treatment is rigorous, no attempt is made to give applications to applied mathematics and the order of development of topics is logical rather than simple.

In the introduction he gives a set of axioms for the system of real numbers and a sketch of Dedekind's construction of them. There follows over 100 pages on infinite sequences and series, functions, continuity and uniform convergence. Here are proved many subtle results (e.g. Cauchy convergence test, theorem on uniform continuity, Weierstrass theorem) needed later. There follows a chapter on the Differential Calculus which is developed as far as Taylor's theorem. The final chapter on the Integral Calculus is based on the result that every function continuous in a closed interval is a limit of a uniformly convergent sequence of polygonal functions. He deduces the integrability of continuous functions and rightly confines his treatment of the Riemann integral to a starred section (which may be omitted). The book ends with a discussion of improper integrals and the Fourier series of piecewise smooth functions.

There is a short section explaining the notation of mathematical logic. He illustrates by giving various definitions (e.g. of limit and continuity) in this notation and he shows how in the definitions of uniform convergence and uniform continuity the order of the universal and existential quantifiers is essential. He rightly says " For many students (not for all, perhaps) the notation of definitions of certain notions by means of the logical symbols makes it easier to understand these notions . . ."

The English translation is very clear, only rarely being not quite idiomatic. Most of the proofs are followed by useful comments and illustrations. While there are exercises at the end of each section, there are still not enough to suit the British tradition. The author says that Professor I. N. Sneddon and Dr. J. Hunter are preparing a book of problems to fill this gap. As a sound account of the calculus of functions of one real variable this book can be recommended.

H. S. A. POTTER

PLUMPTON, C. AND TOMKYS, W. A., *Sixth Form Pure Mathematics*, Vol. I (Pergamon Press, 1962), X+480 pp., 21s.

This book, which covers most of the Pure Mathematics required for the single subject Mathematics at Advanced Level, is the first of a series of volumes on Pure Mathematics and Theoretical Mechanics for Sixth Form students.

It is currently fashionable to develop mathematical topics by a concentric treatment. Here, although the subject matter is standard, the major topics of algebra, calculus, coordinate geometry and trigonometry are developed in accordance with modern trends.

The chapter devoted to the quadratic function and the quadratic equation is particularly good. Every chapter ends with a good selection of carefully graded examples.

The book is moderately priced, and can be recommended to students studying for entrance to Universities and Colleges of Advanced Technology.

W. CRAIG

Popular Lectures in Mathematics—(i) *The Method of Mathematical Induction* by I. S. SOMINSKII, (ii) *Fibonacci Numbers* by N. N. VOROB'EV, (iii) *Some Applications of Mechanics to Mathematics* by V. A. USPENSKII, (iv) *Geometrical Constructions Using Compasses Only* by A. N. KOSTOVSKII, (v) *The Ruler in Geometrical Constructions* by A. S. SMOGORZHEVSKII, (vi) *Inequalities* by P. P. KOROVKIN (Pergamon Press, Oxford, 1961).

The books are issued separately at 10s. each, with the exception of (i), which costs 7s. 6d. They are also issued in one volume costing 50s.

This series, edited by I. N. Sneddon and M. Stark, consists of English translations