

## BOOK REVIEWS : BOEKBESPREKINGS

### MEDICAL RESEARCH

*Methods in Medical Research*. Vol. 9. Ed. by J. H. Quastel. Pp. xiv + 460. Illustrated. \$10.75. Chicago: Year Book Medical Publishers. 1961.

It is easy to account for the popularity of *Methods in Medical Research*, of which this is the 9th volume in the series. There can be few medical schools where research does not play an important part in the academic activity of the institution, and the doctor on the staff who wishes to participate in the stimulating pursuit of investigative medicine frequently finds that the technical aspects of an experimental problem are the most formidable. The medical literary explosion has greatly curtailed the amount of space available in journals for detailed publication of the methods of medical research, and it is therefore highly desirable that a reference work such as this should be available to give the investigator detailed accounts of experimental techniques, their limitations and their interpretation.

The first section of this volume deals with the methods of enzyme assay which are used in clinical diagnosis and investigation. Authoritative accounts are given of techniques which are already used as routine investigations in many laboratories. Instructions are given for the assay of such enzymes as serum lactic dehydrogenase, red-cell glucose-6-phosphate dehydrogenase, serum transaminases, and enzymes of the citric-acid cycle. An intriguing account of a system for the automatic determination of serum alkaline phosphatase is given. A useful chapter on the techniques for studying blood coagulation is included in this section.

The second section deals fully with the methods used to study such pharmacologically active substances as the catecholamines, serotonin, tryptamine and  $\alpha$ -amino butyric acid.

The third section discusses methods for studying the intestinal absorption of various compounds that have already yielded valuable information concerning the transport of a variety of organic and inorganic substances across the intestinal mucous membrane. Many of the techniques described for studying the metabolism of the intestine or the renewal of cellular epithelium in the intestine could easily be modified and applied to other tissues.

The fourth section, on electrical recording from the nervous system, cannot be read without marvelling at the technical ingenuity and skill of the investigators who developed the techniques described. There are chapters on recording of

electrical activity in single nerve cells, in single nerve fibres and from the entire brain, that should be of immense value to anyone interested in this particular branch of neurophysiology.

The quality of the print is excellent. The illustrations are extremely informative and the bibliography is comprehensive. Those responsible for producing this volume of *Methods in Medical Research* are to be congratulated on yet another extremely valuable contribution to solving the problem of how to turn ideas into experiments. E.B.D.

### FREEZING AND SUPERCOOLING

*Biological Effects of Freezing and Supercooling*. By A. U. Smith, D.Sc., M.B., B.S. Pp. xi + 462. Illustrated. R5.50. London: Edward Arnold. 1961.

The last detailed account on the biological effects of freezing and supercooling, namely 'Life and death at low temperatures' by Luyet, appeared in 1940. During the past 20 years cryobiology has developed spectacularly. Dr. Smith has been largely responsible for this progress because of the part she played in the discovery and application of the influence of glycerol on the survival of spermatozoa and red cells and for her remarkable studies on the effects of hypothermia in the golden hamster. She has contributed to the techniques which were designed to avoid shock by slow cooling and rapid thawing and thereby increasing the chances of survival after complete arrest of breathing and heartbeats.

The studies reported include the influence of subzero temperatures (e.g. solid  $\text{CO}_2$ — $70^\circ$ ; liquid  $\text{N}_2$ — $196^\circ$ ; liquid helium— $265^\circ$ ) on water, physiological salt solutions, protozoa, yeast cells, insects, spermatozoa, gonadal and endocrine glands, bone marrow, corneal tissue, nerves and ganglia, whole organs and whole animals, including primates.

This work has important implications for the future, e.g. the extended use of deep-freezing banks, the storage of whole organs as spare parts, the resuscitation of hypothermic mammals which, by all accepted clinical criteria, were dead.

This monograph, which is the only work of its kind, will no doubt stimulate the future development of this branch of physiology.

This book is well illustrated and contains numerous graphs and tables; the micrographs are especially impressive. At the end of each chapter there is a complete list of references.

This work is a milestone in biological literature and is heartily recommended to all readers of this *Journal*. A.v.Z.

## ANATOMIE — 'N GIDS VIR STUDENTE

*A Student's Guide to Anatomy.* By D. Sinclair, M.A., M.D.  
Pp. 91. 75c. Oxford: Blackwell Scientific Publications. 1961.

Die skrywer het hom ten doel gestel om weg te doen met die skrikbeeld dat die studie van die anatomie die memorisering van 'n magdom feite is. Hy probeer die student se benadering tot die vak beïnvloed deur 'n kort bespreking van

die keuse van boeke, studiemetodes, lesings, praktika, eksamens, ens., en hy toon aan hoe die student al hierdie middels kan gebruik om 'n drie-dimensionele beeld van die liggaamstruktuur te kry.

Studente wat die anatomie begin studeer, en veral ook die jonger dosente, kan hierdie boekie met vrug lees.

J.F.v.E.K.