on the theory of filtration. Since they deal with essentially the same subject and the same theory, their excellent contributions would perhaps have been even better had they been amalgamated.

A chapter from Hodgkinson of the U.S.A. opens with a brief review of light extinction and then is devoted mainly to a comprehensive review of the present state of scattered light theory.

The adhesive properties of particles have been known for many years but their theory is far from complete. Corn of the U.S.A. gives an account of the present position. This chapter, in common with others in the book, is not written as a definitive statement of theory. It shows up the gaps in our knowledge. This device will tempt many a reader to try his hand at developing a new line of enquiry.

There is much of academic interest in these accounts. Also practical experimentalists will be stimulated by the ideas embodied in the theory. Detailed practical apparatus is described in places, although it seems more suitable for testing the theories than for immediate technological applications.

The final chapter is by the editor himself and contains a masterly exposition of the deposition of aerosols from turbulent flow.

The book has been meticulously edited and Dr. Davies can be proud of this outstanding work.

This is not a book for the beginner. Nevertheless, this book is highly recommended to those few readers of this Journal who through inclination or force of circumstances have become students of aerosols.

S. A. ROACH

Fourth Quinquennial Report of the Nuffield Department of Industrial Health, University of Newcastle upon Tyne. June 1961-May 1966. (Pp. 93).

It is now more than 20 years since British industrial medicine first attracted Nuffield support resulting in the foundation of three university centres located in Glasgow, Manchester, and Newcastle. This report provides an interesting and encouraging account of the development of the department which was set up in the University of Newcastle. In a preface, Professor Browne refers to the generous financial support which has been accorded the department, including grants from both the Medical and Scientific Research Councils.

In Newcastle, medical undergraduate teaching has recently been reviewed and more emphasis is now placed on the environmental aspect of medicine. In this new curriculum the relationship of health to work is introduced to students as early as their fourth term and continues to be brought before them in subsequent years. A full programme of post-graduate teaching is described.

Research in both the medical and industrial hygiene sections of the Department has been active. On the medical side the investigation of antimony and of lead workers has continued and studies of decompression sickness have been carried out in co-operation with the Department of Surgery. On the occupational hygiene side much attention is being given to investigating the

thermal degradation of protective coatings as well as to the health hazards of welding and noise.

The Department provides help for local industry through the North of England Industrial Health Service. The growth of this side of the department's work has hitherto been slow. With a view to encouraging its growth a medical member of the staff now devotes his whole time to the work of this Service which brings the academic department into close touch with the practical problems of local industry.

R. E. LANE

Rochdale Industrial Health Service. Fourth Annual Report for Year Ended December 1966. (Pp. 23). Rochdale Industrial Health Service, Nuffield House, Bury Road, Rochdale, Lancs.

The Medical Director's Report consists almost entirely of his tentative conclusions based on four years' experience, and statistical information is reduced to the minimum. In his observations on the work undertaken during the year he makes the point that 'the principal attraction membership of the service has for industry is the prospect of improved efficiency of operation—especially but by no means exclusively—by reducing the amount of production lost through injury and illness'. He indicates how that object may be achieved, citing appropriate case histories. Activities concerned with job placement, rehabilitation, problems of the working environment, first aid training, and in the field of public relations are all described.

Nuffield House, the new headquarters building, has been in occupation since August 1966, and the many advantages of planned accommodation are emphasized. The membership of the service is growing slowly but has only been brought about by extending its scope to a wider area; thus an Industrial Welfare Association comprising five woollen mills with a total labour force of 1,000 workers situated at Slaithwaite, about 16 miles from Rochdale, is now a corporate member. Forty-four companies, employing just under 7,000 workers in all, were participating in the scheme at 1 January 1967, but most of them employed fewer than 500 workers. The impression remains of an uphill fight for an energetic and enthusiastic director.

G. F. KEATINGE

Joint I.L.O./W.H.O. Committee on Occupational Health—Fifth Report. W.H.O. Techn. Rep. Ser. No. 354. (Pp. 19; 3s. 6d.) Geneva: World Health Organization. 1967.

The Committee met in Geneva in the summer of 1966 to discuss the organization of occupational health services in developing countries. The Report starts with the observation that the needs for occupational health services are rarely effectively covered anywhere, even in the so-called developed countries. In the developing countries it should be possible to apply the right principles from the outset, although rapid urbanization and industrialization have frequently been accompanied by social and cultural problems as pressing as those of medicine and occupational health.

There is a vast difference in the scope of occupational health services from country to country and even within each country. In some of them, where there are large industries, the services are good in some factories, but they are more usually curative rather than preventive. Indeed, in some countries the facilities for curative medicine which are offered by the occupational health services are better than those available from the general health services. Health services of any kind are usually insufficient in the smaller factories everywhere; some groups, such as the agricultural, rural, and artisan workshop workers, have virtually no cover at all. It may well be that the importance given to industrialization has been over-emphasized and has obscured the fact that agriculture is still the main means of subsistence for most people in developing countries.

In all the developing countries there is a shortage of medical staff, and this leads to the use of para-medical assistants who are often inadequately trained to carry out the duties which would relieve the physician of much routine and simple work. In the meantime, the best use should be made of available staff whose training should be improved as far as resources permit.

The Committee makes a number of general recommendations as to how occupational health services might be started and developed, but it does not make concrete suggestions how this might be done. This may be the inevitable consequence of examining so large a field. In the long run the main need is to find means to finance development. The Committee expresses the sanguine hope that, in countries where no resources are available, interest should be stimulated by establishing committees or institutes. It suggests that, as a first step, a small group of people might review the situation, draw up a programme, and then obtain official recognition; large industrial organizations might set up occupational health services which would be made available at a later stage to smaller industries. The state might make it obligatory for the large industries to provide occupational health services and, once established, these services should be extended and might be based on a hospital or university and should have occupational hygiene laboratories. In the Report various familiar suggestions are made for raising money—tax reductions and similar incentives, levies, loans, insurance schemes, and contributions from employer and employee.

Most countries have legislation prescribing minimum standards of safety, health and welfare, but enforcement varies and usually it is not effective. Probably the greatest single need at the moment is the training and supply of non-medical factory inspectors and the enforcement of the legal requirements so that good working conditions can be attained. There is so much to be done that the physician alone cannot be completely effective, but even alone he can make a substantial contribution to health and safety. The ultimate objective is that he should

head a team of hygienists, nurses, technicians, social workers, and para-medical assistants, and that he should have the necessary facilities and equipment to employ them to the best advantage.

T. S. SCOTT

Airborne Microbes. 17th Symposium, Society of General Microbiology. Edited by P. H. Gregory and J. L. Monteith. (Pp. 385; illustrated; 75s.) London: Cambridge University Press. 1967.

This symposium is concerned with fungi, bacteria, and viruses which may be found in air. It deals with how the micro-organisms become airborne and how, once airborne, they are transported by air movements at both low and high levels, eventually to be deposited in some new environment.

Part of the symposium is devoted to studies on the factors concerned in air movements in the troposphere, at lower altitudes and indoors. Another section deals with air sampling techniques and techniques adopted to 'handle the catch' of micro-organisms. This could be of value to individuals involved in studies of industrial air hygiene. Other papers concern the mechanisms concerned in the 'take off' and 'landing' of micro-organisms, and finally the implications to the health of animals and plants are considered.

This is a well constructed symposium containing many valuable contributions to an understanding of this important but often neglected subject.

G. TAYLOR

NOTICES

Society of Toxicology

The annual scientific meeting of the Society of Toxicology will be held in Washington, D.C. on 4, 5, and 6 March, 1968. Anyone interested may attend.

Papers for the 1968 meeting may be submitted or must be sponsored by members of the Society.

Additional information about the meeting may be obtained from the Secretary: Dr. Joseph F. Borzelleca, Department of Pharmacology, Medical College of Virginia, Richmond, Virginia 23219.

The British Occupational Hygiene Society

An International Symposium on Health Conditions in the Ceramic Industry will be held at the North Staffordshire Medical Institute in Stoke-on-Trent from 27 to 29 March, 1968.

The symposium will deal with all risks incurred in ceramic manufacture, with special emphasis on the problem of pneumoconiosis. Contributions by visitors from overseas will be welcomed.

Further information may be obtained from: Dr. E. Posner, North Staffordshire Medical Institute, Hartshill Road, Stoke-on-Trent, England.