Summary of Contents: Chapter 1, Introduction and definition of information; Chapter 2, Properties of information measures and their relationship with Fisher's information and sufficiency; Chapter 3, Some fundamental inequalities of information theory. Their relation to the "Cramér-Rao inequality"; Chapter 4, Limiting properties of information; Chapter 5, Asymptotic distribution theory of estimates of the information measures; Chapters 6-13, Applications to analysis of samples from Multinomial, Poisson and multivariate Normal populations and to the analysis of contingency tables.

A pleasant feature of the book is the consistent use of properties of information to derive well-known and new results in hypothesis testing. Many worked-out examples, including some numerical ones illustrate the ideas. There is a plentiful supply of problems at the end of each chapter. The references accompanying theory and problems should prove very useful to the student.

The book is suitable for first year graduate students in statistics with some familiarity with measure theory and mathematical statistics. The author is to be congratulated for "a presentation avoiding special approaches for problems that are essentially related".

T. V. Narayana, University of Alberta

The Special Theory of Relativity, by J. Aharoni. Oxford University Press, 1959. 285 pages. $ 7.20.

This book could be read by a first-year graduate student. The author states in his preface that he has written with the physics student uppermost in mind, but that the book may be of interest to a student of mathematics as well. It should be added that it appears to be intended particularly for those seeking preparation for modern quantum field theory.

Five chapters are devoted to standard topics of special relativity: inertial systems, tensors, Maxwell's equations in vacuo, dynamics of a charged particle, and a fluid under normal pressure. Maxwell's equations in charged matter are not solved, although the author refers to the Liénard-Wiechert potentials later. Radiative self-force and the non-electromagnetic mass of the electron are discussed, but superficially. However, a section on the Weyssenhoff equations of a spinning particle is a worthwhile inclusion. The first chapters are carefully written, although they do not set this book above other good works on relativity theory.

As already stated, the purpose of the book is rather special, and many topics are omitted which do not conduce to an understanding of

relativistic field theories. One very good chapter is devoted to the theory of a many-component field. The existence of a canonical energy-momentum tensor is deduced directly from Lorentz-invariance, and the Belinfante-Rosenfeld symmetrization method is added. As examples, the author discusses the scalar field and the Proca vector field.

The last and longest chapter deals with spinors and the Lorentz group. The unimodular representation and the anti-linear representation of temporal and spatial reflexions are discussed in some detail. Other irreducible representations of the full Lorentz groups are considered as well. There is, of course, something to be said for the inclusion of a single chapter on spinors in a textbook of special relativity. However, the author neither provides nor (apparently) expects much understanding of group theory for its own sake, which seems unsatisfactory in view of the close connexion between spinors and the Lorentz group. In the reviewer's opinion, some account of the abstract theory of groups and their representations would do much to explain the rather elaborate notation which spinors require. Possible the happiest alternatives would be either the deliberate omission of spinors, or a full treatment of the Lorentz group on the same level as, say, Wigner's book.

Apart from an appendix on the Michelson-Morley experiment, not much attention has been paid to the experimental foundations of the theory. Furthermore, it seems odd that in a book whose tone is formal throughout there should be several patches of rather inelegant notation. No problems are provided, but a bibliography at the end lists a score of titles.

R. H. Boyer, McGill University

Formes sesquilinéaires et formes quadratiques, by N. Bourbaki, Eléments de Mathématique, Livre II, Algèbre, Chapitre IX. Actualités scientifiques et industrielles 1272, Hermann, Paris, 1959. 211 pages.

Early in 1953, when chapitres I-II, livre V of the Eléments de Mathématique came out, the readers were informed (p. 41 Espaces vectoriels topologiques, chapitre II) that for affine spaces they should look in the book on Algebra (chapitre II, livre II). But in 1955 the second edition on Linear Algebra (chapitre II, livre II) introduced affine and projective spaces respectively in Appendice II and Appendice III. Appendice I called Applications semi-linéaires was a prelude (in a certain sense) to the present chapitre IX.

It is in fact very natural to change what had been planned many years ago for the livre II. As a result Bourbaki's treatment of algebra