

Canadian Meteorologica and Oceanographic Society

La Société Canadienne de Météorologie et d'Océanographie

# C.M.O.S. **NEWSLETTER / NOUVELLES** S.C.M.O.

# JUNE/JUIN

1984

# VOL. 12 NO. 3

# TABLE OF CONTENTS

News from the Executive and Committees	1
New, Sustaining and Corporate Members	4
Items of Interest	4
Awards	6
Conferences and Symposiums	6
Notices and Announcements	10

# TABLE DES MATIÈRES

Nouvelles de l'exécutif et des comités	1
Membres : nouveaux, corporatifs et commanditaires	4
Points d'intérêt	4
Récompenses	6
Conférences et colloques	6
Avis et annonces	10

organization of the Canadian Oceanographic Data Centre (now the Marine Environmental Data Service) and the recruitment and training of oceanographers.

While serving as Chief Oceanographer, Dr. Campbell was assigned the responsibility of organizing the federal government's role in the study of Lake Erie and Lake Ontario following the International Joint Commission reference in 1964. This program led to the establishment of the Inland Waters Branch of the Department of Energy, Mines and Resources.

Dr. Campbell has been Head of the Canadian Delegation to the Intergovernmental Oceanographic Commission (IOC) since 1964. In 1969, he was elected Chairman of the Working Committee for the Integrated Global Ocean Service System and was elected First Vice-Chairman of the Commission in 1977. He was re-elected for a second term in 1980 and served in this capacity until 1982.

Dr. Campbell has represented Canada on the NATO Sub-Committee on Oceanographic Research and served on the Marine Sciences Panel as a member and as Chairman. He has also served as a special advisor on Law of the Sea problems, the Stockholm Conference, and drafting of the London Convention on Ocean Dumping.

Dr. Campbell's particular interests in oceanography have been Canadian Arctic studies, marine pollution and technology and intergovernmental affairs. He has authorized numerous publications in the field of marine sciences and has undertaken invited studies and reviews for several international organizations.

Dr. Campbell is married and has two daughters. He enjoys camping, fishing and curling.

#### ABOUT OUR NEW PRESIDENT

#### DR. NEIL JOHN CAMPBELL

Born in Los Angeles, California, Dr. Neil John Campbell received his B.Sc. and M.Sc. degrees from McMaster University, where he specialized in experimental nuclear physics. He obtained a Ph.D. degree in physics in 1955 from the University of British Columbia, with specialization in oceanography. While attending the University of British Columbia as an employee of the Defence Research Board, he served in the Canadian western Arctic on the Joint Canada-United States Beaufort Sea Expedition.

During his career as an oceanographer with the Fisheries Research Board of Canada, he participated in and served as Chief Scientist on numerous Arctic oceanographic cruises and headed Canada's work on the IGY Program on Deep Water Studies in 1958 and the Northwest Atlantic Fisheries Surveys in 1962.

While in Halifax, Nova Scotia, he lectured at the Institute of Oceanography, Dalhousie University, and served as a special advisor to the Institute Director and as a member of the Faculty of Graduate Studies.

Dr. Campbell's appointment to Ottawa in 1963 was to fulfill the role of organizing and developing the entry of the Department of Energy, Mines and Resources into the field of marine sciences. Acting in the role of Chief Oceanographer, he directed the



# NOTRE NOUVEAU PRÉSIDENT

# DR NEIL JOHN CAMPBELL

Né à Los Angeles en Californie, le Dr Neil John Campbell a obtenu un B.Sc. et un M.Sc. de l'Université McMaster où il se spécialisait en physique nucléaire expérimentale. Il a obtenu un Ph.D. en physique de l'Université de la Colombie-Britannique en 1955 avec spécialisation en océanographie. Pendant qu'il était à l'Université de la Colombie-Britannique à titre d'adjoint pour le Conseil de recherches pour la défense, il a participé dans l'Ouest de l'Arctique canadien à l'expédition mixte Canado-américaine sur la mer de Beaufort.

Au cours de sa carrière comme océanographe avec l'Office des recherches sur les pêcheries du Canada, il a participé comme scientifique principal à de nombreuses expéditions dans l'Arctique et a dirigé la contribution canadienne au programme de l'Année géophysique internationale sur l'étude des eaux profondes en 1958 et aux relevés sur les pêcheries dans l'Atlantique du nord-ouest en 1962.

Pendant son séjour à Halifax, Nouvelle-Écosse, en tant que chef du Groupe océanographique de l'Atlantique, il a donnée des conférences à l'Institut d'Océanographie de l'Université Dalhousie, a fait office de conseiller spécial auprès du directeur de l'Institut et a été membre de la Faculté d'études graduées.

Sa nomination à Ottawa en 1963 a eu pour but de faire entrer le ministère de l'Energie, Mines et Ressources dans le domaine des sciences de la mer. En tant qu'océanographe en chef, il a dirigé la mise sur pied du Centre canadien des données ociéanographiques (maintenant intégré au Service des données sur le milieu marin) et le recrutement et l'entraînement d'océanographes.

Durant son service comme océanographe en chef, Dr Campbell a été chargé d'organiser l'apport du gouvernement fédéral à l'étude des lacs Erié et Ontario à la suite de la conférence de la Commission mixte internationale en 1964. Ce programme a inspiré la création de la Direction des Eaux intérieures du ministère de l'Energie, Mines et Ressources.

Dr Campbell a été le chef de la délégation canadienne à la Commission océanographique intergouvernementale depuis 1964. En 1968, il fut élu président du comité de travail pour le Système mondial de stations océanigraphiques Intégrées de la Commission océanographique intergouvernementale et en 1977 élu comme viceprésident principal de cette commission. Il fut réélu à cette fonction en 1980 pour un deuxième terme qui dura jusqu'en 1982.

Dr Campbell a représenté le Canada au sous-comité sur la recherche océanographique de l'OTAN et a siégé et présidé la commission des sciences de la mer de cette organisation. Il a aussi agit comme conseiller spécial pour les problèmes reliés aux droits de la mer, a assisté à la Conférence de Stockholm et à la rédaction de la Convention de Londres sur l'immersion des déchets en mer.

Dr Campbell s'est surtout intéressé aux études océanographiques sur l'Atlantique canadien, à la pollution marine, à la technologie océanographique et aux affaires intergouvernementales. Dr Campbell est l'auteur de nombreuses publications reliées aux sciences de la mer et a entrepris, sur demande, des études et des enquêtes pour plusieurs organisations internationales.

Dr Campbell est marié et père de deux filles. Ses passe-temps favoris sont le camping, la pêche et le curling.

# CONGRESS PROCEEDINGS

Following the Banff - 1983 Congress, CMOS published Extended Abstracts - an abbreviated form of non-refereed Proceedings. Reaction was mixed. Many liked the idea, but a more vocal group strongly opposed the volume. As a result, the Halifax Congress will not result in any form of Proceedings. CMOS must soon decide what to do for the Montreal Congress in 1985. Your input is urgently required.

Please address comments to the CMO5 head office, Attention: J.C. McLeod.

# EDITORIAL POLICY

The CMOS NEWSLETTER is the principal medium by which Society members may exchange items of CMOS news and interest. It is a bi-monthly publication mailed to all members and, except for advertising revenue, is funded through Society membership fees. Articles are accepted in either official language, and responsibility for content rests with their respective authors. Although views expressed are not necessarily those of CMOS, the editorial staff shall endeavour to maintain a level of integrity deserving of the Society.

Mailing Address

Dave Mudry Ice Climatology Atmospheric Environment Service Third Floor 365 Laurier Avenue West Ottawa, Ontario KIA DH3 Editorial Board

Editor: André Bolduc

Associate Editors: Dave Mudry Micheline Gilbert

#### LA POLITIQUE EDITORIALE

Le BULLETIN DE NOUVELLES de la SCMO est la voie principale par laquelle ses membres peuvent échanger des articles d'information et d'intérêt. C'est une publication bimestrielle qui est expédiée à tous les membres et qui, sauf pour les revenus de la publicité, est financés par les frais d'adhésion. Les articles sont acceptés dans l'une ou l'autre des langues officielles et le contenu demeure la responsabilité de l'auteur. Même si les idées exprimées ne sont pas nécessairement celles de la SCMO, la rédaction tentera de maintenir un niveau d'intégrité digne de la société.

# Adresse postale

Dave Mudry Climatologie des glaces Service de l'environnement atmosphérique 3ª étage 365, avenue Laurier ouest Ottawa (Ontario) K1A OH3 Conseil de rédaction

Rédacteur en chef: André Bolduc

Rédacteurs adjoints: Dave Mudry Micheline Gilbert

# SOME NOTES FROM THE 18<sup>TH</sup> CMOS CONGRESS

The 18<sup>th</sup> Annual Congress took place at Dalhousie University during the period from May 29 to June 1. It marked the first time that CMOS has joined with the Canadian Geophysical Union to host a Congress. It was a stimulating Congress, with presentations covering a wide range of meteorological, oceanographic and geological topics. It was also an excellent opportunity to establish new contacts and renew old acquaintances.

The Dalhousie Campus was a pleasant setting for the Congress. It is conveniently located near downtown Halifax. Congress meetings were held in four different buildings on the campus. Participants had a choice of a variety of food service, ranging from the Faculty Club to a snack bar in the Student's Union Building.

CMOS Committee meetings were held the day before the Congress began. One had to be impressed by the level of participation at the meetings. It was clear to me as an observer at several of these meetings that the Society's Committees are providing a useful forum for meteorologists and oceanographers from the university, government and private sectors to discuss subjects of mutual concern, such as education and scientific programs and policies. The Council meeting was held in the very comfortable Council Chambers of the Student's Union Building. It was well attended and provided a good opportunity for the Executive to meet with Centre representatives, Councillor's-at-large, and a number of Committee chairmen. After the five-hour meeting, Council members joined in the reception being held in the very spacious Green Room of the Student's Union Building. It appeared that many of the approximately 425 registrants were in attendance.

The first scientific meeting was a plenary session. The welcoming remarks were made by a number of individuals, including no less than two MPP's from the Nova Scotia government. Hopefully, that reflects on the priority which governments in the Maritimes attach to meteorological and oceanographic information and advice.

The remaining sessions were held in two adjacent buildings. Attendees at the meteorological sessions got their exercise by walking from the second building to the first in order to obtain coffee, which was being served at the instrument displays in the first building. Apart from the walk, the procedure had some advantages. It did bring all the Congress participants together in a central location and it guaranteed the exhibitors an audience for their displays.

There were a number of quality presentations made at the Congress. I personally found some of the scientific achievements reported at the Congress to be exciting. For example, I was impressed with the General Circulation Model experiments report by Dr. George Boer. The ability of the model to reproduce physical processes inthe atmosphere and to provide explanations for the effects of phenomena such as the El Nino suggest that this model has become an important tool in the explanation and prediction of climate fluctuations and change. The progress being made in the remote sensing of plankton and sediments in the ocean also shows promise of providing useful techniques for monitoring fish feedstocks.

Attendees at the Congress were treated to a very comprehensive review of research activities in oceanography as a result of the open house at the Bedford Institute of Oceanography. The displays ranged from physical oceanography and biological oceanography to those showing how fish populations are estimated and procedrues for carrying out hydrometric surveys. A number of people took advantage of an opportunity to view the solar eclipse with the aid of a telescope at Mount Allison University. Fortunately, the weather cooperated and the fog and low cloud were sufficiently thin that the eclipse could be viewed without difficulty. At times, the cloud provided a natural filter, allowing many of us to catch a glimpse of the event with unshielded eyes.

The banquet arranged by the Halifax LAC at the Shore Club at Hubbard, situated on romantic St. Margaret's Bay, was most enjoyable. The excellent lobster supper, as well as the entertainment, which was provided by a local music group and by Mr. Dunsworth (a well known Halifax actor and entertainer), were appreciated by all. The presentation of awards took place as usual during the banquet. A highlight of that was the presentation of the Rube Hornsetin Prize in Operational Meteorology by Rube Hornstein himself!

In summary, the Congress was very successful. Nearly all the presentations I heard were clear and well illustrated. It is obvious that the CMOS Congress continues to offer an excellent forum for the interchange of knowledge. However, in looking around, I was left wondering why there weren't more graduate students from the universities giving papers and participating in the discussions.

Finally, I would like to extend my congratulations to the Halifax Local Arrangements Committee and the Scientific Program Committee for a job well done.

The calibre of the 18<sup>th</sup> Congress has set a high standard for next year's Congress in Montreal.

**Rick Lawford** 

#### HIGHLIGHTS FROM THE 1984 ANNUAL GENERAL MEETING

The 1984 Annual General Meeting was held in the Arts and Administration Building at Dalhousie University on the evening of May 29 with Dr. Neil Campbell, the Society's Vice-President, in the chair. During the three-and-a-half-hour meeting, the number of members attending reached a maximum of 54 members.

Highlights of the meeting included the unveiling of the Society's new logo and the adoption of a number of important motions. As a result of these motions, a large number of by-law changes are in place and the new Executive will now be able to move toward the incorporation of the Society.

A motion formalizing the position of the Publications manager was adopted. The position will be filled by a Council appointment. The position of the Executive Director was also formalized.

The J.P. Tully award was established at the AGM. The first award was made at the 1984 Congress. Regina was also confirmed as the site of the 1986 Congress.

A concern was raised about the lack of growth in the Society's membership. It was noted that the change in fee structures had not led to any significant growth in the number of members. Theories regarding the cause of the stagnant number of members and some suggestions about means whereby the membership could be increased were discussed. It was agreed that the new Executive should attach priority to the development and implementation of an effective membership strategy. The lack of a growth of revenues from memberships and subscription fees was one reason for the deficit budget which the Treasurer presented to the meeting for approval.

Members will likely be happy to hear that subscription fees for 1985 will not increase. However, the Treasurer may not have the same joy, particularly if the new President wants him to balance the books in 1985.

The members gave a warm response to a motion of thanks recognizing the contributions of the outgoing President Dr. René Ramseier at the meeting. Based on the performance of Dr. Neil Campbell in chairing the AGM, it appears that CMOS will be in the hands of a very effective manager during 1984-85.

# NEWS FROM CMOS HEADQUARTERS

# Changes to CMOS Consistution and By-Laws

The Annual General Meeting (Halifax, 29 May 1984) approved the changes to the CMOS Constitution and By-Laws proposed by the CMOS Council and notified to members in the February 1984 issue of this Newsletter. As there have been various other changes approved since 1978, when the last edition of the Constitution and By-Laws was printed, an updated version is being prepared and will be disseminated to all members during the next two to three months.

#### Incorporation

Most of the above-mentioned changes to the Constitution and the By-Laws were intended to meet requirements by the Department for Consumer and Corporate Affairs to allow the formal incorporation of CMOS. It is hoped that this incorporation can now go ahead in the near future, as various steps planned by the Society have to await this action.

#### Logo

The new Society logo was formally unveiled during the Annual General Meeting. Members will gradually see it on CMOS publications, letterheads, etc., but for the sake of economy, it is intended to use all existing supplies of forms and letterheads before printing with the new logo.

#### Executive Director

The Annual General Meeting has agreed that the Society should have an Executive Director after reviewing the results of a one-year trial with such a position. Relevant amendments to the By-Laws will be proposed to the next Annual General Meeting. The Executive Director, who continues to be Uri Schwarz, will take care of day-to-day administrative matters and can be contacted at the CMOS address (Suite 805, 151 Slater Street, Ottawa, Ontario, Canada K1P 5H3).

#### **CMOS** Publications Manager

The position of a Publications Business Manager was also created by the Annual General Meeting. The incumbent will deal with all business aspects of CMOS publications (Atmosphere-Ocean, Climatological Bulletin, Chinook, Newsletter, Annual Review, Congress Abstracts, etc.). Carr MacLeod will continue to carry out this function, and he too can be contacted via the CMOS office address.

# CMOS

CANADIAN METEOROLOGICAL AND OCEANOGRAPHIC SOCIETY LA SOCIETE CANADIENNE DE METEOROLOGIE ET D'OCEANOGRAPHIE

LIST OF OFFICERS 1984/85

Res.: (613) 837-1768

#### EXECUTIVE

President:	Dr. N.J. Campbell	PPROVED AT EXECUTIVE NO. 6	
	Department of Fisheries and Oceans		MAY 8, 1984
	200 Kent Street - 12th #100r		
	KLA OR6	Regular	
	Bus.: (613) 990-0298	Ray Garnett	- Winnipeg, Manitoba
	Res.: (613) 731-4512	Sehra van Balen	- Ottawa, Ontario
		Dave Henderson	- Ottawa, Ontario
Vice-	Dr. S.D. Smith	Pierre Larouche	- Quebec, Quebec
President:	Atlantic Oceanography Lab.	Joseph Nasr	<ul> <li>Gloucester, Ontario</li> </ul>
	Bedford Institute, P.O. Box 1006	Brian W. Wannamaker	<ul> <li>Downsview, Ontario</li> </ul>
	Dartmouth, Nova Scotia	Robert M. Bloxam	<ul> <li>Toronto, Ontario</li> </ul>
	B2Y 4A2	J.R. Addison	- Montreal, Quebec
	D (000) (DC 0550	John R. Marko	<ul> <li>Sidney, British Columbia</li> </ul>
	Bus.: (902) 426-2558		
	Res.: (902) 434-2489	Student	
Treasurer:	Mr. Ken B. Yuen		
	Department of Fisheries and Oceans	Kelly R. Karr	<ul> <li>Ottawa, Ontario</li> </ul>
	200 Sparks Street - 12th Floor	Anne-Marie Valton	- Montreal, Quebec
	Ottawa, Ontario.	Chang Shik Kim	<ul> <li>Halifax, Nova Scotia</li> </ul>
	KIA OE6		
	Bus.: (613) 990-0311		
	Res.: (613) 820-1157		
Corresponding	Mr. Robert Jones		
Secretary:	24 Higgins Road	Excellence in section	
	Nepean, Ontario	SIXTY-TW	O YOUNG CANADIANS
	K2G OR5	OFFERED RE	ESEARCH OPPORTUNITIES
	Bus.: (613) 997-3511		
	Res.: (613) 820-6336	Ottawa - Sixty-two your university R & D with th	ng researchers will embark on a career in le assistance of the Natural Sciences and
Recording	Mr. R.G. Lawford	Engineering Research (	Council (NSERC), announced Gordon
Secretary:	Environmental Conservation Service	MacNabb, President of NSI	ERC.
	Place Vincent Massey, 7th Floor, Room 743	Following a rigorou	us review of 259 nominations, 62 new
	Hull, Quebec	university research fellow	vships have been awarded by NSERC to
	KLA OE7	promising young scientists to strengthen Canada's un	and engineers. The awards are intended iversity R & D effort and to place highly
	Bus.: (613) 997-1483	qualified researchers in	Canadian universities to help meet the

4

# NEW MEMBERS APPROVED AT EXECUTIVE NO. 5

# MARCH 23, 1984

#### Corporate

Western Research	-	Calgary, Alberta	
Alden Electronics Inc.	12	Westboro, Massachusetts, U.S.A.	
AGE Instruments Inc.	1.4	Ottawa, Ontario	
Rosemount Instruments Ltd.	-	Mississauga, Ontario	
Regular			
Jouglas M. Dixon	1.5	Edmonton, Alberta	
Pierre Ste-Croix	1.2	Pincourt, Quebec	
lean-Pierre Chanut		Rimouski, Quebec	
R.G. Wilson	-	Victoria, British Columbia	
Peter E. Daniel	-	Richmond, British Columbia	
K.R. Thompson	-	Halifax, Nova Scotia	
Nonita T. Yap	-	Ottawa, Ontario	
I.S. Arsenault		Fort Langley, British Columbia	
M.C. Hill		Calgary, Alberta	
Chul-Un Ro	-	Calgary, Alberta	
David W. Phillips	-	Newmarket, Ontario	
Patrick King	2	Toronto, Optario	

- -
  - Kanata, Ontario Halifax, Nova Scotia
- -
- Calgary, Alberta
- Downsview, Ontario

#### Student

N

Max S. Perchanok

Dennis Nazarenko

William L. Ford

Tom Agnew

Bernard Pelchat	-	Rimouski, Quebec
Nowak Aleksander	-	Edmonton, Alberta

expected demand for new faculty appointments in the early 1990's.

Fellows, who must hold a doctorate and have several years postdoctoral research experience, are appointed to a research position at a Canadian university equivalent to that of an Assistant Professor. The fellowship includes a maximum salary contribution by NSERC of \$30,500 per annum for up to five years. Fellows also benefit from NSERC research grants.

The University Research Fellowships program, which was launched in 1980, has already proven very successful. The 356 awards offered to date represent a growing pool of highly skilled young researchers in Canadian universities. "In many fields, especially in the advanced technologies, these young researchers are already emerging as leaders of university research endeavour," said Gordon MacNabb.

Since the beginning of the program, over one-third of the fellowships have been awarded to young scientists and engineers who had left Canada to further their research training or begin a research career abroad. Indeed, of the 62 new awards announced, 28 are to researchers currently outside Canada who will now be returning to take up their new positions. "While the program is not necessarily aimed at recovering some of our exported talent, its success in that regard is an achievement for which the Council is very proud," said Gordon MacNabb.

A complete listing of research fellows appointed since 1980, including titles of research projects, is available upon request.

For further information, contact:

The Communications Division NSERC (613) 993-3659.

#### SOIXANTE-DEUX JEUNES CANADIENS REÇOIVENT DES BOURSES DE RECHERCHE

Après un examen rigoureux des 259 candidatures soumises, le CRSNG a conféré le titre de chercheur-boursier universitaire à 62 jeunes scientifiques et ingénieurs d'avenir. Ces bourses visent à renforcer l'effort de R et D universitaire au Canada et à permettre à d'excellents chercheurs de travailler dans les universités canadiennes, dans l'espoir qu'ils pourront combler les postes de professeurs qui s'ouvriront au début des années quatre-vingt-dix.

Les boursiers, qui doivent détenir un doctorat et avoir acquis plusieurs années d'expérience postdoctorale en recherche, sont nommés dans une université canadienne à un poste de chercheur équivalent à celui d'un professeur adjoint. La bourse consiste en une contribution annuelle maximum du CRSNG de \$30 500, pouvant durer jusqu'à cinq ans. Les boursiers reçoivent également une subvention de recherche du CRSNG.

Lancé en 1980, le programme de chercheurs-boursiers universitaires s'avère déjà une réussite. Jusqu'ici, le Conseil a nommé 356 boursiers, contribuant ainsi à constituer dans les universités canadiennes un bassin de jeunes chercheurs très compétents. "Dans bien des domaines, et plus particulièrement dans les technologies de pointe, ces jeunes chercheurs se distinguent déjà comme les chefs de file de la recherche universitaire," a déclaré M. MacNabb.

Depuis le début du programme, plus du tiers des bourses ont été accordées à de jeunes scientifiques et ingénieurs qui avaient quitté le Canada pour poursuivre leur formation ou pour entrprendre une carrière en recherche. Il en est de même cette année : en effet, 28 des 62 nouveaux boursiers sont actuellement à l'étranger et reviendront au Canada pour occuper leur poste. "Le programme n'a pas comme but premier de rapatrier le talent expatrié, mais le fait qu'il y contribue est une réalisation dont le Conseil est très fier," a ajouté M. MacNabb.

On peut se procurer sur demande une liste de tous les boursiers nommés depuis 1980 ainsi que les titres de leur projet de recherche. Pour de plus amples informations, veuillez communiquer avec:

La Direction des communications CRSNG

(613) 993-3659.

# RESULTS OF THE 1984-85 COMPETITION FOR SCHOLARSHIPS AND FELLOWSHIPS

The Natural Sciences and Engineering Research Council (NSERC) has again offered a record number of awards to graduate students and postdoctoral fellows in the natural sciences and engineering at Canadian universities.

As a result of its annual competition, Council has offered 2,863 Postgraduate Scholarships to students working towards a higher degree. This is an increase of 15% over the number of awards offered last year. Among these awards, 16 are specifically for graduate training in science librarianship and documentation. Postgraduate scholarships are valued at \$11,100 (to be increased to \$11,600 effective 1 September 1984). 1967 Science and Engineering Scholarships, Council's most prestigious awards for graduate students, have been offered to 144 outstanding students to enable them to pursue graduate studies and research leading to a doctorate. This number represents a 15% increase over the number offered last year. These scholarships valued at \$22,250 (\$23,300 effective 1 September 1984), to provide recent doctoral graduates with an opportunity to add to their research experience.

Investment in the development of the nation's intellectual capital is a critical preprequisite for an effective national R & D effort. The Council is therefore encouraged that, as a result of the priority it has given to research manpower programs, there has been a dramatic increase both in the response to these programs and in the quality of the applicants over the last two years. The potential total expenditure for the scholarships and fellowships listed above for the fiscal year 1984-85 is \$33.7 million. The currently approved budget for all NSERC research training awards is approximately \$50 million.

For further information on NSERC's scholarships program, please contact:

Arnet Sheppard Information Officer Natural Sciences and Engineering Research Council Ottawa, Ontario K1A 1H5

(613) 995-5992

The listings of the Postgraduate Scholarship, 1967 Science and Engineering Scholarship, and Postdoctoral Fellowship winners are available upon request. These listings include new and renewal awards.

# RÉSULTATS DU CONCOURS DE BOURSES DE 1984-85

Le Conseil de recherches en sciences naturelles et en génie (CRSNG) a, cette année encore, offert un nombre record de bourses à des étudiants à la maîtrise ou au doctorat et à des stagiaires postdoctoraux des universités canadiennes.

Lors de son concours annuel, le Conseil a offert 2 863 bourses d'études supérieures à des étudiants qui travaillent en vue d'obtenir une maîtrise ou un doctorat en sciences naturelles ou en génie, soit une augmentation de 15% par rapport à l'an dernier. La valeur de ces bourses s'élève à \$11 100 (et sera portée à \$11 600 le 1<sup>er</sup> septembre 1984). Notons que 16 de ces bourses sont plus spécifiquement destinées à des étudiants en bibliothéconomie et documentation scientifiques. Le CRSNG a également offert la bourse en sciences et en génie 1967, la distinction la plus prestigieuse qu'il accorde aux étudiants aux 2<sup>e</sup> et 3<sup>e</sup> cycles, à 144 étudiants exceptionnels inscrits à un programme de doctorat. Ce nombre représente une augmentation de 15% par rapport à l'an dernier. Ces bourses valent actuellement \$16700 et vaudront \$17500 le 1<sup>er</sup> september 1984. Enfin, le Conseil a offert 193 bourses postdoctorales de \$22250 (\$23300 à partir du 1<sup>er</sup> september 1984) qui donnent à des personnes ayant récemment obtenu leur doctorat l'occasion d'ajouter à leur expérience en recherche.

Un effort national efficace en R et D dépend fortement de l'investissement dans le développement du capital intellectuel canadien. Le Conseil est donc heureux de constater que la priorité qu'il a attachée à ses programmes de formation de chercheurs a donné lieu à une augmentation considérable du nombre de demandes de bourses et de la qualité des candidats depuis deux ans. Les dépenses totales prévues pour les bourses énumérées plus haut s'élèvent à \$33,7 millions, pour l'année financière 1984-85. Le budget actuel approuvé pour l'ensemble des programmes de formation de chercheurs du CRSNG s'élève à environ \$50 millions.

Pour de plus amples informations sur les programmes de bourses du CRSNG, veuillez communiquer avec:

> Arnet Sheppard Agent d'information Conseil de recherches en sciences naturelles et en génie Ottawa, Ontario K1A 1H5 (613) 995-5992

Les listes des bénéficiaires des bourses d'études supérieures, des bourses en sciences et en génie 1967 ainsi que des bourses postdoctorales sont disponibles sur demande. Ces listes comprennent les nouvelles bourses et les renouvellements accordés.

# ASSOCIATE COMMITTEE ON HYDROLOGY (ACH) OF THE NATIONAL RESEARCH COUNCIL (NRC)

#### J. Whiting

In 1983 a CMOS member was approved jointly by CMOS, ACH and NRC to act as a technical society representative to both CMOS and ACH. ACH is composed of 28 members: 10 provincial, 10 university, 5 federal and now 3 technical society (CMOS included). The committee has four main functions: fostering contact between research and operational agencies (and individuals); dissemination of knowledge and information (symposia, workshops, national lecture tours, newsletter - Hydrological Events, information notes); formulation of research priorities; promotion of international hydrological development by formulating a Canadian position.

At present, there are three administrative subcommittees: Dissemination of Knowledge, Research Priorities, and International Affairs; and two technical subcommittees on specialized areas: glaciers and hydraulics of ice-covered rivers.

The committee was formed in 1975 out of the former Canadian National Committee for the International Hydrological Decade (IHD) and the Sub-Committee on Hydrology of the Associate Committee on Geodesy and Geophysics. ACH is sponsored by NRC. This sponsorship was renewed in 1980 for three years, and in 1983 for five years. ACH terms of reference are defined under the UNESCO definition of Hydrology: "Hydrology is the science which deals with terrestrial waters, their occurrence, circulation and distribution on our planet, their physical and chemical properties, and their interactions with the physical and biological environment, including the effect on them of the activity of man."

#### CMOS AWARD WINNER

Weekly chores at home inspired his prize-winning science fair project, says Piers Nash of Sudbury, Ontario. The 14-year-old, Grade 10 student at St. Charles College won the Canadian Meteorological and Oceanographic Society's Award and a Gold Medal from the Youth Science Foundation in Intermediate Sciences at the 23rd Annual Canada-Wide Science Fair in Halifax.

Pier's project, "Differential Effects of Windspeed on Low Temperature Evaporation," dealt with the problem of predicting rates of laundry drying out of doors in Northern Ontario winters. It was the second phase of a two-year investigation into evaporation from fabrics, outdoors in winter conditions. Piers won a Silver Medal in Intermediate Physical Sciences at the CWSF in Saskatoon for the first phase, which determined that only air temperature, sunlight and windspeed affected rates of evaporation.

The second phase was to determine exactly how windspeed affects evaporation. Piers used mathematical relationships to describe the data he collected and designed a computer program to make rough predictions of outdoor drying times for heavy and light fabrics.

The Halifax Fair marked the first time a CWSF has been held in the Maritimes. Both exhibitors and delegates enjoyed exploring local historical, scientific and cultural centres and sampling fresh seafood.

St. Mary's University hosted the fair, and judges were from research facilities and universities in the Halifax-Dartmouth area.

Canada-Wide Science Fairs are organized by the Youth Science Foundation, a non-profit organization funded by federal government grants and individual, association and corporate donations.

# CALL FOR PAPERS

# WMO TECHNICAL CONFERENCE ON URBAN CLIMATOLOGY AND ITS APPLICATIONS WITH SPECIAL REGARD TO TROPICAL AREAS

Urbanization is proceeding with great rapidity in the developing (tropical) world, including the growth of some extremely large cities. Population pressures are great but resources are limited; this may lead to a deterioration of environmental conditions for a large proportion of Mankind. However, if simple climatic principles are incorporated in the plans of these settlements, they can be made safer, healthier, and more comfortable and efficient.

In order to accomplish this, it is necessary to gather the available expertise in urban, applied, and tropical climatology to review existing knowledge, to consider its relevance to the design and operation of tropical cities, and to formulate the most effective means of ensuring its use.

These are the objectives of the WMO Technical Conference on Urban Climatology and its Applications wth Special Regard to Tropical Areas, which is co-sponsored by WHO. The conference will be held in Mexico City from November 26 to 30, 1984. Topics of relevance to the meeting include all aspects of urban climatology (e.g. processes, effects, models, methods and case studies), especially those relating urban applications (e.g. hazards, health, comfort, air pollution, energy/water conservation and use) to urban planning (e.g. climate factors in the siting, layout and operation of settlements) and to tropical locations.

Papers are invited on the above topics, and abstracts (less than 500 words) should be sent by July 15, 1984, to:

Professor T.R. Oke c/o World Climate Programme Department World Meteorological Organization 41, Giuseppe-Motta Case postale No. 5 CH-1211 Geneva 20 Switzerland

It is intended that the conference will include considerable discussion amongst the participants. Therefore, only those papers deemed most important to the objectives of the meeting will be selected for presentation in the main sessions. Provision will be made for the others to be presented as short lectures or as posters (please indicate your preference). The conference will be conducted in English, French, Spanish and Russian. Abstracts may be submitted in any of these languages.

# INTERNATIONAL CONFERENCE ON ATMOSPHERIC SCIENCES AND APPLICATIONS TO AIR QUALITY MAY 20 - 24, 1985 SEOUL, KOREA

# Call for Papers

An International Speciality Conference on Atmospheric Sciences and Applications to Air Quality, sponsored by the Korean Federation of Science and Technology Societies (KOFST), will be held in Seoul, Korea, May 20 - 24, 1985. This Conference will take place during the time of the International Science Exposition, "Tsukuba Expo '85," which will be held near Tokyo, Japan. Cooperating organizations will include the Korea Office of the Environment, Korean Meteorological Society, Air Pollution Control Association (Pittsburgh), Americal Meteorological Society, and Canadian Meteorological and Oceanographic Society.

Atmospheric sciences in some parts of the world have progressed slowly over the years, and in the Far East, for example, industrialization and urbanization are also accepted realities. Such phenomena have led to deterioration in the air quality and natural environments of many countries. One of the aims of this Conference is thus to promote atmospheric sciences and clean air in the regions of the Pacific rim and to seek ways for an eventual reduction in background levels of global air pollutants. Proposed sessions of the Conference include: 1) air chemistry, 2) applied and urban climatology, 3) applied meteorology, 4) air quality meteorology, 5) measurements and monitoring techniques, 6) local air quality, 7) regional air quality, 8) global air quality, 9) transport and transformation, 10) acid rain, 11) air quality modelling, 12) air quality prediction, 13) abatement techniques, 14) health and welfare aspects. 15) environmental impact assessment, and 16) environmental decision and policy. In addition to the technical programme, an exhibition of appropriate equipment, instrumentation and services will take place.

Contributions are invited on any of the above topics. The official language to be used at the meeting will be English. Paper presentations by young scientists are encouraged. Informative abstracts of about one page (200-400 words) should be submitted by August 15, 1984, and authors should indicate the subject area session in which the proposed paper fits best. A Conference preprint volume is planned, and complete camera-ready texts of 4-8 pages will be required for accepted papers by December 1, 1984. Abstracts should be sent to Y.S. Chung (tel.: (416) 667-4980), Atmospheric Environment Service (AQRB), 4905 Dufferin Street, Downsview, Ontario, Canada M3H 574. Individuals and exhibitors wishing to obtain further information, please contact the above.

CONFÉRENCE INTERNATIONALE SUR LES SCIENCES ATMOSPHÉRIQUES ET LEUR APPLICATION À LA QUALITÉ DE L'AIR DU 20 AU 24 MAI 1984 À SÉOUL, CORÉE

#### Appel de Communications

A Sécul, en Corée, se tiendra du 20 au 24 mai une conférence spéciale internationale sur les sciences atmosphériques et leur application à la qualité de l'air, conférence parrainée par la Fédération coréenne des sociétés de sciences et de technologie. Cette conférence aura lieu pendant l'exposition scientifique internationale "Expo 85 de Tsukuba," qui se tiendra près de Tokyo, au Japon. Parmi les organismes participants, citons le bureau coréen de l'Environnement, la Société météorologique de Corée, l'Association de lutte contre la pollution atmosphérique (Pittsburgh), la Société météorologique américaine, et la Société canadienne de météorologie et d'océanographie.

Au cours des ans, les sciences atmosphériques ont accompli de lents progrès dans certaines régions du globe et, dans l'Extrême-Orient par exemple, l'industrialisation et l'urbanisation sont aussi des faits acceptés. De tels phénomènes ont contribué à détériorer la qualité de l'air et le milieu naturel de nombreux pays. Un des objectifs de cette conférence consiste donc à encourager le développement des sciences atmosphériques et la présence d'air pur dans les régions de la bordure du Pacifique et de rechercher les moyens de réduire ultérieurement les niveaux de fond des polluants Les séances proposées pour la 1) chimie de l'air 2) climatologie atmosphériques mondiaux, conférence comprennent : appliquée et urbaine 3) météorologie appliquée 4) météorologie de la qualité de l'air 5) mesures et techniques de surveillance 6) qualité de l'air local 7) qualité de l'air régional 8) qualité de l'air mondial 9) transport et transformation 10) pluie acide 11) modélisation pour l'étude de la qualité de l'air 12) prévision de la qualité de l'air 13) techniques de réduction de la pollution 14) effets sur la santé et le bien-être social 15) prospective d'environnement 16) décisions et lignes de conduite en matière d'environnement. Outre le programme d'instruments et de services.

Nous sollicitons des articles sur tout sujet ci-dessus. À la réunion, l'anglais sera la langue officielle de communication. On encourage les jeunes scientifiques à présenter des communications. Il faudrait soumettre d'ici au <u>15 août 1984</u> des résumés documentaires d'environ une page (200-400 mots) et indiquer la séance à laquelle la communication conviendrait le mieux. On prévoit un tirage préliminaire pour la conférence et il faudra d'ici au 1<sup>er</sup> décembre 1984, pour les communications acceptées, les textes complets, prêts à photographier, de 4 à 8 pages. Il convient d'envoyer les résumés à Y.S. Chung (n<sup>0</sup> de tél. : (416) 667-4980), Service de l'environnement atmosphérique (AQRB), 4906, rue Dufferin, Downsview, Ontario, Canada M3H 5T4. Les particuliers et les exposants désirant de plus amples renseignements sont priés de s'adresser à Y.S. Chung.

#### MUSKOKA CONFERENCE '85

#### Call for Papers

An International Symposium on Acid Precipitation, sponsored by the Federal and Provincial Governments of Canada, will be held at Lake Rosseau, Muskoka, Ontario, from September 15-20, 1985.

The Symposium will be devoted to aspects of the Long Range Transport of Airborne Pollutants and associated interactions and responses of the ecosystem. The focus is to be on acidification and the interactions with trace elements that result in ecosystem impairment.

The Symposium will include comprehensive Plenary Sessions, Specific Topic Symposia and Poster Sessions. The Specific Topic Symposia are expected to include: Deposition of Acidic Materials, Source/Receptor Relationships; Historical Perspective of Acidification; Chemical Transformation in Terrestrial and Aquatic Systems; Aquatic Regime Responses to Acidification; Forest and Crop Responses to Acidification; Weathering and Soil Chemistry Reactions; Mitigation and Reversibility of Acidification Effects; and Socio-Economic Assessment of LRTAP Concerns.

An expression of interest to participate in this International Symposium may be made by submitting a title that would contribute to one of the listed topics or related areas of Acid Precipitation concerns. Expressions of interest and titles should be submitted to the Symposium Program Committee in care of the Muskoka Conference '85 address below.

To be considered for second mailing of information and requests for extended abstracts, expressions of interest must be received by September 1, 1984.

Muskoka Conference '85 112 St. Clair Ave. West, Suite 303 Toronto, Ontario, CANADA M4V 2Y3

Tel: (416) 961-6505 Telex: D6-986766

# MUSKOKA CONFERENCE '85

A major International Conference on Acidic Precipitation will be held at Clevelands House/Paignton House, Muskoka, September 15 to 20, 1985, sponsored by the Federal and Provincial Governments of Canada.

The theme of the Conference is the issue of environmental protection as it relates to acidic precipitation.

Sessions will be in the form of original scientific presentations which will be solicited in the disciplines related to atmospheric transport, transformation and deposition of pollutants; the direct and indirect effects, including trace contaminants, on terrestrial and aquatic ecosystems and the socio-economic considerations of these effects. Symposia on special topics and poster sessions are also planned.

Registration includes scheduled bus transportation from Lester B. Pearson International Airport, Toronto, to the conference site, accommodation on site, all meals during the conference, and includes the conference registration fee.

Special fee for non-registrants includes transportation, accommodation, meals, specific conference activities, access to all site facilities, but does not include final banquet.

#### The fee schedule is as follows:

Registration mailed before April 30, 1985	\$575.00
Registration mailed between May 1 and August 1, 1985	\$650.00
Reported for the projectments welled to face	
April 30, 1985	\$325.00
Reservation for non-registrants mailed between	#775 DO
May I and August 1, 1969	\$272.00
Single occupancy subject to availability	\$700.00
No special rate for children	

Accommodation has been booked at both Clevelands House and Paignton House based on double occupancy.

Queries should be directed to Muskoka Conference '85 at the following address:

Muskoka Conference '85 112 St. Clair Ave. West, Suite 303 Toronto, Ontario, CANADA M4V 2Y3

Tel: (416) 961-6505 Telex: 06-986766

Backgrounder on the UN Economic Commission for Europe

# CONVENTION ON LONG-RANGE TRANSBOUNDARY AIR POLLUTION

A Canada-Europe Ministerial Conference on Acid Rain was held in Ottawa on March 20 and 21, 1984, to commemorate the first anniversary of the entry into force of the Economic Commission for Europe (ECE) Convention on Long-Range Transboundary Air Pollution. The Conference was convened to address the urgent necessity for concerned parties to the Convention to reduce the serious effects of acid rain on our human and natural environments.

Canada's position is that it cannot solve the acid rain problem alone. For this reason, Mr. Caccia appealed to his ministerial colleagues from the most environmentally concerned members of the ECE to join forces in acid rain control.

#### Background

A statement by President Leonid Brezhnev of the Soviet Union stimulated the idea of an international agreement on transboundary air pollution. At a 1975 East-West meeting of the Conference on Security and Cooperation in Europe, Mr. Brezhnev challenged fellow participants to reach multilateral solutions to three pressing problems: energy, transport, and the environment. Swedish and Norwegian environmental officials saw the possibility to use Mr. Brezhnev's speech as the beginning for international discussion, negotiation and perhaps even solutions to one of their long standing problems - long range transport of air pollutants. This problem has been labelled "acid rain."

#### Statement

Federal Environment Minister Charles Caccia, and his provincial colleagues: Andrew Brandt, Ontario's Environment Minister; Adrien Ouellette, Guebec's Environment Minister; Hal Andrews, Newfoundland's Environment Minister; William Harmer, New Brunswick's Environment Minister; George Moodie, Nova Scotia's Environment Minister; Ben Marr, Deputy Minister of the Environment from British Columbia; W. Solodzuk, Deputy Minister of the Environment, Work Place Safety & Health from Manitoba; agreed that Canada would take further unilateral action to reduce emissions causing acid rain.

In a statement following a meeting in Ottawa of Environment Ministers, Mr. Caccia said, "We will proceed independently from the United States in developing a Canadian solution on the matter of acid rain and we hope that the U.S. will join us at the earliest possible date."

Ministers reaffirmed their agreement on the need to reduce wet sulphate deposition to 20 kilograms per hectare per year, the level which lakes and rivers can tolerate without damage occurring. Reaching this level in the sensitive areas of Eastern Canada will require emission reductions of up to 50% in Canada and major emission reduction in the United States. Ministers agreed on a strategy of achieving a 50% reduction from 1980 allowable emissions by 1994.

"This strategy represents a combination of the agreement at Fredericton and decisions to be made by a working group established here today," Mr. Caccia said. The working group will consist of an open membership of the federal and provincial ministers of the environment that will put into place a specific program with the objective of reaching the 50% target by 1994.

Canada is already committed to a 25% reduction of SO<sub>2</sub> emissions by 1990. This includes abatement measures at Inco in Sudbury, at Ontario Hydro and at Noranda's copper smelter in Rouyn-Noranda, Quebec. It also includes reductions in SO<sub>2</sub> as a result of switching from coal and oil to natural gas under the National Energy Program.

Acid rain is caused by the emissions of sulphur dioxide (SO<sub>2</sub>) and oxides of nitrogen (NO<sub>X</sub>) from industry, coal-fired electricity plants and automobiles. These substances are transported hundreds of miles, transformed into sulphates and nitrates and fall to earth in rain, snow or dust.

Acid rain damages water systems so they can no longer sustain fish life. Acid rain is threatening forests, slowing their growth and killing seedlings. It is also capable of contaminating our drinking water supplies by leaching metals from soils and water pipes. Buildings and monuments are also showing the effects of acidic erosion.

#### Fiche d'information

#### CONVENTION SUR LA POLLUTION ATMOSPHÉRIQUE TRANSFRONTIÈRE À LONGUE DISTANCE

#### de la Commission écomonique des Nations Unies

Les 20 et 21 mars 1984 à Ottawa, une conférence Canada-Europe sur les pluies acides soulignera le premier anniversaire de l'entrée en vigueur de la Convention sur la pollution atmosphérique transfrontière à longue distance, de la Commission économique pour l'Europe. Les participants à la conférence y discuteront de l'urgence de prévenir les graves dommages que causent les pluies acides au milieu naturel et aux structures artificielles. Le Canada est toujours maintenu qu'il ne peut résoudre seul le problème des pluies acides, M. Caccia priera instamment ses homologues, représentant les pays de la Commission économique pour l'Europe les plus sensibilisés à la question environnementale, de se joindre à lui dans la lutte aux pluies acides.

#### État de la question

C'est Leonid Brejnev qui, dans un discours prononcé en 1975 lors d'une rencontre est-ouest dans le cadre de la Conférence sue la sécurité et la coopération en Europe, a lancé l'idée d'un accord international sur la pollution atmosphérique transfrontière. M. Brejnev avait alors pressé les autres pays participants à rechercher des solutions multilatérales pour trois problèmes urgents : l'énergie, les transports et l'environnement. Des représentants de la Suède et de la Norvège avaient alors envisagé de faire du discours de M. Brejnev l'amorce de discussions, de négociations et éventuellement de solutions internationales pour un problème affligeant depuis bon nombre d'années ces deux pays : le transport à distance des polluants atmosphériques, ce qu'on appelle communément les "pluies acides."

#### Déclaration

Le ministre fédéral de l'Environnement, Charles Caccia, et ses homologues provinciaux, Andrew Brandt, ministre ontarien de l'Environnement; Adrien Ouellette, ministre québécois de l'Environnement; Hal Andrews, ministre terre-neuvien de l'Environnement; William Harmer, ministre de l'Environnement du Nouveau-Brunswick; George Moodie, ministre de l'Environnement de la Nouvelle-Écosse; Ben Marr, sous-ministre de l'Environnement de la Colombie-Britannique; W. Solodzuk, sous-ministre albertain de l'Environnement; et Tom Own, sous-ministre manitobain de l'Environnement, Sécurité au travail et Santé, ont annoncé que le Canada prendra des mesures unilatérales pour réduire les émissions causant les pluies acides.

Après la réunion, M. Caccia a déclaré : " Nous agirons indépendamment des États-Unis pour trouver une solution canadienne au problème des pluies acides, espérant que les États-Unis se joindront à nous le plus rapidement possible."

Les ministre ont reconfirmé leur accord sur la nécessité de réduire les dépôts de sulfates humides à 20 kg par hectare par année, niveau acceptable pour protéger les lacs et les rivières. Pour atteindre ce niveau dans les régions vulnérables de l'Est du pays, le Canada devra réduire ses émissions de 50 % et les États-Unis devront en faire autant.

Les ministre ont convenu d'une stratégie visant à reduire les émissions de 50 % d'ici 1994, à partir des niveaux de 1980. " Cette stratégie a été élaborée à partir des accords de Fredericton et des décisions d'un group de travail est composé de ministres de l'Environmenet que ont pour tâche d'établire un programme ayant pour but d'atteindre l'ojectif de 50 % d'ici 1984.

Le Canada s'est déjà engagé à réduire de 25% ses émissions d'anhydride sulfureux d'ici 1990. Cela comprend des mesures de réduction à la campagnie Inco de Sudbury, l'Hydro Ontario et à la fonderie de cuivre de la compagnie Noranda à Rouyon-Noranda, de même que les réductions résultant de la ocnverion de charbon et du pérole au gax naturel dan le cadre du programme énégétique national.

Les pluies acides sont causées par les émissions d'anhydride sulfureux  $(SO_2)$  et d'oxydes d'azote  $(NO_X)$  provenant de l'industrie, des centrales thermiques au charbon et des conduits d'échappement des voitures. Ces substances, transportées à des centaines de milles et transformées en sulfates et en nitrates, retombent sur terre sous forme de pluie, de neige ou de poussière.

Les pluies acides causent des dommages aux réseaux hydrographiques en détruisant la vie aquatique. Elles menacent les forêts en ralentissant leur croissance et en tuant les semis. Elles peuvent aussi contaminer les réserves d'eau potable en filtrant des métaux à partir des sols et des conduites d'eau. De plus, elles ont déjà endommagé les édifices et les monuments.

# FIRST ICSU MULTIDISCIPLINARY SYMPOSIUM OTTAWA, CANADA

# 25 September 1984 - GLOBAL CHANGE

# 26 September 1984 - TEACHING OF SCIENCE

#### 27 September 1984 - GENE TECHNOLOGY

For further information about participation and practical arrangements, please contact:

ICSU Secretariat 51 Boulevard de Montmorency 75016 Paris France

> Telephone: 525 03 29 Telex: 630553 F

National Research Council of Canada Ottawa Ontario K1A 0R6 Canada

Telephone: (613) 993-9101/9009 Telex: 053-3115

#### SYMPOSIUM ON GLOBAL CHANGE 25 September 1984

The International Council of Scientific Unions (ICSU) is considering proposals for an international, interdisciplinary programme to study global change in the terrestrial environment (geosphere) and the life that inhabits it (biosphere) as a closely coupled system. The system is constantly undergoing change on time scales that range from hundreds of millions of years through the slow recurrence of ice ages to transient phenomena. Changes in the geosphere that embrace the land, occans, atmosphere and the solar terrestrial domain, and in the terrestrial and marine biosphere, arise from the interplay of physical, chemical and biological processes. In view of the need to pursue and support existing programmes in the several components of the geosphere and biosphere, at least three years will be allocated to formulate questions, to develop themes and sub-programmes, to design observational networks responsive to particular research needs, and to bring on-stream new technology.

The first in-depth discussion of this programme is planned at a scientific symposium to be held in Ottawa on 25 September 1984.

There will be commissioned papers summarizing scientific developments over the past 25 years and assessing future prospects for illuminating the interactions among the several parts of the geosphere and biosphere. These papers will be prepared and distributed in advance of the Symposium. Topics will include emerging programmes such as those on biogeochemical cycles and their interactions, tropospheric chemistry, ecosystem dynamics, communications and data management. The use of space-based observational platforms will also be addressed in special papers. The International Scientific Unions, Scientific and Special Committees, Inter-Union Commissions and adhering Academies and kindred institutions are invited to participate in the Symposium and to develop and share their views on the rationale, themes and activities of a programme of study of global change for the 1990's.

# SYMPOSIUM ON SCIENCE EDUCATION AND SOCIAL NEEDS 26 September 1984

The Committee on the Teaching of Science of ICSU (ICSU-CTS) has, in recent years, concentrated much of its attention on the problem of making science education more relevant to social needs, particularly those of developing countries. This endeavour was stimulated by the United Nations Conference on Science and Technology for Development and follows recommendations of the Unesco Congress on Science and Technology Education and National Development in 1981.

The Symposium will provide an opportunity for members of the ICSU General Assembly to learn about developments in the Science and Society Approach to Education, including those initiated by ICSU-CTS and to discuss ways in which scientists can make further contributions to it.

## SYMPOSIUM ON GENE TECHNOLOGY 27 September 1984

The purpose of the Symposium on Gene Technology is to provide an overview of some present trends in this fast developing area of research. The talks will essentially cover recent developments and applications in Medicine and Agriculture.

## 

The entire three-day event will be held at the Westin Hotel and is open to all. The admission is <u>free</u>. Persons wishing to receive the program are requested to write or phone:

> Ken Charbonneau (Telephone: (613) 993-9009) Conference Services National Research Council of Canada Ottawa, Ontario KIA DR6

# R.I.P.

# JOHN JAMES DOBROCKY 1942 - 1983

John James Dobrocky, founder and first president of Dobrocky SEATECH Ltd., died of cancer on September 6, 1983, at the age of 41. Born in Princetown, B.C., John accompanied his family to the west coast at an early age. His formative years were spent in Port Alberni and later Victoria where he graduated from Victoria Senior Secondary School. Summers were spent commerical fishing aboard his father's troller, the MARJON D. Yielding to parental pressure, John enrolled at the then fledgling University of Victoria. Because of his interests in fish and fishing, John selected Biology as a major, fully expecting to fail and "drop out with honour." To his surprise, he enjoyed university and although far from being considered a scholar he passed most of his courses, and as he once said "you can't quit when you have just passed the year." His practical knowledge of field oceanography and his quest for adventure took him out of university for several years to work for Texas A and M University aboard the USNS ELTANIN as an oceanographic technician and later as party chief in their Antarctic program.

Returning to the University of Victoria in 1970, John completed his Bachelor of Science degree developing his skills in the practical aspects of oceanography as well as taking a leadership role in the Biology Club. By the time John graduated he was an experienced field oceanographer with several years experience in implementing major oceanographic programs.

John was intrigued with the idea of providing a commercial ocean-data service for both government and industry and in May, 1971, formed Dobrocky SEATECH Ltd. His magnetic personality and his love of people enabled him to obtain contracts with government and industry where others had failed and business grew. The initial phase of development concentrated on data collection with a strong commitment to quality, based on company ownership and operation of its own equipment. This was an outgrowth of his background which enabled him to personally perform almost any work needed at sea.

The company soon outgrew the original 22 ft. sampling boat and "laundry-room office" and in 1973 acquired the 40 ft. SEATECH II, as well as new office and laboratory facilities along Victoria's waterfront. SEATECH continued to expand under John's spirited leadership with increased facilities including the historical SEA LION, a 130 ft. converted tugboat. By this time, business had expanded to include the entire B.C. coast, as well as the Canadian  $\mbox{Arctic.}$ 

John's commitment to quality never varied, whether it be with regard to scientific data or to his famous salmon and lamb barbeque aboard the SEA LION. Sports fishing continued to be John's recreational love and many early mornings were spent fishing in the waters of Victoria prior to the day's hectic workload.

Expansion of Dobrocky SEATECH Ltd. continued at a rapid rate, with development of facilities for experimental and analytical programs in all fields of oceanography. New facilities were developed in Sidney, B.C., and in 1980 Dobrocky SEATECH (Nfid.) Limited was formed, providing services for offshore oil exploration and other projects in eastern Canada. By 1982, another office had been opened in Dartmouth, Nova Scotia, and John had secured projects in Figi, New Caledonia, Greenland, England, Africa and the U.S., as well as throughout Canada.

John Dobrocky was a unique pioneer of commercial environmental science in Canada. He was able to bridge the gap between the academic and the industrial world and to bring quality work into environmental science. He was also a man of the highest integrity and honesty whose jovial disposition and pragmatic outlook on life earned him the friendship and trust of hundreds, both in Canada and overseas. Applied oceanography in Canada has benefitted from John's many contributions, and his presence will be missed for years to come.

The John James Dobrocky Scholarship Fund has been established at the University of Victoria to receive donations from John's many friends. An annual scholarship will be awarded to a student in Marine sciences whose interests reflect the life-long goals of John Dobrocky.

# WEATHER CONSULTANTS OF CANADA COMPANY LIMITED (PELE WEATHER)

Meteorologist - capable of independent forecasting without supervision. Should preferably have been employed in the field of consulting meteorology and have some marketing in the field. Must be able to broadcast live on radio. Candidate should have a B.A. or M.A. in meteorology, be English speaking with at least 3 years' experience. Salary negotiable.

Please send resumés to:

Weather Consultants of Canada Company Limited Suite 208 1365 Yonge Street Toronto, Ontario M4T 2P7 Telephone: (416) 968-7981

#### NEW PUBLICATION ANNOUNCEMENT

## CLIMATE AND DEVELOPMENT

Editor: Asit K. Biswas (President, International Society for Ecological Modelling, Oxford)

No in-depth studies of the impacts of climate on development have previously been available. Five eminent internaitonal authorities now review the existing knowledge on the inter-relationships between climate and patterns of development; the impact of climate variables on water and agricultural development; and the effects of climate on human health. A case study is also given of the effect of climatic fluctuations on human population in Mesopotamia. Climatologists, geographers, economists, sociologists, meteorologists and environmentalists will all benefit from this comprehensive review.

# Contents

Climate and Development (A.K. Biswas). Climate and Agriculture (M.S. Swaminathan). Climate and Water Management (A.K. Biswas).

Climate and Health (H.E. Landsberg), Effects of Climate Fluctuation on Human Populations: Study of Mesopotamian Society (D.L. Johnson and H. Gould).

Publication Information: Tycooly International Publishing Limited: Dublin, Ireland. January 1984.

#### NEW COURSE

A Certificate Course in Remote Sensing will be offered by the University of Waterloo in collaboration with the Ontario Centre for Remote Sensing from November 5 through 9, 1984. This course is designed for those in government, industry and education who wish to develop their skills in digital analysis of LANDSAT imagery. The five-day course combines lectures, laboratory work on interpretation of hard-copy LANDSAT imagery, and "hands-on" experience with the DIPIX image analysis systems. A university degree is not required, although applicants should have an introductory course in remote sensing, or some practical experience in the field.

For further information, please contact Dr. Ellsworth LeDrew, Program Director, c/o Anne Dunnet, Faculty of Environmental Studies, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1.

#### BOOKS!

As a contribution of the <u>Canadian Climate Program</u> a series of reports on Canadian Meteorological History are being prepared for limited circulation.

Although the language of publication is the preference of the author(s), reports will be made available in both English and French if significant demand exists. Readers are invited to express their language preference to the Director General, Canadian Climate Centre, Atmospheric Environment Service, 4905 Dufferin Street, Downsview, Ontario, M3H 5T4

The following three publications are now available:

- No. 1 Pre-Confederation Climate Data (10 pages) M.K. Thomas, 1984.
- No. 2 Canadian Participation in W.M.O. (19 pages) M.K. Thomas, 1984.
- No. 3 C.M.O.S. Officers 1940 1984 (5 pages) M.K. Thomas, 1984.

#### CMOS PUBLICATIONS

It was expressed at the last AGM that CMOS-sponsored publications be better advertised to the membership in terms of content. The following are Tables of Contents of the most recent issues of Atmosphere-Ocean and the Climatological Bulletin; that for Chinook was not available at the time of printing. ATMOSPHERE-OCEAN - Vol. 22, No. 2, June 1984

- Contents Effect of a Tidal Stream on Internal Wave 125-143 Observations and Predictions B.L. Blackford The Partition of Internal Tidal Motions in Knight 144-150 Inlet, British Columbia Howard J. Freeland Currents Along the Pacific Coast of Canada 151-172 H.J. Freeland, W.R. Crawford and R.E. Thomson Analysis of Internal Solitary Waves Observed in 173-192 Davis Strait Patrick F. Cummins and Paul H. LeBlond A Note on Brine Layer Spacing of First-Year Sea Ice 193-206 M. Makawo and N.K. Sinha 207-225 A Preliminary Investigation Using a Nova Scotia Storm Surge Prediction Model Mark Gray, Maurice Danard, Roger Flather, Falconer Henry, Tad Murty, S. Venkatesh and Clive Jarvis 226-243 A Study of the Systematic Errors of the Canadian Meteorological Centre's Spectral Model C. Chouinard On the Detection of Clouds 244-255 A.W. Harrison and C.A. Coombes The Relationship Between Turbidity and Spectral 256-260 Optical Depth John Davies and Kathleen Stewart **RESEARCH NOTE:**
- 261-263 Determining the Unfrozen Water Content in Soils by Time-Domain Reflectometry M.W. Smith and D.E. Patterson
  - 264 Book Review

ISSN D705-5900

## CLIMATOLOGICAL BULLETIN - Vol. 18, No. 1, April 1984

Contents

- 2 FOREWORD
- ARTICLES
- 3 Atmospheric Carbon Dioxide and Canadian Agriculture D.W. Stewart
- 15 Growing Season Dry Spells in Southern Ontario D. Murray Brown and William D. Wyllie NOTF
- 31 A Simple Procedure Used to Estimate Selected Growing Degree Day Summations in Spring and Autumn in the Atlantic Region A. Bootsma

NEWS AND COMMENTS

- 35 Comments on "Do Increases in Atmospheric CO<sub>2</sub> Have a Cooling Effect on Surface Air Temperature" Kevin Hamilton
- 37 Reply Sherwood B. Idso

CMOS · SCMO Suite 805 151 Slater St. Ottawa, Ontario, Canada K1P 5H3

# FIRST CLASS MAIL