

TWELFTH NORTHERN LIBRARIES COLLOQUY, 5-9 JUNE 1988. Edited by ANN M. BRENNAN and MARTHA ANDREWS. Boulder: World Data Center for Glaciology (Snow and Ice) and Institute of Arctic and Alpine Research (INSTAAR), 1988. Glaciological Data, Report GD-22. 331 p., figs. Softbound. No price indicated.

In keeping with the participants' commitment to share information and ideas, this report on the Twelfth Northern Libraries Colloquy provides a wealth of information on cold regions bibliographic resources. A wide range of topics is covered: from papers on individual library collections to discussions of proposed networks among information centres; from historical and archival subjects, such as the organization of polar information before the advent of on-line databases, to up-to-the-minute issues, such as the use of CD-ROMs for creating a polar bibliography; from descriptions of the operation of highly specialized science and technology libraries to discussion of issues in public library services.

This range is not surprising given that participants are interested not only in information in *all* areas of northern research but also in *all* collections located in sub-arctic and arctic regions, whatever their coverage. Where interests conjoin, however, is in the growing concern to create an international polar information network. The colloquy's theme, "Northern Information — The Global Connection," points to the information community's awareness that as science involves itself more and more with global issues such as environmental change, information sciences must be ready to support such research with global information accessibility. Of course, this is all very well to say, but somewhat more difficult to realize. Obstacles to such endeavors usually include everything from lack of funds to lack of compatibility of machine-readable catalogue records. This colloquy marks some progress toward making the network a reality, however. Participants approved a formal recommendation to establish a working group to prepare a design for a Polar Information Network. The recommendation includes a "vision" toward which the group will work:

To provide easy and effective access to all polar-related bibliographic data bases, expand data base coverage to subject or geographic areas not adequately covered, minimize the need for duplicate effort and develop dependable links to other international institutions that provide bibliographic data bases in order to expand access and ease of use.

Given the number of papers that discuss cooperative efforts in the report, fulfillment of this vision seems to be only a matter of time.

The primary audience for this report are information professionals. The papers deal with issues of interest and concern to those who spend their time searching out, organizing, and disseminating information. A secondary audience, naturally, are those who benefit from this work: people engaged in northern research. One issue discussed in several papers is of particular interest to both audiences, however, and that is the growing problem of "gray literature," a problem that plagues librarian and researcher alike. Gray literature is defined by one of the keynote speakers as "unreviewed preprints and reports with limited, usually author-controlled distribution." Typically, when an on-line literature search is done, the list of citations retrieved contains few if any references to the gray literature. This is because most databases tend not to pick it up, even those databases claiming to cover government and other types of reports. The researcher, thus, can miss relevant work very easily. The librarian, too, has problems. It is difficult to build up a comprehensive collection without these reports; yet it is often hard, first of all, to learn of their existence and, secondly, to find a supplier for them.

One of the papers deals with arctic/Alaska gray literature and presents the findings of a study on the coverage of it by various bibliographic databases, including GEOREF, COLD, NTIS, and BIOSIS. COLD has by far the best coverage. For the majority of the others, the failure rate is disquietingly high. Another paper, by

a keynote speaker, Dr. Juan Roederer, chair of the U.S. Arctic Research Commission, discusses the problem of gray literature as a "major issue that must be addressed and resolved before a data and information policy for Arctic research can be formulated." He talks of "preventative medicine" to stop its proliferation and identifies main causes of the phenomenon that must be addressed. Unfortunately, these "main causes" are seemingly immutable aspects of the whole process of publishing and disseminating research results. For example, one major cause for the publication of results in report form is the delay between the completion of projects and the publication of the results in mainstream journals. Indeed, as Roederer points out, scientists are becoming "increasingly disenchanting" with the peer review process of many reputable journals, believing that it diminishes their chances of publishing "unusual results or bold, innovative ideas."

To the informed, or even to the casual observer, it seems likely that nothing short of revolution will be needed to sweep away such sacred cows as peer review or to speed up the process of publishing. But while the publishing industry is slow to change, information specialists, on the evidence of this report, are not. The text is full of innovative ideas for improving service to researchers, including ways to "capture" gray literature.

More than 80 people from 11 different countries attended the meeting in Boulder, Colorado. During their business meeting they approved a recommendation to change their name from "Northern Libraries Colloquy" to "Polar Libraries Colloquy," partly in order to encourage the Antarctic information community to join with them and thus extend lines of communication even further. The next meeting is in Finland in 1990. All indications suggest that it too will produce as valuable a document for research in cold regions as the 1988 colloquy has done.

*Leah Watson*  
(NHRI Contribution No. 89003)  
National Hydrology Research Centre  
11 Innovation Boulevard  
Saskatoon, Saskatchewan, Canada  
S7N 3H5

ALASKA NORTH SLOPE GEOLOGY. Edited by IRV TAILLEUR and PAUL WEIMER. Bakersfield, Ca.: Pacific Section, Society of Economic Paleontologists and Mineralogists, and Anchorage, Ak: Alaska Geological Society, 1987. 874 p. Softbound. US\$48.00.

This two-volume publication is a collection of papers based on a seminar held in Anchorage, Alaska, in May 1985. The publication is intended as a source book for future resource explorationists, and as such endeavours to present the current state of geological knowledge of the Alaska North Slope. The two-and-a-half-year gestation period is a drawback in this regard, although understandable given the scope and size of the effort involved. The editors' focus on currency is emphasized by their inclusion of the abstracts from a 1987 Geological Society of America symposium on Brooks Range geology, reprinted as Appendix 4. Widespread support for such a volume is further illustrated by the cooperation of the American Association of Petroleum Geologists, American Geophysical Union, the Geological Society of America, Society of Exploration Geophysicists and the Society of Economic Geology in allowing reprints of papers or abstracts originally published elsewhere.

The papers are organized into sections according to disciplines. The first 4 papers provide a background to the volume by recounting the history of petroleum exploration in the region. The second section, on reservoirs (6 papers, 6 abstracts), describes the characteristics of the principal reservoir units into which an estimated 60 billion barrels of oil and 30 trillion cubic feet of natural gas have accumulated in the various North Slope fields. The depositional environments of the sandstone and limestone units regarded as the main reservoirs, and their post-depositional histories relating to the

development of pore spaces and permeability (how well the pores are connected), are the focal points.

Five papers in the geochemistry section describe the compositions of various oils and attempt to correlate them with stratigraphic units from which they may have been derived. Four units ranging in age from Triassic (about 250 million years ago) to early Cretaceous (about 100 million years ago) are believed to be the principal source rocks. Most of the petroleum appears to have been generated within the last 100 million years, due to burial and heating relating to Brooks Range mountain building.

The fourth section (7 papers, 8 abstracts) summarizes the extent of coal, water and other mineral deposits. An estimated volume of 2.7 trillion U.S. tons of high quality sub-bituminous and bituminous coals occur predominantly in Cretaceous age rocks in the western North Slope, representing as much as one-third of the total U.S. coal potential. Two papers on water resources illustrate the severe constraints on resource development imposed by the seasonal availability of water in this permafrost region. One paper compares the two principal tectonic settings indicated by the variety of metallic mineral deposits. Other papers describe the geology and mineralization of copper, lead, zinc, silver, tin, tungsten and molybdenum deposits.

The largest section, on stratigraphy, consists of 19 papers and 14 additional abstracts, which characterize the rock types, distribution and significance of the major stratigraphic units on the North Slope. As is typical for the entire set, papers in this section are grouped according to similarity of themes or geography within a broader organization based on ages of the strata being discussed. Thus, all of the papers dealing with lower Paleozoic strata are found together at the beginning of the section, while Tertiary and Quaternary strata are described together at the end of the section.

Geophysics (5 papers, 4 abstracts), structure and tectonics (11 papers, 17 abstracts), a synthesis section (3 papers and 4 abstracts) and 4 appendices make up volume two of the set. The geophysics contributions focus on various ways to delineate permafrost depth (of importance to petroleum development) and on paleomagnetic studies attempting to identify the presence or absence of large-scale tectonic rotations of arctic Alaska. The structure and tectonics section describes a number of studies from across the entire arctic Alaska region, documenting the displacement history, timing and temperature-pressure conditions as the Brooks Range mountains were formed by folding and thrust faulting, mainly in Jurassic and Cretaceous time. A few papers attempt to see through this younger deformation and describe the Paleozoic evolution of some areas. In the synthesis section, the 3 papers illustrate their authors' favourite arctic reconstruction scenarios. This is the weakest section of the book, because these (and many other) reconstructions rely heavily on imagination, but less so on scarce data. This problem is magnified by the addition of recent data, published since 1985, which further constrains such models. Unfortunately, there is still no model that uniquely satisfies the available data.

One of the biggest assets of this report is the emphasis on data, so that much of what appears here will never be outdated, even though some, perhaps many, of the interpretations will change in the future. In attempting to bring together as much of the available data as possible, as well as the most up-to-date interpretations of Alaskan North Slope geology, the editors have accepted the reality that researchers' interpretations sometimes differ, and there are several examples here of adjacent papers reaching conflicting conclusions. Also, the geographic coverage of the North Slope is very thorough when viewed over all disciplines, and the difficult task of organizing all of the papers into a coherent package was admirably accomplished.

There are several failures in this work. The primary drawback is that the bindings on this soft-covered set are not robust enough to withstand the expected use. Second, the technical quality is variable. Some papers have obvious editing errors, many of which

should have been identified by cursory examination. Several instances were found where parts of words, phrases or lines had apparently been omitted. Although the quality of the figures is usually excellent, a number of papers are poorly illustrated. In one case a photograph is printed upside down. In some papers, the line drawings are reproduced from colour slides and are frequently too dark to be legible. Third, I was irritated by the method used to type accented e's, which consisted of overstriking an apostrophe above a standard 'e'. An appropriate font should have been available; alternatively the accents should have been added by hand.

The target audience is clearly the geoscientific community, and principally those employed in research and development of natural resources. The book would be an appropriate item for any geoscience library, resource exploration outfit or consultant with an interest in arctic geoscience, although it would probably require re-binding after moderate use.

Larry S. Lane  
Geological Survey of Canada  
3303 - 33rd Street N.W.  
Calgary, Alberta, Canada  
T2L 2A7

REINDEER ON SOUTH GEORGIA. By N. LEADER-WILLIAMS. Studies in Polar Research, British Antarctic Survey. Cambridge: Cambridge University Press, 1988. 319 p., index, bib. Hardbound. US\$49.50.

Who would expect a monograph from a British biologist about a Holarctic species in the sub-Antarctic? Occasionally, when we contemplate a well-known commodity from an unfamiliar vantage point, we can glimpse unseen features that yield startling new insight. New facts generate new hypotheses, and the cycle of discovery, explanation and understanding is renewed. Leader-Williams's examination of reindeer/caribou biology on the sub-Antarctic island of South Georgia certainly provides us with a new look at an old species from an odd angle, but, sadly it yields none of the stuff from which revolutions are made. Perhaps my comment speaks to the solid theoretical foundation of modern population biology, for I certainly found no fault with the scholarship of the author.

Leader-Williams begins by reviewing the biology of *Rangifer tarandus*. Reindeer and caribou are members of the same genus and species. They are differentiated only at the level of subspecies. "Reindeer" is the term usually applied to the predominantly domesticated Eurasian and Scandinavian subspecies. "Caribou" is the common name usually applied to the wild North American subspecies. An unusual population of Norwegian reindeer was introduced by whalers to the remote sub-Antarctic South Georgia island on three occasions between 1911 and 1925, and the author discusses this novel natural experiment in the context of modern theories of island biogeography and population introduction ecology.

Part I sets the stage with a review of the biology of reindeer and caribou. Drawing from published North American, Scandinavian and Soviet literature, Leader-Williams develops a concise review of the state of our understanding of reindeer/caribou taxonomy and ecology. Banfield has argued convincingly (in *Mammals of Canada*, University of Toronto Press, 1974) that the genus *Rangifer* is a relatively primitive division of the deer family (Cervidae). Leader-Williams would have us believe that in spite of the fact that the oldest *Rangifer* remains have been dated at over 450 000 years, they are relatively recent cervids. No evidence is presented to refute Banfield, so I will stick with the Canadian authority on this one. Otherwise Part 1 presents a useful review of the natural history of *Rangifer*, a good overview of the literature on ungulate introductions and a brief history of South Georgia island and its introduced reindeer.

Part 2 gives a thorough comparison of the biology of the South Georgia reindeer in the context of the world literature on the genus *Rangifer*. We are informed that both sexes of reindeer have antlers,