

leocene species of *Cytherella* from two boreholes in western Nigeria is analyzed by means of quantitative genetic formulas. The methodology will probably serve as a model for future studies of this type.

At least eight papers dealing with taxa ranging from the Upper Cambrian to the Recent are of value to the traditional systematist, but the spectacular SEM micrographs of the appendages and body of the Upper Cambrian *Hesslandona unisulcata* by K. J. Müller should be of interest to all zoologists. Although Müller has previously published SEM micrographs of appendages of Cambrian ostracods, none have shown the detail visible in the present specimens.

It is fitting that in the Postscript, entitled "From conversations with Peter: Reminiscences of the philosophy of P. C. Sylvester-Bradley," R. H. Benson provides an insight into the philosophy of this inspiring teacher, a theme that is included less particularly in some of the preceding chapters.

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A Biochemical Pioneer

Experiences in Biochemical Perception. L. NICHOLAS ORNSTON and STEPHEN G. SLIGAR, Eds. Academic Press, New York, 1982. xx, 382 pp., illus. \$47.

This book is meant to teach us something about the perception and style of I. C. Gunsalus. Gunsalus was one of a rather small, remarkably talented group of young scientists who collectively shaped biochemistry as a discipline in the 1940's. Their fundamental discoveries and ability to pass on their enthusiasm for the still fledgling field to their students launched the explosive advance that continues unabated today. Gunsalus's interactions with colleagues are always extreme and decidedly nonuniform. This kind of behavior, which is at the root of his success, makes it difficult for one or two of his colleagues to capture the spirit of the man and his research. Wisely, the editors of *Experiences in Biochemical Perception* decided to solicit papers from a broad cross section of Gunsalus's colleagues and former students. The only charge to them was to recount the history of a line of research that can be traced to an insight gained through interactions with Gunsalus. The

resulting decidedly nonuniform but candid and skillfully prepared collection of 27 papers was presented to Gunsalus at a symposium held in honor of his 70th birthday this year.

The papers included in the volume range from histories of life in the Gunsalus laboratory during the times of discovery to primary research reports presenting new data that had their roots in interactions with Gunsalus. The histories, especially those by W. W. Umbreit and D. J. O'Kane describing the discovery of the coenzyme forms of pyridoxal and lipoate, are particularly informative. They convey the sense of excitement and urgency that accompanied the discoveries as well as the retrospective despair at missed opportunities. They also give the reader a sense of the "total abandon" with which Gunsalus attacked problems while at the same time retaining perspective and waiting, almost patiently, for the true answer to emerge in response to a well-mounted experiment. A remarkable paper by R. Y. Stanier detailing a collaboration with Gunsalus in the early 1950's contains a collection of letters written by Gunsalus about the ongoing research as well as about the state of science at the time. The letters are at one level undecipherable and at a second level eminently clear, a quality Gunsalus would later bring to perfection.

Histories of later discoveries reveal Gunsalus as a mature scientist with broad influence, expanding his research interests in many directions. In order to answer the questions that interested him, he simultaneously established groups in genetics, chemistry, and physics, each dominated by his demand for quality and his remarkable hunches. One such hunch, that bacteria gain their enormous nutritional diversity through transfer of plasmid DNA, is documented by A. M. Chakrabarty. In another paper S. G. Sligar shows how a second hunch, that bacterial metabolism of camphor might hold some interesting stories, led to the first homogeneous preparation of cytochrome P-450 and subsequently to the revelation of many details of the chemistry and physics of its mechanism.

Clearly this collection of papers will be most meaningful to the numerous students and colleagues of Gunsalus who can call upon their own impressions and experiences to complete the glimpse of the man presented in the contributions of others. Nevertheless there are important lessons here, particularly about the intensity required to promote discovery, the importance of learning how to listen to what nature returns in response to

meaningful experiments, and the rewards for enthusiastic pursuit of what one enjoys doing. Young scientists embarking on a career in research will find it particularly valuable. The entire volume is written for the nonspecialist and should have wide appeal.

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Books Received

Andesites. Orogenic Andesites and Related Rocks. R. S. Thorpe, Ed. Wiley-Interscience, New York, 1982. xiv, 724 pp., illus. \$83.95.

Annual Review of Biophysics and Bioengineering. Vol. 11. L. J. Mullins, William A. Hagins, Carol Newton, and Gregorio Weber, Eds. Annual Reviews, Palo Alto, Calif., 1982. x, 494 pp., illus. \$22.

Annual Review of Earth and Planetary Sciences. Vol. 10. George W. Wetherill, Arden L. Albee, and Francis G. Stehli, Eds. Annual Reviews, Palo Alto, Calif., 1982. x, 544 pp., illus. \$22.

Current Topics in Membranes and Transport. Felix Bronner and Arnost Kleinzeller, Eds. Vol. 17. Membrane Lipids of Prokaryotes. Shmuel Razin and Shlomo Rottem, Eds. Academic Press, New York, 1982. xxviii, 384 pp., illus. \$45.

Darwinism and Human Affairs. Richard D. Alexander. University of Washington Press, Seattle, 1982. xxiv, 318 pp., illus. Paper, \$9.95. The Jessie and John Danz Lectures. Reprint of the 1980 edition.

Data for Decisions. Information Strategies for Policymakers. David C. Hoaglin, Richard J. Light, Bucknam McPeck, Frederick Mosteller, and Michael A. Stoto. Abt Books, Cambridge, Mass., 1982. xxii, 318 pp., illus. \$28.

Explorations in Natural Resource Economics. V. Kerry Smith and John V. Krutilla, Eds. Published for Resources for the Future by Johns Hopkins University Press, Baltimore, 1982. xiv, 352 pp. Cloth.

Factorization of Matrix Functions and Singular Integral Operators. K. Clancey and I. Gohberg. Birkhäuser, Boston, 1981. x, 234 pp. \$17.55. Operator Theory, vol. 3.

Fiction Stranger than Truth. In the Metaphysical Labyrinth of Relativity. N. Rudakov. Published by the author, P.O. Box 723, Geelong, Victoria, Australia, 1981. iv, 176 pp. Paper, A\$10.

Howell-Fulton Physiology and Biophysics. Excitable Tissues and Reflex Control of Muscle. Theodore Ruch and Harry D. Patton, Eds. Saunders, Philadelphia, ed. 20, 1982. xii, 382 pp., illus.

The Human Brain and Its Universe. Hartwig Kuhlenbeck. Joachim Gerlach, Ed. Karger, Basel, 1982. Vol. 1. The World of Natural Sciences and Its Phenomenology. xiv, 282 pp., illus. \$99. Vol. 2. The Brain and Its Mind. xiv, 374 pp., illus. \$139. Revision of *Brain and Consciousness* (1957).

The Information Professional. Survey of an Emerging Field. Anthony Debons, Donald W. King, Una Mansfield, and Donald L. Shirey, Dekker, New York, 1981. xx, 272 pp. \$35. Books in Library and Information Science, vol. 38.

Microprocessors. Your Questions Answered. Alec Wood. Newnes (Butterworths), Boston, 1982. iv, 156 pp., illus. Paper, \$13.50.

Military Service in the United States. Papers from a meeting, Mt. Kisco, N.Y., Sept. 1981. Brent Scowcroft, Ed. Prentice-Hall, Englewood Cliffs, N.J., 1982. viii, 232 pp. Paper, \$7.95.

Neuroimmunology. Jeremy Brockes, Ed. Plenum, New York, 1982. xvi, 256 pp., illus. \$29.50. Current Topics in Neurobiology.

Psychosocial Family Interventions in Chronic Pediatric Illness. Proceedings of a symposium, Brooklyn, N.Y., Dec. 1980. Adolph E. Christ and Kalman Flomenhaft, Eds. Plenum, New York, 1982. xii, 212 pp. \$32.50. The Downstate Series of Research in Psychiatry and Psychology, vol. 4.

Short Fibre Reinforced Thermoplastics. M. J. Folkes. Research Studies Press (Wiley), New York, 1982. x, 176 pp., illus. \$32.95. Polymer Engineering Research Studies Series, 1.

Visual Information Processing. Kathryn T. Spoehr and Stephen W. Lehmkuhle. Freeman, San Francisco, 1982. xii, 298 pp., illus. Cloth, \$22.50; paper, \$14. A Series of Books in Psychology.