

to describe many "seemingly small, but actually critical details" of preparation. This is a praiseworthy aim, but it opens the way to dogmatism and the glossing over of differences of opinion between rival schools of thought. However, the author is usually frank in stating where his own experience has been limited, and he also provides a list of references at the end of each chapter, so that the novice can seek alternative advice. In the almost complete absence of regular courses of instruction in the techniques of electron microscopy, the present text provides as comprehensive a handbook as can be expected from a single pen. It is designed to be used at the bench rather than in the library, and should be beside every electron microscope in use in a biological or medical laboratory.

V. E. COSSLETT

## RADIATION PROTECTION

### Radiation Protection and Recovery

Edited by Alexander Hollaender. (International Series of Monographs on Pure and Applied Biology. Division: Modern Trends in Physiological Sciences, Vol. 7.) Pp. v+392. (London and New York: Pergamon Press, 1960.) 70s. net.

### Problems of Infection, Immunity and Allergy in Acute Radiation Diseases

By N. N. Klemparskaya, O. G. Alekseyeva, R. V. Petrov and V. F. Sosova. Translated from the Russian by Lydia Venters. Translation edited by R. Clarke. Pp. viii+165. (London and New York: Pergamon Press, 1961.) 50s.

### The Delayed Effects of Whole-Body Radiation

A Symposium. Edited by Bernard B. Watson. (Jointly sponsored by the Operations Research Office and the Walter Reed Army Institute of Research.) Pp. ix+80. (Baltimore, Md.: The Johns Hopkins Press; London: Oxford University Press, 1960.) 36s. net.

### The Entry of Fission Products into Food Chains

Edited by J. F. Loutit and R. Scott Russell. (Progress in Nuclear Energy. Series 6: Biological Sciences, Vol. 3.) Pp. vii+154+xii. (London and New York: Pergamon Press, 1961.) 45s. net.

### Radioactivity for Pharmaceutical and Allied Research Laboratories

Edited by Abraham Edelmann. (A Symposium sponsored by Nuclear Sciences and Engineering Corporation, held in Uniontown, Pennsylvania.) Pp. xii+171. (New York: Academic Press, Inc.; London: Academic Press, Inc. (London), Ltd., 1960.) 6 dollars.

CURRENT and forthcoming legislation, in the form of Factories Acts such as the "Ionising Radiations (Sealed Sources) Regulations 1961", and its companion dealing with the use of unsealed radioactive substances in industry, require the appointment of a medical officer, who will carry out examinations on those workers exposed to radioactive materials. Much of this work will fall on the industrial medical officer already connected with the firm, or the local medical officer of health, but it will be extremely unusual to find one with any knowledge on the effects of radiation. It is true that a set of notes (*Medical Supervision in Radiation Work*) has been drawn up by the World Health Organization, but the keen medical officer will generally wish to supplement

this knowledge with information on the effects of relatively high doses or chronic exposure to relatively low doses of radiation.

The subject is, however, still in its infancy, and much of the information is contained only in professional journals or proceedings of learned societies. The production of any text-book on the subject is therefore of considerable interest at the present time, though from this point of view the books under review are rather too specialized for the average medical officer. On the other hand, there is much to be learned from them, even by the non-specialized reader, and while the first three are primarily medical in character, the health physicist can also find much to interest him here.

All five books are the products of a team of authors, each a specialist in some particular part of the field.

Probably the most important is *Radiation Protection and Recovery*. This is not a comprehensive text-book, rightly concentrating on biological, physiological and biochemical methods of protection and leaving discussion of shielding, etc., to physicists. Its stated aim is to present some of the background of a rapidly developing subject, and in this it succeeds. A considerable amount of space is devoted to experimental treatment of acute whole-body radiation injury in mammals and to the allied problem of antibody formation, which is of great importance in connexion with bone-marrow implantation.

A remarkably extensive bibliography of some 1,500 references is included; this alone should make the book a valuable source of information in this field.

The second book is a translation, sponsored by the U.S. Atomic Energy Commission, of a monograph published in Moscow in 1958 and is probably not, therefore, fully representative of current thought in the Soviet Union. It deals exclusively with the results of animal experiments on auto-infection following irradiation, natural and induced immunization, allergic reactivity, and infectious diseases in radiation sickness; again there is an extensive bibliography, about half the 326 references being non-Russian in origin.

From the research worker's point of view, *The Delayed Effects of Whole-body Radiation* will be disappointing, though for those generally concerned with radiation protection there is some interesting material. Effects on life-span, the induction of malignant diseases and the production of cataracts are each covered in two chapters, one on animals and the other on man; genetic aspects are treated jointly.

*The Entry of Fission Products into Food Chains* is not directly comparable with the previous three books, but it is justifiable to include it in this review since the subject is so closely connected with radiation protection. As one might expect of the editors, who are authorities in this field, we have here a most informative group of papers, which were originally produced as reports by the Atomic Weapons Research Establishment. There are two sections on the retention of fall-out on herbage and ripe cereals, but the majority of the papers deal with animal experiments connected with actual nuclear weapon tests. This is definitely a specialist's book, but should also be of great interest to anyone concerned with the wider aspects of radiation protection and civil defence.

The last book is unfortunately titled. It is certainly not a text-book for pharmaceutical laboratories, being simply the proceedings of a symposium; it is very mixed in character and is too varied in standard to be of great interest.

HUGH D. EVANS