what students find hard is not the derivation of any particular form of statistics, but the understanding of when to use what. Why, say, do we use Fermi–Dirac or Bose–Einstein statistics for the translational energy distribution, but Boltzmann statistics for the rotational or vibrational energy? Why do helium atoms in liquid helium "condense" into their ground state but paramagnetic atoms in a magnetic field do not? These are just the sorts of topics that Kittel could explain so persuasively; it is most disappointing that no discussion is given. Without it, statistical mechanics tends to look like magic.

Greatly as I enjoyed the book, I am not at all sure that I would recommend it for the average student with no previous exposure to the subject, as is suggested. But I would certainly want able students with some experience to read it, and I regard it as essential reading for every teacher of the subject.

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The Mathematical Papers Of Isaac Newton, Vol. III: 1670–1673

D. T. Whiteside, ed.
576 pp. Cambridge U. P., New York, 1969. $32.50

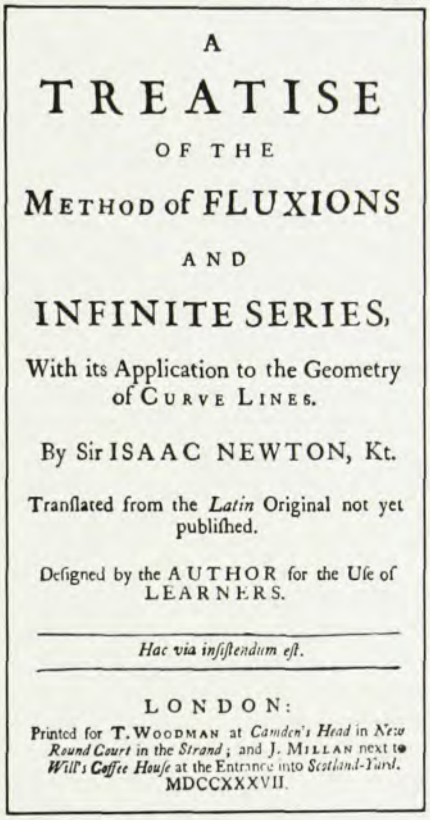
Here we have the third of eight projected volumes that will contain a complete scholarly edition of Isaac Newton's mathematical papers. This third volume fully maintains the high standards of scholarship and erudition that marked its two predecessors and that gained for its editor worldwide critical acclaim.

Derek T. Whiteside brings to his project a rare combination of mathematical acumen, editorial sensitivity and encyclopedic knowledge of the history of mathematics in the 17th and early-18th centuries. His edition (assisted by Arnold Prag and Michael Hoskin) of Newton's autograph manuscripts offers the historian not only the words and thoughts Newton meant finally to preserve, but also those that he struck out.

The facing English translations—the papers in the present volume are all in Latin—are at once faithful and eminently readable. Judiciously employing at times a more modern terminology, the translations enhance the value of the edition by making its contents available to readers lacking familiarity with 17th-century mathematical Latin. The richly detailed footnotes elucidate the mathematics and set forth, in outline at least, the historical context of Newton's thoughts, both in terms of his own development and in relation to the work of his contemporaries. They also guide the reader through the often bewildering complexities of Newton's mathematical world.

The 569 pages devoted to the short period of three years in Newton's early career testify more to the profundity than to the prolixity of his achievements during that time. Indeed, the bulk of the volume is taken up by one treatise (1671), "On methods of series and fluxions," in which Newton sought to unite, polish and extend his earlier papers on fluxions (1666) and "On analysis by equations with an infinite number of terms" (1669).

JOHNSON REPRINT CORP


A

TREATISE

OF THE

METHOD of FLUXIONS

AND

INFINITE SERIES,

With its Application to the Geometry of CURVE LINES.

By Sir ISAAC NEWTON, Kt.

Tranflated from the *Latin* Original not yet publifhed.

Defigned by the AUTHOR for the Ufe of LEARNERS.

Hac via infiftendum eft.

LONDON:

Printed for T. WOODMAN at *Camden's Head* in *New Round Court* in the *Strand*; and J. MILLAN next to *Will's Coffee Houfe* at the Entrance into *Scotland-Yard.*
MDCCXXXVII.

A mere glance at the editor's extremely helpful and analytical table of contents of the treatise reveals the brilliance of Newtons' achievement. It reads as an inventory of the research problems of 17th-century mathematics, united in solution by one systematic approach. Though it later circulated privately, the treatise remained unpublished in Newton's lifetime.

In an enlightening introductory commentary, Whiteside discusses Newton's original plans to publish the work. He provides evidence that, in addition to booksellers' reluctance to print mathematical works that at the time were largely unsaleable, Newton's plan fell victim to the rancorous dispute engendered by the 1672 publication of some of Newton's optical researches. Into the resulting self-imposed exile, broken only in 1687 with the publication of the *Principia*, Newton took with him his mathematical masterpiece.

Newton's appointment in the fall of 1669 to the Lucasian Professorship led him increasingly to focus attention on optics. Following a short collection of miscellaneous mathematical memoirs from 1670–73 (including a paper on harmonic motion in a cycloidal arc), Whiteside publishes, in the third main section, mathematical excerpts from Newton's lectures and research papers in geometrical optics. The volume concludes with a summary by Whiteside of the mathematical content of Newton's correspondence during the three years. No texts are presented here, since Whiteside can and does base his report on the modern edition of Newton's correspondence by Herbert W. Turnbull, to whose memory this volume is dedicated.

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Relativity

By Ray Skinner
340 pp. Blaisdell, Waltham, Mass., 1969. $12.50

There has been a deluge of books on relativity in the last few years, and as is well known these have varied greatly in quality and usefulness. A few have been highly worthwhile, but a number appear to have been written in the hope of finding a place in the many revised curricula now in vogue for general physics courses.

Ray Skinner's book is superior to most of these recent volumes. It is part of a projected five-volume set for a standard two-year general physics sequence of courses. The first volume of the set is *Mechanics*, the book under review is the second volume