The book is intended for students of applied mathematics and is relatively elementary: Hilbert space concepts are used but no familiarity with spectral theory is required. Of special interest is the inherently constructive nature of the methods that are developed. Chapter I: Statement and solution of variational problems. Chapter II: Certain auxiliary results. (Generalized derivatives, singular integrals.) Chapter III: Applications to equations of elliptic type. Chapter IV: Applications to elasticity theory. In this translation, a supplement has been added and some modifications made with the cooperation of the author, who receives no royalties from the sale of the book. (In theory at least, the Russians keep a fund for payment of royalties to American authors whose books are translated into Russian, from which they can collect if they sojourn in Russia.)

Although translators who do a good job are usually ignored in reviews, I would like to make an exception in this case. Dr. Feinstein is himself the author of a book on information theory, and this is his eighth translation to reach print (a ninth is in the process of publication and he is working on a tenth). Eminent in his own right, he got started translating books "to help pay the bills" but now does it mainly as a way to force himself to work through books that he feels may be of interest to him. I, for one, owe him a debt of gratitude.

H.F. Davis, University of Waterloo

Modular lie algebras, by G.B. Seligman. Ergebnisse der Mathematik und ihrer Grenzgebiete, Vol. 40, 1968. x + 166 pages. $9.75.

This valuable book is essentially a survey of the present status of Lie algebras over fields of characteristic not equal to zero. The theory of such algebras is unexpectedly different from the theory of Lie algebras over fields of characteristic zero. As the author states in his foreword, "It is not simply the case that new methods must be found to establish analogues of the theorems for characteristic zero, but rather that almost the only analogues which remain true (with the same degree of generality) are those whose traditional proofs turn out to have been independent of the characteristic anyway".

The first chapter sketches out some of the fundamental results which are independent of the characteristic - e.g. the Poincaré-Birkhoff-Witt theorem, Engle's theorem, and the Cartan-Dieudonné theorem for algebras with a non-degenerate, symmetric, invariant, bilinear form - as well as some concepts, such as the restricted algebras, which are entirely modular in character.

Chapters 2 and 3, which are complete, deal with the classical Lie algebras and their automorphism groups respectively. These important Lie algebras are analogues of split semi-simple Lie algebras over fields of characteristic zero, and actually may be derived directly from them.

However, here the classical Lie algebras are defined axiomatically and then classified - a procedure which is far more than a rehash of the characteristic zero classification.

The groups of automorphisms of the classical Lie algebras are intimately connected with the Chevalley groups which in turn have given an enormous impetus to the theory of simple groups. The Chevalley group G of a classical Lie algebra L is defined and the theory developed far enough to establish the Bruhat decomposition, the simplicity theorem for G', and Steinberg's result that Aut (L) is a semi-direct product of G and the group of graph automorphisms of L. Chapter 3 concludes with the identification of the Chevally groups with the classical groups of geometric algebra.

Chapter 4 deals with forms of the classical Lie algebras. The fundamental problem might be described as that of classifying the isomorphism classes of Lie algebras L over a field F such that L_K is classical for some finite extension field K over F. For the types A - D this ultimately depends on simple associative algebras with involutions. The known results on the forms of algebras of exceptional type involve derivations of Cayley and Jordan algebras and are only outlined.

Chapters 5 and 6 are considerably more sketchy though there are numerous references to the literature. Chapter 5 is devoted to a comparison of the modular and non-modular cases. There is also a description of the known simple modular Lie algebras. In Chapter 6 the author briefly describes the part that modular Lie algebras play in other areas of mathematics, notably in Burnside's problem and in the theories of algebraic and formal groups.

There is a complete bibliography.

The vast amount of material covered in the 160 pages of this book has, no doubt, necessitated a condensed style which makes for relatively hard reading in places. This does not apply however to Chapters 2 and 3 which will form an excellent introduction to the classical Lie algebras and the Chevalley groups for anyone familiar with the theory of the split semi-simple Lie algebras. There can be no doubt that this book is an extremely valuable addition to the mathematical literature.

Robert V. Moody, New Mexico State University

Lectures on Boolean algebras, by P.R. Halmos. Van Nostrand. iv + 147 pages. $2.95.

The author treats Boolean algebras both as algebraic systems and, via the duality theory, as the families of clopen sets of Boolean spaces (completely disconnected, compact Hausdorff spaces). Subalgebras, ideals, homomorphisms, free algebras, products and sums of algebras and