Contents

Acknowledgments
List of illustrations

1  Introduction: Science as public culture 1
2  “The study of a gentleman”: Chemistry as a public science
   in the Scottish Enlightenment 11
   Chemistry as an academic discipline 13
   Gentlemanly science in the public realm 25
   The social construction of the Scottish program 37
3  Joseph Priestley and the English Enlightenment
   The uses of chemistry in Enlightenment England 50
   Making connections: Priestley’s career 63
   The experimenter and the writer 77
4  Airs and their uses
   Priestley’s chemistry in public education 91
   The birth of pneumatic medicine 105
   The analysis of air 117
5  The coming of the Chemical Revolution
   Lavoisier’s theory and its reception in Britain 129
   The instruments of persuasion 137
   Demonstration, authority, and community 145
6  “Dr. Beddoes’s Breath”: Nitrous oxide and the
   culmination of Enlightenment medical chemistry 153
   The Pneumatic Institution 157
   Enthusiastic respirations: The nitrous oxide incident 166
   The end of Enlightenment science? 176
7  Humphry Davy: The public face of genius
   Davy’s career: The creation of a public audience 188
   The voltaic pile: The making of an instrument 203
   Chlorine and “the lever of experiment” 218
CONTENTS

8 Analysis, education, and the chemical community 236
   Specialist careers in the London chemical community 238
   The identity of the discipline and the reception of
   Dalton’s atomic theory 255
   Mineralogy and the development of chemical analysis 269
   Conclusion: Discipline-formation and public science 283

Bibliography 289
Index 323