

the other of an officer of the National Gas Turbine Establishment. The two parts are written almost independently, and might well have been published separately. Indeed, the introduction to Part 2 claims that "it is often evident that a semi-empirical thermal approach can yield results which are much more accurate than a basic theoretical treatment which can usually only indicate orders of magnitude". A closer correlation of theory and experiment may be possible some day, but the authors, in their joint general introduction, say that "much more work must be done before we arrive at anything resembling a complete theory of, for example, flammability limits and ignitibility, particularly in heterogeneous systems", and hope that their monograph "will stimulate fresh ideas and indicate areas of combustion research in which future effort might be directed fruitfully".

Both parts of the book are based on a detailed knowledge of recent advances (up to about 1958) in the study of flame and explosion in gases, vapours and mists. The authors quote from their own contributions, some of which have not previously been published, and from available papers from many sources, including some important Russian work. The bibliographies seem to be thorough and carefully prepared, and the few errors that I have noticed (for example, the mis-spelling of the names of Blecher, Barth and Couriot) will not seriously inconvenience anyone.

The reference (p. 113) to "Semenov's original postulate that an ignition temperature is that temperature at which the initial loss of heat due to thermal conduction etc. is equal to the heat liberated at the same time by the chemical transformation" must have been written in ignorance of Van't Hoff's postulate ("Etudes de Dynamique Chimique", 1884), which reads "Le température d'inflammation est celle à laquelle la perte initiale de chaleur, due à la conductibilité etc., est égale à la chaleur que produit en même temps la transformation".

Although the chief value of the book is its review of the researches of the past ten years or so on gaseous combustion in relation to engines, it will be of much value to a wider circle concerned with the use or suppression of flame. The book is not for beginners, who have (as the authors repeatedly indicate) the works of Bone and Townend, Jost, and Lewis and von Elbe in which to find summaries of the older researches on this very intricate subject.

H. F. COWARD

ARTIFICIAL INSEMINATION IN CATTLE

Lehrbuch der Rinderbesamung
Grundlagen, Technik, Organisation und züchterische Probleme der Samenübertragung beim Rind. Von Dr. Karl Eibl. Pp. xv + 485. (Berlin und Hamburg: Verlag Paul Parey, 1959.) 74 D.M.

THIS book is a thorough and detailed compilation of facts from the literature about artificial insemination in cattle. While a list of the main books on the subject is given, no references to original papers are listed although names and dates are given in the text. It is arranged in six sections the scope of which are indicated by some of the examples quoted below. Section 1 deals with the anatomy and histology of the male organs. The structure of

spermatozoa, the pathology of spermatogenesis and abnormal forms are well illustrated. Different forms of artificial vaginas and electro-ejaculation are described. Methods of semen examination such as the impedance test, staining for live and dead sperm and for fructolysis are outlined. In Section 2 the female organs are described. A good illustrated account is given of the development and timing of the fertilized egg from ovary to uterus. Conception rates are also dealt with. Section 3 outlines the history, development and present state of artificial insemination in different countries. Various methods for proving bulls for milk and type are also described. The practical problems of the organization of artificial insemination stations are given in Section 4: plans are given for the layout of centres. Methods of feeding and examining bulls for disease and impotency are included. The significance of testes volume is also discussed. Among the various things described in Section 5 are the different dilutors and the blood grouping of sires and their offspring. Details and illustrations of the apparatus used in the deep-freezing of semen are given and semen banks are discussed. Reference is also made to the carbon dioxide method of storage at room temperatures. In Section 6, and also elsewhere, the problems concerned with semen infected with *Vibrio* or *Trichomonas* are discussed.

This is a very useful book to consult on all questions of artificial insemination in cattle. J. HAMMOND

ADVANCES IN VETERINARY SURGERY

The Veterinary Annual, 1959

Edited by W. A. Pool. Pp. xxiv + 363 + 36 plates. (Bristol: John Wright and Sons, Ltd., 1959.) 42s.

NO veterinary periodical has as yet, as a matter of editorial policy, sought to provide a comprehensive selected abstract service. "The Veterinary Annual" aims to satisfy this need, and the first edition has made a very good start.

It must be judged mainly on the adequacy and topicality of its reviews of the current literature, which provide the main bulk of the text. The literature of 1958 and part of 1959 is covered in most of the sections as topically as any annual published in early 1960 can be. The reviews cover the diseases related to bacteria and fungi, to protozoa, viruses and parasites, nutritional and metabolic disorders, reproduction and reproductive disorders, neoplasms, radiation and radiology, pharmacology, toxicology, physiology, surgery, technique and apparatus and public health.

The editor, W. A. Pool, has contributed several sections himself, and these are a good indication of the high standard he is setting. He has also avoided, and restrained his contributors (one or two apparently with some difficulty) from, covering up a deficiency of research results by theoretical exercises which may only mislead the veterinary practitioner who is not so well informed on these matters. Indeed the mere fact that these deficiencies due to lack of progress in research are obvious is to the credit of the editor and his contributors.

One major deficiency is the lack of reports of clinical trials of new drugs. This is emphasized by the list of fifty new drugs and appliances together with manufacturers' descriptions—many of which may never be competently evaluated.