Fletcher wished to be remembered. Her early years are only scantily known, and she distroyed her papers relating to her life before she took up anthropology. Besides ferreting out scattered clues in trying to understand Fletcher, Mark acknowledges a debt to Gertrude Stein, who felt people revealed themselves through their "repeatings." The themes of "struggle" and being "alone in the world" were recurrent in Fletcher's letters, diary, and even some publications. The title of the book also reflects Fletcher's self-image, coming from a statement quoted as she had directed on the bronze plaque marking the placement of her ashes in the patio of the Art Museum she helped to establish in Santa Fe: "Living with my Indian friends I found I was a stranger in my native land."

Fletcher's first interest was in organizations devoted to the "woman question." When she began anthropological study among the Omaha, her concern with social reform was transferred to "the Indian question" and lobbying for the allotment policy that late in her career she conceded was too abrupt and sweeping to succeed as intended. As she matured anthropologically along with the discipline itself, Fletcher embraced a sense of cultural relativism and devotion to the careful gathering of facts, including statistical data, for comparative purposes. She was a respected peer among the people who helped to shape the beginnings of American anthropology. In her final years new ideas and new people passed her by, but her legacies of scholarly writing and "struggles" in the interests of anthropology remain.

In her study *Four Anthropologists*, (Neale Watson, 1980) Mark published a "sex-blind" account of Fletcher's work, but as she developed this full-fledged biography she became increasingly aware of the relevance of Fletcher's sex in the male-dominated science and society of the late 19th and early 20th centuries. Of particular interest are the strong, supportive female network Fletcher could turn to and the importance of highly personalized philanthropy on the part of wealthy women in the funding of scientists generally.

Fletcher also was profoundly influenced by two men, Putnam, who introduced her to anthropology and to whom she turned for guidance long after she was professionally established, and Francis La Flesche, an Omaha Indian 17 years her junior, who began his career in anthropology as her interpreter and assistant. Fletcher and La Flesche soon defined the pleasure they found in each other's company as a loving relationship of mother and son. Plans for legal adoption were forestalled because La Flesche would have been required to take Fletcher's name, which neither wanted. La Flesche lived in Fletcher's home in Washington, D.C., also shared for several years with Fletcher's erstwhile field assistant E. Jane Gay (see Gay's *With the Nez Perces: Alice Fletcher in the Field, 1889–1892*, University of Nebraska Press, 1983).

Despite gossip about a romantic liaison between Fletcher and La Flesche, fueled by the early breakup of his marriage and Gay's departure to care for an ailing relative, the relationship appears to have been of the kind that might have evoked comment about apron strings had they been actually related. The discussion of their collaborative research, in which La Flesche persisted in gaining recognition as an anthropologist in his own right, straining the relationship until Fletcher accepted his intellectual independence, is an added bonus of the book, which ends with La Flesche's career until his death in 1932.

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Marine Ecosystems

Continental Shelves. H. POSTMA and J. J. ZIJLSTRA, Eds. Elsevier, New York, 1988. x, 421 pp., illus. $189.50. Ecosystems of the World, vol. 27.

Continental shelves are the relatively shallow (generally less than 200 meters deep) and slightly inclined underwater portions of continental masses extending from the shoreline to the comparatively steeper continental slope. Spanning all climatic regimes on earth, they also are diverse in width (to 1500 kilometers), depth (to 550 meters), and bottom topography. Interest in shelf regions can be traced historically to their substantial living resources, which now, from 7% of the ocean's surface area, contribute approximately 90% of world fisheries yield. This interest has been heightened and broadened in recent years by numerous environmental concerns, including climatic and direct anthropogenic influences. Thus *Continental Shelves* addresses a timely topic. The biological productivity of shelves and the overlying "shelf seas" is influenced by atmospheric, oceanic, and terrestrial inputs and by tidal energy, and this volume presents an overview of these subjects and a close look at several systems as examples.

The editors provide a brief and useful introduction. This is followed by a chapter devoted to physical and chemical oceanographic aspects and one on the geology of shelves. The authors have done an excellent job of presenting these subjects in a manner that will be useful to a biologically inclined readership. I found only a few topics that might have been further developed in light of current emphases in biological work. These include turbulence and dispersion (both horizontal and vertical), wind stress and upwelling rates, cross-frontal exchange, eddies, and convergence-divergence processes.

The remaining eight chapters deal primarily with biological properties. The first three characterize the plankton, benthic fauna, and fish populations and related fisheries. These chapters, like the earlier ones, provide good overviews with an assortment of specific examples; generally, they have diverse geographical representation. Enough is said about methods of data collection to give the reader an understanding of the types of statements and comparisons made. The chapter on fish and fisheries emphasizes commercially harvested species and is subtitled "their perturbations, natural and man-induced." The reader should not be surprised to encounter considerably more philosophy and speculation here than in other chapters, owing to a number of characteristics of fisheries data collections as well as to the fishes' trophic positions. This chapter and the one following, on energy flow in marine ecosystems, introduce the reader to some of the broader challenges facing our understanding of continental shelf ecosystems.

The final four chapters (40% of the volume) describe specific shelf systems: the Barents Sea, the North Sea, the eastern United States continental shelf, and the Gulf of Thailand. Considerable interdisciplinary work has been done in the first three systems, and this is reflected in the chapters, which begin by addressing physical oceanography and proceed through the trophic system to fish and fisheries. Discussion of the Gulf of Thailand is restricted mostly to harvestable resources. Since no tropical shelf system seems to have been studied in as much detail as the temperate and subarctic ones, a chapter describing characteristics and rates from a variety of tropical studies would have been illuminating. Also missing from this group of chapters is a narrow continental shelf, which might have been represented by the well-studied west coast of the United States. Antarctic shelf ecosystem studies were in their infancy at the time the volume was compiled, so the absence of a chapter on this region is understandable.

In general, the book is nicely illustrated and printed and reflects the thinking of a number of noted scientists. Its price may restrict it to institutional collections, but there it should prove useful to students,

instructors preparing course work in marine ecology, and professionals seeking overviews of topics outside their own expertise.

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Ecosystem Analysis

Concepts of Ecosystem Ecology. A Comparative View. L. R. POMEROY and J. J. ALBERTS, Eds. Springer-Verlag, New York, 1988. xii, 384 pp., illus. $72. Ecological Studies, vol. 67. Based on a conference.

E. P. Odum has long been a creative and influential ecosystem ecologist. His publications are often provocative in the best sense of the word, in that they call forth experimental tests and competing syntheses. It would be asking a great deal to hope that this volume, a collection of papers honoring Odum on the occasion of his retirement from the University of Georgia, could synthesize the current status of ecosystem ecology or provoke a new round of research. Not surprisingly, the volume does a better job reflecting modern ecosystem ecology in its strengths and weaknesses than it does of pulling the field together or pushing it forward.

Because of the way the volume is organized, the weaknesses are apparent first. Ecology has been accused of being the only field with the courage to call a spade a geotome, and we continue to find complex ways of making relatively simple points about energy flow, spatial and temporal scales, and hierarchies. More important, the book starts with too much amateur philosophy of science (fine between consenting adults in private), and, most serious, several of the contributions have a defensive tone about working in difficult-to-control complex systems, as against the supposed simplicity of subcellular biology.

The strengths of the field become evident later in the volume. Papers that exemplify them include an informed (although jargon-ridden) ecological analysis of conventional versus zero-tillage agriculture (Coleman and Hendrix), an interesting discussion of grazer-grassland interactions and the ways in which grazing could increase primary production (Detling), a provocative treatment of alternative ways to analyze the dynamics of marine ecosystems (Mann), and an outstanding synthesis of the biogeochemistry of coral reef ecosystems (D'Elia). I don't know if a marine ecologist would be equally impressed with the last; to one who works in forests, it was extraordinarily instructive.

I mention these papers in particular among a number of good ones in the volume because they have several features more or less in common: first, a large and interesting question; second, the willingness and ability to pursue the answer whether it lies in physiological ecology, population biology, systems analysis, geochemistry, or interactions of any of these; third, an inclination to consider the consequences of human manipulations of ecosystems; and fourth, the courage to suggest tentative (and testable) generalizations based on controlling mechanisms. Add a developing concern with global change and with long-term ecosystem dynamics, and these papers represent many of the best features of modern ecosystem ecology.

Overall, I learned something from the papers in this volume; I believe that most ecologists would. However, I would not