

AUTUMN BOOKS



ILLUSTRATIONS BY JONATHAN BURTON

Reassessing the father of chemistry

Robert Boyle's character is often obscured by the shadow of Isaac Newton, but a masterful biography reveals him as larger than life, explains **Peter Anstey**.

Boyle: *Between God and Science*

by Michael Hunter

Yale University Press: 2009. 400 pp.
£25, \$55

In the latter half of the seventeenth century, Robert Boyle (1627–91) was the leading natural philosopher in Britain. Yet although historians have been piecing together a more-detailed profile of him in the past three decades, his popular image extends little beyond the law that bears his name and his most famous publication, *The Sceptical Chymist*. As

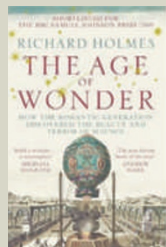
with his contemporaries Robert Hooke and Christiaan Huygens, Isaac Newton's shadow has obscured our view of Boyle. But previous biographers must share the blame for Boyle's faded image, not least the first, Thomas Birch. Writing in the 1740s with his collaborator Henry Miles, Birch removed letters and whole unpublished works from Boyle's papers in order to perpetuate the anodyne image that suited the polite tastes of the day.

Nevertheless, there is no paucity of material with which a biographer can work. Indeed, the most impressive feature of biographer Michael Hunter's *Boyle* is the meticulous care

with which he has combed the vast quantity of published and unpublished materials — including portraits, printed images and medallions — relating to Boyle's life. Hunter masterfully interweaves the narrative of Boyle's intellectual development and scientific achievements with a measured assessment of Boyle's diffident, even convoluted, personality.

The tale begins with Boyle's domineering and ambitious father, Richard, the Earl of Cork, and moves through his infancy, childhood and Eton school years. Then follows his Grand Tour of Europe, on which Boyle had seminal experiences that were to shape his earnest Christian

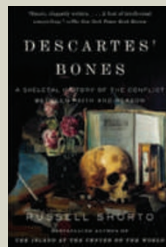
NEW IN PAPERBACK



The Age of Wonder: How the Romantic Generation Discovered the Beauty and Terror of Science

by Richard Holmes (Harper Press, £9.99)

This award-winning book explores links between science and Romanticism around the start of the 1800s. "To guide readers through the science and culture of this period, Holmes masterfully dips in and out of the life of Joseph Banks," wrote David Bodanis in his review of the hardback edition (*Nature* **457**, 31–32; 2009).



Descartes' Bones: A Skeletal History of the Conflict Between Faith and Reason

by Russell Shorto (Vintage Books USA)

Russell Shorto interweaves the fate of philosopher René Descartes' bones with a narrative of Cartesian philosophy and beliefs, also exploring "the history of the uncomfortable relationship between Catholicism and Cartesianism", wrote Lisa Jardine (*Nature* **455**, 863–864; 2008).

faith and his early intellectual trajectory, and from which he emerged as a precocious adolescent.

Perhaps surprisingly, Boyle's first exploits as a writer were directed to moral and devotional topics. But at the age of 22 he was "transported and bewitch'd" by experimental chemistry and never looked back. So began a life dedicated to the study of nature: a life that was funded by the substantial means he inherited from his father, and that is epitomized in the title of his popular later work *The Christian Virtuoso*.

The most compelling chapters in Hunter's narrative cover Boyle's time in Oxford from the winter of 1655–56 and his emergence, in the early 1660s, as a celebrated public figure and emblem of the early Royal Society. These years were his most productive, both in terms of experimental results and written output: from 1660 to 1666, he published a dozen books at an average of 140,000 words per year. Other works took shape in this period, emerging in later decades; and still others have only recently been unearthed and published in the definitive 14-volume *The Works of Robert Boyle* (Pickering and Chatto, 1999–2000), of which Hunter is an editor.

In his publications, Boyle introduced a new and distinctive natural philosophy called corpuscularianism. He also stressed the interplay of theory and experiment in the construction of natural histories, an approach that was to dominate British science for four decades. However, most significant was the series of innovative experiments Boyle performed with his air-pump, J-tube and long pipette. Through the clever manipulation of air and mercury and with careful measurement, he established that the pressure of the air is inversely proportional to its volume. Furthermore, he solved the long-standing problem in animal physiology as to the cause of air entering the lungs in respiration: there is a differential in air pressure between the expanded lungs and the atmosphere.

Yet there is more to Boyle than the careful experimenter. Hunter shows how in the eyes of his contemporaries, from the royal court to savants abroad, Boyle was a larger-than-life character. This stemmed in part from his

overt religiosity, his reputation for professional integrity and his understated philanthropy. But it is the inner Boyle whom Hunter is most concerned to explore: Boyle the doubter, the vacillator, the stuttering and conscience-stricken man revealed in private notes written near the end of his life. Hunter displays fascination and impartiality, even wavering respect, but in the final analysis it is not clear that he really likes Boyle. However, the biographer shows maturity

by leaving the reader latitude to make up their own mind about what made Boyle tick.

This first comprehensive work on the life of Boyle is a piece of stunning scholarship, a command performance by a gifted historian. It is also a great read. ■

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Capturing digital lives

Total Recall: How the E-Memory Revolution Will Change Everything

by Gordon Bell and Jim Gemmell
Dutton: 2009. 304 pp. \$26.95

Delete: The Virtue of Forgetting in the Digital Age

by Viktor Mayer-Schönberger
Princeton University Press: 2009.
256 pp. \$24.95

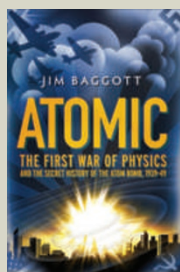
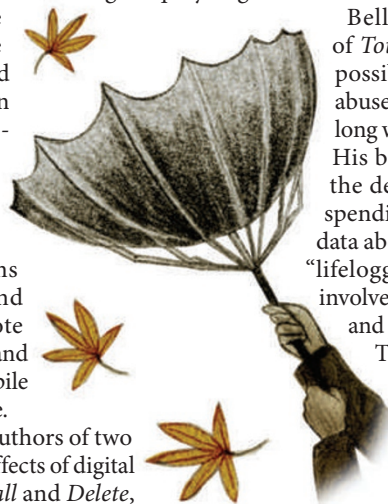
We are entering an era of unprecedented digital power. Thanks to the diminishing cost of digital storage and the increasing ubiquity of digital devices, the day is coming when we will be able to record almost every interaction we have. Digital microphones will capture our brief encounters with strangers; cameras will snap automatically as we enter new rooms or browse the web. And somewhere on a remote server farm, the images and sounds of our lives will pile up in a massive database.

On this at least, the authors of two books about the social effects of digital data storage, *Total Recall* and *Delete*,

agree. Where they differ is in what they think will happen next. Pioneering computer scientist Gordon Bell and his Microsoft colleague Jim Gemmell take a libertarian view in *Total Recall*. Digital media will free us to dip back into the past at will, they argue. Equipped with information that our brains may have lost, we will act more effectively as individuals in every part of our lives. In *Delete*, by contrast, information-policy expert Viktor Mayer-Schönberger believes people and technologies are inextricably woven into the fabric of institutions. Records of our personal data could easily make us vulnerable to the predations of governments and corporations, he warns.

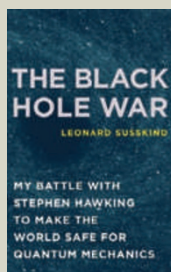
Bell, the first-person narrator of *Total Recall*, acknowledges the possibility that malefactors might abuse our information, but this is a long way from his primary concern. His book is largely a chronicle of the delight he has experienced in spending the past decade gathering data about himself, a process he calls "lifelogging". At the beginning, this involved simply scanning documents and photographs onto a hard drive.

Then he began to look for ways to capture his experiences as they happened. In 2001, this resulted in the birth of the MyLifeBits project at Microsoft Research. Bell's team,



Atomic: The First War of Physics and the Secret History of the Atom Bomb, 1939–49

by Jim Baggot (Icon Books, £9.99)
Vividly written and impressively researched, *Atomic* covers the efforts of scientists and spies in the United States, Britain, the USSR and Nazi Germany to develop their own atomic weapon. Drawing on material including declassified British secret-service transcripts and documents from Soviet archives, this is a thorough but engaging account of the race to build the atomic bomb.



The Black Hole War: My Battle with Stephen Hawking to Make the World Safe for Quantum Mechanics

by Leonard Susskind (Little, Brown, £12.99)
Leonard Susskind charts his long conflict with Stephen Hawking over the fate of information in a black hole. Paul Davies's review noted it "skilfully explains the subtleties of the physics that underlie the issue, and includes anecdotes to enliven the technical details." (*Nature* 454, 579–580; 2008.)