

fauna and inhospitable barren character. This volume is the outcome of a trip on the yacht "Noma" initiated and financed by Mr. Harrison Williams in the interest of the New York Zoological Park. Besides Mr. Williams and Mr. Beebe there were twelve other members of the party including artists, photographers, taxidermist, etc. The trip was made by way of Panama and extended from March 1 to May 16, 1923, less than one hundred hours being actually spent on the islands, the smaller of which received the most attention.

The scientific reports on the collections made are being published in 'Zoologica,' the journal of the Zoological Society, and the present volume is a narrative and description of the trip with historical and other incidents. While most of the book is from Mr. Beebe's pen there are two chapters by Ruth Rose, historian of the party, and one by Robert G. McKay on game fishing in the Galapagos. There are also two appendices, one giving the technical names of the animals mentioned in the text and the other a bibliography of the more important publications relating to the islands.

The text is in Mr. Beebe's well known style and presents vivid pictures of these remote desert islands and their strange fauna—Giant Tortoises and Iguanos, Flightless Cormorants, Fork-tailed Gulls, Sea Lions, curious Crustaceans, etc., while the well known problem of the Finches which inhabit the group and differ in such a perplexing way on each island is discussed. While not making any claim to being a scientific monograph or of adding materially to our knowledge of the islands, Mr. Beebe's volume gives us a clearer idea of the life histories and surroundings of the various animals of the Galapagos than can be obtained in the more technical publications on the fauna, and has brought a knowledge of these most interesting islands within the reach of thousands of persons to whom Galapagos has heretofore been simply a name, besides presenting a most readable and entertaining tale of present day adventure.

The illustrations are numerous and excellent in character. There are 82 half-tones from photographs and eight colored plates of reptiles, fish and invertebrates. A foreword by Dr. Henry Fairfield Osborn entitled 'In the Wake of Darwin,' reminds us of the cruise of 'The Beagle' in 1835 and the observations of the immortal naturalist who first described the remarkable life of these remote islands with which his name has ever been so closely associated.

The work is fittingly dedicated to Harrison Williams to whose liberality science is indebted for the collections and observations which the cruise has brought together.—W. S.

**Dr. Dewar's 'The Bird as a Diver.'**<sup>1</sup>—This book is an illustration of the possibilities of issuing specialized publications which seem to be enjoyed

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<sup>1</sup>The Bird as a Diver. A Contribution to the Natural History of Diving Birds. By John M. Dewar, M.D. London, H. F. & G. Witherby, 326 High Holborn, W. C. 1924. Pp. 1-xii+1-173. Price 10 shillings and 6 pence.

by our coworkers across the water. It would be difficult to publish a work treating only of the diving of birds in the United States and still more difficult to publish one such as this which concerns itself almost entirely with one phase of the subject, the "time-depth relation," as the author terms it. The leading characteristic of the diving habit he tells us is the relation of the average period of the dive to the average depth of water. In the first 15 chapters of the book this relation and other problems of the diving bird are treated as a whole, following which are accounts of the several species of diving birds separately.

The birds which the author has studied comprise nine Ducks, two Cormorants, four Grebes, three Divers (Loons), four Auks and the Coot; while the total number of dives, observed and timed, was 5991. These data naturally offer much opportunity for tabulation and averaging with consideration of mean variations and percentages so that the work has a distinct mathematical flavor.

It is pointed out that there are two principal types of diving; "pelagic," where the bird seeks its food in the intermediate layers of water; and "bottom" diving, where it feeds only on the bottom. Moreover "plungers," such as Terns and Gannets, are excluded from the divers altogether, as they enter the water wholly by the momentum gained from the plunge from a varying distance above the surface and are unable to control their actions under water.

The author finds that depth of water is the principal factor determining the period or duration of the dive and that the average duration of the pause is nearly always less than that of the dive, except in the Coot. The diving habit he decides is polyphyletic in origin, being traced back to surface feeding through "tilting" and "dipping." The Auks have reduced the time of the pause more than other groups and in this and other factors, which make for efficiency in diving, they lead the diving birds, the other groups ranking as follows: Loons, Cormorants, Grebes, Diving Ducks and Coots.

The time-depth relation of diving birds is stated to be expressed by the rule of twenty seconds for the first fathom of depth and ten additional seconds for each additional fathom. The longest dives observed by the author did not last more than seventy seconds nor extend to a greater depth than six fathoms though he gives two minutes and ten fathoms as the longest time and greatest depth observed by others.

There is a mass of information here presented from which deductions may be made but we cannot but regret that the author's observations did not include some study of other aspects of the problem such as the use of wings under water, and other matters which have been the subject of some dispute. He truly says that very little is known in regard to what the diving bird does under water, and admits that the scattered reports in the literature have mostly been based upon chance observations and that many of them are mutually contradictory. The difficulties in the

matter are, as he truly says, inseparable from observation in a medium other than air.

We heartily commend this book especially to those who have made contributions to the subject as we feel that a careful correlation of Dr. Dewar's observations with their own may help to reach more definite and consistent results on some of the other problems of the diving bird and its activities.—W. S.

**Tait's 'The Birds of Portugal.'**<sup>1</sup>—This handsomely printed volume treats of the bird life of a country which has been much neglected ornithologically. The author, Mr. Wm. C. Tait, a resident of Oporto and a member of the British Ornithologists' Union, is the leading authority on the subject and has published a previous list of the birds of Portugal in 'The Ibis' for 1887.

The present volume brings the subject up to date. No descriptions are included, as they are readily available in the manuals on the birds of Great Britain and Europe, but details of occurrence and distribution are presented in a readable manner with many interesting bits of folk-lore and history, while there is a very full list of local vernacular names, remarkably large for the size of the country.

The author has had the cooperation of Mr. H. F. Witherby, who has travelled in Portugal and furnished technical data on subspecific identifications, etc., but resident bird students appear to be very scarce, in fact Mr. Tait states that the only living Portuguese field ornithologist known to him is Mr. Joao Alves dos Reis. It would seem a pity that at least an abridged edition of this work could not have been issued in Portuguese as a stimulant to local bird-study.

Introductory chapters deal with the physical features of the country and with migration while two appendices present a bibliography and a list of "ringed" birds recovered in Portugal. A good colored map and a number of half-tone reproductions of photographs of the country complete this excellent publication.—W. S.

**Lowe's 'Literature of the Charadriiformes.'**<sup>2</sup>—Bibliographic works are such laborious undertakings that we always feel that a double measure of thanks is due to the author who produces a reliable publication in this field, and such a one undoubtedly is Dr. G. C. Lowe's volume on the literature of the Charadriiformes. He considers the twenty-fourth volume of the British Museum Catalogue of Birds as bringing the subject up to

<sup>1</sup>The Birds of Portugal. By William C. Tait, Fellow of the Zoological Society and Member of the British Ornithologists' Union. H. F. & G. Witherby, 326 High Holborn, W. C. I. 1924. Pp. i-viii + 1-260. pls. I-X and a map. Price 18 shillings.

<sup>2</sup>The Literature of [the Charadriiformes] from 1894-1924 [with a classification of the order, and] lists of the genera, species and subspecies [By] George C. Lowe, M. A., M. D., [M. R. C. P., F. Z. S., M. B. O. U.] H. F. & G. Witherby [326 High Holborn, W. C. I. | 1924 | pp. i-xi + 1-220. Price 12 shillings and 6 pence.