

Environmental Change in the Maritimes

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Environmental Change in the Maritimes

Edited by J. G. Ogden II and M. J. Harvey
*Nova Scotian Institute of Science,
 Halifax, Nova Scotia, 109 p.,
 \$5.00*

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The concept of the immensity of geologic time may have been geology's major contribution to science: the present and the past are keys to each other, provided that we have some knowledge of the relevant processes. We are now experiencing tremendously-accelerated anthropogenic environmental changes, and it has become necessary for us to narrow our temporal focus so as to better decipher the Holocene squiggles superimposed upon the Quaternary wiggles. This little volume, from a symposium held at Dalhousie University in 1971 (why did it take four years to publish it?), is an attempt at such a synthesis for the Maritime Provinces.

Each of the papers in the symposium is concerned, in some way, with the Quaternary history of the Maritimes. Within these broad limits, there is quite a range of subjects, from isotope geochemistry to beetles, and from littoral invertebrates to pollen. The scientific "meat" of the papers shows a similar range.

The volume begins with an interesting paper by Byers on prehistoric man in the Maritimes, which discusses possible food sources and cultural concentrations; Terasmae then presents an excellent summary of late Quaternary climatic changes, and the likely effect on human settlement. Two very short contributions follow. (Throughout the volume, there is a strange mixture of two-page and twenty-page papers. Did some authors only submit summaries of their talks?) Raiton summarizes the post-glacial pollen zones for the region, and Mann presents a somewhat arm-waving discussion of the impact of man on the environment.

Another good summary follows: Bousfield and Thomas' discussion of the effect of postglacial climatic changes on the distribution of littoral marine invertebrates. Distributions of many species are disjunct and discontinuous, and the authors do a good job of correlating the present observed populations with past environmental changes. My only quibble with the paper concerns the mixture of data from different surveys, at different times, using different methods. For example, the paper records 100 species per station in the Minas Basin, whereas the vast bulk of the mud flats in the area support less than 30 species per station. The paper also states that the isopod *Chiradotea caeca* is "virtually lacking in the Fundy region" (p. 57), while our work shows it to be ubiquitous in sands of the lower beach and lower intertidal, making copious tracks identical to *Cruziana*, the common Paleozoic trace fossil made by crawling trilobites.

A short contribution by Howden is next, on the late Quaternary history of some of the insect groups, in which the importance of man as an agent of dispersal is noted, and some comments made on possible Pleistocene distributions. Mott then presents the results of some palynological investigations in New Brunswick, and Grant follows with a first-class summary of recent coastal submergence. The volume concludes with Ogden's brief review of some of the principles of isotope geochemistry.

Although a somewhat modest attempt, this little volume does succeed in emphasizing the effect of Quaternary history on our present environment. About four of the papers make the volume worth five dollars.

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Nearshore Sediment Dynamics and Sedimentation: An Interdisciplinary Review

Edited by J. Hails and A. Carr
*John Wiley and Sons, 816 p., 1975.
 \$36.50*

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On open coasts the nearshore zone is essentially the zone of breaking waves and wave induced currents – the submarine section of the beach system: in the estuarine or embayment situation tidal currents may assume greater importance in sediment transport and deposition. The morphology, sediments and dynamics of this zone have been extensively studied in recent years and the book stems from an interdisciplinary symposium organized by the editors, in Southampton, England, to review some of the recent developments in the field. It contains 11 papers of varying length and sophistication and, though the contributors do represent a number of disciplines, the collected papers do not constitute a review. If the book is to be judged on these criterion, which is urged upon the reader by its subtitle and in the editor's preface and introduction, then it cannot be considered successful.

There is only one review paper proper, "Dynamics and Sedimentation: the Tay in comparison with other estuaries" by A. T. Butler, C. D. Green and J. McManus, and the dilemma which faced these authors (all the authors?) is nicely pointed to in their introduction. They were encouraged to frame their topic within the style of an essay-cum-review of estuarine sedimentology rather than produce an isolated contribution on the Tay estuary. Scotland and also to provide an assessment of research problems requiring attention. In responding to this challenge they realized the danger that the end result would neither be a comprehensive review of the Tay, nor a comprehensive review of estuarine dynamics and sedimentation. In fact, the end result is the longest and one of the best papers in the book. Would that the