unduly contracted. In group theory the topics covered include the Sylow theorems, transitive permutation groups, the simplicity of A_n for $n \geqq 5$, automorphisms of finite symmetric groups, and the basis theorem for finitely generated abelian groups. An introductory chapter on ring theory then prepares the ground for a detailed study of modules over a commutative ring, which in turn leads naturally into a concise and (for a student's book) unusually sophisticated account of finite-dimensional linear algebra; this last part would certainly be found hard by a student approaching the subject for the first time. Chapters VII and VIII cover the theory of fields up to the proof of the insolubility of the quintic equation, while the final chapter is devoted to the already mentioned proof of the fundamental theorem of algebra.

Throughout the book the viewpoint is fairly sophisticated, or " modern ". Maturer mathematicians will enjoy the new look it gives to familiar topics. J. M. HOWIE

KRISHNAIAH, PARUCHURI, K. (Editor), *Multivariate Analysis* (Academic Press, 1966), xix+592 pp., 156s.

This is a well-produced book consisting of papers presented at the International Symposium on Multivariate Analysis held in Dayton, Ohio in June 1965. The list of contributors (thirty-nine in all) is formidable and contains a host of very well-known names.

Papers are divided in the book into eight different categories under the following headings: non-parametric methods, multivariate analysis of variance and related topics, classification, distribution theory, optimum properties of test procedures, estimation and prediction, ranking and selection procedures, applications. Thus the coverage of the field is very wide and the wealth of material in the book is such that few professional statisticians would find nothing of special interest in it. Moreover its organisation ensures that it provides an excellent reference book for both recent and past developments in multivariate analysis, so that it is a most useful, if somewhat expensive, addition to the literature in this field. S. D. SILVEY

LEHNER, JOSEPH, *A Short Course in Automorphic Functions* (Holt, Rinehart and Winston, London, 1966), vii+144 pp., 40s.

This is a short introduction to the theory of automorphic functions and discontinuous groups. It is primarily a text for beginners in the subject, although more mature mathematicians will find it an excellent place to learn the connection of the theory of Riemann surfaces with the theories of automorphic functions and discontinuous groups. In the past this has been a one way process, but lately there has been a marked increase in the application of the latter theories to the former. There are three chapters: Discontinuous groups, Automorphic Functions and Forms, and Riemann Surfaces. The first chapter develops the basic facts about linear fractional transformations, discontinuous groups and fundamental regions of discontinous groups. Poincaré's model of hyperbolic geometry is introduced and the existence of fundamental regions is proved by the normal polygon method. The lower bound for the hyperbolic area of a fundamental region is obtained. Chapter 2 starts with the development of Poincaré series and the existence of automorphic forms is thereby demonstrated. The Petersson inner product is introduced for the vector space of cusp forms and Hecke's beautiful theory of T_n operators is sketched. The last chapter develops the connection with Riemann Surface theory.

This book is not without defects. I noted several gaps in proofs which for the most part are easily filled. Most beginners will find that the material on fundamental regions requires careful reading. There is an unfortunate omission in the bibliography. On page 65 Professor A. M. Macbeath's lectures on Discontinuous Groups at the 1961 Summer School in Geometry and Topology at Dundee are mentioned