training of ambulance crews is a recurring theme throughout and one hopes this plea will fall on fertile ground.

In the second part of the book in which the author turns his attention to other accidents including mountain, cave, water, and industrial situations he is on less sure ground. I do not think I am being unduly parochial in criticizing Dr Snook for giving too little credit to occupational medicine. Before 1955 the coal and petroleum industries had, for example, designed and built ambulances on much the lines he is now advocating. Most large factories, chemical plants, and oil refineries in this country have well organized rescue services which are given only a passing reference. In a section on the treatment of chemical poisoning there is no mention of the National Poisons information centres in London and elsewhere, although the telephone numbers are given in Appendix 4. The list of chemicals likely to be encountered on the roads is very brief. The Draeger multi-gas detector kit, although it may be used to determine the concentration of known gases, is not designed to identify unknown hazards; its use is therefore likely to be of little value in these circumstances.

The illustrations, many in colour, are on the whole excellent, but there is no good illustration of the Tynemouth spinal splint. Many of the more gory colour photographs could safely be omitted because they do not serve any useful purpose, but the line diagrams are of a very high standard. I doubt the need for so much detail on tracheostomy and transfusion techniques which are procedures best learnt by practical experience. The suggestion of spending time with an anaesthetist to learn the techniques of tracheal intubation, intravenous infusion, and resuscitation is much more to the point.

The book is well printed but the format rather cumbersome for what is essentially a work for ready reference. The index is comprehensive and the appendices contain useful lists of books and of addresses for the purchase of equipment, etc. One hesitates to criticize the poor use of English because the enthusiasm of the author for his subject shines through all the split infinitives, but occasionally bad grammar does interfere with understanding. This book deserves a second edition with fewer illustrations and the text rewritten in a concise style more suited to the subject.

W. M. DIXON

Noise: The Unwanted Sounds. By David M. Lipscomb. (Pp. 331; \$15). Chicago: Nelson-Hall. 1974.

The preface to this book states that it contains 'a healthy sprinkling of humor . . . and . . . hilarious anecdotes'. Unfortunately much of the humour and many of the anecdotes depend on references to American personalities, geography, politics, or federal law and the 300 pages left a feeling of boredom. References to American standards, without mention of the international equivalents proved annoying, as American standards are not readily available in this country. A number of figures are noticeably dated; cycles per second repeatedly appears instead of Hertz and at least one figure is drawn in terms of the old American standard octave band frequency limits which were superseded in 1967. A minor mistake in the noise levels permitted under the Walsh Healey Act occurs in an unfortunate place in Table 6.1. All this is likely to prove

confusing, especially to the uninitiated layman for whom the book is intended.

Much space is devoted to one of David Lipscomb's favourite topics, the hearing losses found in young people due to exposure to pop music, sport shooting, and unsilenced internal combustion engines. However, this is balanced by a short chapter which plays down many of the over-statements which are made by conservationists and the like, which have no validation or are out of context, and are then repeated by the popular media. There is also a warning given, equally applicable on this side of the Atlantic, that 'industrial noise consulting has become a very attractive business for some people who are not capable of adequately conducting services'. Brand names of American acoustical sleep-inducing devices, and more than 40 pages of the texts of letters received by the Noise Study Laboratory together with the replies, proved uninteresting. The chapter on 'reducing the noise' is largely devoted to legislating, regulating, or lobbying against noise. The principles of noise control are dismissed in two pages and the reader is left confused over the difference between insulation and absorption.

The book is quite obviously directed to the American layman, and gives little assistance with solving either the medical or engineering problems associated with excessive noise exposure. British books, previously reviewed here, are more appropriate for practitioners of occupational medicine in this country, and are more favourably priced. However, this book may still prove useful to anyone seeking material for low-key lectures or talks.

W. I. ACTON

The Training and Utilization of Feldshers in the USSR: Prepared by the Ministry of Health of the USSR for the World Health Organization. WHO Public Health Paper no. 56. (Pp. 52; Sw.fr. 5). Geneva: WHO. 1974.

Recent medical manpower projections suggest that in ten years' time we will still be as dependent in the National Health Service upon overseas doctors as we are today. These projections were made before the recent report of the Merrison Committee and it may be that the doctor/patient ratio in a decade will be even higher than the projections predict. In many branches of medicine, manpower shortage has been minimized by delegating increasing responsibilities to non-medical colleagues. In the United States, physicians' assistants are being trained to improve the position in primary care, and laymen and women are now prepared in periods as short as three months for specific clinical functions. In many parts of the world in which doctor shortage is endemic, nurses play an increasingly important role; the attachment of health visitors and district nurses to general practice in Britain has created an interest in the primary care team.

In Russia none of this is new. This WHO Public Health Paper describes the origins of the feldsher in 1872. After the October revolution it was hoped for a while that all medical care could ultimately be provided by fully trained physicians. When this hope had not been realized by the 1950s, training programmes were expanded and there are now in USSR something of the order of 200 000 feldshers in primary care, 20 000 feldsher

sanatorians, and 70 000 feldshers in industrial medicine.

The training programme of 3½ years follows normal high school, is highly theoretical, and almost conforms to EEC requirements for physician training of 5500 hours. The programme includes basic medical and social sciences, anatomy and physiology, all the paraclinical and laboratory subjects together with clinical medicine, pharmacology, therapeutics, and preventive medicine. 'Scientific atheism' is one of the less conventional subjects from a British standpoint. Practical work is restricted to 16 weeks, but it is clear that experience is rapidly acquired in the field.

Feldshers can be found in every medical setting from primary to intensive care. Feldsher sanatorians fulfil a role midway between the British health visitor and public health inspector. In occupational health the feldsher is responsible for preventive medicine, routine screening, and primary care of the population in his charge. Feldsher health posts are found in undertakings employing 400 to 1000 workers. Where there are a 100 or more workers on night shift, a 24-hour service is provided. Although supported by a physician, the feldsher is clearly in a responsible and often independent position. In primary care, feldshers—particularly in the rural areas—may operate at some distance from medical support and may have a population of up to 3000 to care for. In whichever field he works, the feldsher is sent on frequent refresher courses for periods of a week to three months, and many of these courses are designed to inculcate specific skills on the American model.

As the best example of an established and accepted middle grade medical worker, the feldsher deserves further study. This monograph is an excellent primer.

J. H. WALKER

The Use of Mercury and Alternative Compounds as Seed Dressings: Report of a joint FAO/WHO meeting. Technical Report Series no. 555. World Health Organization, Geneva, 1974. (Pp. 29; Sw.fr. 5). Geneva: WHO. 1974.

The report sets out clearly and simply problems arising from the use of potentially toxic substances as seed dressings and discusses the alternatives. The published literature is extensive and the toxic and other properties of seed dressing compounds have been reviewed by experts of WHO and FAO. For these reasons there is no bibliography, but relevant monographs are included in the list of WHO Technical Reports appended (nos 513, 525, 531, and 545).

The effects of misuse of two types of pesticide, organo-mercury compounds and hexachlorobenzene, used in the

control of fungus diseases of seeds are described. Such seeds may be cereals which form important sources of food for hungry people, and major outbreaks of poisoning affecting many thousands of people have occurred in developing countries where seed intended for planting to ensure healthy high-yield crops has been used instead for food.

The symptoms and signs of poisoning by alkyl (ethyl and methyl) mercury compounds and by hexachlorobenzene are described. Tables 1 and 2 summarize the seed diseases controlled and compare the effectiveness of the insidiously poisonous mercury seed dressings with others which are less toxic. Those pesticides which are less toxic than the alkyl mercury compounds, the benzimidazoles, carbamodithioates and others, tend to control fewer infections and to be more expensive.

The need to substitute seed dressings of low toxicity for the highly-toxic alkyl mercury compounds is recognized in the introduction, and the recommendations include that alkyl mercury compounds and hexachlorobenzene should be used only where there is proven need, and with strict control of application of the pesticide and handling of treated seed. The less toxic alkoxyethyl and phenyl mercury compounds should also be used only when there is no alternative. Education of those responsible for treating and exporting seed and of those receiving it must ensure that it cannot be used as food. It should be distinguished from grain which may be eaten by use of a dye which cannot be removed by washing. In the past poisoning has occurred because the colour has been removed but not the toxic dressing. The addition of a substance which would give a permanent odour or taste, or cause nausea, is discussed but considered impracticable at the present time.

Other recommendations include advice on labelling (in the language or dialect of those receiving the seed), transport, and education in safe use and the dangers of misuse. The report concludes with a discussion of non-chemical methods of plant control which would reduce greatly the need to use highly-toxic seed dressings.

P. L. BIDSTRUP

NOTICE

The British Examining Board in Occupational Hygiene

The 1976 examinations for the awards of Certificate and Diploma in Occupational Hygiene will be held in London on 15-17 November 1976. Applications may be made to the Secretary, Dr D. Turner. The Associated Octel Co. Ltd, Ellesmere Port, Cheshire L65 4HF. The closing date for applications is 30 September 1976.