

conferred a sense of power on the solver. This, he felt, enabled them to analyse any subject clearly and, most important, to detect and unravel fallacies. In this vein, Carroll puns about other knots in *Alice's Adventures in Wonderland*. In Chapter 3, for instance, the Mouse responds to Alice's comments that he had got to the fifth bend in his tale (which appears on the page as a serpentine, tail-shaped paragraph) by crying, "I had not!" Carroll's ever-curious adventurer misunderstands amusingly: "A knot!" said Alice, always ready to make herself useful, and looking anxiously about her. "Oh, do let me help to undo it!"

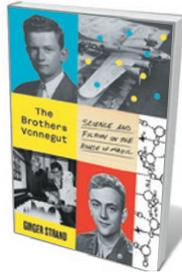
Carroll was, of course, a devotee of word-play, as almost any page of *Alice's Adventures* and *A Tangled Tale* reveals. A fan of acrostics, Carroll dedicated the latter — published in book form in 1885 — to his friend and pupil, the 19-year-old Edith Rix, in the form of a poem that spells her name out in the second letter of each line:

*Beloved Pupil! Tamed by Thee,  
Addish=, Subtrac=, Multiplica=tion,  
Division, Fractions, Rule of Three,  
Attest thy deft manipulation!*

*Then onward! Let the voice of fame  
From Age to Age repeat thy story,  
Till thy hast won thyself a name  
Exceeding even Euclid's glory!*

In the last decades of his life, Carroll published three mathematical pieces in *Nature*. The first, on a method for finding the day of the week for any date (L. Carroll *Nature* 35, 517; 1887), reflects the ▶

## Books in brief



### The Brothers Vonnegut: Science and Fiction in the House of Magic Ginger Strand FARRAR, STRAUS AND GIROUX (2015)

Kurt Vonnegut, beloved troublemaker and science-fiction novelist, famously studied chemistry — but it was his brother Bernie who shone in the field. In this engrossing cultural history, Ginger Strand traces the brothers' intellectual development during the Second World War and its chill aftermath. Military interest led Bernie to research silver iodide as a trigger for cloud seeding at General Electric, and Kurt's horrifying experiences in combat inspired his inimitable fiction. Strand shows how both men, by calling in different ways for progress to be decoupled from conflict, revealed a rare integrity.



### Thunder & Lightning: Weather Past, Present, Future

Lauren Redniss RANDOM HOUSE (2015)

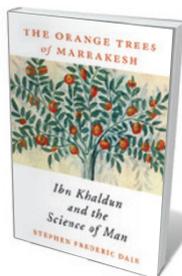
Writer and artist Lauren Redniss's *Radioactive* (It Books, 2010; see G. Frazzetto *Nature* 469, 29; 2011) was a beautiful tour de force, meshing superb illustrations with an original telling of the lives of Marie and Pierre Curie. Now, in another aesthetically charged and deeply researched account, Redniss takes on meteorology. Here are phenomena from fog to cyclones; cloud types (a series of nebulous 'portraits'); the sensory appreciation of weather, such as Benjamin Franklin's air bathing, or snowfall's "muffled quietude" — and more. A wild rainstorm of a book, pelting the reader with ideas and inspiration.



### Fallen Glory: The Lives and Deaths of Twenty Lost Buildings from the Tower of Babel to the Twin Towers

James Crawford OLD STREET (2015)

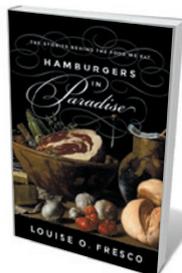
This multiple biography of vanished monoliths is itself monolithic, wending its way from Iraq to Manhattan and beyond. Standouts in the narratives built by writer James Crawford include the Tower of Babel, looming in manifestations from Mesopotamian Emperor Nebuchadnezzar's vast ziggurat Etemenanki to Pieter Bruegel the Elder's exquisite and disturbing 1563 painting. The Bastille, Roman Forum, Berlin Wall — all eloquently fall, along with New York's Twin Towers in the hideous events of 2001. My only quibble? No index.



### The Orange Trees of Marrakesh: Ibn Khaldun and the Science of Man

Stephen Frederic Dale HARVARD UNIVERSITY PRESS (2015)

Six centuries ago, a Tunisian scholar created a new mirror for humankind. In his masterwork *Muqaddimah*, Ibn Khaldun (1332–1406) became the first person to approach history scientifically, by analysing social, economic and political evidence to reveal cycles of societal change. In this sober study, historian Stephen Frederic Dale argues that Ibn Khaldun's work is a key milestone on the road from Greek to Enlightenment thought, chiming with the radical reasoning of philosophers such as Montesquieu and Adam Smith.



### Hamburgers in Paradise: The Stories Behind the Food We Eat

Louise O. Fresco (transl. Liz Waters) PRINCETON UNIVERSITY PRESS (2015)

Behind the whimsical title is a serious cultural history of food, newly translated from Dutch. Plant scientist Louise Fresco, a former assistant director-general of the Food and Agriculture Organization of the United Nations, argues that the trope of paradise as effortless abundance permeates humanity's tortured relationship with the edible. Her comprehensive trawl through biotechnology, supply chains and more concludes that — given more research and effort — a real paradise of plenty is within reach. **Barbara Kiser**

ILLUSTRATION BY JOHN TENNIEL FROM ALICE'S ADVENTURES IN WONDERLAND (MACMILLAN, 1995)



Alice's circular conversation with the Caterpillar is a gem of semantic wordplay.