Occupational Health. By Geoffrey Ffrench. (Pp. 177; 10 plates; £4.50.) Lancaster: Medical and Technical Publishing Co. Ltd.

This is an occupational health book with a difference. The author, an Irishman with an English education, was interested from the first in the relationship of the environment to health. He has worked in Canada, India, West Africa, and Kuwait before taking up the directorship of the Central Middlesex Industrial Health Service. The book follows its theme of the health of people at work to discuss the structure of management and human behaviour in industry. This is succeeded by a simple description of the anatomy of the human frame, illustrated by dramatic drawings of men lifting tallboys, which are supported by a sling round the shoulders. The natural history of accidents and the nature of occupational health disorders are next discussed, and there is a chapter on alcoholism in industry. Respiratory disease, occupational cancer, metals, a few new industrial techniques, rehabilitation, retirement, health screening, and occupational health services all have a chapter each.

This book is rather discursive, full of long quotations, and a lot of it is written in the first person. Not all of it is quite to the point. For example, two pages are taken up by lists of enzymes, which have been shown to be deficient in cases of inborn errors of metabolism. On the other hand, only six pages are allowed in a chapter on occupational health disorders, a subject about which some fat books have been written. Nevertheless, it is an interesting book for the intelligent general reader, and the author has some nice things to say about Newcastle upon Tyne.

R. C. BROWNE

Medical Aspects of Lead Absorption in Industrial Processes. (Pp. 39; illustrated). Copies available free of charge from: The Lead Development Association, 34 Berkeley Square, London, W1X 6AJ.

This report contains 11 papers presented at a meeting held in July 1972 and a summary of the discussion. Despite the title it is primarily concerned with techniques for monitoring exposure and the interpretation of results.

The introductory paper presents a first-class review of lead in man and is followed by a series of papers describing the monitoring of lead intake, principally by determination of lead concentration in blood. Four papers describe recent techniques for monitoring blood lead by micromethods, one reviews experience in a commercial hygiene service, and one discusses the interpretation of blood lead results. An experienced company physician succinctly reviews medical supervision problems, and the Factory Inspectorate's views on legislation are presented. Two papers lie outside the main theme; one outlines methods of measuring lead concentrations in the atmosphere (not necessarily related to a worker's intake), and in chimney stacks, making reference to an instantaneous lead sniffer. The other indicates the potential hazard to children arising from contamination reaching the homes of lead workers, and emphasizes that industrial hygiene must also consider the environment around the plant.

The report as a whole presents an excellent review of current knowledge. It will guide those who have to evaluate lead exposure, whether it be to assess risk to men, or to establish or maintain effective control systems. Although the reader is left to make his own selection of analytical method, the clear message is that reliability of analytical results must be regularly confirmed by exchange of samples between laboratories. The reported requirement for laboratories in Sweden to be approved and licensed may help ensure this but may not reduce the risk of contamination of blood samples during collection. Microsamples must be more vulnerable to contamination if taken in an industrial lead environment.

The report helps to emphasize that all monitoring results demand discretion and experience for their safe interpretation. Environmental and biological monitoring has not been adequately exploited in the past. Now there is a risk that controls will be established to meet such standards, while the real objective is forgotten, that is, the health of the worker, of his family, and of people living in the neighbourhood of lead industries.

For an overall view on lead control this report should be read, together with *Lead, Code of Practice for Health Precautions*, recently prepared by the Department of Employment.

R. J. SHERWOOD

The Hazards of Work: How to Fight Them. By Patrick Kinnersley. (Pp. 394; 90p.) London: Pluto Press. 1974.

There can be few full-time doctors in industry who do not, on occasion, find themselves in discussion with shop stewards or other union officials. This inexpensive and informative paperback was expressly written as a handbook for workers and it covers a wide range of problems in almost 400 pages. Mr. Kinnersley's style and his outspoken criticisms of management may be considered distasteful (or worse) by some. Doctors do not escape unscathed, viz., 'It is sad to reflect on supposedly humanitarian professions like medicine and sociology when their members can still fear for their jobs if they are seen to side too obviously with those their skills are designed to serve'. The Employment Medical Advisory Service is considered grossly inadequate in size but the nine group industrial health services (including Manchester and Peterborough) escape criticism. The Trades Union Congress's proposals for a national occupational health service are seen as the only satisfactory solution.

The style of the book and the extensive use of heavy type owes much to the tabloid press, but the message is certainly clear. It is tempting to quote extensively to illustrate the point, but I would not wish to spoil an intending reader's appetite by more than: 'Only militant action at shop floor level can bring occupational hazards under control'.

With these reservations, I would recommend this book to those who cannot afford standard texts and who need a compendium of reference on the law relating to industrial diseases, injuries, disablement benefit and compensation, on a wide ranging review of occupational health problems including the evils of shift work, productivity deals and so on, as well as a 45-page glossary of toxic

chemicals, and all for less than £1.00. I would suggest it also as necessary reading for industrial medical officers, since as likely as not there will be a well thumbed copy circulating on the shop floor, perhaps to be produced at the next meeting of the joint safety and health committee. Forewarned is forearmed.

P. J. TAYLOR

Pathological Effects of Radio Waves. By M. S. Tolgskaya and Z. V. Gordon. Translated from Russian by Basil Haigh. (Pp. vi + 146; 38 figs; \$23.00) New York: Plenum Publishing Corporation. 1973.

The Western assessment of the hazards of radio waves to human beings has long been more lenient than that of workers in Eastern Europe. For this reason alone a monograph on the pathological effects of radio waves translated from Russian is a welcome addition to the literature in English, doubly so when it derives from the pen of such eminent Soviet authorities.

The first section of the book relates the authors' findings of gross and microscopical postmortem appearances in mice, rats, and rabbits irradiated with single lethal or repeated non-lethal doses of high intensity (40-100 mW/cm²; 2000-9000 V/m) radio waves ranging from medium frequency to extra-high frequency bands. They consider these consistent with hyperthermia in the lethal cases and with acclimatization in the non-lethal. All this accords with Western views.

In the introduction to the second section a series of tables sets out the functional changes which have been observed in living organisms exposed to low intensity radio waves. The literature is reviewed, including observations on man, stressing the effect on the nervous system and in particular the development of the 'diencephalic syndrome'. They subjected their animals to low intensity exposures (10 mW/cm²; 10-2250 V/m) and detail the findings. No gross morphological changes were seen and only occasional degenerative effects were observed by ordinary microscopical methods. Using neurohistological techniques, they demonstrated abundant but delicate changes in the nervous system and histochemistry revealed a decrease in ribonucleoprotein in tissue elements normally rich in this material. The extent of these changes diminished as frequency decreased. In a lengthy discussion it is argued that the changes found are largely the result of a reflex action which arises from the effects of the radiation on cutaneous and visceral sensory receptors, the purpose of which is to maintain homeostasis. This is in line with the Soviet view that the non-thermal impact of radio waves is on the central nervous system. The findings need verification in the West.

There have been many difficulties in the way of a rapprochement on this subject. We have relied on morphological findings and physical theory while the Eastern view has been a functional and behavioural one, but the work reported has a firm morphological basis. There has been a language difficulty, and though one is grateful for an apparently excellent English translation, there are reservations. Of 130 references, 98 are from Soviet sources and 62 are stated to be in Russian while quite a number of the remainder must also be. Only 19 are in

English and none is dated later than 1961. Western workers have also found it difficult to confirm Eastern work owing to inadequate information on experimental method. Unfortunately this volume, too, is not sufficiently communicative in this respect.

Turning to the publication itself, the black-and-white reproductions of photomicrographs appear dull and uninformative at first but careful scrutiny is rewarding. After all, there is no real substitute for the original slides demonstrated by their owners. There is no index, but it is not a textbook nor a work of reference, so perhaps this is excusable. There is an irritating habit of identifying radiation sometimes by frequency and sometimes by wavelength: the translator might have taken the opportunity to express all uniformly in terms of hertz.

The text is somewhat repetitive and the long descriptive sections are definitely only for the interested morphologist. The general review and discussion will appeal to a wider field, though some of that dealing with stress and adaptation might be considered outmoded here. Increasing numbers of workers in various disciplines are interesting themselves in physical environmental hazards but a good grounding in physiology seems essential for any real appreciation of the authors' thesis.

The authors state that the animals irradiated at low intensity remained clinically healthy. This accords with the Western view of harmlessness as well as the view of homeostasis. As there is increasing evidence in the West that low intensity radio waves do have some biological effect, perhaps this note of accord is an omen of eventual agreement as to their nature and importance. Those concerned with man in his occupational environment recognize clearly that homeostatic mechanisms allow him to survive in it.

JOHN RICH

Respiratory Diseases: Task Force Report on Problems, Research Approaches, Needs. The Lung Program, National Heart and Lung Institute, October 1972. (Pp. 243; no price stated.) Copies available from the U.S. Government Printing Office, Washington, D.C. 20402. 1973.

It is an unfortunate feature of the break-neck speed at which medical research gallops along in the United States that no consultant in even a comparatively small specialty like respiratory medicine can have a comprehensive knowledge of more than a tiny corner of his chosen field. This remarkable booklet helps to broaden his horizon by presenting the views of 189 biomedical scientists and one economist, who were called together to discuss the present state of knowledge or dearth of knowledge concerning particular respiratory problems and, taking note of their economic burden on the US community, to recommend specific and practicable steps which might lead to the prevention, treatment, or better understanding of these conditions.

The discussion of environmental and occupational disease is disappointingly humdrum. There seems no solution to the problem set by the long delay between exposure to many industrial hazards and the appearance of clinical disease. Where the response to the hazard is dramatic and early, e.g., biological enzymes or humidi-