

materials. To scientists in many fields such as biology, chemistry, and physics, the disease presents many fundamental problems for research. Thus the physician is concerned with the many complex problems of diagnosis, measurement of respiratory function, and the treatment, management, and rehabilitation of patients. Others are interested in the epidemiology of the disease and its social consequences. Prevention of the disease offers a constant challenge to the ingenuity and tenacity of engineers and others. For governments the problem is preventive legislation and schemes of compensation. Investigations in these several fields produce a seemingly unending spate of literature from almost every country in the world. It is quite impossible for any single individual—language difficulties apart—to keep abreast of the growing knowledge in all branches of pneumoconiosis research. Moreover, the various fields of enquiry have become so narrow and specialized and many of the technical researches so recondite that the general reader is unable to follow them.

All are increasingly dependent on abstracts and commentaries by experts for current information. These are admirably exemplified by the *Bulletin of Hygiene*.

In the present volume Dr. Holt, distinguished over many years for his chemical and physical researches on silica and fibrogenesis, has undertaken to present background material on the subject, which, he hopes, will inform and assist medical specialists, physicists, chemists, engineers, administrators, and others. In the preface he states "that the intention of this book is to provide sufficient material to act as an introduction and to indicate where further information can be found." This demands an encyclopaedic knowledge of the subject. Moreover, it requires great objectivity and self discipline if the author is to achieve a balanced and proper selection of the enormous literature. Almost inevitably the author will prove more expert in his selection and appraisal in his own special field than in others. Likewise, the reviewer cannot avoid the same weakness for he will judge the work by the adequacy of the section, which deals with his special interest. The predicament is not new or peculiar to this subject. It has led to team authorship under the direction of an editor.

Dr. Holt's book consists of 236 pages comprising 18 chapters. The first chapter is a historical survey supplemented by statistics of mortality from various sources. In view of the purpose of the book to direct the reader to sources of further information it is disconcerting to find on the very first page that Aldridge is cited as Aldridge and as this error is repeated in the bibliography and in the author index the printer can be excused. Only a little farther on it is stated that "Josiah Wedgwood introduced finely powdered calcined flint into his white pottery in 1720". This, if one might say so, is a preconception for the great potter was not born until 1730. Generally the innovation is attributed to John Astbury, a North Staffordshire earthenware manufacturer. Chapters 2 and 3 deal with the structure and properties of some industrial minerals and the chemistry of the surfaces of minerals. In the succeeding six chapters discussion is narrowed to silicic acid and its derivatives and their fibrogenic action in the lung. This is Dr. Holt's

special field and much of the material, I fear, is beyond the comprehension of all but a few, of which I am not one, industrial medical officers. Thereafter successive chapters deal with silicosis, asbestosis and coal-miners' (not coalworkers') pneumoconiosis. The effects of other siliceous and non-siliceous dusts are then discussed. Beryllium receives relatively considerable notice. I do not dispute that beryllium dust causes lesions—often extensive—in the lungs but I doubt if berylliosis is rightly included among the pneumoconioses. Within its necessarily restricted limits the chapter on protective measures against pneumoconiosis in mines, factories, and workshops gives a good account of modern practice and matches up to the author's purpose. The chapter on the measurement of dust concentrations is based on a series of papers written by the author and published in *Metallurgia* in 1951. The final chapter is devoted to a summary of compensation legislation and factory regulations. In no subject is the need to be accurate and precise more important than in the law. The opening sentence that "in Great Britain compensation for *pneumoconiosis* (italics mine) was first provided . . . in 1919" is inaccurate; the legislation then applied narrowly to silicosis. The distinction is important and emphasizes the laxity in the use of terms which all too commonly exists in the literature of the subject.

An excellent bibliography, enhanced by author and subject indexes, comprises 657 references. Some researcher may, on occasion, be irritated by the errors in such references as Aldridge (3), Permezzioni (548), Commins (611), Scheppers (630), and Gwyrpai (490). The book contains a wealth of scientific material but pneumoconiosis is basically a disease affecting the lives of thousands of workmen and their dependants. For this reason I think—particularly for the benefit of non-medical readers—that a short introductory chapter on the medical aspects might, with advantage, have been included.

Despite the criticisms which I have made, this book is a *tour de force* and a testimony to the wide range of Dr. Holt's knowledge. The paper and printing are excellent and the illustrations well produced. I can offer no higher commendation than to say that I am glad to have this volume in my library and that it will be a constant source of reference.

A. MEIKLEJOHN

**Chronic Bronchitis in Newcastle-upon-Tyne.** By A. G. Ogilvie and D. J. Newell. (Pp. vii + 115; 6 figures. 15s.) Edinburgh and London: E. & S. Livingstone. 1957.

This book describes a survey designed to discover the prevalence rate of chronic bronchitis in Newcastle-upon-Tyne. In addition an attempt was made to find out more about the aetiology of bronchitis by comparing the present and past living conditions and the family histories of a group of bronchitics with a group of controls. The task undertaken by Ogilvie and Newell, to survey a whole city of 281,000 inhabitants, was one that might well have discouraged Hercules. One in 40 of all the houses in the city were visited by 43 health visitors who, on the basis of an agreed definition, placed all the men

and women over the age of 30 into one of two categories "presumptive bronchitics" and "presumptive non-bronchitics". The definition of chronic bronchitis adopted was "a long-standing condition, the essential features of which are a cough with sputum, persistent through the winter or throughout the year, in the absence of other causative respiratory disease. A minimum duration of two years is essential for its recognition."

The determination with which the survey was prosecuted and the success it achieved can be judged from the fact that only 26 out of 3,866 people interviewed refused all information and 1,202 out of 1,250 required for examination at hospital were in the end examined.

All of the "presumptive bronchitics" were examined clinically at hospital and had their chests radiographed and an approximately equal matched group of "presumptive non-bronchitics" was selected by a random procedure and also examined at hospital. The three doctors carrying out the clinical examination quite often did not agree with the health visitors' assessment. Out of 340 selected as bronchitics by the health visitors, the doctors selected 272, and out of 320 selected as non-bronchitic by the health visitors, the doctor diagnosed 81 as having bronchitis. This demonstrates the great difficulty there is in diagnosing on the basis of a questionnaire the early stages of bronchitis. The final prevalence rate given for men of all ages over 30 was 36% and for women it was 17%.

When their bronchitic and non-bronchitic groups had been established and matched for age and sex the authors proceeded to examine the environmental histories in the two groups. They found that the bronchitics had had an excess of early and acute respiratory illnesses and had experienced chest illnesses more frequently than the control subjects. A much higher proportion of the bronchitics complained of dyspnoea. Only 11% of the male bronchitics were non-smokers compared with 26% of the controls. The disease was commoner in the eastern and western industrial areas of the city than in the northern districts. It was associated with a higher density of population and there was a smaller proportion of the two upper social classes in the bronchitic group. No specific occupation was found to suffer a high rate though the clerical, professional, and administrative groups had a low incidence. There was some association with extremes of temperature and with draughts and dusts encountered at work and a strong relationship was found between the incidence of the disease and the number of years of unemployment which had been experienced by the subjects. This and the fact that there was a similar social class gradient in the wives as that found in the men suggested that economic rather than specific occupational conditions were of aetiological importance.

An interesting finding was that 62% of the bronchitics considered that the disease was neither progressing nor getting better. Out of 1,071 whose chests were radiographed, one was found to have a bronchial carcinoma.

The authors found a high incidence of asthma in the bronchitics but this can perhaps be explained by the fact that "bronchial stridor", presumably equivalent to wheezing or sibilant rhonchi, was taken to indicate asthma, whereas many observers would regard this

physical sign as a normal accompaniment of chronic bronchitis in the middle-aged and elderly. It is argued that this indicates hypersensitiveness and that therefore the hypersensitive individual is especially liable to chronic bronchitis. In addition to the detailed report of the survey there are two chapters on the epidemiology and the pathology and bacteriology of chronic bronchitis.

This book is indispensable to those who are interested in the study of chronic bronchitis by epidemiological methods, as it describes on a larger scale than hitherto attempted one way in which a prevalence study of a whole community can be attempted, the difficulties that can be expected, and the valuable results that can be achieved.

J. PEMBERTON

**Charles Turner Thackrah: The Effects of Arts, Trades and Professions on Health and Longevity.** With an Introductory Essay on his Life, Work, and Times. By A. Meiklejohn. (Pp. 238+50; illustrated. 25s.) Edinburgh and London: E. & S. Livingstone. 1957.

Charles Turner Thackrah is commonly spoken of as the Father of British Occupational Medicine, and with reason since in his book he propounded for the first time the conception of industrial health based on prevention. In this sense indeed Thackrah's influence has extended far beyond the shores of Britain for physicians in industry everywhere all over the world are today his disciples and inheritors.

His book was first published in 1831 and it was highly spoken of by all the reviewers in the journals of the day. The *Lancet* confidently recommended the work to the profession and trusted that Thackrah would find some successful followers "in the benevolent cause he thus invites others to pursue". As Dr. Meiklejohn says, "Those who study the work now for the first time will make their own assessment. Much will depend . . . on what they bring to it for author and reader are complementary".

The first edition was soon sold out and although the second appeared a year later, both are hard to come by, and Dr. Meiklejohn, his publishers, and the Wellcome Trust (without whose generous help publication would not have been possible) have put all those engaged in the practice of occupational health, and indeed the whole profession, in their debt by making this medical classic accessible to everyone almost in its original form, for the present volume is not merely a reprint—it is a facsimile which has been reproduced by photolithography.

In addition, Dr. Meiklejohn has contributed a biographical essay which is the first full and truly authoritative account of Thackrah which has appeared. Several essays have in fact previously been written about him but all have been based on the memoir by Dr. Henry Yates Whytehead in 1834 to the posthumous second edition of Thackrah's work on the nature and properties of blood. Whytehead knew Thackrah well since he had served his apprenticeship with him, and he was one of the executors of his will and was also specifically named in it as the legatee of all his former master's manuscripts. So Whytehead can be regarded as a reliable original



## Chronic Bronchitis in Newcastle-upon-Tyne

J. Pemberton

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