Book Reviews

British Medical Bulletin, Volume 21, Number 3, September 1965. (Pp. 94; illustrated. 30s.) London. 1965.

With the exception of the article by Hanson and Lowry on the molecular contractility in muscle, the 14 contributions in this number are entirely concerned with molecular biology in its narrower sense, namely with proteins and nucleic acids, and in particular with the solved and unsolved problems of gene structure, replication, and expression.

As Crick shows in his introduction, this field is characterized by the application of many divergent and mostly novel approaches and techniques, such as chromatography, electrophoresis, ultracentrifugation or radiotracers, to a very limited number of organisms, mainly the bacteriophages of *Escherichia coli* or the tobacco mosaic virus or even to one particular group of molecules, the human haemoglobins. From the geneticist's point of view this sort of molecular biology deals with the serial chemistry of DNA and RNA, their replication, the transfer of information from nucleic acids to proteins, i.e. the various codes, and with theories of gene regulation. To this, three central topics have been added: 'infectious drug resistance', which may operate between bacteria of different species; 'intra-allelic complementation', and 'penicillinase plasmids'.

All this work adds up to a most fascinating, if still incomplete approach to biology. Whether any of this will become important for practical medicine only the future can show. The 14 British contributors are probably the best in their respective fields; the style of the papers is fairly uniform; and the editing is of a high standard.

H. KALMUS

Genetic Polymorphism. (All Souls Studies V.) By E. B. FORD. (Pp. 101. 21s.) London: Faber and Faber. 1965.

The author of this slim monograph was among the first to recognize the evolutionary importance of genetical polymorphism, which he defined as early as 1940 as the 'occurrence together in the same habitat of two or more discontinuous forms or "phases" of a species in such proportions that the rarest of them cannot be maintained merely by recurrent mutation'. This of course excludes all forms of continuous variation, geographical races, and the rare heterozygous conditions, among which come those responsible for severe dominant conditions in man.

The book expounds the principles of the evolution and maintenance of polymorphisms whether by heterozygous advantage or by the establishment of supergenes, or chromosome polymorphism, as well as dominance modification. Ford uses points from very diverse material to illustrate these principles, but a separate

chapter is devoted to human polymorphism. This deals with the haemoglobins, blood antigens, defective colour vision, taste polymorphism—subjects that are also discussed at many other places in the book.

Medical readers will be pleased by the fact that the treatment is predominantly verbal, with only a minimum of numerical data. However, such a presentation imposes considerable limitations on any attempt to discuss the dynamics which are at the root of any genetical polymorphism. More serious is the almost total omission of well-documented biochemical polymorphisms, e.g. of the erythrocytes or the plasma proteins; the word enzyme does not occur in the index, and only one enzyme, G6PD, is cursorily mentioned. On the other hand some poorly investigated diversities, like the variability in the perception of the scent of certain flowers or lepidoptera, or a possible relation between the Rh-gene and malaria, are described.

While the selection of the material appears a little limited, the book is well written and often justifiably critical of widespread inaccuracies, such as the use of the words 'dominant' or 'recessive' to genes instead of traits. Younger medical geneticists, especially of a biochemical bent, may also find that most of their ideas concerning the formal genetics of polymorphism, which appear new to them, have in fact been developed by zoologists and botanists dealing with morphological characters several decades ago. They may even profitably discover that some of their most recent hypotheses have been already refuted.

H. KALMUS

The Early Conceptus, Normal and Abnormal.

Papers and Discussions Presented at a Symposium held at Queen's College, Dundee, September 17th, 18th, and 19th, 1964. Editor: W. WALLACE PARK. (Pp. 146; illustrated. 25s.) Edinburgh: E. and S. LIVINGSTONE. 1965.

Reports of Symposia tend to be a burden to authors, librarians, and readers, though, as the Ciba Foundation has consistently shown, this tendency is unnecessary and selective authorship with good editing can provide an extensive and economical cross-section of contemporary work.

Approximately half the book is on various features of the trophoblast, including neoplasia, and a quarter on teratomata. In spite of the title, the abortion is almost overlooked. Fertilization is not considered. This symposium, somewhat loosely held together by the title, can be recommended on grounds of authorship, price, and editing. The print is rather small and dense and the grain of the photographs rather coarse, but this is a welcome change from extravagance in ephemeral progress reports.

J. H. EDWARDS