for example, there are close to 100 pages on the standard theory of complex variables. The resulting substantial increase in size is, however, more than compensated by a careful self-contained treatment which makes the book admirably suited both for class use and for self-study.

The first three chapters establish the basic properties of second-order equations, including questions of uniqueness and continuity. The next group deals with the method of separation of variables ending with Sturm-Liouville theory and general Fourier expansions. After the sections on complex variables there are two chapters on Fourier and Laplace transforms (the latter including a detailed solution of a diffraction problem in the theory of sound). The final chapter on approximation techniques covers finite differences, successive approximations, and the Rayleigh-Ritz variational method. There are good sets of problems (with answers). To those acquainted with previous books by the same publishers, the pleasing format and high standards of production will come as no surprise.

H. Kaufman, McGill University

Contributions to Differential Equations, J.P. LaSalle and J.B. Diaz (managing editors), vol. I. Interscience Publishers, New York, 1963. v + 519 pages. $16.50.

This is a serial publication issued under the auspices of RIAS and the University of Maryland. It may be considered as a continuation of the five issues of the Annals of Mathematics Studies entitled Contributions to the Theory of Nonlinear Oscillations (which however dealt solely with ordinary equations). The intention of the editors is to avoid short notes in favour of extensive well-written papers containing full proofs. The present volume contains 25 papers authored by Lefschetz, Diaz and Payne, Horvath Douglis, Bramble and Payne, Letov, Cesari, Kalman, Ho and Narendra, Hale, Aziz and Diaz, Roxin and Spinadel, Driver, Billings, Yoshizawa, Olech, Harvey, Squire, Mlak, Seifert, and Harris.

H. Kaufman, McGill University

Kūshyār ign Labbān: Principles of Hindu Reckoning. A translation with introduction and notes by Martin Levey and Marvin Petruck. The University of Wisconsin Press: Madison and Milwaukee, 1965. xiii + 114 pages. $6.00.

Since our present knowledge of the development of mathematics among the Muslims is still rather incomplete, any publication of new source material will be welcome. Activity in this direction is increasing, and historians of mathematics of several countries have, in recent years, contributed to the research into Arabic mathematics. The present publication makes available, for the first time, the arithmetic of Kūshyār who lived (not "flourished", as is stated on p.4) ca. 971 - ca. 1029. This work seems to be the oldest reckonbook surviving in the original Arabic and using Hindu numerals in the algorithms. The editors have published the Arabic text in facsimile, together with an English translation and excerpts from a Hebrew commentary of the 15th century. Kūshyār explained the four basic operations, the extraction of square and cube roots, methods of approximation for these and the use of sexagesimal tables. The operations are carried out both in the decimal and the sexagesimal systems! In an extensive introduction the editors not only give a survey about related Arabic texts but also discuss carefully the various procedures used by Kūshyār. The volume is equipped with a glossary of Arabic mathematical terms and an index.

C. J. Scriba, University, Hamburg

Evolution of Mathematical Thought, by H. Meschkowski. (Translated by Jane H. Gayl), Holden-Day, 1965. Original German edition, 1956. 147 pages.

The thesis of this book is presented in chapter I and again, in more detail, in the concluding chapter. It is that "... mathematical thinking leads to a new kind of philosophy which makes all previous systems seem 'pre-scientific' ... understanding of the philosophical consequences of basic research in mathematics need not always be reserved for a little band of the 'initiated' ... scientific knowledge can definitely be brought closer to interested laymen in a serious manner."

The titles of the remaining chapters are: Foundations of Greek Mathematics, The Road to non-Euclidean Geometry, The Problem of Infinity, Cantor's Foundation of the Theory of Sets, Antinomies and Paradoxes, Intuitionism, Geometry and Experience, Problems of Mathematical Logic, Formalism, Decision Problems, Operative Mathematics, The Philosophical Harvest from Research in the Foundations of Mathematics. There is also an appendix: Education in the Age of Automation.

With reservations noted below, it is a successful book: the mathematical examples are well chosen, and are nicely balanced by readable discussions of just what is supposed to be significant about them.

Non-Euclidean geometry is shown to have led to a detachment from the Platonic view that mathematics is an exploration of the realm of ideas which uncovers universal truths. The irrationality of $\sqrt{2}$, here proven both algebraically and geometrically, had already shown the Pythagoreans that insight, gained mathematically, demonstrated that the search for such truths led to some surprising results.

The paradoxes of the infinite are claimed to serve an important educational function in that they put bounds to the applicability of given intuitions and hence clarify the function of intuition generally. The procedure given for constructing a plane set which is congruent by rotation