

the preface, these are moving and intuitively appealing sentiments, but they dilute the developing and much needed rigor of conservation biology.

Ogden Nash mused that "God in his wisdom made the fly and then forgot to tell us why." But as conservation biologists our task is to find out why there are flies and how they live and then to explain to others why they and monarch butterflies and all the other insects are important and worth conserving before we swat them all or clear away the few remaining habitats available for some of them.

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Other Books of Interest

Arabidopsis. ELLIOT M. MEYEROWITZ and CHRIS R. SOMERVILLE, Eds. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, 1994. xii, 1300 pp., illus. \$175. Cold Spring Harbor Monograph 27.

This volume is an attempt to synthesize what is known about the biology of the small mustard that has become a central model system for plant molecular genetics in the past decade. In current practice "Arabidopsis" generally refers to the species *A. thaliana*, and in fact, according to R. A. Price *et al.* in the opening chapter of the work, the genus as such is not well defined; it is native to Asia and bears a relationship to such economically important plants as cabbage and broccoli (Brassicaceae or Cruciferae) as well as to some familiar ornamental plants. The properties of *A. thaliana* that underlie its usefulness in biology are related to its "unconventional" nuclear genome, which is unusually small and has relatively little dispersed repetitive DNA, being thereby especially amenable to cloning but otherwise not atypical of flowering plants. Its genetics is the subject of the next eight chapters in the volume, which cover chloroplast and mitochondrial DNAs, molecular cytogenetics, quantitative genetics, mutagenesis, and tissue culture and transformation; also included in this section is a "historical view" by C. Koncz and G. P. Rédei, who trace studies of genetics with *Arabidopsis* back to 1945 and provide some comparisons with other model organisms from Mendel's peas to more recent predecessors such as *Drosophila*, *Neurospora*, and *Escherichia coli*. The treatment of genetics is followed by nine papers on development,

from seed through root and flower to fertilization, and seven on growth, including discussion of ethylene, gibberellin and abscisic acid, auxin and cytokinin, light signal transduction, circadian rhythms, tropisms, and effects of physical stimuli on root growth. Five papers are then devoted to biotic (viral, microbial, and nematode) and abiotic (light, water, heat shock, and cold) stress. The last and longest group of papers is devoted to biochemistry and cell biology, with 11 contributions covering such topics as photosynthesis, secondary metabolism, the cell wall and cytoskeleton, and the biosynthesis and assimilation of starch, nitrate, phosphate, and iron. The volume ends with two appendixes, one a brief account of electronic *Arabidopsis* information sources and the other an updating of Meyerowitz and Pruitt's 1984 Green Book listing genetic variants of *A. thaliana*, and a 32-page subject (but not author) index.

Katherine Livingston

The Cognitive Neurosciences. MICHAEL S. GAZZANIGA, Ed. MIT Press, Cambridge, MA, 1994. xiv, 1447 pp., illus., + plates. \$95 or £64.95. A Bradford Book.

In the 1960s there flourished a broadly based effort known as the Neurosciences Research Program intended to facilitate the



Vignettes: Indoor Zoology

Movie theaters used to be a fine place to get mice. They were open to the public. Every theater had a popcorn stand. Spilled popcorn kept the mice concentrated and breeding. We used the pounce system for catching them, but sometimes we took off our boots and laid them along the wall. Each mouse that chose to hide in a boot was very easy to catch—in fact it was essentially caught.

—Frances Hamerstrom, in *My Double Life: Memoirs of a Naturalist* (University of Wisconsin Press)

The distinctions made by legal minds are often puzzling from an entomological point of view. . . . Doult (1959) lamented, "Entomologists, although they may be saddened, will not be surprised to learn that in many insect cases that reach the courts the judge cannot resist ponderous attempts at judicious humor." One such case was *Ben Hur Holding Corp. v. Rox* (1933), in which a small number of crickets was deemed insufficient cause for withholding rent. The judge reasoned "while a cricket is technically an insect and a bug, it would appear from the study of his life, that instead of being obnoxious, he is an intellectual little fellow, with certain attainments of refinement and an indefatigable musician par excellence." Contrary to legal opinion, crickets and cockroaches are not appreciably different except for the fact that cockroaches at least have the decency to remain silent at night.

—May Berenbaum, in *Bugs in the System: Insects and Their Impact on Human Affairs* (Addison-Wesley)

coalescence of the neurosciences as a discipline. A number of workshops held under its aegis culminated in a month-long conference in Boulder, Colorado, in 1966 and the publication in 1967 of a large collective work entitled *The Neurosciences: A Study Program* (see *Science* 162, 1114 [1968]). Now in *The Cognitive Neurosciences* we have a still larger work following in that tradition but directed more explicitly to addressing the "explanatory gap . . . between biologic process and the processes of mind." Developed out of a summer institute held at Lake Tahoe, the work consists of 92 papers grouped in 11 sections, each with a separate editor or pair of editors who provide an introduction for it. The two opening sections, edited by Ira B. Black and by Pasko Rakic, are devoted to molecular and cellular plasticity and to neural and psychological development. Sensory systems, which provide "the gateway to cognition," are the subject of the third section, edited by Colin Blakemore and J. Anthony Movshon; with 17 papers, 10 of which are devoted explicitly to vision, this is the largest section of the book. Motor systems and their proprioception are addressed under the broader heading Strategies and Planning, with Emilio Bizzi as editor. Attention ("orienting to sensory stimuli") and memory are treated next, the respective editors for these topics being Michael Posner and Endel Tulving. A group of papers on language edited by Steven Pinker considers language acquisi-

tion and syntactical and lexical processing and includes representation of computational and psychological approaches. Thought and imagery are the subject of the next group, edited by Stephen M. Kosslyn. A section devoted to emotion under the editorship of Joseph E. LeDoux discusses relevant cellular and neurophysiological connections and mechanisms suggested by various human emotional disorders. Under the heading *Evolutionary Perspectives*, a group of papers edited by John Tooby and Leda Cosmides covers among other topics sex differences and the analysis of motivational systems such as those affecting parental investment. The final section of the book, edited by Daniel L. Schechter, takes up the issue of consciousness more directly, with philosophical and theoretical analyses as well as discussions of more empirical approaches. The expressed hope of the work's editor-in-chief that it will be a serviceable "source book [for] students of the mind sciences" is backed up by the inclusion of abstracts for each paper and a 42-page, three-column subject index. The book also includes a section of color plates.

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Books Received

Abell's Exploration of the Universe. David Morrison, Sidney Wolff, and Andrew Fraknoi. 7th ed. Saunders (Harcourt Brace), Fort Worth, TX, 1994. xvi, 682 pp., illus. + plates. \$52.

Abraham Robinson. *The Creation of Nonstandard Analysis. A Personal and Mathematical Odyssey.* Joseph Warren Dauben. Princeton University Press, Princeton, NJ, 1995. xx, 560 pp., illus. \$49.50 or £40.

The Acquisition of the Lexicon. Lila Gleitman and Barbara Landau, Eds. MIT Press, Cambridge, MA, 1995. vi, 492 pp., illus. Paper, \$39.95. Reprinted from *Lingua*, vol. 92, nos. 1-4.

Breeding Fodder Crops for Marginal Conditions. O. A. Rognli, E. Solberg, and I. Schjelderup, Eds. Kluwer, Norwell, MA, 1994. xiv, 330 pp., illus. \$130 or £84 or Dfl. 240. *Developments in Plant Breeding*, vol. 2. From a meeting, Loen, Norway, Aug. 1993.

Buprenorphine. *Combating Drug Abuse with a Unique Opioid.* Alan Cowan and John W. Lewis, Eds. Wiley-Liss, New York, 1995. xvi, 326 pp., illus. \$69.95.

Cat Monsters and Head Pots. *The Archaeology of Missouri's Pemiscot Bayou.* Michael J. O'Brien et al. University of Missouri Press, Columbia, MO, 1995. xl, 408 pp., illus. \$39.95.

Cellular Receptors for Animal Viruses. Eckard Wimmer, Ed. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, 1994. x, 526 pp., illus. \$97. Monograph 28.

The Diffident Naturalist. Robert Boyle and the Philosophy of Experiment. Rose-Mary Sargent. University of Chicago Press, Chicago, 1995. xii, 355 pp. \$65; paper, \$26. *Science and Its Conceptual Foundations*.

Drawing the Line. *Tales of Maps and Cartocontroversy.* Mark Monmonier. Holt, New York, 1994. xiv, 368 pp., illus. \$27.50.

Earth's Fury. *An Introduction to Natural Hazards*

and Disasters. Robert L. Kovach. Prentice Hall, Englewood Cliffs, NJ, 1995. x, 214 pp., illus. Paper, \$39.

The Eastern Screech Owl. *Life History, Ecology, and Behavior in the Suburbs and Countryside.* Frederick R. Gehlbach. Texas A&M University Press, College Station, 1995. xiv, 302 pp., illus. \$45. W. L. Moody, Jr., *Natural History Series* no. 16.

Einstein and Our World. David Cassidy. Humanities, Atlantic Highlands, NJ, 1995. x, 100 pp., illus. \$39.95; paper, \$12.50. *Control of Nature*.

Electroactive Polymer Electrochemistry. Part 1, *Fundamentals.* Michael E. G. Lyons, Ed. Plenum, New York, 1994. xvi, 488 pp., illus. \$110.

Fractography of Glass. Richard C. Bradt and Richard E. Tressler, Eds. Plenum, New York, 1994. viii, 302 pp., illus. \$89.50.

Frontier Topics in Nuclear Physics. Werner Scheid and Aurel Sandulescu, Eds. Plenum, New York, 1994. xii, 497 pp., illus. \$129.50. *NATO ASI Series B*, vol. 334. From an institute, Predeal, Romania, Aug.-Sept. 1993.

God's Laughter. *Physics, Religion, and the Cosmos.* Gerhard Stagnh. Kodansha Globe, New York, 1995. x, 255 pp., illus. Paper, \$13. Translated from the German edition (1990) by Steve Lake and Caroline Mähl. Reprint, 1992 ed.

GPS Satellite Surveying. Alfred Leick. 2nd ed. Wiley, New York, 1995. xx, 560 pp., illus. \$69.95.

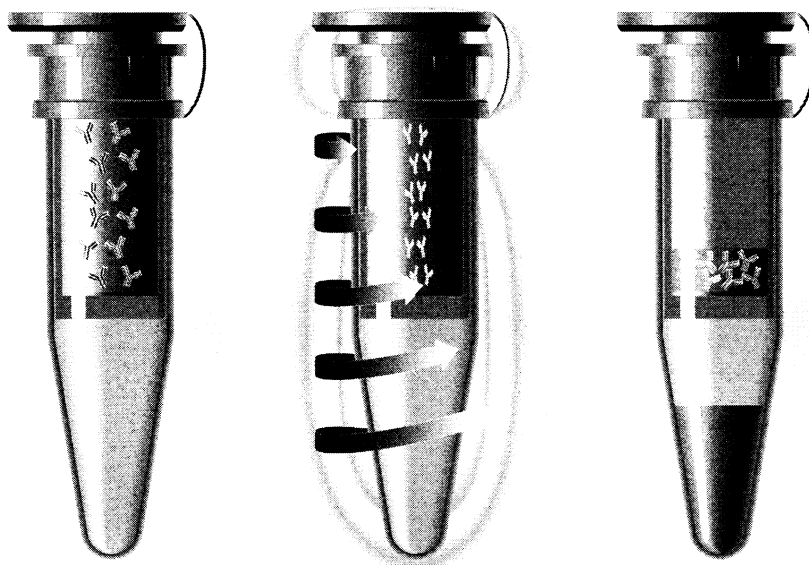
Harmonic Analysis of Probability Measures on Hypergroups. Walter R. Bloom and Herbert Heyer. De Gruyter, Hawthorne, NY, 1994. vi, 601 pp. DM 248 or öS 1.935 or sFr 237. *De Gruyter Studies in Mathematics*, 20.

Hepatic Encephalopathy, Hyperammonemia, and Ammonia Toxicity. Vicente Felipe and Santiago Grisolia, Eds. Plenum, New York, 1994. viii, 219 pp., illus. \$75. *Advances in Experimental Medicine and Biology*, Vol. 368. From a symposium, Valencia, Spain, Jan. 1994.

In Vitro Transcription and Translation Protocols. Martin J. Tymms, Ed. Humana, Totowa, NJ, 1995.

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