



From Atoms to Molecules

Studies in the History of Chemistry from the 19th Century

Colin A. Russell, The Open University and the University of Cambridge, UK

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The focus of this volume by Professor Russell is the history of organic chemistry, which arose improbably out of early speculations about the construction of chemical compounds, and in particular their electrochemical nature. The rise of electrochemistry and the work of Berzelius were critical in this regard, and receive much attention in the first few chapters in this book. Aspects of the contributions of Frankland (fully explored elsewhere) and those of Kekulé and Hofmann are considered, together with the miscellaneous functions of organic synthesis and the origins of conformational analysis. Questions of chemical organisation are germane to the whole sequence of events and are briefly summarized before the whole last hundred years of organic chemistry are placed in historical perspective.

Contents

Preface; 'Rude and disgraceful beginnings': a view of the history of chemistry from the 19th century; The electrochemical theory of Sir Humphry Davy - I: the voltaic pile and electrolysis; II: Electrical interpretations of chemistry; II: The evidence of the Royal Institution manuscripts; The electrochemical theory of Berzelius - I: origins of the theory; II: An electrochemical view of matter; Berzelius and the development of the atomic theory; Introduction to *Essai sur la Théorie des Proportions Chimiques et sur l'influence Chimique de l'Électricité*, by J.J. Berzelius; Chemistry on the edge of Europe: growth and decline in Sweden; The archives of Sir Edward Frankland: resources, problems and methods; Chemical techniques in a pre-electronic age: the remarkable apparatus of Edward Frankland; Kekulé and Frankland: a psychological puzzle?; Early concepts of aromatic substitution; August Wilhelm Hofman, cosmopolitan chemist; The changing role of synthesis in organic chemistry; The origins of conformational analysis; Advances in organic chemistry over the last 100 years; Chemical bonds 1841-1991: 150 years of the British chemical community; Index.

About the Author

Professor Colin A. Russell, The Open University and the University of Cambridge. UK

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