

century was required to build up an edifice of knowledge concerning organic structure and development, the nature of sexual reproduction, and the structural basis of heredity, before definite views of the laws of inheritance could be propounded and accepted. But in the last twenty-four years advance has been rapid, because all these and other lines have converged upon the solution of the central problem of heredity. Where all was formerly hazy and nebulous, results are now seen to be clean-cut and precise, continually opening up further vistas of understanding concerning the relations between the details of organic structure as we find them, and the laws and exceptions to the laws of inheritance as they are developed by experimental work.

While the advances in Mendelian heredity, sex chromosomes, etc., have been rapidly incorporated into biology on account of their fundamental character, yet to the lay mind heredity remains for the most part an unintelligible and almost mystical "force." Even the medical profession remains in an uninstructed condition regarding a subject which vitally concerns their daily activities.

Any book which spreads the modern knowledge of heredity is therefore to be welcomed, and the volume before us, by Prof. Guyénot, should be very useful in this respect for French-speaking peoples. The author's definition of heredity is worth quoting: "L'hérédité consiste dans la totalité des réalisations morphologiques ou physiologiques que le descendant tient de ses parents."

The volume is divided into three sections. The introduction begins with a chapter on the continuity of living matter as the basis of heredity. The sections deal with the laws of hybridisation, the chromosome theory of heredity, and Mendelian anomalies. In the last, such topics as hyperdactyly in fowls, lethal factors, cytoplasmic inheritance, and xenia are discussed. The final chapter is devoted to inheritance in man. While containing little or nothing that is new to the geneticist, the book presents a useful summary of recent advances in this field. The number of *Drosophila* mutations has now reached more than 300, not 100 as the author states.

R. R. G.

*Human Protozoology.* By Prof. Robert W. Hegner and Prof. William H. Taliaferro. Pp. xix + 597. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd., 1924.) 4.50 dollars.

THIS work has been prepared primarily for the use of students in the authors' course of protozoology in the School of Hygiene of the Johns Hopkins University, but it will be of great use to students pursuing similar courses in other institutions, and to medical officers who desire a concise statement of the facts of protozoology. Emphasis is rightly laid on the value of a study of parasites from lower animals, which are often more easily obtained than the allied species occurring in man, and serve as excellent material for practice in technique and in the study of life-cycles.

In the general introduction to the organisation of the protozoa, structure and modes of division are considered. The following chapters deal in turn with the main groups of protozoa, the structure and life-history of representative genera and species being described and

careful reference made to the methods of spread of those which occur in man. A chapter is devoted to the genetics and the physiology of reproduction in the protozoa, and a final chapter gives useful information on the diagnosis of intestinal protozoa. A well-chosen list of books and memoirs on protozoa occupies some fifty pages, there is an adequate index of authors and of subjects, and the volume is excellently illustrated by clearly drawn figures.

In reviewing a work which is so well done it is almost ungracious to ask for more, but here and there the authors might consider whether in their next edition they could add a few further details; e.g. in the chapter on *Hæmosporidia* (exclusive of malaria) it would be useful to have some account of the life-history of *Piroplasma*, incompletely known though it be, and of *Theileria parva*, a short account of *Proteosoma* and a reference to Mrs. Adie's work on *Hæmoproteus*.

The authors are to be congratulated on the production of this excellent manual.

*A Check-List of British Birds: With a Short Account of the Status of Each.* Compiled from "A Practical Handbook of British Birds." By H. F. Witherby. Pp. 78. (London: H. F. and G. Witherby, 1924.) 3s. 6d. net.

ORNITHOLOGISTS will welcome this little book, which is printed on one side only of the paper for convenience in labelling or for the making of notes. The fact that it is taken from the "Practical Handbook of British Birds" is a sufficient guarantee that it is up-to-date and correct in all matters ornithological and nomenclatorial.

From the biological point of view, it is very instructive to look down the pages of the book and note which of the species remain binomial, which have run into trinomials. The latter, of course, are in the great majority—a sign of the enormous amount of geographical variation which patient research reveals. The problem is to understand why some species show this tendency to break up into geographical races or subspecies, while others remain invariant. The lack of variability in some of these may be apparent only, due to our ignorance; but this cannot be true of the Chough, the Snow-Bunting, the Brambling (the specific name of which, by the way, contains a misprint), the Meadow-Pipit, the Waxwing, the Lapwing, the Redwing, and many others. Sometimes whole groups, such as the Tits or the Wheatears, seem to show excessive variability, while the Anseres contain an unusually large proportion of "unsplit" species.

The evolutionary biologist should pay more attention to the rich mine which the labours of the systematist, most notably in the group of birds, have opened up for him.

J. S. H.

*Exercises on Ordnance Maps.* Selected and arranged by C. H. Cox. Pp. 60 + 12 maps. (London: G. Bell and Sons, Ltd., 1924.) 1s. 9d.

ELEMENTARY and advanced exercises are based on twelve sections of different scale ordnance maps of various styles. Concentration on map work of this nature is the best introduction to the study of geography. Even if some of the questions are a little far-fetched as exercises on the maps, the book is excellent and deserves to be widely used in schools.

R. N. R. B.