

CANADIAN GEOSCIENCE EDUCATION NETWORK

RÉSEAU CANADIEN POUR L'ÉDUCATION EN GÉOSCIENCES

c/o Geological Survey of Canada, Calgary Division
3303 - 33rd Street N.W., Calgary, Alberta T2L 2A7
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MINUTES OF MEETING #6 HELD ON THURSDAY 30 MAY 1996 (9:00-12:45) IN ROOM 521, UNIVERSITY CENTRE, UNIVERSITY OF MANITOBA, WINNIPEG, MANITOBA

1. *Introductions*

PRESENT: Chris Barnes (CCESD), Tim Corkery (GAC), Al Donaldson (Ottawa '97), Chris Gilboy (EdGEO, SGS), Fran Haidl (EdGEO), Emlyn Koster (OSC), Godfrey Nowlan (Chair), Bill Padgham (NWT Geology, DIAND), Paul Robinson (GAC), Jim Ross (for Larry Bentley, IAH-Canadian Chapter & AECL), Peter Russell (Waterloo), Brian Stimpson (for Jim Graham - CGS), Mike Stubley (EMPR - GNWT), Christy Vodden (GSC), Graham Williams (AGS)

REGRETS: Jennifer Bates (GSC), Larry Bentley (IAH), Jan Boon (AGS), Michel Bouchard (Vice-Chair, CGEN), Dixon Edwards (Secretary-Treasurer, CGEN), Rob Lord (STAO, NAGT), Alan Morgan (CGC), David Rudkin (ROM), Vic Tyrer (OSC)

2. *Approval of Agenda*

An addition was made under item 7: CESE Report

The order of the agenda was adjusted to accommodate the necessary early departure of some participants: Item 12 was dealt with following item 6 and item 8 was dealt with before item 7. The original numbering is retained in these minutes and the items are dealt with in chronological order.

The agenda was then approved (see Attachment 1).

3. *Review of Minutes*

The minutes of Meeting #5 (Victoria, 20 May 1995) were approved.

4. *Business Arising from the Minutes*

- Item 5: Tremblay suggests the suitable French version of CGEN's title is:
RÉSEAU CANADIEN POUR L'ÉDUCATION EN GÉOSCIENCE.
- Item 7: Nowlan wrote to the Victoria '95 Organizing Committee
- Item 7: Corkery has prepared the necessary insert to the GAC "blue book" but it has not yet been included in a new revision.
- Item 7: Case histories from the most recent meetings HAVE NOT been compiled.
- Item 8: The PAST booklet has been circulated to all GAC members
- Item 8: Robinson reported that a few revisions have been received by the authors.
- Item 8: The booklet has been translated but Tremblay and Bouchard have decided to make it available only as a photocopy based on the fact that since the book is aimed at scientists, and most scientists can read English, they would rather see funds devoted to items for teachers.
- Item 9: A version of the K-12 report has not been published in *Geoscience Canada*, but Nowlan reported that he had been asked to publish the contents of his talk at The Future of Geoscience Session which contained much of the data.
- Item 10: Updates of the Directory and Minutes have been sent for inclusion in the CGEN home page.
- Item 11: A fund raising drive is in the planning stages and will be implemented later in 1996.
- Item 11B: Nowlan wrote to CESE and they have agreed to act as a sister organization.
- Item 13: Nowlan has written to Charlie Smith (Ottawa '97) and planning is under way for a special event at the meeting to honour GAC's 50th Anniversary.

5. *Chairman's Report*

The report prepared by Nowlan for the Canadian Geoscience Council meeting on 26 May 1996 (Attachment 2) and the 1995 Annual Report to CGC (Attachment 3) were tabled and taken as read. Nowlan reported correspondence with UKESCC who produce interactive computer software for teaching earth science and distributed descriptions of the software. He also reported that he would be presenting a poster on behalf of CGEN at the

meeting of the International Organization of Science and Technology Educators in Edmonton and August where he was also speaking.

6. *Current Financial Report*

Reports for CGEN and EdGEO are attached to the minutes as Attachment 4. Very little funds were used by CGEN in 1995-96.

12. *PanCanadian Science Project*

The Chair distributed the Council of Ministers of Education, Canada (CMEC) Update for March 1996 (Attachment 5) describing the PanCanadian Science Project. He described the overall nature of the project and how important it was for scientists to be involved in the drawing up of a new PanCanadian science curriculum. All provinces except Quebec are participating. He reported that he had already attended a meeting in Calgary at the invitation of Alberta Education to discuss the preliminary documents for the curriculum. Dixon Edwards has also attended a similar meeting in Edmonton. Both will be attending further meetings in September. It was thought desirable that there be as much participation as possible by scientists in the process. Therefore, following considerable discussion, a strategy was devised for mobilizing as many earth scientists as possible to ensure that the project is brought to the attention of the science community and in particular, the earth science community. Each province is required to "ensure appropriate communication with partners and stakeholders" and so it should be possible for earth scientists to contribute to the development of the curriculum. The Network is to contact earth scientists in every province with a view to getting them involved in the process. The following action items are required: **all to be completed in June 1996 and reported back to the Chair of CGEN, Godfrey Nowlan.**

Nowlan to contact Frank Blackwood in Newfoundland and the sole member of GAC in Prince Edward Island to ensure participation in the PanCanadian Science Project in those provinces.

Action: Nowlan

Graham Williams to ensure participation in the PanCanadian Science Project in Nova Scotia and to contact Les Fyffe in New Brunswick.

Action: Williams

Koster to talk to staff at the Ontario Science Centre with a view to developing a strategy for Ontario concerning participation in the PanCanadian Science Project.

Action: Koster

Tremblay to investigate why Quebec is not part of the process and to notify Quebec earth scientists about the PanCanadian Science Project.

Action: Tremblay

Corkery to contact Jeff Young and Graham Young and together to ensure participation in the PanCanadian Science Project in Manitoba. Assistance may be available from Heather Robinson, a Manitoba teacher (see next action item).

Action: Corkery

✓ Christy Vodden indicated that her sister-in-law, Heather Robinson, is a Manitoba teacher who is most interested in the project. Vodden to supply Corkery with contact numbers for Heather Robinson.

Action: Vodden

Haidl and Gilboy to investigate the situation in Saskatchewan and to establish participation in the PanCanadian Science Project in as much of Saskatchewan as possible.

Action: Haidl and Gilboy

Nowlan and Edwards are to maintain the contacts already established with the PanCanadian Science Project in Alberta.

Action: Nowlan, Edwards

Barnes is to contact the Pacific and Cordilleran sections of GAC and Sid Katz at Science World to develop a strategy for participation in the PanCanadian Science Project in British Columbia.

Action: Barnes

Mike Stubley will establish communication with the PanCanadian Science Project in the N.W.T. and arrange for participation.

Action: Stubley

Nowlan is to find out who is the current minister in charge of CMEC with a view to sending copies of the CGEN's Report on Earth Science in K-12 Curricula to each of the ministers for the use those developing the PanCanadian Science Project.

Action: Nowlan

Nowlan to advise Jim Franklin as the geoscience representative to the Partnership Action Group for Science and Engineering about the PanCanadian Science Project and ask that the topic be brought to the group's attention.

Action: Nowlan

Nowlan to advise Steven Tobe of the Royal Society of Canada of the PanCanadian Science Project and to suggest his participation.

Action: Nowlan

8. *Special Program for Teachers at Ottawa '97*

Nowlan summarized the developments so far, indicating that at the Victoria meeting in 1995 CGEN had agreed to develop something special to celebrate the Geological Association of Canada's 50th Anniversary. At that time Al Donaldson had indicated that he would be willing to spearhead such a program. Nowlan had written to the Ottawa Organizing Committee (OC) to establish that a program for teachers would be developed for the weekend prior to the meeting and that a half day session would also run on the morning of the first day of the meeting. The Ottawa OC has approved the program and three components have been under development: 1. A session for local teachers in Ottawa to be held on 16-18 May 1997 (Al Donaldson). 2. A special field trip in the Papineau-Labelle region for teachers from across the country to be run on 17-18 May 1997 with overnight in the field (Pierrette Tremblay). 3. A special session for teachers and earth scientists to be held as part of the meeting on the morning of 19 May 1997.

Al Donaldson then outlined his plans for the Ottawa '97 Ottawa-area teachers program (see attachment 6). The plan is purposely fluid at the moment to allow for it to be adapted to the needs of those attending. Al noted that only nine teachers attended the program at Winnipeg '96, so he expressed some concern about attendance. It was suggested that he contact Rob Lord to advertise as widely as possible to earth science teachers. Booths should be set up at local science teachers' conventions to advertise the program. Vodden indicated that GSC's local contact list could be used.

Action: Donaldson

There was some discussion about whether the Workshop should be considered formally an EdGEO Workshop. It was unanimously agreed that this was desirable both to attract EdGEO funding and to advertise widely the existence of the program.

Donaldson indicated that the workshop would run from Friday evening, through Saturday and Sunday. It was agreed that the Friday evening program could be available to the teachers participating in the Papineau-Labelle field trip and similarly they would participate in the Sunday evening program (hopefully the astronaut program).

Tremblay then described the Papineau-Labelle field trip indicating that it would depart Saturday morning and head to the Papineau-Labelle Nature reserve where the participants would take a field trip that has already been run as part of EdGEO workshops in Quebec. The group will spend Saturday night in the field with a special evening program and then return to Ottawa to join the local Ottawa-area teachers. On the Monday they will attend the special session in the morning and then return home.

A working group comprising Al Donaldson, Pierrette Tremblay, Godfrey Nowlan and Fran Haidl was established to ensure that the whole program was worked out and fully integrated.

Action: Donaldson, Tremblay, Nowlan and Haidl

The Monday morning session, to be organized by Godfrey Nowlan will feature a small number (5?) of keynote addresses on earth science topics of interest to teachers (suggestions include a Professor of Earth Science Education, diamonds, Radarsat, global change, water resources, earthquakes, earth materials). Nowlan to seek advice and invite speakers.

Action: Nowlan

Attention then turned to the mechanism for selecting teachers from across Canada to attend the meeting. It was agreed that funding should be sought locally in each province for sending a minimum of two teachers. Primary consideration should be given to those teachers who have participated in a previous EdGEO workshop. Participating teachers would be expected to spread information when they returned to their home provinces.

Barnes is to contact the Pacific and Cordilleran sections of GAC and the Mining Association of British Columbia (through Bernard Dewonck) to establish funding for at least two teachers. It was thought that it might be possible for each section to send one and for the MABC to send one or both of the teachers who helped develop aspects of the Grade 12 support in B.C.

Action: Barnes

Nowlan and Edwards are to investigate the possibility of funding teachers from Alberta. Possible sources of funds are the Edmonton Geological Society and the Canadian Society of Petroleum Geologists.

Action: Nowlan, Edwards

Haidl and Gilboy are to seek funds from local sources in Saskatchewan to support teachers attending the program

Action: Haidl, Gilboy

Corkery is to contact Graham Young and Jeff Young and together to arrange for Manitoba teachers to attend the program.

Action: Corkery

Vodden is to consider how GSC might help fund teachers from Ontario. Proceeds from the GSC auction which usually go to the United Way might be diverted to this cause.

Action: Vodden

Tremblay is to look for funding and select teachers in Quebec. CIM Geology Division is a possibility for funds.

Action: Tremblay

Williams will look into the question in the Maritime provinces.

Action: Williams

Nowlan is to contact Charlie Roots to see if he can consider this question for the Yukon Territory.

Action: Nowlan

Two other possible sources of funding for this were identified: Rotary and Canadian Geographic. Vodden to contact Charlie Smith and ask him to inquire within Rotary. Nowlan to contact Denis St. Onge concerning Canadian Geographic.

Action: Vodden

Action: Nowlan

In consideration of the effort going into raising funds for the teachers' travel, some discussion ensued on the maximum size of the trip. Tremblay indicated that the preferred maximum was for 40 people split as 30 teachers and 10 scientists.

7. *EdGEO Report*

Haidl and Gilboy presented a comprehensive report on the current state of the EdGEO program. Basically, it is very healthy with nine workshops having taken place in 1995. Just over \$21K were spent. For full details see the EdGEO report (Attachment 7). In addition, Haidl presented a preliminary version of the EdGEO logo (attachment 8). Peter Russell agreed to take the idea and design the final logo.

Action: Russell

Haidl and Gilboy also presented the 1996-97 budget with estimated expenditures of over \$27K (see Attachment 9 for details).

Gordon Domm, a teacher who is part of the Steering Committee for EdGEO, is proposing to start an EdGEO Newsletter. The initiative was announced on a blindingly yellow sheet that should attract attention (Attachment 10). The deadline for the first issue is 15 November 1996.

9. *Assessment of Earth Science Curriculum Report*

There was a brief discussion of the report. It was felt that it has served its main purpose and may well be superseded by the PanCanadian Science Project. Copies will be sent to the PanCanadian Science Project secretariat (see above). Some deficiencies in the Nova Scotia part of the report were noted by Williams.

10. *PAST Booklet: Further Distribution*

Since efforts to market additional copies of the booklet have been relatively unsuccessful (200 copies to CANQUA and some sales to the United States), it was felt that it might be best to target some future distribution to meetings where the booklet would be appreciated. Perhaps it could form part of the package at the meetings taking place in Ontario in November (STAO) and December (Geospectives). Other suggestions welcome. It was felt that this distribution might have to be at very reduced rates or free.

11. *Directory of Earth Science Resources*

Williams explained that the directory had been significantly revised and was now a very thick pile of paper. It is available on the Web at the GSC Atlantic and CGEN sites. It is being turned into an interactive WAIS database. Williams noted that it was pretty complete for Nova Scotia and Alberta but that work was needed in other areas. Tremblay volunteered to look over and update the section on Quebec. Haidl and Corkery agreed to do the same for Saskatchewan and Manitoba respectively.

Action: Tremblay, Haidl and Corkery

Williams to send each of the above a paper copy of the report

Action: Williams

13. *Reports of Member Societies and Institutions*

Reports were presented on behalf of the following organizations:

Geological Association of Canada (Corkery)

Atlantic Geoscience Society (Williams)

Saskatchewan Geological Society (Gilboy)

Geological Survey of Canada (Vodden)

Ocean Drilling Program (Barnes)

Mineralogical Association of Canada (Tremblay)

Royal Ontario Museum (Rudkin - written report: Attachment 11)

Waterloo Centre for Groundwater Research (Russell - written report Attachment 12)

Government of the NWT (Letter from Martin Irving - Attachment 13 - if anyone wants a copy of the details on Project Rocks, let me know)

14. *Officers and the Need for Elections*

Nowlan noted that there was no formal mechanism for changeover of officers of CGEN and suggested that since three year terms will have been served by all executive members in 1997, a nominating Committee should be formed. **Graham Williams, Pierrette Tremblay and Ward Neale were nominated and elected as the Nominating Committee.** Nowlan to contact Neale as soon as possible to confirm his agreement to stand.

Action: Nowlan

15. *Future Projects*

No time was left for discussion of new projects. It was felt that the on-going projects represented a satisfactory level of activity, but time should be made for discussion of the development of new projects soon.

16. *Next Meeting Time and Place*

The next meeting will take place in association with the GAC-MAC in Ottawa in May 1997. Regional subsets of CGEN should take advantage of local meetings and travel to have meetings and discussions whenever possible.

A COPY OF THE TELEPHONE AND MAILING LISTS IS ENCLOSED WITH THE MINUTES: PLEASE CHECK YOUR ENTRY AND SEND ANY REQUIRED CHANGES.

Minutes prepared by:

Godfrey S. Nowlan (5 June 1996)

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AGENDA

9:00 - 12:00 a.m., Thursday 30 May 1996
Room 521, University Centre, University of Manitoba, Winnipeg

1. Introductions
2. Approval of Agenda
3. Review of Minutes of 20 May 1995 Meeting
4. Business Arising from the Minutes
5. Chairman's Report
6. Current Financial Report
7. EdGEO Report
 - Workshops
 - Funding
8. Special Program for Teachers at the 50th Anniversary GAC-MAC Meeting, Ottawa, 1997
9. Assessment of the Report on Earth Sciences in K-12 Curricula
 - Value, uses and future work
10. Further Distribution of the Neale-Horne PAST Booklet
11. Directory of Earth Science Resources
12. PanCanadian Science Project
13. Reports of Activities of Member Societies and Institutions
14. Officers and the Need for Elections to Executive of CGEN
15. Future Projects and Planning
16. Next Meeting Date and Place

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REPORT TO CANADIAN GEOSCIENCE COUNCIL MEETING 26 MAY 1996

The Network continues to make progress in its programs to enhance awareness of geoscience in the educational sphere. There has been no formal meeting since the GAC-MAC Meeting at Victoria in May 1995, however, there will be a meeting following this GAC-MAC on 30 May 1996 in Winnipeg, after which there will be some further news to report.

1. Appraisal of Geoscience in K-12 Curricula Across Canada

This appraisal that was completed and delivered to the member societies of CGC in early November, 1995 has been put to good use. The move by provincial education ministers to develop a Pan Canadian Science Curriculum (see below) has resulted in considerable interest in the report and provides the geoscience community with an opportunity to influence this new development.

2. Directory of Geoscience Education Resources

Compilation of the Directory has been undertaken by Graham Williams and associates in Halifax-Dartmouth. The second edition of the hard copy version of *Earth Science Resources* has been produced and will soon be available in interactive format on the Worldwide Web at our web site: <http://agcwww.bio.ns.ca/schools/cgen/index.html>.

3. EdGEO

The EdGEO Program continues to thrive as the number of workshops is growing steadily. More than 700 teachers have taken part in workshops between 1991 and 1995. In 1996, one workshop is completed, a further six are approved and an additional seven are currently in the planning stages (see attached summary diagrams).

On the financial front, the program recently received \$2,500 from CSEG which is most welcome. CSPG, CGC and GAC continue to be our most generous supporters (see summary of 1991 - March 31 1996 donations in attached diagram). A fund raising program in the private sector is planned for the near future. The EdGEO committee, under Fran Haidl, has developed letters and these will be mailed to appropriate corporations in the near future. Amoco, Esso, PetroCanada, Shell, Mobil, Alcan and Cominco have all supported the program in the past (see attached diagrams).

A total of \$21,288 was expended in 1995-96 with 96% of the funds going directly to workshops. The remaining was spent on travel and minor administrative items (see attached diagrams). Additional copies of a brochure describing the EdGEO Workshop Program are still available from

Fran Haidl or Godfrey Nowlan if CGC members are interested.

4. National PAST Meeting

The Organizing Committee of the GAC-MAC Annual Meeting for 1997 in Ottawa responded enthusiastically to a proposal for a special program for teachers and so plans are under way with the guidance of Al Donaldson (Carleton University). The details are being worked out and will be fully discussed at the May meeting of CGEN.

5. Pan Canadian Science Curriculum

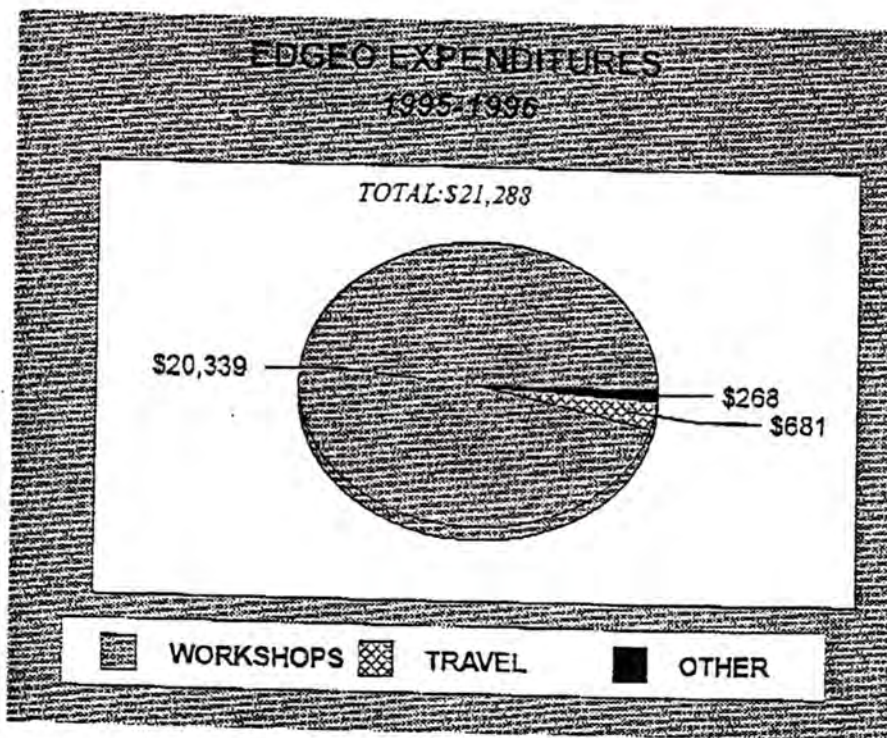
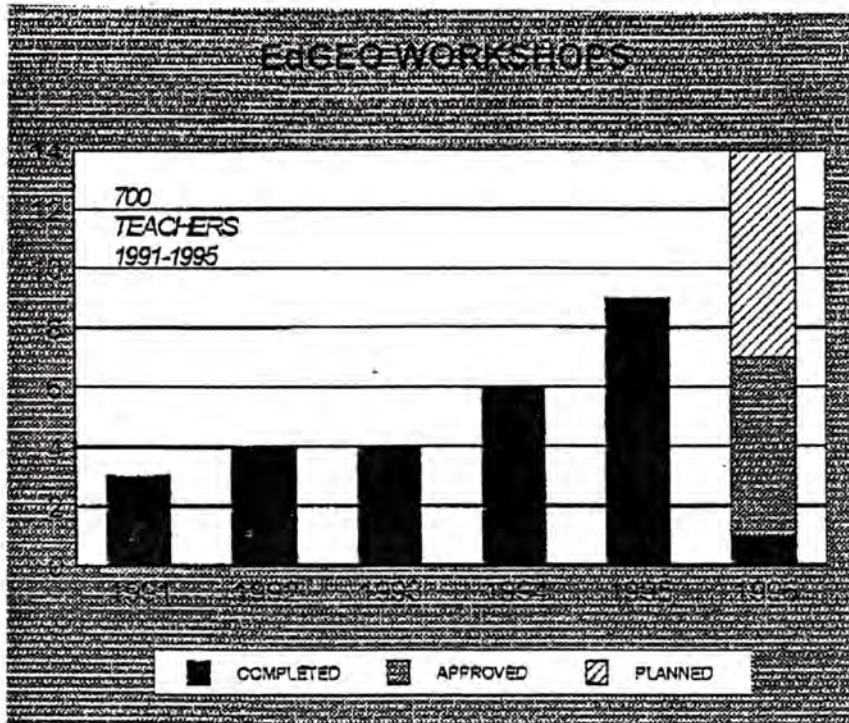
In February 1995, the Council of Ministers of Education, Canada (CMEC) adopted the *Pan-Canadian Protocol for Collaboration on School Curriculum*. In identifying science as the first area for collaboration under this new protocol, the ministers indicated that they recognized the importance of all jurisdictions providing students with the necessary knowledge, skills, and attitudes for scientific literacy.

All jurisdictions except Quebec are participating in the development of a common framework of science outcomes for K- 12. Throughout the project, anglophones and francophones will work together to ensure the development of deliverables in English and French. BC leads the English effort and Manitoba the French.

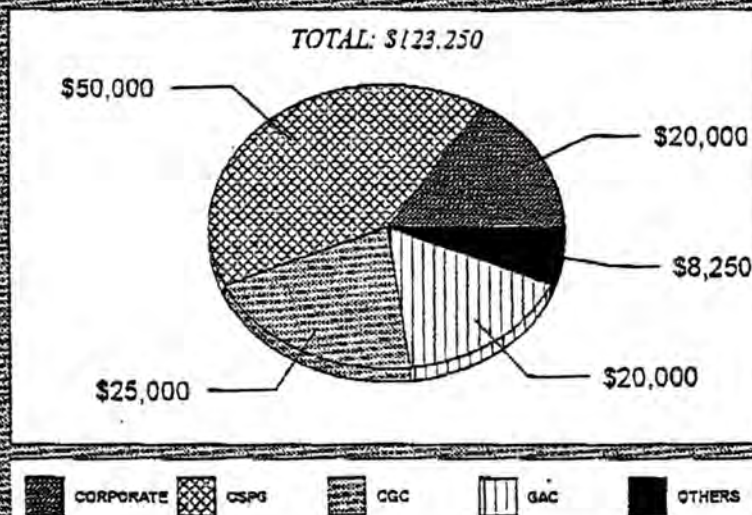
The framework is expected in 1997 with implementation as early as 1998. It is on the fast track and represents an opportunity for the earth sciences to stand alongside the PCB's of science curriculum (physics, chemistry and biology).

The idea is to develop a high quality science education with common curriculum and performance standards. It means that it will be easier for Canadian children moving between provinces because the curriculum content will be the same and records standardized. Obviously it is cost-efficient (probably the driving force behind this idea). It will also allow publishers to develop more focussed resources. *That includes societies involved in earth sciences*. In addition, the whole program draws on a larger pool of ideas and talent. I urge members of societies to get involved with their provincial team. CGC needs to get involved and put earth sciences more firmly on the curriculum map of Canada.

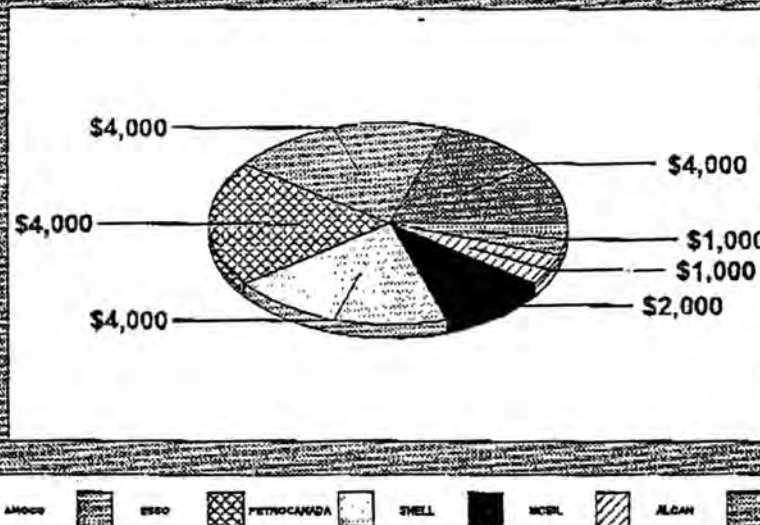
Report prepared by Godfrey S. Nowlan, Chairman, CGEN
22 May 1996



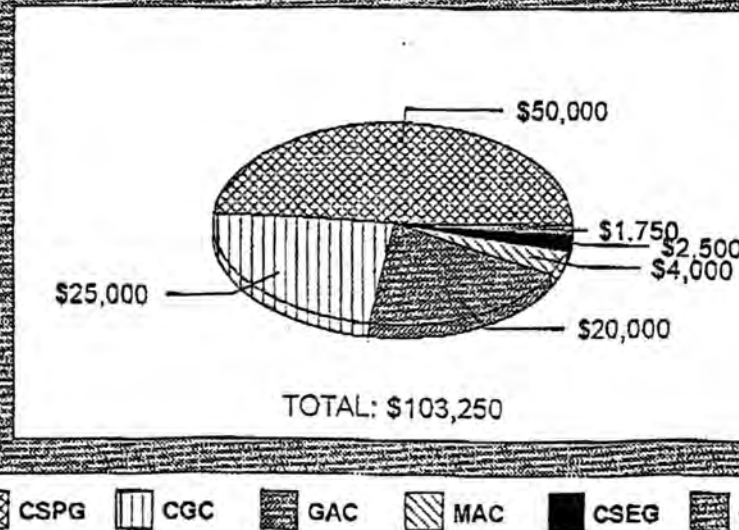
EDGE FUNDING 1991 TO MARCH 31, 1996



EDGE FUNDING CORPORATE DONORS



EDGE FUNDING GEOSCIENCE ORGANIZATIONS 1991 to March 31, 1996



CGEN Report
26 May 1996

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ANNUAL REPORT 1995

INTRODUCTION

The Canadian Geoscience Education Network (CGEN) is an organization within the Canadian Geoscience Council, the umbrella group for Canadian geoscience. CGEN is concerned with all levels of geoscience education in Canada and encourages activities designed to increase public awareness of geoscience. The Network exists to stimulate the development of geoscience awareness activities in Canada and to coordinate the efforts of the Canadian geoscience community in matters related to geoscience education and public awareness of geoscience. It acts as a forum for discussion of matters related to geoscience education in Canada. Since programs related to education in schools are best delivered on a local scale, CGEN is a collective of grassroots activists who deliver programs in their local areas. CGEN undertakes initiatives that can only be conducted on the national scale and raises funds to support grassroots activities.

The officers of CGEN in 1995 were: Chairman: Godfrey S. Nowlan (Geological Survey of Canada Calgary); Vice-Chairman: Michel Bouchard (University of Montreal), Secretary: Dixon Edwards (Alberta Geological Survey); Past-Chairman: Laing Ferguson; and executive members Louisa Horne (Dalhousie University) and Fran Haidl (Saskatchewan Geological Survey). The main meeting was conducted in May 1995.

NATIONAL EDGEO WORKSHOP PROGRAM

EdGEO is a national program of workshops for teachers that provides instruction in geosciences. Local volunteers stage and teach the workshops. EdGEO provides financial assistance, the opportunity to network with others who are undertaking similar programs, and advice on the development and delivery of teacher workshops.

The Executive for EdGEO is in Saskatchewan under the leadership of Fran Haidl of the Saskatchewan Geological Survey. Fran and her colleagues Christopher Gilboy (Saskatchewan Geological Survey), Katherine Bergman (University of Regina) and Gordon Domm (Regina Teacher) took over the EdGEO operation effective 15 January 1995. Gordon Domm replaced Stephen Bend (University of Regina) near the end of the year.

The executive has moved quickly to streamline EdGEO's process of application and reporting by developing standard forms. A brochure advertising the program was produced in April 1995 and an exhibit was prepared and presented at the Geological Association of Canada - Mineralogical Association of Canada meeting in May 1995.

A new National Committee has been formed from the ranks of experienced workshop providers that acts as an advisory body to the program. A subset of this group, the Application Review Committee has been successful in bringing added consistency to evaluation of applications for EdGEO funds. The standardized application, budget estimate and report forms that have been developed for use by each applicant are resulting in the gathering of more consistent statistics. The program is becoming more business-like and pro-active.

On the financial front, significant funding was received from the Canadian Society of Petroleum Geologists, the Geological Association of Canada and the Canadian Geoscience Council in 1995. Despite a generally healthy financial situation, there is concern that continued growth in the number of the workshops will result in demand for funds exceeding those available. A fund-raising campaign in the private sector is planned for 1996.

Workshops were delivered in nine locations in 1995: Calgary, Edmonton and Jasper (Alberta), Regina and Eastend (Saskatchewan), Winnipeg (Manitoba), Toronto (Ontario), Florenceville (New Brunswick) and Sydney (Nova Scotia). In addition, two teachers were funded to attend the Friends of the Grenville field trip in Quebec. Over 350 teachers participated in the workshops. The program continues to grow and diversify.

APPRAISAL OF GEOSCIENCE IN K-12 CURRICULA ACROSS CANADA

Bob Sheppard, a former science specialist with the Calgary Board of Education, completed a review of Earth Science content in K-12 curricula from all educational jurisdictions in Canada. This is the first time such a study has been undertaken in Canada. The report was delivered to the member societies of CGC in early November, 1995. In addition to the societies, a copy of the report has also been sent to the Canadian Society of Petroleum Geologists and to the Alberta and Manitoba groups dealing with the new initiative for a Pan-Canadian Science Program (essentially a new national science curriculum). The report, done by Mr. Sheppard on a voluntary basis, reviews the existence and nature of geoscience components in K-12 curricula across the nation. The results are presented in tabular format for each level in each concept area by province. We hope that societies and other organizations will use this report as an aid to developing programs in geoscience education. The report will allow programs to be aimed at the right topics at appropriate grade levels. The report provides an interesting snapshot for geoscientists and educators across the country of the level of earth science education in Canada's schools and, as such, provide a useful benchmark by which to measure future developments. The fact is that geoscience is poorly represented in most curricula across the country and the Canadian Geoscience Council should take advantage of the new move towards a national science curriculum to insist on better representation in the curriculum.

THE PAST IS THE KEY TO THE FUTURE

An attractive booklet, entitled *THE PAST is the Key to the Future* a joint production of the Network

and GAC, produced in May 1995, was widely distributed to GAC members and to officers of the constituent societies of CGC. It was written by Ward Neale and Louisa Horne and provides essential information for geoscientists who are considering getting involved in the public awareness of science, especially through education systems. In September 1995, the Chairman of CGEN wrote to all CGC societies and the CSPG to see if they would be interested in purchasing copies for their members. Results from this request are still being evaluated. There is significant concern that many geoscientists are members of more than one society and therefore that the purchase of copies by all societies might be a waste of money. This point is well taken and obviates the need for a directory of geoscientists in Canada. The booklet is currently available through GAC at a cost of \$4.00 per copy (including postage and handling). A reduced rate of \$2.00 per copy is available if the order is for 50 or more copies. A French version is currently under preparation by Pierrette Tremblay and Michel Bouchard and will be made available to those who prefer or need a copy in French.

DIRECTORY OF EARTH SCIENCE EDUCATIONAL RESOURCES

Compilation of a directory of all resources available for those who teach earth sciences has been undertaken by Graham Williams (Geological Survey of Canada Atlantic) and associates in Halifax-Dartmouth. A first and second edition of the hard copy version of *Earth Science Resources* were produced in 1995. There are four main sections. The first section groups resources according to geographic area and then by type. The second section lists resources under subject categories, so that one can check out volcanic rocks, dinosaurs etc. Section three lists resources alphabetically and provides detail of content and source. The fourth section includes evaluation forms. There is also an index to facilitate location of the resources. Jennifer Bates, Kevin Coflin and Graham Williams are reorganizing the Internet version of the guide, so that the emphasis is on subject category. Teachers have been consulted about appropriate subject headings. The current version is still available on the Internet at CGEN's Web Site: <http://agcwww.bio.ns.ca/schools/cgen/index.html>.

Godfrey S. Nowlan
Chairman, CGEN
Calgary 26 March 1996

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FINANCIAL REPORT 1995-96

CGEN BANK ACCOUNT
 ALBERTA TREASURY BRANCHES #1180479

| | |
|---|----------|
| OPENING BALANCE | 637.63 |
| REVENUE | |
| Interest (March 0.81; April 0.79; May 0.52; June 0.09; October 0.11; November 0.42; January recalculation 0.61) | 3.45 |
| Deposit from Laing Ferguson (New Brunswick Account final closing) | 67.53 |
| EdGEO Jasper Workshop Funds | 1400.00 |
| TOTAL REVENUE: | 1470.98 |
| EXPENSES | |
| National Earth Science School Survey (Phone 48.05; Curriculum Guides 136.43 and paper and printer use 5.98) Paid to Bob Sheppard 3 Oct 95 | 190.46 |
| Service Charges | 7.00 |
| EdGEO Jasper Workshop Materials (Books: 576.52; Posters: 802.50; Global Change booklet shipping 40.00) | 1419.02 |
| Victoria Meeting Refreshments | 71.00 |
| TOTAL EXPENSES: | 1687.48 |
| CURRENT BALANCE: | \$421.13 |

CANADIAN GEOSCIENCE EDUCATION NETWORK
NATIONAL EDGEO WORKSHOP PROGRAM: FINANCIAL REPORT
1 April 1995 - 31 March 1996

| BANK ACCOUNTS | DR | CR |
|----------------------------|-----------|----|
| Royal Bank opening balance | 16,133.81 | |
| Royal Bank closing balance | 32,488.67 | |

| INCOME | |
|--|-----------|
| Received from CGC | 5,000.00 |
| Received from CSPG | 25,000.00 |
| Received from GAC | 7,500.00 |
| Interest income | 142.20 |
| <i>TOTAL INCOME</i> | 37,642.20 |
| EXPENDITURES | |
| Regina, SK, 1995 | 2,630.00 |
| Sydney, NS, 1995 | 1,500.00 |
| Edmonton, AB, 1995 | 2,939.00 |
| Calgary, AB, 1995 | 1,000.00 |
| Jasper, AB, 1995 | 1,400.00 |
| Eastend, SK, 1995 | 1,570.00 |
| Quebec, QB (INRS), 1996 | 3,000.00 |
| MABC 1996 | 3,000.00 |
| Chicoutimi, QB, 1996 | 3,000.00 |
| <i>Total Workshops:</i> | 20,039.00 |
| Field Trip Registration for Teachers | 300.00 |
| Postage and Phone | 42.00 |
| Bank Charges | 1.50 |
| Travel Expenses | 680.84 |
| Advertising (EdGEO brochure and GAC-MAC Display) | 224.00 |
| <i>Total Overheads:</i> | 1248.34 |
| <i>TOTAL EXPENDITURES:</i> | 21,287.34 |



CMEC'S PAN-CANADIAN SCIENCE PROJECT
PROJET PANCANADIEN EN SCIENCES DU CMEC

March 1996
Vol. I, no. 1

UPDATE

In February 1995, the Council of Ministers of Education, Canada (CMEC) adopted the *Pan-Canadian Protocol for Collaboration on School Curriculum*. In identifying science as the first area for collaboration under this new protocol, ministers recognized that, as Canada moves into the twenty-first century, it is essential that all jurisdictions provide students with the necessary knowledge, skills, and attitudes for scientific literacy.

The project supports the spirit and intent of collaboration as described in the protocol. All jurisdictions except Quebec are participating in the development of a common framework of science outcomes for K-12. Throughout the project, anglophones and francophones will work together to ensure the development of deliverables in English and French.

The final document arising from the Pan-Canadian Science Project will contain the following elements:

- a vision statement for science education
- a summary of current trends in science education
- terms and definitions for a common framework of science outcomes
- a conceptual map for a common framework of science outcomes
- general outcomes (grades 3, 6, 9, 12) for science education
- specific outcomes, grade by grade, and illustrative examples as required, for science education

The project will be developed using the lead jurisdiction model, meaning that an anglophone lead jurisdiction and a francophone lead jurisdiction will be responsible for ensuring the development of the final document and all of the draft documents leading to this final product. The anglophone lead jurisdiction for the project is British Columbia. The French-language lead jurisdiction is Manitoba (francophone). All participating jurisdictions are represented on the project team, which will work with the coordinators from the two lead jurisdictions to develop the deliverables.

The processes and procedures of the Pan-Canadian Science Project will maximize stakeholder involvement, with that involvement occurring within the context and mechanisms of the various jurisdictions at key times throughout the project. At appropriate points, draft documents will be provided to participating jurisdictions for review within their jurisdictions. This review process requires participating jurisdictions to distribute draft documents developed within the Pan-Canadian Science Project to their stakeholders such as educational partners from elementary and secondary schools, postsecondary institutions, business and labour organizations, parent groups, science professionals' organizations, science interest groups, and representatives from other ministries, and to prepare a report for the lead jurisdictions. The lead jurisdictions will respond to individual jurisdictions' comments and will send a summary of all jurisdictional reports to the project team.

Communication is essential to the success of the project, including communication within and between ministries and departments of education, with educational partners, and with partner organizations. On a national level, information will be disseminated by CMEC via the CMEC Secretariat. On a jurisdictional level, ministries and departments of education will ensure appropriate communication with partners and stakeholders throughout the project.

Further updates will be made available on a regular basis on the CMEC home page at <http://www.cmec.ca>

**EARTH SCIENCES PROGRAM
FOR SCIENCE TEACHERS
OTTAWA, ONTARIO, MAY 17-18, 1997
SPONSORED BY GAC/MAC, IMMEDIATELY
BEFORE THEIR JOINT ANNUAL MEETING**

This program will provide workshops and field trips for teachers of courses in the physical sciences, geography, geology and environmental science

Workshop topics will run concurrently, geared to the backgrounds of program participants, covering topics such as:

Rocks and Minerals Fossils Dinosaurs
Geographic Information Systems Planning Earth Science Field Trips
Experiments and Displays linking the Earth Sciences to Physics, Chemistry,
Mathematics and Biology
Mineral and Water Resources

Half-day and Full-day Field Trips will run concurrently on both days, according to demand:

Physical Geography and Geology of the Ottawa Region
Gatineau Park
Museum of Nature: Our National Treasures of Minerals, Rocks and Fossils
Building Stones: their Provenance, History and Durability
The South Nation Landslide
Structure and Metamorphism of the Grenville Province

GEM, MINERAL AND FOSSIL SHOW

GUEST SPEAKERS TO INCLUDE:

A Member of the Canadian Astronaut Team

----An Astronaut's View of our Planet

Dr. Cathy Hickson, Geological Survey of Canada

----Volcanic Hazards

Dr. Brendan Murphy, St Francis Xavier University

----Reflections on the Challenges of Teaching Earth Science

Dr. Emlyn Koster, Director General, Ontario Science Centre

----Your Museum and Science Centre as Educational Resources

Dr. Alan Morgan, University of Waterloo

----Global Change

Contact: Al Donaldson, Dept. of Earth Sciences,
Carleton University, Ottawa, ON, K1S 5B6

EdGEO EXECUTIVE COMMITTEE REPORT — 1995/6

(Preliminary, unfinalized version)

Introduction

The past calendar year has been very active, with nine workshops held, three (Florenceville, Manitoba and Toronto) of which were funded from our 94/95 budget, and other initiatives planned for the upcoming year. Our spending during our fiscal year (1 April, 1995 to 31 March, 1996) amounted to \$21,287.34 of which \$20,039 were on workshops in five provinces. Our income amounted to \$37,642.20 thanks to generous contributions from CSPG (\$25,000), GAC (\$7,500) and CGC (\$5,000).

1995 Workshops

1. Florenceville, New Brunswick, 7 April, 1995: attended by 20 teachers (Grades 7 and 8) and two observers; foci: *Earth Structure and Plate Tectonics, Rocks and Minerals, and Mining in New Brunswick*; venue: Florenceville Motor Inn; organized in close co-operation with NB Department of Education.

2. Regina, Saskatchewan, 11 to 13 May, 1995: attended by 19 teachers from 18 different schools, foci: *Rock and Mineral Identification and Rocks and Minerals of Saskatchewan*; substantial local financial and logistical support; illustrated talks were followed by visits to the Geology Department at the University of Regina, a gravel pit in Moose Jaw, several of Regina's public buildings with interesting facing stones, and the Subsurface Geological Laboratory; resource packages valued at about \$175 were given to each participant; all teachers' evaluations gave high ratings.

3. Manitoba, 19 to 22 May, 1995: attended by 30 elementary and high school teachers; foci: *Geology of Manitoba and Transference of Knowledge to the Classroom*; venue: University of Manitoba Star Lake Field School, Whiteshell Provincial Park; field trips were a major, daily component of the workshop; approximate value of resource packages given to participants was \$140; substantial logistical support was locally provided; teachers' evaluations ranged from "excellent" to "outstanding".

4. Toronto, Ontario, 25 to 28 May, 1995: EdGEO was the major financial sponsor of the Spring Conference of the National Association of Geology Teachers — Eastern Section; the conference included 4 one-hour sessions, each featuring 3 concurrent workshops covering a wide variety of earth-science topics, and 3 concurrent daylong field trips

5. Sydney, Nova Scotia, 21 and 22 August, 1995 (final report not yet received): expected enrollment was 25 teachers, mainly from Grades 5 to 9; focus: *The Earth Sciences: New Resources for Teachers*; venue: University College of Cape Breton; about \$50 per participant budgeted for resource packages; field trip to examine Carboniferous rocks of the Sydney area, effects of glaciation, and coastal erosion; substantial local funding and logistical help requested; this was the second of six workshops planned to be held in Nova Scotia.

6. Edmonton, Alberta, 16 September, 1995: attended by 31 teachers (mainly Grade 3 in accordance with Alberta curriculum); focus: *Rocks and Minerals*; venue: Provincial Museum of Alberta; substantial local financial and logistical support; highly favourable participants' evaluations.

7. Calgary, Alberta, 4 to 7 July, 1995: one of a series of 10 workshops under overall title *Making Connections: The New Elementary Science Program* attended by 120 teachers representing Grades 1 through 6; foci: *Magnetism* (Grade 2) and *Rocks and Minerals* (Grade 3); venue: Lester B Pearson High School.

8. Jasper, Alberta, 15 October, 1995: two-hour workshop given to 19 teachers (probably mostly Grade 11 in accordance with Alberta curriculum — Science 20, Unit 1) at the Alberta Science Teachers' Association Science Council Annual Meeting; focus: *The History of Life on Earth* (especially as demonstrated in Alberta); venue: Jasper Park Lodge; resource packages valued at about \$70 were given to each participant; participants' praise for the presentation and the handouts was high.

9. Eastend, Saskatchewan, 20 and 21 October, 1995: attended by 8 Grade 7 and 8 teachers and 6 educators in the Provincial Park system; focus: *Rock, Mineral and Landform Identification*; venue: Eastend Fossil Research Station; participants' resource packages valued at more than \$55 each; half-day of instruction followed by full-day field trip; participants assessed the workshop as excellent.

1996 Workshops in 1995/96 Budget

1. Quebec City, 19 April/25 June and 22 April/26 June, 1996: two workshops, each for 20 teachers (elementary IV, secondary I, II and III); foci: *Rocks and Minerals and Discovering Earth Sciences*; resource package budget about \$100 per participant; the second day of each workshop is devoted to a field trip to local, geologically significant sites; substantial local funding expected; venue: le Centre géoscientifique de Québec, Sainte-Foy.

2. Mining Association of British Columbia, 1996: two or three workshops, venues to be announced, in early 1996; expected enrollment about 50 Grades 11 and 12 teachers; EdGEO is funding \$3000 of anticipated expenditure of \$13,750 on teachers' resource packages (i.e. each package valued at \$250) consisting of lesson plans relating to curriculum-mandated geology courses, slides, rock samples, software, booklets, brochures, posters and assorted other publications.

3. Chicoutimi, 17 April, 1996: planned for 60 teachers representing elementary IV and secondary II, the workshop was due to be held during the Quebec Association of Geologists and Geophysicists meeting; foci: *Rocks and Minerals and Discovering Earth Sciences*; resource package budget about \$70 per participant; venue: l'Hôtel Le Montagnais.

Other Funded Activities

1. EdGEO sponsored two Papineau-Labelle workshop (September, 1994) graduates (a third person had to withdraw at the last minute due to illness) to attend the 1995 Friends of the Grenville field trip, held 29 September to 1 October, 1995. The teachers mingled well with the geoscientists, and found the experience valuable.

2. A brochure outlining EdGEO's goals and suggesting how to organize workshops and apply for grants was prepared and printed in time for distribution at the 1995 GAC/MAC meeting; most of the 800 copies have been given out in the past year, so a second printing (incorporating mostly minor changes, but with the significant addition of four teachers' comments) has just been completed.

3. The EdGEO Manual for workshop presenters continues to progress, albeit slowly. The text is essentially in its final form, but illustrations have to be completed. Release format has yet to be decided — production costs could run in excess of \$10,000 if the manual is printed and/or copied onto CDs. The EdGEO Executive is prepared to allocate \$1,000 to \$2,000 to have the Manual photocopied and put into 3-ring binders (into which presenters' notes and other addenda can readily be inserted) and/or copied onto disks.

Planned Initiatives in 1996 and 1997

1. Nation-wide fund-raising campaign: this is perhaps the major undertaking immediately ahead of us. We plan to conduct it in a well structured manner which will take advantage of personal contacts that members of the National EdGEO Workshop Committee and other supporters have with geoscience-related societies and/or industry. If the response is sufficiently good, we anticipate increasing our efforts to expand the workshop program.

2. Rock and mineral kits: we are trying to assemble a variety of teaching specimens in Regina to make kits available for workshops at cost. This development follows the discontinuance of G.S.C. sets which had become standard items in teachers' resource packages distributed at workshops in several Canadian centres. Donations of specimens (in batches of about 500, each approximately 4x4x4 cm in size) will be welcomed.

3. National EdGEO Workshop, Ottawa, 1997 GAC/MAC meeting: discussions are in progress about holding a workshop in Ottawa for teachers from across Canada - with EdGEO possibly supporting two per province who have previously attended a local workshop and so can exchange — with each other and with interested geoscientists — ideas for program improvement, follow-up activities and so on; Pierrette Tremblay is exploring the possibility of combining the workshop field trip with one she is running for GAC/MAC.

4. EdGEO Newsletter and Logo: the teacher representative, Gord Domm, on our Executive has been instrumental in actively starting to assemble material for our first newsletter, due out this fall, and in taking a first run at designing a logo which incorporates EdGEO's *raison d'être*. Expected readership for and contributors to the newsletter include existing and potential sponsors, workshop organizers (and, possibly, participants), National EdGEO Committee members and other interested groups or individuals asking to be placed on our mailing list. We are searching for a graphic artist willing to prepare a camera-ready version of our logo in return for a small honorarium.

Conclusions

The EdGEO program is healthy, but much room for innovation and expansion exists. Public and political perceptions of the parts played by earth-science related organizations, activities and events in everyday life are woefully limited and under-appreciated. EdGEO helps redress this situation to a small, but growing, extent.

One delicate issue that the Executive is starting to explore is that of how and when EdGEO executives should change. No guidelines presently exist — but some form of structure with inbuilt flexibility might be necessary to ensure the programs continuing good health in the years ahead.

The Executive thanks all members of the National Committee for your input and enthusiasm during 1995 and asks you to continue to supply ideas and constructive comments through 1996. Sub-committees, such as the Workshop Application Review Committee, have performed valuable work often at short notice and are duly acknowledged. We congratulate all workshop organizers, presenters and participants for your dedication and hard work — you are our core. And we are deeply grateful to all our supporters — financial, logistical, and moral — without you this program would not exist please stay with us!

()

On Behalf of the 1995/6 EdGEO Executive

Tuesday, 28 May, 1996

EdGEO LOGO

The logo attempts to convey the message that the main objective of EdGEO is to help our young people to understand the geology of planet earth and, consequently, to prepare them to care for it in a responsible way.



1996 - 1997 EdGEO BUDGET

ESTIMATED REVENUE

\$15,000¹

¹ have assumed that anticipated additional funds from corporate donors may not be processed through Canadian Geological Foundation until 1997-1998 fiscal year

ESTIMATED EXPENDITURES

| | |
|-------------------------------------|-----------------|
| Workshops | 25,000 |
| Office expenses | 150 |
| Brochure | 150 |
| Logo | 200 |
| Newsletter | 350 |
| Poster displays | 100 |
| Travel expenses | 1,000 |
| Workshop manuals | 500 |
| Total estimated expenditures | \$27,450 |

CASH ON HAND (March 31, 1996)

\$32,488.67

1996 WORKSHOPS

Funding approved

Quebec City (2)
St. Hyacinthe
Chicoutimi
British Columbia
Regina
Calgary

Planned

Eastend
Edmonton
Toronto
Nova Scotia

Interest Expressed

Victoria
La Ronge
Saskatoon
Manitoba

EdGEO Newsletter Initiative

May 24, 1996

An EdGEO Newsletter?

- The EdGEO Workshop Program continues to grow and is having a significant impact on educators and students across Canada.
- Last year hundreds of Canadian teachers were involved in EdGEO workshops.
- Teachers inspired by hands-on, targetted workshops enthusiastically returned to classrooms armed with new and powerful teaching tools.
- Importantly, the youth, through their teachers are the direct beneficiaries of these workshops, thereby raising public awareness of the GEOSCIENCES AND RELATED ISSUES to new levels now and for the future.
- Many inspiring and encouraging stories are emerging.
- The time has come to share our stories which can serve as a binding force and springboard for us, thus enhancing further growth and development on behalf of the young.
- EdGEO workshops are a vital contribution at a critical time to the understanding, stewardship, and care of our earth.
- Many corporate, commercial, and geoscience societies organizations are standing shoulder to shoulder with us, offering direct support by contributing financial and technical resources.
- **Feedback through a newsletter is an important way for our supporters and leaders/presenters to see their contributions meeting real needs and impacting the future.**
- Help us to help you and those who will follow in your footsteps.
- This is a new venture. We will endeavour to publish two issues the first year and perhaps more in the following year.
- Please take a little time ... share ... contribute to the birth of an EdGEO NEWSLETTER.

WE NEED YOU!

What do I send?

- Workshop stories (approximately 50 to 200 words), rough form acceptable - we are pleased to edit
- Behind the scenes stories
- Periodic updates on projects underway
- Classroom or individual teacher or student success stories
- Interesting side stories and anecdotes
- High interest or unusual photographs (any size, black and white or colour)
- Include caption detail such as names, position in photo, location, activity, date, etc.
- Sketches, diagrams, cartoons
- Be creative, this is not an exhaustive list

Where do I send EdGEO Newsletter material?

Deadline: For initial material,
November 15, 1996

Send to:

EdGEO Newsletter
Gordon Domm
1226 James Cr.
Regina, SK
S4N 6A5



Phone: (306) 751-0320
FAX: (306) 787-4608