

Reviews

ANTIBIOTICS IN PRACTICE

The Clinical Application of Antibiotics. By M. E. Florey, M.D. Volume IV: *Erythromycin and Other Antibiotics.* (Pp. 303+viii; illustrated. 84s.) London, New York, Toronto: Oxford University Press. 1960.

Once again we are indebted to Lady Florey for an encyclopaedic work on the clinical application of antibiotics. This volume, the third in the series (volume II, which is to be devoted to the treatment of tuberculosis, has not yet been published), deals with the erythromycin group, some of the new antistaphylococcal antibiotics, a miscellaneous group mainly suitable for local application, and antibiotics active against protozoa, fungi, and neoplastic cells. It concludes with a section on "The Choice of an Antibiotic," which summarizes much of the information in all three volumes.

The book is well documented and contains more than a thousand references, for which alone it will be invaluable to all serious students of the subject. The book is not easy to read, partly because of the mass of information, but long paragraphs sometimes covering more than two pages and often containing unrelated material do not help. It is, however, easy to criticize a book of this nature, and Lady Florey is to be congratulated on her industry. To have collected together in three volumes so much material on the clinical aspects of antibacterial antibiotics, from penicillin to ristocetin, together with notes on antifungal and antineoplastic antibiotics, is no mean task.

Few would have had the courage to contemplate such a task, both because of the work involved and because in the words of Professor Garrod "no development in medicine has ever been at once so rapid and so complex," so that books about it are liable to be out of date before publication. Lady Florey was neither daunted by, nor blind to, this fact, and on the last page she writes: "The foregoing pages have accomplished little if they have not led the reader to conclude that the value of antibiotic therapy is in a continual state of flux." This is indeed true, but the material collected together by Lady Florey will remain valuable for many years to come.

MARY BARBER.

NEONATAL PHYSIOLOGY

The Physiology of the Newborn Infant. By Clement A. Smith, M.D. Third edition. (Pp. 497+xii; illustrated. 95s.) Oxford: Blackwell Scientific Publications. 1959.

World research in medicine in all its branches has progressed at a faster rate in the fifteen years since the end of the second world war than in any other similar period of world history. In 1945 the first edition of this book was published. Since then it has been amplified to present these developments, and Dr. Smith has wisely accepted the compulsion of this development and invited colleagues in America and abroad to co-operate by criticizing certain chapters. In Great Britain, Dr. Geoffrey Dawes has looked over the sections on the circulatory system and neonatal respiration; Professor R. A. McCance and Miss Elsie Widdowson those on the foetal and neonatal nutrition, minerals, vitamins, and renal physiology. Professor Vahlquist, of Stockholm, has passed the chapter on

immunology, and Dr. Smith in Boston has been guided biochemically by Dr. Claude A. Villee in the same department.

Without doubt the author has summarized very efficiently all, or almost all, relevant new work on the physiology not only of the newborn infant but on foetal and neonatal physiology of any animal in so far as it has an influence upon the human newborn infant. It is therefore a useful book of reference for the young paediatrician or experimenter working in this field, and will bring him up to date in regard to the new work and the literature.

A. ST. G. HUGGETT.

BASIC CIRCULATORY INFORMATION

Handbook of Circulation. Analysis and compilation by Philip L. Altman. Edited by Dorothy S. Dittmer and Rudolph M. Grebe. (Pp. 393+xv. 52s.) Philadelphia and London: W. B. Saunders Company. 1959.

This handbook weighs 2½ lb. and measures about 11 by 8½ by 1 inches. It consists of a mass of tables, and long lists of references often occupy the lower half of a page. These references are set out in prose form and are not in alphabetical order; nor are the titles of the papers given. Obviously, then, this is not the sort of handbook you can carry around in your pocket or refer to very easily. However, it was supposed that these unprepossessing qualities would be offset by the excellence of the tables. But how is one to judge the excellence or otherwise of 363 pages of tables in small print? Before passing the book on for someone else to review, it seemed fair to test its value and accuracy by looking up specific items in the index. I started with acetylcholine: the index referred me to p. 278—"effect on hearts (insects)." I turned to morphine: there were two pages listed, one concerning the effect of morphine on insects (p. 280), and the other on its cardiovascular action (p. 250). In the table on p. 250 the reference to morphine is "sedative for acute myocardial infarction or acute congestive failure."

Switching to physiology, I looked up cor pulmonale (p. 332). Here the page was devoted to demonstrating a close correlation between the arterial oxygen saturation and the pulmonary artery pressure. Rather desperately I turned to pulse configurations in man (p. 156). On this page is the left atrial configuration in mitral stenosis. The tracings show a y descent barely dissimilar to the speed of other y descents in other tracings from different conditions shown on the same page, and a return of pressure from the y nadir before the next a wave. Shocked, I glanced at the next page and saw a tracing depicting the anacrotic pulse with the anacrotic notch almost as high as the tidal wave. On this page there was also a pulsus bisferiens, which looks practically the same, except that there is a faster initial ascent. What sort of handbook is this, put out by the National Academy of Sciences, National Research Council, U.S.A.?

Clearly it is as likely to mislead as to guide the clinician, and it would appear to be of little value to research workers concerned with problems relating to clinical cardiology. The foreword suggested it might be much more basic. Refreshed with this idea I tried the output test. This law states that the sum of all systemic territorial blood flows should equal the cardiac output. The handbook evaded the test by failing to give the majority of the territorial blood flows. Precise information on cerebral, renal, and hepatic blood flows, however, was well presented. Encouraged, I looked up

the relative ventricular weights during the first three months of life, data not at all easy to obtain, and there on p. 22 was exactly the information I had been seeking. Delighted, I tried a few haemodynamic formulae, and these were quickly found, nicely set out together on pp. 355-6.

And so the lesson went on: the more basic the information required, the more likely was it to be found and the more accurate were the data. And that is both the secret and the value of this handbook. The amount of work that must have gone into its production is prodigious and there can be nothing quite like it in cardiovascular literature.

PAUL WOOD.

QUANTITATIVE BIOLOGY

Carcinogenesis by Ultraviolet Light. An Essay in Quantitative Biology. By Harold F. Blum. (Pp. 340+xv; illustrated. 52s.) Princeton, N.J.: University Press. London: Oxford University Press. 1959.

Radiation in the near ultra-violet region around 250 $m\mu$ to 320 $m\mu$ is carcinogenic, and it has provided the research worker with a particularly fine tool for the examination of the carcinogenic process. It has yielded data which are reasonably complete and analysable, and which merit very serious consideration compared with the more meagre data to be obtained by employing other carcinogenic agents. The experiments on the ultra-violet induction of cancer do not support some current concepts of the carcinogenic process but do lead to conclusions which can be used to challenge these concepts and to suggest further experimental work. These are the main contentions of this book, and they are well supported and clearly discussed.

Ultra-violet carcinogenesis is a fascinating topic, and this summary of the work in the field should interest a wide variety of readers. Realizing the need to carry physicists, chemists, and biologists with him in his discussion, the author, in the first half of his book, defines basic terms and describes the varied effects of ultra-violet and visible radiation on biological systems. The inactivation of enzymes and viruses, haemolysis, lysogenicity, photodynamic action, and examples of the photo-recovery which sometimes results from exposure to visible after ultra-violet radiation, are mentioned in sufficient detail to point probable differences between the mechanisms of these effects. This provides a useful background for the discussion of ultra-violet carcinogenesis. Much of the work in this field has been carried out by the author and his collaborators, and it is good to have the results collected and reviewed in one volume. The animal data are extensive, and gathered from experiments which are beautifully designed and executed. From these are drawn the conclusions about the process of cancer induction by ultra-violet radiation which are extended later to other carcinogens, and which make this book of quite general importance in the cancer field. Dr. Blum finds that carcinogenesis is a continuous process which cannot be separated into distinct periods; that it is cumulative; and that it is essentially irreversible. Evidence for some small degree of recovery is seen in the failure of reciprocity at very low dose-rates; but the threshold at which recovery just balances cancerization is very low and not directly measurable. So, in a practical sense, ultra-violet carcinogenesis is non-threshold. Further, comparison of tumour growth-rate curves with models indicates that, during regularly repeated dosage, the tumour grows

by the proliferation of an increasing number of clones, the proliferation rate of all these clones being constantly accelerated.

At this point speculation commences as to the basic replicating unit which governs the growth of a tumour. The "tem" is introduced. This is neither a virus, nor a mutated gene, nor an intermediate chemical formed by the ultra-violet radiation, but a high-molecular-weight template which is not readily diffusible; it could be a polynucleotide. The speculations are by no means far-fetched, and perhaps gain some support from recent work on the induction of animal tumours by injection of nucleic acids.

The section on sunlight and human skin cancer is brief, but this is not the author's own experimental field, and its data, in any event, are far less clear-cut. One of the merits of this book is that it should stimulate the collection and assist the analysis of more of these data. A final word on public attitudes to environmental cancer hazards arises quite naturally from the conclusions as to the carcinogenic process.

This book summarizes a complex problem clearly and logically, and its conversational style and lay-out make it easily read. It is, indeed, "an essay in quantitative biology," and as such it will repay study by all cancer workers.

E. M. F. ROE.

FOSTER CARE

In Place of Parents. A Study of Foster Care. By Gordon Trasler, Ph.D. (Pp. 248+viii. 25s.) London: Routledge and Kegan Paul. New York: Humanities Press. 1960.

There are 61,000 children in the care of local authorities and voluntary organizations in England and Wales of whom 47% are boarded out in foster homes. Between one-third and two-fifths of foster-home placements "fail" for one reason or another. In spite of (or perhaps because of) years of vigorous discussion about the factors associated with success or failure in this kind of care, little research has been carried out. Dr. Trasler's illuminating study of 57 children who were boarded out unsuccessfully at least once, in the County of Devon, and of a "contrast group" of 81 successful placements, does much to get us thinking about how such research can be done.

The book is in two parts: the first is a qualitative account, illustrated with much case-history material, of important determinants of failure of boarding out; the second part presents statistical findings. In his discussion of the dynamics of the foster-home situation Dr. Trasler shows himself aware of the many factors that contribute to its quality. "It is not easy," he says, "to be a good parent to one's own children, but it is much more difficult to be a good foster parent." He goes on to show why this should be so. The statistical findings are full of interest. Separation from the mother at an early age was not more common among the study sample of foster-home failures than among the contrast group of successful placements; but the total amount of institutional care during the first three years of life was very significantly related to subsequent failure. Aggressive children more commonly had a longer institutional history. Two-thirds of those children who were placed in foster homes before they were 4 years old achieved a good adjustment, whereas of children placed between 7 and 13 years only 30% did. Women over 40 years of age were more often successful as foster mothers than were younger women. There was evidence