TABLE OF CONTENTS

PHILIP EHRLICH / General Introduction vii

PART I. THE CANTOR-DEDEKIND PHILOSOPHY AND ITS EARLY RECEPTION

E. W. HOBSON / On the Infinite and the Infinitesimal in Mathematical Analysis (Presidential Address to the London Mathematical Society, November 13, 1902) 3

PART II. ALTERNATIVE THEORIES OF REAL NUMBERS

DOUGLAS S. BRIDGES / A Constructive Look at the Real Number Line 29

J. H. CONWAY / The Surreals and Reals 93

PART III. EXTENSIONS AND GENERALIZATIONS OF THE ORDERED FIELD OF REALS: THE LATE 19TH-CENTURY GEOMETRICAL MOTIVATION

GORDON FISHER / Veronese's Non-Archimedean Linear Continuum 107

HENRI POINCARÉ / Review of Hilbert's *Foundations of Geometry* (1902): Translated for the American Mathematical Society by E. V. Huntington (1903) 147

GIUSEPPE VERONESE / On Non-Archimedean Geometry. Invited Address to the 4th International Congress of Mathematicians, Rome, April 1908. Translated by Mathieu Marion (with editorial notes by Philip Ehrlich) 169

PART IV. EXTENSIONS AND GENERALIZATIONS OF THE REALS: SOME 20TH-CENTURY DEVELOPMENTS

HOURYA SINACEUR / Calculation, Order and Continuity 191

H. JEROME KEISLER / The Hyperreal Line 207
PHILIP EHRLICH / All Numbers Great and Small 239
DIETER KLAUA / Rational and Real Ordinal Numbers 259

INDEX OF NAMES 277