

lapses; the level here is roughly junior secondary. Later in this section a full discussion is given of each illustration, a procedure which is followed all through the book.

Chapter III is algebraical and far more extensive in scope. It contains, in addition to many instances of blunders due to division by zero in varied disguises, or to faulty handling of inequalities, examples exhibiting the necessity for rigour in mathematics, a necessity which many students fail to appreciate. The chapter ends by elucidating common sources of confusion in elementary complex algebra, and the level extends from "O" minus to "A" plus.

Geometrical fallacies have a long history, and, although Chapter IV is on mainly traditional material to "O" level, it is stimulating and is probably the most complete such collection in English.

Trigonometrical howlers, at level "O" plus, are dealt with scantily in Chapter V, and approximate computation at the same level even more sketchily in Chapter VI.

It will be seen that the standard of matter treated is far from uniform, reaching a considerable maximum in Algebra, to which is devoted the longest and most interesting chapter in the book. In general the treatment, while less arresting than, say, that of Northrop, is very thorough everywhere, and is sufficiently detailed for the needs of those studying alone. The variation in level of topics selected is chiefly responsible for the book just missing completeness as an anthology at Grammar School standard, of mathematical error and its correction. Many teachers, as well as pupils, will benefit from its study: it should be in every school and training college library.

SELWYN READ

Studies in Mathematical Analysis and Related Topics: Essays in Honor of George Pólya, edited by G. Szegő and others (Stanford University Press; London: Oxford University Press, 1963), xxi + 447 pp., 80s.

This volume, published on the occasion of his 75th birthday, contains sixty original papers by leading mathematicians of the United States and Europe who have been inspired by the teaching or researches of Professor Pólya, together with a list of Pólya's publications and a preface by the editors on his distinguished career. Most of the papers are in fields to which Pólya himself has contributed, and many of the authors indicate Pólya's influence on the development of their subjects and give fuller historical backgrounds than are usual in research papers. Predictably one finds the names of Boas, Erdélyi, Hayman, Littlewood, Szegő, Titchmarsh, Zygmund and others in the list of authors, but the presence of such names as Brauer, Coxeter and Davenport is a striking reminder of the breadth of Pólya's interests and his contributions to pure and applied mathematics.

It was not to be expected that every one of the authors could produce a specimen of his most memorable work to order for the occasion, but this well-produced volume is a worthy tribute to one of the most outstanding mathematicians of our time.

P. HEYWOOD

RYSER, H. J., *Combinatorial Mathematics* (Carus Mathematical Monographs, No. 14; published by The Mathematical Association of America, distributed by John Wiley and Sons, 1963), xiv + 154 pp., 30s.

Beginning with sets, permutations and combinations, the very first principles of the subject, the author leads us to the forefront of modern combinatorial analysis. Inevitably in a compass of some 140 pages, the account is compact and has to be read with careful attention, but this is a small price to pay for the convenience of a self-contained monograph. The author leads us to such heights as an extremely elegant construction of pairs of orthogonal Latin squares of order $12k + 10$, part of