Their generally descriptive ecology focuses on species, from two main viewpoints: natural history of their component individuals, and species as components of communities. The authors devote little attention to such important ecological topics as population-level phenomena, energy flow, and cycling of materials or to dynamics at any ecological level.

Readers familiar, for example, with U.S. Pacific Coast shores may be surprised at the absence of incisive information, based on field observations and experiments, identifying the important physical factors and biological interactions that influence community organization, particularly in the substantial section on hard shores. Britton and Morton tend to list known interactions and suggest others, but they can draw few strong inferences from such a primarily inductive approach.

I don't mean to imply that this is the authors' fault; they develop habitat and community structure and energy relationships as far as available data permit. They do address other conceptually important topics such as succession, predation, competition, and natural disturbance, but the very limited data available constrain these discussions to speculative hypotheses and references to studies of similar organisms, assemblages, and processes elsewhere in the world.

A concise, well-illustrated introductory guide to the physical factors affecting shore biotas is followed by chapters on natural and man-made hard substrates. Although narrowly limited in size and number in the Gulf, these habitats support more diverse communities than sand beaches, and they exhibit clear patterns and gradients that invite study of how they relate to physical variables and biological interactions. Striking differences between northern and southern and granite and limestone jetties, and their windward and leeward and Gulf and inlet sides, provide a matrix of independent environmental variables for hypothesis testing. These habitats also provide the closest analogues to better-studied hard shores elsewhere, and the authors raise enough unanswered fundamental ecological questions to occupy the next generation of dissertation-seeking graduate students in marine ecology.

In keeping with their dominance of the Gulf coastline, beaches and other soft or sedimenting shores—the barrier islands, bays and lagoons, and mangrove shores—occupy the largest section of the book. Subtidal sands and coral-dominated habitats are also covered. Each habitat account discusses and illustrates in line drawings the major species likely to be encountered there. Both authors are marine zoologists whose emphasis in these sections indicates that they share this reviewer's view that the most important problem an animal faces in nature is getting enough of the right kind of food, and that feeding modes, strategies, and interactions are important forces structuring marine communities.

The authors' broad temporal perspective, including analysis of the effects of sea and land level changes on modern shore ecology, enhances the usefulness of the book. The final chapter, "The future for Gulf shores," stresses their inherently dynamic nature and the history of human influences via fisheries, development, mining, and pollution, as well as protection of national parks, seashores, and wildlife refuges. Although the beaches themselves support a biota of low diversity, much of the simplicity is more apparent than real. Britton and Morton's book makes clear that a surprisingly diverse array of distinctive marine shore environments occurs in the Gulf of Mexico, and it should generate educated support for protecting and sustaining these environments.

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A Coastal Project

Nearshore Sediment Transport. RICHARD J. SEYMOUR, Ed. Plenum, New York, 1989. x, 418 pp., illus. $85.

This long-awaited book written by a group of leading U.S. coastal engineers and scientists provides a summary of theoretical and field results of the Nearshore Sediment Transport Study (NSTS). The NSTS was an ambitious six-year long (1977–1982), four-million-dollar field data collection project that had as its major objective the development of "improved engineering models for predicting the motion of sediment along straight coastlines under the action of waves and currents in the nearshore zone." The NSTS was one of several such multi-institutional projects conducted in the 1970s and 1980s in Canada, Europe, Japan, and the United States. (Papers describing some of them are to be found in volume 1 of the *Proceedings of Coastal Sediments '87*, published by the American Society of Civil Engineers.)

The material is arranged in 30 independently authored chapters organized under 17 general headings. With respect to subject, the major technical chapters fall broadly into three categories: field measurements and instrumentation, nearshore hydrodynamics, and sediment transport. All chapters are self-contained and focus directly on the subject at hand with a minimum of literature review and cross-reference to other chapters. With rare exceptions, literature citations peak around 1978 to 1982, particularly in the treatment sediment transport. Although essentially all of the material has long since been published in journals and conference proceedings, the collective power of so many original and well-written articles warrants their being brought together under one cover.

The chapters on measurement procedures and instrumentation, many of them only a few pages long, hold the fruits of hard-won experience and careful analysis. Sediment-sensing and sampling devices produced under the purview of the NSTS are described, including the highly successful optical backscatter (OBS) sensor developed by John Downing and Richard Sternberg, with results of applications presented in two chapters. Other chapters describe nearshore bathymetry survey techniques, fluorescent sand tracer methodology, and measurement of the long-term (order of months) longshore sand transport rate by impoundment at breakwaters and jetties. In two of these, Ole Madsen provides a thorough analysis of the theory of sand tracer measurements and Robert Dean describes the principles and analytic procedures of large-scale trap experiments and results at two sites. Coastal-processes researchers will appreciate the care taken by the NSTS group in analyzing errors in their instrumentation and measurement techniques.

Much of the gold in this book is contained in five chapters on nearshore waves and currents written jointly by Edward Thornton and Robert Guza. Their contributions are the most up-to-date, including citations to 1985 and 1986, and, taken

"Rack for emptying and rinsing . . . suspended sediment sampling devices. The rack holds a row of funnels which drain the water and sediment into numbered bottles." [From *Nearshore Sediment Transport*]

together, constitute an excellent framework for a modern graduate course on nearshore hydrodynamics. The subject matter includes design of field measurement systems; shallow-water transformation of regular and random waves; run-up and surf beat; conservation equations for nearshore waves and currents, including comparison of theoretical predictions and NSTS field measurements of setup, radiation stresses, and bottom friction coefficient; and regular and random wave models of the longshore current tested with field data.

The greatest weakness in this book is in the account of sediment transport. One would have expected a chapter on the Bailard sediment transport model published in the early 1980s, which was developed during the NSTS and among NSTS researchers and has served as the theoretical starting point of much recent work on sediment transport and beach change modeling. The physical insights and measurements obtained by the NSTS would be useful for examining the model predictions that have been published elsewhere. Thomas White and Douglas Inman do describe the results of the meticulous NSTS tracer experiments on depth of sand mixing and gross longshore sand transport rate, for which, surprisingly, much of the modern technology of hydrodynamics measurement so skillfully employed in the NSTS does not appear to have been used.

This book would more appropriately have been entitled "The Nearshore Sediment Transport Study," since it focuses on the activities and results of that project. Readers interested in learning about the state of knowledge of nearshore wave, current, and sediment transport measurement technology, hydrodynamics, and engineering procedures to measure the long-term longshore sand transport rate will find it worth owning. Those interested in sediment transport theory and related applications are advised that the NSTS fell short of its goal of developing engineering models of sediment transport, and this book does not include important theoretical, field, and laboratory advances made elsewhere over the past decade.

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Books Received

The Arctic Seas. Climatology, Oceanography, Geology, and Biology. Yvonne Herman, Ed. Van Nostrand Reinhold, New York, 1989. xii, 888 pp., illus. $92.95.

Behavioral Genetics. A Primer. Robert Plomin, J. C. DeFries, and G. E. McClearn. 2nd ed. Freeman, New York, 1989. xvi, 455 pp., illus. $32.95. A Series of Books in Psychology.

Biological Invasions. A Global Perspective. J. A. Drake *et al.*, Eds. Published for the Scientific Committee on Problems of the Environment, International Council of Scientific Unions, by Wiley, New York, 1989. xxiv, 525 pp. $146. SCOPE, vol. 37.

Characterization and Catalyst Development. An Interactive Approach. Steven A. Bradley, Mark J. Gattuso, and Ralph J. Bertolacini, Eds. American Chemical Society, Washington, DC, 1989. xiv, 451 pp., illus. $99.95. ACS Symposium Series, vol. 411. From a symposium, Los Angeles, CA, Sept. 1988.

Charles Darwin in Australia. F. W. Nicholas and J. M. Nicholas. Cambridge University Press, New York, 1989. xiv, 175 pp., illus. $39.50.

Computer Network Architectures and Protocols. Carl A. Sunshine, Ed. 2nd ed. Plenum, New York, 1989. xiv, 543 pp., illus. $75. Applications of Communications Theory.

Computer Techniques in Neuroanatomy. Joseph J. Capowski. Plenum, New York, 1989. xxii, 483 pp., illus. $69.50.

CONPAR 88. C. R. Jesshope and K. D. Reinartz, Eds. Published for the British Computer Society by Cambridge University Press, New York, 1989. xii, 761 pp., illus. $100. The British Computer Society Workshop Series. From a conference, Manchester, U.K., 1988.

Constructivism and Science. Essays in Recent German Philosophy. Robert E. Butts and James Robert Brown, Eds. Kluwer, Norwell, MA, 1989. xxvi, 287 pp. $96. The University of Western Ontario Series in Philosophy of Science, vol. 44.

Contemporary Issues in Comparative Psychology. Donald A. Dewsbury, Ed. Sinauer, Sunderland, MA, 1989. xiv, 509 pp., illus. $40; paper, $27.50.

The Control of the Hypothalamo-Pituitary-Adrenocortical Axis. F. Clifford Rose, Ed. International Universities Press, Madison, CT, 1989. xxiv, 458 pp., illus. $65. From a symposium, London, U.K., June 1988.

Cosmic Odyssey. Jean Heidmann. Cambridge University Press, New York, 1989. x, 182 pp., illus., + plates. $19.95. Translated from the French edition (Paris, 1986) by Simon Mitton.

A Dictionary of Neuropsychology. Diana M. Goodwin. Springer-Verlag, New York, 1989. vi, 325 pp. $39.

Disappearing Through the Skylight. Culture and Technology in the Twentieth Century. O. B. Hardison, Jr. Viking, New York, 1989. xxii, 389 pp., illus., + plates. $22.95.

Getting Published. The Acquisition Process at University Presses. Paul Parsons. University of Tennessee Press, Knoxville, 1989. xii, 243 pp. $29.95; paper, $14.95.

Gorda Ridge. A Seafloor Spreading Center in the United States' Exclusive Economic Zone. Gregory R. McMurray, Ed. Springer-Verlag, New York, 1990. xvi, 311 pp., illus. $89. From a symposium, Portland, OR, May 1989.

Grand Obsession. Madame Curie and Her World. Rosalynd Pflaum. Doubleday, New York, 1989. x, 496 pp. + plates. $22.50.

Gravity's Lens. Views of the New Cosmology. Nathan Cohen. Wiley, New York, 1989. xviii, 237 pp., illus. Paper, $14.95. Wiley Science Editions.

Isolation of Biotechnological Organisms from Nature. David P. Labeda. McGraw-Hill, New York, 1989. xiv, 322 pp., illus. $59.95. McGraw-Hill Environmental Biotechnology Series.

Knowing, Learning, and Instruction. Essays in Honor of Robert Glaser. Lauren B. Resnick, Ed. Erlbaum, Hillsdale, NJ, 1989. xx, 512 pp., illus. $75; paper, $29.95.

Mechanisms of Inorganic and Organometallic Reactions. Vol. 6. M. V. Twigg, Ed. Plenum, New York, 1989. xvi, 535 pp., illus. $110.

The Medical Revolution of the Seventeenth Century. Roger French and Andrew Wear, Eds. Cambridge University Press, New York, 1989. viii, 328 pp. $59.50. From a conference, Cambridge, U.K.

Metallic and Ceramic Coatings. Production, High Temperature Properties and Applications. M. G. Hocking, V. Vasantasree, and P. S. Sidky. Longman Scientific, Harlow, U.K., and Wiley, New York, 1989. xvi, 670 pp., illus. $165.

The Metaphysics of Evolution. David L. Hull. State University of New York Press, Albany, 1989. viii, 331 pp. $73.50; paper, $24.95. SUNY Series in Philosophy and Biology.

Military Space Forces. The Next 50 Years. John M. Collins. Pergamon-Brassey's, McLean, VA, 1989. xxiv, 236 pp., illus., + plates. $24.95. Future Warfare Series, vol. 4.

Mood. The Frame of Mind. William N. Morris with Paula P. Schnurr. Springer-Verlag, New York, 1989. xii, 261 pp. $49. Springer Series in Social Psychology.

Multivariate Statistics and Probability. Essays in Memory of Paruchuri R. Krishnaiah. C. R. Rao and M. M. Rao, Eds. Academic Press, San Diego, CA, 1989. xiv, 567 pp., illus. $59.95.

Network Analysis in Marine Ecology. Methods and Applications. F. Wulff, J. G. Field, and K. H. Mann, Eds. Springer-Verlag, New York, 1989. x, 284 pp., illus. $49.50. Coastal and Estuarine Studies, vol. 32.

Nonlinear Functional Analysis. P. S. Milojević, Ed. Dekker, New York, 1990. x, 264 pp. Paper, $89.75. Lecture Notes in Pure and Applied Mathematics, vol. 121. From a meeting, Newark, NJ, April 1987.

The North American Porcupine. Uldis Roze. Smithsonian Institution Press, Washington, DC, 1989. x, 261 pp., illus. $29.95; paper, $19.95. Smithsonian Nature Books, vol. 8.

Observability and Observation in Physical Science. Peter Kosso. Kluwer, Norwell, MA, 1989. viii, 165 pp., illus. $49. Synthese Library, vol. 209.

On the Frontiers of Science. How Scientists See Our Future. Nigel Calder and John Newell, Eds. Facts on File, New York, 1989. 255 pp., illus. $35.

Organic Radiation Chemistry Handbook. V. K. Milinchuk and V. I. Tupilov. T. J. Kemp, trans. ed. Horwood, Chichester, U.K., and Halsted (Wiley), New York, 1989. xii, 385 pp., illus. $185. Ellis Horwood Series in Physical Chemistry. Translated from the Russian edition (Moscow, 1986).

Physics of Highly-Ionized Atoms. Richard Marrus, Ed. Plenum, New York, 1989. viii, 472 pp., illus. $105. NATO Advanced Science Institutes Series B, vol. 201. From an institute, Cargèse, France, June 1988.

Plant Population Genetics, Breeding, and Genetic Resources. Anthony H. D. Brown *et al.*, Eds. Sinauer, Sunderland, MA, 1989. xii, 449 pp., illus $60; paper, $36. Based on a symposium, Davis, CA, Aug. 1988.

Pollution in Lake Titicaca, Peru. Training, Research and Management. T. G. Northcote *et al.*, Eds. Westwater Research Centre, University of British Columbia, Vancouver, and Instituto de Aguas Alto Andinas, Universidad Nacional del Altiplano, Puno, Peru, 1989. xii, 262 pp., illus. Paper, $CAN20.

Polymers in Microlithography. Materials and Processes. Elsa Reichmanis, Scott A. MacDonald, and Takao Iwayanagi, Eds. American Chemical Society, Washington, DC, 1989. xii, 449 pp., illus. $94.95. ACS Symposium Series, vol. 412. From a symposium, Dallas, TX, April 1989.

Processing of Sensory Information in the Superficial Dorsal Horn of the Spinal Cord. F. Cervero, G. J. Bennett, and P. M. Healey, Eds. Plenum, New York, 1989. xii, 530 pp., illus. $115. NATO Advanced Science Institutes Series A, vol. 176. From a workshop, El Escorial, Spain, May 1988.

PSA 1988. Arthur Fine and Jarrett Leplin, Eds. Philosophy of Science Association, East Lansing, MI, 1989. xviii, 517 pp. $21.50. From a meeting, Evanston, IL, Oct. 1988.

Purine and Pyramidine Metabolism in Man VI. Kiyinobu Mikanagi, Kusuki Nishioka, and William N. Kelley, Eds. Plenum, New York, 1989. 2 vols. Part A, Clinical and Molecular Biology. xiv, 560 pp., illus. Part B, Basic Research and Experimental Biology. xiv, 552 pp., illus. Each vol., $95. Advances in Experimental Medicine and Biology, vol. 253 A-B. From a symposium, Hakone, Japan, July 1988.

Reproduction, Genetics and Distributions of Marine Organisms. John S. Ryland and Paul A. Tyler, Eds. Olsen and Olsen, Fredensborg, Denmark, 1989. viii, 469 pp., illus. £78. International Symposium Series, vol. 1. From a symposium, Swansea, Wales, Sept. 1988.

The Respiratory Physiology of Animals. James N. Cameron. Oxford University Press, New York, 1989. x, 353 pp., illus., + diskette in pocket. $49.95.

Retrovirus Biology and Human Disease. Robert C. Gallo and Flossie Wong-Stahl, Eds. Dekker, New York, 1990. xviii, 409 pp., illus. $99.75.

The Roots of Evil. The Origins of Genocide and Other Group Violence. Ervin Staub. Cambridge University Press, New York, 1989. xvi, 336 pp. $29.95.

Safety Requirements for Contraceptive Steroids. F. Michal, Ed. Published for the World Health Organization by Cambridge University Press, New York, 1989. xvi, 467 pp., illus. $110. Scientific Basis of Fertility Regulation. From a symposium, Geneva, Switzerland, Feb. 1987.

Tritium and Helium-3 in Metals. R. Lässer. Springer-Verlag, New York, 1989. x, 159 pp., illus. $54.50. Springer Series in Materials Science, vol. 9.