

from Santa Cruz Island agrees with that of several ornithologists who have made a study of the insular races.

On the whole group of islands 195 species and subspecies are tabulated as authentically recorded, or noted, together with 16 doubtful ones. The greatest number reported from one island—Santa Cruz—is 141 authentic, with 2 doubtful. This is partly accounted for by the apparently more attractive conditions on this island and partly because more observers have visited it. San Clemente comes next, principally on the latter account as it does not appear to be an especially attractive resort for land birds, with 114 authentic and 2 doubtful.

Mr. Howell is to be congratulated upon his work, and his paper will undoubtedly meet with a warm reception by all members of the Cooper Ornithological Club, as well as American ornithologists in general.—JOSEPH MAILLIARD.

THE FUNDUS OCULI OF BIRDS ESPECIALLY AS VIEWED BY THE OPHTHALMOSCOPE. A STUDY IN COMPARATIVE ANATOMY AND PHYSIOLOGY. By CASEY ALBERT WOOD. The Lakeside Press, Chicago, 180 pp., 61 colored plates, 145 figs. in text.

A revelation awaits everyone fortunate enough to have access to Dr. Casey A. Wood's monograph on the fundus oculi of birds. The professional bird student will be surprised at the wonderful colors and patterns to be found in the eyegrounds of birds; while the amateur bird student will be at least no less impressed. The well-known shining eye of a cat or of an owl in the dark gives no intimation that the ophthalmoscope can bring out such beautiful eyegrounds.

In the introduction Dr. Wood points out that although the fundus oculi of many of the mammals have been thoroughly described, little attention has been given birds, vertebrates that exhibit the highest and most varied types of vision. Ophthalmoscopic examination of the fundus oculi of living birds comprised a large part of the investigations reported upon.

In addition to macroscopic examinations of prepared specimens, the tissues were microscopically examined by Dr. J. R. Sloanaker of Leland Stanford University in collaboration with Dr. Wood. In one chapter a review of the anatomy and physiology of the organs and tissues in the fundus oculi plained; the appearance of the eyegrounds of the bird is given; in another, ophthalmoscopy and the instruments used are explained in the various orders of birds and a classi-

fication of them forms another chapter; whereas, the concluding chapter points out the relations of reptilian to avian fundi.

The differences noted between day birds and nocturnal birds are described as follows: "The average eyeground or fundus oculi of most Day Birds resembles, as much as anything, the texture of the so-called 'scotch mixtures' in smooth finished cloth—usually light brown, gray, gray-blue, blue mixed with striate rays, or fine concentric marking of lighter gray or white. Scattered over this background are numerous yellowish, yellow-white, brown or gray points of pigment. . . ."

"Nocturnal Birds have, almost invariably, yellow-red, orange, orange-red or reddish brown fundi, with the choroidal vessels plainly visible through the semi-transparent retina. Some of the Owls present almost a scarlet vermilion eyeground, and this intensity of colors appears to be peculiar to Strigiformes. . . ."

Although attempts at photographing the fundus have failed, there is a wealth of illustration in the monograph. One hundred and forty-five drawings illustrating the macroscopic findings of preserved specimens are to be found in the text, most of them by Mr. C. H. Kennedy, now of Cornell University. A series of sixty-one paintings executed by Arthur W. Head, of London, showing minute details and shades of color of the fundus oculi of many different species of birds and of several species of reptiles, show the varied and beautiful coloration and the complex tissue formations revealed by the ophthalmoscope. These attractive plates cannot fail to catch the eye of everyone who opens the pages of the book, and they will doubtless aid in stimulating others to examine the eyegrounds of birds that come under their observation, something which the author has stated in the introduction is the main purpose of the study.

The monograph is the more appreciated when it is known that Dr. Wood brought it to completion by utilizing spare moments during a busy professional life. Students of comparative anatomy and physiology owe a great deal to the energy and enthusiasm of Dr. Wood, and specialists on the eyes of birds will long have to refer to the fundamental work of this author. Nor is the work so technical that it will be utilized only by the scientist. The book will be found entertaining and understandable by all.—H. C. BRYANT.

A DISTRIBUTIONAL LIST OF THE LAND BIRDS