

Revolutions in Mathematics

Edited by

DONALD GILLIES

CLARENDON PRESS · OXFORD

Contents

List of contributors	xi
Introduction Donald Gillies	1
1 Michael Crowe: Ten 'laws' concerning patterns of change in the history of mathematics (1975)	15
2 Herbert Mehrtens: T. S. Kuhn's theories and mathematics: a discussion paper on the 'new historiography' of mathematics (1976)	21
3 Herbert Mehrtens: Appendix (1992): revolutions reconsidered	42
4 Joseph Dauben: Conceptual revolutions and the history of mathematics: two studies in the growth of knowledge (1984)	49
5 Joseph Dauben: Appendix (1992): revolutions revisited	72
6 Paolo Mancosu: Descartes's <i>Géométrie</i> and revolutions in mathematics	83
7 Emily Grosholz: Was Leibniz a mathematical revolutionary?	117
8 Giulio Giorello: The 'fine structure' of mathematical revolutions: metaphysics, legitimacy, and rigour. The case of the calculus from Newton to Berkeley and Maclaurin	134
9 Yuxin Zheng: Non-Euclidean geometry and revolutions in mathematics	169
10 Luciano Boi: The 'revolution' in the geometrical vision of space in the nineteenth century, and the hermeneutical epistemology of mathematics	183
11 Caroline Dunmore: Meta-level revolutions in mathematics	209
12 Jeremy Gray: The nineteenth-century revolution in mathematical ontology	226
13 Herbert Breger: A restoration that failed: Paul Finsler's theory of sets	249
14 Donald Gillies: The Fregean revolution in Logic	265
15 Michael Crowe: afterword (1992): A revolution in the historiography of mathematics?	306
About the contributors	317
Bibliography	322
Index	345