subject-matter to algebraic theories is kept in mind. The first chapter, entitled " Number systems and algebraic structures," contains definitions of concepts such as group, ring, field and equivalence relation. These ideas are not developed far in their own right but the algebraic terminology is used where appropriate in later sections. Thus the elementary properties of congruences (mod m) are also expressed as results concerning the ring of residue classes (mod m), or when in particular m is a prime p, the field of p elements. Chapters 2 to 5 present the topics of divisibility and congruences traditional in an introductory text of this type, going as far as primitive roots and quadratic residues and including the Law of Quadratic Reciprocity, a theorem notorious for the variety of its proofs. Of these the reviewer would prefer a version making explicit use of a lattice-point argument; see for instance Hardy and Wright, *An Introduction to the Theory of Numbers*. However this is purely a personal preference for geometrical imagery! The last two chapters deal with the representation of integers by binary quadratic forms and with some diophantine equations. Naturally only an outline of these vast topics can be given at this level and in the space available. Another consequence, presumably, of the small size of the book is the sparseness of historical references. We are told on p. 133 that Diophantus of Alexandria lived in the third century A.D., but Mersenne and Fermat primes are merely named as such in exercises on p. 41 without further comment. However such details are easily accessible in more comprehensive books to which, it is to be hoped, readers of the present volume will be encouraged to progress. This remark prompts the reviewer's one serious criticism—the lack of a list of suggestions for further study. On p. 29 there is a reference, for a proof of the Prime Number Theorem, to Le Veque's two-volume treatise; later, mention is made of algebraic works by Ledermann and van der Waerden. But this is not enough and the gap should be filled as soon as possible in a further printing. There is a good supply of examples, very generously provided with hints for solution. Answers are also given.

Both the elegance of elementary Number Theory and its close relationship to algebra suggest that it should be part of the equipment of the modern teacher of Mathematics. The publication of a cheap and compact text on the subject is therefore timely and Dr. Hunter's book can be warmly welcomed.

D. MONK

FLETCHER, T. J. (editor), *Some Lessons in Mathematics* (Cambridge University Press, 1964), xiii + 367 pp., 35s.

This book was written by a group of members of the Association of Teachers of Mathematics, largely during a " writing week ", and later edited by the group leader, Dr T. J. Fletcher. It must have been an extraordinary hard-working week, but also an extremely exciting and stimulating one—and the excitement and stimulation are clearly conveyed in the book. The chapter-headings indicate the wide variety of material discussed: binary systems; finite arithmetics and groups; numerical methods and flow charts; sets, logic and Boolean algebra; relations and graphs; linear programming; patterns and connections; convexity; geometry; vectors; matrices. Although there is a good deal of " straight " exposition and description, the most fascinating sections of the text are those in which more or less informal lessons are described, just as they might be conducted in the classroom. The method by which it was produced, and the style employed have produced a very unorthodox book full of fertile ideas, both mathematical and pedagogical, and, far more than any carefully-polished conventional text, it conveys very strikingly the impression of mathematics as a challenging and constantly developing subject. It should be in the hands of all who are concerned with the teaching of the " new mathematics ".

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