

Native people in the Territories and elaborates on the theme of two disparate cultures. The Northern Careers program operated by the federal government and the territorial government's Arctic College system are discussed as examples of institutional long-term facilities.

Chapter four deals with the special case of the Norman Wells megaproject, where the training of Native workers involved trade unions and was conducted in a context of urgency, complexity and political maneuvering.

Chapter five describes the methodology of the case studies, which were chosen to demonstrate the experience of Native organizations, departments of government, cooperatives, and industrial corporations with their training programs for Native employees. The role of unions in the training at Norman Wells is also included. The cases are compared and a plea is made for greater synthesis of the knowledge gained from studies, programs of training and other related activities.

In chapter six the views of those interviewed are summarized into a call for better access to employment, more control by communities of all aspects of employment and a greater choice of work. The elements of successful training, such as motivation and counselling, are also discussed, and a good case is made for recognition of the special skills that Native employees can contribute from their knowledge of the total northern environment.

The information from the study is used in chapter seven to support recommendations for action. Preventive measures are suggested to deal with cultural and institutional barriers to training, and positive measures such as affirmative action and the Northern Benefits program are outlined. The chapter includes a checklist of factors conducive to effective training.

The eighth and final chapter is "preoccupied with systemic solutions," which include the inclusion of Native employment as a core element in all forms of planning; the integration of the four main sectors of the northern economy; and greater use of Native "traditional" skills.

Specific recommendations are made for sectoral analysis of the territorial economy; establishment of a labour force planning board; development of an information system based within communities; and block funding of training programs.

Appendix A describes the designing of the Native Employment Study. Appendix B explains the Native Training Program contained within the study, and Appendix C presents, in graphic form, statistics of Native employment in the Territories. The bibliography provides numerous and relevant references for each chapter of the book, and the illustrations are adequate and unobtrusive.

In her preface the author invites constructive criticism, and in accepting that invitation, two things come to mind — what the book says and the way it says it. With respect to the first consideration, the book is full of useful insights, observations and recommendations, all based on solid research and the synthesis of material of enormous scope. Some of the premises, however, particularly the definition of Native trainees as the experts in the field of program design, require qualification, and while the book emphasizes the cultural factor along with funding and economic development, more could have been said about the role of cultural perspective as it affects motivation to learn, perform and stay with a job.

As for the way in which the book tells its tale, I found *Gathering Strength* hard to read. For a book intended primarily for Native, non-academic readers, such terms as "systemic," "holistic" and "auspices" seem inappropriate. Inventions such as "targetting to," "in-depth" and "Inuit-specific" detract from the quality of the book, and only a journalist could love a paragraph beginning with "Understanding why this situation exists . . ." On one page, within seven consecutive lines, the word "training" appears seven times, "employment" four times and "opportunities" thrice.

The report by Angus Lennie, with its mixture of varying levels of formality and its northern flavour, seems more faithful to the opening premise than the rest of the book.

The layout of pages and the organization of material in the book can best be discussed together. The space between paragraphs is narrow, and this visual difficulty is exacerbated by the extreme length of some paragraphs. Ideas and information are repeated or belaboured, and items are sometimes listed without numbering, indentation or other devices to help the reader. The choice and order of the parts of the book are confusing. It would have been better to let the preface and the introduction do their jobs, let each chapter speak for itself without internal summaries, cross-references and apologia, move the facts section in with the appendices, and summarize the book at the end, if at all.

Despite my criticism, I found that this book made me think deeply, especially about the one-way nature of education and most other cultural and economic forces in the North. While this process appears inevitable, it is ironic that just as Native people are adopting the outlook and skills necessary for survival in industrial society, that society is being forced to recognize its own destructive power, and in seeking a new order of things, looks longingly at the kind of ecological balance enjoyed by the old Native cultures.

No single book can comprise the elements of the northern dilemma, but through her systematic study of one vital, current topic, Frances Abele has been able to provide a useful reference book and a thought-provoker. I recommend *Gathering Strength* to all those involved in the training of Native people for employment and to all who have an interest in the well-being of Native Canadians, North or South.

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THE FROZEN EARTH. By PETER J. WILLIAMS and MICHAEL W. SMITH.
Cambridge: Cambridge University Press, 1989. 306 p., 115 figs.,
refs., index. Hardbound. US\$65.00.

Williams and Smith undertook a challenging task, attempting to integrate published results of field studies of ground freezing and thawing with laboratory and theoretical work applying the principles of physical chemistry and thermodynamics. The resulting book provides an excellent state-of-the-art review of our current knowledge and understanding of the processes controlling ground freezing and thawing and the behaviour of frozen ground.

The introductory chapters deal with periglacial conditions in general, with the landforms related to permafrost and seasonally frozen ground, and with the effects of climate and microclimate on the occurrence and behaviour of frozen ground. Subsequent chapters provide more detailed treatments of: the numerous factors affecting the thermal regime of the ground; down-slope movements of soil related to freezing and thawing and thaw subsidence (thermokarst); terrain features caused by accumulation of ground ice (e.g., pingos), differential freeze-thaw effects (e.g., soil hummocks and stone rings), and thermal-contraction cracking of frozen soil (e.g., ice wedges); thermodynamic behaviour of frozen soil; hydrology of frozen ground; the mechanics of frozen ground; and a summary of aspects requiring further experimental and theoretical study with emphasis on thermodynamic principles. There is ample cross-referencing among chapters to illustrate the interrelation between the various aspects treated. The book is blessed with a thorough index.

A three-page listing of the more than 100 symbols used for various parameters in the text is provided following the table of

contents. The listing is essential, because several of the symbols represent two or even three different parameters. The list does not indicate the customary units or dimensions for those parameters.

The list of references provides an excellent guide to journal papers and conference proceedings dealing with frozen ground. It should be noted that two of the references listed (Williams, 1963, and Williams, 1966a) refer to the same published paper; three entries for K.A. Linell misspell his name as Linnell; and the slash is left out of the "o" in O.H. Løken's name.

The very readable text is well illustrated with numerous high-quality graphs and photos. The reader should, however, be aware that some of the graphs are simplified versions of illustrations from other sources, although the credits do not always indicate this. In some instances the simplification has led to errors, e.g., in the section shown in Fig. 3.12, where the label for "original permafrost surface" was shortened to "original permafrost" and placed in the seasonally freezing layer; the credit states "from Linell 1973."

Few misprints mar the text; only three of those caused this reviewer some concern. On page 102, a factor 2 appears to be missing from equation [4.21]. On page 210, the authors state that "... the unfrozen zone was reduced to 170 m³ . . ." rather than the 167 m² given in the original reference. On page 98, two lines from the second paragraph are repeated in the first paragraph, at the expense of having an obviously incomplete sentence at the end of the first paragraph. Desiccation is consistently misspelled as dessication.

The authors have been less than rigorous in dealing with the subject of permafrost. On page 12 they state: "Permafrost is defined as ground remaining frozen for more than a year" (emphasis added). On p.41 they state: "According to a widely accepted definition any material below 0°C may be called permafrost," but they argue that it is a mistake to apply the term to a material with none of the properties of frozen ground. Nowhere do they refer to the general definition of permafrost: "Ground (soil or rock) that remains at or below 0°C for at least two years," which does not require that the material contains any ice (*Glossary of Permafrost and Related Ground-Ice Terms*, Technical Memorandum No. 142, National Research Council of Canada, Ottawa, 1988). On page 58, however, the authors appear to use this temperature-defined meaning of permafrost when they state "... the top of permafrost is that depth where the maximum annual temperature is 0°C . . ." The authors also object (p.51) to the use of the generally accepted terms "continuous" and "discontinuous" permafrost, for good reasons; but on page 79 they start using these terms themselves.

In dealing with subsea permafrost, the authors invoke (p.51) "... recent submergence due to isostatic adjustment. . . ." Recent submergence is more likely due to the post-glacial rise in sea level; isostatic adjustment in most places resulted in emergence and raised shore lines. Where they state (p.79) that "Permafrost is unique in earth material terms, since it exists close to its melting point," they presumably should have referred to the ice content in permafrost, because none of the other soil minerals are anywhere near their melting point.

Notwithstanding the above comments and the rather stiff price, this book is recommended reading for both graduate students and professionals who are involved in earth science, geotechnical, ecological and hydrological studies in the permafrost region and in other areas that experience seasonal freezing and thawing of the ground.

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PLAYING DEAD: A CONTEMPLATION CONCERNING THE ARCTIC. By RUDY WIEBE. Edmonton: NeWest, 1989. Softbound. Cdn\$12.95.

Rudy Wiebe is a well-known fiction writer in Canada. As poetic shaman and self-styled prophet of both settler and native culture on the prairies and in the North, Wiebe has made his mark on Canadian literature by writing about the West and the North. His many novels and short stories are largely spun out of this space, its histories of aboriginal and white contact, and in his earlier work, out of a German Mennonite cultural context that is his own ethnic and religious background. Such novels as *Peace Shall Destroy Many* (1962) and *The Blue Mountains of China* (1970) involve Mennonite community and protagonists who are in search of spiritual values in a materialistic age. Typically, at the centre of Wiebe's literary consciousness are the land's aboriginal vision questers, the Indians and Inuit, who people his fictional landscapes and whose ancestral past and way of life he celebrates. His two best-known works, *The Temptations of Big Bear* (1973) and *The Scorched Wood People* (1977), are historical fictions of Big Bear and Louis Riel, whom Wiebe mythologizes as visionary heroes.

Playing Dead: A Contemplation Concerning the Arctic is a short collection of three essays originally presented in "somewhat different form and under the title *The Arctic: The Landscape of the Spirit*" as a series of lectures at the University of Toronto. These essays, entitled "Exercising Reflection," "On Being Motionless" and "In Your Own Head," are literary explorations of the Arctic in which Wiebe, with the voice of the informal and discursive essayist, maps the territory. Quoting from the journals and the likes of John Hood, Samuel Hearne and John Franklin, historical records and official reports on arctic expeditions, recorded songs and stories of the Inuit, and supplying his own personal experience of the arctic landscape and the people he met there, the author freely associates and reflects on the physical and spiritual nature of the Arctic and its stories of native/white interface which are frozen in time and space.

In effect, even as the essayist, Wiebe continues to function as the fictionalizer, the storyteller. In an earlier essay, "On the Trail of Big Bear," he explained:

... I believe in "story" as a fact beyond and outside the entity of its maker. Michelangelo's beautiful (perhaps apocryphal but no matter) statement that he studied the rock for the shape that was inside it and then used his chisels not to create that shape out of the rock but rather to release the shape from all the encumbering rock around it — that has seemed to me profoundly true of the storymaker's art also.

In this collection of essays, Wiebe is on the trail of the Arctic, attempting to "release its shape" as he questions and speculates upon the possibilities of historical events and the lives and fates of arctic characters. He speculates, for example, about the relationship between John Hood and Green Stockings, the beautiful native woman Hood painted, and the fate of their daughter. He wonders about the arctic explorer Steffansson's relationship to the native woman Pannigabluk and the untold story of the explorer's son, the blond "Viking" Alex Steffansson, who died in Aklivik in 1969. Of the lost ships *Erebus* and *Terror*, vanished on the coast of King William Island, he suggests:

Perhaps the implacable ice holds them still. Perhaps in one or another of those endless, gigantic ice pressure ridges shifting, sinking, reshaping themselves forever in the ice streams that flow between the islands of the Canadian archipelago, *Erebus* and *Terror* are still carried, hidden and secret. Their tall masts are long since destroyed and their decks gouged, splintered, walled in by impenetrable floes, the ice a shroud scraping over these great oaken sailing ships of empire, their skeleton crews