

BOOK REVIEWS

DRUGS AND PREGNANCY

Symposium on Embryopathic Activity of Drugs

Edited by J. M. Robson, F. M. Sullivan and R. L. Smith. (Biological Council—The Co-ordinating Committee for Symposia on Drug Action.) Pp. xii+305. (London: J. and A. Churchill, Ltd., 1965.) 60s.

THE epidemic of congenital malformations that followed the use of thalidomide has re-emphasized the risks associated with administering drugs during pregnancy. It has also stimulated thought and discussion about the value of testing drugs in pregnant animals as a means of predicting teratogenic activity in human embryos. The predictive value of animal tests was among the subjects discussed at a symposium on the embryopathic activity of drugs held in London in 1965. The chief participants in the symposium were mainly from academic institutions and pharmaceutical companies, and their contributions together with the subsequent discussions now appear in this book.

The introductory papers by F. Beck and J. M. Robson outline some embryological and pharmacological principles of teratogenesis and direct attention to the need for more information on the causal mechanisms underlying the development of organs and tissues. J. R. Fouts emphasizes the need for more research into drug absorption and metabolism in the foetus and neonate. Fouts also discusses the appearance of hepatic microsomal enzymes which metabolize drugs in neonates, and the stimulation of hepatic enzyme activity by phenobarbitone and other drugs. H. Tuchmann-Duplessis argues that teratogenic tests are of practical value. Although current screening methods cannot guarantee safety, he regards animal tests as the most appropriate approach to the problem of teratogenicity, and believes that tests can and should be improved. Some adverse effects of administering sex hormones to women with a history of habitual abortion are discussed by G. R. Venning, who finds that assays for androgenicity based on seminal vesicle and prostatic weight have a better predictive value than tests on pregnant animals. In a review of the action of cytotoxic substances, B. N. Hemsworth and H. Jackson direct attention to the destructive effect of sulphonic esters on rat foetal sex cells which results in sterility in adult life, and to the production of inheritable semi-sterility in mice; a reminder that not all embryopathies can readily be discerned by macroscopic examination.

About a quarter of the book is concerned with various aspects of the teratogenic activity of thalidomide. The chief contributions come from the groups led by R. T. Williams and H. Keberle, and give concise accounts of current research on the chemistry and metabolism of the drug and discuss theories on the mechanism of its action. Although it has been shown that thalidomide and its metabolites accumulate in the early embryo, none of the various hypotheses concerning the action of the drug has yet been satisfactorily confirmed by experiment. In contrast to some sections of the text, the verbatim publication of the discussions on the thalidomide papers enhances the value of the book. W. Binns gives an interesting account of an investigation into the role of a poisonous plant in the aetiology of a cyclopean-type deformity in lambs, and C. G. Hunter briefly reviews the embryopathic activity of pesticides, a subject that appears to merit further investigation.

The epidemiological approach to the identification of environmental teratogens is discussed by R. W. Smithells,

who points to the need for establishing the basic incidence and normal variations of particular malformations. B. C. S. Slater gives details of a pilot analysis of the results of a prospective investigation of drug embryopathies in women. He emphasizes that the success of such studies depends on accurate records of all medication—whether or not prescribed—during the early weeks of pregnancy. In the final two papers, F. O. Kelsey and D. A. Cahal describe the measures taken in America and Britain to minimize the incidence of embryopathies induced by drugs in pregnant women. Their impartial approach helps to place the subject in proper perspective and it is gratifying to find general agreement on many aspects of this difficult subject.

There is inevitably a certain amount of repetition in a book of this type, but the contents are a useful guide to current views on the complex problem of drug embryopathy.

J. W. S. HARRIS

PROGRESS IN MEDICAL SCIENCE

The Harvey Lectures

Series 60, 1964-1965. (Delivered under the auspices of the Harvey Society of New York.) By Herman N. Eisen, Alexander B. Gutman, Sidney Udenfriend, Hugh E. Huxley, Philip P. Cohen, S. E. Luria, Hilary Koprowski, Rita Levi-Montalcini and Henry A. Lardy. Pp. xiv+314. (New York: Academic Press, Inc.; London: Academic Press, Inc. (London), Ltd., 1966.) 76s.

THIS volume consists of well produced accounts of nine lectures on a wide range of topics. Several of the articles illustrate how multi-disciplinary attacks on a problem hasten progress. Thus S. E. Luria describes how the use of phage-mediated induction and bacterial mating between organisms (such as *E. coli* and *S. dysenteriae*) with DNA of similar overall base composition, followed by a biochemical examination of the β -galactosidases synthesized by the *lac*⁺ hybrids produced, allows investigation of the "comparative anatomy of a gene" and indicates a new approach to the study of suppressor mechanisms. R. Levi-Montalcini describes the discovery of a specific protein which has a marked effect on the growth of sensory and sympathetic nerve cells. The biochemical effects of this protein lead her to suggest that its effects are exerted at the genetic level. H. E. Huxley's review on the fine structure of striated muscle and the physical process of muscular contraction also attempts a correlation with the biochemical knowledge of the generation by enzymes of the energy required. This article is illustrated by a series of beautiful electronmicrographs. S. Udenfriend shows how a detailed knowledge of the biosynthesis of noradrenaline permits an understanding of the action of some pharmacological agents and also of related pathological lesions.

The value of studies on both the comparative and developmental aspects of a problem is revealed in P. P. Cohen's concise account of the biochemical changes involved in the transition from ammonotelism to ureotelism during metamorphosis and in the review on the biological significance of uric acid by A. B. Gutman, who also discusses the metabolic abnormalities in gout.

The results of investigations on the varying degrees of antibody response to a simple artificial determinant are discussed in detail by H. N. Eisen. H. Koprowski's review on tumour viruses is informative but difficult for