



## The Quest for the Invisible

Microscopy in the Enlightenment

Marc J. Ratcliff



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May 2009

332 pages

978-0-7546-6150-4

Includes 34 b&w illustrations and 6 line drawings

234 x 156 mm

Hardback

\$134.95



The eighteenth century has often been viewed as a period of relative decline in the field of microscopy, as interest in microscopes seemed to wane after an intense period of discovery in the seventeenth century. As such, developments in the field during the Enlightenment have been largely overlooked. This book therefore fills a considerable gap in the study of this life science, providing a thorough analysis of what the main concerns of the field were and how microscopists learned to communicate with each other in relevant ways in order to compare results and build a new discipline.

Employing a substantial body of contemporary literature from across Europe, Marc J. Ratcliff is able to present us with a definitive account of the state of research into microscopy of the period. He brings to light the little known work of Louis Joblot, re-evaluates the achievements of Abraham Trembley and gives new weight to Otto-Friedrich Müller's important contributions. The book also connects changes in instrument design to an innovative account of microscopical research during the eighteenth century and the rich social networks of communication that grew during this period. Investigating the history of microscopical research from 1680 up to 1800 also shows how scholars progressively established a modern rule on which to shape their new discipline: balancing microscopical magnification with shared vision. This rule developed in response to the diminishing size of the microscopical object during the course of the eighteenth century, from dry minute organisms such as insects, to aquatic minute bodies such as polyps, and finally to aquatic invisible organisms, thus completing the scholar's quest to study the invisible.

This book will be essential reading for historians of microscopy, epistemologists, and for historians of the life sciences in the modern period.

### Contents

Introduction: reasons for a new historiography; Part 1 The Definition of Good Microscopical Objects 1680-1740: Production and visibility of microscopes in the first half of the 18th century; The study of animalcules at the turn of the 18th century; Insects, hermaphrodite and ambiguity. Part 2 The Break with the Past 1740-1760s: Towards marketing strategies for the microscope in the second half of the 18th century; Abraham Trembley, the polyp and new directions for microscopical research; The disputes over authority and microscopical observations. Part 3 Infusoria and Microscopical Experiments: The True Invisible Objects 1760s-1800s: The quantifying spirit in microscopical research and 'keeping up' with invisible objects; The emergence of the systematics of infusoria; From spontaneous generation to the limits of life: the microscopical experimentalist research from the 1760s to 1800; Conclusion; Bibliography; Indexes.

### About the Author

Marc J. Ratcliff is based at the University of Geneva, Switzerland. In 2005 he won the History of Science Society Derek Price/Rod Webster Award for a paper on Abraham Trembley published in *ISIS*. He is currently working on twentieth-century psychology.

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