

sive firms. He finds no evidence of economies of scale justifying IBM's size—although it should be noted that customers gained what competitors lost from the shift in risk and protracted cash flow associated with leasing. IBM's "plug incompatibility" tactic, designed to segment its own markets as well as combat manufacturers of plug-compatible peripherals, has resulted in what DeLamarter depicts as a systems network architecture "mess" of incompatible IBM components. By manufacturing its own semiconductor chips, IBM has denied non-integrated U.S. chip manufacturers experience that he contends gave an important advantage to integrated Japanese manufacturers in outstripping the U.S. industry. Though IBM is less efficient and progressive than the leading Japanese computer firms, DeLamarter nevertheless thinks it possible that IBM will come to dominate the world market through the same tactics that proved so successful at home. Given the growing importance of information processing throughout the economy, he concludes that IBM's market power poses a severe political as well as economic threat.

This book is not the definitive study of IBM, or of appropriate public policy toward that firm and the information industry. It does not, in my opinion, make an adequate assessment of the competition that can be expected in the future from foreign as well as domestic computer manufacturers. DeLamarter's assertion that barriers to reentry into various segments of the industry are and will remain high enough for the continued success of IBM's past tactics is neither substantiated nor convincing. By and large, the analysis is not rigorous where rigor is needed for thorough comprehension, most probably as a concession to the archetypal "general reader." But it is a knowledgeable, perceptive, and significant contribution to our understanding of a firm and an industry that will continue to pose major problems for public policy.

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## American Naturalists

**The Eagle's Nest.** Natural History and American Ideas, 1812–1842. CHARLOTTE M. PORTER. University of Alabama Press, University, AL, 1986. xiv, 253 pp., illus. \$24.95. History of American Science and Technology Series.

The editor of a new series in the history of American science and technology presents

this first volume as "a splendid picture of scientific endeavors and the American state of mind in the first third of the nineteenth century." So it is, in the same sense in which one may discern splendor in Edward Hicks's *Peaceable Kingdoms*, a succession of canvases analysis of which commands the final chapter of the book. Like them the book abounds in curiosa, queer juxtapositions, seeming irrelevances. And there is more in both than first meets the eye.

In response to Buffon's observation that the New World environment—too hot, too wet—was deleterious to life (though the slander informs every chapter of this book, Antonello Gerbi's magisterial study of it, *The Dispute of the New World*, somehow goes unmentioned), American naturalists organized themselves in societies for the purpose of classifying the native flora and fauna. Focusing particularly though by no means exclusively on Philadelphia's Academy of Natural Sciences, for some years after its founding in 1812 the most vigorous and fruitful of the societies, the author examines the ensuing three decades of transition in American natural history—from the heyday of the individual field naturalist busily affixing labels to new species and genera, his labors usually privately funded, to the emergence, all within a decade, of the Corps of Topographical Engineers, the United States Exploring Expedition, and the Smithsonian Institution and with them the professional, "closet" investigator working in the laboratory on specimens gathered by collectors in the field. Like the contemporary craftsman confronted by the emerging factory system, the field naturalist became an employee. Institutional collections absorbed his cabinet of curiosities and peer review closed off his access to publication. Arrested careers and broken reputations resulted.

At a time when natural history's first concern was taxonomy, the field investigator fell because, necessarily without reference collections and type specimens at hand, he tended to multiply species. Nomenclature ran amok. By thus subjecting American science to ridicule, the field investigator offended the nostrils of the "closet" scientist jealous for its reputation. (Itself a response to Buffon's slander, that jealousy receives little notice here.) When game was scarce Titian Peale and Thomas Say dined on hawk where Asa Gray would gather plants from a railroad car bearing wife and cook. To the unfortunates done in by peer review the author accords her full sympathy, fixing the while a baleful eye on her chosen type specimen of the new professional, Asa Gray.

To dramatize her account the author makes the most of the tension between Philadelphia's Academy, rapidly succumb-

ing to peer review, and those of its members—including its financial angel, the geologist William Maclure—who, deriving a social science from natural history, became "Industrious Producers" at Robert Owen's New Harmony establishment. The stage chosen is really too small to support the cast, and the book would have benefitted from a firmer editorial hand (for byways of fact and interpretation abound). Though it fails to shed sustained light, however, it does throw off a succession of scintillations.

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## Webs and Web-Builders

**Spiders.** Webs, Behavior, and Evolution. WILLIAM A. SHEAR, Ed. Stanford University Press, Stanford, CA, 1986. xvi, 492 pp., illus. \$55. Based on a symposium, Knoxville, TN, 1981.

For spiders, webs provide an answer to the question of how to catch prey. For arachnologists, they provide questions about spider behavior, ecology, and systematics. A 1981 symposium provided 16 arachnologists with an opportunity to answer some of these questions. Expansions of their papers form this book's 13 chapters, each of which summarizes the framework, findings, and current directions of a line of research. Within this broader context, most focus on their authors' own research, and together they address four major issues: the evolution of different types of spider webs; the construction, use, and dismantling of webs; web architecture, prey-capturing abilities, and placement; and the importance of webs in mediating spider sociality. Many chapters discuss several of these issues. Persons unfamiliar with spiders will find the book's taxonomic glossary a helpful introduction to the distribution and natural history of all genera and families mentioned in the text.

This volume introduces many new questions. For example, Carico asks, "How does a spider take down its web?" He shows that two methods may be used, one that completely destroys the web and another that simultaneously establishes the framework for a new web.

Coyle demonstrates that even primitive spiders use silk threads to detect prey passing near their burrows and that others extend the silk lining of these burrows to form sheets that both detect and hinder the passage of a prey. The spinning apparatus of more advanced spiders permits them to add