

addressed at the teachers and examiners rather than at the content of the manuals.

It is a pity that references to the contents of pre-1960 first-aid boxes have not been omitted altogether. To mention gentian violet and other outdated contents in this edition seems quite unnecessary. The comments on pressure points and tourniquets deserve commendation and it is to be hoped that these will be adopted by the First Aid Organizations in the near future.

It would be helpful if the section on electric shock treatment was tied more closely to the recommendations on resuscitation. The mouth to mouth method is probably more deserving of special mention than a rocking stretcher, which may well not be available, and surely if it is believed that external cardiac massage is a technique suitable for use by first aiders, this is the place to draw attention to it. The description of cardiac massage is very sketchy and no mention is made of any of the dangers inherent to the method.

The accuracy of the statement 'voltages under 150-250 are not often fatal' must be queried; of 38 fatal electrical accidents in 1958, 20 were due to voltages up to 250, the majority from voltages between 200 and 250. It is usually accepted that there is a risk of electrocution above 150v, and the figures quoted by the authors may give workers a false sense of security when dealing with ordinary domestic voltage.

These are all minor points; this book continues to give an excellent background to the industrial first aider, although it is doubtful if six instruction periods are adequate.

J. R. BOWKER

The Regulation of Human Respiration. The Proceedings of the J. S. Haldane Centenary Symposium held in the University Laboratory of Physiology, Oxford. Edited by D. J. C. Cunningham and B. B. Lloyd. (Pp. 591; illustrated; 90s.) Oxford: Blackwell Scientific Publications. 1963.

As a young man Haldane made the important discovery that breathing is regulated to a greater extent by carbon dioxide excess than by oxygen lack. This finding arose out of interest in the effects of overcrowding on health. It turned Haldane's attention to blackdamp which he found to contain about 12% CO₂ in nitrogen, and afterdamp, when he revealed the hazard from carbon monoxide after explosions in mines. This led him to develop oxygen breathing apparatus for rescue teams and to use small animals to monitor the atmosphere. These remarkable contributions to industrial hygiene are part of the debt we owe J. S. Haldane, the Centenary of whose birth was commemorated for the Physiological Society by a Symposium at Oxford.

The published proceedings start with a curriculum vitae, bibliography, and tribute by Professor C. G. Douglas which demonstrate the enormous range of Haldane's interest and achievement. Haldane published extensively in journals concerned with industry including *Transactions of the Institute of Mining Engineers* and the *Journal of Hygiene*, which he founded; he worked more in an industrial than academic environment and was for

four years President of the Institute of Mining Engineers. These aspects of Haldane's life demonstrate the interrelation of pure and applied science. They introduce the symposium which stemmed from his work. This was attended by 132 physiologists from 14 countries.

The bulk of the book consists of 27 papers and discussion which provide an authoritative description of control of normal breathing. Contributions on carotid glomus sensory mechanisms by Neil and Joels, arterial CO₂ and hydrogen ion as respiratory stimuli by Perkins, and papers on adaptation to high altitude seem to the reviewer to be particularly interesting; these subjects are pertinent to the regulation of breathing in patients with chronic lung disease which is not discussed.

The symposium contains hypotheses to explain the increase in ventilation on exercise, which are to some extent incompatible; it is evidence for the usefulness of the occasion that some have since been modified or restated (for example *British Medical Bulletin*, January 1963). Meanwhile the facts they seek to explain are summarized clearly in this account which can be recommended to all disciples of Haldane; if they are not yet interested in respiration this book should convert them.

J. E. COTES

Principles of Rehabilitation. By W. Russell Grant. (Pp. 76; 12s. 6d.) Edinburgh and London: Livingstone. 1963.

This is a short book based on a series of articles which appeared in *The Practitioner* and represents a practical approach to a group of every-day problems. The practice of rehabilitation is not itself restricted to the specialist in physical medicine, and this book is mainly directed towards the doctor interested in total patient care, but who lacks special training in rehabilitation. It is full of valuable advice for the general practitioner, industrial medical officer, hospital doctor, and all interested in problems of locomotor and physical disability. Almoners, occupational therapists, and social workers should also read this book. The most important sections are those on methods of achieving personal and domestic independence. The adaptation of simple and easily obtained apparatus, such as industrial hoists and overhead garage door track to enable the severely handicapped to transfer from bed to chair or bath, is clearly described and illustrated by well-chosen photographs and excellent line diagrams. All gadgets described are cheap, and work. Criticism may be directed towards the chapter on Treatment at Home, which is inadequate, and to the book's title. It would be better called *Some Aspects of Rehabilitation*, as it is far from being a complete outline of rehabilitation principles or rehabilitation practice. It is however a sensible book and can be strongly recommended to all interested in physical disability.

R. HARRIS

Milk Hygiene. Hygiene in Milk Production, Processing and Distribution. World Health Organization Monograph Series No. 48. (Pp. 782; £3). H.M.S.O., London. 1962.

Milk Hygiene is sub-titled *Hygiene in Milk Production, Processing and Distribution*, and its 37 distinguished contributors attempt to cover this wide field from a practical point of view. That this is an urgent problem is emphasized by the estimate in the final chapter that a new milk plant, with a capacity of 100,000 litres per day, should be opened every two weeks for the next 10 years in the underdeveloped countries just to provide the expected increase of 65 million in the child population with 0.25 litre/day each. The areas with the greatest need are just those where the problems of adequate milk production per animal, of prevention of contamination, and of preservation of milk until it can reach the consumer are greatest. Drawing on the experience of countries which have virtually eliminated the spread of milk-borne disease, the contributors make detailed proposals for organizing efficient and safe milk production under various environmental conditions. Their reminder of the importance of the education and training of milk handlers is timely, even for a country such as Great Britain.

J. LEESON

Text-book of Orthopaedic Medicine, Vol. I. *Diagnosis of Soft Tissue Lesions*, 4th ed. By James Cyriax. (Pp. xiv + 735; 134 figs. + 40 plates; 55s.) Cassell, London. 1962.

Dr. Cyriax, physician to the Department of Physical Medicine at St. Thomas's Hospital, needs no introduction, nor should this book as it is now in its fourth edition.

The book is of great interest to all who practise medicine even though some may disagree with some of his deductions.

The chapter on referred pain is clear and concise, and a knowledge of it, as is forcibly pointed out, gives the only chance of accurate diagnosis in many unfortunate people who are labelled anything from 'arthritic' to 'neurotic', both equally damaging to the patient and in the long run to the doctor.

Dr. Cyriax's plea for an open-minded approach is an attitude about which many doctors might learn much from their scientific colleagues.

My only major criticism of this book concerns the chapter on psychogenic pain, undoubtedly because it is an 'extra'. I find it quite impossible, with the majority of patients, to divide people suffering from pain into physical or psychogenic, and this is the impression given by this chapter, though I doubt that this is Dr. Cyriax's intention.

There are some very scathing words written about intermittent mis-directed prolonged physiotherapy and also medico-legal problems with which the reviewer completely agrees.

The book is easy to read, the diagrams are clear, and the paper has not got the glossy finish so tiring to the eyes.

J. R. BURROWS

Air Sampling Instruments for Evaluation of Atmospheric Contaminants, 2nd ed. (Pp. vii + 424; illustrated; \$8.00 soft bound, \$9.50 hard bound). American Conference of Governmental Industrial Hygienists, 1014 Broadway, Cincinnati 2, Ohio. 1962.

In this country, at least, many workers in the field of occupational hygiene have not had the opportunity to undergo formal instruction in their subject and yet may be called upon to carry out environmental determinations of a wide range of substances. Nor is the task of literature study made easy, for many of the standard textbooks devote but little space to detailed descriptions of air sampling equipment, and articles dealing with this aspect are scattered throughout a very wide range of publications.

There should, therefore, be a warm welcome for the volume which is the subject of this review. In a series of five introductory papers the principles of air sampling are reviewed under the headings of:- Air sampling and analysis for contaminants; aerosol sampling and the importance of particle size; home-made instruments; calibration of air sampling instruments; and factors affecting the selection of an air sampling method. The main body of the book is occupied with reviews of specific types of instruments ranging from air movers and filter media through electrostatic and thermal precipitators to direct reading colorimetric devices and physical instrumentation. Each review takes the form of an introductory technical section in which the inherent capabilities, sensitivities, advantages, and limitations of the particular methods are discussed, followed by descriptions of current instruments, supplied by the manufacturers. The majority of the instruments described are manufactured in the U.S.A., but the increased availability of these products in this country makes this less of a disadvantage than would have been the case a few years ago. Indeed it is a sign of the development of occupational hygiene in this country that more of our own manufacturers are now becoming interested in meeting demands for air sampling equipment.

D. E. HICKISH

Occupational Health Problems in Agriculture. *W.H.O. Tech. Rep. Ser.* No. 246. Joint I.L.O./W.H.O. Committee on Occupational Health. (Pp. 61; 3s. 6d.) Geneva: W.H.O. 1962.

In view of the recent appearance in this country of the first report on Safety, Health and Welfare in Agriculture it is opportune to see this short booklet which is the report of a joint I.L.O./W.H.O. Committee on Occupational Health Problems in Agriculture. The subject is considered under four headings.

Public Health Problems related to agricultural work embrace housing conditions, water, and sewage disposal. Specific problems include the economic situation of the agricultural worker in the community and the economic vulnerability of those workers to the caprice of the weather. Accidents on the farm are considered under the heading of Public Health Problems. It is noted that accidents are a leading cause of death and disability.

Toxic Hazards are a relatively new problem to agriculture and have attracted a good deal of attention and legislation. But to keep this in perspective it is pointed out that in the U.K. and U.S.A., at least, accidents from mechanical equipment far outnumber those from poisoning (nevertheless 'Toxic Hazards' occupies nine pages of the report, compared with one and a half devoted to farm accidents). Much trouble seems to stem