produced behavioural symptoms which could be predicted. Examples of such patterns of behaviour were described.

During the week visits were paid to a number of industrial organizations in the London area and there was a full social programme for members and their wives.

An exhibition of the medical services of the Ministry of Supply was open during the week at the Pillar Hall in the new Government buildings, Whitehall. Exhibits and illustrations were shown, covering many types of hazards and the protection required. Of particular interest was the resuscitation section in which the historical development of resuscitation procedures was illustrated with examples of old and modern types of equipment.

The anniversary dinner was held at the Royal College of Surgeons on the anniversary date, September 27, of the foundation of the Association 21 years before. The toast of the Association was proposed by Sir Harry Platt, who spoke of the need for all branches of medicine to work together. The President of the Association, Dr. R. S. F. Schilling, in his reply, foresaw a steadily developing future for occupational health services, bringing great benefit to industry. In proposing the toast of "Medicine in Industry" the Earl of Verulam recalled the many benefits to industrial management which an occupational health service provided. The toast of the guests was proposed by Dr. L. G. Norman, and Dame Florence Hancock replied.

Erratum

We much regret that the legends to the paper by J. N. Morris in the last number (13, 287) were omitted. They are as follows:—

FIG. 1.—Mortality in the "social classes" England and Wales, 1950. Males aged 20-64 inclusive.

FIG. 2.—Mortality from coronary heart disease England and Wales, 1950. Males aged 20-64 years inclusive.

Industrial Medicine and Hygiene

A Review by

L. G. NORMAN

This is the only book in the English language which brings together a series of authoritative essays comprehensively covering almost the whole field of industrial medicine and hygiene. Messrs. Butterworth & Company are to be congratulated on their foresight and enthusiasm, no doubt stimulated by the late Lord Horder, in developing this work. Dr. E. R. A. Merewether, as Editor, has not only achieved a personal masterpiece; he has placed British industrial medicine firmly in the forefront. To collate the balanced contributions of 33 individualistic experts, to make them speak roughly the same language, and avoid overlapping each other's contributions to any serious extent is a remarkable achievement. It has been a task which few would care to undertake and the three present volumes will remain a lasting tribute. There is indeed a galaxy of authors, each at the head of the field about which he writes. The work is perhaps least strong on the clinical side, but it does not set out to be a clinical text-book, and about half the authors, leaders in their own field, are not medical men. There are one or two omissions, which, together with a summary of recent advances, will, it is hoped, form the basis of a further volume or volumes in order that the book as a whole may be kept up to date. For example, there is little about the treatment of gassing casualties, human-engineering aspects of machine design, the clinical aspects of toxicology, accident prevention, the effects of shift work, and psychiatry in industry.

There is a good index, separate for each volume. The production is of a high standard throughout, on good quality art paper, with excellent illustrations, and with a refreshing absence of typographical errors.

Volume I

This volume was published in 1954 and is inevitably out of date in minor respects. It is interesting to note that progress seems to have been most marked in legislation. For example, the Mines and Quarries Act and the Food and Drugs Act, 1955 (and Regulations), have been passed since the relevant chapters in this volume were written.

The volume opens formidably but perhaps appropriately with an account of the work of the Factory Inspectorate by H.M. Chief Inspector of Factories. Sir George Barnett's brief and impeccable first chapter describes the history of the Factory Inspectorate and gives an account of its present-day activities. As this is

Industrial Medicine and Hygiene. Vols. 1-3. Edited by E. R. A. Merewether. (Pp. ix + 426, vi + 451, vii + 617 respectively; illustrated. 70s. per volume; 10 gns. per set.) London, Butterworth Medical Publications: 1956.

a work on industrial medicine one had hoped to find a more complete account of the work of the medical inspectors. The reference to policy in regard to the assignment of "the medical side" to another ministry or department might have been better omitted. Mr. McCullough, a Deputy Chief Inspector of Factories, follows with a chapter on factory legislation which, as he says, is written not for the expert but for the man in the street. The doctor newly undertaking an industrial appointment will, however, find this chapter useful. The sections on heating, ventilation, and lighting go beyond legislative requirements, but this chapter may prove a helpful guide on what is acceptable to the Factory Inspectorate. An excellent description, somewhat beyond the requirements of hygiene, is given of the fencing of machinery. There is a useful list of the legislation covering factory owners and occupiers on the one hand and workpeople on the other. This chapter will also be found useful for reference, for example, on requirements covering young persons, and legislation concerning weight-lifting.

Dr. Reid follows with a masterly account of the application of statistical and epidemiological methods. In a mixture of statistics and common sense he leads us gently by the hand along difficult paths until the reader finds himself enthusiastically calculating square roots and standard deviations. Dr. Reid is rather optimistic in supposing that many factory managements keep adequate records of staff, adequate, that is, for the purpose of statistical investigations. This chapter might have been improved by the inclusion of actual examples of the practical use of morbidity and mortality statistics. There is perhaps some confusion between the personal sickness record of the individual employee, which is useful clinically, and the grouped records of numbers of employees which are of epidemiological use. The Industrial Health Research Board Report No. 85 is now out of date and should not be made the basis of sickness absence recording. Since this chapter was written the Registrar-General has published his recommendations concerning terminology in sickness absence recording and it is desirable that these terms should be generally adopted. In this work there is sometimes thought to be a danger of too large a statistical pyramid being built on the shifting sands of human data; Dr. Reid's sound common sense avoids this pitfall.

Dr. Amor describes the organization and operation of an industrial medical department, emphasizing throughout that the medical officer is part of the management team. Not all will agree that the medical officer should be responsible to the personnel manager. There is a practical account of the working environment, divided into physical, chemical, biological, and psychological environments. Descriptions are given, with a plan and photographs, of the siting and design of a medical department for both large and small organizations. These will be found useful by those who require to set up a new department but the author is against the provision of physiotherapy, for which accommodation is therefore not included. Useful examples are given of medical examination and report forms; the difficult question of disclosure to the employer of such information

as diagnosis is not discussed. Dr. Amor has put much of his wisdom and experience into this chapter, which will be read with profit.

The organization of industrial and occupational nursing services is described by Miss Mann, formerly Industrial Nursing Organizer of the Royal College of Nursing, and it may be assumed that this chapter is in line with the general policy of the Royal College. Miss Mann does well to remind us of the report of the Health of Munition Workers Committee (1918) which referred to the industrial medical service as "this new preventive medicine which has as its object the removal of the occasion of disease and physical inefficiency combined with the husbanding of physical resources of the worker in such a way and to such a degree that he can exert his full powers unhampered, and with benefit to himself and all concerned". An excellent blueprint for today. Surprisingly Miss Mann does not emphasize the importance of the State Registration qualification for nurses who take charge of works surgeries. The sections on siting and accommodation of "health departments" somewhat overlap the previous chapter and much of the detailed lists of equipment could have been omitted. In the design of a new health department the provision of a combined consulting room (for consultations with the nurse) and nursing staff office seems inadequate and the accommodation listed for the department as a whole is incomplete. The standards of staffing recommended are of interest, and the references to rates of pay and conditions of service are in accordance with the recommendations of the Royal College of Nursing which are revised from time to time. The author does not indicate that the nurse's duties should take her outside the treatment room into the factory. The important question of administration of morphia by factory nurses is not discussed. Miss Mann considers that nursing staff should work to "standing orders", of which a copy should be posted in the treatment room; many medical officers, however, prefer to allow their nurse colleagues professional discretion in accordance with their ability.

Dr. N. Langdon Lloyd describes the Ministry of Supply Medical Service, and gives a valuable account of the work of a large industrial medical service. Examples are given of pre-employment medical examination forms and of other useful forms and certificates. No account is given of the levels of sickness absence experienced in royal ordnance factories following the introduction of a sick pay scheme, a cautionary tale which might have been a help to others. This excellent description of the work of a large industrial medical department will repay careful study by those who work in or join such a department. Of particular merit is the final section "*Esprit de Corps*" which should inculcate a strong sense of pride in belonging to a service with a high reputation.

The medical aspects of coal-mining are described by Dr. S. W. Fisher. A compact and useful account is given of history and legislation, not readily available elsewhere. There is a full account of miner's nystagmus, but no mention of Browne's work on kittens which supported the view that nystagmus was mainly due to

inadequate lighting. There is a useful account of underground operations. The "beat" diseases are adequately described in accordance with the Prescribed Diseases Regulations, although in fact there are cases which do not always seem to fit the Regulations, such as "beat shoulder". Dermatitis is rather briefly described. There is an excellent account of gases in coal-mines (though not of dealing with gassing casualties) and of high temperatures and ventilation in mines. The extensive medical services now provided by the National Coal Board receive little description, perhaps because they fall under a different administration from that with which the author was associated.

Dr. Patricia Shaw writes on medical supervision in shops, warehouses, and offices. This is of particular interest in view of the promised Gowers legislation. A sympathetic and practical account is given of the nature of shop work, and of the special skills required. There are few health hazards for workers in shops, but Dr. Shaw rightly draws attention to the potential dangers of x-radiation in shoe fitting and of the dissemination of tuberculosis. No reference is, however, made to Alice Stewart's work on the spread of tuberculosis in large and small workrooms. Dr. Shaw is perhaps unduly restrictive in the selection of workers for shops and offices. It would have been interesting to see Dr. Shaw's views on the important question of large versus small offices; from the points of view of ventilation, distraction, and infection the small office seems to have considerable advantages over the large one. Staff accommodation is rather inadequately described. There is a helpful account of methods of medical supervision, particularly where there are multiple scattered units. The impression is left that this is a valuable account of medical services in shops and related premises which might, however, have been expanded to give a more complete account of legislation, environmental working conditions, and staff accommodation.

Dr. T. A. Lloyd-Davies contributes an essay on "The Young Worker" which is in quite a different style. It is a fine piece of writing, redolent with sympathy and keenly sensitive to the needs of older school children and young workers; a mixture of sound philosophy and common sense. The historical and social background of adolescents is analysed, drawing attention to the different social conditions after World Wars I and II. The table of contrast in "employment" conditions between school and work is of much interest. Clinical case reports of four "difficult" adolescents reveal the author's deep understanding; they are worthy of careful study and thought. Leisure interests, motivation in work, and after-school education are adequately discussed. This is a valuable essay on the social employment and medical problems of young adults which should be studied by all who are in any way responsible for the care of young people at work.

The responsibilities of the Ministry of Labour and National Service in regard to the disabled worker are considered by Mr. W. Taylor, a former Under-Secretary of the Ministry. It is refreshing to find a full and readable account of the working of the Disabled Persons (Employment) Act, 1946. Unemployment among registered

disabled persons is considered and there is a detailed description of the work of the Disablement Resettlement Officer. In 1953, nearly 130,000 vacancies were filled from the Disabled Persons Register, which is a tribute to the administration of the Act. There still remain over 50,000 unemployed persons in Section I of the Disabled Live File (those who are regarded as capable of work under ordinary conditions), and this number should not be regarded complacently. The work of the Ministry's industrial rehabilitation units and government training centres is described in detail. The chapter concludes by describing the work of the Remploi factories and of voluntary organizations and local government authorities in assisting disabled persons. A subject which is a maze of confusion to many will be clarified by reading this chapter.

Dr. Donald Stewart appropriately contributes a chapter on rehabilitation, for he is medical adviser to the Austin Motor Company whose pioneer rehabilitation workshop is well known, and a member of the National Advisory Council on the Employment of the Disabled. Starting with rehabilitation in the hospital, progress has generally been disappointing since the Ministry of Health's Memorandum on Rehabilitation (1949), though the author might have mentioned a number of hospitals where the physical medicine specialist or orthopaedic surgeon has developed excellent rehabilitation services. The contribution of industry to rehabilitation is discussed, with a description of certain rehabilitation workshops. Many employers prefer to provide rehabilitation by means of alternative work, without segregating the employees concerned in separate workshops, and the value of this contribution to rehabilitation is perhaps not sufficiently emphasized. It is true that in this form of rehabilitation the patient is apt to be "lost" in the works, particularly if he fits his new environment well (a tribute to the medical officer), but it is surely the medical officer's responsibility to recall such cases for follow-up and so not lose sight of them. The influence of wage structure and incentive bonus schemes on rehabilitation arrangements, influences which may make or wreck a rehabilitation scheme, are not discussed. Special consideration is given to rehabilitation in pneumoconiosis, tuberculosis, heart disease, psychiatric cases, and the placing of blind persons. Many industrial medical officers doubt whether infectious persons suffering from tuberculosis should be placed in ordinary industry at all. In heart disease, Dr. Stewart gives a useful classification of functional activity, quoting the Work Capacity Report proposed by the American Heart Association in 1952. Dr. Stewart describes and generally criticizes the various schemes for matching human capacity against a job analysis. Industrial medical officers will usually agree with this view; most disabled cases have to be assessed individually and there is no substitute for the medical officer himself seeing and knowing the details of the job concerned. Useful appendices to this chapter list 20 sheltered workshops for the disabled (excluding Remploi factories and workshops for the blind) and describe a method of job analysis for resettlement purposes.

National Insurance benefits for sick and injured work-

people are described by Miss Mildred Riddelsdell, Under-Secretary of the Ministry of Pensions and National Insurance. A much too brief historical account of the origins of health insurance and workmen's compensation is followed by detailed descriptions of the current sickness benefit and industrial injury provisions. The historical reasons for the separation of these two schemes and the advantages and disadvantages of their amalgamation are unfortunately not discussed. Since this chapter was written there have been changes in the rates of benefit, various changes in the provisions for pneumoconiosis and byssinosis, and poisoning by cadmium fumes has been added to the list of prescribed diseases. The Beney Committee reported after this chapter was written and a summary of its findings would have provided a useful statement of present opinion concerning cover for occupational diseases. The chapter concludes with a list of the prescribed diseases and scheduled occupations.

Dr. Magnus Pyke contributes a chapter on "Feeding the Worker". A full account of nutritional requirements for light and heavy workers is given. Unfortunately only one sample menu is included. Many industrial medical officers do not have sufficient concern with the nutritional values of canteen meals, but here will be found enough information in a brief space to answer any questions regarding the nutritional needs of employees. Dr. Pyke supports the administration of milk to lead-workers, although it is now regarded as being of no particular value in protecting workers against lead poisoning. Diets suitable for special categories of workers such as adolescents and night workers are described, but there is no mention of special dietary arrangements for medical cases such as those suffering from peptic ulcers and diabetes.

Volume I concludes with a chapter on canteen services by Miss D. Johnson, a Deputy Chief Inspector of Factories. A history of the development of works canteens is followed by descriptions of the siting, accommodation, equipment, management, and staffing of the canteen. From the industrial medical officer's point of view, it would have been useful to include a review of the principles of hygiene in canteens, together with some account of detailed hygienic requirements. The Food Hygiene Regulations (1955) were, of course, published after this contribution was written.

Volume II

This volume opens with a joint contribution from Dr. R. M. B. MacKenna and Dr. Sibyl Horner, a unique combination of a leading dermatologist and the Deputy Senior Medical Inspector of Factories who is the leading authority on administrative aspects of industrial dermatitis. The account of the legal aspects of occupational skin disease will be of much help to those who are concerned with this subject. The difficult question of compulsory notification of industrial dermatitis is adequately discussed. The failure, under present national insurance arrangements, to inform employers of cases of industrial dermatitis, which renders it impossible for employers to take action to prevent the disease, is mentioned, but it would have been preferable to read of

the overcoming of this unfortunate obstacle. Skin diseases caused by occupation are discussed in sufficient detail for a work of this size, but there is of course ample material in this subject for the production of a separate volume. The summaries of the different conditions are, however, adequate and the photographs are excellent. Allergic contact dermatitis is briefly described and this section is followed by a somewhat lengthy discussion of cross-sensitization, with notes on the fundamental organic chemistry concerned. A good description of patch testing is given but the obvious failure of patch testing to detect sensitivity in advance of exposure is not mentioned. Skin cancer due to pitch and tar is well described, but a photograph of pitch warts might have been included. The uses, limitations, and composition of barrier creams are fully discussed and this section will be found most useful. Valuable hints on differential diagnosis of occupational skin conditions are given. There is some splitting of subjects, such as barrier creams, which appear in two places, and which might be brought together in a subsequent edition. This chapter is a well condensed summary of much information on occupational skin conditions.

Professor W. J. B. Riddell contributes a chapter on occupational ophthalmology. After the usual description of the anatomy and physiology of the eye (why is this always included in such articles?) there follow excellent accounts of many different types of injury to the eye and their treatment. Defective colour vision is briefly discussed; there is no reference to the invaluable report of the Physical Society on this subject. The Appendix gives the visual standards required by various civilian and military authorities, but it is not quite clear why lists of notifiable diseases have been included here.

Dr. C. B. Frisby contributes a chapter on occupational psychology. The Seven Point Plan, now well known, for the assessment of the individual is fully described. In the space available there is little detailed account of intelligence and aptitude tests, but the principles and uses of these tests are well set forth. The effects of faulty physical and psychological environments are reviewed, and there is a valuable account of the contribution which the industrial medical officer may make to relationships and morale, a role which gives him the opportunity to influence the philosophy of management.

Four separate authorities contribute chapters on compressed air, including one on medical aspects of compressed air illness by Professor W. D. M. Paton. The whole section of four chapters probably forms the best account of compressed air illness in the English language. The Appendix gives rules for compression and decompression, together with phase decompression tables.

Mr. H. W. Swann's excellent account of electrical accidents deals more with safety than health aspects, giving useful information about the prevention of electrical accidents and the safe handling of electrical equipment. The occurrence of hazards in various processes due to static electricity is described, together with methods of prevention.

Dr. H. E. Watts writes on explosives in industry, mainly from the point of view of those who are interested

in the manufacture and storage of explosives. Safety measures are fully discussed and there is an adequate account of legal requirements relating to the manufacture, sale, conveyance, and importation of explosives, but there is little of medical interest in this chapter.

Dr. Thomas Bedford's chapter on heating and ventilation, on the other hand, contains just what is required by the industrial medical officer. Three scales of warmth are described, with a detailed account of the ranges of thermal comfort. In addition to a full description of the theoretical requirements for satisfactory heating and ventilation, there is practical guidance on the best methods of heating and ventilating workrooms. Incidentally, in an investigation of winter comfort zones for sedentary workers, undertaken in 1936, variations due to observer error were eliminated by having only one observer, a method which would not now be wholly acceptable. This chapter is invaluable for reference.

Dr. H. C. Weston writes on "lighting, glare, and efficiency". An account of theoretical requirements for artificial lighting is given, but there is little description of the different methods of installation. More detailed information about the type, number, spacing, mounting-height, and light-output of lighting units would have been useful. The standards of illumination for different visual tasks recommended by the leading authorities might also have been usefully included. There is a full account of glare and its prevention. The section on fluorescent lighting will be found useful in advising on installations and in dealing with complaints about this form of lighting.

"Intense Sound and Ultra-Sound" is the title of the chapter by Air Vice-Marshal E. D. Dalziel Dickson. This chapter is of particular interest as people seem to be developing increasing sensitivity to noise. Physical methods of evaluating and measuring noise are described and a full account is given of the effects to noise on hearing. Useful practical accounts are given of the methods of reducing excessive noise in workrooms, but curiously there is no mention of acoustic tiles, of double windows, or of siting opposing wall surfaces at an angle so as to reduce the reverberatory effects of reflection.

The biological and clinical effects of ionizing radiations are considered by Dr. J. F. Loutit. Miners' cancer of the bronchus, and occupational disease of radiologists, radium technicians, and dial painters are described. There is an interesting account of the clinical effects of radiation, divided into non-threshold effects, which are cumulative and from which there is no recovery, and threshold effects, from which there may be a considerable measure of recovery.

This volume concludes with a chapter on protection against ionizing radiations by Dr. W. Binks. It is a valuable supplement to the Factory Department publication on precautions in the use of ionizing radiations and goes into considerable detail in the theory of this subject. The theoretical physics in this chapter, invaluable to the specialist, is, however, not likely to be of interest to the average medical practitioner. Nevertheless, industrial medical officers should undoubtedly make this chapter the object of study in view of the increasing use of radioactive isotopes in industry.

Volume III

This volume appeared somewhat later than the first two, and was published in May, 1956. It was worth waiting for. Volume III enhances the standard of the whole work. Silicosis and other fibrotic pneumoconioses are described by Dr. Andrew Meiklejohn in a masterly chapter of 120 pages. Current experience, mainly in Great Britain, is presented in a general survey, with the emphasis on practical problems rather than on scientific detail. Existing knowledge is well summarized and, as all who know Dr. Meiklejohn will appreciate, he has not shirked the discussion of controversial issues where necessary. The historical survey is regrettably brief, but no doubt limited by the space available. The photomicrographs of pathological specimens are well reproduced, but the small photographs of radiographs necessarily lose definition and detail; they are usefully included for the sake of completeness but there is no substitute for the study of actual radiographs. The author indicates where specimen radiographs may be obtained for study. After a discussion on the meaning and interpretation of the term "pneumoconiosis" the definition is left in some confusion; this is certainly a statement of the present position and the author has put the different views forward fairly. Theories of the development of pneumoconiosis are briefly and adequately described. Practical hints on the conduct of pathological examinations are given in the section on morbid anatomy. The author appeals for a critical re-examination of the view that massive fibrosis is due to tuberculosis infection. "... it is not yet disproved that massive fibrosis can result from intensity of dust exposure alone ...". The section on diagnosis is particularly good; it is based on the author's personal experience. There is much sound advice here, for example: "Doctors should warn patients against patent medicines and nips of brandy, if only to safeguard their financial resources. There is no better remedy than work; it keeps the mind occupied and avoids the introspection and depression of idleness, in which the patient becomes querulous of everybody and everything." The value of radiology in diagnosis is clearly expressed. The use of standard films, as a means of reducing observer-error in diagnosis, is not considered to be of much value to experienced observers. The danger is expressed that periodic medical examinations may degenerate into a sterile routine and the author emphasizes that all such examinations should have a clearly defined purpose, a view which might well be applied in a much wider field than that of pneumoconiosis alone. There is a full account of aluminium treatment, and the social aspects and the assessment of disablement. Recent work on the assessment of cardio-respiratory function is, however, rather too briefly described. There is some repetition in the description of silicosis of material that was given under the general heading of pneumoconiosis, but the account of silicosis stands well by itself and is an excellent introduction to the subject for the interested practitioner. Coal-miners' pneumoconiosis and asbestosis are similarly well described. The whole chapter is well written and should become a standard work of lasting value.

Dr. A. T. Doig follows with a chapter on dust diseases,

excluding the fibrotic pneumoconioses. This is an interesting and readable account which adequately covers the known examples of these conditions. Siderosis, due to inhalation of iron dust or fume, is fully described in a section which will remain useful for reference on this subject. The differential diagnosis between siderosis and silicosis is well summarized and cases of mixed exposure are briefly described. Short descriptions of stannosis, barytosis, and the effects of inhalation of calcium compounds complete the survey of pneumoconiosis due to metallic dusts. Acute pneumonitis due to metallic dusts and fumes is described, but the accounts of these conditions might perhaps have been more complete in view of the increasing importance of this subject. For example, the effects of vanadium pentoxide on cleaners of oil-fired boilers are but briefly described and there is no reference to Williams' work on this subject. Poisoning by cadmium fume (but not dust) has been made a prescribed disease since this chapter was written. Chronic pneumonitis due to beryllium is well described and there is a rather brief account of occupational cancer of the respiratory tract. The chapter concludes with a section on diseases due to vegetable dust, in which byssinosis is well described, but there is no reference to Schilling's Milroy Lectures (1956) on this subject, which were perhaps delivered after this chapter was written. Brief references are made to other diseases associated with animal or vegetable dusts. This chapter is successful in setting out the present position of knowledge without going into great detail; it will be useful for study and reference.

Those who work in industrial medicine have known for some time that Dr. M. W. Goldblatt and his wife had been working on the chapter on industrial carcinogenesis and toxicology for this book. It is a monumental work of nearly 400 pages, which will for long remain a tribute to the authors' patient recording and summarizing of present knowledge on many aspects of their subject. To have summarized all aspects would have required a work of many volumes and the authors have selected those subjects most likely to be of practical importance to industrial physicians. Part I deals with occupational carcinogenesis and first discusses the effects of chromium, arsenic, and nickel. There is no reference to Bidstrup's most recent paper on chromates. Although a satisfactory experimental basis is lacking in the case of chromium and arsenic, the authors review comprehensively and thoroughly the evidence for the carcinogenetic activity of these elements and their compounds. There is an interesting discussion of possible biochemical reactions which may lead to tumour formation. Our present knowledge of nickel acting as a carcinogen is well summarized. There is an excellent section on asbestos as a carcinogen, which might, however, have been better included in the previous chapter under asbestosis; this section includes a good description of co-carcinogenesis. In the following section on aromatic amines the authors reveal the advantage of bringing together the two disciplines, organic chemistry and medicine. Starting with the relatively simple theoretical basis of the synthesis of magenta (fuchsine), rosaniline, and methyl violet, the authors go on to describe the chemical theory involved in the more complex dyestuffs and intermediates, such as

safranine, congo red, and auramine, developed in the earlier years of this century. At each stage in the formulation of the chemical theory the authors refer to the position then reached concerning views on the causation of bladder tumours. This parallel development of chemical research and knowledge of tumours of the bladder will be of more interest to specialists than to general practitioners, although it is through research on these lines that further knowledge of the origin of bladder papillomata is likely to be acquired. The synthesis of the two naphthylamines is next described, with an account of the evidence for the carcinogenicity of β naphthylamine. A suggested method for eliminating β naphthylamine as an intermediate by isolating it only as a sulphonate, maintaining sulphonation by the use of sulphonated β naphthol, is described, but it is unlikely that some of the uses of the intermediate could be met in this way. Experience in Germany and Italy between the wars in the use of naphthylamines and other intermediates is well documented. The chemistry of benzidine manufacture is next described, with a summary of the convincing evidence that this substance is also carcinogenic. Recent advances in the diagnosis of cancer of the bladder are well described, and a full account is given of recent experimental work. In published results on carcinogenic azo-benzene derivatives, it is striking that the parent azo-benzene is non-carcinogenic, whereas only those which yield an ortho-methyl-amino derivative on reduction fission are carcinogenic. As a matter of practical guidance in considering the possible carcinogenicity of any amine, a blocked para position to the amino group would facilitate ortho hydroxylation and the formation of the carcinogen. The implications of this work are fundamental in foreseeing possible carcinogens in the organic chemical industry. The section on beryllium would have been better transferred to the previous chapter.

Under the comprehensive title "Soot" there is a short description of the history of "chimney-sweepers' disease" followed by an excellent account of pyrene derivatives as carcinogens. A full description of the origin and chemical causation of tar and pitch warts follows; there are no clinical descriptions in this section of the book.

The section concludes with a useful practical description of the carcinogenicity of mineral oils, which, on account of their ubiquity, should be studied by all industrial physicians; a list is given of recommendations for the protection of workers who come into contact with mineral oil.

Part II of the chapter deals with some aspects of industrial toxicology. The approach is original; each problem is considered first from the chemical and biochemical angle. Most previous works begin with the presentation of signs and symptoms resulting from the use of certain industrial products, and follow with the methods advocated for prevention and treatment. The authors, however, deal with the subject quite differently. For example, under the general heading "inhibitors of phosphorylation", is included an account of the biochemistry of this process, followed by a description of the effect of dinitrophenols and chlorinated phenols and

including incidentally an excellent account of the toxicology of dinitro-ortho-cresol. Once the reader has mastered this different approach he will find that the authors have considered many aspects of industrial toxicology from the essential angle of their biochemical origin, an approach which must surely form the fundamental basis of this subject in future. At present there is just sufficient knowledge for a start to be made and the authors have carried out their difficult enterprise extremely well.

XIIth International Congress on Occupational Health

The XIIth International Congress on Occupational Health will be held in Helsinki from July 1 to 6, 1957.

The preliminary programme is divided into (1) Congress subjects, (2) section subjects, (3) reviews, (4) round table, and (5) group meetings. The Congress subjects are industrial noise, evaluation of invalidity, industrial hygiene norms, and cardinals and work.

There will be an opportunity before and after the Congress for members to visit and acquaint themselves with the organization and operation of occupational medicine and hygiene in other Scandinavian countries. There will be an excursion on July 7 to industrial establishments and hospitals in various parts of Finland.

The official languages of the Congress are English, French, German and Spanish.

The Nicolo Castellino prize, value 3,000,000 lire, will be awarded for the first time at the Congress at Helsinki. The award will be made for what, in the opinion of the assessors, is adjudged to be the most outstanding investigation in the field of occupational health by a research worker, who must be under the age of 35 years and is not the holder of a university chair. Details of the competition will be published at an early date by the Directors of the Fund or can be obtained direct from Directors of Nicolo Castellino Prize, The University, Naples, Italy.

A film competition will be organized in connexion with the Congress.

The Congress fee for members is £5 8s. and for associate members £3 12s.

Persons who wish to present original scientific papers should state the title of the paper, together with a summary of not more than 200 words in English and French, and should reach the Committee not later than March 1, 1957.

The final detailed programme and application forms will be posted early in 1957. Notification of intention to be present must be made by May 1, 1957. Hotel accommodation cannot be guaranteed after that date.

Further information relating to the Congress may be had on application to the Organizing Committee, c/o Työterveyslaitos, Haartmaninkatu 1, Helsinki-Töölö. The Chairman is Dr. Leo Noro and the Secretary-General Dr. Pentti Sumari.

Percivall Pott (1714-1788) and Chimney Sweepers' Cancer of the Scrotum

JOHN R. BROWN and JOHN L. THORNTON

From the Department of Applied Physiology, London School of Hygiene and Tropical Medicine, and the Medical College Library, St. Bartholomew's Hospital, London

With the possible exception of John Hunter, Percivall Pott is remembered as the most eminent surgical writer of his period, and the premier position he held in his profession was recognized not only in England but abroad. The fact that he is associated eponymously with several conditions has ensured that his name is still constantly before the medical profession but the facts of his career are little appreciated. Percivall Pott has not been the subject of a full-scale biography, and there are certain divergencies of opinion among those who have written about him. However, the following brief facts outline the activities of one who published the first description of an occupational cancer, and who should be numbered among the pioneers of occupational medicine.

Born in 1714 in Threadneedle Street, London, on the present site of the Bank of England, Percivall Pott was educated with a view to his becoming a clergyman.