importance of long-term exposure to low levels of air pollution, a problem highly relevant to morbidity in the United Kingdom.

The fourth section deals with "Specific Problems". Professor Jethro Gough reviews the effects of mineral, metallic, and vegetable dusts on the lungs in a space of only 15 pages and provides a list of 40 references. M. B. McIlroy and J. A. Nadel describe recent work in alveolar physiology, and C. P. Yaglou's posthumous paper on air ions as a biological factor summarizes his work in this field.

The symposium, which was generously supported by the Tobacco Manufacturers' Association, ends with four authoritative papers by Paul Kotin, E. C. Hammond, Joseph Berkson, and D. F. Eastcott, with 122 references in all, on the epidemiology and experimental production of lung cancer.

The style of much of the text is informal, sometimes colloquial, and easy to read. Figures and tables are numerous and clearly set out. Most of the papers are provided with good lists of references, and the editors have provided the reader with a comprehensive 22-page subject index. The printing and binding are good, too. Candidates for the D.P.H. and D.I.H. should find the book useful for supplementary reading in epidemiology and applied physiology.

GEOFFREY CAREY

Inhaled Particles and Vapours. Proceedings of an International Symposium organized by the British Occupational Hygiene Society, Oxford, March 29—April 1, 1960. Edited by C. N. Davies. (Pp. xi + 495; illustrated. 100s.) Oxford: Pergamon Press. 1961.

In the Spring of 1960 the British Occupational Hygiene Society organized an international symposium under the above title, and the present volume records both the papers and the discussions which followed them. Of the 38 papers given, 15 came from U.S.A., 11 from this country, six from Germany, two from France, and one each from Czechoslovakia, Israel, Italy, and Sweden.

The symposium was organized in the following seven sessions:

1. Anatomy and physiology
2. Physical and chemical aspects of particle retention
3. Radioactive aerosols
4. Vapours and particle-vapour interactions
5. Pulmonary elimination and storage of dust
6. Asbestosis
7. Selective sampling and pneumoconiosis.

It is impossible to do more than draw attention to the very wide range of subjects in a borderland in which mathematicians, physicists, and chemists meet with bacteriologists, biologists, physiologists, and pathologists. Although several of the papers reviewed, and often extended, previously published work there was also a large volume of new data, and the book with its nearly 500 pages is a mine of information on the interaction of the respiratory tract with dust, toxic vapours, and on particle-vapour interaction. Studies with radioactive aerosols seem to be an American speciality as all six papers in this session came from the U.S.A.

The book begins with a thoughtful preface by the editor who tries the impossible, to sum up a newly-developing field in which each new result poses more questions than it answers.

G. NAGELSCHMIDT

Health in Industry. A Guide for Engineers, Executives and Doctors. By R. C. Browne. (Pp. vii + 157; 61 figures + 8 tables. 18s.) London: Edward Arnold. 1961.

It is all too common an experience for those engaged in occupational medicine and hygiene to find instances of toxic or dangerous materials being introduced for reasons of technical advantage but with a lack of understanding of the probable impact on the health and comfort of the workers. Professor Browne attributes this state of affairs largely to the lack of instruction in these matters during the technical education of the engineers, scientists, and commercial men who are responsible for the management of industrial processes.

Having attempted to remedy this situation for the present generations of students at Newcastle by providing lecture courses, the author now seeks to enlighten past generations, and in doing so has produced a book that will repay reading by those already familiar with occupational hygiene.

The early chapters deal with the health of the executive, sickness absence statistics and their interpretation, equipment design, accidents, automation, and fatigue. Then follows a section dealing with the physical aspects of the environment—lighting, heating, and ventilation, noise, and ionizing radiations. While there are some terminological inexactitudes in the sections on lighting and noise, these sections nevertheless give a very concise introduction to the subject.

The final chapter is devoted to the problem of chemical substances in the environment, including the dangers of handling chemicals, gases and gassing, the effects of lead, mercury, and other metals, organic compounds, and dust.

Professor Browne writes in a pleasing, rather informal style, and the manager who begins this book is likely to continue to its end.

D. E. HICKISH

Physiology in Industry—Evaluation of Industrial Stresses by the Physiological Reaction of the Worker. By Lucien Brouha. (Pp. 145. 40s.) Oxford: Pergamon Press. 1960.

The content of this 145-page monograph, which does not pretend to be a textbook on industrial physiology, is adequately described by its sub-title. The book is mainly based on experiments by the author.

Dr. Brouha argues that the work a man may safely do can be evaluated by measuring the physiological energy expenditure of the human machine, and because physical work plays an important part in industry greater consideration should be given to the functional characteristics of the human body. He discusses the physiology of muscular activity, its assessment, and factors influencing it; the effects of the physical environment on work, and

the factors causing stress; the requirements for particular jobs, how stress and fatigue in them can be reduced and assessed; the selection of the worker for a particular job and his supervision. The chemical environment is evaluated in a contribution by Dr. John A. Zapp, Jr.

The book is of value in that it presents an aspect of industrial work which has in the past received little consideration, while its well-documented factual content will provide more than an interesting introduction to some of the problems of human engineering with which the physician, the manager, and the engineer in industry should be acquainted.

I. P. PRIBAN

Occupational First Aid, 2nd ed. (Pp. 73; illustrated. 4s. 6d.) London: The St. John Ambulance Association. 1961.

The second and improved edition of *Occupational First Aid* published by the St. John Ambulance Association has now made its appearance.

It is more profusely illustrated although the two-colour illustrations are rather lurid and might be clearer in black and white.

In accordance with current practice the Association has recognized that first aiders in industry do perform treatment for minor injuries and illnesses without medical supervision, and it has devoted almost one-third of the book to this subject.

There are two points of criticism. Both sterility and no-touch dressing techniques are difficult subjects to teach to first aiders, and it appears unwise to the reviewer to show a dressing trolley set up with mixed sterile and non-sterile objects on the same shelf. It is an accepted principle that the upper shelf should contain sterile objects only and that such non-sterile requisites as bandages and the cetrimide bottle should be confined to the lower shelf.

The other point concerns haemorrhage. There is no mention of elevation of the limb and of lying the patient down before proceeding to the final and dangerous step of applying a rubber constrictive bandage. There are many people who believe that this appliance should be banished from the armamentarium of the first aider.

Despite these criticisms this edition will be read widely by first aiders in industry and should also be studied by managers who have the responsibility for providing first aid services in their factories—especially if they are not guided by the advice of a doctor trained in industrial medicine.

R. A. TREVETHICK

A Survey of Some Current Surgical Dressing Techniques. Report of an Occupational Health Section Scholarship Project (Studies in Nursing No. 2). By M. Margaret Williams. (Pp. 76; 6 figures. 6s. 6d.) London: The Royal College of Nursing. 1961.

The Royal College of Nursing has published a survey of surgical dressing techniques carried out in the medical departments of a cross-section of industry in this country. It is a report which should be read and digested by all

doctors and nurses who perform or are responsible for treatment in industry, and it should serve as a yardstick against which their own techniques can be measured.

Some 35 suspected dangerous practices are discussed, which should form the basis for any heart searching and reorganization of technique. All these faults appear to have been transgressed by some of the respondents, for example, Suspected Dangerous Practice number 35, and perhaps one of the most important, is concerned with the segregation of clean and dirty cases. The cubicle system in the treatment room is probably one of the most effective ways of doing this.

After making comment on all the 35 suspected dangerous practices, a graph is shown in which the sepsis rate, calculated from the cases at risk and the number going septic, is plotted against the number of transgressions of ideal technique. It appears that a higher rate of sepsis exists in those medical departments that commit the greatest number of suspected dangerous practices, and also, as an interesting sideline, it is brought out that heavy industry is more liable to have a high sepsis rate than light industry.

The reviewer would take issue on one point which concerns the definition of sepsis, "the slightest inflammation indicates some degree of sepsis". If this were taken as the criterion for sepsis then almost 100% of lacerations and burns would be classed as septic since they heal by a process of inflammatory repair. Surely sepsis should be defined as a condition where there is heat, redness, swelling, throbbing pain, lymphangitis, and discharge of pus. Any combination of these signs indicates that the normal process of repair has been superseded by added infection.

This criticism apart, the survey is most helpful in pinpointing pitfalls into which it is too easy to slip. One of the most telling phrases used is the very last one in the book, "all practice should be under constant review". It is surprising to find that there are departments where daily dressings still take place. In the survey it is recommended that dressings should be undisturbed for 24 hours in the first place and then should be looked at every three days. It is even more desirable to the reviewer's mind that the dressing should remain undisturbed for a minimum of five days and on occasions 10 days, and this is quite possible in industry if patients are instructed how to wash and avoid getting their dressings wet. Top bandages can always be replaced if dirty.

Much is made of the use of standard packs ready sterilized for finger and other dressings. Disposable gallipots of aluminium foil and paper towels are all excellent ways of eliminating cross-infection.

This survey deserves a wide distribution, and if its advice is followed there should be a drastic reduction in cross-infection of casualties treated in industry.

R. A. TREVETHICK

Tidy's Massage and Remedial Exercises in Medical and Surgical Conditions, 10th ed. Edited and revised by J. O. Wale. (Pp. viii + 600; 192 figures. 42s.) Bristol: John Wright. 1961.