be a crumb of comfort to our general practitioner colleagues in the London area who gave the basic information on which the study depends that their certificate writing has not been in vain; and which the "genius of English healers" has already "put to good account".

J. P. W. HUGHES

The Functions of an Occupational Health Service in an Industrial Organization. (Pp. 70, 5s.) London: Association of Industrial Medical Officers. 1956.

Occupational health has so far made but slow progress in the academic sector. Most medical students learn little of the subject. Yet in field, factory, dockyard, mine, transport, and building construction the doctor also serves. All over the world this service is expanding. In Great Britain, the membership of the Association of Industrial Medical Officers has grown in 21 years from 35 to over 800. The Association has chosen the occasion of its 21st anniversary to issue a booklet of 70 pages setting out the functions and aims of an occupational health service. The booklet also describes the present extent of existing services and includes short descriptions of many of the societies and associations concerned with occupational health. Presumably the intention is to clarify, not to plan, and truly clarification is needed. The examples of existing services described, together with the appendix of associated organizations, provide a substantially complete picture. In addition there are useful tables of comparative costs of medical services and a reasonably full bibliography of occupational health publications. The main value of the booklet lies in these factual sections. All the threads in the tangle are here collected neatly. Many hours will be saved for any newly appointed industrial medical officer, social worker, industrial or medical administrator, who may wish to study or to make use of these services. The booklet would have been improved by a summary of the existing law on the subject (that relating to rehabilitation is given), and by at least a cursory glance at the more significant variations in practice in other countries.

On the matter of functions and aims the book is less satisfactory. In the first five pages some 20 or 30 functions are dealt with in a few lines each. Elsewhere, the functions of the National Coal Board's medical service are well summarized under seven heads, and those of the British Overseas Airways Corporation under six heads. Clearly it is possible to make do with a single sentence: "The function of an occupational health service is to foster the health and safety of people at work." Enlarging on this, there is hardly a function of medicine that cannot be found a place in appropriate circumstances—from psychiatry to sanitation, from vital statistics to Civil Defence, from cancer research to control of infectious disease. There could even be a place for paediatrics in factory cèches. Where then is the value of a functional breakdown? It should serve to explain the details of the service and to influence those who may doubt its value. Moreover, it should guide the inexperienced on priorities and warn them of pitfalls. Unfortunately, insufficient guidance is given here. A carefully considered and detailed statement on some 10 or a dozen of the

main activities consistently associated with preserving health at work would have gone a long way to help those who seek guidance. It is of doubtful value to mention continued observation of young persons, advice on health and employment of older workers, advice on health of senior staff, encouragement of managers to advise staff to obtain medical advice, and accessibility to employees of medical advice as five separate functions (Page 4).

Only rehabilitation is dealt with at any length. The short chapter on this subject begins with the statement: "It has been estimated that there are three million people actually in need of rehabilitation; if this is correct, much remains to be done." Much indeed, but is it correct? This is the type of assertion that the Association's members between them should have confirmed or refuted. One function which should have been discussed in detail is the vexed question of treatment and diagnostic investigation. At this point much is done that should not be done and much left undone that is necessary. Surely this needs a thorough airing.

Also it is not made clear who exactly is to be served by the occupational health service. Presumably "industrial organization" includes all the personnel in factories, mines, transport undertakings, and construction works, but who else? Will the farmer, the nurseryman, and the orchardist be included? Is an occupational health service to function for professional men, shop assistants, and local government personnel? The objective should not fall short of all who work, even the housewife in some aspects of her labour.

Besides those already referred to, there are short chapters of two or three pages each on the introduction of an occupational health service, the constitution and functions of an occupational health team, and occupational health nursing services. The subject matter is not clearly demarcated, as indicated by the titles, and the principal characters of doctor and nurse wander somewhat indiscriminately across chapter boundaries. The fine intention of this booklet is not fully realized.

T. O. GARLAND

Health of Workers in Chromate Producing Industry. A study under the direction of W. M. Jafafer. Public Health Service Publication No. 192. (Pp. 131; 25 figures, 6 in colour, 41 tables.) Washington: Federal Security Agency. 1953.

The manufacture of chromates and bichromates used in electroplating, anodizing, and surface treatment of metals, tanning and colour making is a small but essential part of the heavy chemical industry. In the United States as in this country there are some six factories where manufacture takes place. On the user's side the skin hazards of chrome, ulceration, dermatitis, and perforation of the nasal septum, have been well known, particularly in the chrome-plating industry, and the chromate producers until recently were thought merely to share these hazards. But since Lehmann in 1932 described cases of lung cancer in chromate workers suspicion has been increasing that a real risk of this disease exists on the manufacturing side. It is noteworthy that no malignancy has been reported in any of the skin or nasal cases.

This invaluable study, conducted with typical American team work and thoroughness, presents the results of a clinical and environmental survey of six factories and 897 workers concerned with the manufacture of chromates and bichromates. The process consists of roasting finely ground chromite ore with soda ash or a soda ash-lime mixture to produce sodium chromate which is converted by acidification and crystallization into sodium bichromate.

Ten men, mean age 54.5 years and mean exposure to chromates 22.8 years, were found to have bronchogenic carcinoma. This represents a rate of 1,115 per 100,000, which is far higher than the rate found in a comparative group. A study of morbidity and mortality statistics for the industry showed that there were nearly 29 times as many deaths from respiratory cancer among chromate workers as the expected rate for all males in the United States. The rate for coloured males was higher than for white males. The excess incidence was confined to cancer of the respiratory tract. There was no excess for other sites.

Perforation of the nasal septum was found in 56.7% of chromate workers and again the incidence was higher among coloured men. The condition also developed more rapidly in this group. Fifty-four per cent. had skin ulcers or their scars, but only 2% had chrome dermatitis. There was no evidence of an undue incidence of dental caries though gingivitis and periodontitis were noticed with greater frequency among chromate workers.

The main feature of the environmental investigation was the discovery of an acid-soluble-water-insoluble chromium fraction, differing from the commoner trivalent or hexavalent compounds, which is present in the roast and residue from the leaching tanks. It is considered that this material, probably a calcium chromate-chromite complex, may be responsible for the occurrence of the disease. The practice in Germany and America is to use the residue to mix with the fresh ore, while in Britain it is discarded. This fact may explain Bidstrup's finding that there has been no unusual incidence of pulmonary carcinoma in the British chromate-producing industry.

The recommendations arising out of the survey include: (1) More complete enclosure of processes; (2) dust control features incorporated in design of new equipment; (3) local exhaust ventilation; (4) regular routine air analyses by competent persons; (5) good housekeeping to prevent spillage and accumulation of dust; (6) personal protection until air concentrations are reduced to a safe level; (7) routine radiograph every three months on men who have worked in the industry more than five years; (8) continuation of morbidity and mortality statistics; (9) continuation of biochemical and toxicological research on all chromium compounds.

R. MURRAY

Price's Textbook of the Practice of Medicine. Edited by Donald Hunter. (Pp. xiv + 1,774; 2 figures. 63s.) Oxford University Press (London: Cumberlege). 1956.

"Price's Textbook of Medicine" was always a mixed bag with some outstandingly good and some equally bad sections. Now, under the editorship of Dr. Donald

Hunter, it retains this characteristic feature. Dr. Hunter claims that it is a "unique compilation of modern knowledge". It is, indeed, encyclopaedic, including many rare diseases, but yet some common disorders appear to have slipped through the editor's mesh; for instance, I could find no reference in the index to cough syncope or senile osteoporosis. Unfortunately it also retains a fair sprinkling of Edwardian folk lore. In the treatment of cough in influenza it is stated that "dry cupping is often of service" and a nasal spray of chlorbutol and menthol in liquid paraffin is recommended without reference to its dangers. In the section on pulmonary tuberculosis two pages are devoted to collapse therapy, but only one to chemotherapy. The régimes described here are out of date and there is no clear statement on the necessity for using combinations of antibacterial drugs. Under portal cirrhosis there is no mention of portal systemic encephalopathy, and high-protein diets which may precipitate it are advised without warning. In the cardiac section there are four pages on electrocardiography but no illustrations; on the other hand, there is one illustration of an electroencephalogram in the neurological section. These random gleanings lead to a sense of wariness in accepting the reliability and balance of the book. Much of it is, however, excellent. Especially good are the introductory chapters on "Antibacterial Drugs" (but why more space to sulphonamides than to all the others put together?), the "Anaemias" (by L. J. Witts) and "Diseases of the Kidney" (by Horace Evans and Clifford Wilson). What a pity it is that publishers do not issue offprints of the separate sections of these vast omnibuses so that we could pick the good ones without having to take the rubbish. To get 1,700 pages of text for 63s. is a good bargain, but it is rather like a mixed lot at an auction.

C. M. FLETCHER

Hutchison's Clinical Methods. By Donald Hunter and R. R. Bomford. (Pp. xv + 452; 25 plates, 95 figures. 18s. 6d.) London: Cassell. 1956.

Every British medical student and practitioner probably is or has been familiar with this remarkable book, which started its life in the year 1897 and after flourishing for 12 editions has now blossomed into a new and exciting thirteenth edition.

While we must deeply regret that Sir Robert Hutchison should have retired from the authorship of a work which he has for so long personally inspired, the present authors have thoughtfully altered the title to perpetuate not only his name in this connexion but also the fundamental philosophy with which Sir Robert Hutchison taught his students.

During its long years and many editions, *Clinical Methods* must have been reviewed many hundreds of times, and those who have read such reviews will be familiar with the words of praise lavished upon it. We know already from our own experience that it fits into the pocket (not quite so easily as before perhaps) and that it is a mine of useful information. Whether we are humble students anxiously feeling our way in the awesome fog of our first clinical studies or ambitious diagnosticians