also provided. An appendix lists these codes and the references for the associated crystal structure.

But this book is more than a compendium of structural facts about biomolecules. Throughout, the authors show how analysis of the hydrogen-bonding properties of biomolecules leads to an understanding of why they are assembled from the particular subunits that compose their structures. One example is the discussion of how the allowed tautomeric forms of thymine, cytosine, adenine, and guanine control their hydrogen-bond donor-acceptor properties, which in turn determine their unique role in the flow of genetic information.

*Hydrogen Bonding in Biological Systems* is informative and eminently usable. It is, in a sense, a Rosetta stone that unlocks a wealth of information from the language of crystallography and makes it accessible to all scientists.

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## Other Books of Interest

**Phage and the Origins of Molecular Biology.** JOHN CAIRNS, GUNTHER S. STENT, and JAMES D. WATSON, Eds. 2nd ed. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY, 1992. xii, 366 pp., illus. $35.

One of the first salvos in the ongoing attempt to write the history of molecular biology was the famous "phage volume," put together at the Cold Spring Harbor Laboratory in 1966 to honor the 60th birthday of Max Delbrück, one of the field's founders. To that much-heralded work over 30 of Delbrück's friends and associates contributed their personal reminiscences, observations on the growth of the field, and comments on their own particular areas of research. Now the publisher has reissued it in this "expanded edition." For the new volume John Cairns, who as he puts it "had had nothing to do with the origins of molecular biology" but became involved in the project by virtue of being director of the laboratory, contributes a preface recounting some of the vicissitudes encountered in getting the original work into print. The initial editing of the manuscripts was done by Gunther Stent, who though a "punctilious and immensely skillful" editor has a "very distinctive style," so that Cairns in many cases found himself "substituting *stet* for Stent" in the interest of preserving the spirit of the occasion and minimizing authors' dismay. Another difficulty was the fear that had been instilled in the contributors by Delbrück's own exacting manner, which led them to express the need for endless revisions. Extraordinary means were required to extract manuscripts from some delinquent authors, including James Watson, then reportedly more concerned with his own larger work on the theme. Cairns concludes by proffering a photograph of Delbrück dressed as Theseus for a performance of *A Midsummer Night's Dream.* There follows a reprinting of the original 352-page collection (which was reviewed in *Science* **155**, 1091 [1967]). A final section of the volume, opening with a 1979 portrait of Delbrück, contains a 1967 review of the book by John Kendrew from *Scientific American*, Stent's 1968 essay "That was the molecular biology that was," reprinted from *Science*, and his obituary for Delbrück, first published in *Genetics* in 1982.

***—Katherine Livingston***

**Finders, Keepers.** Eight Collectors. ROSAMOND WOLFF PURCELL and STEPHEN JAY GOULD. Norton, New York, 1992. 157 pp., illus. $50.

This collaboration between a photographer (Purcell) and a writer (Gould) is devoted to the category of objects found, kept, and collected in the name of natural history. Most conspicuously the book is a lavish rendition of color photographs, and the photographer's statement of her principle of operation gives a good sense of what they are like: "Although I photograph everything just slightly out of context (fossil on a wooden chair, pigs on the floor, only parts of the ichthyosaurs), I tried as much as possible not to add inappropriate detail. Once seen, however, it is hard to separate the cigar box from the brain cast [it contains]; it is difficult to ignore blue-bleached cotton when it appears in the vicinity of a fossil shark tooth." As for the collectors, more than eight are in fact dealt with in the nine essays Gould has contributed. Figuring most prominently are Peter the Great of Russia and his Dutch supplier Frederik Ruysch, one of whose specialties was sentimentally adorned mountings of parts of human infants; Philip Franz von Siebold (1796–1866), who pursued his avocation in Japan in an era of that nation's history most difficult for foreigners; Willem Cornelis van Heurn of Leiden (1887–1972), a "taxonomist's taxonomist" who traveled the Dutch empire in search of animal, especially mammalian, specimens; Eugen Dubois, the discoverer of "Java Man"; Walter Rothschild (1868–1937), particularly fascinated by birds; the fossil-collectors John Woodward (1665–1728) and his contemporary Agostino Scilla, some of whose drawings are included in the book along with photographs of the original specimens; Thomas

## Vignette: Looking Toward Calcutta

When, at sixteen, he matriculated quite by chance with a sheaf of distinctions, his teachers decided that he must go to Presidency College in Calcutta to study history. . . .

Balaram listened to them quietly, and they took his silence for acquiescence. But Balaram was not thinking of their Calcutta at all, with its philology and philosophy and history. He had his own vision of Calcutta. For him it was the city in which Ronald Ross discovered the origin of malaria, and Robert Koch, after years of effort, finally isolated the bacillus which causes typhoid. It was the Calcutta in which Jagadish Bose first demonstrated the extraordinarily life-like patterns of stress responses in metals. . . .

Balaram knew of Presidency College, too: it was there that Jagadish Bose had taught two young men—Satyen Bose, who was to appropriate half the universe of elementary particles with the publication of the Bose-Einstein statistics; and Meghnad Saha, whose formulation of the likeness between a star and an atom had laid the foundation of a whole branch of astrophysics.

And of course there was the gigantic figure of C. V. Raman, whose quiet researches in the ramshackle laboratories of the Society for the Advancement of Science, in Calcutta, had led to the discovery of the effect in the molecular scattering of light which eventually came to be named after him.

—From *The Circle of Reason*, a novel by Amitav Ghosh (Viking Penguin)

Hawkins of Dorset, a 19th-century "eccentric" who shares honors in the book with Mary Anning; and Louis Agassiz of Harvard, whose lithographic plates of fossil fish are juxtaposed with photographs of the specimens. The accounts of these personages and their activities are not straightforward biographical accounts but belong more to the genre of the familiar essay for which Gould is well known, with many divagations on topics larger and smaller. Apparently intended for only the most casual of readers, the book includes no bibliography for those whose appetite might have been whetted for a less episodic treatment, nor even an index or informative table of contents for those who might want to reread choice bits before moving on to other pursuits.—*Katherine Livingston*

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## Books Received

**Abstract Algebra and Solution by Radicals**. John E. Maxfield and Margaret W. Maxfield. Dover, New York, 1992. xi, 209 pp., illus. Paper, $7.95. Dover Books on Advanced Mathematics. Reprint, 1971 ed.

**Acid Soil and Acid Rain**. I. R. Kennedy. 2nd ed. Research Studies, Taunton, Somerset, U.K., and Wiley, New York, 1992. xviii, 254 pp., illus. $99. Research Studies in Botany and Related Applied Fields, 10.

**Acoustical Imaging**. Vol. 19. Helmut Ermert and Hans-Peter Harjes, Eds. Plenum, New York, 1992. xx, 986 pp., illus. $155. From a symposium, Bochum, Germany, April 1991.

**Acousto-Optic Devices**. Principles, Design, and Applications. Jieping Xu and Robert Stroud. Wiley, New York, 1992. xviii, 652 pp., illus. $69.95. Wiley Series in Pure and Applied Optics.

**Active Measures in the War Against Epidemics in Colonial Guatemala, 1519–1821**. Lawrence H. Feldman. Southern Illinois University School of Medicine, Springfield, 1992. iv, 60 pp., illus. Paper, $20. Special issue of *Caduceus*.

**Adams Memorial Symposium on Algebraic Topology: 1**. (Manchester, U.K., July 1990.). N. Ray and G. Walker, Eds. Cambridge University Press, New York, 1992. xxiv, 292 pp. Paper, $37.95. London Mathematical Society Lecture Note Series, 175.

**Adhesives in Civil Engineering**. G. C. Mays and A. R. Hutchinson. Cambridge University Press, New York, 1992. xii, 333 pp., illus. $110.

**Basic Theory of Surface States**. Sydney G. Davison and Maria Steslicka. Clarendon (Oxford University Press), New York, 1992. xiv, 223 pp., illus. $65. Monographs on the Physics and Chemistry of Materials.

**Bayes or Bust?** A Critical Examination of Bayesian Confirmation Theory. John Earman. MIT Press, Cambridge, MA, 1992. xvi, 272 pp. $35. A Bradford Book.

**Before Writing**. Vol. 1, From Counting to Cuneiform. Denise Schmandt-Besserat. University of Texas Press, Austin, 1992. xviii, 269 pp., illus. $60.

**The Beginnings of Western Science**. The European Scientific Tradition in Philosophical, Religious, and Insitutional Context, 600 B.C. to A.D. 1450. David C. Lindberg. University of Chicago Press, Chicago, IL, 1992. xviii, 455 pp., illus. $57; paper, $19.95.

**Belief Revision**. Peter Gardenfors, Ed. Cambridge University Press, New York, 1992. vi, 277 pp. $34.95. Cambridge Tracts in Theoretical Computer Science, 29.

**Bioengineering Heat Transfer**. Young I. Cho, Ed. Academic Press, San Diego, CA, 1992. viii, 443 pp., illus. $109. Advances in Heat Transfer, vol. 22.

**Biologic Markers in Immunotoxicology**. Board on Environmental Studies and Toxicology. National Academy Press, Washington, DC, 1992. xviii, 206 pp., illus. Paper, $37.95.

**Calcitonin Gene-Related Peptide**. The First Decade of a Novel Pleiotropic Neuropeptide. Yvette Taché, Peter Holzer, and M. Geoff Rosenfeld, Eds. New York Academy of Sciences, New York, 1992. xiv, 561 pp., illus. $140. Annals of the New York Academy of Sciences, vol. 657. From a symposium, Graz, Austria, July 1991.

**Calcium Entry and Action at the Presynaptic Nerve Terminal**. Elis F. Stanley, Martha C. Nowycky, and David J. Triggle, Eds. New York Academy of Sciences, New York, 1991. x, 506 pp., illus. $131. Annals of the New York Academy of Sciences, vol. 635. From a conference, Baltimore, MD, Oct. 1990.

**Capillary Electrophoresis**. Theory and Practice. Paul D. Grossman and Joel C. Colburn, Eds. Academic Press, San Diego, CA, 1992. xvi, 352 pp., illus. $69.95.

**$^{13}$C-NMR of Natural Products**. Vol. 2, Diterpenes. Atta-ur-Rahman and Viqar Uddin Ahmad. Plenum, New York, 1992. x, 795 pp., illus. $125.

**Catalog of Teratogenic Agents.** Thomas H. Shepard. 7th ed. Johns Hopkins University Press, Baltimore, MD, 1992. Unpaged. $95.

**Catalysis in Polymer Synthesis**. Edwin J. Vandenberg and Joseph C. Salamone, Eds. American Chemical Society, Washington, DC, 1992. xii, 292 pp., illus. $74.95. ACS Symposium Series, 496. Based on a symposium, Atlanta, GA, April 1991.

**Dasycladales**. An Illustrated Monograph of a Fascinating Algal Order. Sigrid Berger and Matthias J.