the advantages of the routine use of penicillin preparations after the removal of foreign bodies.

It is interesting to see that speed in irrigating chemical eye injuries is emphasized, as this is still too often overlooked; but there does not appear to be any mention of the use of the buffered phosphate solutions which are now used in Britain as universal antidotes.

There is an interesting chapter on epidemic keratoconjunctivitis which was a serious problem during the war years in America, and from which we in this country were fortunately spared.

While the phraseology and wording of this book is somewhat unusual and confirms its American origin, it undoubtedly contains a considerable amount of interesting material, and could well be included in the library of every industrial medical officer.

H. F. CHARD

Medical Aspects of Atomic Warfare. *The Practitioner* (December, 1950). No. 990, Vol. **165.**

This issue of *The Practitioner* consists mainly of a symposium upon the "Medical Aspects of Atomic Warfare" prepared with the help of Sir Ernest Rock Carling. Ten papers are provided covering a wide field without undue recourse to the complexities of atomic physics or radiobiology.

Sir Ernest Rock Carling's introductory article "Morale: an Exercise in Preventive Medicine", places emphasis upon prior education, information, discipline, and an effective medical service in maintaining national morale during atomic warfare, thus providing one of the most effective antidotes to the weapon's effects.

C. G. Neary ("A Simplified Account of Atomic Radiation Physics") prefaces his account by emphasizing that the most dangerous potentialities of atomic explosions are the thermal and blast effects; the radiation effects, while "novel", are not first in order of importance. He explains in a reasonably straightforward fashion such elements of atomic physics as are required to appreciate the problems likely to arise from different methods of atomic attack.

R. H. Mole ("The Action of Radiation on Tissues") gives a broad outline of the physiological and pathological sequelae of irradiation, and surveys the possible mechanisms of acute and delayed radiation injuries.

Brigadier A. Sachs ("Morbid Anatomy of Radiation Injuries") summarizes the pathological findings in the Japanese victims of 1945, and indicates broad clinical groupings of radiation casualties.

D. G. Catcheside ("Radiations and Genetics") discusses briefly the essentials of normal genetics, the process of mutation and some of its potentially adverse consequences in man. He then considers the mutagenic effects of radiation in animals and plants, and the evidence on the eventual genetic effect of irradiating a proportion of the country's population. His main conclusion is that there is likely to be a long-term genetic result from the irradiation received by surviving persons, although he is naturally guarded about its extent or significance.

E. Leader-Williams and J. Smith ("Assessment of Possible Casualties and Damage") give a sober and sobering evaluation of the probabilities of the effectiveness of atom-bomb attack, based on an analysis of the results of the 1939–45 war's H.E. bombing attacks, and the Japanese atom-bomb data. This article, perhaps above all others, draws attention to the probable magnitude of the destructive, social, and medical sequelae of atomic explosions in such a country as this, and points clearly to the most urgent problems of defence and medical organization.

Sir Claude Frankau ("The Casualty Service") considers the methods by which the nation's civil defence and medical services could best cater for the initial and secondary problems from atom-bomb attack, with due emphasis upon the massive scale of preparedness required to deal with the potential needs.

J. F. Loutit and W. d'A. Maycock ("The Treatment of Radiation Casualties"), after drawing attention to the probability of a higher incidence of casualties from non-radiation rather than radiation injuries, summarize the likely clinical courses of acute radiation injuries, and discuss nursing and therapeutic measures for casualties. Once more, it seems that the best lines of treatment as yet available concentrate mainly on good nursing, the prevention of concurrent infections, and the transfusion of blood. Although many pharmacological avenues have been explored, there seems up to now no effective therapy for the acute radiation syndrome.

J. P. Bull ("The Treatment of Flash-burns") summarizes present-day concepts of the treatment of burns affecting relatively large areas of the body surface. As in other articles, the probable need for urgent treatment of very large numbers of cases of burns within a short time is emphasised and methods for simplifying the initial and plenary treatments of the burned cases are suggested.

A. E. Martin's article ("Monitoring Instruments and their Use in Civil Defence") is perhaps a little short and comes rather late in the symposium. This may tend to imply that the use of monitoring instruments for dose-measurement and contamination-detection is somewhat of a side-line to the medical matters described in preceding papers. That is unlikely, since a knowledge of the order of radiation exposure received by a casualty will lead to better patient-grouping and disposal, better casualty reception and availability of treatment than would occur were all cases to be received and disposed of without regard to their magnitude of exposure. It would have been better if this paper were made to follow Neary's paper on the physical aspects of the explosions, and enlarged to conform to the real status of instrumentation during and after radiation emergencies.

The Practitioner has provided a helpful collection of expert opinion and knowledge on an important subject. As in most symposia, there is some repetition, but this—often annoying—occurrence is for once somewhat helpful, for the medical aspects of atomic warfare are not always easy to understand, especially where they involve the physical aspects of atomic explosions. The symposium provides the general practitioner or the industrial medical officer with an amount of information which is probably adequate for all present purposes.

There is of course no orthodox industrial medicine

in the symposium, and it would be difficult to regard the subject as one of occupational health. Nevertheless, the papers presented are of rather special value to the industrial medical officer and should help him to give a reasonably assured, knowledgeable, and unhysterical view of the medical aspects of future atom-bomb attack. And in this respect the medical officer is always regarded as "one who should know". His experiences with hazard evaluation, casualty prevention, first aid, casualty disposal, group discipline and group morale can be of high value in such emergencies. E. F. EDSON

The Industrial Safety Manual and Directory. Edited by J. Vernon Bosly, B.Comm. 1950. London: Practical Press, Ltd. Illustrated. Pp. 206. Price 25*s*. net.

In this book the Editor contributes a well balanced survey of the steps which should be taken to reduce hazards to health and safety; he discusses protective equipment, good housekeeping, and the education and training of management and workers. The provisions of the Factories Act in respect of accident prevention are set out in readable form, and the constitution and functions of a safety committee are described. There is a good account of the nature of mechanical hazards and the best ways of reducing them: common faults in electrical installations are illustrated by simple diagrams, and other chapters deal with dangerous chemicals, dust control, the risks of fire, and with ventilation, heating, and lighting. An interesting article points out the value of colour in the industrial environment; suitable colours are suggested for reducing the chance of accident in handling machines and in getting about.

Particulars are given of the principal organizations concerned with occupational health and welfare, and there is a useful list of periodicals and books on these subjects.

Finally, the book contains an alphabetical list of safety equipment and protective devices, which is cross-indexed with a list of firms and other agencies which supply these articles.

The Editor is to be congratulated on the production of this book, which is likely to be most helpful to all who are seeking to raise the standards of health and safety in industry. D. C. NORRIS

Safety in the Chemical Laboratory. By H. A. J. Pieters and J. W. Creyghton. 1951. London: Butterworth & Co. (Publishers) Ltd. Pp. 258. Price 15*s*.

This is a deadly serious book translated from the Dutch. It is intended to be at the elbow of every technician to warn him of the risks of his job and to tell him how to work safely. It is doubtful if any book can replace or even aid the learning from precept and example that forms the basis of technical skill.

The style of this book is jerky, disordered, and repetitious. It is characterized by a mixture of pomposity ("a fire is an exothermic reaction, mostly between an oxidizable substance and oxygen") and of naivety ("special care should be taken in the storage and transport of glassware and chemicals"). The book owes its length to its repetitiveness and to the inclusion of much irrelevant material that has replaced the detailed consideration of safety measures that should be the main object. Thus the treatment of cuts and wounds is given three lines whereas methods for dust sampling occupy seven pages: radiation hazards in the modern chemical laboratory receive 15 unhelpful lines and the methods for the estimation of carbon monoxide in the air and in blood, 17 pages. The methods for the detection of alcohol in the breath, blood, and urine (pages 180–184) also seem out of place in a book on safety.

Quite apart from defects in style and proportion the book fails chiefly because it is an inadequate guide to the trivial as well as to the major problems in laboratory management. Such statements as, "Handling a pipette frequently causes accidents especially with iodine or alkali hydroxide solutions. A safety pipette or a pump should be used", on page 51 and repeated in essence on page 124, make up about a third of the book. If the technician is so inexperienced that he is unaware of these points he will not be helped much by this exhortation. If the advice is considered necessary it should be amplified by a description of the safety pipette and the way in which the pump is used. As an example of omission on a larger scale, the problem of chemical carcinogens can be considered. Chemical carcinogens are discussed briefly under the heading "Toxicity and Chemical Constitution", and a page is given to the structural formulae of seven of these. This space could have been put to better use by giving an account of the types of laboratory in which risk of exposure to carcinogens is known to occur, the precautions that are taken in such laboratories, and the supervision of personnel exposed to this particular risk. But detailed information of this sort is not to be found in this book.

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Medical Aspects of Atomic Warfare

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