

Thirty papers were presented, of which over half relate to Faroese and Greenlandic whaling. The volume begins with a brief history of whaling, which claims to portray the two competing kinds of whaling: commercial whaling, driven by avarice, and "limited, ecologically-justified" subsistence whaling. Although the latter category is never properly addressed, we are informed that the commercial whalers left a "totally ruined ecosystem" and now it is unfair that native whalers have to pay for these "irresponsible actions." Hardly a credible preface to the conference!

The proceedings are organized into three sections: "Biological Studies," "Policy and Regulations," and "Socio-Cultural Aspects." Although the "Biological Studies" section constitutes nearly 40% of the proceedings, not much new or interesting information is presented. If anything, this section reveals the large uncertainties inherent in stock assessments of whales, the nebulous data that conservative environmentalists have exploited in bringing about a blanket moratorium on whaling. Survey data were presented by Norwegian and Icelandic biologists, but both found the costs of obtaining accurate data on pelagic whale species to be prohibitive and unlikely to detect anything but very gross trends. Some of the biological data presented was obtained under the controversial label of "research whaling." Such data, obtained from the Icelandic catch of fin whales, was presented as evidence that changes in several growth and reproductive parameters had occurred over the past few decades, apparently as a result of changes in population densities and resource competition. It was argued that such density-dependent responses of the population to whaling could only be detected through long-term monitoring (i.e., through dissection of dead whales) and that there was a need to look at whales in a broader perspective in connection with the management of other marine resources.

Science and the International Whaling Commission received a bashing in the second section of the proceedings, "Policy and Regulations." In a long diatribe, anthropologist Milton Freeman dismissed the recent history of the IWC as being one based on politics and sentimentality — the end of an era of attempted scientific rationality — and he argued that the resulting management decisions have caused serious and pervasive damage to a number of human communities. Greenlandic politician Finn Lynge stated that science was simply a costume that one put over the attitudes one already had, and he asked the audience to "try to imagine what would happen if the various national delegations at the International Whaling Commission were encouraged to formulate their policies on philosophical and emotional principles, without trying to cloak them in statistics or other scientific garb." (I tried to imagine but quickly returned to the comfort of my biologist's costume.) Norwegian political scientist Alf Hoel presented a concise history of the IWC and the role of the United States in using trade sanctions "primarily for the sake of demonstration of some action [to environmental activists]" to force the end of Norwegian whaling. (Norway holds a unique position in the IWC in that its objection to the 1986 moratorium is still in force and it is not bound by the vote.) Hoel stated that the blanket moratorium on whaling represented a major setback for rational resource management and that Norwegian whaling could not be viewed in isolation from its fishing policies. Unfortunately, the recent collapse of Norway's fish stocks is not especially exemplary of rational management.

In the final section, "Socio-Cultural Aspects," several anthropologists examined the international political development of the anti-whaling campaign and its socio-cultural impact on coastal communities in the North Atlantic. The whale-hunting culture of the Faroe Islands figures prominently in this arena, much like Newfoundland did during the anti-sealing campaign. Anthropologist Raoul Anderson, drawing on his experience with the Newfoundland harp seal hunt, paints a picture of a beleaguered salt-of-the-earth folk in battle with the urban environmentalist (however well intentioned) who doesn't know which end of the animal his porkchop comes from. He claimed that international resource politics, especially environmentalism, threatened the subsistence, independence

and self-esteem of coastal communities. On the other hand, as another anthropologist pointed out, foreign criticism has served to rally the whaling societies, to entrench cultural identity and to ensure that whaling will endure. As anthropologist Anne Brydon noted, Iceland has responded to the anti-whaling campaign with its own propaganda, which portrays the anti-whaling stance as a morality that can only flourish in those societies where the majority have lost touch with the realities of food production. The Icelanders argue that it is the very wealth of these non-whaling nations that permits such a morality to exist, a wealth that is built upon a far more destructive use of nature.

Considering the swiftness with which the proceedings were published, and the fact that English is not the first language of most of the participants, the publication is remarkably well produced. However, there are some glaring editorial errors that may be attributed to the haste. The subject material is poorly organized; for example, at least three papers in the biology section have little or nothing to do with the subject. Some papers should have been edited for brevity; for example, in a rambling paper by Anderson, an entire section of over three pages was repeated but with minor editorial variation. It appears that most of the papers were carefully proofread but a couple are full of typographical errors. Presumably, as with many symposium publications, the papers did not benefit from peer review, which may account for their uneven quality. The proceedings are followed by a table with the heading "Whales — IWC's Nomenclature," which includes several scientific names that are not officially recognized by IWC.

Despite the problems with this publication, it is an important contribution to the continuing dialogue on whaling. It represents the inevitable swing in the pendulum away from the extreme environmental politics of the '70s and '80s towards (I hope) a more rational discussion on the use of marine resources. It is a useful reference for biologists, anthropologists and students of international resource politics. Now that the whales are on the way to being saved, we may have to think about managing them as an integral part of our coastal marine ecosystems. And like it or not, in the convener's words: "Basically, people, politics, and cultures are also parts of the global ecosystem."

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FIELD GUIDE TO THE PEAT MOSSES OF BOREAL NORTH AMERICA. By CYRUS B. McQUEEN. Hanover: University Press of New England, 1990. 138 p., 1 map, 32 figs., 30 colour photos, identification keys, index, bib., glossary. Softbound. US\$22.95.

The author has attempted to provide a simple but effective means of identifying common peat mosses (*Sphagnum*) in the field that is useful to both amateur naturalists and professional botanists. His user-friendly style and personal anecdotes make this book relatively easy to read. The use of normally mind-boggling terminology is reduced to the necessary minimum, and where technical terms are used, they are clearly defined both in the text and in the glossary. Where appropriate, the author has included line drawings to explain some of the more confusing terms. The author also describes common peat moss habitats and major environmental gradients (shade, depth to the water table, and surface water chemistry) that affect *Sphagnum* distribution. Both of these ecological descriptions are often necessary for accurate identification of *Sphagnum*. Species descriptions are for the most part accurate, and critical distinguishing characteristics are clearly illustrated with line drawings. Some photographs are difficult to interpret because several species are shown together and it is hard to distinguish one from another. However, this is not critical, since photographs are not used for identification purposes but are merely illustrative.

The author has taken great care to produce a *field* guide that does not require a compound microscope to be used effectively. Thus, all identification keys are based on characteristics that are distinguishable to the naked eye or with the aid of a hand lens and ruler. However, on occasion, the author recommends the use of a microscope to clearly distinguish between closely related species. Keys are dichotomous and for the most part easy to use. Where confusion and pitfalls may arise, the author recognizes them and offers alternative solutions to solving those problems. The author also provides an easy to use multiple access key, which in some cases may provide significant clues as to the identity of some species.

The size and soft cover also make this book useful in the field, but the square corners may, on occasion, make it awkward to handle. The poor-quality binding and square corners could significantly reduce the book's life expectancy, especially under field conditions. The cost is a bit high in view of the number of photographs and in comparison to other field guides.

With the wide variety of forms and colours that many species may assume under different environmental and climatic conditions, and the visible similarities among many species, *Sphagnum* identification is a particularly bewildering subject and has discouraged many naturalists and terrified more than one plant ecologist. Because of these intra-specific variations and inter-specific similarities, reliable identification of most peat mosses is impossible without staining, sectioning, and the use of a compound microscope. Having stated this, this book comes close to being the exception that proves the rule. The author has achieved this goal somewhat artificially by selecting only those species that have diagnostic characteristics readily identifiable with a hand lens and simply pointing out closely related species that may require microscopic study to distinguish them. For example, *Sphagnum austinii* and *S. papillosum* are both common and abundant in coastal Pacific peatlands and often grow intermixed on the same hummocks. In some cases, it is virtually impossible to distinguish each species based on macroscopic features but relatively easy when using a compound microscope. To circumvent this problem, the author only describes the more common *S. papillosum* in his keys, and later in his more detailed description of that species he describes *S. austinii* as being: ". . . barely distinguishable from *S. papillosum* in the field." He then describes other methods for distinguishing between these species. However, based solely on the identification keys, both species would have keyed out together. For obvious reasons, this may prove entirely unsatisfactory to professional botanists.

This book has a definite eastern North American low-boreal flavour to it that somewhat restricts its use in other areas. Descriptions of such species as *S. lindbergii*, *S. austinii*, *S. tenellum*, and *S. jensenii*, which are both common and abundant in high-boreal and/or Pacific coastal areas of western North America, are hidden in the descriptions of other species. Some species — for example, *S. lenense* and *S. balticum* — that are common in high-boreal regions of western Canada are not even mentioned. Conversely, such species as *S. pulchrum*, *S. cuspidatum*, and *S. flexuosum*, which do not occur in the western interior of North America, are described at length. One of the major shortcomings of this book is that the author has not provided distribution maps for these species and often leaves the reader with the impression that they are found throughout boreal North America. This could lead to serious identification errors, which may be unacceptable to many users in western and mid- and high-boreal regions of North America.

In conclusion, the writing style and the use of macroscopic characteristics to identify *Sphagnum* species make this book a very valuable tool for naturalists and students venturing into peatland ecology for the first time or with a passing interest in these ecosystems. This book certainly makes a very difficult subject a lot less discouraging for non-specialists. However, because of its eastern North American focus, naturalists interested in coastal peatlands in western North America may find it of limited use. Also, professional botanists who must rely on accurate identifications will find this book less

than satisfactory. Readers of *Arctic* interested in northern peatlands will only find this book adequate at best.

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CANADA'S MISSING DIMENSION: SCIENCE AND HISTORY IN THE CANADIAN ARCTIC ISLANDS. 2 vols. Edited by C.R. HARINGTON. Ottawa: Canadian Museum of Nature, 1990. 855 p. Softbound. Price not indicated.

The 40 papers in this publication represent the proceedings of an international meeting with similar title sponsored by the National Museum of Natural Sciences and organized with great skill by C.R. Harington, who has performed his heavy editorial task with equal skill.

The papers are arranged in nine sections in the following sequence: scientific research — support, conflict and the future; the earth — fossils and paleoenvironments; freshwater, sea and ice; the atmosphere; plants; insects; fishes, birds and mammals; human pre-history; history and recent expeditions. The 62 authors (or co-authors) are mainly leading Canadian specialists in their fields, but 9 have United States and 2 have United Kingdom affiliations.

As Harington remarks in his perceptive introduction, this publication complements M. Zaslow's *A Century of Canada's Arctic Islands* (Ottawa: Royal Society of Canada, 1981), which focused "more on the history of various disciplines, policy, strategy, sociology and economics." The present work gives greater emphasis to the current state of knowledge in the various disciplines and also provides pointers to the way ahead. Compared with the earlier volume, it can thus be expected to appeal more to the field scientist than to the administrator or the commercial operator.

In a short review it is impossible to do justice to a book of such broad scope and, in the case of some papers, magisterial sweep. It is only possible to pick on a small fraction of its contents. And, first, tribute is due to the Polar Continental Shelf Project (PCSP), which, as a support agency, has played a huge role in promoting knowledge of the Canadian Arctic Islands and whose work is ably described by G.D. Hobson, its former director. He is followed by E.F. Roots (PCSP's first director), who rightly stresses the need for "multidisciplinary, internationally-related research," a field in which the PCSP already has an excellent record but for which (reading between the lines) more funds are sorely needed.

In the specialized papers, which form the bulk of the book, there runs through many a persistent theme: the climatic control exercised on all life — human, animal and plant — and indeed determining its very existence, or otherwise, in a hostile land. The key to this theme is contained in R.M. Koerner's paper on arctic ice cores representative of the last 100 000 years. For the future, under the perceived threat of a man-made greenhouse effect, Koerner suggests that "the early phase of the last interglacial may be the best analogue for such warmer conditions." Clues or questions posed on climatic change are scattered through other papers.

Take Harington's own paper on Ice Age vertebrates in the Arctic Islands. He suggests that research in this field has "important palaeoclimatic implications stemming from the relationship between marine mammals and their environmental adaptations." He poses the question of whether there was "a delay between early Holocene open-water conditions in the southern islands compared to the northern ones," the answer to which could be highly relevant to changing sea-ice conditions in the next century, if predictions of climatic warming are correct. This subject is taken up in a paper on climate by G.A. McKay, who points to current projections indicating arctic winters up to 10°C warmer by the year 2050 as a result of arctic haze and the greenhouse effect. A similarly higher than present-day temperature is implied by the trees that grew on