transform, is followed by one on functions of more than one variable. In this the authors have managed to include an account of information theory. Another chapter is devoted to differential equations both ordinary and partial. The Laplace transform and Fourier series methods of solutions are given as well as others.

Throughout the book there are many illustrations from and applications to problems in biology and medicine, e.g. the law of allometric growth and the cupulogram in otology to select two sections at random. Every effort has been made to make the text intelligible to the student and the authors have not hesitated to advise the students not to worry about a derivation where the introduction of rigour would obscure the point of the argument. Altogether, the book should be very helpful in teaching the biologist and doctor.

D. S. JONES

CUNNINGHAM, W. J., *Introduction to Nonlinear Analysis* (McGraw-Hill, New York, 1959), 348 pp., 70s.

This book gives an account of numerical, graphical and analytical methods of solving ordinary non-linear differential equations. The level of presentation is determined by the fact that the book is based on a graduate course in electrical engineering given by the author at Yale. It will be of little interest to mathematicians except to provide useful illustrations to those lecturing to engineering students on differential equations.

I. N. SNEDDON

ALDER, H. L., AND ROESSLER, E. B., *Introduction to Probability and Statistics* (W. H. Freeman & Co., San Francisco & London, 1960), pp. 252+xi, 20s.

This is intended as a textbook for a 45-hour introductory course in probability and statistics. It is based on lectures given for several years to students in the agricultural sciences, business administration, economics, home economics, psychology, sociology, geology and the medical sciences. The only mathematical knowledge assumed in the reader is school algebra, so that students of science subjects in this country might find the pace, particularly at the beginning, rather slow. But often students who have for years lost contact with formal mathematics find a need to acquire a knowledge of statistical methods: for them the gradual introduction of this book to algebra may be very suitable.

The topics covered are organisation of data, measures of central tendency and of dispersion, elementary probability, the binomial and normal distributions, large sample methods, testing hypotheses, confidence limits, the t-test, the sign test, regression and correlation, the χ^2-distribution, index numbers, and time series. The treatment of these last two topics is designed for economics students: otherwise there is no emphasis on any particular application.

For its purpose the book should be quite satisfactory. It introduces to readers of very modest attainments quite a number of standard statistical methods, well illustrated by worked examples. The exposition is clear enough, and where proofs are omitted the fact is clearly stated. There is a good selection of exercises at the end of each chapter, including " practical " ones from a variety of fields of application. Since the answers to half of them are given, the book could conceivably be used for self-study.

Such defects as have been noticed are not serious. The most striking omission is the Poisson distribution, which receives only a mention. The word " variate " is used in a sense which appears to be unusual, even in America, to denote what would more ordinarily be called a " variate-value ".