

geogram

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DÉCEMBRE

an informal branch newsletter
un bulletin interne d'information



FROM THE DIRECTOR-GENERAL

This will be the last editorial I write for GEOGRAM as Director of the Survey. Probably by the time you read this my successor will have been announced, although I don't know who it will be at this time. One of the things that I consider successful during my term as Director has been the principle of management rotation, or term management. In all, since 1976, there have been 10 changes of managers at the Division and Subdivision level due entirely to this principle as opposed to normal replacement through retirement or promotion. Without exception, those who have "returned to the bench" have done so vigorously and with enriched understanding.

I must, therefore, practice what I preach. My intention was to stand down as Director after six years in the job but I was persuaded to stay on another year. It must be emphasized that my decision is not motivated by dissatisfaction with the Department or even with the government service, even though there have been times... No one should remain in a sensitive job for too long and in spite of what one's ego may suggest, there are always others to do your job. I plan to stay in the Department for a few months to do one or two things that I would like to do, and after that we shall see. I intend, however, to keep active in geology.

The most recent management changes in the Survey have been the retirement as Division Directors of Don Stott at ISPG and John Reesor from Precambrian Geology. Both have much to contribute yet, and we wish them well in their new found freedom.

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NOTE DU DIRECTEUR GÉNÉRAL

C'est sans doute la dernière fois que j'écris l'éditorial de GEOGRAM à titre de directeur de la Commission. Au moment où vous lirez ces lignes, le nom de mon successeur, que je ne connais pas encore, aura probablement été annoncé. Parmi toutes les choses qui ont marqué mon mandat de directeur, il en est une que je considère particulièrement heureuse: c'est le principe de la rotation des cadres ou, si vous préférez, de la gestion à terme. Depuis 1976, il s'est produit, au sein des divisions et des subdivisions, 10 changements de chef qui sont attribuables non pas à des retraites ou à des promotions, mais plutôt au principe de la rotation. Tous ceux qui ont goûté au "pouvoir" sont retournés à leur poste, une fois leur mandat expiré, plus vigoureux et plus enrichis.

Je dois donc mettre en pratique ce que je prêche depuis toujours. Au début, j'avais l'intention de démissionner après six ans, mais on m'a persuadé de demeurer en poste une autre année. Je m'empresse de préciser que ma décision de partir n'est aucunement motivée par un mécontentement à l'égard du Ministère ou de la Fonction publique, même s'il y a eu des moments... À mon avis, personne ne devrait s'éterniser dans un poste important et, en dépit de ce que notre ego peut raconter, nul n'est irremplaçable. Je compte demeurer au Ministère pendant quelques mois, car il y a une ou deux choses que j'aimerais faire. Après, nous verrons. J'ai toutefois l'intention de continuer à pratiquer la géologie.

(suite à la page 18)

STAFF NEWS

Director-General's Office

A few faces have disappeared from the second floor halls of the House of Geology while others are becoming more familiar.

Don Stalker decided to try something different and left during the summer for the Department of Environment.

Bill Hutchison ("Hutch" to his many colleagues and friends) has left his two-year post as secretary general of the International Union of Geological Sciences (IUGS) and on January 1, 1981 will fill the vacancy left by John Brindle. John, head of the Programme Office since 1975, has followed the setting sun to ISPG where he is head of the Petroleum Geology Subdivision. Vera Lafferty, Hutch's executive assistant, will continue as editor of the quarterly IUGS magazine, EPISODES.

Atlantic Geoscience Centre

Mel Walker joined us in June, filling the Mechanical Engineering position in Program Support Subdivision. Mel previously worked for a Dartmouth engineering development firm.

Margaret MacDonald, the Director's secretary, left in July to return to university. She had taken evening courses previously and decided it was time to take the plunge as a fulltime student. Good luck, Margaret!

Ron Macnab replaced Allin Folinsbee as the co-ordinator for the multi-parameter surveys program carried on in co-operation with Canadian Hydrographic Service. Ron previously worked at AGC before going to the Computer Division of the Department of Fisheries and Oceans a number of years ago.

Doreen Campbell, the backbone of AGC Finance, has accepted a job as a Financial Officer with Transport Canada. Doreen, one of the first employees to be hired when this division was formed in 1974, has worked constantly above and beyond the call of duty for AGC staff. She will be sorely missed, and Transport Canada will gain greatly from our loss.

Carl Amos was seriously injured in a car crash this summer. It was originally thought he would return to work full time around Christmas, but due to his speedy recuperative powers, Carl is now back at work part days while receiving hospital therapy. He tells us he owes it all to keeping physically fit by running. Good to have you back, Carl!

Ken Asprey, after working for AGC on a term basis, has joined us full time. He is working in Environmental Marine Geology as a technical support person for the coastal scientists. Welcome aboard!

John Woodside, who has spent a year working with the United Nations in Bangkok, will return January, 1981. We look forward to hearing of some of his experiences.

Ed Davies, a palynologist, began working with the Eastern Petroleum Geology Subdivision in April. Welcome to AGC, Ed.

Tony Atkinson is providing electronics expertise to a host of AGC scientists, having previously worked with the Meteorology Division at the Bedford Institute of Oceanography. He replaces Borden Chapman who has accepted a job with Eastern Provincial Airways.

Central Laboratories and Technical Services

R.J. "Bob" Traill retired June 1st after 27 years' service as a mineralogist. Since 1959, he was Head of the Mineralogy Section and recently Assistant Director of the Central Laboratories and Administrative Services Division. During Bob's tenure, the Survey's mineralogical capabilities expanded significantly, and evolved from the almost primitive conditions that many of us will remember at Sussex and George streets and the Victoria Museum to the modern, well-equipped laboratories at Booth Street. Bob's career had many scientific and administrative highlights, and included his appointment as one of the investigators in studies of the lunar samples and his establishment of the first electron microprobe laboratory in Canada.

Bob's published work reflects a wide range of research and interests, from structural studies on feldspars through extra-terrestrial and terrestrial mineral descriptions to catalogues of minerals and meteorites. His last publication, a major revision of his Catalogue of Minerals, will probably become a collector's item as it is the last of the pre-computerized catalogues.

Bob declined any formal farewell by the Branch but his colleagues marked the occasion at an effervescent gathering in (where else?) the mineralogical laboratory where each had the last word in a framed cartoon presented to him. We all wish Bob and his wife Shirley, many happy years ahead and hope that Bob may break 80 before he reaches it!

At the same time we congratulate George Plant who has taken over the reign. Good luck.

A few new changes in Records Office - Matt Colterman and Jim Clarke both recently won competitions within the Records Office. We welcome a new addition, Frank Groothuysen to our mail room. Suzanne Larocque left us in September and Bernie Leclair has joined us as the new Xerox Operator.

We wish Randy Hamilton all the best in his new job with Regional Geophysics and Geochemistry Division and welcome Shirley Kostiew who recently joined our Word Processing Unit as an able Xerox operator, having worked previously with the National Library.

Economic Geology Division

Alex Brown, professor of ore deposits geology, École Polytechnique in Montreal, arrived in October to spend a year's sabbatical leave organizing and editing a booklet series on ores and their geneses. This undertaking is being sponsored by the Mineral Deposits Division of GAC, Mineral Exploration Institute of Montreal and the Canadian Geological Foundation.

Larry Jones, who was with the Uranium Resource Evaluation Section for two years, left in June. Larry accepted a position with Alberta Energy Corporation and moved to Calgary.

Dave Rose, a member of the Mineral Data Bank Unit for eight years, resigned in early September. Dave has joined Sunbury Shores Arts and Nature Centre, Inc. in St. Andrews, New Brunswick.

Lynda Picard-Charron recently joined the Division as its Administrative Clerk. Lynda comes to the GSC by way of the Geographical Services Directorate of Surveys and Mapping. Welcome!

Geological Information Division

The Library is participating in an automated cataloguing support system through the University of Toronto Library Automated Systems (UTLAS) network. The card catalogues have been closed and since April, all new books and serial titles have been entered on the UTLAS system. This system produces the Accession List and the Microfiche Catalogue for the Library.

Since April, Wendy Stark has been working on the Automated Serials List project and the indexing of GSC publications for GEOSCAN.

In July, Judy Wilks joined the division as Reference Librarian with particular responsibility for the GeoRef profiles on CISTI'S CANSDI system, as well as the retrieval of information from GEOSCAN.

Institute of Sedimentary and Petroleum Geology

Scientific additions to the Institute of Sedimentary and Petroleum Geology in recent months include a number of new faces. Barry Richards is completing his Ph.D. dissertation (University of Kansas) on Carboniferous stratigraphy and sedimentology in southwestern District of Mackenzie. Margaret McMechan has recently completed her doctorate in structural geology (Queen's University) and is working on geological maps of the Pine Pass area of British Columbia. John Brindle has come to the Institute from GSC Ottawa to head the Petroleum Geology Subdivision.

Frédéric Monnier has traded the Swiss Alps for the Rockies. He is a post-doctoral fellow working with ISPG scientists under the auspices of the Swiss National Scientific Research Foundation. His doctorate in geology was completed at the University of Neuchâtel last year. He is currently working with Lloyd Snowdon and Trevor Powell on geochemical and organic petrography studies.

Kazuwe Tazaki is also applying her geochemical skills. She is a postdoctoral fellow from Japan and is currently being sponsored by a National Research Council grant to undertake research in clay mineralogy with Tony Foscolos. We extend a "bienvenue chaleureuse" to these international scientists who have chosen to work with us in Calgary.

J. William "Bill" Kerr recently formed his own geological consulting firm. After 19 years of scientific research writing at the ISPG he is still typing with one finger! We wish him success in all of his Calgary consulting and international geological efforts.

"I'm trying! I'm trying!"
- Bill Kerr



Elsie O'Keefe will be greatly missed in the Paleontology Lab. She joined Petro-Can last month. We have it on authority that she has been named honorary member of the ISPG cultural club and that she will be promoting our artistic interests at Petro-Can so that we can expect to produce a joint art show with that group next summer. Pictured here at Elsie's farewell luncheon are (L to R): Glen Edward, Elsie, Jean Daugherty, Don Norris and Lionel Emond.

Bob Munson was replaced by Pearl Broad on September 29th. Bob accepted an administrative position with the Department of Agriculture Health of Animals Division. Pearl was Post Office Supervisor in the Employee Service Unit (Calgary) before taking on the Office Manager position at ISPG.

Joan Galloway is now programme analyst in the Computer Services Unit. She replaced Keitha Baer who left a short time ago to work as a Systems Analyst in the Land Administration Division of Petro Canada. However, Keitha, like many of our ex-colleagues, does belong to the secret survey alumni society so we are sure to see her from time to time.

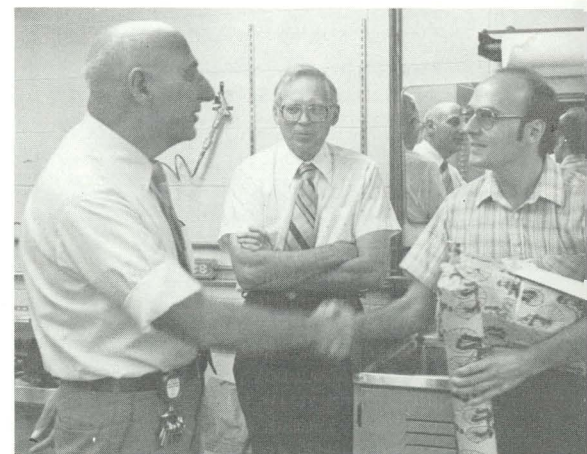
After 8 1/2 years as a coal geologist, John "Sandy" Irvine is joining BP Canada in Calgary as manager of their coal exploration division. Throughout his career at the ISPG he was responsible for coal resource studies.

June Graff left the Library some months ago to work as Head Librarian in Dome Petroleum. She has been replaced by Dana Frake. Dana did her Masters of Library Science in Urbana, Illinois and comes to the Institute from the National Museum in Ottawa. Her able support staff include Fontaine Hwang, who was a Library Technician with the Northern Pipeline Agency before joining the ISPG a few months ago, and Valerie Chipper, Acquisitions Clerk.

Don Norris has been without a secretary since September 29 (so that's why the outgoing correspondence has been so low!) when his former aide, Carol Boonstra left to replace Brian Cormier as coal technician. Al Heinrich has moved up the ladder as a clay mineralogy technologist and Aline Hennessey has been promoted in the administrative field. Congratulations everyone.

Sharon Wolf resigned her laboratory technician position recently. Alex Stadnyk replaced John Juigalli as Electronics Technician. Christianne Niewerth is now switchboard operator at the Institute. Christine Alparts and Susan Onofriechuk are working in Stores, much to Dennis Peatman's delight. May Tchi is now on a six months' term in the Computer Services Unit. Monica Ivanowski is also a term employee in the Library. Hazel Holder and Tammie Mackae are making those keyboards hum in the Word Processing Unit and Mike Johnson replaced Pierre Meilleur as storeman in the Core and Sample Examination Room.

New people to the Cartography Unit include Barbara Fisher who worked with the Ontario Ministry of the Environment drafting unit. Steve Orzcek joined the Cartography Unit a few months ago following completion of his studies at Seneca College in Toronto.



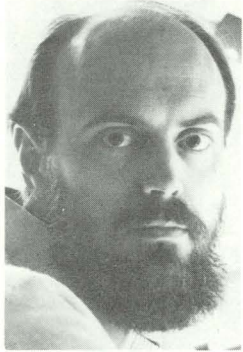
Cliff Jermy presents John Juigalli with his gifts on leaving ISPG as former director Don Stott looks on.

Precambrian Geology Division

The Director General, Chief Geologist and the Ottawa-based Division Directors entertained John Reesor at lunch on November 7, his last day as Director of Precambrian Geology Division. John will be moving to Vancouver later in the winter but has already resumed his scientific career full time. It is expected that his successor will be appointed in the next few weeks.

The Regional Geology Subdivision is pleased to welcome to Ottawa John A. Korstgård, a lecturer in the Department of Geology, Aarhus University, Denmark.

Dr. Korstgård received a Master's degree and his first Ph.D. from Aarhus University for research on the petrology and geochemistry of high grade metamorphic rocks in western Greenland. In 1980 he received a second doctorate from Liverpool



University for a study of the structure and metamorphism across the Archean/Proterozoic boundary in western Greenland. As a Natural Science and Engineering Research Council (NSERC) Visiting Fellow associated with Ingo Ermanovics, John is working on the structure and petrology of high grade rocks across a boundary between structural provinces in eastern Labrador. His research on the Precambrian of Greenland is of great interest to many of the geologists in the Subdivision. We look forward to a stimulating and enlightening exchange of information and ideas during the next year.

Resource Geophysics and Geochemistry Division

Mike Holroyd resigned his position as of August 1, 1980 to continue his career with Data Plotting Services Limited of Toronto, specialists in the computer compilation of aerogeophysical data. David Johnson also left in July to take a position with Transport Canada.

Early in the past summer John Conaway left the Resource Geophysics and Geochemistry Division to take a new position as Manager of Borehole Geophysical Services with McPhar Geophysics in Toronto. John came to GSC from the University of Western Ontario, as a postdoctoral fellow in 1976, and in 1978 he joined the staff of the GSC as a Research Scientist.

Cordilleran Geology Division

Don Tiffin has resigned his position to take on a geophysical project for the United Nations in the Pacific Ocean around Hawaii, Fiji and Solomon Islands. His boat the OCEAN GIRL which Don built himself is currently being outfitted with additional gear in San Francisco. Don, his wife and three girls should have an exciting and interesting life for the next year or so. *Bonne chance!*

Suzi Cameron has resigned to become a full time Domestic Engineer in the Cameron residence.

Patrick McLaren has joined the group from Ottawa. He is a coastal geomorphologist and sedimentologist.

Bob Thompson moved from Calgary to join the group of Yukon specialists in Vancouver. Bob will be mapping in the Ogilvie and Wernecke mountains with the aim of better defining the structural evolution of the region and how it compares with other parts of the foreland thrust and fold belt.

Bert Struik comes to us as a Post-Doctorate Fellow and will be working in Central British Columbia for the next two years sorting out the structure and stratigraphy principally of the Snowshoe formation.

Mike Orchard is now a term employee after a stint as a Post-Doctorate Fellow. Mike's work in micro-paleontology is an essential part of our operation.

Jack Souther, our resident volcanologist after years of studying extinct or at least dormant volcanoes in British Columbia, had a chance to study a live one when Mt. St. Helens became active last May. Jack has done much valuable P.R. work on radio and television in this connection. His geothermal studies are also very much in the public eye.

During his brief career at GSC, John made major contributions to the development of borehole logging methods. Good luck to all!

Larry Stephens joined the Electrical Methods Section of the Terrain Geophysics Subdivision this past September. Larry hails from the Pacific Geoscience Centre of the Patricia Bay Institute of Ocean Sciences. While in Victoria for the past five years, he has been working for the Earth Physics Branch in marine gravity surveys on board CSS PARIZEAU. In Ottawa, Larry will be involved in deep-sounding electromagnetic techniques with Len Collett and Ajit Sinha. Larry is looking forward to this new challenge of using electrical methods for geological mapping and exploration. Welcome to GSC!

Next summer the M.V. HUDSON will come out to the west coast for an extensive program of geology and geophysics in the vicinity of the Queen Charlotte Islands.

Jim Monger, Bert Struik, Dirk Tempelman-Kluit, John Wheeler, Mike Orchard and Hugh Gabrielse ran a field trip along and west of the ancient cratonal margin of North America with the object of defining terranes, that is units of unique structural and stratigraphic characteristics. They were joined by several members of the United States Geological Survey and other American and Canadian geologists. From all accounts they had a wild and woolly exchange of ideas.

Jim Monger, at the invitation of Dave Brew of Menlo Park, joined members of the U.S.G.S. on a field trip in southeastern Alaska with the object of extending geological concepts across international lines.

Terrain Sciences Division

E.B. "Ted" Owen retired from the Geological Survey in September. During much of Ted's 35 year career as an engineering geologist with the Survey he was involved in providing engineering geological advice and service to many government departments and agencies including St. Lawrence Seaway Authority, Indian and Northern Affairs, Northern Canada River Commission, and Public Works. Never one to remain inactive for long, Ted will be devoting the time afforded by retirement to a number of personal interests that he had developed over the years.

Terry Day left the Division in August to take a position as Head, Sediment Survey Section with Inland Waters Directorate. While Terry was here, he carried out fluvial geomorphological studies, primarily in northern Canada, as well as experimental studies on the flume. We wish Terry all the best in his new endeavours.

Congratulations to Larry Dyke who received his Ph.D. from Texas A & M University last December and Jean-Serge Vincent who was granted the degree Docteur en Sciences after successfully defending his dissertation at the Université Libre de Bruxelles in June.

Terry Gibbs joined the Division in June and is working in our Sedimentology-Engineering Geology Laboratories.

OF GENERAL INTEREST

Paleontological Variety in Fredericton, New Brunswick

Paying little heed to the dire predictions of the Farmer's Almanac, a group of Canadian paleontologists assembled at the University of New Brunswick in Fredericton on September 26th, for the annual Canadian Paleontology and Biostratigraphy Seminar sponsored by the Paleontology Division of the Geological Association of Canada. After an enjoyable welcoming evening at the historic Faculty Club at the University of New Brunswick, a day of talks followed. Thirteen papers were presented covering a broad variety of subjects: Cambrian cavity dwellers (the first troglodytes?), Ordovician corals and conodonts, Silurian sea levels, Devonian brachiopods, Carboniferous ostracodes and conodonts, Eocene pine cones and twigs, topped off by Recent forams. Areas from British Columbia to the high Arctic to Newfoundland were covered. No other annual meeting provides such variety in a single session and the audience's discussion and comments reflected their attentiveness. Too often meetings specialize on a single group, area or system, so for me this continues to be the best paleontological meeting of the year. The relatively informal atmosphere provides for less nervous presentations and better discussion. The GAC Paleontology Division award for the best student paper went to Ann Miller of Dalhousie University for her paper on ecophenotypic versus subspecific variation in the foram Elphidium excavatum.

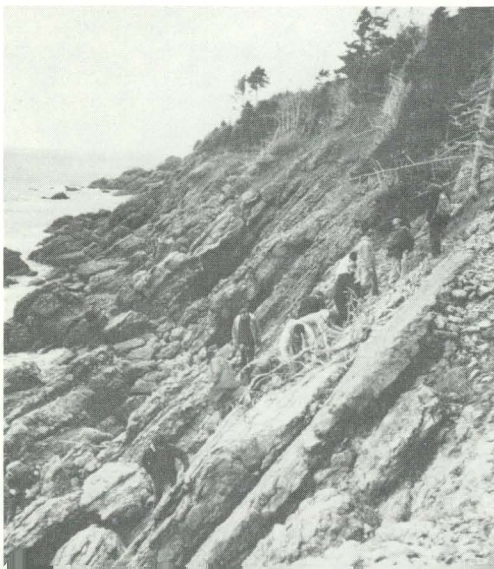
After the day of talks, about half the participants (twenty stalwarts or so) set out for a three day foray through the Lower Paleozoic of northern New Brunswick and Gaspé Peninsula, Québec. Our guides, Jim Noble (UNB), Ron Pickerill (UNB), Bill Forbes (University of Maine) and



Another interesting stop, this time at Limestone Point, N.B. GSC 203467-B

Pierre-André Bourque (Université de Laval) provided us with an excellent guidebook and a broad variety of rocks and fossils. We saw the highly fossiliferous Lower Silurian sequence of northern New Brunswick, spectacular Ordovician trace fossils, dazzling Devonian plants and beautiful exposures of the Late Silurian reef complex at Port Daniel, Québec.

The first day can be remembered with fondness until lunchtime when the gods saw fit to pepper our sandwiches with sleet and made nonsense out of efforts to keep the beer cold. The white wine was beautifully chilled, but the red suffered from a low 'room temperature'. None of us will forget that last stop in the darkness and driving wind and rain - someone said there was an ostracode, but even it did not stay out long enough to be caught! As we stood looking at rocks deposited during the Late Ordovician-Early Silurian glaciation we had the advantage of getting an honest feel for the environment at the time of deposition. The weather did not dampen our enthusiasm and it improved somewhat for the rest of the day.



(above) Lunch bench? GSC 203467-C

(opposite) It looks cold as some field members, precariously perched on a slope near West Point, N.B., search for ostracodes (perhaps?). GSC 203467-D

Another memorable CPBS has passed, affording excellent opportunity for discussion and education. It is a meeting format that can be highly recommended to other sections of the geological fraternity. It is a chance to meet, discuss and find out what is going on in your discipline outside of your own geographic area or geologic system - but first check the Farmer's Almanac!

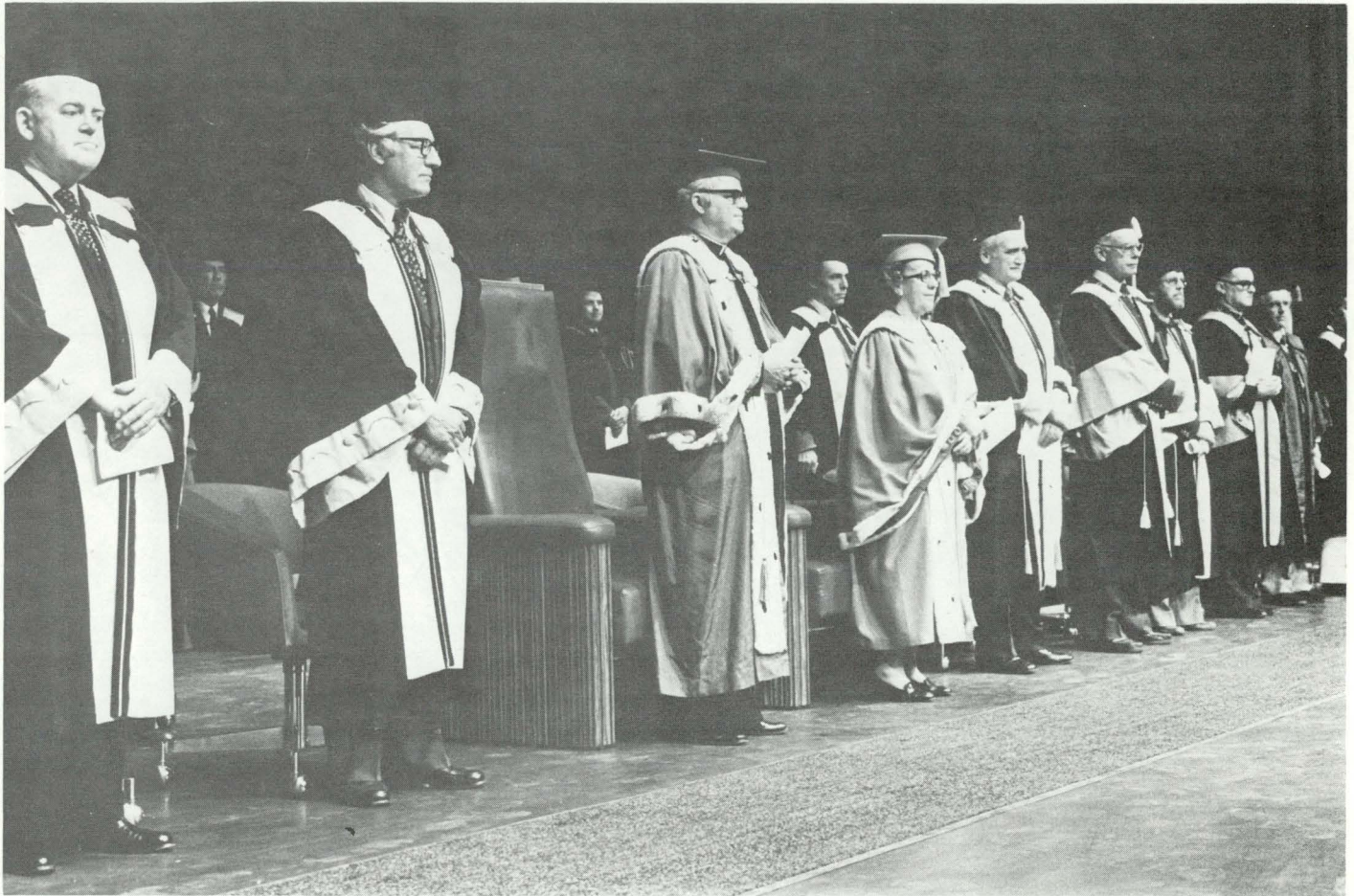
- G.S. Nowlan
ISPG, Ottawa

Eleventh Annual Binghamton Geomorphology-Symposium

The Binghamton Geomorphology Symposium, traditionally held annually at the State University of New York, is now a travelling road show. The eleventh symposium in this series, with a theme of Applied Geomorphology, was hosted by the Department of Geology at Kent State University, October 2-5.

John Clague (Terrain Sciences Division, Vancouver) represented the Geological Survey at the symposium and presented a paper on the role of geomorphology in the recognition and appraisal of geologic hazards. In his presentation, John summarized various geologic hazards in southwest Yukon Territory and evaluated the future danger of catastrophic natural events to life and property in Shakwak Valley, the main transportation and communication corridor in the region. This study represents one facet of Terrain Sciences' program of providing geologic information pertinent to the construction and operation of pipelines and ancillary structures in northern Canada.

The excellent technical program of the Eleventh Annual Geomorphology Symposium highlighted the increasing role which geomorphology is playing in man's attempts to solve complex environmental problems. Examples of concerns being addressed by geomorphologists and reported at the meeting include the siting of hazardous waste facilities and MX missile sites, slope movements related to expansive soils, coastal erosion, land subsidence caused by groundwater withdrawal, and land-use problems in carbonate terrane. With geomorphologists in industry, government, and academia increasingly addressing such practical issues, there can be little doubt that the discipline is no longer solely the domain of 'ivory-tower' theorists.



In the May 1979 issue of GEOGRAM we congratulated Digby McLaren on his election as a Fellow of the Royal Society. This past summer the University of Ottawa bestowed upon him the degree of Doctor of Science, *honoris causa* in appreciation of his own contributions to UNESCO and other international organizations. When one realizes that since the founding of the Survey 138 years ago 9 million square kilometres of Canada have been mapped as well as extensive offshore surveys, the responsibility and importance of the Director General is awesome.

The citation was delivered by Dr. Alec Baer, professor and a member of the University of Ottawa Senate.

In Dr. McLaren's acceptance speech he spoke of the technological challenge that faces us today in satisfying the world's needs for tomorrow - scientific, religious, social and philosophical - a heavy task indeed.

Other recipients of distinguished awards were James Macdonell (former Auditor-General of Canada) - Doctor of Administration, and Dr. Jacques Genest - Doctor of Health Sciences. It seems that pride in our Director General reaches far beyond the GSC. Our sincere congratulations, Dr. McLaren.

Someone Out There Must Like Us!

Readers of GEOGRAM are aware of the worldwide reputation of GSC as a centre of excellence in the earth sciences. We have all heard about the involvement of our Director General and his predecessors in leading roles within a number of major international bodies. We also know that many of our leading lights in the various earth sciences have been in great demand as consultants and invited lecturers just about everywhere in the world. Most but by no means all of us realize that there are other scientific disciplines at work within the Branch, some seemingly far removed from geology proper. How are we doing in those other areas?

Let us look at a few examples - admittedly from the prejudiced viewpoint of the Analytical Chemistry Section, CLTS Division:

Within recent years, Jean-Louis Bouvier was invited first by Dalhousie University, later by Laurentian University, to set up equipment similar to some of our own, in their Geology Departments. The Mines and Energy Department of Newfoundland is expecting his visit on a similar mission as soon as they have acquired the necessary apparatus. At this writing, the Iron Ore Company of Canada is considering adopting one of our newer techniques and has invited Jean-Louis to help get things started.

Gerry Lachance must be regarded as "the champ" in this type of activity. He has presented invited talks at the Whiteshell Nuclear Establishment, Pinawa, Manitoba; at the Corning Glass Research Centre, Corning, New York; at the Pennsylvania-New York Section of the Society for Applied Spectroscopy, Big Flats, New York; and at the Denver X-ray Conference, Denver, Colorado. For two consecutive summers, he has acted as invited resource person in the annual two-week courses in the X-ray Clinic conducted at the State University of New York, Albany, New York. Earlier this year, he spent two days as invited consultant on x-ray fluorescence methods at Sidbec-Normines, Port Cartier, Québec. In one recent international conference and in two advertising publications

of a leading manufacturer of x-ray equipment, Gerry's work has been referred to, respectively as "milestone", "a preferred model" and as the basis of a software that is "...advanced, practical...saves money and time...". His only problem is that people seem to get his name wrong. So far, he has been called "La Chance" and "Lachange". Perhaps we should just say "bonne Chance" and hope for the best.

At the invitation of the organizers, Joy Sen Gupta spoke at a Symposium on Analysis of Geological Materials, at the Central Glass and Ceramics Research Institute and at the Geology Department of Jadavpur University, all in Calcutta, India.

Sydney Abbey has also appeared as an invited speaker at Whiteshell, and more recently at a Workshop on Quality Control in Environmental Analysis, in Halifax, N.S. At the request of the provincial departments concerned, he has visited the Mines and Energy Departments of Nova Scotia and Newfoundland as a consultant on laboratory operation. At this writing, he is planning to attend the Annual Meeting of the Federation of Analytical Chemistry and Spectroscopy Societies, in Philadelphia, Pa., where he is to appear as an invited Keynote Lecturer. He has also been invited to sit on the NRC Advising Committee on Marine Analytical Chemistry. His GSC Paper 77-34 was reproduced in an international journal; his updating of the same material, Paper 80-14, is to reappear in another international journal and also as an appendix to a textbook.

Let no one say we hide our light under a bushel - or its equivalent in litres!

Andy Douma who works in the Analytical Chemistry Section of CLTS always wanted a spacious but affordable home in the country. His dream began to materialize in the early 70s with the purchase of a lot south of Ottawa and a pile of lumber called a prefab kit.

In order to keep the heating costs to a minimum Andy modified his home plans considerably. His "passive solar" design, which in layman's terms means lots of window areas facing south, required special storm windows of double layered clear plastic in addition to the permanent thermopanes. Extra insulation of up to two inches of styrofoam was added to the four inches of fiber-glass insulation.

Andy's energy bill last year averaged about \$1/day for the entire year, remarkably low since he is heating approximately two thousand square feet. What is the magic formula? Well most of his heat is derived from sunshine and "free" wood. There are four sources of heat in Andy's home: solar, a wood



stove, a heat pump and an electric furnace. The heat pump, which is really a refrigeration unit in reverse, extracts heat from the pumped in well water, using it as the main back up rather than the electric furnace.

Andy is a science graduate of Carleton University and has won two suggestion awards since he began work as a casual employee.

- G. Bender
CLTS

New Director for ISPG

Walter W. Nassichuk has been appointed director of the ISPG as of October 7.

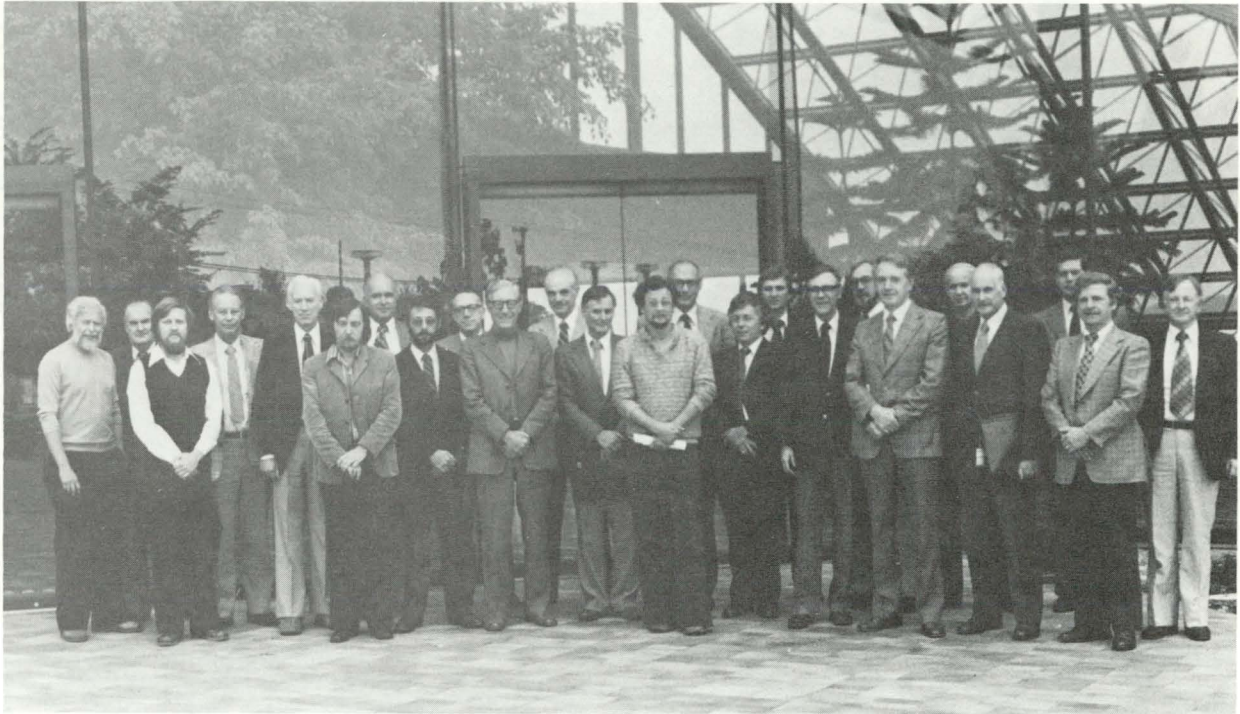
A native of Powell River, B.C., Walter joined the Institute as a geologist in 1966. A paleontologist and biostratigrapher, he has produced some definitive works on Pennsylvanian and Permian ammonites including a much-cited zonation of these Late Paleozoic systems. A graduate of the University of British Columbia, he took his Ph.D. at University of Iowa in 1965; he became head of the Survey's Paleontology Subdivision in 1977. Active on many national and international committees, Walter was secretary-general of the IUGS Commission on Stratigraphy for 1972-76 and has been chairman of many other IUGS subcommissions and working groups. He was leader of the Permian-Triassic delegation to the People's Republic of China in 1978 and is currently a member of the Dean's visiting committee to University of Toronto geoscience departments.

Dr. Nassichuk replaces Donald F. Stott who returns to his research after seven years at the head of the Institute. A past president of the Canadian Society of Petroleum Geologists, Don is one of the outstanding authorities on the Cretaceous System in Canada. Much exploration work for hydrocarbon deposits in western and Arctic Canada has been and will continue to be based on his imaginative and informed stratigraphic and structural interpretations.

Don's term coincided with peculiarly difficult times in regard to problems associated with the employment and salary boom in the petroleum industry in Calgary. His judgment, wisdom and sense of proportion have been largely responsible for the fact that the Institute continues to operate and flourish, and can contemplate the future with confidence.

We all wish Brian Norford the best of luck as he assumes the title role as head of the Paleontology Section, on an acting basis.





Does anyone look familiar? Some certainly should!
For those who give up, turn to page 18 for names.

Calgary Stampede Loosens Inhibitions

There are probably no more staid and reserved people in the world than research scientists and editorial assistants. Put them in Calgary, the home of conservatism and you have a very uptight situation indeed.

Once a year the Calgary Stampede breaks down inhibitions and even the underpaid people in the ISPG forget the pressures of interviews for downtown jobs and relax a little. In the picture two old Latin American hands Lynn Machan, ex-Columbia, and Jim Aitken, ex-Venezuela, proved that it

takes two to tango during the daily, noon-hour lawn stomp that kept ISPG workers on each others toes throughout Stampede week. Olé!

- Ward Neale
ISPG, Calgary

Fifth International Palynological Conference, Cambridge, United Kingdom

During June and July I had the privilege of attending the 5th International Palynological Conference and of participating in conference excursions in Britain. The conference was held at Cambridge University with more than 600 delegates housed in King's, Queen's and Newnham colleges, three of the 24 colleges that are part of Cambridge University. The sessions were held in various lecture halls of the University.

The opening plenary session on Monday morning, June 30, was addressed by Dr. Jan Muller; the closing plenary session was on Saturday afternoon, July 5. A total of 51 technical sessions on 28 different topics occupied the intervening days. Poster sessions covering 22 topics took place at various times throughout the week. A conference reception, a civic reception, a conference buffet dinner and a lecture by Prof. W.G. Chaloner were some of the evening activities.

The technical sessions included a wide variety of palynological subjects from Precambrian palynology to Melissopalynology. Of particular interest to me as a Quaternary palynologist were the 13 sessions covering 8 topics on Quaternary palynology. Needless to say with so many sessions there were the inevitable conflicts and not all talks of interest could be attended.



My accommodations during the conference were in King's College which meant that I had my meals in the historical grandeur of King's College Dining Hall - an experience in itself. Across the courtyard was the magnificent King's College Chapel, begun in the early Fifteenth Century. The lawns, gardens, and River Cam completed the pictorial appeal of the College. Cambridge as a whole has an old-world character, not only because of the many distinguished colleges but also the stately churches and buildings of the town itself. I spent many hours between sessions and in the evenings touring the sites - all within walking distance.

Four excursions were of interest to Quaternary palynologists:

- 1) the Quaternary vegetational history of the Lake District,
- 2) the Quaternary of East Anglia,
- 3) the Quaternary history of West Scotland, and
- 4) the Quaternary vegetational history of western Ireland. Because of my particular interest in late-glacial palynology and interglacial and interstadial deposits, I participated in the first two excursions.

The excursion in the Lake District was led by Dr. Winnifred Pennington Tutin of Leicester University, who has spent all of her professional career studying the area as well as being a native of the District. Her knowledge of not only the geology and palynology of the area, but of the vegetation and human history as well, is phenomenal. She was ably assisted on particular occasions by Dr. Elizabeth Haworth of Freshwater Biological Association, Dr. C.D. Pigott of the British Forestry Institute, and others. The 24 participants from 12 countries were accommodated in a small hotel near Hawkeshead. Daily trips in mini-buses radiated out over much of the Lake District.

The Windermere Interglacial, equivalent to the European Bölling, older Dryas and Allerød chronozones, is recorded in the sediments of many lowland lakes. These sediments are covered at some sites by glacial varves representing renewed mountain glaciation during Younger Dryas time. High corrie lakes located behind Younger Dryas moraines do not contain interstadial sediments but contain sediments with pollen assemblages datable to progressively younger times proceeding upward from the moraines. Flandrian sites show the development of the vegetation and the changes in vegetation, such as the prominent elm decline, possibly attributable to man. The presence of early Neolithic man is recorded at coastal sites. The deforestation

of upland areas by Bronze Age man is reflected in some pollen profiles. Changes in oak pollen curves pattern the destruction of the forests around various sites. Two other prominent deforestations are recorded in pollen profiles and are attributable to upland farming during Romano-British time and lowland farming during Viking settlement. Sites that demonstrate most of the present day vegetation types were visited, and pollen evidence for the origin of these communities was discussed. This excursion involved walking through peatlands, climbing to high cirque lakes, a boat trip on Lake Windermere to view the Mackareth lake sediment sampler in action, botanizing in modern woodlands, and visits to churches and various archeological sites to see relicts of Roman and Viking occupation. In all it was a most enjoyable and informative excursion.

The post-conference excursion in East Anglia was led by Prof. R.G. West of Clare College, Cambridge. Dr. C. Turner assisted with the description of some sites, and Prof. W. Coombe described the botany of various locations and provided a running commentary on the history and folklore of the region. The 12 participants from nine countries were billeted in Clare College for the duration of the field trip and were transported by coach on the daily excursions around East Anglia.

The excursion was arranged so that sites of progressively older age were visited, beginning with modern vegetation and Flandrian peats of the Fenlands and ending with deposits of the Bramertonian temperate and Baventian cold stages of the early Pleistocene. Of the 16 Quaternary stratigraphic states recognized in Britain, the type localities of 13 occur in East Anglia, and special emphasis was placed on visiting these.

The excursion began with a visit to Wichen Fen, an area of the Fenlands where an attempt is being made to restore the original fen plant communities that existed before the drainage of the Fenlands around 1850. Compaction and wastage of the peat, which exceeds 4 m, is documented by the "Holme Post". At the time of drainage of the peatlands this post was pushed through the peat into the underlying Mesozoic clay and the top of the post made level with the top of the peat. The subsidence and loss of peat over the years, therefore, is recorded by the fixed post. Pollen analysis of the Flandrian peats and sediment shows the vegetation succession and development of the fens and then the elm decline and subsequent forest clearance of the Neolithic and Bronze ages.

Of the three major periods of glaciation recognized in Britain, only the earliest, the Anglian, covered East Anglia and provides a marker bed to separate the middle and lower Pleistocene from the upper Pleistocene deposits. The last, or Devensian ice, and the penultimate glaciations did not reach East Anglia, but periglacial features and cold pollen floras attest to the proximity of the ice. Ipswichian and Hoxnian Interglacial intervals with temperate floras separate the Devensian, Wolstonian, and Anglian glacial intervals. Five interglacial intervals with temperate floras and four intervals with cold floras are found below the Anglian till; sites representing four of the temperate and three of the cold intervals were visited, including the well known Cromer Forest Beds Formation on the North Sea coast. Interspersed archeological and historical sites of interest rounded out this interesting excursion.

- R.J. Mott
Terrain Sciences Div.

On October 19-22, 1980, the Fourteenth Annual Association of Earth Science Editors (AESE) was held at the Hotel Nova Scotian in Halifax. The registration of 80 delegates was a little lower than the norm, probably because Halifax was considered as foreign travel by the USGS. The GSC was well represented by Al Grant (AGC), Peter Griffin (GID), Vera Lafferty (DGO), Bosko Loncarevic (AGC), Lynn Machan (ISPG), Leona Mahoney (GID), and Carol Mitchell (AGC).

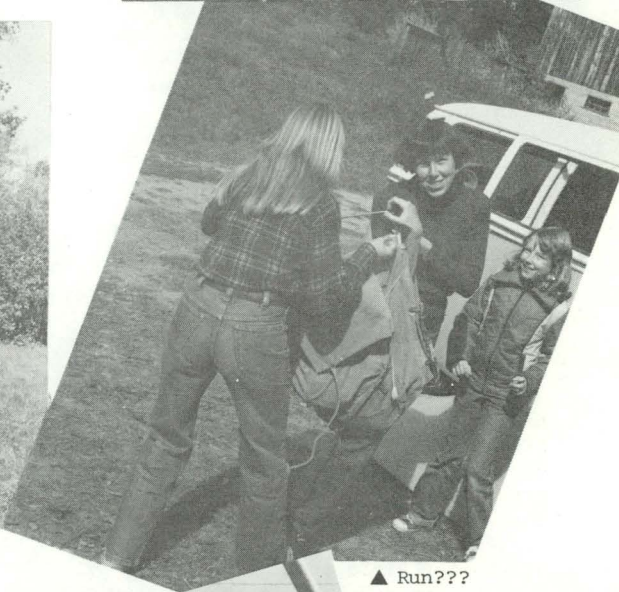
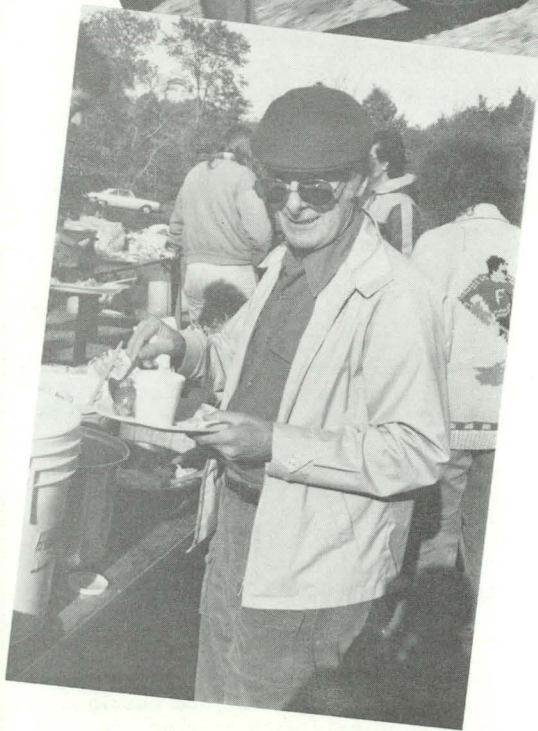
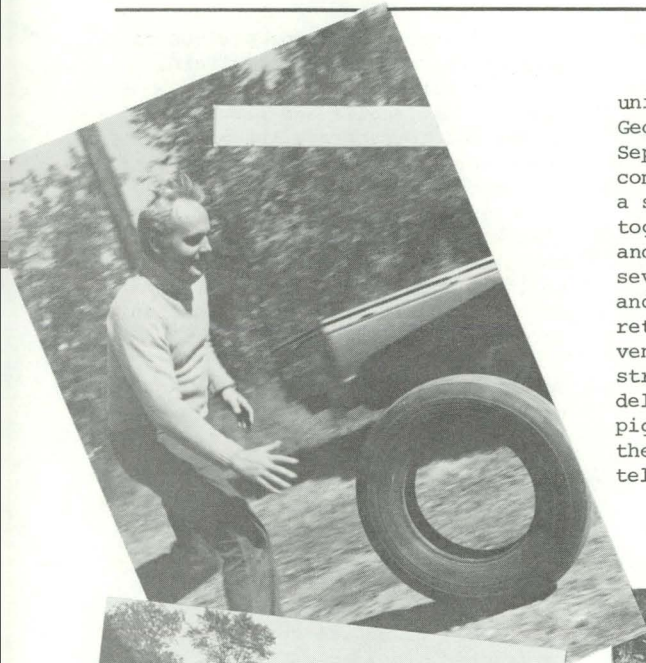
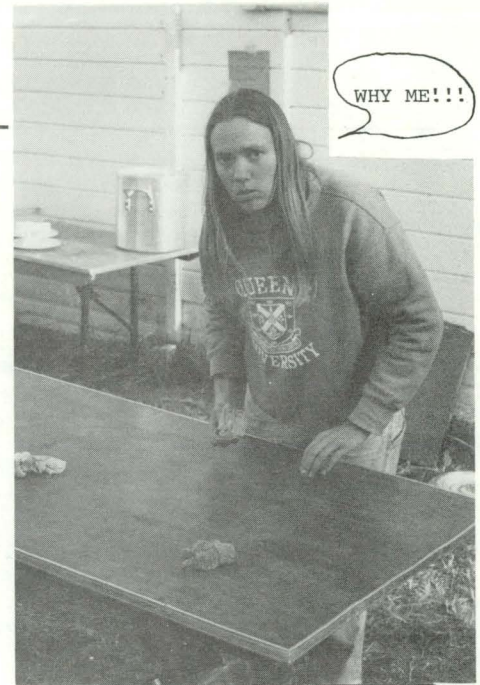
The program was informative and varied with something of interest for everyone. A unique aspect of this year's program was that one session was held jointly with another association - the International Association of Marine Science Libraries and Information Centres.

Mike Latremouille, Director of Publications at Bedford Institute of Oceanography (BIO) and Vice President of AESE, did a superb job with the organization of the meeting and the social program which included a boat tour of Halifax Harbour, a reception at Province House (Canada's oldest seat of government), a combined field trip and lobster banquet, and a tour of the new buildings at BIO, Bedford Institute of Oceanography.

Logan Day in the Capital

Geologists from our local universities, industry and the Geological Survey gathered September 28 at a Calabogie site to commemorate Logan's day. This day, a special end of field season get-together for geologists, Survey staff and their families, was started several years ago on the west coast and welds the hale and hearty newly returned geologists with the fine veneer of civilization. Feats of strength were followed by the delicate inhumation of whole roasted pigs, lamb, and chickens served from the tip of a machete. These pictures tell quite a story!

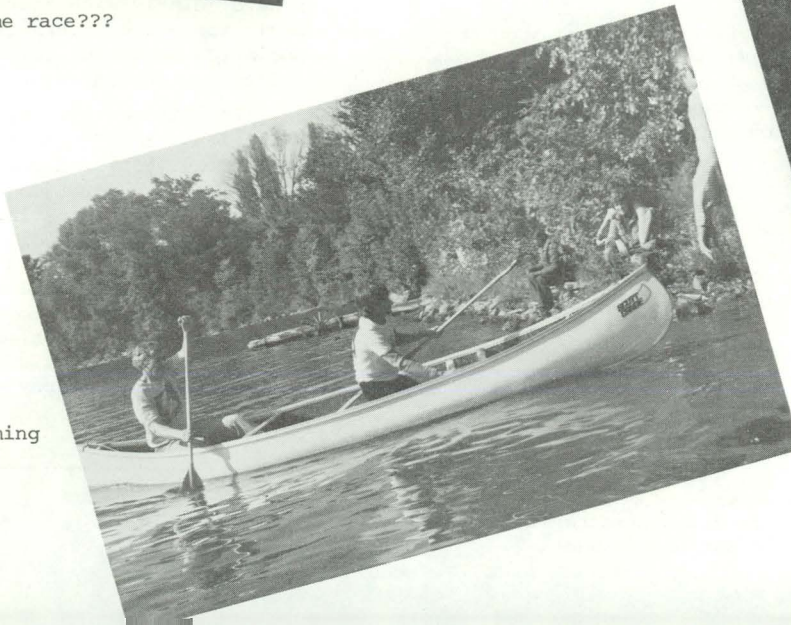
- Mikkel Schau
Precambrian Div.



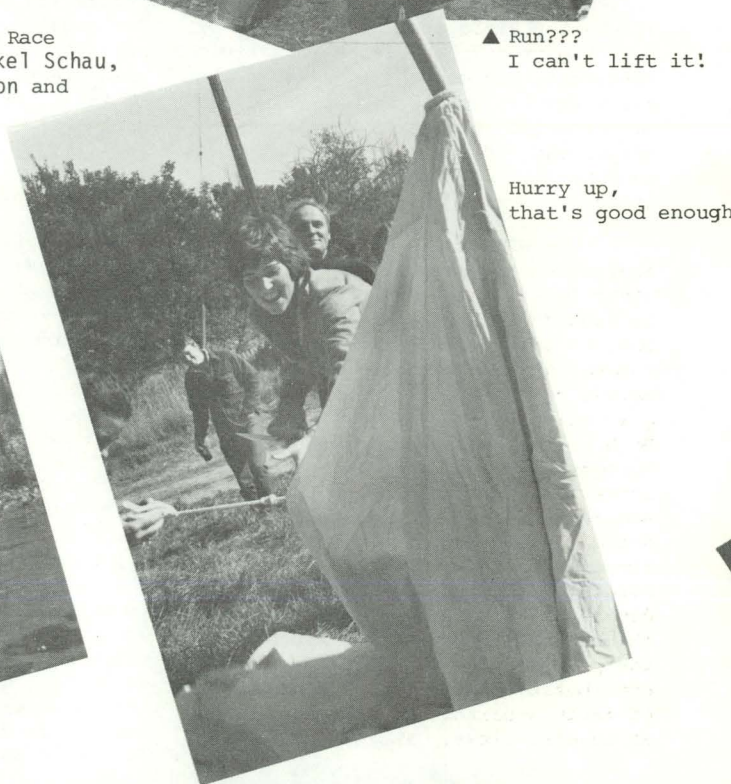
The Great Canadian Canoe Race starring (clockwise) Mikkel Schau, Bill Fritz, John Henderson and Eric Schwarz

▲ Run???
I can't lift it!

What - me race???



Are they coming or going?



Hurry up, that's good enough

A tone poem written for a former GSC director general in times gone by, revised for the occasion of Logan Day celebrations held at Carleton University field camp, near Calabogie, Ontario:

LOGAN DAY

One hundred years (or more) since Logan left,
We'll do the same today,
We'll celebrate in GSC
His Resignation Day!

Another letter on the Director General's desk, another celebration!
Oh why in Fall do we hear this call - this annual mass migration?
The facts were noted, stamped and filed, without interpretation,
But down the halls the message rang throughout Administration.

And when the message reached the ranks, albeit somewhat later,
A suggestion came from quite low down, heard by the elevator.
It was passed above as memos are, and placed in circulation,
Until it reached the Director General's desk, its final destination.

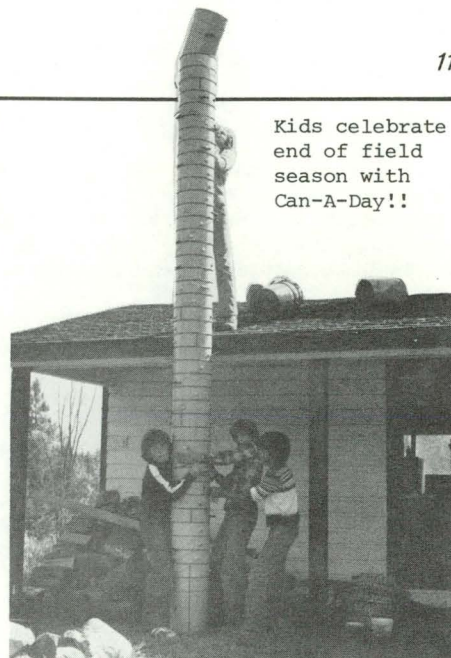
"The time has come", the Director General said, with sudden inspiration,
"To drop our forms, remember friends, and have a celebration."
And down the halls the message rang, a note of desperation,
The time has come, the Director General says, to have a celebration.

One hundred years since Logan left,
We'll do the same today,
We'll celebrate in GSC
His Resignation Day!

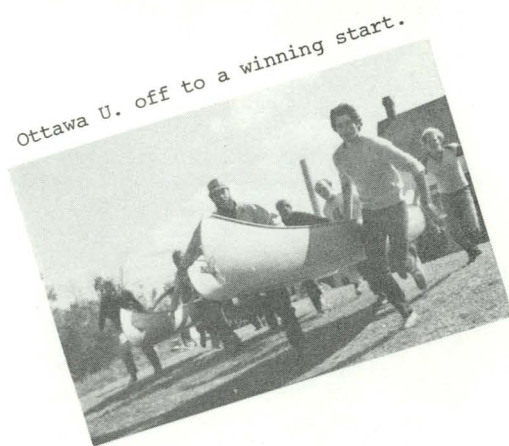
But Newton's law of motion says, although it's out of fashion,
Reaction follows equally, every little action,
And, as the supply of geologists fails, there's every indication,
I'll have to sign my own some day, for the final celebration.
And if there's anyone in this field, that doubts this proclamation,
We'll have to ask, it would appear, for an immediate resignation.

And so today from out this station,
Let's send the word throughout the nation,
Inspired in this humble way,
We too have had one Logan Day!

- Ed Rose



Kids celebrate end of field season with Can-A-Day!!

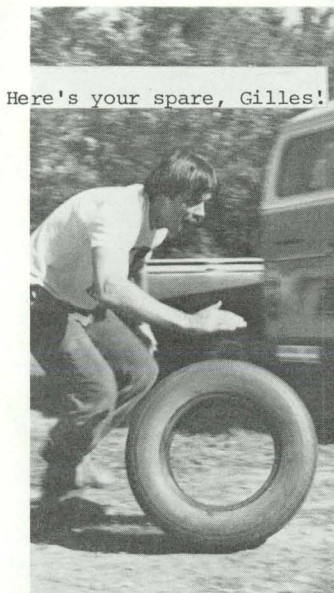


Of course we're smiling, we have the beer!



Calabogie sate...

◀ The Fans

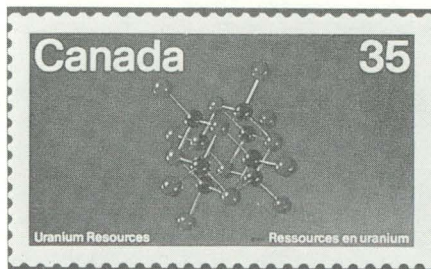


URANIUM RESOURCES STAMP

The work of the GSC has been recognized in the release of the new uranium resources stamp which is illustrated with a structural model of pitchblende UO_2 . The description in the lithographed brochure reads as follows:

"In 1900 James Mackintosh Bell of the Geological Survey of Canada journeyed to Great Bear Lake to collect mineral specimens and to map parts of the region. At one point at the east end of the lake he noticed that "the steep rocky shores which here present themselves to the lake are often stained with cobalt-bloom and copper-green." In 1930, Gilbert LaBine read this quotation and concluded that silver might be present. He flew to Great Bear Lake, located the spot, and discovered not only silver but also pitchblende, an ore containing radium and uranium.

"This discovery gave the Canadian nuclear industry its start, because radium was in great demand, although there was little demand for uranium until the Second World War. In 1945 Canada completed the world's first reactor outside the United States.



In the early 1950's work began on the CANDU nuclear power reactor system, now internationally recognized as the world's finest. By generating electricity with uranium instead of coal, the system has already saved Canada one billion dollars in imported coal and has eliminated the pollution that burning coal would have caused.

"The Uranium Resources stamp was designed by graphic designer Jacques Charette of Ottawa. Based on a photograph by Hans Blohm, the design features a model of the molecular structure of uraninite, one of the basic uranium minerals found in Canada. The red, black, and silver model floats against a deep blue-black background."

Front near Killarney, Ontario which provided a rare opportunity for Sub-division geologists working in widely separated parts of the Shield to gather on the same outcrop. The ensuing lively discussions rarely went beyond the shouting point. On the way back to Ottawa Tony Davidson whetted appetites for the next trip with a few choice stops in his map area.

- Peter Thompson
Precambrian Div.

Geological Wives' Association Scholarship

This year's award went to Gail Wade, whose dad, John works at AGC. Majoring in violin, Gail is working towards a Bachelor of Music from the University of Brandon. A past member of the Nova Scotia Youth Orchestra and Dalhousie University Chamber Ensemble, she also enjoyed performing for various social groups. Not only is Gail a music fan, she may pursue a degree in her second love, English. Congratulations, Gail, and the best of luck.

Rock Chips from the Regional Geology Subdivision (Precambrian Geology Division)

Stretched across 4200 km from District of Mackenzie to Labrador a thin beige line of sixteen geologists continued the regional mapping that is the basis of our knowledge of the Canadian Precambrian Shield.

Paul Hoffman put the finishing touches on a major part of the Wopmay Orogen in the Bear Province. The enigmatic Thelon Front, the boundary between the Slave and Churchill provinces, is a little less so as a result of the summer's work by John Henderson ("J.B.") and Peter Thompson. Tony Frith mapped parts of both these provinces where they are juxtaposed across the Bathurst Fault, while in the District of Keewatin, progress was made in spite of pumps that wouldn't pump, tents with unusually high permeabilities, and helicopters that either rolled over or wouldn't fly on sunny days. Subas Tella assisted Ken Eade in the last year on his current map area, while Fred Taylor managed to do two years' work in one and Tony LeCheminant completed his project field work. The unstoppable team of Heywood and Schau (alias Bill and Mikkel) started a new project west of Baker Lake. Tony Davidson, the Grenvillian of the Subdivision, set a modern-day record by starting field work on April 18, with Bill Morgan ably assisting in the helicopter-aspect of the Grenville Project.

Ken Card, Kojo Attoh and André Ciesielski took care of the Superior Province this year. Our man in Labrador, Ingo Ermanovics, with the help of John Korstgård, soldiered on in a low temperature hydrothermal environment (activity $H_2O = 1$) with low visibility. The crew, however, was not distracted from the geology by views of spectacular scenery or excessive heat.

Back in Ottawa, editing, laboratory work, drafting, writing, re-writing and re-re-writing kept Murray Frarey, Maurice Lambert, Lloyd Davison, Al Fraser, Jack Henderson ("J.R."), Bill Morgan, Bob Baragar, John McGlynn, Fred Campbell, Ralph Skinner, and Walter Fahrig, occupied as Bev Cox, Jim Maley, and Koloman Bencik kept the system rolling smoothly.

Garth Jackson represented the Subdivision at the International Geological Congress in Paris, France. Tom Frisch spent the latter part of his summer on the northwest coast of Greenland. Feeling the strain of editing contributions to his Proterozoic Basins Symposium, Fred Campbell "rested" for two weeks at Hadley Bay in the Arctic Islands.

Following a short respite, it was back to the field in October for some. Peter Thompson was co-leader of the Friends of the Grenville annual field trip and Murray Frarey led a field trip to the Grenville ▲

International Geological Correlation Programme News

Jim Franklin (Economic Geology Division) visited Australia in May and June as an invited delegate to the joint conference and Archean symposium organized by the IGCP Archean geochemistry project and the Geological Society of Australia. As access to the outback regions by four-wheel drive vehicle is excellent, he was able to tour very large areas of both the Yilgarn and Pilbara blocks, and examine some of the oldest and most pristine Archean sequences in the world. Visits to newly discovered 3400 Ma paleobiological sites, the very large Kambalda nickel district and the old and famous Kalgoorlie gold fields were only a few of the highlights in the western Australia visit. Following the conferences a week was spent in each of the very important mining camps of Broken Hill, Tasmania, and Mt. Isa. By comparing the geological settings of these areas with various parts of the Canadian Shield, several Canadian areas emerge as being potentially productive for as yet undiscovered massive sulphide deposits. Jim's contact with the Australian research community gave him many new research ideas which he intends to apply to his metallogenic studies.

On the way home, a one-week visit to Japan included touring three Kuroko-area massive sulphide deposits, a visit to the Geological Survey of

Japan, and a meeting with the Mining Association of Japan. Jim noted that the Kuroko deposits are in a rift developed on the Japanese island arc, a fact which has important implications in evaluating the tectonic regime of the Precambrian deposits.

In all, Jim visited 17 producing mines, numerous past producers, delivered 9 lectures and had excellent exchanges of information with dozens of Australian and Japanese geologists. The information that he gained should be useful to his colleagues in their research programs.

Roger Eckstrand attended the Nickel Sulphide Field Conference, IGCP #161, Norway-Sweden-Finland, July 19-30.

Some 40 participants from 11 countries assembled at Narvik about 250 km north of the Arctic Circle, Norway, July 19 for 10 balmy days of field tripping to many of Scandinavia's varied nickel sulphide deposits. Excellent geological guidance and background information, good planning, Nordic cuisine (especially breakfasts) and a convivial group made it a geologically and otherwise memorable experience.

In Norway the low grade Rana deposit was shown (43 million tonnes @ 0.33% sulphide Ni, 0.08% Cu, 0.015% Co) in a complex layered mafic/ultramafic intrusion. Feasibility studies on this low grade deposit are being carried out by the Norwegian government with a view to ensuring continued operation of Falconbridge's nickel refinery at Kristiansand, as well as a domestic source of nickel.

Crossing the Caledonides brought us into northern Sweden to the new nickel belt south of the venerable Boliden copper-zinc mining district. This pair of distinct metallogenic zones can be followed eastward across the Gulf of Bothnia into western and Central Finland. Discovery and exploration of the Swedish nickel deposits has helped stimulate a new round of metallogenic modelling in the Fennoscandian Shield. In Sweden, the ultramafics and associated nickel deposits occur in migmatized greywacke, regarded as deepwater facies, while to the north, the Boliden felsic supracrustals and related copper-zinc deposits represent shelf facies which in turn lap northward onto older Proterozoic or Archean craton.

Examination of several of the Swedish nickel deposits (at least two of which will in future probably be mined) revealed their intensely deformed and metamorphosed character. The Swedish Geological Survey exploration team also put on a fascinating display of their "sulphide-sniffing" dogs, efficient staff members of their nickel exploration program. Without the dogs, definition of the glacial trains of nickel-bearing boulders leading to bedrock nickel deposits would be a much more tedious and imprecise business.

The crossing by ferry to Finland was memorable for the hordes of rather aggressive tourists, and the magnificent buffet dinner on board. Long bus rides separated visits to several metamorphosed Sveco-Karelian (1.8-2.0 Ga) nickel deposits and associated

ultramafic to mafic intrusions that account for Finland's past but now flagging nickel production. A visit to the eastern Finnish Archean greenstone belts, that have been mapped only in the last decade, was designed to show well-preserved komatiitic volcanics with good spinifex textures, and related nickel deposits, unfortunately subeconomic. A final one day symposium in Turku was a bit anticlimatic, but yielded several excellent papers.

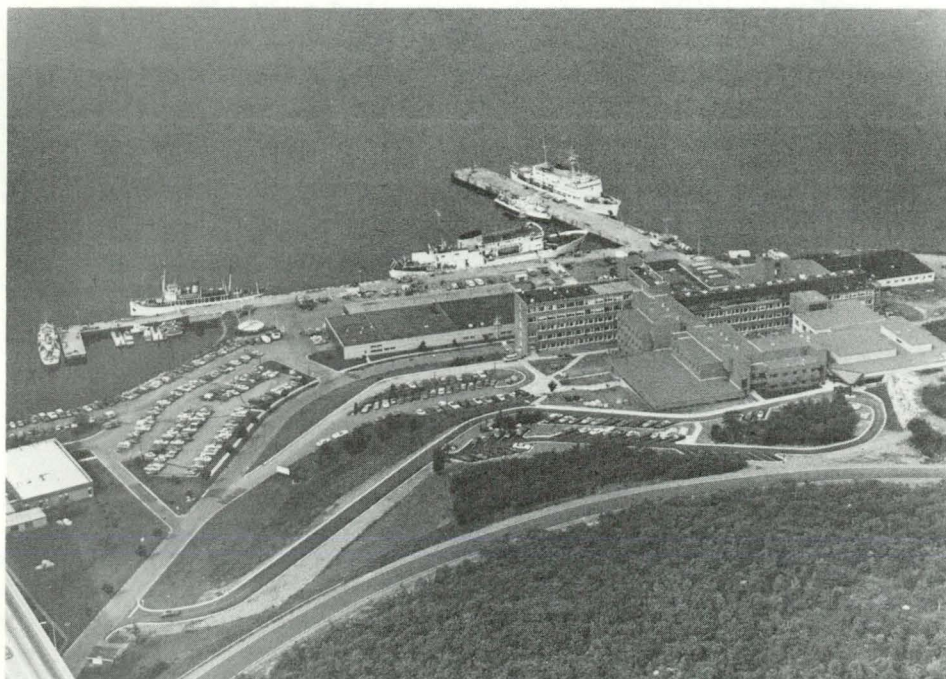
A truly excellent job of organization was done by the field conferences leaders, headed by Heikki Papunen (Turku University), and including Gunnar Nilsson (Swedish Geological Survey) and Ron Boyd (Norwegian Geological Survey). Next meeting of IGCP #161 will be in Australia in 1982.

ISPG Annual Field Trips

The Scientists

Don Norris, who must have led more field trips through the western mountains than any other geologist (except Jim Aitken?), arranged yet another for his colleagues in early September.

This one emphasized the tectonic style of the eastern Cordillera on a longitudinal traverse between Calgary and Beaver Mines and along a transect between the Interior Platform and the Rocky Mountain Trench at the latitude of Crownst Pass. Discussions among the participants drew comparisons and contrasts between tectonic styles in this southern region with those in



The new buildings at the Bedford Institute of Oceanography were officially opened on May 22, 1980. Those officiating included the Hon. Romeo LeBlanc, Minister of Fisheries and Oceans; the Hon. Judy Erola, Minister of State responsible for Mines; Gerry Ewing, Assistant Deputy Minister of Ocean and Aquatic Sciences, Department of Fisheries and Oceans; Dr. Charles Smith, Senior Assistant Deputy Minister, EMR; and Dr. A.R. Collin, Associate Deputy Minister, EMR. The EMR visitors met separately with AGC staff. A stand up lunch was held in the new library and old friends caught up on news and new friends were made. AGC was particularly delighted that Mrs. Erola toured the buildings and the CSS HUDSON, and met AGC staff. She was presented with a picture of the CSS HUDSON which had the signatures of AGC staff on the back.

- P.G. Stewart
AGC, Halifax

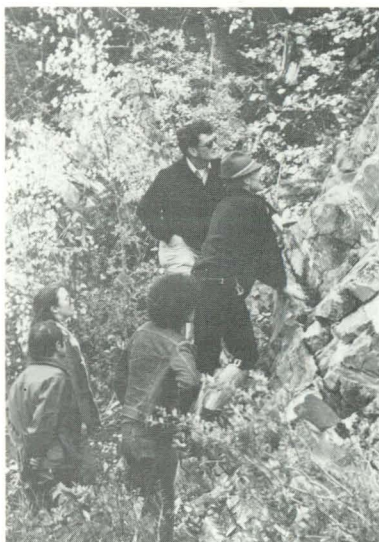
central and northern parts of the orogen. Coal and other hydrocarbon deposits were emphasized - and a grinitizing Vancouver visitor, Jim Roddick, went into uncontrollable ecstasy when a coal diapir with a mushroom-cloud shape was brought to his attention.

There was no free lunch for most of the participants as Don called upon many of them to perform: new recruit Marg McMechan had to discuss the Crowsnest Deflection and the Rocky Mountain Trench; veteran John Wall handled the Cardium Formation, Dave Gibson explained the nuances of the Kootenay Group, Bernie Latour gave historical vignettes of the history of coal mining and Bernie, Alex Cameron, Dave Hughes and Sandy Irvine provided the intimate details at the old Adamac Mine and the prospering Coal Mountain operations. Even Emlyn Koster, a visitor from the Alberta Research Council, was brought into the act to explain geomorphic and fluvial features en route.

There is no better way to keep up with the work and thinking of colleagues than to join them for a few days on the rocks. Don Norris and his organizational lieutenant, Carol Boonstra, once again earned the gratitude of a busload of participants from Calgary, Vancouver and Edmonton for taking us to the places where the ultimate answers are found.

The Support Staff

On a rather forbidding Saturday morning in September a caravan of five vehicles loaded with 15 support staff and four geoscientists

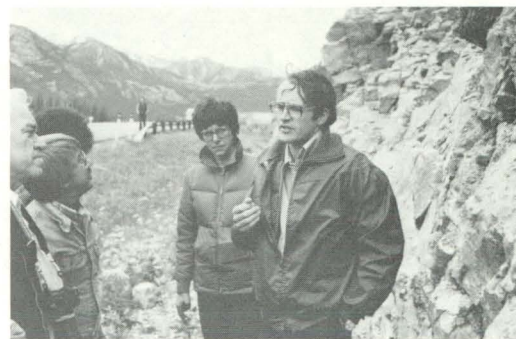


Gordon Taylor and Jim Aitken shed some light on the intricacies of the area's formation.

left the ISPG parking lot en route to Banff and Kootenay national parks. There was plenty of cloud cover in the morning but spirits were high as we headed down the Banff highway looking at surficial features of the Foothills and Rockies and longing for a hit of caffeine. Don Cook, Jim Aitken, Gordon Taylor, Alan Pedder and Marg McKenzie answered questions about physical processes such as glaciation, formation of drumlins and folding mechanisms and described examples as we travelled into the mountains. Several road stops were made along the route and formation structures were discussed by our scientific guides. From the rolling hill country near Jumping Pond Gas Plant, where Mesozoic outcrops were visible, to the Cambrian rocks of Castle Mountain, many outcrops were studied over the two day trip.

One of the first major features examined was the west-dipping McConnell Thrust Fault which separates the Front Ranges from the Foothills. At a road stop near the Three Sisters turn-off the Palliser-Banff-Rundle formations were pointed out.

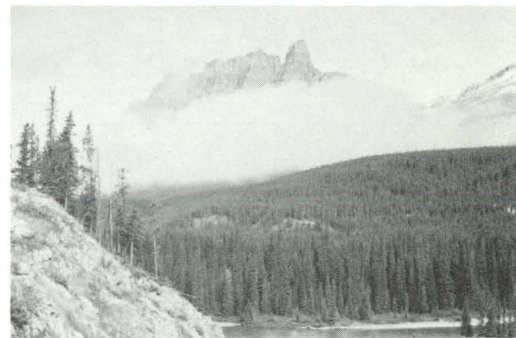
At mid-day we found a sheltered picnic area where the group mobilized for munching. Jean Dougherty, Marg McKenzie and Elsie O'Keefe brought out the chow and we ate amid drying tents and maverick hikers who shared a shelter with us. By this time rain was falling but our spirits had not been dampened. The communal coffee cups emptied and our stomachs filled, we decided to take in the natural bridge near Field, British Columbia, the Marble Canyons on the Radium Highway and the Vermilion Pass area of the Main Ranges before settling



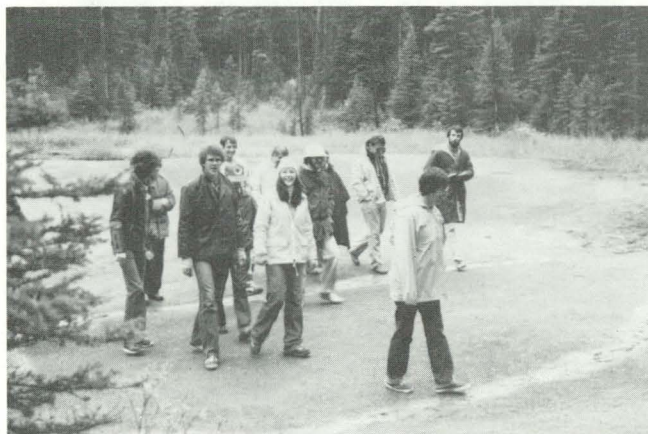
Everyone listens intently as Alan Pedder gives a roadside mini-lecture.

in at Wapta Lodge (about 150 km from Calgary) for the night's festivities.

Near the location of the natural bridge (the result of erosion of limestone beds), Don Cook sent out parties in search of bedding and cleavage planes. Some of the crew turned up geologically missing at this time. In a warm-up talk on Friday the process of cleavage formation had been described in theoretical terms - now it was up to us to find examples in the rocks. Jean Dougherty had also given a talk on the different types of plant and tree life we would be seeing, from log pole pines in burned areas to aspen and fir country. It was easier to find log pole pines than bedding planes at this point!



(above)
Castle Mountain



(opposite)
The students

Another interesting stop on the Radium highway was made at the Marble Canyons where the river had carved deep into the limestone. Eight kilometres away we saw the Paint Pots - iron oxide and iron hydroxide had precipitated out of clays and muds to form ochre mounds once regarded by native peoples as sacred and by 19th century industrialists as a source of ochre for paint products.

Then it was on to fun and games at Wapta Lodge, on the Trans-Canada highway west of Lake Louise. The group settled down to some serious study of the games room after dinner. Geological charades tested the ingenuity of the two competing teams who had to perform such sticklers as "argillaceous limestone", "breccia", "Gog Group" and "Arctomy's Formation". Ruthlessly precise time-keeping was maintained by team captains Bryan Rutley and Don Cook.

Getting up for 8 o'clock breakfast on Sunday morning seemed somehow contrary to nature; however, we managed to down our food in short order before heading out with our guides to see the Cambrian section near the lodge. We then travelled to the Mount Eisenhower area where Jim Aitken led the pack up a hillside to look at the Pika, Stephen, Eldon and Cathedral formations from a stratigraphic point of view. The hike up the hill helped focus a few bleary eyes but clouds entombed the mountain as we reached the top of our lookout. Some of our heads were as foggy as the summit we were trying to see; it was not in our karma nor in that of Castle Mountain to reveal the mystery of her normal fault that morning. However, we did see more examples of dolomitized limestones which had formed in an environment of magnesium-laden water. The differences between dolomites and limestones became apparent in the physical structure of the two rock types in the Eldon-Chancellor section where cleavage could be spotted at 20 paces. At Lake Minnewanka we took one last look at the Palliser-Banff-Rundle trilogy before having lunch at Two Jack Lake, in a wooded picnic area by the lake.

It was time to retrace our steps to the Pigeon Mountain roadcut before driving back to Calgary. We had bypassed this section because of the poor weather the previous day. With the help of paleontologist Alan Pedder we examined the fauna from the Livingstone Formation. At this point we could use our geological hammers, since we were no longer in the park. The tooth of a shark (probably of the flat tooth variety) was identified from dolomitized limestone of Mississippian age by Marg McKenzie. It was now

early afternoon and we gathered our spoils and headed for home. Sorting collections will take up any spare time we have this winter away from our typewriters, adding machines, lab beakers and darkrooms.

- Lynn Machan
ISPG

Dr. D.J. McLaren and his Branch managers, joined by Dr. Collin and Dr. Keys, met in Vancouver October 15th where a show-and-tell was presented by members of the Division then on to Pacific Geoscience Centre at Patricia Bay for a Branch management meeting on the 16th and a show-and-tell by the Patricia Bay group on the 17th. Everyone in the Division enjoyed the occasion and we hope our visitors had a pleasant and profitable time.

- R.B. Campbell
Cord. Geol. Div.

Logan Day in Calgary

Brilliant sunshine, splendid camaraderie, a hard fought soccer game and memorable gluttony characterized Founder's Day for Calgary geoscientists. The site was again the Sandy McNab wilderness area in the Bow-Crow Forest near Turner Valley. The temperature, as always for this event, was around 28°C and unstructured informality ruled.

The main event this year was the camp-out and pig roast on Saturday evening, October 4. In the past only hardy people such as the ISPG Ceciles and Poultons stayed out overnight. This year these pioneers camped out for two nights and 60 others, emboldened by the fine weather of past years, joined them for the Saturday night of mulled wine and roast pig. It was a splendid feast - after 8 hours of careful turning on a crude spit over an open fire, the pig was perfect and its outer crackling indescribably delicious. Hats were



The Mineral Collection Needs YOU



With the National Mineral Collection's Systematic Reference Series located at the Geological Survey of Canada, Hal Steacy and Gary Ansell believed they were in an enviable position to build the Series and to improve its Canadian content. This was not only because of the domestic and 'worldly' contacts of the staff, but more so because the Survey's nation-wide field program effectively provided a scouting and collecting force of some 500 persons from whom - it was naively thought - a flood of specimens would result, annually. This, unfortunately has not been the case, for many reasons, including an admitted lack of 'hard-sell' amongst the staff. Nevertheless, a few converts have donated a good many interesting specimens which have improved the representation and, through subsequent study, contributed new data to the literature.

What may be damming the anticipated flood of specimens is a misunderstanding that only premium-grade specimens are being sought, such as the magnificent ones normally on display in museums and even in our own Logan Hall. Nothing could be further from the truth. The Geological Survey is not building a display collection. That is the responsibility of the National Museum of Natural Sciences, whom the Survey assists whenever possible. The GSC is building a working reference collection that is actively supporting Branch projects. Its efforts are directed mainly to acquiring typical rather than esoteric specimens - specimens representing, so far as possible, all known species, habits, associations and occurrences, and particularly ones of Canadian provenance.

This note, then, is a plea for each field geologist to examine the minerals collected this summer and to notify Hal or Gary of any that might be of interest to the collection. Crystals, cleavages, mosses. No matter what and no matter how elementary, if in doubt, let Hal and Gary, on the basis of their many years' curatorial and 'customer' experience, decide what would be useful. The collection is being developed to serve the geosciences and seeks - and deserves - your support.

H.R. Steacy (613-995-4947)

H.G. Ansell (613-995-4982)

off to chefs Mike Cecile and Prof. Ian Hutcheon (ex. GSC) with a nod to Terry Poulton who split cords of wood and had to be constantly restrained from feeding it to the porcine pyre. Gisela Geldsetzer stirred up a spiced wine that lent just the right mellow mood when Andy Okulitch manned the guitar and Melinda crooned soulful ditties late in the starlit evening.

The slackers showed up on Sunday to swell the ranks of those who braved overnight temperatures of 18°C. Despite the popularity of the horse-shoe pitch and fossil hunting trips along Sheep River, the great East vs. West soccer game was the big attraction of the day. Again the powerful Eastern team, led by Marg McKenzie, the ISPG curator, scored an impressive 6 to 4 victory over the West which was captained by Helmut Geldsetzer of GSC and West Germany. Stars were almost too numerous to single out but we must mention Hans Bielenstein's children who are both now signed on contracts to the White Caps. The Imperial Oil three-star award went to the great defensive back, and former Rodeo star Milt Fuglem. He received the longest penalty for blinding 10 opposition players with a place kick



Mike Cecile (left) and Andy Okulitch (opposite) dismember the last of the poor porker. Don Cook and Elliot Borden (at end of table) recite from Charles Lamb's essay on the delights of porcine gluttony.

that, unfortunately, included a cow dropping. The only serious injury was to a 90-year-old poodle called Pablo Neale who received the ball in his left ribs during a scrum. He recovered miraculously during the dinner hour.

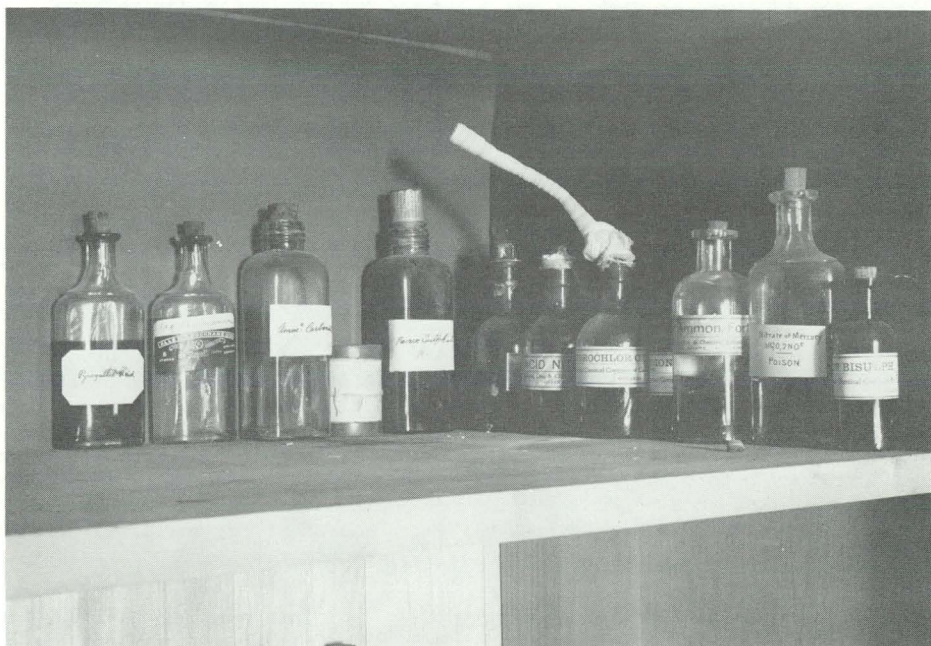
A touching toast to Sir William Logan was proposed by Professor Norman Wardlaw who dwelt upon the accomplishments of the great national survey which this quiet, modest man had built "without the aid of a single civil service management course".

Farthest travelled visitor was Iris Power of St. John's, Newfoundland - a well-known broadcaster and columnist who travelled to Calgary especially for this event. She summed up everyone's feeling as she mused over Marty Maher's café à la Logan: "Today kind Providence has paid us in advance for all the good things we should do for the Earth".

- Lynn Machan
ISPG, Calgary



History is made over an ISPG drafting table. On May 26 Dianne Wallace of the ISPG Cartography Unit achieved a perfect hand after three years of coffee break cribbage. Congratulations, Dianne!



This strange growth (ammonium chloride) was photographed in the GSC's old mineralogy lab on Sparks Street sometime before the summer of 1939 when they moved to 541 Sussex Street (the home of the Survey from 1881 to 1910). The photo was found by John Maxwell in a collection of papers belonging to Dr. Eugene Poitvin, who was in charge of Mineralogy from 1922 to 1957.

SPORTS BEAT

The ISPG Golf Classic of 1980

Hockey Lunch in Ottawa

The gleam of freshly sharpened blades flashes around the boards of the RA Centre as the Ottawa teams hit the ice (and not necessarily vertically) for another season. The two Ken's, Ford and Clark are running the show this year with Mike Kiel's helpful hindsight. Reliable sources reveal that Mikkel Schau has mastered the skill of turning and stopping. Opponents and team mates are pleased not to mention relieved. Team 4 with Rick Allard at the helm and net is getting it together after a rough start. Good luck to all four teams.

Almost everyone with half a day's annual leave left to her or his credit deserted the Institute on Monday afternoon, September 8, to participate in the first official golf tournament. Master-minded by Bill Vermette, Dennis Peatman and Bryan Rutley the 18-hole neo-classic on the challenging Carstairs course, went off without a hitch. Sunny skies, free golf balls donated by Dennis (a club director) and a variety of prizes skillfully chosen by Bill Vermette made it a memorable day. And what did Brian Rutley do? - He laughed and laughed - as well he might after sinking 3 chip shots from off the green (and winning the luckiest golfer trophy).

Ward Neale walked off with the ISPG trophy putting an incredible 40 together with his usual 51 for a gross 91 and a Calloway System net of 74 which tied him with Buck Serafini and resulted in a play-off which went for two holes under the surveillance of arbitor Dennis Peatman and a gallery of thousands (who were also eating their steaks at the clubhouse barbecue).

Ward and partner Steve Orzeck won the best ball. Marg Northcott, despite a gross 204 and a net 150 came through brilliantly to win the most honest female prize for 17 on a par 4 hole, almost equalled by Bob Davidson with his 17 on a par 5. Shortest drive prize went to Ken Nairn who achieved 1.25 m off the first tee - although legitimate protests came from Davidson and Northcott who had innumerable whiffs to their credits. Low hidden hole went to Bill Vermette, high hidden hole to Marg Northcott and third highest gross to Denise Armstrong.

The unsung heroes of this event were the hot shot, low handicappers - people like Jim Broadfield, Sandy Irvine, Gord Taylor and Lionel Emond, who cheerfully tolerated their high spirited, high handicap colleagues, replaced the divots for them and toasted them in sportsmanlike manner as they carried off their ill-earned prizes.

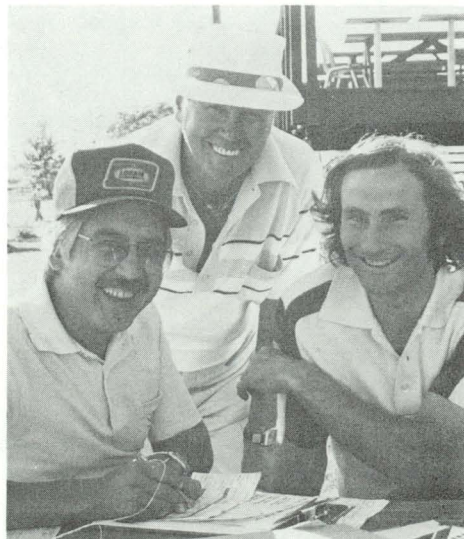
Dennis Peatman and Bill Vermette are already busy planning next year's ISPG golf classic. Bryan Rutley is still laughing about this year's event.

- Ward Neale
ISPG, Calgary

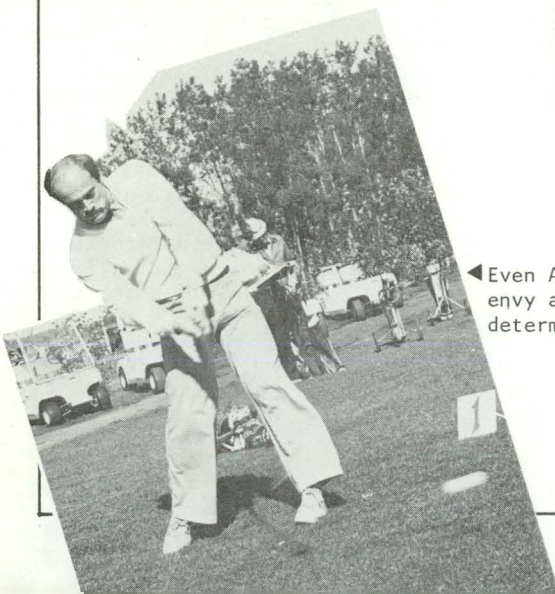


From left: Marg Northcott, Jim Broadfield, Gord Taylor and Bryan Rutley start their post-game barbecue near the club house.

The Winners: (upper) Dennis Peatman and Marg Northcott display their new hats - prizes for low gross and high gross, respectively. (lower) Bill Vermette (l) presents the ISPG Golf Classic Trophy to the first winner, Ward Neale (r).

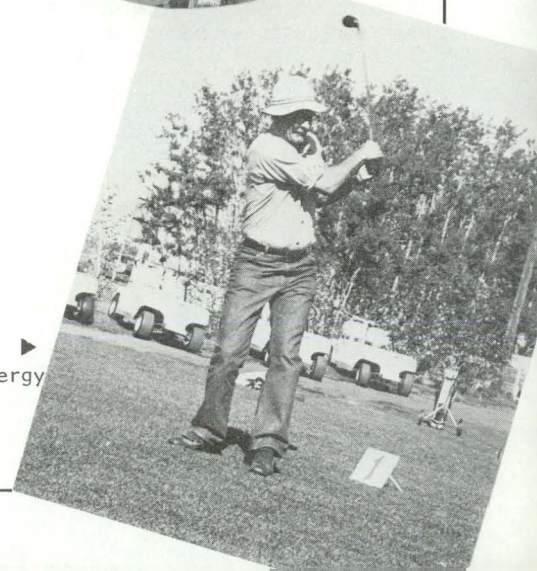


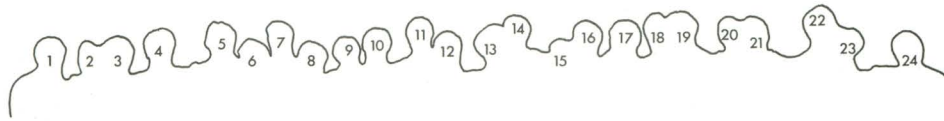
Organizers Bill Vermette (l), Dennis Peatman (c) and Honest Bob Davidson (r) work out the intricacies of the Calloway System handicaps.



Even Arnold Palmer would be green with envy as Lionel Emond shows style and determination off the first tee.

An enormous release of energy by Buck Serafini of the National Energy Board.





Here are the answers to the pictorial quiz on page 8:

- | | |
|---|--|
| 1. Bruce Cameron, scientist, Pacific Geoscience Centre | 13. John Luternauer, scientist, PGC |
| 2. Bill Milne, Director, PGC | 14. John Scott, Director, Terrain Sciences Div. |
| 3. B.D. Bornhold, scientist, PGC | 15. Mike Keen, Director, Atlantic Geoscience Centre |
| 4. Dick Campbell, Director, Cordilleran Geology Div. | 16. Yvon Claude, Head, Administrative Services, GSC |
| 5. John Fyles, Chief Geologist, GSC | 17. Ed Hall, Scientific Executive Officer, GSC |
| 6. R.G. Currie, scientist, PGC | 18. Patrick McLaren, scientist, PGC |
| 7. John Keys, Assistant Deputy Minister, Science and Technology Sector, EMR | 19. Arthur Darnley, Director, Resource Geophysics and Geochemistry Div. |
| 8. Chris Yorath, scientist, PGC | 20. Dave Benson, Programme Office, GSC |
| 9. John Maxwell, Director, Central Laboratories and Technical Services Div. | 21. Geoff Leech, Director, Economic Geology Div. |
| 10. Digby McLaren, Director General, GSC | 22. Art Collin, Associate Deputy Minister, EMR |
| 11. Ira Stevenson, Acting Director, Precambrian Div. | 23. Walter Nassichuk, Director, Institute of Sedimentary and Petroleum Geology |
| 12. Bob Blackadar, Director, Geological Information Div. | 24. Bill Hutchison, former Secretary General, IUGS |

If you scored 20-24: are you sure you didn't peek just a little?
 10-19: not bad; you're coming along
 0-9 : where did you say you worked?

Continued from cover

Don has been replaced by Walter Nassichuk, who is already taking hold vigorously, and the Precambrian Director will be chosen soon.

I believe that my successor is going to take over the Geological Survey at a time when its importance and usefulness are well recognized in the Department and in government. During my tenure, we went from the end of the fat years through the seven lean years, which saw relative and absolute cuts in budget and staff, the Thunder Bay debacle, and the rise of the influence of accountants in the Central Agencies. Although I might not convince everyone, I believe that I wasn't entirely responsible for these unneeded stimulations.

Now it is possible that the pendulum is beginning to swing again. A change may not be due to improve economic circumstances. Rather, at long last, it may be that government recognizes the importance of earth science as a base to the economic well being of a country that relies so heavily on resources and must make many difficult decisions on the use of its territory. My optimism is bolstered by the fact that we currently have two Ministers, both of whom are fully aware of the importance of earth science in regard to their own concerns in energy and minerals. Those who have been fortunate enough to meet Mrs. Erola, Minister of State (Mines) will realize that we have a powerful ally. During the next half year or so, I hope to assist the Department in trying to focus the direction which earth science research should take, and would welcome discussions or suggestions when I start this task in the new year.

That's all. I'll be around, and hope that I shall continue my friendships and associations that are so much part of my life after 33 years with the Geological Survey.

Continuation de la page couverture

Parmi les plus récents changements de directeur au sein de la Commission, soulignons le départ de Don Stott, à l'Institut de géologie sédimentaire et pétrolière, et de John Reesor, à la Division du Précambrien. Les deux ont encore beaucoup à nous apporter, et nous leur souhaitons de bien profiter de leur liberté fraîchement acquise. Don a été remplacé par Walter Nassichuk, qui tient déjà fermement la barre, et le nouveau directeur du Précambrien sera bientôt choisi.

Je crois que mon successeur arrivera à un moment où l'importance et l'utilité de la Commission géologique sont bien reconnues au Ministère et au sein du gouvernement. Lorsque mon mandat a débuté, c'était déjà la fin des années grasses. Puis, nous avons connu sept années maigres, marquées par des réductions relatives et absolues du budget et du personnel, par la débâcle de Thunder Bay et par l'influence grandissante des comptables des organismes centraux. Tous ne me croiront peut-être, mais je ne me considère pas entièrement responsable de ces stimulants dont on aurait pu se passer.

Cela étant dit, il est possible que le pendule recommence à osciller, et pas nécessairement à cause d'une amélioration des conditions économiques. Peut-être que le gouvernement reconnaît-il enfin l'importance des sciences de la Terre pour le bien-être économique d'un pays qui est largement tributaire de ses ressources et qui doit prendre de nombreuses et difficiles décisions sur l'utilisation de son territoire. Mon optimisme s'explique en partie par le fait que nous avons actuellement deux ministres pleinement conscients de l'importance des sciences de la Terre pour les questions qui les préoccupent, qu'elles soient d'ordre énergétique ou minéral. Ceux qui ont eu la chance de rencontrer Mme Erola, ministre d'État aux Mines, savent que nous avons en elle une alliée puissante. Au cours des six prochains mois, je compte aider le Ministère à déterminer l'orientation que devrait prendre la recherche géoscientifique et, à cet égard, j'accueillerai avec joie toute discussion et toute suggestion.

Voilà. Je demeure aux alentours et j'espère conserver les amitiés et les associations qui ont tant marqué les 33 ans que j'ai passés au sein de la Commission géologique.

The J.B. Tyrrell Collection of Photographs

The Thomas Fisher Rare Book Library of the University of Toronto holds a collection of more than 4000 photographs taken by J.B. Tyrrell during his career with the GSC and subsequent career as a mining engineer and consultant. Tyrrell worked with the Survey from 1881 to 1899. He made two celebrated journeys into and through the Barren Lands of Keewatin in 1893 and 1894. During the first he went from Edmonton to the Dubwant River via Lake Athabasca. When they reached Chesterfield Inlet on September 12 the short summer season was already long finished. The low, reef-studded western coast of Hudson Bay offered appalling travelling conditions but despite illness, frostbite and near starvation Tyrrell's party reached Churchill by early October where they rested until there was enough snow to permit travel by dogteam to Selkirk, Manitoba which was reached at the New Year. In 1894 he explored the Kazan River area.

Tyrrell undertook reconnaissance geological studies in the Yukon in 1898 and also reported on the Klondike goldfields where the "Rush" was in full swing. He left the GSC early in 1899 and for 10 years worked as a consultant in the Klondike. Later he became interested in the mining boom of the 1920s in northern Ontario, was a key figure in the development and management of Kirkland Lake Gold Mining Company, and became a millionaire. In his later years he was active in professional and educational work and in writing about the history of the fur trade in the north.

When Tyrrell died in 1959 at the age of 99 he left his photographs and papers to the University of Toronto. Some of the material dating from his GSC days was available from the GSC Photolibrary but much was not. Within the past few years the staff of the Thomas Fisher Rare Book Library have been able to sort, catalogue and preserve about 2600 negatives. Work continues on the remainder.

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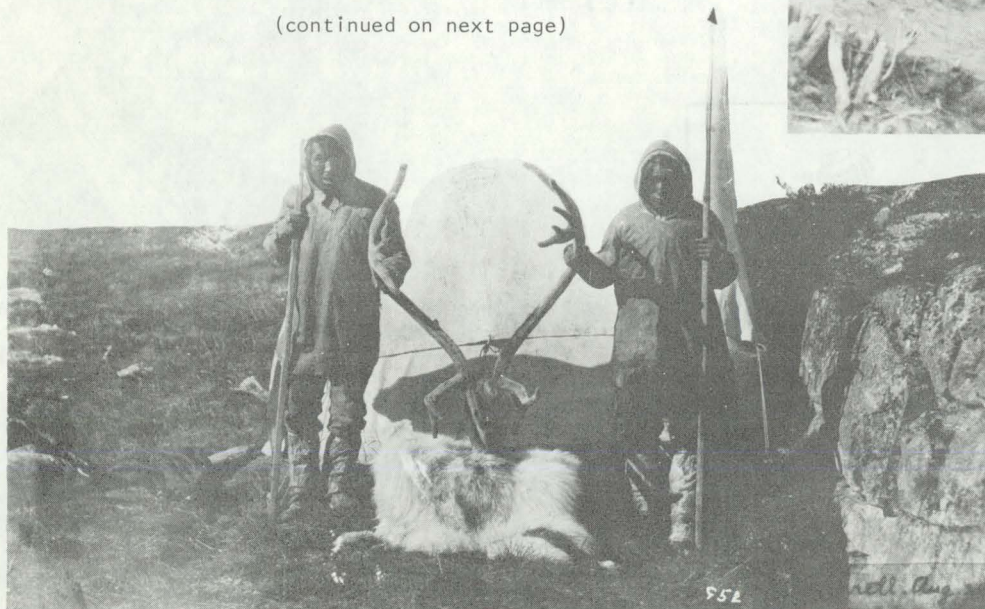


Between Churchill and Split Lake, Manitoba. December 5, 1894



▲ Dawson City 1898

◀ On the Kazan River.
August 24, 1894





Skagway, Alaska from Wharf, Yukon 1898

According to an article published in the University of Toronto Bulletin for September 8, 1980 the negatives were in terrible condition. For some the emulsion had partly perished. Others were torn or curled. The task of rehabilitation is however well worthwhile because the collection documents the activities of the mining industry during a time of great growth. The photos for Tyrrell's Yukon period probably provide unique documentation of the most exciting and important period in the history of the Yukon. They trace the development of Dawson from a tent town, through the log cabin period marked by muddy streets and wooden sidewalks to a town of two-storey frame houses, hotels, opera house and imposing government buildings.

This collection will provide valuable secondary source material to those concerned with the history of the Geological Survey during an important period in Canadian history and to those interested in the growth of the mining industry.

- R.G. Blackadar
Editor

With all the recent resignations and appointments quite a few people have good reason to ring in the new year with much joviality and excitement. Congratulations to the newcomers and good luck to those who are either resuming research or moving on to new adventures.

All the tinsel, coloured lights and Yuletide greetings are adorning the stores for another season. Even though it seems the Christmas season begins earlier each year, we still manage to leave everything to the last, panicky day. But Christmas parties are usually planned well in advance and this year is no exception. December 11 is this year's date for Ottawa GSC members to let their hair down and enjoy another Christmas party at the Commons Lounge of Carleton University. Everyone seemed to have a grand time last year, thanks to Larry Dyke's chairmanship and as he is heading the committee again this year, we can expect to have another rip-snortin', foot-stompin' and hand-clappin' time. **Merry Christmas** everyone and all the best in '81.

- L.A. Firth
Co-ordinator



Many thanks again to Diane Plourde who greatly aided this issue's preparation by typing the numerous contributions received from our many newshounds. She can really make the typewriter sing GSC praises!

Appointment of New Director General



On December 4 Dr. J.D. Keys our ADM announced the appointment of Dr. W.W. Hutchison as 15th Director of the GSC effective January 1, 1981. Known for his work in the Cordillera and in directing the Data Systems Group, "Hutch" served as Secretary General of the International Union of Geological Sciences from 1976 to 1980.