

of well known authorities on the game birds while some valuable notes by Hugh Wormald on Duck plumages are made free use of. The accounts cover the distribution, habits, nesting, plumage variation, and methods of hunting, in a most satisfactory way and are beautifully printed on paper almost as heavy as that which supports the plates, making the handling of the pages very much easier.

The species included comprise all of the British Ducks, Geese and Swans, the gallinaceous birds together with the three Snipe, the Golden Plover, the Lapwing and the Curlew. The artist-author and the publishers deserve much praise for producing a remarkably beautiful and useful volume.—W. S.

**Witherby's 'Practical Handbook of British Birds.'**—This work<sup>1</sup> which has been appearing in parts ever since March 3, 1919, has been completed with the issue of Part XVIII (Vol. II, pp. 801-959) on February 26, 1924. This final part contains the conclusion of the Auks, and consideration of the Bustards, Rails, Cranes and Gallinaceous birds. Half of the text however is devoted to additions and corrections which bring the work up to the end of 1923 so far as information, nomenclature etc. are concerned; and a systematic list of British birds numbering 496 of which 208 breed or have bred in the British Isles during the past fifty years.

As completed the 'Handbook' is one of the most notable works on the birds of Great Britain that has yet appeared and the most complete technical account of the birds of any one country with which we are familiar. It presents all of the scientific facts concerning each species in concise form and clear language, without any attempt at popular writing or consideration of the habits, "life-history" or "character" of the birds. This latter phase of the subject is a perfectly legitimate and important one and has offered opportunity for the production of some of the finest pieces of ornithological literature but it is a field apart, and we think Mr. Witherby has done well to limit the present work to the hard facts of the science, as well as presenting these facts in language perfectly understandable by the laity. The reviewer has always contended that scientific facts may be presented without the use of technical language and still lose none of their force.

The generic and specific headings with their references and foot notes give one all the technical information on nomenclature contained in a

<sup>1</sup> A Practical Handbook of British Birds Edited by H. F. Witherby, M. B. E. F. Z. S., M. B. O. U. Editor of British Birds (Mag.). Authors of Various Sections: Ernst Hartert, Ph. D., F. Z. S., M. B. O. U., Annie C. Jackson, H. M. B. O. U. (Mrs. Meinertzhagen), Rev. F. C. R. Jourdain, M. A., M. B. O. U., H. F. A. O. U., C. Oldham, F. Z. S., M. B. O. U., Norman F. Ticehurst, O. B. E., M. A., F. R. C. S., M. B. O. U. and The Editor. Vol. I. With 17 Plates and Numerous Text Figures. Witherby & Co., 326 High Holborn, London. 1920 (pp. i-viii + 1-532, text figures 117). Vol. II. With 13 Plates and Numerous Text Figures. 1924 (pp. i-xii + 1-959, text figures 211). Price bound complete £4.10.0.

check-list with much additional explanation, while the keys and detailed descriptions covering all the known plumages make the identification of specimens an easy matter, the section on "measurements and structure" being particularly noteworthy in pointing out details too often omitted. The section on "field characters" describes the more prominent features by which the live bird may be recognized, while that on "characters of allied forms" points out the differences between the form under consideration and its nearest geographic allies, which not only enables one to see exactly the systematic status of the British species or race, as the case may be, but also to identify a possible extralimital straggler.

Under "breeding" facts of interest to the student of oölogy and of nesting activities are summarized with measurements and descriptions of eggs and data on the time of nesting, brooding and incubation period. The general character of the food of each species is stated and a list of the more important items including, in the case of Raptores, a list of the birds which each species is known to kill. The paragraphs on distribution give the character of occurrence both geographical and seasonal, as well as the relative abundance in the British Isles and "abroad."

The text figures illustrate structural characters of wing, tail, foot or bill with drawings of the heads of many species to aid in identification, while the full page plates, some of which are in colors, depict either very closely related forms or birds in the unfamiliar juvenal plumage.

An additional point which strengthens this work is the collaboration of the other notable authorities on British birds who have aided Mr. Witherby in the undertaking—Dr. Hartert, Mrs. Meinertzhagen, and Messrs. Jourdain, Oldham and Ticehurst. The work of a group of collaborators is necessarily more complete than that of any one individual.

It is difficult to over emphasize the importance of the 'Handbook' as a work of reference not only to the beginner but to the advanced ornithologist both of whom will find here the information of which they are in search.—W. S.

**Görnitz on Feather Colors and Pigments.**—Görnitz has published two papers which consider feather colors and pigments. The first paper<sup>1</sup> gives a good classification of feather colors. The original feature is a division of melanin pigments into two groups: eumelanins and phaeomelanins. Otherwise the classification is similar to that of other authors.

The other paper,<sup>2</sup> in the reviewer's judgment, is an important contribution to biological literature. It deals with some difficult problems of unusual interest. The eumelanins include the darker and much less soluble granular pigments of feathers, whereas the phaeomelanins are

<sup>1</sup> Versuch einer Klassifikation der häufigsten Federfärbungen. Von Karl Görnitz. *Jr. für Ornith.*, LXXI, 1923, Heft. 1. S. 127-131.

<sup>2</sup> Ueber die Wirkung klimatischer Faktoren auf die Pigmentfarben der Vogelfedern. Von Dr. K. Görnitz. *Jr. für Ornith.* LXXI, 1923, Heft. 4. S. 456-511. Taf. 7.