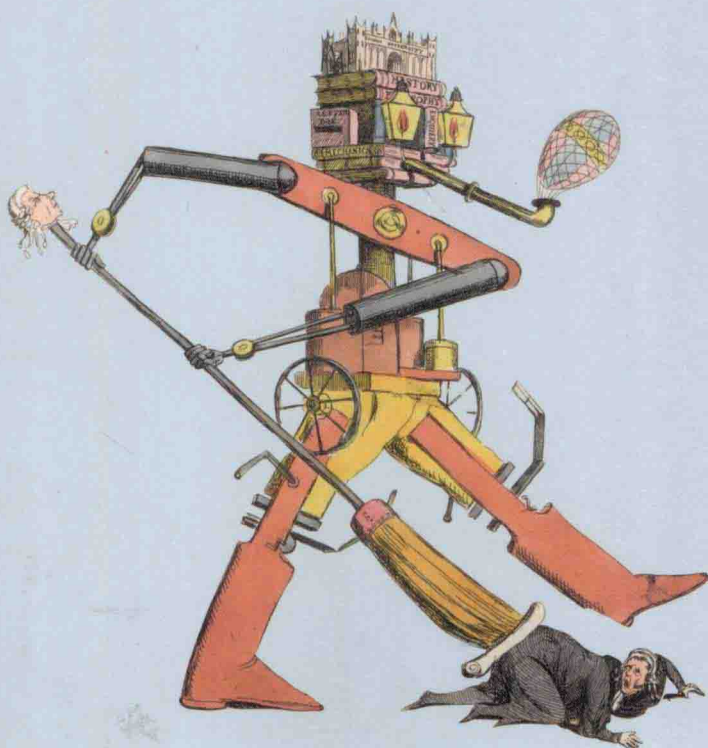


VISIONS OF SCIENCE

Books and Readers at the Dawn of the Victorian Age



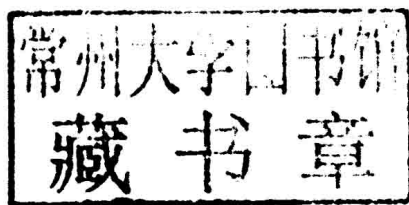
JAMES A. SECORD

VISIONS OF SCIENCE

*Books and Readers at the Dawn
of the Victorian Age*



JAMES A. SECORD



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JAMES A. SECORD is professor in the Department of History and Philosophy of Science at the University of Cambridge, director of the Darwin Correspondence Project, and a fellow at Christ's College. He is the author of *Victorian Sensation: The Extraordinary Publication, Reception, and Secret Authorship of "Vestiges of the Natural History of Creation,"* also published by the University of Chicago Press.

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VISIONS OF SCIENCE

For Anne

PREFACE

When we imagine the future, we think about science. In this book, I suggest that this distinctive way of projecting what the novelist H. G. Wells later called 'the shape of things to come' first became widespread during the upheavals of the early industrial era in Britain, and especially in the turbulent decade around 1830. During these years, science was changing from a relatively esoteric pursuit into one known to have profound consequences for the everyday life of all men and women. A key feature of this transformation was the flourishing of books reflecting on the practices and prospects of science. These books range from polemics about national decline to overviews of the unity of knowledge. Among a host of potential titles I have selected seven of the most important. These works have long been celebrated within particular disciplines, but the significance of the utopian moment that produced them has been forgotten. They were not just accessible versions of specialist research, what we pigeonhole today as 'popular science'. Rather, these books offered comprehensive perspectives on science and its meaning for human life, at a moment when the first industrial nation appeared on the brink of revolution.

At this extraordinary juncture, the country confronted the prospect of a greatly expanded reading public. Reading had the potential to define the character of the nation. Who should read what, and towards what end, was fiercely debated. What would hold a reformed political order together? How were people to define their identity in an era that looked likely to be dominated by global commerce, a

class-based society, and life in cities? These questions would come to be asked throughout the world wherever traditional societies faced the challenges of the new order of industry and empire. For many readers, the answers were to be found in books about science. The heroes of my story are these books and their readers.

As a book about books, *Visions of Science* is first and foremost indebted to libraries and librarians. An invitation from Anne Jarvis and Jill Whitelock of Cambridge University Library to deliver the Sandars Lectures in Bibliography for 2013 gave shape to the project. The opportunity offered by David McKitterick to contribute to *The Cambridge History of the Book in Britain* (2009) made it possible to develop some of my ideas. I wish especially to thank Anna Jones and Tim Eggington of the Whipple Library, as well as Dawn Moutrey and Steve Kruse for help with images. The staff of the University Library in Cambridge has been uniformly helpful over many years, particularly those in Special Collections, as have librarians at the National Library of Scotland, the British Library, the Bodleian Library, and the Library of the Royal Society of London.

I am grateful to colleagues, students, and staff in the Department of History and Philosophy of Science at Cambridge both for intellectual stimulus and generous provision of leave. I am also deeply indebted to my colleagues on the Darwin Correspondence Project, particularly Alison Pearn, for making it possible for me to finish this book. This work has been enriched by my participation in the Past versus Present project of the Cambridge Victorian Studies Project and the Generation to Reproduction Project, funded respectively by the Leverhulme Trust and the Wellcome Trust. I am also grateful to Gareth Stedman Jones and Inga Huld Markan for an invitation to contribute to the seminar series on History and Economics at Cambridge, and to Eileen Gillooly and Jonah Cardillo for the opportunity to speak to the Society of Fellows at Columbia University.

PREFACE

My knowledge of the apocalyptic image of the 'March of Intellect' comes from Alison Winter, who long ago convinced me to think about this period in a fresh light. Jan Golinski, Ralph O'Connor, and Clare Pettitt provided critical readings of chapters. Over many years I have benefited from conversations with Simon Schaffer, Jack Morrell, Nick Hopwood, Adrian Desmond, Aileen Fyfe, Bernard Lightman, Adelene Buckland, Katharine Anderson, Gillian Beer, Duncan Bell, Jane Munro, Martin Rudwick, Mary Beard, Evelleen Richards, Boyd Hilton, Peter Mandler, Simon Goldhill, Paul White, John van Wyhe, and Richard Yeo. A special thanks goes to Jon Topham, whose unparalleled knowledge of science and medical publishing in this period has transformed my understanding. I am grateful for the bracing criticisms and helpful suggestions of the academic referees for Oxford University Press, and to Karen Darling and the University of Chicago Press for their interest in the book. Working with my editor, Latha Menon, and the team at Oxford has been a pleasure throughout.

Through her critical insights and constant encouragement, Anne has shaped every aspect of this book: she is my best reader.

LIST OF PLATES

1. 'The Century of Invention'. Wellcome Library, London.
2. 'Patent Penny Knowledge Mill'. © Science Museum / Science & Society Picture Library—All rights reserved.
3. 'The March of Intellect'. Courtesy of The Lewis Walpole Library, Yale University.
4. 'The March of Intellect'. © The Trustees of the British Museum.
5. 'Modern Style of Language'. © The Trustees of the British Museum.
6. 'Calves' Heads and Brains: Or a Phrenological Lecture'. © The Trustees of the British Museum.
7. 'Toe-tology—versus—Phrenology'. Wh. 6033. Reproduced by permission of the Whipple Museum of the History of Science, University of Cambridge.
8. 'A Flint'. © Science Museum / Science & Society Picture Library—All rights reserved.
'The Tailor'. Author's collection.

CONTENTS

<i>Preface</i>	viii
<i>List of Figures</i>	xi
<i>List of Plates</i>	xiii
 Introduction	 1
1. Fantastic Voyages: Humphry Davy's <i>Consolations in Travel</i>	24
2. The Economy of Intelligence: Charles Babbage's <i>Reflections on the Decline of Science in England</i>	52
3. The Conduct of Everyday Life: John Herschel's <i>Preliminary Discourse on the Study of Natural Philosophy</i>	80
4. Mathematics for the Million? Mary Somerville's <i>On the Connexion of the Physical Sciences</i>	107
5. A Philosophy for a New Science: Charles Lyell's <i>Principles of Geology</i>	138
6. The Problem of Mind: George Combe's <i>Constitution of Man</i>	173
7. The Torch of Science: Thomas Carlyle's <i>Sartor Resartus</i>	205
Epilogue	236
 <i>Chronology</i>	 247
<i>Further Reading</i>	251
<i>Abbreviations</i>	253
<i>Endnotes</i>	254
<i>Bibliography of Works Published after 1900</i>	282
<i>Index</i>	293

LIST OF FIGURES

1. 'Order is Heaven's First Law', from <i>The Real Constitutional House</i> . CUL: Pam.5.81.96. Reproduced by permission of the Syndics of Cambridge University Library.	7
2. 'A Box of Useful Knowledge'. Wh. 5337. Reproduced by permission of the Whipple Museum of the History of Science, University of Cambridge.	12
3. 'The Transparency', from the <i>Political Showman</i> . CUL: Pam.5.82.61. Reproduced by permission of the Syndics of Cambridge University Library.	13
4. Applegarth and Cowper printing machine. Reproduced by permission of the Syndics of Cambridge University Library.	15
5. 'Pursuit of Knowledge under Difficulties'. Courtesy of The Lewis Walpole Library, Yale University.	18
6. Vignette from Volney's <i>The Ruins</i> . Author's collection.	31
7. <i>Proteus anguinus</i> . CUL: XIX.17.49. Reproduced by permission of the Syndics of Cambridge University Library.	34
8. 'Babbage's Difference Engine'. Author's collection.	54
9. Herschel's <i>Preliminary Discourse</i> . Author's collection.	86
10. 'The Cut Celestial'. © The Trustees of the British Museum.	98
11. 'Philosophy' and 'Physics'. Author's collection.	99

LIST OF FIGURES

12.	Pages from the Library of Useful Knowledge and Somerville's <i>Mechanism of the Heavens</i> . Author's collection.	118
13.	Somerville's <i>Connexion of the Physical Sciences</i> . Author's collection.	120
14.	Lyell's theory of climate. CUL: Ant.c.48.152. Reproduced by permission of the Syndics of Cambridge University Library.	148
15.	'Awful Changes'. Henry Thomas de la Beche (1796–1855) // Wikipedia Commons.	150
16.	Lyell's <i>Principles of Geology</i> . Whipple Library: STORE 116.3. Reproduced by permission of the Whipple Library, University of Cambridge.	163
17.	Names of the phrenological organs. Author's collection.	175
18.	Combe's <i>Constitution of Man</i> in flames. Reproduced courtesy of the British Library.	189
19.	The 'People's Edition' of the <i>Constitution of Man</i> . Author's collection.	193
20.	The time ball at the Royal Observatory. CUL: Q420.d.74. Reproduced by permission of the Syndics of Cambridge University Library.	213
21.	Nairne's electrical machine. Whipple Library: STORE 212: 62. Reproduced by permission of the Whipple Library, University of Cambridge.	217
22.	'Hungerford Market'. CUL: T900.d.22.5. Reproduced by permission of the Syndics of Cambridge University Library.	218
23.	Pascal's 'Machine arithmétique'. Oeuvres de Blaise Pascal, Chez Detune, La Haye / Wikipedia Commons.	223

Introduction

We are assembled here in performance of our part of a process...
on which it is no exaggeration to say, that the future destinies of this
empire will very mainly depend.

—John Herschel, 'An Address to the Subscribers of the Windsor
and Eton Public Reading Room', 1833

On the evening of 29 January 1833, the astronomer John Herschel addressed a meeting in the Christopher Inn on the high street of Eton, a village on the outskirts of London. The only son of the planetary discoverer William Herschel, he was already a celebrated man of science in his own right. Herschel was speaking as President of the Windsor and Eton Public Library and Reading Room, which had been recently founded to spread the cost of books to the local community. Those at the meeting had just agreed to offer a reduced subscription for 'industrious' readers, but Herschel urged his listeners to go further by providing a free selection of books to even their poorest neighbours. The universal spread of reading, Herschel believed, provided the best hope for raising 'the standard of moral and intellectual culture in the mass of the people', which would in turn lay the foundations for progress, civil liberty, and national unity.¹

Fewer than a hundred heard Herschel speak in the old coaching inn, but his words were soon published and quoted across the world. This was a utopian moment, for nothing less than the future of

civilization appeared at stake. During the previous decade Britain had come as close to revolution as it had at any point since the seventeenth century, with mass demonstrations over the right to vote, the removal of restrictions on religious minorities, and the replacement of human labour by machines. The Reform Act, to which Herschel alluded in his speech, had passed through Parliament in June 1832, clearing away the worst abuses of the old political system. But the reform debates had revealed a nation on the edge of an abyss, with riots, arson, and machine-breaking. Preachers foretold the approaching end of the world from pulpits, and philosophers characterized the ‘spirit of the age’ in weekly magazines. Herschel’s quiet and considered remarks were part of this prophetic literature, as he looked forward to a future when the lessons of great literature—rather than religious or political dogma—would guide public debate. Readers could start with Miguel de Cervantes’ *Don Quixote* or Samuel Richardson’s *Pamela*, and, thus prepared, could move on to the ‘higher’ realms of poetry, history, and philosophy.

The sciences, increasingly seen as a touchstone of rational endeavour, had a uniquely important role to play in this new order. This was brought out at a subsequent meeting of the Windsor and Eton subscribers by the publisher Charles Knight, who from local origins as a printer in Windsor had become the nation’s leading purveyor of inexpensive non-fiction works. As Knight stressed, the spread of this kind of ‘useful knowledge’ would provide readers of all classes with a standard for measuring the words of demagogues, gossips, and politicians.² During the late 1820s and early 1830s, men like Herschel and Knight were at the forefront of a movement that stressed the reading of science as a remedy for the country’s social, political, and religious malaise. Conversation about science pervaded elite society, new institutions for practising and disseminating knowledge were founded, and hundreds of thousands of men and women paid a penny a week