Introduction to the foundations of mathematics. By R. L. Wilder. New York, Wiley; London, Chapman and Hall, 1952. 14+305 pp. $5.75.

For a number of years R. L. Wilder has given a very successful course in Foundations of Mathematics at the University of Michigan. This course has come to be well known, and the present book has grown out of it. The book promises to be as successful as the course. It is sound, thorough, modern, and readable, and well suited as a textbook for a course in foundations. It will probably be required reading for many other courses, and in addition should be valuable as a reference work for anyone interested in the philosophy or foundations of mathematics.

The book is divided into two parts. Part I, on Fundamental Concepts and Methods of Mathematics, presents the reader with actual instances of materials and methods of modern mathematics related to the foundations. For example, here is a list of some of the topics included in the seven chapters of Part I: The axiomatic method, independence, completeness, and consistency of axiom systems, axioms for simple order and equivalence, the theory of sets, paradoxes, the axiom of choice, cardinal and ordinal numbers, transfinite induction, the Hamel basis, Zorn's lemma, the real number system, Dedekind cuts, the Peano axioms for the integers, the complex number system, groups, semigroups, rings, ideals, integral domains, fields, vector spaces, group theory applied to algebra and geometry, and topology.

Part II of the book, called Development of Various Viewpoints on Foundations, takes up the broad questions that have arisen naturally from a consideration of the sort of situation met with in the first part. The beginning chapter of Part II traces the history of foundational questions up to about the year 1908. The next three chapters are devoted to three of the principal schools of thought on foundations: the Frege-Russell or logistic school, the intuitionist or Brouwer school, and the formalist or Hilbert school. In the last chapter, on the cultural setting of mathematics, the author presents some of his own views.

A feature of the book that will add greatly to its usefulness as a text is the inclusion, at the end of each chapter of Part I, of a list of suggested readings, followed by an extensive list of good problems. The eleven pages of bibliography, and the index of topics and of names, are other convenient features. Practically every topic the beginning student of foundations should be familiar with appears somewhere.

The chapter headings are: Chapter I, The Axiomatic Method;