Book reviews

Pulmonary Reactions to Coal Dust. A Review of U.S. Experience. Edited by M. M. Key, L. E. Kerr, and M. Bundy. (\$14.00). New York and London: Academic Press. 1971.

Until very recent years the view prevailed in the United States that silica alone was the harmful dust in mining and this misconception fostered complacency in devising effective legislation to deal with health hazards. Now things are changing rapidly and this book, with contributions by 18 authorities, of whom 17 are from within the United States, is evidence of the increasing scientific and social awareness of the problems. The volume opens with a chapter on the historical aspects, emphasizing the slow chain of events leading to the major advance of the Federal Coal Mine Health and Safety Act of 1969 which laid the foundation for effective inspection of mine standards, periodic examination of miners, and improved compensation. It was not until this Act that any unified attempt could be made to relate environmental conditions to the prevalence of disease in different parts of the country. Such a unified attack is necessary if any adequate data on the effects of different types of dust are to be collected. Now data from the survey by the U.S. Public Health Service, centred chiefly in the Appalachian, Illinois-Indiana, and Utah coalfields, will be supplemented by that from a much more sophisticated study covering the whole country on the broad principles of the British Pneumoconiosis Field Research of the National Coal Board and envisaging a study of some 7 500 miners at intervals of five years.

In addition to these broadly based epidemiological studies, there have been many attempts to study individual problems in pneumoconiosis by pathological and physiological techniques. A detailed morphological study of heart and lung structure in necropsy material of over 300 Appalachian miners was undertaken by Naeye. This showed the common occurrence of right ventricular hypertrophy over the age of 50 and discusses the development of the coal macule, suggesting that silica content may be more important than rank of coal.

Lapp and Seaton review studies of respiratory function in the United States, particularly recent work by the Appalachian Laboratory for Occupational Respiratory Diseases (ALFORD). Results follow broadly those of European studies and have failed to substantiate the claim of Rasmussen and co-workers that there was substantial hyperventilation on exercise in disabled miners

without radiological abnormality but it did confirm a slight increase in oxygen (A-a) gradient and a decrease in arterial oxygen tension at rest.

On reading the book one naturally asks if all this new effort is necessary in the light of past work. I am convinced that it will be valuable, particularly those parts related to fundamental problems. Here is an opportunity for a new look with improved techniques built on the successes and failures of past European work. This book can be read with benefit by all workers in the field of pneumoconiosis as reviewing past and present work and suggesting a course for the future.

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Toluene Di-Isocyanate in Industry. Operating and Medical Codes of Practice. A Report of the Isocyanate Sub-Committee of the British Rubber Manufacturers' Association Ltd. Health Advisory Committee. BRMA, Health Research Unit, Scala House, Birmingham. 1971. (Pp. 52; British Isles £2.00; overseas £3.00 a copy available from the above address.)

This Code of Practice was produced to define work procedures for TDI workers, which should ensure reasonable standards of safety, and to recommend medical selection, supervision, and screening methods.

The Code contains a brief description of the principal health hazards caused by di-isocyanates. In addition to primary irritant effects leading to immediate respiratory symptoms and sensitivity reactions producing severe asthma-like attacks in some workers, there is a possibility of chronic effects from long-term low-level exposure.

A comprehensive section on the design of production equipment stresses the importance of regarding efficient fume extraction as an integral part of the plant. Methods of handling and storing TDI are described, as are disposal techniques, spillage procedures, and the use of respirators and protective clothing.

Methods of atmospheric monitoring by manual and automatic methods are discussed, and some simple hints on sampling techniques are given. The Threshold Limit Value for TDI is a 'ceiling value', and the TLV of 0.02 ppm cannot be regarded as a safe average concentration. The actions which should be taken when atmospheric concentrations exceed the TLV are listed, and it is stressed that there should always be someone having the authority to order total evacuation in the workplace.