master the theory of first-order linear differential equations. Those who are not will find little to help them; the treatment throughout is in terms of first-order processes. There is no attempt to follow up, for example, the work of Hartley (*J. theor. Biol.*, 5, 57, 1963) or of Gurpide, Mann, and Lieberman (*J. clin. Endocrinol.*, 23, 1155, 1963) which could lead to treatments requiring more elementary mathematics. For those with mathematical knowledge the treatment is inadequate. A small number of cases are treated in great detail; there is little mention of non-linear processes; and what there is, on lead, is not related to any fundamental processes at work. Contrary to the suggestion in 'Final Remarks', anyone would be better off using a book on tracer kinetics for the relevant mathematics. The use of the kinetics of metabolism after a single exposure to calculate the results of multiple exposure is theoretically sound but in practice dubious, owing to the difficulty of measuring all the rates after single exposure accurately enough.

The author does make the valid point that the assumptions underlying tracer and toxicological investigations are often different, even when the mathematics are identical, and the main value of the book lies in its discussion of the assumptions involved in the latter. He also brings together much data published only in central European languages and therefore rather inaccessible here.

D. F. HEATH

Four Architectural Movement Studies for the Wheel-chair and Ambulant Disabled. By F. Walter. (Pp. 60; illustrated; no price stated). The Disabled Living Foundation, 346 Kensington High Street, London, W.14. 1971.

The research in this report was commissioned by the Disabled Living Foundation. An architect was in charge and the aim was to establish a series of comprehensive planning recommendations which would embrace all horizontal space movement activities involved in the general design of buildings.

These have been achieved by carrying out four carefully designed studies:

- (a) the circulation of the disabled person in the chair between and around obstructions;
- (b) the same type of circulation through doorways, including opening and shutting the door from all four directions;
- (c) a ramp gradients study by disabled in wheelchairs; and
- (d) a study of disabled drivers and the various vehicles available, together with recommended garage sizes, parking spaces, and dimensions for U turns.

It is clearly divided into paragraphs, but there are no chapters and no index. Certainly, it is essential reading for architects, councils, or do-it-yourself enthusiasts about to alter or design a house for the disabled, but it covers only a small part of the problem; it does not, for example, cover the movements of a chair in a toilet or bathroom, but perhaps an architect could extrapolate from these figures. No summary or conclusions or recommendations for the future were given.

J. R. GLOVER

Society, Stress and Disease, Volume I. The Psychosocial Environment and Psychosomatic Diseases. Edited by Lennart Levi. (Pp. 485; 41 figs; £8.00.) London: Oxford University Press. 1971.

This volume reproduces the proceedings of 'An International Interdisciplinary Symposium' held in Stockholm in 1970 and sponsored jointly by the University of Uppsala and the World Health Organization. The editor is director of the Laboratory for Clinical Stress Research of the Karolinska Institute. Forty-four papers are grouped under six headings such as 'Review of Experimental, Clinical and Epidemiological Evidence concerning Psychiatric and Psychosomatic Diseases Provoked by Psychosocial Stresses' and 'Possible Ways of Modifying or Preventing Psychiatric and Psychosomatic Diseases through Social Action'.

The reader's heart will have sunk. Another conference transcript (though speedily produced), so many double-column pages, so many papers, so expensive. The terms are always so imprecise: 'psychosocial stresses', 'psychoneurotic overstrain', 'social action'. And, indeed, the final looking-to-the-future section daunts in just this way. Elsewhere, however, there is good straightforward stuff though rather heavily written for the most part.

Overall, contributors seem to have accepted the premise that there are diseases that can usefully be thought of as psychosomatic (where's the proof though? where's the use?) and, conversely, that environmental factors, 'semineurotic emotional patterns in our over-industrialized, competitive, sophisticated, cynical societies', have been convincingly shown to exert a causative influence via the brain or the mind. Those who know how thin is the evidence for this will not be surprised that theories exceed facts in this volume. Although many of the articles are detailed and particular, there are some good general ones which try to deal with the global concepts implied by the title.

It is useful to have these ideas brought together into a single volume. This is a good book to send to someone to consult in a not too distant library. There he may 'indulge the hope that human ingenuity will be able to forestall the apocalyptic finale before it is too late'.

NEIL KESSEL

Inhaled Particles. III. Edited by W. H. Walton (Two volumes; Pp. 1090; £15.) London: Unwin. 1971.

This neatly produced book in two volumes presents the proceedings of an international symposium organized by the British Occupational Hygiene Society in London from 14 to 23 September 1970. The symposium is the third instalment of a rather successful series held at five-yearly intervals. Over 200 authors from all over the world contributed to the 91 papers presented, which are arranged in 10 sections, four in volume 1 and six in volume 2. Many of the contributions have not been previously published.

The first section concerns the deposition of various particles into different parts of the ventilatory system under various conditions, and the second section, the clearance of these particles in health and in disease. Together, they comprise nearly one-third of all the

contributions. The subject matter includes the fluid mechanics of pulmonary air flows, some theoretical considerations, the way deposition and clearance are affected by various factors including disease, and the measurements of regional deposition and regional clearance. The third and fourth sections, embracing over 20 papers, centre around the biological reactions to inhaled particles. The majority of the contributions in these sections are devoted to the toxicity of silica and mine dusts, others to the effects of fly ash, asbestos, $^{239}\text{PuO}_2$, uranium ore, cigarette smoke, diesel exhausts, and some polymer dusts.

Certain immunological, radiological, and physiological aspects of pneumoconiosis and berylliosis are dealt with in the eight papers grouped into the fifth and sixth sections. Here emphasis lies with the immunoglobulin levels in fibrosis and with the diagnosis of pneumoconiosis. The six studies in the following section concentrate on the nature and quantity of dusts detected in the human lung, either radiologically or at necropsy. The epidemiological studies, 11 in all, are collected in the ninth section. They include investigations of the prevalence of respiratory symptoms among Yugoslav coal miners, pneumoconiosis among West German coal miners, the attack rate of massive fibrosis among British coal miners, and the damage to the human nasal mucosa by wood dust in the furniture industry around High Wycombe. Studies are also reported on the relationship between chronic bronchitis and dust exposure, pneumoconiosis and dust exposure, bronchitis and coal miners' pneumoconiosis, and the amount of dust breathed and the development of silicosis. The eighth and last sections cover 15 papers which describe some properties of mine dusts, asbestos particles, metallic fumes, and radioactive aerosols produced by radon in room air, and discuss the problems of monitoring dustiness in the environment and of enforcing certain dust standards.

Obviously, a lot of information is presented. Much of it is interesting and original and some is exciting. Evidence has been produced in support of the notion that air-flows in the pulmonary airways are laminar and yet not reversible. Macrophages may apparently have their origin in the bone marrow and not in the lymphoid tissue or alveolar epithelium. The protective effects of certain constituents in mixed mine dusts may be only temporary.

These two volumes are certainly of interest to those involved in research into respiratory diseases, industrial hygiene, and air pollution.

F. F. CINKOTAI

Safety—Uncensored. By James Tye and Kenneth Ulllyett. (Pp. 59; 35p.) London: Corgi Books. 1971. Also available at 40p (Post paid) from: The British Safety Council, 163/173 Praed Street, London, W.2.

'If your work involves you in factories . . . the next industrial victim could be you! *Safety—Uncensored*, an alarming account of industrial accidents in Great Britain today.'

All this appears on the front cover and serious students of industrial safety might be put off. But they should not be—the book is really quite sober and it certainly

deserves serious attention, despite inaccuracies here and there. Chapter 5 is a piece of first-class parliamentary journalism. It deals with the speech by which Mrs. Barbara Castle introduced the Employed Persons (Health and Safety) Bill to the House of Commons and the subsequent debate. *Safety—Uncensored* highlights the various speakers' opinions for and against the Bill. Here is useful material for future discussions.

I suppose that *Safety—Uncensored* was originally intended for the 'safety reps' that the Bill sought to encourage. But the Bill was never enacted and only a few safety reps took office. The few who remain will find the book a readable guide to intelligent hazard-spotting and a clear warning against the abuse of 'safety' in industrial relations.

The Bill stimulated a great deal of talk outside as well as inside parliament and this interested a number of trades unionists, apart from safety reps, in the technicalities of safety. *Safety—Uncensored* should help to keep that interest alive. Indeed, any chairman who felt that his works safety committee was in need of stimulation could profitably put *Safety—Uncensored* down for discussion and he could be sure that this would be lively. This would be in tradition because the British Safety Council (of which James Tye is Director General) specializes in provoking lively controversy.

Safety—Uncensored concludes with a brief mention of total loss control which is itself the centre of much controversy at the present time. Whatever the merits of total loss control, there can be no doubt that James Tye is pointing up a factor very largely ignored in occupational medicine—that economic considerations are the principal bases upon which decisions are made in present-day industry. Perhaps James Tye should be asked to write 'Occupational Medicine—Uncensored'.

G. R. C. ATHERLEY

A History of Medicine: Selected Readings, edited by Lester S. King. (Pp. 307; 60p.) Harmondsworth: Penguin Books. 1971.

This book is divided chronologically into four sections, preceded by a 35-page introduction. Each of the sections contains sample writings by authors whom the editor considers to have been among the most significant in the development of medical thought in the period. He writes (p. 10): 'In this book I have made no attempt to pick out the "greatest" physicians in history, nor have I tried to narrate the "great" discoveries nor emphasize "high spots" of medical progress. Instead, I try to illustrate methods and thought-modes of representative physicians from Hippocrates to the present'. Thus works of Hippocrates and Galen comprise Part One—The Classical Heritage; of Vesalius, Paracelsus, and Harvey, Part Two—Revolt; of Sydenham, Hoffmann, Boerhaave, Cullen, Lind, John Hunter, Morgagni, Bichat, Pierre-Charles-Alexandre Louis, Oliver Wendell Holmes, and Hahnemann, Part Three—Development; and Virchow, Claude Bernard, Koch, Walter Reed, Banting and Best, and a short contemporary case report on radon-induced skin reaction from contaminated gold wedding rings, Part Four—