completely in their aim, and even smack of gimmickry. One example of his approach will make the point. To me the idea of the expectation or mean of a random variable has an intuitive meaning of which the standard definition is a direct formalization. Prof. Tucker defines the expectation of a random variable as:

$$EX = \int_0^\infty (1 - F_X(x))\,dx - \int_{-\infty}^0 F_X(x)\,dx$$

This must be purely to simplify understanding of the subject, since no mathematical advantage is gained from it (the standard definition is deduced as a theorem, and used in subsequent work). Similarly, he abhors the dichotomy in the standard treatment of discrete and absolutely continuous distributions, but at the level of mathematical sophistication at which he is working (which could not easily be higher in such a book) he has to revert to the usual practice.

Apart from these idiosyncrasies Prof. Tucker gives a fair account of the usual material. One notable omission from the content is any mention of generating functions. On the credit side is a discussion of limit theorems, a very useful summary of appropriate results in matrix theory, with their application to multivariate normal distributions, and a clear presentation (if rather unrelated to practical uses) of estimation and Neyman's theory of hypothesis testing and confidence intervals.

Prof. Birnbaum covers rather less ground than Prof. Tucker in a book half as long again. The omissions are principally in the field of statistical inference, of which only a brief but clear statement of basic ideas is given in the final chapter. Analysis of variance and related topics are not considered at all. It is doubly unfortunate that no references are given to other texts which students might consult. But there are here chapters on characteristic functions, on the χ^2 goodness of fit test and on distribution-free techniques which are not considered in the other book. Both books have a number of exercises, Birnbaum's fewer than Tucker's and of a less searching nature. More could have been provided with advantage.

The limitation of material is self-imposed, and it is easy to understand Prof. Birnbaum's decision. More important is his lack of subjective assessment of the potential value of different parts of the material. Thus, for example, equal weight is given to the *t*-test and a test for the equality of sample correlations. Apart from these criticisms, Prof. Birnbaum must be congratulated on an excellent text. Used in conjunction with advice as to the practical value of the theory, this book will give the student a thorough grounding in the standard theory slanted in such a way that he will be able to understand modern developments.

Both books are well produced on good quality paper and with excellent bindings, and by modern standards for mathematics books are reasonably priced. If my recommendation as 'best buy' is clear, the other should by no means be abandoned untried. R. M. CORMACK

VITAL AND HEALTH STATISTICS FOR GENETIC AND RADIATION INVESTIGATIONS

The Use of Vital and Health Statistics for Genetic and Radiation Studies

Proceedings of the Seminar sponsored by the United Nations and the World Health Organization held in Geneva, 5–9 September, 1960. Pp. xi + 259. (New York: United Nations. London: H.M.S.O., 1962.) 7.50 dollars; 53*s*. 6*d*.; Sw. Fr. 32.00.

THE forms in which registrars present vital and health statistics are not necessarily the most useful to the geneticist or the investigator into the long-term effects of radiation who may also require additional information which could readily have been added to the original survey.

The United Nations and the World Health Organization sponsored a seminar in 1960, attended by representatives from national registries and from research organizations, with the view of bringing out the conflicting needs of the two groups, and the Proceedings have now been published in the volume under review. As a rule, the Proceedings of conferences or symposia tend to be of interest to few besides the members, but the present volume avoids many of the usual failings. Its chief drawback, common to most publications of this type, is that it has taken about two years to publish, but the papers are such that this delay is not of great importance. The choice of topics is better than usual, and though the subjects vary widely from present sources of information to methods of processing, they do bring out strongly the needs of the different groups and show relevant differences and similarities in outlook.

One interesting point is that the registrar generally produces 'transverse' surveys, rather than the 'longitudinal' type required in genetic and radiation studies, where it is often necessary to follow a family or section of a family through several generations. The Japanese family register and certain records of the Catholic Church concerned with consanguineous marriages are, however, of the longitudinal pattern and are described in some detail in two papers.

Two papers of particular interest to the health physicist deal with the medical findings of the Atomic Bomb Casualty Commission on the Hiroshima and Nagasaki survivors and with follow-up studies of British luminizers. The latter, besides presenting the results themselves, and giving an account of the way in which the survey was carried out, emphasizes the dependence of such a survey on willing assistance from the subjects themselves.

The standard of the papers is extremely high and consistent, as might be expected of the international authorities who contributed. Statisticians, geneticists and health physicists will find much to interest them, even in the parts which are well outside their fields and all should benefit from a realization of the different aspects involved. It is to be hoped that this is but a beginning to the reconciliation of the apparently different needs of administration and research. HUGH D. EVANS

HOW MANAGERS ARE MADE

The Management Makers

The Ideas, People and Institutions that make or mar Management. By Auren Uris. Pp. xvi + 288. (New York: The Macmillan Company, a Division of the Crowell-Collier Publishing Company, 1962.) 37*s*.

AUREN URIS has been a member of the Research Institute of America for sixteen years and, during that time, has had uncommon opportunities to examine the management picture in his country. He has keen perceptive powers and, in his book, has combined them with considerable persuasive skill to produce a work which should appeal to many readers on both sides of the Atlantic. For the specialist student of management the book should be of value for a penetrating analysis and for dispelling many fashionable whims and gimmicks. For the more general reader who is sometimes overawed and perplexed by the mysteries which surround such terms as management development and executive performance, Uris's review should provide many of the answers.

The book falls into four parts. An unusual introduction is addressed to wives of managers. It advises them which sections to read if they want to learn what their husbands get up to at work. The second is by far the most valuable part of the work and, in it, Uris uses all his extensive