

Aluminium, for example, was first named aluminum by Humphry Davy, who repeatedly tried to isolate it from its oxide, alumina. He followed the naming precedents set by platinum, molybdenum and tantalum. Then, in 1812, an anonymous reviewer of Davy's book *Elements of Chemical Philosophy* insisted on a name that sounded more "classical" — aluminium. Nonetheless, when use of the metal took off in the United States at the end of the nineteenth century, Americans plumped for the version that omits the letter 'i'. Not even the US literary critic H. L. Mencken could work out why in his 1919 book *The American Language*.

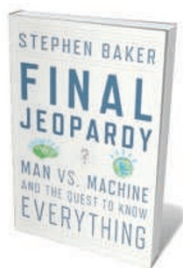
Aluminium enjoyed a brief mid-century vogue as a precious metal before the invention of the electrolytic separation process in 1886, still used today, which extracts it from bauxite (named after Les Baux in Provence, France, where the ore was found). In 1855, a French chemist, Henri Sainte-Claire Deville, managed to extract the metal by heating anhydrous aluminium chloride with sodium. But this was hugely expensive. His ingots — worth a dozen times more than silver — were admired at the Paris Universal Exposition of 1855 by Emperor Napoleon III of France, who offered financial support to Deville. Such was the metal's rarity that a renowned goldsmith, Christofle, made hand-crafted aluminium jewellery and tableware, which was favoured at imperial banquets, and an aluminium rattle was given to the emperor's newborn son. Chemical elements, *Periodic Tales* emphasizes, can go in and out of fashion. Think of what happened to chromium plating.

Almost every page yields a nugget. The difficulty, however, is to find order and meaning. Aldersey-Williams settles for five sections, divided into chapters on one element or a group such as the halogens. 'Power' includes gold, iron, carbon, plutonium and mercury; 'Fire' includes sulphur, phosphorus, chlorine, oxygen and radium; 'Craft' — tin, silver, copper, aluminium and calcium; 'Beauty' — chromium, arsenic, vanadium, antimony and neon; and finally 'Earth', encompassing the rare earth elements and some other, less familiar ones. This division is workable, but I query some choices. Gold, for instance, surely belongs as much in 'Craft' and in 'Beauty' as in 'Power'. It also seems odd to omit a chapter on silicon, given its starring role in electronics.

That said, the book is imaginative and fun. Who can resist the information that an unofficial Dutch spectroscopic analysis of the five-euro banknote shows it to be impregnated with an anti-counterfeiting ink containing a little-known rare earth element — europium. ■

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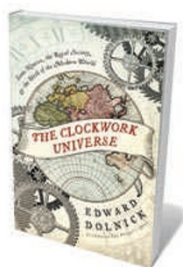
## Books in brief



### Final Jeopardy: Man vs. Machine and the Quest to Know Everything

Stephen Baker HOUGHTON MIFFLIN HARCOURT 288 pp. \$24 (2011)

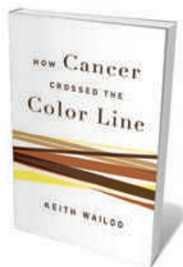
For the past year, IBM researchers have been building a robot clever enough to compete in the US television quiz show *Jeopardy!* In mid-February, viewers in the United States will be able to watch a real contest between man and machine, when two previous winners take on the drone. Technology writer Stephen Baker describes in his book how artificial-intelligence researchers constructed the robot and the challenges they faced in getting 'Watson' to understand language, spot puns and recall general knowledge.



### The Clockwork Universe: Isaac Newton, the Royal Society, and the Birth of the Modern World

Edward Dolnick HARPER 400 pp. \$27.99 (2011)

From a modern perspective, seventeenth-century science can appear strange. Rational descriptions of a clockwork Universe sat happily beside belief in omens, alchemy and the devil. By portraying the lives and discoveries of Johannes Kepler, Galileo Galilei, Isaac Newton and Gottfried Leibniz, science writer Edward Dolnick fleshes out these contradictions in the thinking of the time. Emphasizing their social relationships and collaborations, he also brings to life the network of the Royal Society in London.



### How Cancer Crossed the Color Line

Keith Wailoo OXFORD UNIVERSITY PRESS 264 pp. \$27.95 (2011)

Cancer awareness and treatment have a strong socio-political element. Attitudes to race have influenced cancer concerns throughout the twentieth century in the United States, finds historian Keith Wailoo in his study of medical, cultural and sociological factors around the illness. From being an affliction that was mainly associated with white women, cancer has crossed cultural boundaries. But race, class and gender issues linger, for example in reports of high rates of breast cancer in affluent parts of California and in the poor health outcomes for black men with prostate cancer.



### Discoverers of the Universe: William and Caroline Herschel

Michael Hoskin PRINCETON UNIVERSITY PRESS 272 pp. \$29.95 (2011)

With the help of his sister Caroline, the eighteenth-century German-British astronomer William Herschel discovered the planet Uranus, revealed infrared radiation and coined the term asteroid. In this joint biography, written with the cooperation of the Herschel family, historian of astronomy Michael Hoskin portrays the siblings' shared passion for the night sky, and the triumphs and pitfalls of their work. Using an amateur telescope, the pair charted thousands of stars and nebulae in catalogues that are still used today. Caroline's role as one of the first professional women astronomers is also recognized.



### Life in a Shell: A Physiologist's View of a Turtle

Donald C. Jackson HARVARD UNIVERSITY PRESS 192 pp. \$29.95 (2011)

Over 200 million years of existence, turtles have shared the planet with dinosaurs, witnessed the diversification of mammals and seen the spread of humans. Physiologist Donald Jackson conveys his love of the reptile in his book. He explains how its slow movements help it to survive winters under ice and describes how its shell functions as a home, armour and a buoyancy aid. By focusing on the physiology of this one familiar beast, he also reveals how scientific understanding evolves by building on the work of others.