

the title "Genetic Approaches to Cellular Variation" (see *Nature*, 181, 1706; 1958).

Of the many research centres devoted to radiation, the Biology Division of the Oak Ridge National Laboratory has for long been in the forefront not least because it realized the need to integrate this polyglot subject with the advancing fronts of biological research. Last year's symposium is further evidence to show the far-reaching influence of these conferences and the foresight of their organizer, Dr. A. Hollaender.

P. C. KOLLER
P. ALEXANDER

PHYSICAL CHEMISTRY AT HIGH PRESSURES

Physico-Chemical Effects of Pressure

By Dr. S. D. Hamann. Pp. ix+246. (London: Butterworths Scientific Publications; New York: Academic Press, Inc., 1957.) 42s.; 8.50 dollars.

THERE are several books concerned either with high-pressure technology or with the physics of high pressure, but this is the first to bridge the gap between these two subjects. Dr. S. D. Hamann, of the Commonwealth Scientific and Industrial Research Organization, Australia, has performed a valuable service in providing a concise summary of the effects of pressure in the field of physical chemistry. Although the book will be mainly of interest to physicists and chemists engaged in high-pressure research, it will also provide chemical engineers with a theoretical background to the subject.

The first part, dealing with the techniques of experimenting at high pressures, is concerned with the principles of small-scale experimental apparatus and, in particular, with those techniques, such as the generation of high transient pressures by shock waves, which have been developed during the past decade. The omission of the detailed information that is so essential in the design of high-pressure apparatus is offset by the provision of numerous references to original publications. The discussion of the effects of pressure on compressibility, phase changes, transport properties, electrolytic conduction and dielectric and optical effects deals in the main with changes brought about by pressures greater than one hundred atmospheres. In spite of this restriction, there are omissions, and some of the sections are of necessity very brief; nevertheless, the treatment, which is largely theoretical, is well illustrated by carefully chosen data. The author is well known for his work on the equilibria and kinetics of chemical reactions under pressure, and the last part of the book, which contains authoritative chapters on these topics, will be of great interest to chemists. Two appendixes are provided; one containing a bibliography of Bridgman's measurements of the compressions of liquids and the other information about the effect of pressure on the freezing temperature of liquids.

Throughout the book an admirable balance between theory and experiment is maintained. Except in the section dealing with the strength of thick-walled cylinders, empiricism has been largely avoided, and an attempt has been made to give molecular models of the underlying causes of the pressure effects. In the words of the author, it is likely that time will prove some of the models wrong, but in the meanwhile they will have a use if they merely stimulate further research.

K. E. BETT

VETERINARY HANDBOOK

The Merck Veterinary Manual

A Reference Handbook of Diagnosis and Therapy for the Veterinarian. Second printing. Pp. ix+1398. (Rahway, N. J.: Merck and Co., Inc., 1957.) 7.50 dollars.

THIS publication, produced by the Merck Pharmaceutical Company of the United States of America, is intended as a reference handbook of diagnosis and treatment for the use of veterinary surgeons. Among the stimuli to its preparation was the wide and enthusiastic reception given to a similar handbook prepared for the medical profession.

While encyclopædic tomes of this type (it comprises 1,350 closely packed pages) inevitably have many weaknesses, it must be stated at once that this is a serious and, in measure, very successful attempt to provide the veterinarian with concise, authoritative and readily available information on the diagnosis and treatment of diseases of domestic animals. Emphasis, of course, has been placed on those conditions occurring in North America.

Not the least of the problems arising in the preparation of a book such as this is the matter of classification. This is greater in veterinary medicine than in human medicine because of the number and variety of species the former deals with, and the diversity of the pathological conditions encountered in them. In this manual the classification is primarily under the respective body systems, and the various diseased conditions, whether they come under the heading of general pathology or contagious disease, of each species are included. Exceptions are poultry and the non-domestic animals, which have sections to themselves. It is confusing to find diseases of cattle, sheep and pigs, horses and dogs, dealt with under the same systematic headings. One would have preferred to see each of the important species dealt with separately and the contagious diseases separated from the general ones. Surgery does not receive more than a mention when appropriate; nevertheless, those who practise in the veterinary field know that the division between clinical medicine and surgery is a purely arbitrary one and not infrequently that which may be classified as medicine necessitates surgical interference. As is the custom with books of this type, one starts with the name of the disease and then reads all about it. This, of course, is the opposite from that which prevails in the field. One commences with the animal and is primarily concerned with the clinical signs it exhibits. This is followed by a detailed examination of the various systems of its body with the view of ascertaining the site and, even more important, the extent of the disease. Its name is the last point. The task of the veterinary surgeon differs from that of the doctor in that he is chiefly governed by the economics of agriculture and thus he must accurately assess what the animal's chances of recovery are; thus prognosis is often more important than treatment. These are things that can only be taught by skilled diagnosticians working at the veterinary equivalent of the bedside and by pathologists in the post-mortem room. No book can effectively replace them.

The Merck Company are to be complimented for producing what is, of its type, an excellent book and one which, despite the criticisms made, will be found most useful to veterinary surgeons. It should be stated that it is completely free from any suggestion of advertising material.

J. G. WRIGHT