

the technical processes of production—drawing, engraving (copper, steel, and stone), coloring, and photography.

As systematics came to figure ever more largely, the naturalist gave way to the zoologist, the field to the laboratory. Though the tradition of the artist-naturalist would survive for a century and more in popular natural history, the transition was early viewed with alarm and some resentment. For natural history was assumed to have an "improving social influence" (p. 116), and, Americans believed (and a hostile world agreed), it was America's pristine nature that defined them as a people.

As the professional scientist (rather fastidiously) drew apart from the amateur, the specialist from the naturalist, the magnificent plates of an earlier day, whether engraved or lithographed, hand-colored or chromos, gave way to line drawings. The natural environment, landscape, drama (the rattlesnake charming Audubon's mockingbird), the animal entire with a page to itself, all had begun to disappear by mid-century. In their place a composite animal was depicted on a composite page, anatomy awaiting assembly.

"What then, if anything, distinguished American zoological illustration as American?" (p. 345)—or, for that matter, distinguished American science? (Recall that among the pioneers of American ornithography Wilson, Audubon, and Catesby were none of them American-born.) Success in winning European recognition for American scientific achievement rendered the question irrelevant. Success came through adoption of British and European styles of illustration, and adoption of European lithographers as well. But how came an equalitarian society committed to utility to possess science of a quality to win recognition from the European scientific community? That, as this book shows, is a very interesting question.

Picturing Nature is an impressive book, thorough in research and documentation. The illustrations, including 74 color plates, lend a touch of magnificence.

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Books Received

Biomembrane Protocols I. Isolation and Analysis. John M. Graham and Joan A. Higgins, Eds. Humana, Totowa, NJ, 1993. x, 313 pp., illus. Spiral bound, \$49.50. Methods in Molecular Biology, 19.

Birth Weight and Economic Growth. Women's Living Standards in the Industrializing West. W. Peter Ward. University of Chicago Press, Chicago, 1993. xvi, 218 pp., illus. \$38.

The Blood-Brain Barrier. Cellular and Molecular Biology. William M. Pardridge, Ed. Raven, New York, 1993. xx, 476 pp., illus. \$85.

The Bowhead Whale. John J. Burns, J. Jerome Montague, and Cleveland J. Cowles, Eds. Society for Marine Mammalogy, Lawrence, KS, 1993. xxvi, 787 pp., illus. \$75. Society for Marine Mammalogy Special Publication no. 2.

A Bright and Savage Land. Ann Moyal. Penguin, New York, 1993. viii, 240 pp. + plates. Paper, \$16.95. Reprint, 1986 ed.

The Cache Memory Book. Jim Handy. Academic, San Diego, CA, 1993. xviii, 269 pp., illus. \$44.95.

Capillary Electrophoresis Technology. Norberto A. Guzman, Ed. Dekker, New York, 1993. xvi, 857 pp., illus. \$165. Chromatographic Science Series, 64. Z

The Cell Surface. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, 1993. xxiv, 707 pp., illus. \$210; paper, \$95. Cold Spring Harbor Symposia on Quantitative Biology, vol. 57. From a symposium, May 1992.

Cell Surface and Extracellular Glycoconjugates. Structure and Function. David D. Roberts and Robert P. Mecham, Eds. Academic, San Diego, CA, 1993. xii, 314 pp., illus. \$79.95. Biology of Extracellular Matrix Series.

Cell-Cell Signaling in Vertebrate Development. Elizabeth J. Robertson, Frederick R. Maxfield, and Henry J. Vogel, Eds. Academic, San Diego, CA, 1993. xii, 269 pp., illus. \$79.

Cellular and Molecular Biology of Bone. Masaki Noda, Ed. Academic, San Diego, CA, 1993. xxii, 567 pp., illus. \$99.

Embryonal Stem Cells. Introducing Planned Changes into the Animal Germline. Martin L. Hooper. Harwood, Langhorne, PA, 1993. xii, 147 pp., illus. \$35 or P19; to institutions, \$58 or P31. Modern Genetics, vol. 1.

Endosomes and Lysosomes. A Dynamic Relationship. Brian Storrie and Robert F. Murphy, Eds. JAI, Greenwich, CT, 1993. xiv, 433 pp., illus. \$90.25. Advances in Cell and Molecular Biology of Membranes, vol. 1.

Environment and Aquaculture in Developing Countries. R. S. V. Pullin, H. Rosenthal, and J. L. Maclean, Eds. Deutsche Gesellschaft für Technische Zusammenarbeit, Eschborn, Germany, and International Center for Living Aquatic Resources Management, Manila, Philippines, 1993. viii, 359 pp., illus. Paper, \$22. ICLARM Conference Proceedings 31. From a conference, Bellagio, Italy, Sept. 1990.

Glow Discharge Spectroscopies. R. Kenneth Marcus, Ed. Plenum, New York, 1993. xx, 514 pp., illus. \$95. Modern Analytical Chemistry.

An Introduction to Behavioural Ecology. J. R. Krebs, and N. B. Davies. Jan Parr, illustrator. 3rd ed. Blackwell Scientific, Cambridge, MA, 1993. xii, 420 pp., illus., + plates. Paper, \$36.95.

Lockhart and Wiseman's Crop Husbandry Including Grassland. A. J. L. Wiseman, H. J. S. Finch, and A. M. Samuel. 7th ed. Pergamon, Tarrytown, NY, 1993. x, 317 pp., illus. Paper, P22.

The Logic of Discovery. A Theory of the Rationality of Scientific Research. Scott A. Kleiner. Kluwer, Norwell, MA, 1993. xii, 334 pp. \$107 or P70 or Dfl. 175. Synthese Library, vol. 231.

The Mechanisms of Brain Lateralization. Vsevolod L. Bianki. Gordon and Breach, Philadelphia, 1993. viii, 290 pp., illus. \$70 or P38; to institutions, \$140 or P75. Monographs in Neuroscience, vol. 4. Translated from the Russian edition (Leningrad, 1989) by T. A. Endeke.

Medical Statistics. A Commonsense Approach. Michael J. Campbell and David Machin. 2nd ed. Wiley, New York, 1993. x, 189 pp., illus. Paper, \$28.95.

The Membranes of Cells. Philip L. Yeagle. 2nd ed. Academic, San Diego, CA, 1993. xiv, 349 pp., illus. \$75.

Metaman. The Merging of Humans and Machines into a Global Superorganism. Gregory Stock. Simon and Schuster, New York, 1993. 365 pp., illus. \$23.

New Concepts in AIDS Pathogenesis. Luc Montagnier and Marie-Lise Gougeon, Eds. Dekker, New York, 1993. xiv, 323 pp., illus. \$99.75.

New Developments in Lipid-Protein Interactions and Receptor Function. K. W. A. Wirtz et al., Eds. Plenum, New York, 1993. x, 318 pp., illus. \$95. NATO Advanced Science Institutes Series A, vol. 246. From an institute, Spetsai, Greece, Aug. 1992.

Power and Illness. The Failure and Future of American Health Policy. Daniel M. Fox. University of California Press, Berkeley, 1993. viii, 183 pp., illus. \$20.

Preschool Issues in Autism. Eric Schopler, Mary E. Van Bourgondien, and Marie M. Bristol, Eds. Plenum, New York, 1993. xviii, 276 pp., illus. \$45. Current Issues in Autism.

Spin Glasses. K. H. Fischer and J. A. Hertz. Cambridge University Press, New York, 1993. x, 408 pp., illus. Paper, \$34.95. Cambridge Studies in Magnetism, 1. Reprint, 1991 ed.

Starvation in Bacteria. Staffan Kjelleberg, Ed. Plenum, New York, 1993. xviii, 277 pp., illus. \$75.

Vignette: A Letter from Nobel

Nowadays, when I have to associate with people, I cannot fail to notice how enormously the lack of social intercourse these last few years has damaged me. . . . I will probably never again in my life recapture my spiritual sprightliness.

I am not blaming you, my dear sweet little one, for things turning out this way. When all is said and done, it is my own fault, and you cannot be held responsible. Our views of life—on the need for constant mental improvement, on our duties as human beings with a higher education—are so hugely different that we should never even attempt to understand each other in these matters. It is with great pain that I draw the conclusion that my own nobility of soul has withered away and, my head bowed with shame, I am stepping out of the circle of educated persons.

Actually, it is totally senseless for me to write this to you. You will never be able to understand me on a deeper level. . . . You are not capable of grasping that for many years I have sacrificed my time, my reputation, all my associations with the educated world and finally my business—all for a self-indulgent child who is not even capable of discerning the selflessness of those acts.

Alfred Nobel, letter to Sofie Hess, 5 December 1880, as quoted by Kenne Fant in *Alfred Nobel: A Biography* (Arcade)