The first three chapters are introductory. Chapter 4 treats procedures based on empirical distribution functions and Chapter 5 discusses some uses of order statistics. Rank sums and the two sample problem form the basis for Chapters 6 and 7 while Chapter 8 is devoted to confidence intervals for location parameters. Chapter 9 deals with two-sample dispersion tests, Chapter 10 with association and Chapter 11 with the efficiency of nonparametric methods.

A special feature of the book is the treatment of tied observations. It should also be mentioned that most of the chapters conclude with a section entitled "Notes and References" which contains useful, though somewhat incomplete, information on further reading and reference to tables. However, the book contains no examples or problems for solution.

Although the book is not suitable for use as a text book, it is a welcome addition to the literature in a field in which there is a dearth of books.

<div style="text-align: right">V.K. Rohatgi, Catholic University of America</div>

Emile Borel, philosophe et homme d'action. Pages choisies présentées par Maurice Fréchet. Paris, Gauthier-Villars, 1967. 406 pages.

This volume collects Borel's popular essays on the philosophy and the teaching of mathematics, as well as on physics and on social problems. They were published between 1900 and 1937 and may be regarded as supplementing the Oeuvres d'Emile Borel, in the course of publication.

For a mathematician, the most interesting papers are probably those on set theory and functional analysis. Borel was, together with Baire, one of the rare Frenchmen who gave Cantor immediate recognition, even though he was critical of abstract set theory and, in general, mistrustful of abstraction. But the reader will probably be baffled by the claim that set theory is an integral part of the theory of functions, that algebra is the science that handles numbers in general, and that mechanics is as good a branch of mathematics as any. Age tells in all of these essays.

The foundational worker may be attracted by Borel's early defense of constructivism, and he will be surprised to find no mention of either Brouwer's intuitionism or Hilbert's finitism. Closely allied to constructivism was his empiricist conception of mathematics as "a natural science in which logic plays no greater role than in any other natural science" (p. 298). Although Borel claims that his scientific work was influenced by his philosophy, it is hard to see what relevance it may have had on his work in set theory. On the other hand it clearly

had a bearing on his later mathematical work, which was mainly concerned with probability. So much so, that he focused his attention on the applications of the calculus of probability rather than on its foundations.

The weakest essays are perhaps those in which logic is at stake. Borel, like Poincaré and most other eminent mathematicians, had no patience with the new logic and the new philosophy of mathematics. His insistence on the need for invention and the value of intuitability was beside the point in discussing the worth of logic. His criticism of the logician and philosopher Coutourat - the importer of mathematical logic into France - was ferocious and unjust. Borel misread Coutourat as claiming that mathematical invention is a deductive process, while all Coutourat had pointed out is that the justification of any mathematical invention requires logic. Eventually, logic took its revenge: forty years later Borel published an almost worthless book on mathematical logic.

The reader will have to make a selection by himself, for this collection is really a Borel set, as it includes not only the union of all its subsets but also all its intersections, which are often nonempty. At least half of the essays might have been omitted, for they deal with dead issues, such as defending set theory, probability theory and aviation against their critics half a century ago. Also, the set might have been ordered, if not by subject at least chronologically. But the chaos just adds interest to the exploration of one of the most perceptive and universal mathematical brains of all times. One may apply to Borel what he himself said of Bergson: "Même à ceux qui ne partagent pas toujours sa mainere de voir, il donne à penser, ce qui est le rôle essentiel du philosophe".

<div align="right">Mario Bunge</div>

Topological groups, by L.S. Pontryagin. Second edition. Translated by Arlen Brown. Gordon and Breach, New York 1966. xiv + 543 pages. Ref. ed. $32.50, Prof. ed. $17.50.

This is a translation from the Russian of the revised edition. The Russian edition was published in 1954, so while this translation is a welcome addition to the literature, the delay in making an English version available is regrettable.

A large number of changes and additions have been made. One of the more important changes is the treatment now of compact and locally compact abelian groups without the added restriction of a countable basis for the open sets. A major addition to the book is the final chapter on compact Lie groups. This is an exposition of the Killing - Cartan - Weyl theory of the structure of compact Lie groups based on properties of their Lie algebras.