Contents

 $\textbf{Preface}\ \textit{by}\ \mathsf{FABIO}\ \mathsf{BEVILACQUA}\ \mathsf{and}\ \mathsf{LUCIO}\ \mathsf{FREGONESE}$

Editors, Scientific Board and Authors of the volume

Abbreviations

From "Electricity Minus" to "-E": Attempts to Introduce the Concept of Negative Magnitude into Worldly Wisdom by ALFRED NORDMANN Bibliography	1 12
Georg Christoph Lichtenberg: Experimental Physics from the Spirit of Aphorism by JÜRGEN TEICHMANN Bibliography	15 29
The Shocking Bag: Medical Electricity in mid-18th-Century London by PAOLA BERTUCCI Bibliography	31 42
Electricity in Portugal in Volta's Times by ISABEL MARIA MALAQUIAS Bibliography	43 52
A Shock to the Public: Itinerant Lecturers and Instrument Makers as Practitioners of Electricity in the German Enlightenment (1740-1800) by OLIVER HOCHADEL 1. Introduction 2. An Italian goes North: A Case Study 3. The Lives and Works of Itinerant Lecturers and Instrument Makers 4. Itinerant Lecturers, Instrument Makers and the History of Science 5. Conclusions Bibliography	53 53 55 58 60 63 65
Volta's Apostle: Christoph Heinrich Pfaff, Champion of the Contact Theory by Helge Kragh 1. Introduction 2. Who was Christoph Heinrich Pfaff?	69 69

3. From Galvanist to Voltaist	71
4. A Brief Outline of the Voltaic Controversy	74
5. A Note on Terminology	76
6. Concluding Observations	77
Bibliography	80
In the Wake of Volta's Challenge: The Electrolysis Theory of Theodor	
Grotthuss, 1805 by Juozas Al. Krikštopaitis	83
Bibliography	90
The Correspondence between Alessandro Volta and Giuseppe Zamboni	
about the Realisation of the "Dry Pile" by MASSIMO TINAZZI	91
Bibliography	102
The Battery as a Tool of Genius in the Work of Humphry Davy	
by Julianne Tuttle	105
Bibliography	116
When Chemistry entered the Pile by VALERIA MOSINI	117
1. Introduction	117
2. From Animal Convulsions to the Pile	118
3. Chemical Phenomena and Electric Current	121
4. Electricity and Chemistry at the End of the Eighteenth Century	125
5. Conclusions	128
Bibliography	130
Giuseppe Eugenio Balsamo's Iron-Lead Pile, Giuseppe Candido's	
Regulating Diaphragm Pile: Two Contributions from Lecce to the Development of Volta's Battery by ARCANGELO ROSSI, LIVIO RUGGIERO	
and Ennio De Simone	133
Bibliography	141
Changing a Theory: The Case of Volta's Contact Electricity	
by Nahum Kipnis	143
1. Introduction	143
2. "Animal" Electricity versus "Contact" Electricity	144
3. The Pile	146
4. Chemical Theory versus Contact Theory: Phase I	147
5. Chemical Theory versus Contact Theory: Phase II	151
6. Can Kuhn's Theory be a Framework in this Case	153
7. Conclusions	158
Bibliography	159

The Voltaic Origins of Helmholtz's Physics of Ions by OLIVIER DARRIGOL	163
1. Voltaism in Über die Erhaltung der Kraft (1847)	163
2. Helmholtz's Singularity	165
3. A More Detailed Picture	167
4. A non-Helmholtzian Helmholtz?	168
5. The Spread of Helmholtz's Picture	169
6. Conclusions	172
Bibliography	173