by doctors, but by all those interested in the subject. The author has succeeded in his difficult task and his book will stimulate doctors reading it to take more interest in their patients' working environment, and laymen to appreciate the part they can play in making industry safer. It stresses the value of the team, including physicians, chemists, engineers, employers, and employees, in tackling industrial accidents and hazards.

The history of industrial medicine is frankly and graphically told, and the summary of legislation affecting working conditions is factual and clear.

The importance of accident prevention is demonstrated by descriptions of the hazards met with in a number of heavy industries.

The second half of the book is principally concerned with prescribed diseases, but also includes some excellent sections on dangerous materials not yet in this category. Accounts of various disasters, when inadequate precautions were taken, in handling organic compounds, such as insecticides, should be a warning to all who are concerned with the manufacture, marketing, and application of new potentially dangerous chemicals.

To assist the layman there is a glossary of technical terms, and the author, having stimulated his reader's interest in this important subject, provides a list of books and papers for further study.

It is to be hoped that subsequent editions will include a chapter on the place of epidemiological and statistical methods in investigating accidents, industrial hazards, and the causes of sickness absence.

W. E. CHIESMAN

Industrial Health Technology. By Bryan Harvey and Robert Murray. (Pp. xiii + 337; 78 figures. 45s.) London: Butterworth. 1958.

This should prove a useful book for all those concerned with the health of the industrial worker, including executives and trade unionists. For, as the authors wisely state in their preface, "The health of the industrial worker does not lie in the hands of those whose training makes them experts in this subject but of those who control industry . . .". For the new industrial medical officer, too, it provides an excellent summary of occupational diseases and control methods in a great number of industries. For the expert, its value—although still considerable—is limited by a tantalizing lack of references: there are only 36 in the entire book.

The book is divided into three parts. The first part describes the physical, biological, and chemical causes of industrial diseases. There are some excellent simple accounts of such things as radiant energy and the chemistry of the hydrocarbons which can be understood without previous technical knowledge.

In the second part the principles of the prevention of industrial disease—substitution, segregation, enclosure, exhaust ventilation, wet methods, protective clothing—are described and an account of air sampling and analysis is given. The extensive practical experience of the authors is apparent and many examples are given to illustrate the underlying principles. The chapter on exhaust ventilation, the longest and one of the best in the book, combines a

simple theoretical explanation of air flow, with a practical account of the design of ventilation systems. The tables of air engineering data, which are also included, are unlikely to be used by many readers; but they serve to illustrate some of the technical problems.

The third part of the book concerns the comfort of the worker which, though it cannot be divorced from his health, requires environmental conditions better than the minimum necessary to prevent illness. It contains chapters on ventilation and heating, lighting and colour, and noise. A short, carefully chosen bibliography is given. Also, there is a 10-page glossary of chemical substances commonly used in industry. For each substance is given the chemical formula, physical state, main uses, its most likely mode of entry into the body, and its chief effects.

The inevitable difficulty of presenting technical information simply and concisely to readers with differing background knowledge and differing needs for new information is apparent in this book. For example, the authors could be criticised for omitting some detail which should properly be included in a comprehensive treatise: on the other hand, it is possible to argue that there is already too much detail and that more would deter those who should be encouraged to read the book. On the whole, the authors are to be congratulated on their selection of material and cannot be accused of oversimplification.

This, the first book of its kind from this side of the Atlantic, is a valuable contribution to bridging the gulfs which exist between medicine, industrial hygiene, and industrial management. The authors state that "the reader of this book will not necessarily discover how to swim, but it is hoped that he will learn to judge the depth of the water". Industrial medical officers should have this book and lend it to their non-medical friends.

C. H. WOOD

Manuale di Medicina del Lavoro, 2nd ed. By F. Molino. (Pp. 890. Lire 10,000.) Turin: Ed. Minerva Medica.

The author has developed the classification of the first edition and many additional conditions are discussed.

After a short review of recent developments he describes the various human physiological types, noting the average proportions and the usual relationships between height, chest measurement, and weight. It is pointed out that many persons vary so much from the normal as to be handicapped when using conventional equipment. Accident proneness also receives attention.

Methods for studying fatigue are described together with measures to lessen its severity. The effects of physical agents are described and in this section recent work on the effects of raised or lowered atmospheric pressure is noted.

Among the infections commonly contracted from certain special kinds of work Molino includes epizootic foot and mouth disease, Q fever, ankylostomiasis, and many others. Dust diseases receive attention, and there is a good chapter on the symptoms caused by vibrating tools, for which dihydroergocornine and other ergot

derivates have been given with good results. Under a recent Italian law all workers using vibrating tools are required to undergo an annual medical examination.

In some ways Italian law seems ahead of that of other countries, particularly in the recognition and introduction of regulations to limit new hazards. Thus beryllium was early recognized as a highly toxic material and those working with it appear to be adequately safeguarded. This is also the case with the industrial use of fluorides.

This book is attractively produced and contains many useful illustrations and figures.

G. C. PETHER

Die Staublungenerkrankungen, Vol. III. Reports of the third international conference on dust diseases of the lung held in 1957 at Munster University. (Pp. xvi + 607; 319 figures. DM. 62.00.) Darmstadt: Dr. Dietrich Steinkopff Verlag.

This volume contains reports of the third international conference on dust diseases of the lung held in 1957 in the department of hygiene and industrial medicine of Munster University.

The first part is devoted to fundamental research with particular reference to the effects of silicates.

The next part deals with trace elements and the relationship between them and the formation of silicotic lesions. A group of contributors investigated the effects of various constituents of the dust to which workers in the Ruhr coalfields are exposed.

The relationship between emphysema, bronchitis, and silicosis received attention and the importance of cor pulmonale when these are present was noted. Some contributors consider that there is a constitutional factor operating in some cases of emphysema and it has been shown that examination at necropsy will give not only an accurate measure of the elasticity of the lung but also of the capacity of its vessels. Elasticity is highest when growth ceases and is little altered until the fiftieth year after which it falls.

The vessels in a silicotic lung degenerate so that in time various complications such as thrombosis or even obliteration occur. Pulmonary sclerosis is common, and though some ascribed it to the effects of an existing high pulmonary pressure, others thought it might sometimes be linked with locally occurring sclerosis and thrombotic processes.

To diminish the incidence of silicosis it is necessary not only to keep workers under constant observation but also to be able to change their work before much damage has been done. In Switzerland the intervals between systematic examination of employees vary from trade to trade so that miners, depending on age, are seen every year, or two years, while workers in other industries with a dust hazard are seen less often. Should evidence of undue sensitivity to dust be apparent soon after work begins, it is considered reasonable to advise that a different occupation be chosen.

In the last section of the book a number of interesting individual contributions are found. Some deal with the association of pulmonary tuberculosis with dust diseases

and the difficulty of diagnosis of this condition on radiographic evidence alone is stressed.

A new material invented by Krupp and known as *hartmetall* has come into industrial use. It has about 95% of the hardness of diamonds and is made from tungsten carbide, cobalt, titanium carbide, and tantalum carbide. These are mixed together and then fused at a temperature of 1400 to 1600°C.

In 1940 the first cases of lung damage attributed to *hartmetall* were notified.

It appears that the individual constituents may each have harmful effects. One worker took up employment at the age of 21 but by his 27th year had such severe dyspnoea that he had to give up. The clinical picture is similar to that seen in the aluminium industry in the Rhein-Main area. Spectrographically the lung had a high content of tungsten and titanium but less cobalt. There is evidence that the liver as well as the lung may suffer in this industry.

Lung injury from vegetable dusts received attention from an English contributor and in the discussion the value of microscopic examination of lymph nodes from the scalenus area was described. This procedure is commonly used in Sweden.

In the field of prophylaxis the value of aerosols is discussed and in some animal experiments certain aluminium preparations gave good results.

This book contains much interesting material, though much of it is necessarily speculative or controversial.

G. C. PETHER

The Pneumoconiosis Problem: With Emphasis on the Role of the Radiologist. By Eugene P. Pendergrass. (Pp. x + 146; 53 figures. 51s.) Oxford: Blackwell Scientific Publications; Springfield, Illinois: Charles C. Thomas. 1958.

This book, by an eminent American radiologist who has made many valuable contributions during the past 30 years to the literature of the pneumoconioses, is concerned with silicosis, asbestosis, and coal workers' pneumoconiosis. No attempt has been made at an exhaustive treatise which would have been impossible in a work of this length but many facets of the history, pathogenesis, clinical and physiological features of pneumoconiosis are presented, compensation issues are touched on, and the radiological changes are considered in greater detail. The author's wide experience and judicious selection of the world literature has resulted in a very well balanced account of these three pneumoconioses. The reproductions of the chest radiographs, so important to the success of a book of this kind, are printed as negatives and are of a sufficiently high standard to illustrate the points being made, though No. 23 has unfortunately been reproduced upside down.

The author's recommended radiographic routine for workers in an industry with a dust hazard (six pre-employment chest films repeated five yearly with a single film during the intervening years) seems excessive but apart from this one reservation "The Pneumoconiosis Problem" can be strongly recommended.

I. T. T. HIGGINS