tween plant and animal viruses, and which are based on the principal host, are probably artificial" (Tinsley). "It is a fallacy that consumption of leaves, buds, flowers and other plant tissue by insects necessarily reduces plant vigour or reproductive capacity" (Harris). Incidentally, such views expose the anachronistic and inadequate terminology we are forced to borrow from reductionist fields of biology, and the unintentional bias such borrowing produces.

Pollination biology (Yeo) is given a short, classical treatment and should not have been included in the symposium. Concerned with interactions in which the animal raises the fitness of the plant, pollination biology is finally coming into its own as the ecology of foraging strategies welded to gene flow.

Sensory physiologists often marvel that in choice tests herbivorous insects sometimes prefer "the odour of some non-host plant . . . over their natural food" (Schoonhoven). The problem vaporizes if we accept an evolutionary-ecological approach to tastes and odors. Considering the immense diversity of compounds and herbivores present in any specific habitat, there is no reason to expect tastes (and odors) of plants to be intrinsically correlated with their value to the animal (with the obvious exception of fruits and flower nectars, which, we may note, have converged strongly with respect to attractant—sugar—and receptor). Two-thirds of the papers in this symposium unconsciously emphasize the futility of a strictly physiological approach to animal-plant interactions. Attractant, repellent, stimulant, inductant, tasty, distasteful, and other such terms do not refer to properties of chemicals but rather are descriptions of reactions in context. To view the matter otherwise is like expecting the word "la" to mean the same in Arabic, Chinese, Spanish, and French.

Aphids are popular subjects for agriculturalists and entomologists and therefore provide many of the data used in this symposium. However, the collection and analysis of such data are in need of a solid dose of evolutionary biology. For example, aphid biologists appear to have overlooked the fact that the aphid "colony" produced parthenogenetically by a single female is no more a collection of individuals than are the leaves on a tree or the worker ants in an ant colony. The parthenogenetically produced aphid is not the unit of selection, and the fitness of the founding female is measured by her genetic contribution to later generations rather than the number of aphids surviving in her clone. The pseudoevolutionary discussions of aphid fitness vis à vis such phenomena as crowding, effect on the plant, and alate transformation are badly in need of overhaul.

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Sedimentation

Shelf Sediment Transport. Process and Pattern. Proceedings of a symposium, Washington, D.C., Nov. 1971. DONALD J. P. SWIFT, DAVID B. DUANE, and ORRIN H. PILKEY, Eds. Dowden, Hutchinson and Ross, Stroudsburg, Pa., 1973. xiv, 656 pp., illus. $35.

One result of continental shelf and estuarine studies during the past 40 years has been the evolution of concepts regarding shelf sedimentation and dynamics. D. W. Johnson's "shelf-at-grade" model, which was popular during the early part of the century, was shown to describe the exception rather than the rule in the 1930's and '40's. Subsequent studies during the '50's and '60's have shown that shelf sediments can be at various stages of textural equilibrium while either in or out of compositional equilibrium with their environment.

Questions regarding the extent and mode of modern shelf sedimentation and sediment transport, however, remain. Is the shelf at grade or in disequilibrium? What are the main transporting agents—wave-induced activity, wind drift, or some other mechanism, such as tides or internal waves? Does sediment movement occur mainly during storms or is it more or less continuous? How much stream-derived sediment is being deposited on modern shelves and how much remains trapped within the estuaries and coastal marshes or bypasses the shelf and is deposited in the deep sea?

The answers to these and other questions were sought during a symposium held during the 1971 annual meeting of the Geological Society of America. This book includes most of the papers presented at the symposium. It is divided into three sections. The first, containing nine papers, deals with the processes of sediment transport as seen through theoretical models and derived from field data. The second contains six papers which concern themselves primarily with the transport of fine sediment, mostly in suspension and in nearshore areas. The third section, consisting of 12 papers, deals with the transport and dispersal of coarse sediments on shelves.

Papers range greatly in length, from the expansive (75-page) paper of Swift, Kofoed, Saulsbury, and Sears to the cryptically short (3-page) paper by Stride. Similarly, in style and content the papers range from nearly incomprehensible and trivial to well-written and fundamental. Perhaps the uneven editing reflects the relative speed with which the papers were published after the symposium.

A more serious complaint is the overemphasis on the continental margin of the eastern United States; 65 percent of the papers and fully 75 percent of the total pages in the second two parts of the book deal with this area. Although it is true that a disproportionate amount of shelf research is being done (and has been done) off the eastern United States, the fact that the book is predominantly domestic in scope seriously restricts its worldwide applicability. One would hope that future symposia will place greater emphasis upon worldwide processes and phenomena.

Fortunately the book's good points outweigh the bad ones. Not only is the subject matter timely, but many of the papers present valuable new observations, insights, and models. Most notable are the papers by McCave (on the transport of fine-grained sediment onto and across shelves) and Duane and others (on the morphology, structure, and origin of linear shoals along the central and southern Atlantic shelf). Despite the turgid prose, the study by Swift and others is an extremely valuable contribution to our knowledge of shelf morphology and processes. The book also contains several thought-provoking discussions of other papers within it. Not only do these discussions make interesting reading, they also expose many of the present controversies and problems concerning shelf sedimentation and in the process give the reader a feeling for the dynamic state of the art.

The book is probably too specialized and too expensive for use by students, but the timely discussions and new data make it a necessary reference book for those working on shelf sediments and processes.

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