BOOK REVIEWS

carry out the patient and skilled teaching clearly required. Surely it will be necessary to look on colonies in future as predominantly educative, and only custodial for the exceptional case. This concept no doubt has led some to suggest that defectives should become the responsibility of the Ministry of Education. It would naturally have to be clear, first, that the latter would welcome such a charge with enthusiasm and forethought and not regard it as a burden.

With all this, it seems fair to hope that there will be a gradual change to far fuller employment of defectives, inside colonies and out. For the latter, of course, there will be difficulties: many firms, for instance, will be reluctant to cooperate. Perhaps here, too, little credit has been given to the good will, broadmindedness, and enlightened supervision of the Kolster-Brandes staff (page 99) which was of an order seldom likely to be matched. Further, signs of unemployment could throw grave and sudden stress on employed defectives. The handling of these matters will be, in fact, further social problems. Therefore, the more the public knows, and accepts its own responsibility, the better. The divorce between local health authorities (who can be public educators) and colonies for mental defectives is a pity, here. The gap can be bridged by the regional hospital board officers, and by voluntary bodies, such as national associations, or locally, friends of hospitals. In this way prejudice may slowly be overcome, and the real potential of the defectives appreciated. This would thus constitute an appeal to the public not only to fill the grave deficiencies in the mental deficiency nursing service, but to do so with people inspired not simply to care, but also to teach.

R. F. TREDGOLD


The relatively new and expanding subject of air pollution crosses the boundaries of most scientific disciplines and is steadily accumulating a literature of its own. This latest addition will form an invaluable reference work to the specialist and cannot be too strongly recommended to scientific workers entering the field for the first time. There are 14 self-contained sections, each of which deals with the present state of knowledge in a particular field. Many of the contributors are well known to research workers in this country as well as in the United States, and the book is edited by staff of the Stanford Research Institute in California, where a large amount of research on air pollution has been undertaken. The scope is wide and the general layout good. Sections on sources and city planning are followed by others on the behaviour of pollutants in the atmosphere and on weather effects. Then follow three sections on the effects of air pollution on human beings, animals, and plants. Sampling, analytical and experimental test methods are next discussed, followed by a long section on abatement and one on legal aspects. Most of the material presented will be of international value, although some of the practical problems discussed are less applicable to this country. The emphasis tends to lie on pollution from specific industrial sources, for there is much less domestic pollution in the United States than in this country. Each section contains a useful bibliography, and after allowing for some duplication, there are well over 1,000 references, extending up to 1954.

Those who are seeking a general account of the community air pollution problem should read Section 2 first. This is concerned mainly with problems of city planning and industrial plant location, but its scope is much wider and it provides an excellent introduction to the other more technical sections. The one on sources and their control deals at length with the properties of fuels and the ways in which they are used. It shows the important part now played by natural gas and fuel oil in meeting the energy requirements of the United States, and compares the position with that in Great Britain. Means of controlling all major emissions are reviewed, but the question of flue-gas scrubbing is dealt with very briefly. The sections on physics of the atmosphere, the evaluation of weather effects and visibility and air pollution contain an immense amount of material of fundamental importance. The treatment is, however, highly mathematical and they should be left to the specialist in each field.

Dr. Phair's chapter on the epidemiology of air pollution is disappointing. It occupies only 14 pages compared with an average of 49 in the other sections, and deals at such length with the general philosophical problem that it lacks any detail of value. This may be inevitable, for the literature on this aspect is quite limited. However, it seems a pity to dismiss all past attempts at demonstrating an effect of ordinary air pollution as not being fruitful. There is a short but useful section on the effects of air pollutants on farm animals. It deals mainly with the specific problems of arsenic, fluorine, and lead poisoning, and provides an extensive bibliography. Air pollution has widespread effects on vegetation and the section on plants provides a valuable summary of these. Several pages are devoted to smog damage, and the authors are careful to draw the distinction between Los Angeles smog and the mixtures of smoke and fog which occur elsewhere.

The section on sampling procedures seems to cover most of the problems likely to be encountered by the air pollution investigator, from samples of stack gases to colour transparencies of cow's teeth. Proper emphasis is given to the various pitfalls in sampling and the sentence "All too frequently, samples are collected that, regardless of the analytical techniques applied, will not provide the information that is necessary" could well be underlined. Frequent references are made to specialized equipment available in the United States, and in most cases British readers should be able to find something similar here.

At times one feels that the editors have gone a little too far in splitting the book up into so many sections. Dr. Cholak himself, in his section on analytical methods, points out that there is inevitably some overlap with the preceding one on sampling procedures. It might have been more economical to have combined these. A fairly complete catalogue of analytical methods is provided, but the reader is left to consult original papers for details.
There is an admirable section on experimental test methods by Dr. Silverman in which he describes the design and operation of exposure chambers and methods of producing various aerosols. The numerous practical details and diagrams included will be of immediate interest to those wishing to expose human subjects or animals to suspect pollutants, and to others who need to prepare artificially polluted atmospheres for testing filters or sampling methods.

By far the longest section is on equipment and processes for abating air pollution. There are 10 authors, headed by Dr. H. F. Johnstone, of Urbana, who is the leading authority on industrial emissions, particularly of sulphuric acid. This excellent survey covers questions such as the effect of stack height on the dispersal of pollutants, the collection of aerosols by impaction, filtration, scrubbing, electrostatic and sonic precipitation, and the control of gaseous pollutants. There is again a certain amount of overlap with earlier sections, but the seven pages on the removal of sulphur dioxide are largely complementary to those on the same subject in the first section.

The book concludes with a section on legislation in which the author sets out to "(1) review some of the basic legal considerations involved, (2) point out some of the issues with which pollution legislation will need to deal, and (3) report what has been done and is proposed by way of air pollution legislation." It provides a useful summary of American ordinances, most of which relate to single cities or counties. The author refers to the difficulty of defining air pollution and restricts his discussion to "the presence in the atmosphere of substances, resulting from acts of man, in quantities which are or may become injurious to human, plant or animal life or to property; all aspects of employer-employee relationship as to health and safety hazards are excluded." This might well be accepted as defining the limits of "community air pollution".

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Books Received
(Review in a later issue is not precluded by notice here of books recently received)

Gastric and Duodenal Ulcer (Report and Recommendations). (Pp. 6. 1s. 6d.) Pamphlet issued by the British Council for Rehabilitation, London. 1957.


Size and Morale, Part II: A Further Study of Attendance at Work in Large and Small Units. (Pp. 36. 3s.) London: The Acton Society Trust. 1957.


Medical Writing, the Technic and the Art, 3rd ed. (Pp. x + 262; 36 figures. 52s. 6d.; $7.00.) London, New York, Toronto: McGraw-Hill. 1957.


