

BOOK REVIEWS

Advances in Mathematics, volume 1, fascicle 1, 1961, edited by H. Busemann, Academic Press, New York and London, 30s. 6d.

This is the first part of a new journal devoted to expository articles, and is to be warmly welcomed. There has been for some time a need for a Western periodical on the lines of the Russian *Uspehi*. The papers published will be of two main types, those addressed to all mathematicians and those addressed to a smaller number of mathematicians working in related fields. The first article published, entitled "Recent developments in the theory of connections and holonomy groups", by Katsumi Nomizu, is of the second type, while the second article on "Banach algebras and analytic functions" by John Wermer, is of the first type or is, at any rate, addressed to a wider set of readers. To secure prompt publication of material, *Advances in Mathematics* will be released in paper-bound fascicles, which will be combined into volumes of between 350 and 400 pages.

R. A. RANKIN

STOLL, R. R., *Sets, Logic, and Axiomatic Theories* (W. H. Freeman and Co., San Francisco, 1961), x+206 pp., \$2.25.

This book is one of the Golden Gate series of undergraduate mathematical texts. It is intended, however, not only for undergraduate use but also for school teachers who want to learn something of the spirit of modern mathematics; probably its main appeal in this country will be to the latter class of readers, and possibly also to their pupils. Much of it would be accessible to an intelligent sixth-form schoolboy.

Chapter 1 provides an eminently readable introduction to the elementary parts of the theory of sets and relations, with special reference to equivalence relations, functions and ordering relations. Chapter 2, on Logic, covers the statement calculus and the predicate calculus. The elementary sentence connectives, truth tables and quantifiers are introduced and validity and valid consequences discussed. Axiomatic theories are introduced in Chapter 3, which includes a clear elementary description of the notions of consistency, completeness, decidability and categoricity. The concluding section, on metamathematics, gives an informal account of Hilbert's programme and the theorems of Gödel and Church. Chapter 4, on Boolean algebras, is "the icing on the cake"; it is intended to draw together the ideas of the previous chapters and to show them at work in a modern mathematical theory. Two formulations of the theory are given and it is developed far enough to give the Stone representation theorem.

The book is clearly and attractively written, with some lively turns of phrase—for example, "The principle of duality yields a free theorem for each theorem which has been proved". It should be of interest and value to the readers for whom it is intended.

I. F. ADAMSON

PHILLIPS, E. G., *A Course of Analysis* (Cambridge Students' Editions, C.U.P., 1961), 361 pp., 15s.

This is a reprint at a reasonable price of the second edition of a book first published in 1930, which covers an undergraduate course on the definition of number, the theory of convergence and differential and integral calculus; multiple integrals and functions