

activity patterns additionally sets the time frame for visualizing the conditions faced during any given year form a "bird's-eye view."

The bulk of the book is organized into species accounts, each of which covers a species' abundance status, use of the peninsula and surrounding islands and waters (i.e., resident, breeder, migrant or visitant); describes specific observations on local population levels and distribution patterns, timing of use, natural history, and for some species their biogeographic affinities and recent taxonomic status. Throughout each account, information presented is meticulously and quite consistently referenced to the original observer or literature source. Written in a very readable style, the accounts provide plenty of specifics for the serious ornithologist, but remain at a manageable level of detail to be of interest for even the average bird enthusiast. The use of subtitles within each account (e.g., "status," "spring migration," "breeding," "fall migration," etc.) would have aided the reader seeking specific information on a particular life phase of a given species. Accounts are, however, subdivided by paragraphs, each of which often (although not consistently) begins with an introductory phrase such as "Commencement of nesting . . ." and "Fall movement begins . . .," which can assist the reference seeker in locating the appropriate section of interest at a glance.

The great care taken in review of literature and scrutiny of records submitted by a variety of observers sometimes not personally known to the author is evident throughout the species discussions. For example, records for the Long-toed Stint and Siberian Tit are (appropriately) placed in brackets and, as explained, the single observer sightings are not altogether convincing enough to place them on the confirmed list of Seward Peninsula birds. Although sometimes maddening to enthusiastic observers, this system of careful scrutiny of all avian records accepted by the University of Alaska Museum ensures a trusted reference work will result from the accepted records. Similarly, the seeming lack of observations for some probably common but confusing species (e.g., Glaucous-winged Gull, Thayer's Gull) reflects the caution with which the records are accepted. Few obvious omissions or mistakes can be found in the text. The discussion of the probable breeding of Marbled Murrelets north of Nome seems to need clarification as to whether the adult birds apparently collected with the egg are still available for examination, thereby lending additional support for possible breeding, since they were said to have been taken "on rocky land." The discussions of taxonomy for some confusing species such as the Redpoll may be more helpful if placed toward the beginning of the accounts to clarify later discussions, such as was done with the Lesser Golden-Plover. All species seem to have received treatment in proportion to their abundance on the peninsula. The Ruby-throated Hummingbird identified from Nome, however, does not receive its own account but is lumped under "Hummingbirds" with a sighting of another unidentified hummingbird and other extralimital sightings. The use of extralimital sightings has been appropriately kept to a minimum and they appear only when necessary to place the pattern of sightings in a regional perspective.

The impressive amount of literature review undertaken by the author in preparation for the book is clearly indicated in the literature review section. Similarly, the number of observers who have contributed information on birds (all painstakingly listed with page references in the index) is a tribute to the unequalled data base assembled at the University of Alaska Museum. The level of organization of information on Alaskan avian abundance and distribution apparent at this institution should become a model for those compiling similar regional data bases.

The only criticism concerning the black-and-white illustrations by John C. Pitcher is that there should be more of them. This artist has already established himself as one of the premier illustrators

of birds on the continent today and his renditions in this volume provide an enticing taste of his abilities. Other figures, including the two maps on the inside covers, are clearly drawn and useful for reference. The only map I found missing is a relief map or topographic map useful in orienting the reader to major mountain regions and important wetland basins.

More than just another compiled regional ornithological reference, *The Birds of the Seward Peninsula, Alaska* provides an abundance of original data of significance. Examples include breeding range extensions for many species, habitat affinities not nearly so thoroughly explored by previous field biologists and many interesting behavioral and natural history notes worthy of separate publications on their own. This book exemplifies the extremely careful and well-thought-out writing style and thorough record-keeping abilities for which the author is well known; its readable style and clean organization lift it above the level of a stuffy reference text to that of a truly well-rounded and scholarly treatise indispensable for anyone desiring information on the birds of this fascinating region.

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GATHERING STRENGTH. By FRANCES ABEL. Calgary: The Arctic Institute of North America, 1989. Komatik Series, No. 1. 257 p., 1 map, 14 black-and-white photos, 12 graphs, 6 cartoons, 3 appendices, bib., index. Softbound. Cdn \$20.00.

The degree of success of the northern economy, self-government and the settlement of Native claims will depend heavily upon the performance by Native people in managerial and other roles that are being created. Frances Abele's book on training for employment in the Northwest Territories is therefore a timely addition to the literature on vocational education as it concerns Native people, particularly those of the North. The book is a study of various training programs for Native workers conducted in the Northwest Territories during the 1980s. Seven programs, each implemented by a separate agency, were studied over a period of six years, and during the central two years a small group of young Native people were trained on the job with the research team.

Gathering Strength begins with a summary of itself, followed by a brief preface. These two sections define the premises and convictions that guided the study. In summary, these are: 1) trainees and the people of their communities should identify what training is needed; 2) training should meet these needs; and 3) the study and future training should blend economic, social and political considerations and should bridge the gap between Native and non-Native value systems.

The preface is followed by several pages of facts about the Native Employment Training Study, including mention of one case study (of a Transport Canada training project) that did not contribute directly to this book.

A comprehensive list of acknowledgements is next, followed by a map showing the communities of the Northwest Territories, with a key containing names in English, Inuktitut and the appropriate Indian languages. Chapter one is an introduction, with some historical background, an outline of what the ensuing chapters will say, and comments on what has been omitted from the book. This chapter makes the important observation that each of the three present generations of Native people in the Territories has its distinct history and characteristics.

Chapter two deals with the legacy of colonization, the movement towards self-government, and the problem of designing training to accommodate regional characteristics. Chapter three sums up the history and current status of vocational training for

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