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American Heart Association Family Guide to Stroke: Treatment, Recovery, and Prevention—Louis R. Caplan, Mark L. Dyken, and J. Donald Easton. This text outlines short- and long-term effects, treatments, rehabilitation, and lifestyle and home changes for stroke survivors and their caretakers. Early chapters describe the warning signs of stroke, who's at risk, prevention measures, and what happens in the body during a stroke. Times Bks, 1994, 320 p., hardcover, \$23.00.

Designing the Molecular World: Chemistry at the Frontier—Philip Ball. Recognizing that chemistry is not considered one of the most glamorous sciences, Ball highlights the evolution of the field and describes the most exhilarating achievements in recent years and those to come, in hopes of lifting the shroud that seems to cover work in this area. He emphasizes that chemistry provides the building blocks for other sciences and points to groundbreaking achievements such as buckyballs and superconducting ceramics used for brain scanners to illuminate the role of chemistry in a broad range of disciplines. Princeton UPr, 1994, 376 p, b&w photos and illus. and color plates, hardcover, \$29.95.

Chaos Under Control: The Art and Science of Complexity—David Peak and Michael Frame. A physicist and a mathematician combine their expertise to cultivate an understanding of complexity, chaos, and fractals and the relationship of each to everyday life and various academic disciplines. Problems, puzzles, and hands-on experiments are sprinkled throughout the text, enhancing the comprehensibility of the material and encouraging participation among readers. WH Freeman, 1994, 408 p., color plates and b&w photos and illus., paperback, \$24.95.

Earthy Goods: Medicine-Hunting in the Rainforest—Christopher Joyce. At one time it was widely believed that rain forests harbored plants crucial to the pharmaceutical industry. These plants were regularly harvested by ethnobiologists, who became absorbed in the aboriginal cultures and learned the secrets of their shamans. During the 1970s, however, the larger pharmaceutical companies turned away from ethnobiologists and attempted to synthesize drugs in the laboratory. This chronicle recounts the past successes and failures of medicinal discoveries and the renewed faith of pharmaceutical companies in ethnobiologists, who in recent years have intensified the hunt for medicinal plants in declining rain forests. Little, 1994, 304 p., hardcover, \$23.95.

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How Buildings Learn: What Happens After They're Built—Stewart Brand. The creator of the *Whole Earth Catalog* exemplifies through photographs and lively text his thesis that architects do not always consider the changing needs of the residents of the buildings they design. This failure often leads to unsightly additions and changes in the original architecture. The author juxtaposes photographs and histories of numerous buildings that have aged gracefully with those of buildings that have not because of poor planning, inadequate funding, or legal problems. Brand's goal is to show that buildings are cherished and preserved because of their ability to adapt. Viking, 1994, 243 p., b&w photos, hardcover, \$30.00.

The History and Folklore of North American Wildflowers—Timothy Coffey. This exhaustive sourcebook lists nearly 700 wildflowers and analyzes their common and botanical Latin names family by family. The author has also extensively researched various pharmacopoeias and texts detailing the historic and medicinal purposes of these flora, which are further detailed in each entry along with native locations and bibliographical references. HM, 1994, 356 p., b&w illus., paperback, \$14.95.

Math Magic—Scott Flansburg. Known as "The Human Calculator," the author outlines strategies for learning and teaching all levels of math from addition to algebra. He shows adults and children alike how to equate calculations, master the basics, and use math in figuring tips and costs. Originally published in hardcover in 1993. Harper-Perennial, 1994, 350 p., b&w illus., paperback, \$10.00.

Geomagnetism as Gravity Measured by Magnetic Materials: The Infinite or Finite Speed of Gravity and Light?

by R.N. Sansbury

A thought provoking discussion of the nature and transmission of electromagnetic influences. Reprints classic papers on the speed of light by Roemer, Halley, Cassini, Bradley, Fizeau & Michelson; Measurement problems: Modern ephemeris data contradict Romer's measurement; Fizeau and Michelson ignore the affect on transmission delay of light intensity independent of distance; ambiguities of interference measurements that do not take into account transients; statistical analysis of weak radar reflections from nearby planets with the receiver on prior to the expected arrival time; Questions: Is electromagnetic radiation the cumulative effect of weak repeated instantaneous forces at a distance, causing an increase of oscillating charge toward an asymptotic maximum above a measureable threshold if the initial oscillation is greater than Johnson noise? A model of this process is derived from the premise that the magnetic force can be represented electrostatically; e.g., transverse electrostatic dipoles, r_1^2/l_2c and r_2^2/l_1c , per unit meter length gives the magnetic force per unit length between parallel currents, I , r meters apart; c is the speed of light. Experiments supporting this model of the magnetic force as an electrostatic force were carried out by the author at MIT and reported in the Rev. of Scientific Instruments (3/85) and the Elec. Eng. Times (12/28/87).

A similar process occurs, the author claims, in the atomic nuclei of spinning planets and stars. The spin initiates sustainable electrostatic dipoles (10^{37} C-m for the earth) inside the object's atomic nuclei that tend to line up transverse to the object's spin along its radii and longitudes but that for magnetic elements the bulk material must also change position to complete this alignment as in a magnetic needle. This explains the Wilson relation between spin, magnetism and gravity, the spherical asymmetry [curved space] and time delay [dilation] effects of gravitational fields and is shown to be consistent with Cavendish's measurement of the gravitational constant. Charge polarization inside electrons and nuclei is attributed to the excitation of an, on average circularly, orbiting charged mass of 10^{56} kg. with a radius at room temperature of about 10^{15} m. into an elliptical orbit transverse to the exciting force.

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