Vignettes: Field Exercises

I soon learned . . . that one could never sit at the feet of Dobzhansky when he was at a field station. When he was not sleeping or eating, he was either setting out baited traps for *Drosophila*, catching them in bottles, preparing and examining their squashed chromosomes, or taking his "leisure" by mounting a horse and riding rapidly in a chosen direction. The only possible way of communicating with him was to mount another horse and ride equally rapidly in the same direction.

—G. *Ledyard Stebbins, in Genetics of Natural Populations: The Continuing Importance of Theodosius Dobzhansky* (Louis Levene, Ed.; Columbia University Press)

Some things [are] more difficult to accomplish underwater: for example, sitting on a rock for a few hours writing up notes; changing film in your camera; eating lunch; talking; marking a place so you can return to it reliably the next day or week or year. But there are compensations. . . . I could "fly"—like Superman!—over the undersea forests of my choice, taking conspicuous advantage of three dimensions, gliding down whenever I chose and landing precisely where I wanted to (as long as it was not more than about 150 feet deep).

—*Sylvia Alice Earle, in Sea Change: A Message of the Ocean* (Putnam)

Despite the intent to cover a wide range of topics, there is an obvious bias among the chapters toward terrestrial (17 of 22 chapters) and botanical (12) studies and studies from the United Kingdom (13). Such a bias is not totally unexpected given the origins of the volume, but it would have been useful, in light of the growing recognition of value of long-term studies for conservation planning and environmental policy, to include more of the well-known long-term studies of animals.

Overall, however, this is a commendable compilation of papers that will be of interest to a wide audience both because of the scientific contributions that are summarized and for the perspective it provides on the historical and social context that motivated the initiation and continuation of many of these studies. It is interesting to reflect that many of the long-term studies described in this volume (including the Rothamsted Classicals) were initiated at a time when there was concern about declining soil fertility and its consequences for agricultural productivity. The environmental concerns of today are broader—and encompass spatial scales that extend to the global—but include these same issues. It will be interesting to see whether the foresight of today's planners results in a legacy of scientific insight comparable to that which has come from the Rothamsted experiments.

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Environmental Debate

Reinventing Nature? Responses to Postmodern Deconstruction. MICHAEL E. SOULÉ and GARY LEASE, Eds. Island Press, Washington, DC, 1995. xviii, 189 pp. $34.95; paper, $17.95 or £16.95.

Postmodern forms of critical analysis have proven to be unsettling to conventional wisdom far beyond the bounds of the disciplines within which they first appeared, crossing the barrier that has traditionally separated the natural sciences from the humanities and mounting a challenge to modern beliefs regarding the certainty of our knowledge of the natural world. This collection is an outgrowth of a series of conferences inspired by the work of one such postmodern critic, historian of science Donna Haraway, and its particular concern is to consider the role postmodern thought has supposedly played in undermining attempts to defend nature, and more specifically wilderness areas, from the wide variety of threats presented by modern society.

Historian Gary Lease provides an even-handed introductory essay that outlines the terms of the debate, but the dominant tone of the collection is set by the contributors who flatly reject postmodernism. Asserting an unmediated relationship with the natural world, zoologist Paul Shepard characterizes postmodernism as the most recent version of the Western intellectual tradition's humanistic alienation of human from nature, now lending aid and comfort to the encroachments of the inauthentic "virtual reality" of contemporary consumer culture. Stephen Kellert, a professor of forestry and environmental studies, describes the results of his quantitative cross-cultural study of modern attitudes in Japan and the United States and concludes that human values regarding nature are fundamentally alike and are determined by human biology and evolution, not culture. He finds contrary views, such as those linked to relativistic "deconstructionist" points of view, to be dysfunctional and dangerous.

Michael E. Soulé, a professor of environmental studies, argues that while there are many differing views of nature in Western society, "living nature" is unquestionably under siege, both physically, from developers, the "wise use" movement, and others who contribute to the current extinction crisis, and ideologically, from the advocates of postmodernism who pave the way for the physical threats. Soulé summarizes the potential dangers of postmodernism's influence in the policy arena and calls for an approach to wilderness management that would allow the expertise of the scientific community, especially that of conservation biologists, to come to the fore.

Two contributors look more closely at these issues as they relate to the management of wilderness areas. The desire to preserve nature in its pristine state, unaltered by human society, guides wilderness management today, but, argues conservationist Gary Paul Nabhan, the natural world has always been actively managed by indigenous cultures and the "untrammeled" pre-Columbian wilderness that our parks are mandated to preserve and restore is a myth. Ethnobiologist David M. Graber describes a further irony confronting wilderness managers: aggressive human intervention is required if we are to maintain what remains of the wild. To allow nature to take its course, untouched, will now only lead to a quickening of the extinction crisis. The meaning of the difference between "the wild" and human society is becoming increasingly difficult to define, even for the professionals, as the physical landscape itself comes to be seen as a social construction.

Not all the contributors, however, decry these intellectual developments. Environmental historian Donald Worster describes the impact of historicism on ecological thinking, in which the ecosystem concept, a balanced vision of orderly change, has been displaced by the notion of a fragmented, "disturbed" nature, and still finds that history, or at least a moderately historicist perspective, has valuable lessons to offer us. Philosopher Albert Borgmann sketches a history of humankind's gradual estrangement from nature and still chooses to plot a course "across the postmodern divide,"

where he sees the critical issue becoming one not of real nature versus artificial human culture but of degrees of reality. Nature may be reduced to the status of a contingent reality in the postmodern world, but, in Borgmann's view, it will still be with us, a meaningful cultural relic from the past deserving of preservation.

The most positive response to postmodernism in this volume is contributed by literary critic, and former chemist, N. Katherine Hayles, who embraces the postmodern critique of knowledge while still recognizing that there really is something "out there," beyond ourselves. For most, that something is nature; for Hayles, it is better thought of as an "unmediated flux" that we can never know directly, but from this vantage point she describes a common ground that traditionally "objectivist" scientists and environmentalists, on the one hand, and social constructivists, on the other, might share. According to Hayles, a recognition of the limits imposed by the "positionality" of our knowledge of the world strengthens the case for protecting other species, since it is only through an effort to understand how others see nature that we can hope to stretch our thinking to reach beyond the boundaries of our own constructions of the world around us.

The contributions to this collection are concise and to the point, and they are almost jargon-free. There is, however, a particularly noteworthy lack. No one here represents the postmodern point of view as boldly and affirmatively as Haraway, for instance, has, and a more well-rounded give-and-take from both sides of the postmodern divide might have filtered out some of the more dubious characterizations of the postmodern position one finds here. For example, those most hostile to postmodernism repeatedly link it to schools of thought it has little or nothing in common with, or, as in the case of humanism, to traditions it fundamentally opposes. But we are still very much at the beginning of this conversation. The value of this book is that it presents a wide variety of the voices one might expect to hear around the table in this important debate, and all of them are worthy of consideration.

Jeffrey Hearn

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Books Received

The Alchemy of the Heavens. Searching for Meaning in the Milky Way. Ken Croswell. Anchor (Doubleday), New York, 1995. xii, 340 pp., illus., + plates. $24.95 or $C34.95.

Alcoholism and Women. Marc Galanter, Ed. Plenum, New York, 1995. xxiii, 472 pp., illus. $89.50. Recent Developments in Alcoholism, vol. 12.

The Algorithmic Beauty of Sea Shells. Hans Meinhardt. Springer-Verlag, New York, 1995. xii, 204 pp., illus., + diskette. DM 78 or ÖS 608.40 or SFr 75.

Algorithmic Foundations of Robotics. Ken Goldberg *et al.*, Eds. Peters, Wellesley, MA, 1995. xii, 556 pp., illus. $52. From a workshop, San Francisco, Feb. 1994.

American Medicine. The Quest for Competence. Mary-Jo DelVecchio Good. University of California Press, Berkeley, 1995. xiv, 265 pp. $35 or £28.

Archimedes and the Sands of Space and Time. Henry Sonneborn III. Eagle Press, Larchmont, NY, 1994. xii, 180 pp., illus., + diskette. Paper, $15.95.

An Atlas of Fullerenes. P. W. Fowler and D. E. Manolopoulos. Clarendon (Oxford University Press, New York), New York, 1995. viii, 392 pp., illus. $98. International Series of Monographs on Chemistry, 30.

Attention and Memory. An Integrated Framework. Nelson Cowan. Oxford University Press, New York, 1995. xvi, 321 pp., illus. $49.95. Oxford Psychology Series, no. 26.

Breathing. Mark A. Hanson *et al.*, Eds. Cambridge University Press, New York, 1995. xiv, 400 pp., illus. $85. Fetus and Neonate: Physiology and Clinical Applications, vol. 2.

Calculating the Weather. Meteorology in the 20th Century. Frederick Nebeker. Academic Press, San Diego, CA, 1995. viii, 255 pp., illus. $64.95. International Geophysics, vol. 60.

Cancer Metastasis. From Mechanisms to Therapies. Richard G. Vile, Ed. Wiley, New York, 1995. x, 210 pp., illus. $49.95. Molecular Medical Science Series.

The Case of the Frozen Addicts. J. William Langston and Jon Palfreman. Pantheon, New York, 1995. x, 309 pp. $25 or $C35.

Chemical Equilibrium and Reaction Models. Richard H. Loeppert, A. Paul Schwab, and Sabine Goldberg, Eds. Soil Science Society of America, Madison, WI, 1995. xviii, 422 pp., illus. Paper, $30. SSSA Special Publication no. 42. From a symposium, San Antonio, TX, Oct. 1990.

The Children of Time. Causality, Entropy, Becoming. Rémy Lestienne. University of Illinois Press, Urbana, 1995. xiv, 221 pp., illus. $45.95; paper, $17.95. Translated from the French edition (1990) by E. C. Neher.

Dynamic Patterns. The Self-Organization of Brain and Behavior. J. A. Scott Kelso. MIT Press, Cambridge, MA, 1995. xx, 334 pp., illus., + plates. $49.95.

Dynamics of Atmospheric Motion. John A. Dutton. Dover, New York, 1995. xx, 617 pp., illus. Paper, $17.95. Reprint of *The Ceaseless Wind* (1986).

Exploring Evolutionary Biology. Readings from *American Scientist*. Montgomery Slatkin, Ed. Sinauer, Sunderland, MA, 1995. ii, 307 pp., illus. Paper, $24.95.

Family Support Programs and Rehabilitation. A Cognitive-Behavioral Approach to Traumatic Brain Injury. Louise Margaret Smith and Hamish P. D. Godfrey. Plenum, New York, 1995. xiv, 222 pp. $34.50. Critical Issues in Neuropsychology.

A Guide to the Stone Circles of Britain, Ireland and Brittany. Aubrey Burl. Yale University Press, New Haven, CT, 1995. 276 pp., illus. Paper, $14.

Guidebook to Cytokines and Their Receptors. Nicos A. Nicola, Ed. Sambrook and Tooze (Oxford), New York, 1995. xvi, 261 pp., illus., + plates. $75; paper, $39.50.

The Hot Zone. Richard Preston. Anchor (Doubleday), New York, 1995. xxii, 422 pp., illus. Paper, $6.99 or $C8.99. Reprint, 1994 ed.

Instant Physics. From Aristotle to Einstein, and Beyond. Tony Rothman. Fawcett Columbine (Ballantine), New York, 1995. xiv, 242 pp., illus. Paper, $10 or $C14.

Introduction to Biostatistics. A Guide to Design, Analysis, and Discovery. Ronald N. Forthofer and Eun Sul Lee. Academic Press, San Diego, CA, 1995. xviii, 567 pp., illus. $59.95.

The Invisible World. Early Modern Philosophy and the Invention of the Microscope. Catherine Wilson. Princeton University Press, Princeton, NJ, 1995. x, 280 pp., illus. $39.50 or £32. Studies in Intellectual History and the History of Philosophy.

John Dewey and the High Tide of American Liberalism. Alan Ryan. Norton, New York, 1995. 414 pp. $30.

Knowledge and Memory. The Real Story. Robert S. Wyer, Jr., Ed. Erlbaum, Hillsdale, NJ, 1995. viii, 243 pp. $49.95; paper, $19.95. Advances in Social Cognition, vol. 8.

Landmark Experiments in Twentieth Century Physics. George L. Trigg. Dover, New York, 1995. x, 309 pp., illus. Paper, $8.95. Reprint, 1975 ed.

The Landscape Perspective. David Ehrenfeld, Ed. Society for Conservation Biology, Madison, WI, and Blackwell Science, Cambridge, MA, 1995. viii, 253 pp., illus. Paper, $24.95. Readings from *Conservation Biology*.

Monoclonal Antibody Protocols. William C. Davis, Ed. Humana, Totowa, NJ, 1995. x, 264 pp., illus. Spiralbound, $64.50. Methods in Molecular Biology, vol. 45.

Motherhood in Human and Nonhuman Primates. Biosocial Determinants. C. R. Pryce, R. D. Martin, and D. Skuse, Eds. Karger, Farmington, CT, 1995. x, 176 pp., illus. $130.50 or SFr. 150 or DM 180. From a symposium, Kartause Ittingen, Switzerland, Sept. 1994.

The Myth of Scientific Literacy. Morris H. Shamos. Rutgers University Press, New Brunswick, NJ, 1995. xx, 263 pp. $27.95.

Nonisotopic Probing, Blotting, and Sequencing. Larry J. Kricka, Ed. 2nd ed. Academic Press, San Diego, CA, 1995. xviii, 518 pp., illus. $79.95; spiralbound, $39.95.

Optimism. The Biology of Hope. Lionel Tiger. Kodansha Globe, New York, 1995. xxviii, 306 pp. $15. Reprint, 1979 ed.

Powering Apollo. James E. Webb of NASA. W. Henry Lambright. Johns Hopkins University Press, Baltimore, MD, 1995. xiv, 271 pp., illus. $35.95. New Series in NASA History.

Quantification and the Quest for Medical Certainty. J. Rosser Matthews. Princeton University Press, Princeton, NJ, 1995. x, 196 pp. $39.50 or £32.

Scientific American, Triumph of Discovery. A Chronicle of Great Adventures in Science. Holt, New York, 1995. xviii, 254 pp., illus. $40.

Scintillating-Fibre Calorimetry. Michele Livan, Valerio Vercesi, and Richard Wigmans. CERN, Geneva, 1995. vi, 127 pp., illus. Paper. CERN 95-02.

The Search for an AIDS Vaccine. Ethical Issues in the Development and Testing of a Preventive HIV Vaccine. Christine Grady. Indiana University Press, Bloomington, 1995. x, 195 pp. $25. Medical Ethics Series.

Sexual Nature, Sexual Culture. Paul R. Abramson and Steven D. Pinkerton, Eds. University of Chicago Press, Chicago, 1995. xviii, 416 pp., illus. $65; paper, $19.95. Chicago Series on Sexuality, History, and Society. Based on a conference, Cascais, Portugal, March 1993.

The Six Core Theories of Modern Physics. Charles F. Stevens. MIT Press, Cambridge, MA, 1995. xiv, 233 pp. $30.

Sortir du Chômage. Un Effet de Réorganisation du Système des Activités. Martine Roques. Mardaga, Liege, Belgium, 1995. 296 pp., illus. Paper, 1 101 FB or 1179 FF. Psychologie et Sciences Humaines, 208.

Statistics for the 21st Century. Proposals for Improving Statistics for Better Decision Making. Joseph W. Duncan and Andrew C. Gross. Irwin Professional, Chicago, IL, 1995. xv, 316 pp., illus. $45.

Tracking the Vanishing Frogs. An Ecological Mystery. Kathryn Phillips. Penguin, New York, 1995. xii, 244 pp., illus. Paper, $11.95 or $C15.99. Reprint, 1994 ed.

War of the Worlds. Cyberspace and the High-Tech Assault on Reality. Mark Slouka. BasicBooks, New York, 1995. xvi, 185 pp. $20.

Publishers' Addresses

Below is information about how to direct orders for books reviewed in this issue. A fuller list of addresses of publishers represented in *Science* appears in the issue of 26 May 1995, page 1220.

CAB International, distributed in the US by the University of Arizona Press, 1230 N. Park Ave., No. 102, Tucson, AZ 85719. Phone: 800-426-3797; 520-621-1441. Fax: 520-621-8899.

Island Press, P.O. Box 7, Covelo, CA 95428. Phone: 800-828-1302; 707-983-6432. Fax: 707-983-6414.