

ornithology century by century down to the time of Linnaeus, Pennant and Latham.

Prior to the tenth century we have only scattered mention of birds in old Saxon verses, where the Gannet, Kite, Goshawk and Raven appear. For several centuries however the birds most frequently mentioned in literature were the domestic fowl and other birds used for food, and rapacious species employed in falconry, which practice is said to have dated back to 1700 B. C. in Persia and even earlier in China. Pheasant hunting is mentioned in the Welsh laws of the tenth century, and in the fifteenth century laws were passed to check the ravages of Rooks. The Venetian ambassador in 1496 was astonished at the abundance of bird life in England and reports that one or two thousand tame swans could be seen at once on the Thames. Swan laws and the marking of the bills of swans to denote ownership come in for much attention a little later.

In the sixteenth century there is an interesting housekeeping record of birds brought to Hunstanton Hall, Norfolk and several early price lists of birds, show at what a ridiculously low cost they could be purchased. A swan in the fourteenth century brought four shillings, a snipe a penny, while four larks could be had for the same price, and a teal for two pence.

Details of the great feast, when Neville the Chancellor of England was made Archbishop of York indicate what a place birds played in the menu of the fifteenth century. The program called for 4,000 Mallard and Teal, 2,000 Geese, 400 Swan, 400 Plover, 104 Peacocks, etc., sixteen species of birds being enumerated.

In the sixteenth and seventeenth centuries we find the first writers who could be considered "ornithologists," while the first list of English birds is that of Christopher Merrett, 1666, a poor effort at best, which was followed in 1676 by the famous 'Ornithologia' of Willughby and Ray.

Space will not permit a more detailed review of Mr. Gurney's book but to those who are interested in early bird lore and in tracing the origin of domestic fowl and the former status in England of many birds now rare, will find a perusal of his pages intensely interesting. A good index serves as a clue to the voluminous and diverse information which the book contains.—W. S.

Swarth's 'Birds of the Papago Saguaro.'—This National Monument lying just east of Phoenix, Arizona, is a tract of land set aside for the conservation of the peculiar desert vegetation of the region, which is so rapidly disappearing before the advance of cultivation. Connected with it by the Apache trail are the Tonto National Monument and the Roosevelt Bird Reservation some eighty miles farther east. The purpose of the present pamphlet,¹ gotten out by the National Park service, is to present

¹ Birds of the Papago Saguaro National Monument and the Neighboring Region Arizona. By H. S. Swarth. Washington, Government Printing Office. 1920 pp. 1-63, [with eight plates from photographs of birds and habitats.] Dept. of the Interior National Park Service.

some reliable information regarding the birds of the region; and in choosing Mr. Swarth to prepare the account a wise selection was made, as no one has a better knowledge of Arizona bird life.

An interesting sketch of the physical features of the region with the characteristic birds and plants is presented, followed by a fuller description of the more important birds, their recognition marks, character of occurrence and habits. These sketches cover the Palmer's Thrasher, Cactus Wren, Verdin, Western Kingbird, Dwarf Cowbird, Desert Sparrow, Phainopepla, Zone-tailed Hawk, Texas Nighthawk, Arizona Crested Flycatcher, Desert Quail, White-winged Dove, Mearns' Gilded Flicker, Gila Woodpecker, Farallon Cormorant, Pallid Great Blue Heron and Black-crowned Night Heron.

Lists are added of birds seen during a short visit to the region in 1917: thirty species on the Papago Saguaro Monument, May 30-June 4; thirty-seven at Tempe and surrounding farm lands during the same period—eighteen being identical; fifty-two at Roosevelt Lake, June 5-11 and July 2-5; fifty-seven in the Sierra Ancha, June 11-July 2 and twenty-six at Globe, July 5-7.

Mr. Swarth's pamphlet will be of great value to anyone visiting the region and forms an important contribution to the ornithology of Arizona, as well as a record of the present status of the bird life of the region for future comparison.—W. S.

Economic Value of the Starling in the United States.—This report¹ is primarily a consideration of the food of the Starling based upon an examination of 2157 stomachs of the birds collected mainly in Connecticut, New Jersey and New York and upon field investigations carried on by the authors. The results of these studies show that the food of the Starling consists largely of injurious insects and that its food habits are either beneficial or neutral so far as man is concerned, the time during which it destroys crops or molests other birds being extremely short compared with the endless hours spent in searching for insects or feeding on wild fruits.

In the opinion of the authors the Starling is a more valuable bird than the Robin or Flicker and compares favorably with the House Wren. They think that while no legislation should prevent farmers or others from killing Starlings, when actually engaged in destroying crops, the bird should on other occasions be protected by law. They admit that the great abundance and notably gregarious habits of the bird may develop some minor food habit to such a degree that it may become serious, while the roosts often become a nuisance in towns or villages. Judging by our own experience we are inclined to think that the Starling can take care of

¹ Economic Value of the Starling in the United States. By E. R. Kalmbach and I. N. Gabrielson, Assistant Biologists, U. S. Department of Agriculture, Bulletin No. 868. January 10, 1921. pp. 1-66. Four plates and several diagrams.