

section will seem far too brief in relation to the practical importance of its subject. Some technical aspects of heart surgery are dealt with authoritatively in 48 pages by Dr. Lillehei and Dr. Varco, but the surgery of the lungs is given no special attention whatever. There are many statements with which most physicians on this side of the Atlantic would disagree. For instance, emphysema is stated to be the most frequent complication of allergic bronchial asthma. Artificial pneumothorax is advocated as treatment for pulmonary tuberculosis, while the details of antibacterial treatment and the important problem of drug resistance are, to British eyes, very sketchily presented. Elsewhere what appear to us to be curious omissions are evident. The pneumoconioses are briefly dealt with under the general heading "air contaminants," and in the course of this article coal miners are not mentioned at all. There are some excellent sections dealing briefly with special topics. Notable among these are Dr. Boyden's on the segmental anatomy of the lungs, Dr. David Smith's on the pulmonary mycoses, and Dr. Bernard Lewis's on emotions and the circulation.

So far as the book as a whole is concerned, it seems to offer nothing that cannot be obtained as well, and for most purposes better, from other writings of some of the authors and from existing textbooks of cardiology and respiratory disease.

J. G. SCADDING.

GENETICS FOR EVERYMAN

Outline of Human Genetics. By L. S. Penrose, M.A., M.D., F.R.S. (Pp. 146+xii; illustrated. 12s. 6d.) London, Melbourne, Toronto: Heinemann. 1959.

It is most uncommon for a physician to be so gifted mathematically that he can understand all the intricacies of modern genetics, and an even more unusual combination is that being so endowed he can retain the capacity to explain a complicated, though not inherently difficult, subject to that overworked abstraction the "informed layman." Yet this is what Professor Penrose has succeeded in doing, and his book is also ideal for medical students because, being a medical man, he not only understands human genetics but also human beings.

Any student embarking on this book can be assured that it is assumed that he knows no genetics and possesses only the mathematical knowledge required by the General Certificate of Education. Furthermore, he will find that the subject matter does not become increasingly difficult as is the case with so many books on scientific subjects written for the general public.

Penrose begins with a chapter on basic observations in which he discusses the difference between segregating and non-segregating characters, the former (like achondroplasia) being inherited in an all-or-none manner and the latter (like height or weight) being a matter of quantitative difference. Because the segregating traits are usually controlled by a single gene they are easier to understand and the various methods of single-gene inheritance are discussed in considerable detail. On the other hand, the non-segregating traits for which many genes are responsible and where the answers are less clear-cut, are mentioned only in a general way.

Turning to genes and population, Penrose explains the fallacy in the common idea that because a gene is dominant it must necessarily spread. This leads on to

a discussion of the idea of gene frequency and the Hardy-Weinberg formula showing how with random mating the genetical structure of a population remains the same. The diagrammatic explanation of the Hardy-Weinberg law is excellent, and no one after reading it should be in any doubt as to why the heterozygous "carrier" may be quite common even though one homozygote is extremely rare.

Associations and linkage are dealt with in an orthodox manner, but he is controversial in his last chapter on eugenics and dysgenics. He does not make it clear that the biological variability desirable in a population refers to "normal" characters and not to the pathological conditions which form the subject of so great a part of his book. Furthermore, his conclusions that "the genetical backbone of the population is, in fact, the despised mentally inferior tenth" (p. 118) seems unconvincing, because neither fertility nor intelligence can be accounted for on a single gene hypothesis which is his admittedly over-simplified model for these characters.

In spite of these minor criticisms the book has the overriding merits of being interesting, entirely comprehensible, and short. Such a combination is bound to appeal to medical students and anyone else who wishes to know the elementary facts about a rapidly growing science.

C. A. CLARKE.

OXYGEN AND THE FOETUS

Oxygen Supply to the Human Foetus. A Symposium Organized Jointly by C.I.O.M.S. and the Josiah Macy Jr. Foundation. Edited by James Walker and Alec C. Turnbull, assisted by Clement A. Smith and Donald H. Baron. (Pp. 313+xii; illustrated. 47s. 6d.) Oxford: Blackwell Scientific Publications. 1959.

The organizers of this conference have called together distinguished workers from several different disciplines, and this book offers reports which illustrate their various approaches to the subject in hand. The book follows the pattern to which we have become accustomed in the reporting of modern symposia.

In order to measure the oxygen supply to the foetus one would like, on the maternal side, the results of measurements of blood flow to the uterus and uterine A-V oxygen differences. Similarly, on the foetal side, one requires umbilical flow and umbilical A-V differences. To complicate the matter further all these readings should be made simultaneously and the mechanisms of the underlying physiological adjustments should be fully understood. Not unnaturally most of the investigators who report their work here have examined one or other of these variables, and in reading the individual articles it is necessary for the reader to keep in mind that the complete picture is not yet available.

There are many very interesting observations in the book, but it suffers from some of the defects consequent upon rapid publication. For example, the verbatim reports of the discussions are on occasions very difficult to follow, and, although it is lavishly illustrated, some of the figures are inadequately labelled and it takes considerable investigation of the text to interpret their meaning.

Despite these strictures it should be appreciated that there is here a great deal of information which is not obtainable in this form elsewhere, and for those who are interested in the physiology of the foetus it provides invaluable additions to our knowledge. Quite apart