

## REVIEWS

*The Natural Environment of Newfoundland, Past and Present.* Ed. Alan G. Macpherson and Joyce Brown Macpherson. [St. John's:] Memorial University, Department of Geography, 1981. 265 p. \$17.50 (Obtainable from Dr. A. G. Macpherson, Dept. of Geography, Memorial University.)

### MICHAEL MARSDEN

This book provides the first overview in a single volume of the environmental parameters of Newfoundland. Alan and Joyce Brown Macpherson have chosen to do this with a coordinated series of commissioned review papers which have been presented in a conventional and logical order. Thus the book opens with a historical review of early perceptions, which is followed by summaries of tectonics (crustal movements) and surface morphology (landforms), oceanography, climate, surface water and landforms, the development of the vegetation cover since deglaciation and the affinities and distribution of the indigenous plants and animals. The book closes with an intriguing and thought-provoking essay on the alien anthropophytes of the Avalon Peninsula. If, like this reviewer, you are not sure you would recognize an alien anthropophyte if you saw one and vaguely fear that your descendants might become involved, it is worth reading this essay simply to explore a quiet challenge to some concepts of environmental determinism.

Alan Macpherson opens the book with a fascinating and scholarly study of a wide range of literature as far back as 1589. He has produced a surprising wealth of varied perceptions of the Newfoundland environment, some of considerable sophistication, as with the Cartwright journals from 1792. His demonstration that most components of the environment had been identified by 1882 will provide interest for a wide range of readers.

Robert Rogerson offers a review of the tectonic evolution and surface morphology of Newfoundland which provides everything the title promises,

but no more. His paper is not a regional physiography but is genuinely concerned with the relationship of the surface topographies to those tectonic zones, whose evolution is clearly described. It is perhaps a pity that modesty did not allow Rogerson to deal more fully with the components of the present landscape and especially the glacial and post-glacial relicts which are his special area of interest and for which he is so well known.

Geoffrey Farmer has given an almost clinical account of the physical oceanography. The text is clear and professional and the coverage is thorough. There is no attempt to incorporate the marine biology or to present the physical parameters as environmental characteristics. He does not trace the oceanic influences upon terrestrial environment characteristics nor does he discuss the relationship of this particular environment to man in Newfoundland. The organization of this paper is no accident because he takes a firm stand in his closing paragraph, separating the environments as a "regional duality."

Colin Banfield occupies seventy pages of the book with an outline of the climate. There is an orderly reductionist presentation of the parameters with no less than forty-eight pages of diagrams and tables. Banfield is however unique among the contributors in using his presentation to derive a conclusion, i.e., that the classical classification systems such as Koppen and Thornthwaite are not adequate in describing the climatic mosaic of the province. Unfortunately there is no identification or explanation of the system used for the climate map on page 128 unless we assume that the key is the classification, the classification is his, and that it is new. If so, there is a problem of comparability for any reader using the conventional systems applied elsewhere.

William Yoxall in his paper on the surface waters and associated landforms of the island of Newfoundland also wants his title to be regarded seriously. He alone confines his work to the island and this is not a hydrology. It is a careful and scholarly exposition of the relationship between the drainage nets and landforms over time. It drives to the significant judgement that the drainage has not yet reached a stable dendritic organization and that any destabilization of the regime would lead to the development of a more recognizably fluvial landscape at the expense of eliminating most of the surface water storage which characterizes so much of the terrain in Newfoundland.

Joyce Brown Macpherson in a remarkably tight piece of writing outlines the development of Newfoundland's vegetation and the relationship to climatic changes during the Holocene (post-glacial period). She has managed to combine a historical introduction with some precepts of palynology (the study of pollens) and an explanation of the problems specific to the Newfoundland case. The ensuing compilation of modern pollen spectra (to which she has made significant contributions) and her critical analysis lead

to a rational discussion of the changes which have occurred in the vegetation and climate over the last 10,000 years. There are speculations as to the dominant climatic controls through that time and the identification of a climatic deterioration since 3,000 B.C. There is a more holistic view than is shown previously in the book and it provides an appropriate introduction to Roberts Mednis, who follows with "The Indigenous Plants and Animals: their geographical affinities and distributions."

The Mednis paper serves not only as an introduction and overview of the Newfoundland case but also as an introduction to methodology. He opens both "Plant" and "Animal" sections with unabashed guides to selected readings that will be particularly valuable to a newcomer and generalist. He follows with maps which show the varied distributions of some selected species which overlap in Newfoundland. An outline of the modes of dispersal—anemochore, zoochore, and hydrochore (dispersals by wind, by animals and by water)—is an enlightenment in and of itself, although it is meticulously directed to the Newfoundland case. A discussion of faunistic affinities of the mammals is also of general value as well as serving to explain the particular. Mednis concludes with brief excerpts which delineate the two major biomes (vegetation types) of Newfoundland and yet allow him to leave the reader with an image of variety and change which is congruent with Joyce Macpherson's work.

This book closes with an intriguing sortie by Karyn Cooper into at least one aspect of man's intervention, the so-called anthropophytes, both as cultivated plants and weeds. Although purists (factionalists?) might quibble over terms like "transferred landscapes," or prolong the discussion over Cooper's definition of "weeds," her account of adventive weeds in Newfoundland tells a fascinating story of a transfer from the Old World to the New. Strangely enough, after the long jump there are local distributions and failures. One clue comes from a plant list of a single English county. Cooper explores the habitats of these migrant weeds beyond the usual disturbed sites and into the built environment. There she introduces us to some city slickers among Nature's children with such associations as the Common Dry Roadside in Built-Up Areas, the Urban Weed, the Wet Roadside Ditch and the Cultivated/Fill. There are necessarily brief allusions to dispersal with human aid, environmental plasticity and the role of man in increasing the genetic diversity of some species. Cooper concludes with a gentle understatement of "problems" which will force any thinking reader into a reconsideration of some of the assumptions that lie at the heart of environmental ecology.

The graphics have been coordinated and presented by Memorial's Cartographic Laboratory. They include very varied styles and methods, but they are without exception clear and for the most part elegant.

*The Natural Environment of Newfoundland, Past and Present* offers an

authoritative and exhaustive overview of those environmental characteristics the editors have chosen to present. It is at once an introduction to the Newfoundland environment and a future reference book, while the individual bibliographies offer powerful tools to the newcomer. The authors, without exception, convey an authority that makes the book valuable for itself and not merely because it is a "first" or an "only," or even because, remarkably, it is the product of a single department.

Readers who approach the book from its title may suffer some disappointments. Environmentalists are notoriously beset by semantic difficulties and we all occupy different ranges of the spectrum. Thus Alan and Joyce Macpherson, Mednis and Cooper adopt holistic approaches and write for people within their disciplines and without. They present material which can be used in teaching, as case studies, or in comparative works, while retaining a clear descriptive value in the Newfoundland context. Banfield, Farmer, Rogerson, and Yoxall by contrast confine themselves, with perfect propriety, to their systematics. They meticulously present the physical facts without assertions as to their role in the environmental complex, while Banfield and Yoxall finally pursue restricted topics within their disciplines—the inadequacy of climatic classifications and the relationship of drainage to topography. As a consequence a general reader or a transdisciplinary environmentalist might have difficulty in recognizing the relevance to an overview or synthesis. For example Rogerson's discussion of tectonics before the Mesozoic (early crustal movements) may not provide important insights in this context, while Banfield presents more climatological tables than are needed to support his important theme and yet too few to serve as a data base. It seems probable that these were decisions by the editors, since each author is obviously capable of expanding to the boundaries of his topic and beyond in order to provide links to a holistic synthesis.

The book is dedicated to William ("Bill") Summers, a geographer held in affection and esteem across Canada. He must be proud of the tribute since the book is a definitive original work offering the first complete overview of the biophysical parameters of his homeland. It is inconceivable that, in the future, anyone could begin work in Newfoundland or undertake comparative studies without turning to this material. The book deserves a wide distribution and review outside Newfoundland.

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