BOOK REVIEWS

The Effects of Ionising Radiation on the Digestive System. By I. T. Kurtsin. (Pp. 325; 90s.) Amsterdam, London, and New York: Elsevier Publishing Co. Ltd. 1963.

The author of this book is a Russian writing from Leningrad. The first part of the book describes in considerable detail much experimental work, done mostly on dogs, on the effect of whole-body radiation on the digestive system. The last chapters deal with the various mechanisms by which the changes in the digestive organs after irradiation are thought to occur. Considerable attention is paid to the effect of the higher centres of the brain in relation to these changes, and a theory is proposed to explain the various phases of radiation sickness. The prophylaxis and treatment of radiation injury to the digestive tract are discussed.

There are numerous references and naturally a large number of them are to Russian work. The book is of interest to all those who are concerned with radiation injury to animals or to man.

K. S. HOLMES

The Causation of Bus Driver Accidents. By W. L. Cresswell and P. Froggatt. (Pp. 298; 45s.) London: Oxford University Press. 1963.

The authors summarize previous work on accident causation in the excellent descriptive part of the book. These sections are followed by an analysis of the accident experience of Ulster and Belfast bus and trolleybus drivers. The overall population involved was about 1,500, too small a number to provide for the analysis of a large number of sub-groups. Much statistical work is thus undertaken on an insecure foundation. The statistical theory is highly technical and not for the average reader. The statistical treatment of the data leaves much to be desired. Thus, to take a specific example, in Table I of the Introduction, for a given population of unstated size, 29,869 deaths from vascular lesions of the central nervous system and 9,471 deaths from motor vehicle accidents are stated to lead to 'approximately similar crude death rates'.

The authors investigate whether there is any variation in accident experience according to the route or 'rota' of the driver, and in order to study this and many other problems they use the statistical technique of analysis of variance. On this basis the authors separate out five Ulster Transport Authority rotas and consider the remainder homogeneous. This method of analysis assumes that approximately equal weight may be given to each rota, but the tables given in the appendix indicate that there is in fact considerable variation of mileage between rotas. An analysis allowing for mileage variations suggests

that the authors' opinion that the remaining groups are homogeneous is not correct. At the top of page 13 reference is made to analysis of variance in Table A.8 on the transformed variate. It appears that this is in fact an analysis of the actual rates. Although the analysis is made on the assumption of equal weighting of components, the mean value of types for a given rota and of rotas for a given type from Table A.7 used for assessing variations therefrom appear to be weighted means. This is inconsistent and may have a considerable effect on that analysis. This is one example of the authors' apparent indiscriminate use of weighted and unweighted means throughout the analyses. Several further criticisms of the statistical work may be made, particularly of the analyses given in chapters 3 and 4, and generally it is considered that the authors have not adopted a sound approach to the question of statistical significance. It must be stressed, however, that a more rigorous analysis would not necessarily produce different conclusions from those obtained by the authors. But it is a pity that such a good discussion of past work and of general principles is supported by statistical material of perhaps inadequate volume and analysed in an unsatisfactory manner.

J. E. AGER
L. G. NORMAN

Dangerous Properties of Industrial Materials, 2nd ed. By M. Irving Sax. (Pp. 1343; 200s.) New York: Reinhold Publishing Corporation; London: Chapman and Hall. 1963.

Those who know and have used 'Sax' will probably note that there is a new edition and order it straight away without reading the rest of this review. Those to whom 'Sax' is new may be interested to know what it sets out to provide and how this is achieved.

From time to time every industrial medical officer is asked about the toxicity of some chemical or other, quite possibly one he has never heard of. With a copy of 'Sax' on his shelves, the doctor has access to information on 10,000 such questions. But there is more to it than that. This information is contained in Section 12 which takes up three-quarters of a book of some 1300 pages. The first 11 sections comprise a chapter each on such subjects as toxicology, ventilation control, respiratory protection, air pollution, and allergic disease in industry. These form valuable and informative reading matter and provide a foundation on which the information in the rest of the book can be intelligently and usefully based. The first chapter, on toxicology, by Professor Goldwater is a mine of clearly presented factual information compounded with the approach of an experienced clinician: 'The