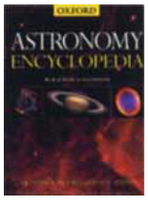
Books

A selection of new and notable books of scientific interest

ASTRONOMY ENCYCLOPEDIA: An A–Z Guide to the Universe

PATRICK MOORE, ED.

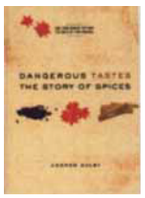
More than 3,000 entries pack this oversized, richly illustrated volume that also features colorful photos, descriptive diagrams, and star maps. Virtually every aspect of astronomy, from adaptive optics to cold dark matter, is defined clearly and succinctly. Where needed, entries are quite substantive, carrying on for several paragraphs. The text spans the history of astronomy, from the field's origins to the present era of orbiting telescopes. ***OUP, 2002, 456 p., color/b&w photos/illus., hardcover, $50.00.***



DANGEROUS TASTES: The Story of Spices

ANDREW DALBY

The quest for spices is inexorably linked to the development of global trade and exploration. Dalby profiles individual spices and aromatic botanicals, including the contribution of each to human history. Readers learn, for example, how Greeks and Romans came to crave ginger, which originated in southeast China. Dalby provides background information for each spice, including where it was first used, how it initially fit into that region's culture, and how it came to be exported to other lands. Originally published in hardcover in 2000. ***U CA Pr, 2002, 184 p., paperback, $16.95.***



THE MILLENNIUM PROBLEMS: The Seven Greatest Unsolved Mathematical Puzzles of Our Time

KEITH DEVLIN

Just over 100 years ago in Paris, German mathematician David Hilbert challenged his colleagues to conquer the most significant unsolved math problems of the day. There were 23 on Hilbert's list, which shaped the course of mathematics and brought fame to those who solved them. By 2000, all but one had been cracked. That set the stage for a new challenge brought by the Clay Mathematics Institute. This group announced a prize of $1 million to be awarded for each solution of seven new problems now known as the Millennium Problems. Specifically, they are the Riemann hypothesis, which lingers from Hilbert's list, Yang-Mills theory and the mass gap hypothesis, the P Versus NP problem, the Navier-Stokes equations, the Poincaré conjecture, the Birch and Swinnerton-Dyer conjecture, and the Hodge conjecture. Devlin profiles each problem and offers insight into how it came about and its significance. ***Basic, 2002, 237 p., b&w illus., hardcover, $26.00.***

ENTANGLEMENT: The Greatest Mystery in Physics

AMIR D. ACZEL

Entanglement is one of science's most provocative ideas. It stems from the realm of quantum mechanics and holds that two particles may be very far apart—conceivably millions of miles away from each other—yet may be inexorably linked. If so, whatever happens to one particle immediately causes a change in the other. Albert Einstein was deeply troubled by entanglement, feeling that it was an incomplete and "spooky" idea. After all, if entanglement were a property of the universe and could be harnessed, then teleportation and other seemingly impossible processes could become realities. Aczel explains how entanglement came of age and was proved through physical experiments once considered undoable. He summons the work and words of physicists at the forefront of this field who aim both to understand how entanglement operates and to manipulate it to advance fields such as cryptography and computing. ***FWEW, 2002, 284 p., b&w plates, hardcover, $25.00.***

ROBOTS: Bringing Intelligent Machines to Life?

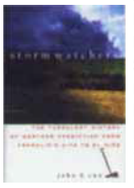
RUTH AYLETT

Although robots are inherently mechanical things, Aylett explains that researchers find themselves drawing on nature's own biomechanical innovations to change the way robots move, sense their environments, think, learn, and make decisions. She explains this through illustrated two-page spreads, each devoted to a robotics topic—such as smelling the world or determining locations. She also discusses obstacles confronting the robotics community, including the need for better energy sources and the fear that robots will supercede people. Recommended for age 12 and up. ***Barrons, 2002, 144 p., color photos/illus., hardcover, $23.95.***

STORM WATCHERS: The Turbulent History of Weather Prediction from Franklin's Kite to El Niño

JOHN D. COX

Through profiles of 30 pioneers in the field, Cox unravels the history of meteorology before the advent of high-tech machines that make highly accurate prediction possible. Readers learn about Benjamin Franklin's research on the Gulf Stream and the effects of volcanoes on atmospheric cooling and how expansion-minded government officials ignored John Finley's 19th-century warnings about of the wrath of tornadoes in the U.S. frontier. In the process of telling these individual stories, Cox relates tales of some of the most devastating weather events ever. He also discusses how the weather has influenced history, including how conflicting weather reports may have delayed the launch of D-Day during World War II. ***Wiley, 2002, 252 p., hardcover, $24.95.***



LETTERS

Hot mail

Regarding the article "What the mail must go through" (*SN: 8/31/02, p. 142*), I was shocked. Not by the findings but the resources that were wasted. I have been involved in the radiation sterilization of medical devices for 30 years. Yellowing and brittleness of cellulose materials is well known, as are discoloration and damage to many plastics. Computer chips, CDs, film, and video and audiotapes are usually rendered useless.

JAMES M. GIBSON JR., ODESSA, FLA.

As a former member of the Viking Meteorology Science Team, to me the concept of using irradiation to sterilize the mail, an expensive process, and allowing it to heat mail to more than 130°C appears ridiculous. I suggest that sterilization be discussed with some of my Viking colleagues to see if baking will suffice for this application.

JAMES E. TILLMAN, UNIVERSITY OF WASHINGTON, SEATTLE, WASH.

Pet theory

Rather than early exposure to pets preventing allergies ("Pet exposure may reduce allergies," *SN: 9/7/02, p. 157*), I suspect that families who have allergies may generally tend to avoid having pets in the home because they cause physical discomfort to allergy sufferers.

TERRY LEE, YERINGTON, NEV.

Arctic sneeze

Concerning "Arctic Sneeze: Greenlanders' allergies are increasing" (*SN: 9/7/02, p. 150*), why not explore the connection to much greater use of antibiotics, particularly in recent years, including by expectant mothers and very young children? Could not this factor negatively affect immature immune systems, leading to increases in allergic disorders in otherwise healthy people?

ROBERT C. WAGGONER, MOUNTAIN LAKES, N.J.

CORRECTION *As several scuba divers have informed us, exposure to 2 to 3 atmospheres of pressure, as described in "Into the Tank: Pressurized oxygen is best at countering carbon monoxide exposure"* (SN: 10/5/02, p. 214)*, isn't akin to being under 6 feet of water. Two atmospheres feels like submersion under 33 feet of water, and 3 atm, 66 ft.*

SEND COMMUNICATIONS TO:
Editor, Science News
1719 N Street, N.W., Washington, D.C. 20036
or editors@sciencenews.org
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