no significant difference in the inception rates but diabetics tended to have longer absences. Stabilization of the diabetes caused only a small part of the absence.

These results, with detailed individual information, indicate that diabetics present no special problem in several occupations and many are capable of heavy work, even outside normal shifts. But stabilization difficulties cause problems and the combination of diabetes with another condition may be disabling.

This valuable study is based on limited data and shows the need for further work, including "prospective" surveys. It also suggests the possibility of similar studies of other conditions.

C. J. CORNWALL

Work and the Heart. By 93 authors, edited by Francis F. Rosenbaum and Elston L. Belknap. (Pp. xxii + 537; illustrated. \$12.00.) New York: Paul B. Hoeber. 1959.

This book is an account, running into more than 500 pages, of the first Wisconsin Conference on work and the heart which was held in May, 1957. The 93 participants include many Americans who have made their name in cardiology and circulatory and exercise physiology; also Professors A. C. Burton, J. D. Hamilton and J. C. Paterson from Canada, Dr. A. Morgan Jones from Manchester, and Drs. G. Björck, M. J. Karvonen and H. H. Weber from Scandinavia and Germany. The conference was subdivided into five sections, meeting concurrently, which, between them, covered the basic and clinical physiology, pathology, re-employment, and workmen's compensation.

The book opens with a series of lucid articles describing basic cardiac physiology; these include the physics and biochemistry of muscular contraction and, from Dr. S. J. Sarnoff, an account of the oxygen consumption of the heart in relation to cardiac work and to factors affecting the coronary circulation. These are followed by chapters discussing cardiac activity in normal subjects, including coronary blood flow, the control of cardiac output, the regulation of heart rate (Dr. D. B. Dill), the effect of age (Dr. Milton Landowne), and of strenuous exercise (Dr. M. J. Karvonen). The assessment of cardiac efficiency is considered in relation to the strain to which the heart is subjected as a result of exercise; that arising out of emotional and thermal stress, and the additional effects of dilatation and cardiac failure. The need for better standardization of tests of fitness emerges clearly from this section of the proceedings.

The aetiology of coronary disease is considered by Drs. Ancel Keys and H. L. Taylor in relation to occupation and to physical activity insofar as these affect the serum cholesterol concentration. Dietary fat intake is mentioned briefly but not the possible prophylactic value of unsaturated fatty acids. The role of capillary haemorrhage and thrombosis is discussed in the section on pathology, as is the part played by physical and emotional stress in precipitating coronary occlusion. The significance of silent myocardial infarction and, in fatal infarctions, the common absence of coronary occlusion are also treated.

One section of the book is devoted to a consideration of re-employment of cardiac patients, including both suitability of jobs and employment record, and also the effect of employment on the course of the disease. This section, which will be of particular interest to industrial medical officers, includes accounts of cardiological experience in several industries and work situations as well as of the 35 work classification units in the United States, which have been set up to solve these problems. The place of these special diagnostic and rehabilitation units in the framework of the general medical and rehabilitation services of the community is discussed constructively.

The last section on workmen's compensation in relation to cardiovascular diseases in the United States includes both medical and legal viewpoints.

This brief survey indicates the range of subject matter covered by this large, well-produced book. Some of the individual contributions are in fact reviews; the majority are individual viewpoints. To one who is a physiologist, the first two sections in particular are immensely stimulating and the book should provide a valuable jumping off point for anyone interested in exploring further this fascinating field. Inevitably the picture they acquire will be out of date in some places and biased or incomplete in others, but with several hundred references to assist them they are unlikely to go badly astray. One reference which might be added is "Cardiac Control" by R. F. Rushmer and A. O. Smith (*Physiol. Rev.*, 1959, 39, 41). The conference promises to be followed by others in which current trends will be critically assessed; meanwhile the proceedings of this first conference can be recommended.

J. E. COTES

The Health of Business Executives. The Transactions of a One-Day Conference held in the Royal Festival Hall, London (November 20, 1959). (Pp. 126.) London: The Chest and Heart Association. 1960.

In November 1959 nearly 500 directors spent a day trying to find out how to avoid a premature death from an excess of work, travel, food, drink, and (all be they self-administered), drugs. Over 100 doctors attended the same conference, no doubt seeking, if not a new elixir, a fresh means of dispensing the elixir of life to directors.

For the doctors, there was no new elixir. For the directors, there was no primrose path, but some contributions, notably Sir Stanley Davidson's "Overweight and Diet", were models of how to present medical matters to the layman.

Business men deal with facts; philosophers with fancies. One of the difficulties facing the doctor who seeks to be a philosopher and friend to his executive is to find the right mixture of facts and fancies. It so often becomes a series of cautionary tales about "patients I have known". Sir Stanley's contribution summarizes excellently the theme which creeps into practically every contribution, namely, that the greatest hazard of living today is to be overweight, and this is by no means a health hazard that is confined to the executive.

Mr. Beric Wright's rules for travellers suggest a suitable topic for any management conference, and a pamphlet on this theme would be helpful—perhaps one is already available?

Few would agree with the views of Mr. Dickson Wright, a surgeon, who is out of sympathy with the contribution that medicine makes to industry and commerce, albeit they have been expressed forcibly, and for this reason if none other, this pocket-size booklet should be read by all industrial medical officers.

J. C. GRAHAM.

Detoxication Mechanisms. The Metabolism and Detoxication of Drugs, Toxic Substances and Other Organic Compounds, 2nd ed. By R. Tecwyn Williams. (Pp. x + 796. 126s.) London: Chapman & Hall. 1959.

The first edition of this book, less than a third of the weight of this volume, was packed with useful information. The ratio of information to mass remains the same and the style of the new edition does not depart materially from that of the original one. The work is essentially a book of reference and is more of a dictionary than a discussion. Anyone who wishes to try to understand the mode of action of a foreign chemical that may be ingested either as a drug or in food or during occupational exposure should start by referring to this volume. With an excellent index and references at the end of each chapter, the original information is easy to trace. It is a book of chemistry and the subject is one which owes much to the work of the author and his colleagues. The occasional references to medicine and statements such as "organic nitrites . . . have been used for many years in the treatment of hypertension" or "menthol . . . is a compound of great importance in medicine" or that "synthalin is used in diabetes" do not enhance the value of the chemical information provided. Problems of industrial toxicology are not enlarged upon. The metabolism of benzene is fully discussed but no reference is made to its unique toxicity to the bone marrow of mammals when compared with related aromatic hydrocarbons. The toxicity of benzene and chlorobenzene are compared only on the basis of their narcotic action (p. 251).

Although documentation is on the whole excellent there are occasional gaps such as the metabolism of cyclohexylamine (p. 119) and there is no reference for the statement that vitamin B₁₂ relieves the poisonous effects of carbon disulphide (p. 40).

Having completed this masterly compilation the author might consider a smaller volume discussing the significance of the information he has presented. A single chapter at the end stimulates the appetite for more. Thus the enzyme systems in liver are mentioned briefly in many places but no general account is given of the ability of the liver to transform foreign chemicals reaching it. For technical reasons the rabbit or larger species has been used in work on the excretion of metabolites yet most toxicity testing is done on rats or mice. There is probably enough information now available to make some useful generalization on species differences.

Much of this work described so far has been of necessity done on chemicals that may be administered in relatively large quantities. Refined methods for the isolation, purification, and identification of chemicals will enable more work in the future to be done on more toxic drugs and chemicals.

It seems probable that further editions of this book will be called for at much shorter intervals than the 12 years that separate the first from the second edition.

J. M. BARNES

Recherches sur la Toxicologie du Thallium. By René Truhaut; Foreword by René Fabre. (Pp. 272; 54 figures.) Paris: Institut National de Sécurité pour la Prévention des Accidents du Travail et des Maladies Professionnelles. 1958.

This is a more complete study than any hitherto on the mechanism of thallium poisoning. Previous reports and theories are fully cited. The author stresses the importance of covering the different fields of analytical chemistry, biochemistry, physiology, and cytology when attempting to penetrate the mechanism of action of toxic substances. This monograph is thus divided into five parts incorporating experimental results obtained under these headings. A survey of this nature tends to be superficial in many respects. However, the spectrophotometric method described for measuring thallium in biological media, the data on distribution of thallium in animals together with those obtained using radioactive thallium are very valuable.

Among the many and varied investigations made, the section on the appearance of alopecia in animals suffering from thallium poisoning is the most striking. Contrary to some earlier reports thallium was found to be without effect on the thyroid in spite of an accumulation of the metal in this organ.

Of the substances tested to alleviate thallium poisoning certain sulphur-containing amino-acids showed some degree of efficiency while B.A.L. was without effect.

From results in the more biochemical and pharmacological sections no mode of action is, or can be, suggested for thallium poisoning. In fact, the author concludes that the mechanism of the toxicity of thallium is as equally complex as the chemical properties of the metal, termed "métal paradoxal" by early workers.

J. E. CREMER

Bibliography of Cancer Produced by Pure Chemical Compounds. A Survey of the literature up to and including 1947. By Otto Neubauer. (Pp. xxvii + 604. 42s.) London: Oxford University Press. 1959.

All cancer workers will welcome this compilation of the literature starting from the first induction of tumours by a pure chemical compound by Kennaway, in 1930, using 1:2:5:6-dibenzanthracene (considered at the time to be the 1:2:7:8-dibenzanthracene).

The value of such a bibliography depends on its reliability, completeness, and ease of perusal. Though