



A Course of Lectures on Natural Philosophy, Edited by D. Weaire, P. Kelly and D.A. Attis, IOP Publishing, 2000, pp: 404, ISBN 1898706174; Price: US\$59 (pbk).

This book is a facsimile reprint of the fourth edition of *A Course of Lectures in Natural Philosophy*, a compilation of Richard Helsham's lecture notes at Trinity College in Dublin. The first edition was published posthumously by his colleague Bryan Robinson one year after Helsham's death in 1738; the 4th edition was published in 1767.

Twenty-first century physicists will be forgiven if the name Richard Helsham does not sound familiar: his recorded contribution to science is not in the form of theoretical developments or groundbreaking experiments, but in his expositions of Newton's revolutionary theories of physics. (Even at the time, Newton's *Principia* was notorious for its deficiencies as a pedagogical book, and the diffusion of Newton's insights owes much to scholars like Helsham, who devoted considerable efforts at reexpressing them in a clearer way.)

A first question that arises concerning this book is the appropriateness of its reprinting. The need for a clear exposition of Newton's ideas (and a lot of ideas that have arisen in physics since Newton's time) is no longer an issue: first-year physics texts are plentiful. Furthermore, as Helsham was not himself at the origin of crucial insights, this reprinted version does not represent an essential book for work in the field of history of science (or history of ideas). It is therefore difficult to understand what need the editors of this reprinted version were trying to fill.

It appears that this book would nowadays only attract readers with an interest on how Newton's physics was being taught several decades after the *Principia*. In going through this book, these readers would immediately find that they have few beacons to help explore this period: the arguments rely mostly on geometry and proportions, and imperial units are used. While these hurdles can be overcome, this unfamiliar pedagogical framework requires a substantial effort on the part of the reader.

Since this is essentially a photocopy of the original publication, the reader must overcome other difficulties: the antiquated English, strange terminology, unfamiliar units and the style of demonstrating ideas. On top of this, the typeface of that era is very confusing to the reader, since the letter *s* is almost identical to the letter *f* but the modern *s* nevertheless is used at times, as well. For example, on page 28 the word "pass" looks like *pafs*.¹ Furthermore, the figures are all grouped at the end of the book, making it cumbersome to follow the geometrical arguments.

In view of these numerous difficulties, it appears to me that *A Course of Lectures in Natural Philosophy* might be useful to historians of science looking for very specific types of information (and they have to be familiar enough with the period to know exactly what they are looking for). However, it would not be very suitable for a more general reader, even with a strong scientific background.

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1. Before the 19th century, the modern *s* was used only at the end of words and for the French *se* in contractions such as *s'être*; the long *s* was used everywhere else. Superficially, it appears identical to the lower-case *f*, but close inspection reveals that its horizontal crossbar is shorter and extends only to the left of the vertical stroke—a tiny difference indeed! (Some variants dispose of the entire stroke.) Leibnitz immortalized the long *s* when he incorporated it into the notation for his calculus as a symbol for *summa*: it's our familiar integral sign. -Ed.(BR)