mentary introduction to the subject of wave motion; it will also interest the experts in some one type of physical wave motion as a book for ready reference concerning other types of physical wave motion. In common with other books belonging to "University Mathematical Texts" this book is remarkably informative for its size. In the first chapter the wave equation and its principal solutions are introduced. From there on are treated in succession waves on strings, waves in membranes, longitudinal waves in bars and springs, waves in liquids, sound waves, and electric waves. The last chapter contains some general considerations. In each chapter the equations for the particular type of waves and the boundary conditions are derived; the methods of solution are illustrated by well-chosen examples. The presentation is clear and straightforward. Each chapter is followed by problems.

In the words of the author, "The object of this book is to consider from an elementary standpoint as many different types of wave motion as possible. In almost every case the fundamental problem is the same, since it consists in solving the standard equation of wave motion; the various applications differ chiefly in the conditions imposed on these solutions. For this reason it is desirable that the subject of waves should be treated as one whole, rather than in several distinct parts; the present tendency is in this direction." If one is to criticize the book in this connection, it is, perhaps, in order to suggest that the announced purpose could be served still better by giving the impedance concept the place it rightly deserves in wave theory. The original wave equation usually consists of two first order equations connecting the force and the velocity (or displacement). The solution will consist of a wave of force and a wave of velocity. By placing emphasis on this "two-wave" aspect, greater uniformity in treatment of reflection can be attained. It is hoped that the author will consider this point of view in the next edition.

SERGEI A. SCHELKUNOFF

Lectures in Topology. The University of Michigan Conference of 1940. Edited by R. L. Wilder and W. L. Ayres. Ann Arbor, University of Michigan Press, 1941. 316 pp. $3.00.

This volume is a collection of the papers presented at the University of Michigan Conference on Topology in June 1940. The scope of the book is indicated by the following list of titles of the longer papers:

Solomon Lefschetz, Abstract complexes; R. L. Wilder, Uniform local connectedness; N. E. Steenrod, Regular cycles of compact metric spaces; Samuel Eilenberg, Extension and classification of continuous mapping; Hassler Whitney, On the topology of differentiable manifolds; S. S. Cairns, Triangulated manifolds and differentiable manifolds; P. A. Smith, Periodic and nearly periodic transformations; Leo Zippin, Transformation groups; Saunders MacLane and V. W. Adkisson, Extensions of homeomorphisms on the sphere; O. G. Harrold, Jr., The role of local separating points in certain problems of continuum structure; L. W. Cohen, Uniformity in topological space; E. W. Chittenden, On the reduction of topological functions. There are also short accounts of nine other papers.

As can be seen from this list, practically every phase of modern topology is touched upon in this collection. Many of the papers are of a discursive nature, with most of the proofs omitted, and so the total amount of ground covered is quite extensive. We heartily recommend this book to any worker in topology as an excellent source of information on the present status of this subject.

R. J. WALKER

An Introduction to Linear Transformations in Hilbert Space. By F. J. Murray. (Annals of Mathematics Studies, no. 4.) Princeton University Press, 1941. 135 pp. $1.75.

The purpose of this book, according to the author, is "to present the most elementary course possible on this subject" and at the same time "to emphasize those notions which seem to be proper to linear spaces." Despite the assertion that these aims are not antagonistic, the exposition would be pretty tough going for the average graduate student. Although the reader is not assumed, except in an isolated section, to know about Lebesgue integration, and although the proof of such a comparatively elementary fact as that a continuous image of a compact set is compact is given in detail (p. 48), many parts of the book assume a great deal more sophistication.

The discussion is almost entirely unmotivated: the beginner might like to know *why* one studies spectral families, or the adjoints of operators. Even to one familiar with the theory it requires proof that von Neumann's definition of T^* is equivalent to the easier one usually given for bounded transformations; T^* is defined as the negative of the transformation whose graph is the orthogonal complement of the graph of T.

Concerning the author's choice of the order of the material, it is questionable whether or not it is pedagogically advisable to aim the