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Author(s): D. A. Walker

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## Book Reviews

ECOLOGY OF A POLAR OASIS. Edited by Josef Svoboda and Bill Freedman. Toronto: Captus University Publications, 1994. iv + 268 pp. and an annex. \$30. ISBN 1-895712-26-2.

Most of the High Arctic is an ecologically-barren polar desert, but there are sporadic flat lowland areas that have a warmer mesoclimates, accumulate moderate amounts of snow and moisture, and support much more productive and biologically diverse ecosystems. The few oases that exist total less than 6% of the Canadian arctic archipelago, and less than 1% of the northeastern Queen Elizabeth Islands. These small areas provide critically important habitat for the sparse wildlife of this climatically stressed biome. The broad objectives of this book are to describe the major biotic communities and to study the environmental factors that influence plant and animal diversity and productivity of the Alexandra Fiord coastal lowland on central Ellesmere Island at 79°N. This site was the subject of an integrated study by a team of 20 Canadian researchers from 1979 to 1985.

The book is divided into four major sections devoted to the environment of the oasis, plant community and production ecology, autecology and experimental studies, and the fauna. Introductory chapters provide an overview of the research, the geology of the region, and the climate. Three excellent chapters by Muc, Svoboda, and Freedman describe the soils, vascular plant communities, and the aboveground biomass of the oasis. These are followed by chapters on the ecology of *Cassiope tetragona* snowbed communities, the standing crop and production of sedge meadows, and communities of the polar desert uplands above the oasis. Eleven chapters are devoted to various autecological studies including resource allocation in plants of different growth form; biomass allocation in ten species of *Saxifraga*; phenology and resource allocation in *Cassiope tetragona*, autecology of *Dryas integrifolia*; effects of habitat on variations of phenology and nutrient concentration in *Papaver lapponicum*, *Salix arctica*, *Cassiope tetragona*, and *Dryas integrifolia*; mycorrhizal status of 24 common high arctic species; effects of fertilization on higharctic plant communities; comparison of grazed and nongrazed sedge meadows; seed banks and seedlings; and dinitrogen fixation in sedge meadows. Two of the most interesting chapters are devoted to the plant communities in microhabitats surrounding a large erratic and the exciting discovery of dead but well-preserved plant communities that were entombed by glaciers during the Little Ice Age. The text concludes with four chapters on the breeding birds, springtails (*Collembola*), the woolly bear caterpillar (*Gynaephora groenlandica*), and muskox populations. Appendices to the book include lists of lichens (104 species), bryophytes (12 liverworts and 89 mosses), vascular plants (92 species), terrestrial arthropods (71 insects, 14 spiders), birds (27 species), and mammals (12 species).

This is an important new compendium of research that provides a much-needed North American High Arctic comparison to that from the International Biological Programme's Tundra Biome research site on the Truelove Lowland, Devon Island, Canada (Bliss, 1977). The format is paper bound. It is an affordable and essential addition to the library of arctic ecologists. Some of the chapters have been previously published in journals. This lends a variety of formats to the chapters. Some have brief abstracts, while others lack abstracts; some are obviously written

with this synthesis in mind, whereas a few do not tie well to the general theme of the book. For example, the chapter on geology by Sterenberg and Stone is a competent presentation of the geological mapping in the region, but it does not link the geological patterns to the spatial distribution of plant communities and biodiversity of the lowland. The opposite is true of the chapter devoted to meteorology and climatology by Labine, which clearly relates the micro-, meso-) and macroclimate patterns to the conditions necessary for plant growth and the regional patterns of productivity.

An unusual addition to the book is an annex containing poems, thoughts, and art of the members of the research team. Such emotion is often lost in the papers and books that result from months and years in the field, but it gives this volume a personal touch that reflects the genuine love that arctic researchers have for northern landscapes. One sample from the annex of this excellent volume:

We all strive to find something which is at once challenging, satisfying and fun. To be able to fuse all of these goals into one—the study of high arctic ecology—and to carry out this search in the *most* beautiful area in the world, is a joy which I am completely unable to express in words! (Greg Henry)

### Reference Cited

Bliss, L.C., 1977: *Truelove Lowland, Devon Island, Canada: A High Arctic Ecosystem*. Edmonton: University of Alberta Press. 714 pp.

D. A. WALKER

*Institute of Arctic and Alpine Research  
University of Colorado  
Boulder, Colorado 80309-0450, U.S.A.*

QUATERNARY INSECTS AND THEIR ENVIRONMENTS. By S. A. Elias. Washington, D.C.: Smithsonian Institution Press, 1994. Hardcover, xiii + 284 pp., Price \$47.95. ISBN 1-56098-303-5.

This new book about fossil insects begins with a brief history of the study of Quaternary insects, mostly beetles, and includes the often told story of Samuel Scudder's pioneering work during the nineteenth century. Scudder's work resulted in the naming of a number of new species, including *Bembidion damnosum*, a trivial name chosen no doubt to reflect Scudder's frustration with the work. The study and use of Quaternary insects, especially beetles, took a turn for the better in the late 1950s thanks to the work of G. R. Coope and since then it has developed into one of the primary research tools of Quaternary paleoecology. Even so Elias points out that fewer than 40 scientists worldwide are actively engaged in the field. Considering the need to understand better climate change in the recent history of our planet, this book is a timely introduction to encourage proliferation of a useful technique.

Oddly enough the audience least likely to benefit from this book, at least in some ways, are the 37 researchers intimately involved in Quaternary insect research. With a research group