

MR1102460 (92e:01079) [01A75](#) ([00A30](#) [01A45](#) [01A50](#))

Newton, Isaac

★**Mathematische Grundlagen der Naturphilosophie. (German) [Mathematical principles of natural philosophy]**

Translated from the Latin, edited and with an introduction by Ed Dellian.

Philosophische Bibliothek [Philosophical Library], 394.

Felix Meiner Verlag, Hamburg, 1988. xlii+254 pp. DM 48.00. ISBN 3-7873-0764-8

This book contains, apart from an introduction and notes, a partial German translation of the third edition of the *Principia* (1726). In his own words, the translator has put “textual precision before elegance of language, but intelligibility before textual precision”, and the precision is (according to a number of spot checks) indeed much higher than in both existing German translations (Berlin 1872; and a partial translation in Ostwalds Klassiker 191, not mentioned by the present translator).

Translated are Halley’s accompanying poem, Newton’s preface, and Cotes’ preface to the second edition. From Book I, furthermore, the definitions and axioms with scholia and corollaries, and propositions, etc., until proposition 17 are included; from Book II everything until proposition 10, and from Book III everything until proposition 24, and the closing “general scholium” are included. Omitted are thus (to mention the most important) a number of intricate theorems from Book I which are used in Book III, and the refutation of the theory of vortices. Nonetheless, the selection provides an adequate introduction to Newton’s methods, discourse, and thought.

More problematic are the introduction and the notes to the text. The former is organized around two main themes: Firstly the claim that the analytical mechanics of d’Alembert and Laplace is separated from the *Principia* by a sharp ontological break, argued in particular from the question of whether effect (change of momentum) is identical with the cause (the force; the stance of Leibniz and analytical mechanics) or merely proportional (Newton’s actual formulation); secondly, that analytical mechanics has thus distorted the “absolute truths” established by Newton, which are claimed to be vindicated by the special theory of relativity and by quantum mechanics unisonantly. The arguments for this include a brush-up of Zenon’s arrow-paradox (p. xxv, 1. 18ff), the claim that Newton held time and space to consist of discrete quanta (with ratio c), and the algebraic combination of formulae belonging to pre-relativity particle mechanics ($p = mv$) and the theory of photons ($E = pc$).

The notes are in the same vein. Apart from biographical notices on authors mentioned by Newton, they tell nothing which might help elucidate the text—not even the wording of omitted theorems from Book I when these are used in Book III. When the general scholium refers to the doctrine of vortices, a note tells that the refutation of this theory, “recognized to be materialistic”, was a main aim of the *Principia*, but the elegant and ingenious proofs of Book II, omitted from the selection, go unmentioned. In general, the notes explain adequate passages in a way that makes them look like support for translator’s theses as put forward in the introduction, and lets passages which disprove them go unmentioned.

On the whole, the translation will thus be a useful companion for those whose Latin needs

support from a translation and who can do without notes or with the general secondary literature. But the book as a whole is inadequate and even strongly misleading as a guide. One may ask why the publisher and his reader (explicitly acknowledged in the preface) have not reacted.

Reviewed by *Jens Høyrum*

© *Copyright American Mathematical Society 1992, 2007*