

**MR1006210 (90f:01014)** 01A45 00A25 26-03

**Jesseph, Douglas M.** (1-ILIT)

**Philosophical theory and mathematical practice in the seventeenth century.**

*Stud. Hist. Philos. Sci.* **20** (1989), no. 2, 215–244.

This article tries to show that 17th-century researchers in the calculus were concerned with developing their subject in accordance with the classical geometrical conception of proof. The author considers Cavalieri, Leibniz and Barrow. He investigates their well-known contributions by examining passages in which they address methodological questions and by considering how they responded to critics of their work. Treatises discussed include Cavalieri's *Geometria indivisibilibus continuorum* (1635), Guldin's *Centrobaryca seu de Centro Gravitatis* (1635–41), Wallis's *Mechanica* (1670), Barrow's *Lectiones geometricae* (1670) and *Lectiones mathematicae* (1683), Nieuwentijt's *Considerationes circa Analyseos ad quantitates infinite parvas applicatae Principia* (1694), and Leibniz's "Responsio ad nonnullas difficultates a Dn. Bernardo Nieuwentiit...", in the *Acta Eruditorum* (1695).

The article is a useful and historically informed discussion of mathematical practice in the 17th century. Nevertheless, in evaluating the philosophical character of research the author does not, it seems to this reviewer, go far enough in exploring the technical content of the theories in question; further study is needed in order to situate the concern for methodology that he identifies within an appreciation of the early calculus.

*Craig G. Fraser*