A Study of the Traité des Indivisibles of Gilles Persone de Roberval. By Evelyn
Walker. New York, Bureau of Publications, Teachers College, Columbia
University, 1932. vi+272 pp.

According to the extended title, on the title-page, this study was under-
taken "with a view to answering, insofar as is possible, the two questions:
Which propositions contained therein are his own, and which are due to his
predecessors or contemporaries? and, What effect, if any, had this work on his
successors?"

The answers to these questions are found in a summary (pp. 165–167) at
the end of Part 2 of the book. Roberval is credited, among other accomplish-
ments, with having "invented a method of integration by means of infinitesi-
mals"; "founded his treatment of infinitesimals upon an arithmetic basis,
thereby anticipating Wallis"; "successfully applied his method of infinitesimals
in order to establish a number of quadratures and cubatures, and to find the
centers of gravity of certain plane and solid figures"; drawn "the first trigono-
metric graph that was ever constructed, namely, the curve of sines, found the
area under it and the volume of the solid generated by revolving it about its
base line as axis"; made various discoveries relating to the cycloid and, in so
doing, "invented a new curve which he called the companion of the cycloid."

Two of the most important conclusions reached are given in the paragraphs
numbered 10 and 12 (pp. 166–167) and they are here quoted in full:

"10. In this treatise, Roberval has given one example of his method of
drawing tangents to curved lines by means of composition of motions, namely,
in the case of the cycloid. The invention of the method gave him the right to be
considered a pioneer in the domain of the differential calculus as well as in that
of the integral calculus. A method almost identical with his was later used by
Torricelli and still later by Wallis and Barrow. In Newton's hands it developed
into the method of fluxions, and in those of Leibniz into the method of dif-
ferentials.

"12. Furthermore, Roberval's influence as a teacher, as a member of
Mersenne's Academy and later of the Académie Royale des Sciences, and finally
as a correspondent of other scientists, was probably much more widespread
than has been generally realized."

These statements seem slightly more conservative than the following
paragraph, which appears on the wrapper:

"Gilles Persone de Roberval, who made important contributions to
the early development of both the differential and the integral calculus, is
rarely given the credit that is his due. He has, indeed, been treated with un-
pardonable neglect by historians of mathematics, although he was held in high-
est esteem by his contemporaries. The present work, in which some of his
achievements are indicated, may help to restore him to his proper place among
the scholarly pioneers of the seventeenth century."

Possibly the author placed in the text itself the conclusions which she felt
had been sufficiently documented and on the more perishable jacket the
somewhat more emphatic personal convictions to which the study had led her.

An "Acknowledgment" following the title-page states that the study was
inspired and aided by Dr. David Eugene Smith. Evidently, during his years
of exploration in the field of mathematical history, Dr. Smith, more or less in-