Newsletter for the Canadian Antarctic Research Network

Bulletin pour le Réseau de Recherches Antarctiques du Canada

Welcome to a new CARP/PRAC initiative, the Canadian Antarctic Research Network. This network is composed of members who have shown an interest in Canadian involvement in Antarctic research in the past, present and future by responding to our previous questionnaire. If you did not receive this newsletter directly and would like to join the network please fill out and return the questionnaire on p. 6. If you have suggestions for future issues, please contact the editor (address on p. 5).

Bienvenue à cette première édition d'une nouvelle initiative du CARP/PRAC, le Réseau de Recherches Antarctiques du Canada. Ce réseau se compose de membres qui ont manifesté un intérêt sur l'implication passée, présente et future du Canada en l'Antarctique. Si vous désirez faire partie de notre liste de correspondance, veuillez s'il vous plaît remplir et retourner le formulaire à la p. 6. Si vous avez des suggestions à apporter pour les éditions à venir, communiquez avec l'éditeur (adresse à la p. 5).

The Canadian Antarctic Research Program: Moving Toward Reality

from Peter Suedfeld, Chairman of the CARP/PRAC Executive Committee

During the past year, there have been many discussions concerning just what CARP/PRAC is, what it should be, and how we can move it from the first to the second. After considerable discussion, including a conference sponsored by the Canadian Polar Commission (CPC), we have decided not to press for full membership in SCAR until a more cohesive Canadian Antarctic "Program" actually exists. The retitling of this Newsletter as being addressed to the Canadian Antarctic Research Network also reflects this situation.

However, thanks to the CPC (see Whit Fraser's article), we are in fact becoming a much more organized and established enterprise. We have obtained a stable budget for administrative purposes, and the part-time assignment to Antarctic affairs of a CPC staff member (Dr. Albert Haller). Olav Loken, a member of the CARP Executive, will act as our Ottawa liaison with CPC. He has also prepared an extensive workplan for the CARP-CPC interface (see article inside).

We have made considerable progress since the inception of CARP in 1993. Members of the CARP Executive have met several times with the Polar Commissioners and the Circumpolar Ambassador to raise their awareness of Canada's Antarctic activities. Canada was represented for the first time at the 1994 SCAR and COMNAP meetings (see G.S.H. Lock's article) and we will also participate in 1996. In addition, Dennis Stossel, a new member of the CARP Executive, will represent us in 1996 at SCALOP. In the recent past, CARP has established links with other national programs (notably those of Great Britain, New Zealand, and the USA), which are now leading to bipolar scientific exchanges. Such collaborations will be further enhanced by the Canadian Arctic/Antarctic Exchange Program, now being designed jointly by the Polar Continental Shelf Project and CARP, which is planned to become operational this August. CARP has also supported Canadian companies in their Antarctic activities.

All this has occurred with helpful suggestions and support from Fred Roots, whose knowledge and experience of polar research and policy are unrivaled in Canada, and from other Canadian scientists with relevant interests. Thanks to everyone's cooperation, we have come a long way in three years, and the momentum is growing. We shall keep you informed in future issues of the Newsletter about further developments; in the meantime, we welcome your questions and suggestions.

Canada in the Antarctic: Challenges and Opportunities

Whit Fraser, Chairman of the Canadian Polar Commission

Canada has long maintained strong commercial links to the multinational research community in Antarctica. However, only recently have we moved to build these ties through accession to the Antarctic Treaty and membership in the Scientific Committee on Antarctic Research.

Despite what some may regard as a tentative federal commitment to study of the polar regions, Canada need not take a backseat when it comes to Antarctic research. Nor should we be timid in our expectations for the future: we can set challenging goals for a national Antarctic research program, and we can achieve those goals through concerted action on the part of all stakeholders in the research process. In the words of the Commission's recent paper, *Toward a Policy for Canadian Polar Science and Technology*, " Canada cannot afford to undervalue its stake in Antarctic research. The time is opportune for Canadian government, business, and the research community to adopt a more active role in the region. "

As a key proponent of bi-polar studies, Canada has much to offer and much to gain. The Polar Commission has initiated discussions with Natural Resources Canada on the establishment of reciprocal research arrangements that would permit Canadians to utilize Antarctic stations operated by other Treaty countries; in exchange, the northern facilities of Canada's Polar Continental Shelf Project would be made available to researchers from abroad.

The Polar Commission is encouraged by the efforts to date of the Canadian Antarctic Research Program; though modest in size and limited in resources, it has accomplished a great deal in only a few short years. Most importantly, it has helped to provide a clear sense of purpose in the development of Canadian policy with respect to the southern polar region.

SCAR Working Groups

All SCAR member countries have national working groups representing the various scientific disciplines of Antarctic research; their recommendations are subsequently transmitted to the annual international SCAR meeting. CARP/PRAC is now calling for nominations (including self-nominations) to establish such groups for Canada. Please send your nominations to Dr. Peter Suedfeld.

Upcoming and Recent Meetings

17-20 Oct. 1995: SCAR/COMNAP Workshop on Antarctic Environmental Monitoring (Part 1). Oslo, Norway.
26-29 Mar. 1996: SCAR/COMNAP Workshop on Antarctic Environmental Monitoring (Part 2). College Station, Texas.
29 April - 10 May 1996: Antarctic Treaty Consultative Meeting. Utrecht, Netherlands.
1-4 July 1996: Polar Desert Ecosystems. Christchurch, New Zealand. (for information, the Email contact is carol@chch.niwa.cri.nz).
5-16 Aug. 1996: XXIV SCAR Meeting, Cambridge, UK
27-31 Aug. 1996: IX International Symposium on the Physics and Chemistry of Ice. Hanover, USA

SCAR-WATCH

At the SCAR XXIII delegates' meeting in Rome (September 1994), Dr. G.S.H. Lock, as chairman of the Polar International Affairs Committee of the Canadian Polar Commission, presented Canada's application for Associate Membership noting:

1) The application represented a partnership between CPC (which has a mandate for polar affairs) and NRCC (which is the official ICSU adhering body);
2) Canada's long historical involvement in Antarctic science, e.g. biology, geophysics, atmospheric physics, glaciology, etc.;
3) Canada's provision of technical support for Antarctic science through ships, aircraft, snow vehicles, buildings, airstrip construction, etc.;
4) The contributions of individual Canadians as recognized, for example, in Antarctic place names;
5) The role of the Canadian Polar Commission in developing our Antarctic scientific community;
6) Our strong interest in bi-polar studies;
7) The formation of CARP, the inaugural newsletter of which was distributed at the meeting;
8) Canada's intention of seeking full membership in SCAR;
9) Our wish to participate in suitable joint projects with other SCAR members.

Our application was unanimously approved and we were warmly welcomed.

During the course of the meeting several useful contacts were made. In particular, the United Kingdom, Australia and New Zealand expressed interest in developing further ties.

Gerry S.H. Lock

Canadians in the Antarctic: 1995-96

Kathy Conlan is a biologist with the Canadian Museum of Nature in Ottawa. In January and February 1996 she completed a three year study on the synchrony of reproduction of benthic crustaceans to the annual phytoplankton bloom. A new study was initiated on the influence of sewage-derived organic matter on the benthic fauna adjacent to McMurdo Station, using stable isotopes as tracers. Dr. Conlan assisted her USAP collaborator, Dr. Rikk Kvitak of Moss Landing Marine Laboratories, California, who is developing a GIS (Geographic Information System) of the McMurdo area. In collaboration with New Zealand's International Centre for Antarctic Information and Research, the U.S. Antarctic Program, and the Italian Antarctic Program, she assisted in assessing the potential of three coastal marine sites at the Italian Terra Nova Station for designation of special protection status. Dr. Conlan was also involved in a number of public information projects. For example, she established e-mail contact with two Ottawa area high schools and supplied them with ongoing descriptions of Antarctic research activities at McMurdo Station. One of the schools incorporated this into a grade 11 geography project on Antarctica.

Peter Doran, from Ontario, is a doctoral student at the University of Nevada (Desert Research Institute), Reno. During the 1995-96 season he made his fourth visit to the Antarctic. His primary tasks were to do annual maintenance on the McMurdo LTER Automatic Weather Network, and to collect samples for water column dating of Taylor Valley lakes. Along with Jeffrey Schmok of Golder Associates, Vancouver, he also did some radar work on one of Antarctica's large lakes, Lake Vida. This lake was previously believed to be frozen to it's base at about 10 metres, but the radar survey suggests that it has a 19 metre ice-cover over saline water. He will be investigating this further in the coming season.

Paul Langevin who works with Parks Canada in Jasper visited the Taylor Valley as a glaciological assistant. He was involved in measuring glacier mass balance, energy fluxes on land, glacier ice and lake ice, surveying stake networks using GPS, and photographing glaciers from established photogrammetry sites. He worked for Dr. Andrew Fountain, USGS, a co-PI of the Long Term Ecological Research Program that is investigating physical and biological processes of the McMurdo Dry Valley ecosystem.

Rowena Rae is a doctoral student at Université Laval in Québec City. During January 1996 she joined biologists with the New Zealand Antarctic Program at Lake Vanda in the Wright Dry Valley and at Bratina Island in the Ross Ice Shelf. Several water column profiles were done at Lake Vanda including one of ultraviolet light penetration. Experiments both at Lake Vanda and the Bratina Island ice shelf ponds focused on ultraviolet radiation and temperature effects on photosynthesis and damage/repair rates of natural phytoplankton assemblages.

Jeffrey Schmok is a geophysicist at Golder Associates in Vancouver. In support of the McMurdo Dry Valleys LTER project, he used ground penetrating radar (GPR) in a range of frequencies, polarizations, antenna designs, and acquisition modes to acquire subsurface images of perennially ice-covered lakes, deep subsurface water bodies, permafrost alluvium, and subglacial structure. He was asked to participate because of extensive practical experience in successful application of Cold Regions geophysics, and for his expertise in unusual subsurface imaging problems. Besides support from the LTER, funding support was provided by Golder Associates and by Canada's IRAP program. This funding was for field experiments in a well-constrained conductivity environment to improve the ability of GPR to penetrate more effectively into attenuative, difficult ground. Lack of penetration into conductive ground represents a major limitation to the more widespread application of GPR to shallow engineering and environmental geophysics.

Jean-Eric Tremblay recently received his PhD from Université Laval, Québec City, and is now working on a post-doctoral fellowship at the Alfred Wegener Institute in Germany. During the 1995-96 season he worked aboard the German ice-breaker "Polarstern" in the Weddell Sea. The objectives of the expedition were to characterize the physical and biological structure of the northern Weddell Sea, with Dr. Tremblay involved specifically in the uptake of nitrogen and carbon by size fractionated phytoplankton.

Warwick Vincent is Professor of Limnology (freshwater environmental science) at Université Laval in Québec City. Over the last year he has been involved in developing an environmental management strategy for the McMurdo Dry Valleys, a region in the Ross Sea Sector of Antarctica containing lakes, streams and ice-free land. He revisited this region as a guest of the United States Antarctic Program in December 1995 to inspect current environmental impacts and protocols, and to finalize the management report (now available on the World Wide Web at http://icair.org.nz/environment/dry_valleys/). He also undertook a study of bio-optical properties of the Dry Valley lakes, in particular the extent to which ultraviolet radiation penetrates into these permanently ice-covered waterbodies.

The Antarctic Treaty Consultative Meeting, Seoul, Korea, May 1995

Dr. Fred Roots, Science Advisor Emeritus of the Dept. of the Environment, represented Canada as a Non-Consultative Party at the XIX ATCM in Seoul, Korea, 8-19 May 1995, and took part in all discussions that appeared relevant to Canadian interests or expertise. Canada co-sponsored a Working Paper with Chile to open a discussion on the agenda item 'Relevance of Developments in the Arctic to the Antarctic'. Canada also tabled three information papers: an opening address from Canada; a policy statement from a major Canadian Antarctic tour operator as a contribution to agenda item discussions on Tourism and on governmental activities in the Antarctic Treaty Area; and a copy of the 1993 AEPS Ministerial Report (Nuuk Declaration) as a contribution to the agenda item 'Relevance of Developments in the Arctic to the Antarctic'. Also, the major Initial Environmental Evaluation of Antarctic shipborne commercial operations, tabled by the International Association of Antarctic Tour Operations (IAATO) was prepared by a Canadian operator. Dr. Roots is currently preparing for Canada's participation in the XX ATCM to be held 29 April-10 May 1996 in the Netherlands.

BIPOLAR RESEARCH OPPORTUNITIES

CARP/PRAC is currently working in collaboration with Polar Continental Shelf Project to establish a Canadian Arctic/Antarctic Exchange Program. It would enable foreign scientists who work with Canadians in the Antarctic to be supported logistically (transportation in the Arctic plus subsistance at a PCSP base) by PCSP on the same basis as their Canadian colleagues. The application would come from the Canadian sponsoring scientist and would be judged by the PCSP Science Advisory Panel with input from CARP. PCSP will produce a draft application form and we expect the program to be up and running by August 1996.

CARP/PRAC Workplan

A workplan for CARP/PRAC is currently being finalized by the Executive Committee in consultation with the Canadian Polar Commission (CPC). The key objectives outlined in this workplan are:

* to promote bipolar studies
* to identify Canadian interests in Antarctica
* to facilitate exchange among Canadian scientists with a research interest in Antarctica (via the CARN newsletter)
* To act as the formal link between the Antarctic research community in Canada and the CPC

The CARN Database

The CARN database is now fully operational with 149 respondants to the questionnaire worldwide who have an interest in Canadian Antarctic activities. Fifty eight percent of these people are Canadians, forty seven of whom have made at least one visit to Antarctica in the past. The database includes information on date and location of Antarctic visits, topics of specific interest and related polar publications. The database, which has been produced through support from CPC to CARP, is being updated regularly.

International Exchanges

CANADA - ARGENTINA

Dr. Gustavo Ferreyra of the Instituto Antarctico Argentino (IAA) has recently been awarded his doctorate in biological oceanography for studies at the University of Québec at Rimouski. His thesis is entitled "Effets du rayonnement UV sur le plancton des régions subarctique et Antarctique". The research was on the ecological effects of rising UV-B radiation associated with ozone depletion. His research director was Prof. Serge Demers with co-direction from Dr. Suzanne Roy, both of INRS-Oceanologie. Dr. Ferreyra returned to Argentina at the end of 1995 to continue his work for IAA in Antarctica.

CANADA-GERMANY

Following a visit by Prof. Max Tilzer, director of the Alfred Wegener Institute (AWI) at Bremerhaven, to Canada in October 1994, an agreement has been signed between Université Laval, Québec and AWI for ongoing exchange of scientists for bipolar research.

Marine Expeditions Inc.

Marine Expeditions operates a fleet of six small ice-rated expedition vessels in the Peninsula region and the South Shetland Islands. The cruises are all educationally focused, with expert naturalists and historians accompanying each voyage. As a supporting member of IAATO, Marine Expeditions prides itself on its environmental record, and teaches and promotes environmentally responsible travel in Antarctica. In 1994 Marine Expeditions completed an Initial Environmental Evaluation of its Southern Ocean operations, the first of its kind by a tour operator.

Over the past three years, Marine Expeditions has supported and promoted a number of environmental and scientific initiatives, including support of Project Antarctica of Cambridge University, The Oceanitis Site Inventory and the VIEW Foundation's clean-up projects at Arctowski and Bellingshausen Stations.

Scientists interested in logistic support from Marine Expeditions' vessels should apply in writing to Patrick Shaw, Vice President Operations, 13 Hazelton Avenue, Toronto, Ont., M5R 2E1.

Trent Polar Paper

The Trent Polar Paper (TPP) was first published in April 1987. Since then, it has resurrected itself (in 1991), and relocated its' office to : the Dept. of Geography, Trent University, Peterborough, Ont., K9J 7B8. It is published bimonthly through the academic year (4 issues). The TPP tries to inform the Trent University community and its external readership (present world-wide mailing list of 50 people) on what is happening in the higher latitudes of the world. They welcome contributions from their readership on most anything pertaining to the polar regions of the world. Anyone wishing to receive the TPP can do so by contacting Miles Ecclestone at the above address, by faxing at 705-748-1205 or by e-mail at (mecclestone@trentu.ca).

Société Antarctique de Montréal
Montreal Antarctic Society

The Montreal Antarctic Society is a Québec registered association whose object is the study of Antarctica. This interest arises mainly as a result of travel by its members to the Antarctic regions. They maintain a library, keep subscriptions to various publications and research articles in the news and through contacts with other associations. Travel experience of members includes visits to the Antarctic peninsula and South Georgia. If you would like to contact the Montreal Antarctic Society for further information, please write to: Valmar Kurol c/o 4633 Harvard Ave., Montreal, Quebec, H4A 2X3.

CANADIAN ANTARCTIC RESEARCH PROGRAM EXECUTIVE COMMITTEE:

For further information or suggestions regarding the activities of CARP/PRAC please contact any of the following committee members:

Hugh French, Office of the Dean, University of Ottawa, Ottawa, ON, K1N 6N5.

Peter Hochachka, Dept. Zoology, University of British Columbia, Vancouver, BC, V6T 1Z1.

David Lean, National Institute of Water Research, Environment Canada, Burlington, ON, L7R 4A6.

Olav Loken, 1170 Bonnie Cres., Ottawa, ON, K2C 1Z5.

Dennis Stossel, Polar Affairs, 8 Nuffield Place, Winnipeg, MB, R3T 4A5.

Peter Suedfeld (Chairman), Dept Psychology, University of British Columbia, Vancouver, BC, V6T 1Y7.
Tel. (604) 822-5713. Fax. (604) 822-6923.
Email: psuedfeld@cortex.psych.ubc.ca

Warwick Vincent (Co-chairman, editor), Dépt Biologie & Centre d'études nordiques, Université Laval, Sainte- Foy, QC, G1K 7P4.

Please send editorial correspondence to:

W.F. Vincent,

Dépt. de biologie,
Université Laval,
Sainte-Foy, QC
G1K 7P4
tel 418-656-5644
fax 418-656-2043

Email:
warwick . vincent@bio . ulaval . ca

Editorial Assistant: Rowena Rae

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If you have not previously done so, please fill out and return this questionnaire.

Si ce n'est déjà fait, veuillez s'il vous plaît, remplir et retourner ce questionnaire.

Name: _____

Address: _____

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_____

Telephone: _____ Fax: _____

Email: _____

Have you ever worked in Antarctica? _____ First year that you were in Antarctica: _____

Which part of Antarctica: _____ In which national program: _____

Please circle the topics which most closely match your Antarctic interests:

Atmospheric Sciences, Botany, Ecology, Environmental impacts, Geography, Geochemistry, Geology, Glaciology, History, Legal issues, Limnology, Microbial ecology, Oceanography, Organisation & management, Physics, Policy, Psychology, Technology, Tourism, Zoology.

List up to three of your polar publications (Antarctic if possible):

_____

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PLEASE MAIL TO: Dr. Albert Haller, Canadian Polar Commission, Suite 170 - Constitution Square, 360 Albert St., Ottawa, Ontario, K1R 7X7, CANADA.