).

We find little about the Report to criticize. Tanner seems to have examined but 91 of the 200 to 250 specimens which he estimates to be in the museums of this country, and yet in his discussion of plumages and molts, for example, he indicates that he was hampered by a shortage of material. The comparison of the Ivory-bill's "nesting success" (six nests) with Mrs. Nice's results on 211 Song Sparrow nests seems far-fetched. Throughout the paper Tanner uses the adjective "juvinal" indiscriminately, both in the sense that Dwight proposed when he introduced the word and as a synonym of juvenile. And finally, the price of \$2.50 on a 123-page, paper-covered, bulletin is hard to understand.

Tanner concludes that "the collecting and shooting of Ivory-bills has not been a major cause of the species' decrease, has not been as important as the destruction of the Ivory-bill's habitat by logging. But now that there are so few Ivory-bills living, the shooting of a few birds might become the final cause for their extinction."

¹ For additional reviews see pages 22 and 50.

Tanner has done a fine job, and the Audubon Society has published his report handsomely. However, the Ivory-bill is in a desperate situation. Will this report be allowed to serve as the Ivory-bill's obituary, or will conservationists follow the matter through so that state and federal agencies may act quickly enough to save the few small tracts of big timber where alone the Ivory-bill can survive?—J. VAN TYNE.

THE ROSEATE SPOONBILL. By Robert Porter Allen. National Audubon Society Research Report No. 2: xviii + 142 pp., colored frontispiece and 20 pls., 44 figs. December, 1942. Paper covers. \$2.50.

This monograph, along with that of James T. Tanner on "The Ivory-billed Woodpecker," stems from the recently established research program of the National Audubon Society. It is definitely a scientific report, though it starts with the assumption that the Roseate Spoonbill should be—yes, must be—preserved as an element in the fauna of the United States. Since this magnificent and bizarre bird is shown to conflict to a negligible degree with man's economic welfare, this pre-conception will probably not be challenged from any responsible source. Nor will many be inclined to take issue with a second assumption, that the preserve and warden system of the Audubon Society has been an effective factor in the survival of the precariously small colonies in Florida and in the growth of the population in Texas. The author makes clear his belief, however, that an overflow from larger colonies in the Antilles and in Mexico has been mainly responsible for the maintenance of the species in the Southeast and for its increase in Texas. Just how the breeding populations to the southward have affected and will continue to affect the conservation of the species in the southern United States remains to be determined by further research. In the meantime rigid care and continued vigil are still required to prevent the extirpation of the species in the United States.

The vivid enthusiasm of a bird lover is not concealed between the printed lines of description and of cautious and critical interpretation. One wonders whether Allen's unquenchable delight over the sight of spoonbills exceeded his joy in scientific discovery. Whatever its basis, his enthusiasm overcame the discomforts and loneliness of living for months with these birds and their ecological associates.

This intimate contact with the Roseate Spoonbill has enabled the author to locate and to census all extant colonies in the United States, and hence to compare present-day habitats and populations with former homes and numbers, as reconstructed by a prolonged historical study. He has determined the facts of migration, further emphasizing the dependence of the Florida and Texas colonies on the stocks of lands to the south. He has worked out the prenuptial and the mating behavior in detail. He has determined also the six plumages, in a four-year cycle of development. Food has been treated at length, from the viewpoint of food-chains and general ecological relations.

In the matter of food one might criticize the author for drawing lengthy and involved conclusions from inadequate data, for he gives stomach analyses of only five birds. We realize, of course, that the need for protection was too strongly felt to warrant a large kill for food samples, and that the author's long observations of the feeding birds and his analyses of organisms in the feeding waters furnished much data on the spoonbill's probable diet. Again one might criticize a rather sweeping conclusion as to harm done by ectoparasites, when only four birds were autopsied. The discussion on the fishes that live in the feeding waters of the Roseate Spoonbill is marred by numerous slips and mistakes.

The treatment of "limiting factors" is a fine piece of applied ecology, and is the product of much study and honest thought. The conclusion is reached that man, long the most serious enemy of the spoonbill, "is now of negligible importance as a decimating factor in the U. S. portion of the range." Several "welfare" and several "decimating" factors are analyzed. No outstanding critical factor was discovered.—CARL L. HUBBS.

THE REPRODUCTIVE CYCLES OF THE BRITISH AND CONTINENTAL RACES OF THE STARLING. By W. S. Bullough. Phil. Trans. Roy. Soc. London, Ser. B, Biol. Sci., Vol. 231, No. 580:165-246. August 31, 1942.

This is a thorough, careful study based on the examination of 786 specimens of *Sturnus vulgaris* from Yorkshire, the majority taken from communal roosts in fall and winter. Detailed accounts, illustrated with sketches and microphotographs, are given of the reproductive systems of both sexes at different ages.

"It is shown that there are differences between the sedentary British starling and the migratory Continental bird in the seasonal variations of these systems. The gonads of the first-year British and Continental starlings begin to grow in February, but the rate of growth in the British bird is greater than that in the Continental. The gonads of the adult British starlings do not regress so far in summer as those of the Continental birds, and they start to grow precociously in early autumn. The gonads of the adult Continental starlings do not begin to grow until January or February, the time when the gonad growth of the British birds is accelerated. In February and March the gonads of the adult British birds grow much more rapidly than those of the Continental birds" (p. 165).

Continental and British birds were distinguished partly by behavior, partly by banding, and partly by the state of the neck feathers, (since British birds wear off the tips by hole-exploration). Sex was told by eye-color—brownish in males, yellowish in females; by the more pointed throat and breast feathers of the males; and (when the beak is yellow) by the grey base of the mandibles in the male. With adult British Starlings the beak becomes yellow in autumn, with Continental birds not until January or February. Male Starlings were found not to breed until their second year, females in their first year.

The British Starling is markedly sedentary, aside from some wandering in summer by a proportion of the juveniles. In the fall, adult females "all appeared to be paired . . . and the surplus of unpaired males also occupied holes and staked out territories" (p. 227). Some British Starlings roost in their nesting holes throughout the year, while others frequent the communal roosts from June through December. British Starlings go to roost in holes at about the time in the afternoon that Continental Starlings leave for their roosts 15 miles distant; thus British Starlings get less light and less exercise than the Continental birds, yet their gonads develop much more precociously. The author says: "It is known that extra light in winter is capable of stimulating the gonads of starlings to precocious growth (see review by Bissonnette 1936), and it is therefore probable that, in late winter and early spring, the increase in the length of day helps to induce the growth of the gonads in both races of starlings. The variation of the external environment, however, merely helps as a superficial control to render more precise the timing of an animal's internal rhythm, a conclusion which, supported by the evidence obtained from a study of the reproductive cycle of the minnow (*Phoxinus laevis* L.), was put forward by Bullough (1939, 1941)" (p. 236).

The suggestion is made that the gonads of British Starlings seldom regress enough to allow the attachment to the nesting site to be broken. It is otherwise with the Continental birds, who "are released for the southward migration. In late winter and spring, when the gonads grow once more, the birds are induced to return to their nesting areas. Applied to birds in general, this theory, which is certainly oversimplified, means that the basis of the autumn southward migration is negative (the absence of a stimulus), and that of the spring northward migration is positive (the renewal of the stimulus)" (p. 238).

On the basis of the physiological differences between these two populations of Starlings, the author divides them into subspecies, naming the British bird *Sturnus vulgaris britannicus*. He suggests that the behavior of Starlings in this country gives evidence that both races are present. A notable paper, well planned and well executed.—M. M. Nice.

THE DUCKS, GEESE AND SWANS OF NORTH AMERICA. By Francis H. Kortright; illustrated by T. M. Shortt. American Wildlife Institute, Investment Bldg., Wash., D. C. 1942: 6 x 8¾ in., viii + 476 pp., many text figs., 36 color pls. \$4.50 (de luxe edition \$10.00).

The author of this fine manual modestly disclaims being an ornithologist, and indeed the name of Francis Kortright is probably unfamiliar to many in this field, but if he was not so recognized before, we certainly claim him as an ornithologist now. In a field noted for its profusion of handsome illustrated books, Kortright and Terence M. Shortt (also a comparative newcomer) have, at their first attempt, produced a volume which for combined utility and beauty will stand in the first rank.

There are many new features. The section on sex- and age-determination includes information that will be new to almost any ornithologist. Another section gives the weight, length, and wing-spread (in avoirdupois and inches) of both sexes in each species. These were carefully compiled from a large amount of data including that in many of the large museums. In the case of the male Mallard, the weights given are based on 1,577 individuals! The excellent exposition of the "very simple and extremely important" matter of scientific nomenclature, and the explanation of the pronunciation and meaning of the scientific name of each species, will do much to win converts to ornithology from the ranks of those duck hunters who have supposed that such scientific matters would be too technical to master. The accounts of waterfowl molts and plumages are far more complete and understandable than any hitherto published. There are small maps to show the summer and winter distribution of each native species, but the scale is so small that some of them are very hard to read.

There is an extensive and well-chosen bibliography. However, some of the titles are inaccurate, and many rather incomplete, and therefore difficult to use.

The book is magnificently illustrated. A series of 36 color plates depicts, with two to five plumages each, all North American ducks, geese, and swans, and even some of the hybrids between species. Four plates are devoted to the downy young—a very attractive and intensely interesting series. Unfortunately an occasional plate in the volumes we have seen is somewhat marred by poor printing. A maximum sized image has been secured by filling the page completely with the color plate, but the slightest error in trimming results in clipping the end of a bill or tail here and there. The text is interspersed with drawings which show the characteristics of the various species as they appear when swimming, flying, standing, and sometimes in other poses. These will be very helpful except in the case of the figures of flying Mute and Whistling Swans, which have been accidentally transposed.

We can recommend this book in the highest terms to ornithologists and sportsmen alike.—J. Van Tyne.

WILSON ORNITHOLOGICAL CLUB LIBRARY

The following gifts have been received recently:

- William H. Burt: 5 reprints
- Lynds Jones: 19 magazines
- Leon Kelso: 1 pamphlet
- Karl F. Lagler: 2 reprints, 3 reports
- Harrison F. Lewis: "The Natural History of the
Double-crested Cormorant"
- Dayton Stoner: 5 reprints
- Lawrence H. Walkinshaw: 10 reprints

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