

of the internal environment, reproduction and physiological genetics. It is the last section that will be of most interest to readers of this journal. This includes sections on sex determination, metabolic blocks, haemoglobin variants, serum protein polymorphism, enzymes, and polygenic inheritance. Once again, the author's wide perspective is valuable. The complexities of the genetic determination of sex become apparent when one learns that even in some vertebrates, for example strains of frog, most subjects first pass through a female stage, but later a proportion change into males. In some species male sex appears to be polygenically determined. In the section on haemoglobin variants it is interesting to learn that, in hybrids between fish species with different haemoglobins, not only may both parental varieties of the pigment appear, but sometimes *in vivo* recombinations between the peptide chains. In one such instance in shellfish the recombinant has a better oxygen-carrying capacity than either parental variety—an instance of 'hybrid vigour' at the molecular level.

The author is admirably succinct and he has packed a surprising amount of well-chosen information and illustrations into each short chapter.

C. O. CARTER

Modern Genetics. By Haig P. Papazian. (Pp. xx + 350; illustrated. 42s.) London: Weidenfeld and Nicolson. 1967.

Genética Médica. Vol. 1. Teoria do aconselhamento genético. By N. Freire-Maia and A. Freire-Maia. (Pp. 162, vol. 2. **Prática do aconselhamento genético.** By N. Freire-Maia. (Pp. 155). São Paulo, Brazil: Coleção Burity. 1966.

Modern Genetics by H. P. Papazian is an exceptionally competent popular exposition of present-day genetics, with its achievements and problems. Of the three approximately equal parts into which the book is divided, the first and third deal with classical genetics and population genetics respectively. They draw widely on biology as a whole and are refreshingly free from hackneyed examples. But the outstanding merit of the book lies in its second part. This is devoted to mutation, the template mechanism, the genetic code, and the enzyme systems. A lucid account of their complexities is aptly concluded with a discussion on morphogenesis, the contrasting approach of the embryologist and the microbiologist being wittily brought in as a dialogue. The illustrations are well chosen and the legends are strikingly full and informative, but the text occasionally suffers from striving after effect and mere cleverness—a particularly lurid example is the footnote on J. B. S. Haldane, described as an 'Indian geneticist and aphorist, who died in 1964'.

The two volumes on *Genética Médica* by Drs. N. and A. Freire-Maia are part of a paper-back series of small books on academic and cultural subjects. The title is rather misleading, for the two volumes are devoted not to medical genetics, but to genetic counselling, the first covering in outline the basic and pathological knowledge

required and the second giving examples of actual consultations. Concise and remarkably comprehensive—empirical data on risks are discussed as adequately as theoretical genetic deductions—these volumes are fully documented and are a welcome contribution to a literature which is as yet still slight.

ARNOLD SORSBY

The Thread of Life. An Introduction to Molecular Biology. By John C. Kendrew. (Pp. 112; 18 figures + 52 plates. 21s.) London: G. Bell and Sons. 1966.

DNA—Ladder of Life. By Edward Frankel. (Pp. 110. illustrated. 16s) Tadworth, Surrey; The World's Work. 1967.

The first of these books, subtitled 'an introduction to molecular biology', is based on a series of B.B.C. television lectures. It is most stimulating, communicating some of the burning excitement of scientific discovery.

Professor Kendrew says in his preface: 'anyone should be able to understand [molecular biology] easily without being trained as a scientist'; his lectures make this possible. This book is a model for all interested in putting complex ideas simply and clearly to a mass audience while avoiding ellipses, inaccuracies, or 'talking down'. The science of molecular biology owes as much to Professor Kendrew as to any man; perhaps it takes one of the founders to see it with this clarity and to convey its complexities so successfully.

The second study is meant for the layman. It gives a simple, clear, and on the whole accurate account of molecular biology, though it contains the occasional oversimplification. This is inevitable when presenting such a subject in a form elementary enough for a reader with no scientific education. Interest is maintained by a wealth of clear and lively illustrations. The author gives a guide to pronunciation and an index, but no reading list.

L. I. WOOLF

An Introduction to Medical Genetics, 4th ed. By J. A. Fraser Roberts. (Pp. xiv + 290; 121 figures. 38s. cloth; 25s. paper covers.) London: Oxford University Press. 1967.

The third edition of this standard textbook was reviewed in the first number of this Journal. It is a good illustration of the increasing importance of genetics in medicine that, whereas there were nearly 20 years between the first and second edition, the subsequent editions have followed each other at four-yearly intervals. The new edition is the first to appear as a paperback, as well as in hard cover, and at 25 shillings the paperback is extraordinarily good value. The text has been considerably revised, not only in including new material, but also in substituting better examples of old principles. The lucidity and logical presentation of the original edition is, however, in no way affected.

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