given, 1.07, seems to be the result of hasty work; accurate use of the trapezoidal rule yields 1.103, as compared with the exact value, 1.0894, obtained by the aid of Γ functions and verified by Simpson's rule with five ordinates. The error due to the trapezoidal rule is nominally only 1.3 per cent., but inspection shows the area to be a unit square surmounted by a small area, and for this latter even an accurate use of the rule suggested results in an error of about 15 per cent. Such approximate integration seems unsatisfactory to the reviewer, although it must be admitted that other books appear to sanction it.

The points open to criticism—the too orderly arrangement, inaccuracies in certain answers, and undesirable features in a few problems—are flaws which limit rather than destroy the usefulness of the book. It is certain that many teachers will find it convenient to put in the hands of students for supplementary work, and more will find it a very satisfactory source from which to draw, for classroom work or tests, problems which will be new to their students.

R. W. BURGESS.

Vom periodischen Dezimalbruch zur Zahlentheorie. By ALFRED LEMAN. Leipzig, Teubner, 1916. iv+59 pp. Price 80 Pfennige.

THE aim of this little book is to present the main properties of periodic decimals as material for a concrete introduction to the more elementary topics of the theory of numbers. The concept congruence is introduced on page 16 and Fermat's theorem is presented, illustrated and proved on pages 21–23, —each topic being a natural sequel to concrete questions and results concerning periodic decimals.

Periodic fractions to bases other than 10 are treated briefly in the final chapter 8, although on page 51 this part of the theory is said to be treated in chapters 8 and 9.

There is a list of about 15 papers, including most of the earliest ones. There is no mention of the early MS. by Leibniz; Henry Goodwyn's tables, 1816–23; the papers by Poselger, 1827; Bredow, 1834; Midy, 1836; Catalan, Thibault, and Sornin in *Nouvelles Ann. Math.*, 1842, 1843, 1846; Desmarest's text, 1852; Hudson's excellent paper in Oxford, *Cambridge and Dublin Messenger of Mathematics*, 1864, pages 1–6—not to cite various earlier papers and a hundred later ones. The topic is not exhaustively treated as claimed.