

the trees against which some of the world's experts in food and agriculture have been barking their individual and collective shins. He has, moreover, on many occasions shown those experts the way—and generally the only way—in which those trees can be cut down, to make a path through the jungle of anarchic production and inequitable distribution to that world of plenty now so often promised by the United Nations. A. L. BACHARACH

ANALYSIS OF OSCILLATIONS

Frequency Analysis, Modulation and Noise

By Dr. Stanford Goldman. (Radio Communication Series.) Pp. xiv+434. (New York and London: McGraw-Hill Book Co., Inc., 1948.) 36s.

THE manner in which this book has been written enables any one of the subjects mentioned in the title to be studied alone; but there are sufficient cross-references to indicate the relationships between them. Much of the material contained in the first section, dealing with Fourier analysis, can be found elsewhere; but it is presented here in a form particularly useful to radio engineers. The author maintains that mathematics should not be regarded merely as a convenient tool or a shorthand language to facilitate the solution of engineering problems, but as a subject exhibiting natural phenomena of its own. In support of this argument he mentions the many scientific discoveries which were made as a result of a mathematical investigation rather than by planned experiment. Certainly the mathematical treatments are presented in such a way that their practical importance is constantly in mind.

The comparatively short section which deals with the basic theory of modulation again contains material which can be found scattered among various textbooks; but more than usual attention has been paid to the fundamental similarities and differences between the various types of modulation.

The chapters on noise occupy half the book and are based largely on papers which have been published during the last few years. The importance of a statistical approach to the subject has been given an emphasis which will be particularly valuable to those readers with no previous knowledge of noise phenomena. Random noise, of the type caused by shot-effect in valves and thermal agitation in impedances, has been treated at length; but atmospheric and man-made noise are worthy of more than the brief mention given to them. Space might have been found also for the important subject of crystal noise, and a treatment of the interaction of non-random noise with a signal would have been useful to those concerned with jamming techniques.

The author's teaching experience has enabled him to produce a book suitable for students, in that many queries on interesting side-issues have been anticipated. A useful selection of exercises has been introduced at appropriate points in the text. At the same time, the clear lay-out of the text and diagrams, the full list of contents, and the index make the book equally useful for reference purposes.

In cutting down the mathematics to the essentials, the author has not forgotten those who wish to study the subjects more deeply, and an adequate supply of references to original papers is provided. As is often the case in American publications, however, a number of valuable papers published in British journals find no mention. F. HORNER

SYMPOSIUM ON HORMONES

Recent Progress in Hormone Research

The Proceedings of the Laurentian Hormone Conference. Vol. 2. Edited by Gregory Pincus. Pp. v+427. (New York: Academic Press, Inc.; London: H. K. Lewis and Co., Ltd., 1948.) 8 dollars.

VOLUME 2 of the "Recent Progress in Hormone Research" in effect the *Proceedings of the Laurentian Hormone Conference* for 1946. This meeting has become a very successful affair and is widely attended by workers connected with this field. The volume at present under consideration is largely concerned with the metabolism of hormones. It is divided into five parts, and each paper is followed by a summary of the discussion, with the names of those taking part and their comments given in considerable detail. As a rule, discussion reported long afterwards makes poor scientific reading; but it must be stated that in this volume the editors have obviously gone to great trouble to cut out the monosyllabic inanities that so frequently disfigure this type of discussion.

Section 1 is entitled "Physical Methods in Hormone Research" and consists of two papers. The first, by R. N. Jones on the characterization of steroid hormones by ultra-violet and infra-red spectroscopy, is an extremely valuable account of this very modern development in North America. It serves as an excellent introduction to the important and complicated work being performed by Dobriner and his colleagues. It is very difficult for the British reader to appreciate the importance of infra-red spectroscopy, as hitherto we have not had the apparatus. These beautiful self-recording infra-red spectrometers are commonplace instruments in America, and they greatly speed up the investigation of steroid excretion products. The discussion on this paper is particularly interesting and is opened by Dobriner. The second paper, by Friedgood and Garst, is on the identification and determination of oestrogens by ultra-violet spectroscopy. Here again the European reader can see the enormous importance of these automatic and self-recording instruments. This paper indicates that the excretion of oestrogens, which has hitherto been very unsuccessfully investigated, will now yield results to this type of method, and a new field has therefore been opened.

It is not possible to consider the remaining four sections in the same detail, but they follow the same method of presentation. They are concerned with the control of the pituitary, the metabolism of certain steroid hormones, the hormonal regulation of metabolism, and a final section on clinical endocrinology. This last is particularly interesting and contains three papers. The first, by E. P. McCullagh, is on sex-hormone deficiencies; the discussion following this paper is particularly interesting and can be read with great profit. The second paper is on adrenal cortical tumours and Cushing's syndrome, and is by E. J. Kepler, R. G. Sprague, H. L. Mason and M. H. Power. This again is interesting in that it deals with the excretion products, and it is certainly a very valuable contribution to this subject.

In conclusion, the volume is very definitely an essential one for workers interested in endocrinology. Each section has an adequate series of modern references, and the reader may be certain that if he is familiar with this work he will at least be as up to date as the book itself. E. C. DODDS