historical survey of occupational health practice by Dr. Simson. The volume ends with 44 specific recommendations grouped under headings such as company policy, personnel practices, occupational health, rehabilitation, safety, and the vexed matter of medical certification. While there is little here that has not been proposed elsewhere, this report has the advantage of having a strong practical bias and collecting all the opinions in one booklet.

P. J. TAYLOR

Statistical Tables on the Health of the Army, Vol. I 1967, Vol. II 1968, Vol. III 1969. (Pp. 129; 131; 129, no price stated.) **Statistical Tables on the Health of the Army 1970.** (Pp. 142; no price stated.) London: Ministry of Defence. 1972.

Detailed statistics on morbidity are always welcome and these four volumes on the health of the British army at home and abroad contain many interesting figures, but without a more detailed description of the population at risk they are of rather limited value. For example, few actual numbers are given and none of the tables is broken down by rank. It is appreciated that some of these shortcomings may lie outside the statistician's control.

The main area of interest is the differing incidence of a few conditions (skin disease, appendicitis, diarrhoea and enteritis, tonsillitis and pharyngitis) in commands situated in various parts of the world. Injuries, the main cause of admissions for treatment, are rather summarily dealt with.

The statistical appreciation with which each volume begins is somewhat terse, and several points of interest which arise from the tables are not discussed. It is a pity that more has not been made of the labour which has gone into collecting the data and compiling the tables.

D. APPLETON

Microbiology of the Atmosphere, 2nd ed. By P. H. Gregory. A Plant Science Monograph, general editor N. Polunin. (Pp. 377; 8 plates; 47 figs; £7.50.) Aylesbury: Leonard Hill. 1973.

The behaviour of small living particles in air is of interest in many biological disciplines and Gregory's *Microbiology of the Atmosphere*, now in its second edition, provides a great deal of factual information that will be valuable to a variety of workers. Dr. Gregory discusses the nature of the atmosphere and the behaviour of the air masses that may transport living material and then describes the mechanisms by which microbes, pollens, and spores may be liberated into the air and travel through it. As befits a volume in the series Plant Science Monographs, attention is concentrated on the spread of plant pollen and spores, and of the fungi that can infect them, and, in consequence, dispersal in the open air is predominant and is well described and illustrated. In contrast, the intramural spread of bacteria and viruses infecting men (and animals) is given relatively little space, supported by a very curious balance of references, many culled

from the last decades of the nineteenth century. Despite the use on the dust-cover of a photograph of bacteria on an epidermal scale, dispersal of bacteria from the skin has scant treatment.

The book is enriched by illustrations of fungal and other spores and pollen grains and there are 38 pages of references; it will continue to serve as an important manual for all those interested in the living matter of the air.

R. E. O. WILLIAMS

Occupational First Aid. The Authorised Textbook of the St. John Ambulance Association and Brigade. (Pp. 43; illustrated; 75p.) London: Macmillan Journals Ltd. 1973.

Most of the day-to-day problems that face first-aiders working alone are, of course, minor ailments and injuries. Their abilities to splint fractures, stem haemorrhage or care for an unconscious patient are seldom—if ever—put to the test except in examinations or competitions. This booklet, which supplements the standard St. John training manual, will be widely welcomed because it provides much of the guidance that has long been needed. A great improvement on previous editions, it is well laid out and easy to read. Its scope is best indicated by the titles of its six chapters, the longest being only seven pages—duties and responsibilities of first-aid attendants; treatment of minor injuries; treatment of minor illnesses; emergencies and major incidents; anoxic states and their treatment; and the first-aid and safety. The importance of good record keeping is stressed and the Birmingham Accident Transfer form is illustrated.

Reference is made to various topical subjects, such as the Robens' report and the impending translation of the Medical Officer of Health to Community Physician. Paracetamol is recommended as the analgesic of choice, and the risks of aspirin are described. Since there must still be many first-aiders who use APC or its proprietary equivalents it is a pity that no mention is made of phenacetin. The analogy of a coal-fired power station used to explain the various types of anoxia is, however, complicated—some may think laboured—and its accompanying diagram lists medical conditions such as 'pulmonary oedema' and 'cerebral ischaemia' without explanation. This chapter also describes how to use amyl nitrite in cyanide poisoning, and advises the injection of atropine by the nearest person for organophosphorus-induced respiratory paralysis but with no mention of any earlier warning signs or symptoms.

This booklet will certainly be widely read by first-aiders and it should also be read by all doctors and nurses who practice in industry or commerce, since they may be asked for their views, and perhaps even to clarify a few points.

P. J. TAYLOR

Institute of Occupational Medicine. Report 1969-72. (Pp. 21; 50p.) Institute of Occupational Medicine, Roxburgh Place, Edinburgh EH8 9SU. 1973.

In the early years of the National Coal Board's Medical

Service a good deal of the research was contracted out, and the influence of such units as the MRC's Pneumoconiosis Research Unit was relatively large. But since 1969 the National Coal Board has established its own Institute of Occupational Medicine or, more accurately, perhaps, Mining Medicine, in which a number of diverse research groups have been brought together. This is the first report of the Institute. The research programme which is set out has a strong environmental bias, as is most appropriate. A good deal of the work is concerned with dust, and, as well as the standard equipment, the Institute possesses a wind tunnel. Some interesting findings are already beginning to appear, such as the relationship of dust exposure to radiological pneumoconiosis and a tentative answer to, perhaps, an even more important question—How much dust can be breathed in without contracting pneumoconiosis? The resistance of some men to this condition is confirmed, and it is shown that in men under 45 years of age there is a definite association between exposure to respirable coal dust and the prevalence of bronchitis.

Some interesting work in ergonomics is going on and the acoustics team has shown how complicated the noise contours are round a piece of heavy machinery.

In its three years work the Institute has produced 29 publications and 36 technical memoranda. The report is nicely produced on art paper, and the photographs and reproductions reach a high standard.

R. C. BROWNE

Health Practice Research and Formalized Managerial Methods. By F. Grundy and W. A. Reinke. (Pp. 193; £1·25.) Geneva: WHO. 1972.

The preface to this volume explains that its purpose is to 'describe, as simply as possible, the principles of health practice research and the managerial methods employed in tackling health practice problems'. The 'application of scientific and especially mathematical methods to management problems is relatively new'. The methods were used in relation to military problems during the second world war and subsequently in industry and commerce. More recently, WHO consultants have studied these techniques in relation to health practice research, and this volume is an expansion of their conclusions.

The first chapter on Scope and Character of Health Practice Research discusses techniques which will be well known to the occupational health physician—systems concepts, systems analysis, need-demand relationships, cost-benefit analysis, and the use of network and mathematical models. He will also appreciate the necessity of the multidisciplinary approach in health practice research, but the authors are correct in emphasizing this concept, not always sufficiently appreciated in other branches of our profession.

Chapter 2—The Methods of Operations Research Applied to Health Practice—is an expansion of the study of suitable models, especially of mathematical models, and proceeds to discuss decision analysis and dynamic programming.

These techniques are then used in studying various subjects in the next few chapters—Health Care in the Community; Disease Control, using typhoid fever,

tuberculosis and cholera as examples; and Health Manpower Requirements. Further chapters consider training for health administration and health practice research.

There is also a useful annex on practical considerations in health practice research, which in a few pages gives excellent advice on many aspects of research planning. Those who try to introduce a research element into their clinical or administrative work will find a very tidy outline for planning their research programme, so that this annex should be of interest to all occupational health physicians. While most of the book is concerned with general and hospital health services, occupational medicine could well profit from application of the principles enunciated. If we applied cost benefit analysis with adequate care to problems such as routine examinations and published our results, much good could result.

The authors have tackled a difficult subject with considerable success. They have enumerated their problems in the introduction, and their clarity here and in the subsequent chapters is perhaps the best recommendation of the techniques they describe.

They have chosen to give very few references in the text but have compiled a most useful annotated bibliography under seven subject groups. They and WHO are to be congratulated on such a fine presentation of their subject at such a low price.

M. A. COOKE

Nutritional Deficiencies in Modern Society. Edited by Alan N. Howard and McLean Baird. (Pp. 109; illustrated; £1·30.) London: Newman Books. 1973.

Eight papers presented at a symposium arranged by the Food Education Society are published together in this small book. Those interested in current problems of nutrition will find this a useful and informed publication.

The prevalence of malnutrition in the United Kingdom is a question frequently raised in relation to vulnerable groups in the population. These papers, covering a wide variety of nutrients, form a useful series of reviews.

Dr. Callender, writing on iron deficiency anaemia, enumerates the sources of iron in the diet and describes some of the work carried out on absorption of this nutrient. While she concludes that iron deficiency is widespread, its incidence has been reduced by better medical care and higher standards of living.

Dr. Chanarin, discussing deficiencies of vitamin B₁₂ and folic acid, reviews the literature on requirements and availability of these vitamins, indicating that groups at risk are likely to be found among strict vegetarians and possibly, in relation to folic acid deficiency, among pregnant women and elderly people.

Nutritional aspects of calcium and vitamin D are discussed by Professor Nordin. While nutritional rickets are rare in this country, he considers that calcium may be playing a significant role in the growth of children. He cites the increase in growth as seen in Japan and questions the effect that the removal of school milk might have on the development of children in the United Kingdom. This paper raises many questions in relation to calcium absorption, supplementation with vitamin D,