BOOK REVIEWS

The mathematical career of Pierre de Fermat by M. S. Mahoney, Princeton
   University Press, Princeton, N.J., 1973, 419 + xviii pp., $20.00.

Nothing could be more welcome than a book on Fermat. This has been
a desideratum for many years, and one wishes one could congratulate the
author (an associate professor of the history of mathematics at Princeton
University) and the Princeton University Press on the publication of this
volume, which comes to us in a handsome jacket decorated with Fermat's
engraved portrait from the *Varia Opera* of 1679. Fermat is one of the most
fascinating mathematical personalities of all times, the creator (with
Descartes) of analytic geometry, one of the founders of the calculus, the
undisputed founder of modern number theory. The aura of mystery that
still surrounds some of his best work provides an added attraction. Nor
does such a project require extensive searches in many libraries. Fermat's
complete writings and correspondence have been excellently published
by Ch. Henry and P. Tannery in four splendid volumes (Gauthier-
Villars, Paris, 1891–1912, with a supplementary volume, ibid., 1922);
this includes authoritative French translations of all Latin texts, valuable
commentaries, and virtually all relevant passages from the writings and
correspondence of Fermat's contemporaries. If one adds to this two short
pieces published by J. E. Hofmann in 1943 (Abh. d. Preuss. Akad. d. Wiss.
1943, No. 9, one has Fermat's entire corpus. Of course one cannot easily
separate Fermat from his great predecessors and contemporaries,
Viète, Galileo, Descartes, Roberval, Torricelli, Schooten, Huyghens,
Pascal, Wallis; fortunately, most of their work has been very well edited
and is easily accessible.

   Nevertheless, in order to write even a tolerably good book on Fermat,
a modicum of abilities is required, and it is the reviewer's duty to consider
whether the author appears to possess them. Such requisites are

   (a) *Ordinary accuracy.* This is perhaps the primary virtue of the historian;
unless he carefully checks all details, how can we trust him in his major
conclusions? It may be accidental that the *Jahresbericht der deutschen
Mathematiker-Vereinigung* is referred to as *Jahresbericht des deutschen
Mathematiker-Vereins* (p. 147); as every mathematician knows, there has
never been a "deutscher Mathematiker-Verein". But it can hardly be an
accident when, in one of the introductory chapters, "Pell's equation" (so-
called) is *twice* given as "$x^2 - py^2 = 1$ *for prime p*" (pp. 61, 63), whereas
Fermat invariably specifies the equation to be $Ny^2 + 1 = x^2$ where N is
any (positive) *nonsquare* integer. Perhaps that is why Mr. Mahoney's