

CONTENTS

<i>List of Contributors</i>	viii
Introduction	1
<i>Jed Z. Buchwald and Robert Fox</i>	
PART I. PHYSICS AND THE NEW SCIENCE	
1. Was There a Scientific Revolution?	7
<i>John L. Heilbron</i>	
2. Galileo's Mechanics of Natural Motion and Projectiles	25
<i>N. M. Swerdlow</i>	
3. Cartesian Physics	56
<i>John A. Schuster</i>	
4. Physics and the Instrument-Makers, 1550–1700	96
<i>Anthony Turner</i>	
5. Newton's <i>Principia</i>	109
<i>Chris Smeenk and Eric Schliesser</i>	
6. Newton's Optics	166
<i>Alan E. Shapiro</i>	
7. Experimentation in the Physical Sciences of the Seventeenth Century	199
<i>Nico Bertoloni Meli</i>	
8. Mathematics and the New Sciences	226
<i>Niccolò Guicciardini</i>	

PART II. THE LONG EIGHTEENTH CENTURY

9. The Physics of Imponderable Fluids 267
Giuliano Pancaldi
10. Physics on Show: Entertainment, Demonstration, and Research
in the Long Eighteenth Century 299
Larry Stewart
11. Instruments and Instrument-Makers, 1700–1850 326
Anita McConnell
12. Mechanics in the Eighteenth Century 358
Sandro Caparrini and Craig Fraser
13. Laplace and the Physics of Short-Range Forces 406
Robert Fox
14. Electricity and Magnetism to Volta 432
Jed Z. Buchwald

PART III. FASHIONING THE DISCIPLINE:
FROM NATURAL PHILOSOPHY
TO PHYSICS

15. Optics in the Nineteenth Century 445
Jed Z. Buchwald
16. Thermal Physics and Thermodynamics 473
Hasok Chang
17. Engineering Energy: Constructing a New Physics for Victorian Britain 508
Crosbie Smith
18. Electromagnetism and Field Physics 533
Friedrich Steinle
19. Electrodynamics from Thomson and Maxwell to Hertz 571
Jed Z. Buchwald

20. From Workshop to Factory: The Evolution of the Instrument-Making Industry, 1850–1930 584
Paolo Brenni
21. Physics Textbooks and Textbook Physics in the Nineteenth and Twentieth Centuries 651
Josep Simon
22. Physics and Medicine 679
Iwan Rhys Morus
23. Physics and Metrology 698
Kathryn M. Olesko

PART IV. MODERN PHYSICS

24. Rethinking ‘Classical Physics’ 721
Graeme Gooday and Daniel Jon Mitchell
25. The Emergence of Statistical Mechanics 765
Olivier Darrigol and Jürgen Renn
26. Three and a Half Principles: The Origins of Modern Relativity Theory 789
Daniel Kennefick
27. Quantum Physics 814
Suman Seth
28. The Silicon Tide: Relations between Things Epistemic and Things of Function in the Semiconductor World 860
Terry Shinn
29. Physics and Cosmology 892
Helge Kragh

- Name Index* 923
- Subject Index* 936