

# NEWSLETTER NOUVELLES OF THE MINERALOGICAL DE L'ASSOCIATION ASSOCIATION OF CANADA MINÉRALOGIQUE DU CANADA

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## EDITORIAL

### MAPPING A FUTURE FOR MAC

The editorials of the last four newsletters on the future of Earth Sciences in general, and mineralogy in particular, and the discussion they generated

corporate memberships. This decrease roughly coincides with fee increases, which is surely a significant cause, but does the decline in memberships also reflect a decline in the interest in, and the funding of, mineralogy? Many options will be examined in the coming year to reverse these trends: a membership drive, narrowing or broadening the scope of our publications, etc. Of course, electronic publication of the journal is a first effort to ensure that our members keep *The Canadian Mineralogist* on their renewal list.

(cont'd on page 2)



**MAC Council 2000-2001.** From left to right : Gina LeCheminant (Secretary), Brian Fryer (President), Roger Mitchell (Chairman of MAC Foundation), Jim Nicholls (Past President), Ron Peterson, Larry Heaman, Dante Canil, Greg Dipple, Iain Samson (Finance Chair), Pierrette Tremblay, Mati Raudsepp (Treasurer), Bob Pinard (staff), Jeanne Percival, Jonathan Fowler, Peter Burns, Robert F. Martin, Toby Rivers (MAC representative on St. John's 2001 local organizing committee) and Norm Halden (Vice-president).

Members of Council not on the picture : Alan J. Anderson and Yuanming Pan

laid the groundwork nicely for the last Council meeting on May 28<sup>th</sup>, 2000, in Calgary. We intentionally moved swiftly through our agenda items (see Highlights of Council Meeting, p. 3) so that the future of your association could be adequately discussed. Many questions were raised to which we will

be seeking input and answers in the coming year.

Finance Chair Iain Samson presented his analysis of membership trends from 1993 to 1999. Total memberships have decreased gradu-

ally over that period, mainly due to declining Canadian memberships of all types and overseas corporate members. This is reason for concern as a large portion of our income comes from

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(cont'd from page 1)

Is MAC, as a not-for-profit organization, essentially just an organization devoted to publishing a scientific journal, or does it also provide other essential services to its members? The decline in our ordinary Canadian memberships is of concern. Do our individual members perceive they are receiving services that they value along with a great journal? Do they expect to receive more than they do? What types of services would keep them interested in renewing their membership?

Council quickly reached consensus about the need to change the way MAC is run. MAC has traditionally been run by volunteers, but most of today's volunteers have increasingly heavy workloads, and the time available for volunteer commitment has shrunk. This comes at a time when the tasks that need to be accomplished have expanded and the timelines have shortened. MAC has to be run more professionally. We need to employ somebody to maintain our visibility, to do the legwork so that Council can make informed choices as it is mapping the future of the organization. Different operational and business models will be explored in the coming year.

We would love to hear from you. Send your comments to

Brian Fryer, President  
Bfryer@uwindsor.ca

## FROM THE EDITOR

Summer has come at last, and Quebec City is very beautiful at this time of year. I get many opportunities to enjoy it as I drive my daughter to work downtown a few times a week. For most of us in the northern hemisphere, it is time for a change of pace, because of field work, concentrated research or a slowing down of activities. As for myself, I really enjoy taking care of the garden and smelling the roses after a hectic year.

### A new chapter in the asbestos story

I first became interested in the asbestos story when MAC decided to publish the proceedings of a workshop held in Montreal in September 1997 (see Newsletter 58, p.6). About one year ago, while visiting the Université de Paris VI in France, I came across a building that had been empty for over a year so that asbestos insulation could be removed from it, at great cost and terrible inconvenience, needless to say. This made very real the fact that France banned the use of asbestos in its territory in 1997 and it also brought many questions to mind: How did the French government come to this decision? Was this an evidence-based decision? Or was it a political decision taken under pressure from public opinion? What about the substitutes for asbestos? Have they been proven safe?

The proceedings of the 1997 conference will be published this summer as a supplement to *The Canadian Mineralogist*. It is a must to see what the latest research



Empty building at the Université de Paris VI

has to say about the asbestos story. Researchers from fields as varied as pathology, mineralogy and epidemiology have worked on the asbestos issue. Every field of study provides a piece of the puzzle, but the whole picture can only be seen when we look at all the pieces together.

As for myself, I became so involved in the story that I chose to present it as part of a talk I gave as the Ward Neale medalist of the Geological Association of Canada for 1999. I discovered in the process that asbestos has been the most studied occupational health issue. It is indeed a complex issue, and one that has become very emotional. I also became convinced that mineralogists have an important part to play in it. Many thanks to the editors of this supplement who allowed me access to many of the papers before their publication.

This month, the International Commerce Board has recognized France's right to ban the use of asbestos in its territory. Did science prevail in this decision? A good question to ponder. And if mineralogists had been more active in the political arena and in public awareness of science, would the results have been any different?

### Meet the author

While in France, in April 1999, I also met Mr. Jean Delvigne, the author of Special Publication 3 of *The Canadian Mineralogist, Atlas of Micromorphology of Mineral Alteration and Weathering*. We had corresponded extensively while working on all the technical details of publishing his book, so it was really delightful to meet him at last. I will always remember looking for Mr. Delvigne at the main public square in Aix-en-Provence and wondering how we would recognize each other. Then I sighted



Jean Delvigne and Pierrette Tremblay, in Aix-en-Provence

someone holding the pamphlet we made to advertise his book. He and his wife took my husband and I for an unforgettable Sunday lunch at l'Auberge du Cap. I learned about his life working in Africa and Brazil, his Brazil, and his interest in mineral collecting. It became even more evident that this book was the distillation of his life's work. By the way, more and more excellent reviews of this book are coming out, the latest having been published in *American Mineralogist*.

#### New feature

I also have the pleasure to introduce a new feature about the people behind the new mineral species first described in the pages of *The Canadian Mineralogist*. Our editor Robert F. Martin came up with this wonderful idea to highlight some of the people who have minerals named after them and he provided material for the first feature. As the saying goes, if you want to get something done, ask the busiest person you know!

*Pierrette Tremblay*

Pierrette Tremblay

## ASSOCIATION NEWS

### HIGHLIGHTS OF COUNCIL MEETING

#### New Format for Council meetings

After welcoming Greg Dipple, Ron Peterson and Larry Heaman to their first Council meeting, and welcoming back Norm Halden as incoming Vice-president, MAC Councillors swiftly moved to adopt a change in the make-up of future council meetings. It has been customary to have two one-day meetings of the full Council each year, one in the fall and one in conjunction with our annual meeting in the spring. The fall meeting is traditionally held in the city where the next annual meeting is to be held. At that time, the local organizing committee makes a full report on the coming meeting and holds a visit of the facilities for the two organizations, GAC and MAC. From now on, the fall meeting will only be attended by members of the Executive. On the other hand, the spring meeting will be expanded to a two-day meeting, allowing time for in-depth discussion of issues. More use will be made of electronic communication and conference calls when decisions have to be made between meetings.

#### New terms for Councillors

A change in the term of Councillors was also adopted. Until now, new councillors began their term on January 1<sup>st</sup>. However, as there was no meeting until May, they usually did not participate in the business of the Association until after their first Council meeting. As well, councillors

at the end of their three year term ending December 31st could not effectively contribute to the ongoing business of the Association after their last meeting. With this By-Law revision, terms will start and end at the annual meeting or no later than June 1, so that every council meeting will have some incoming and outgoing councillors in attendance. It will also allow us to comply with our by-laws by notifying our membership of the slate of candidates being nominated.

#### New Award

Council also voted unanimously to create a new award for distinguished services to mineralogy or exceptional contributions to the advancement of the mineralogical sciences by an amateur mineralogist, mineral collector or dealer. Peter Burns is in charge of developing terms of reference for this new award. Moreover, the terms of the Berry Medal were slightly modified so that persons currently active in an elected or appointed office can be nominated for this award. Moreover, more than one Berry Medal may be awarded in any year.

#### 1999 finances

Treasurer Mati Raudsepp reported that MAC and MAC Foundation, which are two separate legal entities, showed a total surplus of \$23 337 for 1999. This is indeed good news, as not only did we recover from the deficit of \$91 459 in 1998, but the 1999 surplus will be used for new activities of the Association in 2000/2001.

### The Canadian Mineralogist

In 1999, volume 37 of *The Canadian Mineralogist* closed at 1552 pages. More and more authors are making use of colour, as there is no additional cost to the authors for publishing in colour in our journal. Many thematic issues are in various stages of preparation. Watch for the next thematic issue combining *Ni deposits and komatiites*, with Sarah-Jane Barnes and Jim Crocket as guest editors, and the *Roeder volume*, with Dante Canil and Heather Jamieson as guest editors. A thematic issue on PGE honouring Louis Cabri is also in the works and should be published in 2002.

The electronic publication of *The Canadian Mineralogist* is going ahead. After being tested with the February issue, now on line, the process should become streamlined with the next issues. Many options will be evaluated in the coming year, such as a publication alert service and papers being put online as they become ready. People who sign up for the publication alert service would automatically receive an electronic message informing them when a new issue has been posted. Upon recommendation of NRC Research Press, we have decided to make the electronic version of the journal available to all in 2000. In 2001, only members will have access to the full text articles through the use of a password. Please visit our web site and consult *The Canadian Mineralogist* on line. We look forward to receiving your comments and suggestions.

## ASSOCIATION NEWS

### News from the Publications Committee

At present, the members of the Committee are Roger Mitchell, Peter Burns, Pat Sheahan, Robert F. Martin, and Iain Samson. One of the tasks of the Publications Committee is to evaluate new projects and make recommendations to Council. This time, it recommended going ahead with the publication of a fully searchable CD-ROM version of *The Encyclopedia of Mineral Names and Glossary of Mineral Synonyms*. The Committee is working on the business plan and our editor is hard at work updating the files and doing the preparatory work. It should be available in February, 2001.

### Fluids and Basin Evolution

The MAC-sponsored short course on *Fluids and Basin Evolution* organized by Kurt Kyser and offered at GeoCanada 2000 was very successful with about 40 participants. The new short-course volume edited by short-course editor Rob Rae-side was very well received. Thanks to Kurt and Rob for this huge team effort!

### Short Course Coming Up

A two-day short course on *Principles and applications of laser ablation-mass spectrometry in the Earth Sciences* will be held in St. John's, Newfoundland, prior to the next GAC-MAC annual meeting. Here is what the organizer Paul Sylvester (Memorial University of Newfoundland) has to say:

"Laser-ablation ICP-MS is arguably the most exciting new analytical development of the last decade in geochemistry, opening approaches to pure and applied geologic problems that were only dreamed of before. More and more of these instruments are appearing in Earth Sciences departments, government labs and mining company facilities. Yet for many scientists, the details of the technique remain murky, hidden behind a facade of geochemical jargon and apparent technical complexity. This short course aims at teaching graduate students and post-graduate researchers how laser-ablation ICP-MS works, what is being done in the Earth Sciences with the method now, and what could be done in the future. It will appeal to all Earth Scientists interested in solving geological problems with chemical data." Nine speakers with extensive first-hand experience with this technique will lecture at a level of understanding suitable for most graduate students. A symposium on the same topic will be held during the annual meeting and will complement the short course.

### News from the MAC Foundation

The MAC Foundation had its annual meeting on May 27, 2000. Roger Mitchell was re-elected as Chairman of the Foundation. It was moved that the Chairman of the Foundation be a non-voting member of the MAC Council. A scholarship committee was struck to assess

### AWARDS PRESENTATION

As is customary, the MAC awards were presented at the annual luncheon held during GeoCanada 2000. We publish the citations below. Watch for full citations and responses from the awardees in the December issue of *The Canadian Mineralogist*.



The annual luncheon: a good opportunity to network and see old friends



The head table at the MAC luncheon

the applications received for the \$10 000 scholarship that will be awarded for the second time in 2000. Terms of reference were slightly modified so that, in future years, holders of other major scholarships like NSERC will also be eligible to apply for the MAC Foundation scholarship.

### Last Minute News

And the winner has just been announced! Martin L. Stewart, from the Department of Earth and Ocean Sciences at the University of British Columbia becomes the second winner of the MAC Foundation \$10 000 Award. Watch for a profile of the winner in the next newsletter.

## ASSOCIATION NEWS

### Undergraduate Students Awards 1999-2000

We congratulate the following students :

Julie Bélanger,  
Université du Québec  
à Chicoutimi

Rachel R. Gammell,  
University of Saskatchewan

Christina Johnson,  
Okanagan University College

Brian S. Kendall,  
University of Alberta

Katie Lucas,  
Lakehead University

William A. Matthews,  
University of Waterloo

Susan L. Newbury,  
Queen's University

Flavia Nunes,  
University of Toronto

Heather J. Paul,  
Acadia University

Kerry Vernier,  
Carleton University

These awards are given for excellence in one of the specialties supported by MAC. The award consists of one of MAC's publications, the choice of which is left to the prize recipient.

### The Hawley Medal to Puga, Ruiz Cruz & Díaz de Federico

The Hawley Medal is awarded for the best paper to appear in *The Canadian Mineralogist* in any given year. The selection for 1999 was especially difficult because there were a large number of excellent papers. The Hawley Committee, made up of Ben Edwards, André Lalonde and Mavis Stout, all agreed on the eight or so finalist papers but had a difficult time select-

ing the winner. After several e-mail discussions, they agreed that the best paper this year was:

Encarnación Puga, María Dolores Ruiz Cruz, and Antonio Díaz de Federico:  
Magnetite-silicate Inclusions in Olivine of Ophiolitic Metagabbros from the Mulhacén Complex, Betic Cordillera, Southeastern Spain. *Can. Mineral.*, **37**, 1191-1209.

The paper is based on extensive TEM imaging of minute inclusions of magnetite and amphibole in olivine crystals from the rocks of an ophiolitic sequence. From this lattice-scale information, the authors draw important conclusions on the metamorphism, tectonic evolution and fluid infiltration into these rocks. This extreme change in scale, from the atomic to the crustal scale, is quite impressive. The authors describe an outstanding study of exsolution processes in an interesting and complex geological setting. The study was well coordinated and applies the relevant new and established instrumental techniques. The paper sets the geological problem, presents the data and gives a logical, thoughtful interpretation supported by the data. In addition to being very readable, the paper includes high quality photographs which enhance the understanding of the reasoning and interpretation. Although quite technical, this paper can be read and understood even by the uninitiated because the authors have written with a flow and logic that allows the reader to follow their work from the intro-



Greg Dipple receiving the Young Scientist Award from President Brian Fryer.

duction through their closing interpretations.

Difficult personal and health reasons prevented all of the authors from making the journey from Spain to Canada to accept the medal. Our best wishes go to them for a change to happier circumstances.

### Greg Dipple Receives the Young Scientist Award

Dr. Greg Dipple is Associate Professor of metamorphic petrology in the Department of Earth & Ocean Sciences at the University of British Columbia. He was awarded tenure and promoted to associate professor in 1999. Greg is emerging as one of the truly innovative scientists in North American petrology and his nominee believes he has the intellect and scientific curiosity to become one of the premier researchers in the field of high-temperature reactive transport.

Although the Young Scientist Award is primarily for research excellence, it is appropriate to comment on his effectiveness as a teacher and mentor of students because students carry forward the research of their teachers and supervisors. He is recognized as an excellent lecturer; his undergraduate petrology course is considered a challenge and, although optional, attracts between 30 and 50 students each year. He always scores highly in teaching evaluations and has been nominated for several faculty teaching awards. He is an excellent mentor to young researchers as shown by the huge impact he has on students at field school, the success of his fourth year course on fluid flow and reactive transport (extremely quantitative), and the number of honours thesis students who come to him for support. Finally, he is sought by fac-

## ASSOCIATION NEWS

ulty and students alike to serve on graduate student supervisory committees for his expertise in both field and theory.

Greg's field of research is broadly metamorphic petrology. His current focus is quantitative studies of fluid flow dynamics and mass transfer in hydrothermal systems, be they metamorphic or metallogenic. What makes his work novel is that his numerical modeling is coupled to the natural occurrences. His field observations provide him with the mineralogical and chemical signature of fluid flow. These field results are then combined with and interpreted through numerical models of coupled heat flow, fluid flow and mineral reactions. His work has shown that it is the mineral reactions that create the complexity and the richness of metamorphic assemblages.

Greg has over the past few years broadened the base of his research activities and has become an important player within the Mineral Deposits Research Unit (MDRU) at the University of British Columbia. He has co-supervised graduate students who are working on metallogenic thesis topics, taught courses on rock-water interaction for MDRU students, and is currently a co-investigator on the "Magmatic-Hydrothermal" MDRU research grant. He has also received considerable funding from industry for petrological modeling studies of a wollastonite skarn deposit. All of these are signs that he can provide innovative solu-



**Greg Anderson receiving Past Presidents' Medal from Jim Nicholls**

tions for practical problems related to ore-deposits using his theoretical-computational-field skills. Broad research interests and abilities are the hallmark of excellence.

### **The Past President's Medal to Greg Anderson**

Greg Anderson is known throughout the world for his extraordinarily thorough approach to experimental work and for the theoretical application and interpretation of the resulting data. Never being content with empirical data, he is always testing and evaluating them against thermodynamic predictions for the reactions that occur in rocks and ore deposits. He has instilled the importance of this approach in a large number of graduate students. Greg provides help, instruction, and insight

in the use and interpretation of thermodynamics and phase equilibria to colleagues at the University of Toronto, across Canada, and around the world.

Greg started his career at McGill University and then moved to the University of Toronto for his graduate work, where he came under the influence of F. Gordon Smith. His Ph.D. thesis was an experimental study of the solubility of lead sulfide and its applications in nature, a subject that has remained close to his heart to this day. On leaving Toronto, he spent four years at Penn State where he collaborated with Wayne Burnham on further studies of mineral solubilities at high pressures and temperatures. He returned to the University of Toronto in 1965

and set up a state-of-the-art experimental laboratory, including rocking furnaces for measuring mineral solubilities, and internally heated gas apparatus.

His long-term association with a former M.Sc. student, Dave Crerar, led to the publication of *Thermodynamics in Geochemistry* in 1993, of which a revision has just come out, and to *Thermodynamics of Natural Systems* in 1995. These textbooks alone would ensure Greg's place and standing as a premier scientist in Canada and the world. Greg has shown himself to be one of Canada's leading exponents of the importance of taking a quantitative approach to the solution of geological problems, ranking with the very best in the world.

## CALL FOR NOMINATIONS

The Mineralogical Association of Canada honours outstanding scientists each year with its Past Presidents' Medal and its Young Scientist Award. Selecting medalists requires the help of members of the Association in the form of nominations. Assembling the documentation to support the nomination takes some effort and energy from the nominator but the reward of seeing outstanding scientists recognized more than repays the effort.

I ask you, the members of our Association, to please give some thought to nominating scientists you think are deserving of these awards. The criteria for the medals are listed below. I look forward to receiving your nominations.

J. Nicholls

### THE YOUNG SCIENTIST AWARD

This award is given to a young scientist who has made a significant international research contribution in a promising start to a scientific career. The areas of research considered are any or all of those covered by the Mineralogical Association of Canada.

- The scientist will be 40 years or younger at the time of the award.
- The scientist must be a Canadian working anywhere in the world or a scientist of any nationality working in Canada.
- The research areas include mineralogy, crystallography, petrology, geochemistry, mineral deposits, and related fields of study.
- The candidate must be nominated by a member of MAC.
- The letter of nomination must be accompanied by a statement giving the accomplishments of the candidate, the candidate's curriculum vitae, and list of publications.
- Candidates may also be identified by members of the selection committee.
- The selection committee will be made up of the Past President and three other MAC members selected by the Past President.
- The selection of the winning scientist normally will be made in January or February in order that the award be presented at the May Annual Meeting of the Association.
- The award need not be presented in any given year if a suitable candidate cannot be found.
- Previous winners of the award are Peter Burns (1998), Lee Groat (1999) and Greg Dipple (2000).

Nominations should be sent to Dr. Jim Nicholls, Department of Geology & Geophysics, University of Calgary, 2500 University Drive NW, Calgary, Alberta T2N 1N4, by December 31<sup>st</sup>, 2000.

### PAST PRESIDENTS' MEDAL

The Past Presidents' Medal is awarded to a scientist who has made outstanding contributions to the mineralogical sciences in Canada. There is no restriction regarding nationality or residency. The medal is intended to recognize the breadth and universality of these contributions in mineralogy, applied mineralogy, petrology, crystallography, geochemistry or the study of mineral deposits rather than in a narrow area of expertise. A committee of three Past Presidents, chaired by the immediate Past President, considers all nominations received. Nominations should be accompanied by a one page explanation of the merits of your nominee and forwarded to Dr. Jim Nicholls, Department of Geology & Geophysics, University of Calgary, 2500 University Drive NW, Calgary, Alberta T2N 1N4, by December 31<sup>st</sup>, 2000.

Previous recipients of the medal are:

Len Berry (1982), Gabrielle Donnay (1983), Petr Černý (1984), Denis Shaw (1985), Don Sangster (1986), Peter Roeder (1987), Steve Scott (1988), Rob Kerrich (1989), Lincoln Hollister (1990), Tony Naldrett (1991), Robert Boyle (1992), Louis Cabri (1993), Roger Mitchell (1994), Hugh Greenwood (1995), Thomas E. Krogh (1996), Mike E. Fleet (1997), Fred J. Longstaffe (1998), Frank C. Hawthorne (1999) and Greg Anderson (2000).

### BERRY MEDAL

The Leonard G. Berry Medal is awarded annually for distinguished service to the Association in an elected role. The award recognizes significant service to the Association in one or more areas that may include leadership or long-term service in an elected or appointed office. The medal is named after Leonard G. Berry (1914-1982), a founding member of the MAC, editor of *The Canadian Mineralogist* and its predecessor for 25 years and first winner of the MAC Past Presidents' medal. The medallist is chosen by a committee consisting of the two immediate past recipients of the medal and one member-at-large, chaired by the Vice-President (ex officio). Nominations are encouraged from the membership at large and should be sent to Dr. Norm M. Halden, Dept. of Geological Sciences, University of Manitoba, Winnipeg, Manitoba R3T 2N2, by December 31<sup>st</sup>, 2000.

Previous recipients of this medal are :

Les Nuffield (1988), Guy Perrault (1989), Joe Mandarino (1990), Dick Alcock (1991), John Jambor (1992), Louis Cabri (1993), Ann Sabina (1994), Bob Gait (1995), Sol Kaiman (1996), J.M. Duke (1997), Dorian G.W. Smith (1998), and Norman Halden (1999).

## THE EDITOR'S CORNER

### THE MORNING MAIL

In the last issue, I hosted an informal fireside chat, in which I told you of the people behind *The Canadian Mineralogist* operation. Now in response to popular demand, I invite you to join me in the suite of our editorial offices, where the action really takes place. You can imagine that I and my staff occupy a corner suite of a skyscraper in downtown Montreal, with a fantastic view of Mont Royal ever present, always there to inspire when the spirit sags. We enjoy this prime real estate, comparable in comfort and amenities, I am sure, to the accommodations in the Elsevier high-rise in Amsterdam and the Springer-Verlag tower in Heidelberg. We are all allowed to fantasize, aren't we?

As soon as the morning mail has been brought up to our suite by the postman, the editor scans and "prioritizes". If a new manuscript has come in the morning mail, a decision is made as to which Associate Editor (AE) it will be assigned, and this decision is communicated to my assistant, currently Ms. Azin Zangooi. Azin prepares the forms to be sent promptly to the AE, along with two copies of the new manuscript. On one of these forms, the AE will record the names of the referees selected (my instructions are that we try to find the best pair of referees for the job!) and the dates of receipt, etc. The other forms are used by the referees in their evaluation of the manuscript. A conscious effort is made to assign a manuscript close to the AE's field of interest; at

the same time, I must be wary not to overload an AE. In some cases where a submission is too offbeat, where the appropriate AE is overloaded, or on vacation somewhere, or where I believe that I can serve the author best by choosing the referees, I do not hesitate to take over the responsibilities of the AE.

For any article on a new mineral species, still treated as first-rate science in *The Canadian Mineralogist*, a copy of the newly submitted manuscript is forwarded to Dr. Joseph A. Mandarino, who scrutinizes all the basic physical and chemical data for internal consistency. He thus ensures "quality control" on all documentation relating to new mineral species.

The morning mail may also bring in a fat envelope from an AE, typically containing two copies of a marked-up manuscript, copies of two reports from well-qualified referees, and a clear recommendation to me as to what to do with this particular manuscript. The AE is encouraged to add comments to those formulated by the referees.

If the recommendation is to turn down a manuscript, which happens in about 25% of the cases, I must draft a diplomatic letter to the author(s) in which I clearly summarize the aspects of the manuscript that led to such a negative decision. In some cases, the recommendation is based on a combination of factors, for example, lack of originality, regional interest only, and knowledge of the scientific literature that is judged inadequate. In such



"Now what is that author really trying to get across?" Editor Robert F. Martin with the ever-present red pen at the desk of Associate Editor Filippo Vurro, at the University of Bari, in southern Italy, November 1999.

cases, there is little likelihood that I will ever see a reincarnation of that submission. In other cases, however, the letter of rejection needs to be softer, with a subtle invitation to "take the bull by the horns" in addressing flaws pointed out by the referees and AE. The scientific content may be first-rate, but the changes required may be judged to be too drastic to salvage the present version. In most cases, the authors in this category do resubmit a new and dramatically improved version. I circulate the revision anew to the referees who evaluated the first version, along with a copy of their earlier remarks, so as to easily allow them to decide whether their main misgivings have been accommodated.

If the AE has recommended that I accept the manuscript, then I must plow through it myself, in order to get to know it well, so that I can add my two cents' worth. My aim is to help the author(s) give me the highest-impact contribution they can prepare. I am at this

point thinking of enhancing the impact of their contribution and the journal's own impact. I typically add my annotations to the manuscript before reading the referees' comments. If I happen to comment on the same areas of weakness as one or both referees, then the author gets the hint that this is probably an important area to try to improve. But typically, my comments address areas that referees and the AE have not touched. For example, I happen to take seriously my role as "custodian" of the IMA-approved nomenclature. I insist that in *The Canadian Mineralogist*, the quality of writing be on a par with the quality of the scientific content. Furthermore, I insist that all authors write in a straightforward way, in such a way that the message is understood by all in our international audience. I do not hesitate to tell the author(s) of the changes that I want to see done to the text, tables and figures. This brashness is done with a keen sense of self-preservation, as I will see that manu-



## THE EDITOR'S CORNER

script again! Thus it is in my best interests to get my message across to the author(s) clearly and emphatically.

The morning mail may also bring in an author's corrected manuscript, complete with an electronic version and a covering letter, in which the reactions to the reviewers' remarks, the AE's words of wisdom and my annotations are explained to me. The author(s) usually express gratitude for the time spent on their manuscripts, and the useful suggestions that have been made. Of course, not every suggestion is accepted or needs to be. What is important is that there be discernible efforts to improve the product. At this point, I must read the improved manuscript, to make sure that the improved article is ready for the next step. I write the author(s) once more, to tell them what "loose ends" need to be fixed, and in which issue the article will appear. If the list of these "loose ends" is too long, I have been known to return a revised manuscript for further "fixing". As of this writing (July 7<sup>th</sup>), I am accepting revised manuscripts for the October issue.

The morning delivery may well bring in proofs from our typographer. I insist on reading the proofs before I send them to the author(s). This is my last opportunity to ask those last-minute questions about inconsistencies, apparent errors, etc. At this stage, I send a photocopy of any article on a crystal-structure determination to Technical Editor Robert T. Downs. It is another way that quality control is assured in the articles that are published

in our journal. Any glitches and inconsistencies are addressed *via* e-mail communications, as the end of the process is in sight by this point.

Finally, I get a steady stream of corrected proofs. I scrutinize these, evaluate the new changes indicated by the author(s), decide what further modifications need to be conveyed to our typographer. At this advanced stage of the preparation of an issue, page proofs are sent to me by the typographer, and the final glitches are corrected. Pierrette Tremblay steps in to look over the typographer's shoulder (literally) to make sure that the corrections requested are interpreted properly. The adrenalin flows more quickly as the end of the process approaches. The final proofs are sent to me by the printer of our journal, and very few last-minute changes usually need to be made before the presses start to roll.

The morning mail thus may bring in elements in the overall process that pertain to its very beginning or to its final stages, and everything in between. I typically operate like a juggler, with many balls in the air at once. It is an exhilarating feeling to be part of this great adventure, and a great pleasure to acknowledge the help of all who willingly give of their time to make it happen.

Robert F. Martin

Note from the Newsletter Editor : In case you wondered - it sounded so real - the beautiful suite overlooking Mount Royal does not exist except in the imagination of our editor ! Neither does the staff!

## PEOPLE BEHIND MINERAL NAMES

The Newsletter Editor is pleased to present the first of what will hopefully be a regular feature of the MAC Newsletter. The idea is to introduce you to a person or persons being honored by the naming of a new mineral species as described in the pages of a recent issue of *The Canadian Mineralogist*.

The new series starts off with a profile of T. Dennis Coskren, after whom the new species *coskrenite*-(Ce) was named. This new species was described in the following article:

PEACOR, D.R., ROUSE, R.C., ESSENE, E.J. & LAUF, R.J. (1999): *Coskrenite*-(Ce),  $(\text{Ce,Nd,L a})_2(\text{SO}_4)_2(\text{C}_2\text{O}_4)\cdot 8\text{H}_2\text{O}$ , a new rare earth oxalate mineral from Alum Cave Bluff, Tennessee: characterization and crystal structure. *Can. Mineral.* **37**, 1453-1462.

In the above article, Don Peacor and coworkers mention that T. Dennis Coskren (b. 1942) is a geochemist and geologist from Columbia, Maryland, who discovered the new mineral, the first known example of a rare-earth oxalate. In addition, Dennis discovered two other rare-earth oxalates at Alum Cave Bluff, *levinsonite*-(Y) and *zugshunite*-(Ce), both recently characterized by the same team at the University of Michigan. A look at the membership list shows that Dennis is an MAC member, obviously one with a flair for the new and unusual, and a keen observer..... Just who is this man?

Dennis Coskren became interested in minerals through a fascination with crystals and crystallography, acquired



Dennis Coskren wearing a one-of-a-kind sweatshirt

when he inadvertently grew a batch of salt crystals during his high school days in Lawrence, Massachusetts. He quickly learned that crystals could be found in local rocks, and he could be seen pounding garnet crystals from granite boulders in the foundation of his parents' house (they were unusually tolerant!). He soon joined the Boston Mineral Club, through which he became acquainted with the wealth of pegmatite minerals of New England. He has been collecting and studying minerals since.

Dennis received his B.S. in geology from MIT after fighting the blackflies and the Ordovician/Devonian rocks of Aroostook County, Maine. His M.S. and Ph.D. projects at the University of Kentucky [where he crossed paths with William H. Dennen and

William H. Blackburn] were exercises in physical (geo) chemistry; his dissertation applied fractal theory to the development of domains of equilibration in metamorphic carbonates. While working on his doctorate, he also mapped the Pennsylvanian rocks of eastern Kentucky for the U.S. Geological Survey, and organized and led post-meeting GSA field trips to the Pine Mountain thrust sheet at the Kentucky – Tennessee – Virginia juncture. After a few years of teaching, he turned his hand to environmental geology and acquired a working knowledge of hydrogeology and the chemistry of soil and groundwater contaminants. He is still engaged in environmental assessment work, but maintains his active interest in mineralogy and geochemistry through his ongoing study of the evaporite deposit at Alum Cave Bluff in the Great Smokies of Tennessee. Other interests include birding, chess (*via* the internet), and music.

The interested reader wishing to find out more about Alum Cave Bluff and the curious environment of formation of those fascinating rare-earth oxalate minerals should consult the following article co-authored by Dennis Coskren:

COSKREN, T.D. & LAUF, R.J. (2000): The minerals of Alum Cave Bluff, Great Smoky Mountains, Tennessee. *Mineral. Rec.* 31(2), 163-175.

Robert F. Martin

## MUSEUM NEWS

### THE PACIFIC MINERAL MUSEUM

This brand new museum opened in January, 2000 in a heritage building in the heart of downtown Vancouver. What is truly amazing is that this museum came to life solely through efforts of dedicated individuals who raised the money privately.

After the shutdown of the M.Y. Williams Geological Museum of the University of British Columbia, due to cut-backs in 1995, there was no active museum dedicated to minerals in Western Canada. Discussion between Joe Nagel, former curator of the M.Y. Williams Geological Museum, and Ross Beaty, a Vancouver mining executive, led to the founding of the Pacific Mineral Museum Society in 1997, as a registered non-profit charitable society. The Society's first task was to find a home for the museum. After one year of looking at various possibilities in the Vancouver area, the perfect site was found in the heart of Vancouver's financial district. Once a lease was secured, fundraising efforts began in earnest among the mining and mineral collecting communities.

Built in 1921, the heritage building housing the museum was extensively renovated, while preserving the original exterior appearance. Interestingly enough, the original architects had gone to considerable effort to ensure the use of materials from British Columbia. Renovations included seismic upgrading, modernization of all building systems, addition



A new museum in a heritage building

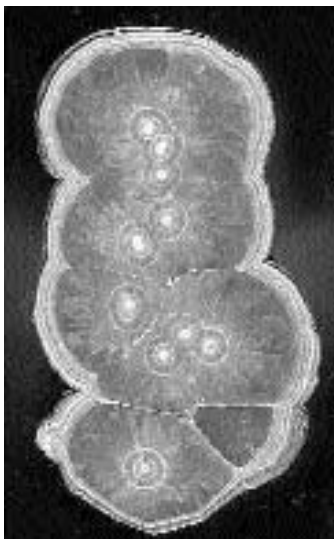
of elevators, and changes that made the building wheelchair accessible.

Director/curator Mark Mauthner has chosen to present minerals in terms of the stories they tell - how they relate to our daily lives, to the Earth's various cycles and to the universe. His main objective is to leave visitors with a new appreciation that minerals are valuable and this at three levels. First, minerals are beautiful, natural art objects. Second, minerals are

useful; humans depend on them every day. Third, minerals are part of everything in the universe. In order to illustrate this, he has displayed minerals in a way that departs from the traditional taxonomic and descriptive presentation of the past.

The Museum has three galleries. The Discovery Gallery, on the first floor, introduces the nature of minerals and addresses the questions "What are minerals? Where do they come

## MUSEUM NEWS



Beautiful rhodochrosite from Argentina – one of the prized samples of the museum

from?" The Main Gallery on the second floor is a collection of anecdotal displays which allow minerals to tell their fascinating stories. The Vault Gallery, also on the second floor, showcases an awe-inspiring display of silver, gold, platinum, and gems.

An appealing giftshop greets the visitor and offers a wide range of souvenir items, books, and toys. For collectors, there is a wide selection of minerals and fossils ranging from beginner level and study kits to world class connoisseur level specimens. Some of the latter have been designated as "sponsorship candidates". These specimens may be purchased and donated to the Museum's collection. A tax receipt for the purchase price is issued and the donor is recognized on every label associated with the piece whenever it is displayed.

The museum is open to school visits, and an educational program to complement the curriculum developed by the Mining Association of BC is currently under development.

The Pacific Mineral Museum  
848 West Hastings Street  
Vancouver, BC  
V6C 1C8  
[www.pacificmineralmuseum.org](http://www.pacificmineralmuseum.org)



View of the Main Gallery

## CONFERENCE NEWS

### GEOCANADA 2000

More than 3000 geoscientists gathered at the University of Calgary campus for a five-day extravaganza of talks from May 29<sup>th</sup> to June 2<sup>nd</sup>. It was the largest meeting of geoscientists ever held in this country as six geosciences societies worked together to present a joint annual meeting: the Canadian Society of Petroleum Geologists, the Canadian Society of Exploration Geophysicists, the Canadian Well Logging Society, the Canadian Geophysical Union, the Geological Association of Canada, and the Mineralogical Association of Canada. The conference opened with a morning of plenary sessions introducing the three key issues in Earth Sciences addressed at this summit meeting: first, the future of the resource industries; second, the future directions of research in Earth Sciences; and third, the interface of Earth Sciences and society. Three symposiums went deeper into each of these themes during the conference. Three to five keynote addresses were held each day prior to lunch and drew large crowds.

The exhibits and poster sessions were held in the olympic speedskating oval while the talks were spread out all over the campus. Attending sessions had to be mapped out carefully as there were about fifteen concurrent sessions at any one time. As has become customary, the talks ended at 3:30 PM to give everyone an opportunity to see the posters. One novelty, this

year, was that posters were up for the length of the conference giving more time to see all the posters one was interested in. Even though the authors were only slotted for one day of the conference, many of them were to be found in their general poster area during the poster sessions.

There were many excellent thematic sessions to choose from. Three of them held the attention of many petrologists: *How Do Magmas Solidify?* convened by Michael Higgins and Tony Fowler, and reviewed by Peter Roeder at the end of this article; *The Future of Petrology*, convened by David Pattison, Dante Canil, and Greg Dipple; and *Granites and Granulites: Making the Lower Crust*, organized by Edward Sawyer, Tom Chacko, and David Pattison.

One other highlight was the presidential address given by Past President Jim Nicholls, entitled *Thermodynamics of a Magmatic Gas Phase – 50 Years Later*. Jim presented an outstanding talk on a paper written in 1949 by one of his personal heroes, John Verhoogen of the University of California. This paper documented the first sophisticated application of thermodynamics to problems in igneous petrology and was clearly ahead of its time. Watch for Jim's address to be published in a future issue of *The Canadian Mineralogist*. I am sure many of the scientists present at the talk will be searching for the original paper.

Members of the local organizing committee of

## CONFERENCE NEWS

every annual meeting devote an enormous amount of time in planning and orchestrating the event. With a meeting of this size, as one can expect, potential for logistical problems is enormous, but everything ran extremely smoothly. Congratulations to the GeoCanada 2000 team for giving us a memorable meeting.

Pierrette Tremblay

### How do magmas solidify?

One of the highlights of the GeoCanada 2000 meeting in Calgary was the special session on *How Do Magmas Solidify?* sponsored by MAC. It brought home how the study of igneous rocks has changed since I first read *The Evolution of the Igneous Rocks* by N.L. Bowen in 1955. Much of the focus at that time was on the evolution of one melt to another melt with little attention paid to the textural diversity in both extrusive and plutonic igneous rocks, or the tremendous wealth of information that these textures might divulge about the cooling history of these rocks. The special session covered a very large range of textures from the classic large-scale layering in the Skaergaard (McBirney) to the fine-scale rhythmic layering in the Stillwater (Boudreault); from the simulation of textures in a crucible (Freda & Baker) to the giant 3-4 metre spherulites, shown in photographs with tiny geologists for scale, that occur in a rhyolitic vitrophyre from Colorado (Smith *et al.*).

The interpretation of textures is so often in the eye of

the beholder and the so-called "eye" includes techniques as diverse as electron microscopy, X-ray CT scans, and old-fashioned outcrop observation. How many geologists walked over the very extensive Holyoke flood-basalt flow in Connecticut and Massachusetts and never noticed boas of radiating plagioclase crystals that created extensive millimetre scale layering (Dickson & Philpotts)? For those geologists who are less fashion conscious, a boa is defined in my dictionary as "a round scarf of fur, feathers etc., for the neck". Maybe it is time that this definition be expanded to include plagioclase.

The large range of interesting textures described in this session were explained by everything from a "general one dimensional wavelet transform equation" (Fowler & Prokoph) to textural coarsening using CDSs (Higgins) to a coupling of thermodynamic and kinetic data to explain the time scales of magmatic processes (Edwards & Russell). I came away from this session with the feeling that my traditional view of igneous rocks should be broadened to include that range of processes of very slow fluid (melt) flow through a crystal mush, to the recrystallization and textural reorganization that I always left to the very "simple" realm of the metamorphic petrologist. I have even wondered if I and my colleagues should rename our igneous petrology profession.

I hope I have stimulated the reader to go to their computer and call up the

abstracts of this fascinating group of papers. However let the reader be warned that searching the CD-ROM that contains the abstracts is not for "the faint of heart". I found the searching software "clunky" and not easy to use. I am old-fashioned enough to want to have a paper copy of abstracts where I do not need to lug a computer + CD drive to my hotel room or to the session itself in order to view the abstracts. I hope one of the organizers of the next GAC/MAC meeting takes heed. I compliment MAC and the organizers of this year's special session for producing a fascinating collection of about 20 papers that stimulated this reviewer to look at his chosen field in a new light. It is obviously never too late.

Peter L. Roeder

### The Tucson Gem and Mineral Show

For the third year in a row, I had the opportunity to staff the exhibit booth of the Mineralogical Association of

Canada at Tucson. For MAC, it is a unique chance to meet far away members, to create links with the mineral community, and exchange with colleagues from MSA. It is always a pleasure to discuss ideas and projects with Alex Speer. It also allows us to hear first hand reactions from people to our latest publications and test ideas for future projects. Many people dropped by: Dan Caudel, one of the originators of the TGMS, John Sinkankas, author of *Gemstones of North America*; Brendan Laurs from *Gems and Gemology*, Skip Simmons, and many, many more.

As many mineralogical magazines publish extensive accounts of the novelties at the show, my account will be a very personal and subjective one. The first year I went to Tucson, I felt totally overwhelmed. The second year, I was sick so everything was just a blur. This third year was the first year I really took it all in. The Tucson show is in fact a series of shows all over the city of Tucson lasting a full two weeks. Satellite



Editor Robert F. Martin is always happy to tell visitors about our publications.

## CONFERENCE NEWS



A chance encounter at the MAC booth at the Tucson Gem and Mineral Show in February, 2000: Takaharu Araki, after whom the mineral arakiite is named, Frank C. Hawthorne, who solved and described its structure in a recent issue of his favorite journal, and Robert F. Martin, who makes sure that everything gets edited (the verb "martinized" has been proposed as a synonym) and published. Dr. Araki, now enjoying retirement, spent a few years at McGill University in the early seventies. Before this chance encounter, Frank and Takaharu had not had the pleasure of meeting. Interesting encounters do take place at the MAC booth!

shows in various venues – mostly hotels – last from January 30<sup>th</sup> to February 12<sup>th</sup>. You can see everything in Tucson, from the most exquisite crystals, to the rarest, to the gaudiest.

Here are some of my most vivid memories from my visits to the hotel suites and various venues:

- A warehouse full of enormous quartz crystals from Arkansas still in their packing crates, ready to go. I felt like I was going into Alibaba's cave.
- Newly discovered dark bluish green fluorite from the Rogerley Mine, Durham County, England. This fluorite fluoresces even in daylight and a small sample was added to my fluorite collection;
- Hearing first hand the story behind the beautiful aegirine crystals Karl A. Cull-

mann brings back from his many trips to Mount Malosa, Malawi;

- The beautiful fresnoite crystals found by the owner of Great Basin Minerals in the summer of 1998;
- The mythical orbicular jasper from Madagascar – exhibited for the first time by Gilbert Gauthier who



Our neighbours at the show, Peter Modresky from the USGS and his wife Jane

had been searching for this occurrence for many years.

The Tucson Gem and Mineral Show held at the convention center closes this mineralogical extravaganza. This year, the 46<sup>th</sup> show highlighted the minerals of Brazil. Many of the museums and private collectors displayed their best specimens from that country. For best commercial display, my vote goes to The Collector's Edge. Bouquets of red roses set off

the displays of beautiful rhodochrosites from the Sweet Home mine, green amazonite, and smoky quartz from Colorado. This year, orpiment crystals from the Twin Creeks mine were also exhibited for the first time. And Patrick Haynes will take just as much care in helping you choose a \$5 crystal than one costing hundreds of dollars.

Pierrette Tremblay



One of the many dazzling exhibits at the show

## FEATURE

### FRIENDS OF THE GRENVILLE: A RETROSPECTIVE VIEW

Although the "Friends" did not formally come into existence until 1972, our roots really go back to 1967, when Hugh R. Wynne-Edwards, then Chairman of Geology at Queen's University, hosted AZOPRO (Association pour l'Etude des Zones Profondes de l'Ecorce Terrestre) and the GAC-MAC Annual Meeting in Kingston. With contributions from Jack Henderson, Jim Brown, Sid Lumbers, Al Gregory, Ken Card, John Gittins, Jacques Martignole and John Moore, he assembled a guidebook to a set of Grenville field excursions, including a monumental 12-day, 3000 km traverse that extended from Kingston as far west as Coniston, and east to Lac St. Jean, and cut two major transects across the orogen. Wynne reran parts of these trips for the graduate students at Queen's (among them Jamie Bourne), and in the process raised a great deal of enthusiasm for more work on Grenvillian rocks. Around this time, the Solid Earth Science Study Committee (of the Science Council of Canada), in a critique on the state of Earth Sciences in Canada, recommended: "...creation of better personal contacts between Grenville workers. This could be furthered by field trips and symposia. No formal organization is necessary and a sort of "Grenville Club" seems best suited to the purpose. The association should also eventually include U.S. institutions working in the Adirondacks."

It was Alec Baer, then at the GSC and newly responsible for work in the Grenville Province, who in the fall of

1971 wrote to all the interested parties he knew, proposing the formation of such a "loose-knit fraternity". This call led to the inaugural meeting, in the afternoon of February 16, 1972, in the Steacie Building at Carleton University. It was attended by at least 58 people, mainly from Ottawa but including delegations from Montréal, Québec, Queen's University and representatives of McMaster University and University of Waterloo. An executive was acclaimed, comprising John Moore (Chairman), Dugald Carmichael (Vice-Chairman) and Alec Baer (Secretary-Treasurer). A number of field trips were proposed, and one led by Alec Baer adopted for the following spring (see below; it is interesting to note that, of the five suggestions made at the meeting, all but one have been carried out - a visit to Dugald's thesis area at Whetstone Lake!). Hugh Wynne-Edwards presented a preview of his synthesis of the Grenville Province, to be published in the GAC volume *Tectonic Styles in Canada*. That evening, a social event was held at John Moore's house, during which a paperweight was presented to Wynne, (who had recently announced his intention to leave Queen's for UBC) "in appreciation of his energy, imagination and outstanding contribution to Grenville Geology". The ornament depicted the "basal contact of the Grenville Group", fabricated in the lapidary shop at Carleton from Algonquin Park granulite, and Balmat-Edwards marble (we hope that Wynne still has it, because it remains the only direct evidence of an (un-ectonized) unconformity at that contact!).

In the fall of 1972, John Moore abandoned his presidential duties and went with Tony Davidson to Ethiopia, and the then Grenville Club appears ever since to have been run by its Secretary-Treasurer: Alec Baer (1972-77), Jamie Bourne (1978-85) and now Tony Davidson. Between 1981 and 1982, it

underwent metamorphism to "Friends of the Grenville". Since 1970, there has been an unbroken chain of annual two-day excursions, moved near the inception to a more acceptable end-of-September schedule. The field trips typically alternate between Ontario, Québec and New York:

1970:	Grenville Front	Sid Lumbers
1971:	Kipawa area, Québec	Maurice Rive
1972:	Huntsville to Kaladar	Alec Baer, John Moore
1973:	Central Adirondacks	Dirk de Waard
1974:	Morin Anorthosite	Jacques Martignole
1975:	S.E. Adirondacks	Brian Turner
1976:	Saint-Maurice Valley	Jehan Rondot
1977:	S. Adirondacks	Jim McLelland
1978:	Gatineau-Lièvre area	Jamie Bourne, Don Hogarth
1979:	Charlevoix, Québec	Jehan Rondot
1980:	Flinton Group	Peter Thompson, John Moore
1981:	Saguenay Valley, Québec	Gérard Woussen, Erich Dimroth, Ned Chown, Denis Roy
1982:	Parry Sound, Ontario	Tony Davidson, Nick Culshaw, Léopold Nadeau
1983:	Marcy Massif, Adirondacks	Howard Jaffe, Elizabeth Jaffe, Paul Ollila, Leo Hall
1984:	Minden-Chandos area, Ontario	Mike Easton, Larry Heaman, Bob McNutt, Denis Shaw
1985:	Central Granulite Terrane, Quebec	Jacques Martignole, Aphrodite Indares
1986:	New York Lowlands	Bill DeLorraine, Jim McLelland
1987:	Frontenac Arch	Dugald Carmichael, Herb Helmstaedt

This is an impressive record of continuity for any organization, but especially one with so little bureaucracy and no budget! Clearly our format is a good one: plenty of time for pre- and syn-excursion socializing, identification of "volunteers" and venue for the following year at the annual excursion dinner, after the warming effect of a good deal of food and drink... The side effects of the organization's vigour are also notable: two full-fledged workshops, a linked GAC symposium, field excursions and volume, and now a

newsletter - The Foghorn/L'Appel edited by Léopold Nadeau and Tony Davidson. We owe a great deal to the vision of Wynne and Alec - who have both gone on to higher offices - and to the dedication of our Secretary-Treasurers, their organizations and friends who support them. Most of all though it is the rocks, the beautiful enigmas, that keep drawing us back, year after year, rain or shine. May it never cease!

John Moore  
and Jamie Bourne

## FEATURE

### ADDENDUM

Since the foregoing notes were written in 1987, the Friends have continued to hold a field meeting every fall, and although attendance has fallen off somewhat in the last decade (from highs of 60 to 70 participants in the early 1980s to more like half that number), enthusiasm is as healthy as ever. In addition, a highly successful and well attended third Friends of the Grenville Workshop was held in Québec City in 1992, special sessions were held at GAC-MAC Annual Meetings in 1989 and 1994, and symposia at the Northeast GSA Meeting in 1990 and the South-Central GSA Meeting in 1992. Even more notable was the holding of two special field trips during the summer in Labrador, exposing Friends to geology normally out of range for the purposes of the annual fall excursion.

A curious and, in fact, somewhat alarming matter of record concerns the "incendiary" tendencies of the Friends of the Grenville workshops. Shortly after the first one, the establishment where it was held, at Rideau Ferry, Ontario, burnt to the ground. Shortly before the second one convened, the place where it was to be held, near Gananoque, Ontario, suffered a serious fire, and the venue had to be changed at very short notice. And to cap this off, Château Montmorency near Québec City, where the third workshop was held, was the scene of a repeat of the Rideau Ferry Inn workshop! A fourth workshop is planned for the fall of 2000; the organizers are keeping their fingers crossed!

At the present time, management of Friend's affairs lies in the hands of Louise Corriveau and Léopold Nadeau at the Centre géoscientifique de Québec, CP 7500, Ste-Foy QC G1V 4C7.

Below is a continuation of the record of Friends of the Grenville field trips and a list of other activities. Field trip guidebooks for all trips from

- 1988:** Grenville Front, Killarney  
**1989:** Potassic plutons  
**1990:** NE Adirondacks  
**1991:** Huntsville area  
**1992:** CMBBZ, Maniwaki area  
**1993:** Western Labrador (*special trip*)  
**1993:** Hyde School Gneiss, Carthage-Colton MZ  
**1994:** Sharbot Lake area  
**1995:** CMB Quebec  
**1996:** SW Adirondacks  
**1997:** N Shore St Lawrence (*special trip*)  
**1997:** Frontenac area  
**1998:** Portneuf – Mauricie area  
**1999:** Hudson Highlands  
**2000:** Barry's Bay, Algonquin

1976 to the present are being held in archive, and can be photocopied on request (at cost to the requester).

- Tony Davidson, Kathy Bethune  
Louise Corriveau  
Jim Olmsted *et al.*  
Léopold Nadeau  
Kamal Sharma *et al.*  
Jim Connelly, Jeroen van Gool, Toby Rivers, Don James  
Norm Grant *et al.*, Tony Heyn  
Tony Davidson, Mike Easton  
Louise Corriveau *et al.*  
Phil Whitney *et al.*  
Charlie Gower, Ian Knight, Toby Rivers  
Mike Easton, Tony Davidson  
Léo Nadeau, David Corrigan  
Alex Gates *et al.*  
Sharon Carr *et al.*

### List of workshops, special sessions, symposia, etc.

- 1982:** 1st FOG workshop, Rideau Ferry Inn, Ontario, Feb 12-14. <sup>(†)</sup>  
**1984:** Symposium: "New Perspectives on the Grenville Problem", GAC-MAC, London, Ontario, May 15 (leading to GAC Sp. Pap. 31, "The Grenville Province").  
**1988:** 2nd FOG workshop, Blinkbonnie Inn, Gananoque, Ontario, Mar 4-6. <sup>(†)</sup>  
**1989:** Special session: "The Grenville Province – New Developments", GAC-MAC, Montréal, Québec, May 15-16.  
**1990:** Symposium: "Grenville Province: Sudbury to Vermont", GSA, NE section, Syracuse, NY, March 6.  
**1992:** Symposium: "Evolution of Grenville Basement", GSA, S-C section, Houston, Texas, Feb 25.  
**1992:** 3rd FOG workshop, Château Montmorency, Québec, April 3-5. <sup>(†)</sup>  
**1994:** Special Session: Terranes, domains and lithotectonic assemblages within the Grenville Province", GAC-MAC, Waterloo, Ontario, May 16-17.  
**2000:** 4th FOG workshop, Barry's Bay, Ontario (reconciliation of CMB models)

(†) Abstract volume available for photocopying.

Tony Davidson

### Note from the editor

In the previous newsletter I shared some of the happenings of the last Friends of the Grenville field trip. Many thanks to Tony Davidson who provided this retrospective of this long lasting group. The next Friends of the Grenville field trip will be held from September 29 to October 1,

2000, and will be led by Sharon Carr and Sarah McMullen in the Bark Lake-Maynooth/Bancroft-Gooderham area, in Ontario. It will be followed by a workshop on the *Assembly and Breakup of Rodinia*. Contact Sharon Carr at scarr@ccs.carleton.ca or Louise Corriveau at lcorrive@nrc.gc.ca

## OBITUARIES

### HOMMAGE À JAMES BOURNE

Le Département des sciences de la terre et de l'atmosphère regrette le décès du professeur James (Jamie) Bourne. Jamie avait obtenu une maîtrise à McGill et un Ph.D. à l'université Queen's à Kingston, et s'était joint au corps professoral de l'UQAM en 1978 après un bref séjour à la Commission géologique du Canada.

Spécialiste en pétrologie ignée et métamorphique, il laisse en héritage des travaux de recherche très importants sur le Bouclier canadien, l'Asie, l'Amérique du Sud et l'Afrique du Nord. Sa participation aux récentes découvertes sur la mise en place des indices diamantifères dans le nord du Québec fut fondamentale.

Le personnel et les étudiants connaissaient bien Jamie et tous l'appréciaient grandement. Il a su se distinguer entre autres par ses qualités d'excellent pédagogue, sa curiosité scientifique, sa bonne humeur et sa joie de vivre.

Les gens qui l'ont bien connu au département se sont joints à sa famille et à ses amis(es) lors d'une cérémonie commémorative en novembre dernier. Jamie a reçu là de nombreux témoignages empreints de vérité et bien mérités. En sa mémoire et afin de souligner son excellence dans l'enseignement des sciences de la Terre, une bourse de 1<sup>er</sup> cycle a été créée au département. Tout don pourra être envoyé à la Fondation UQAM à la mémoire du Dr. Bourne.

Normand Goulet

## OBITUARIES

### F.F. OSBORNE

F.F. Osborne, a pioneer of Grenville geology, died this spring. In 1956, Dr. Osborne wrote at the end of his paper on the Grenville of Québec in the book *The Grenville problem* "While I was writing this, a thought kept recurring : Grenville is neither a series nor a lithological unit. It is a state of mind. Of course, rocks do not have a state of mind but they can engender one in those who work with them. I feel that progress has been made and that the knowledge of the geology of the Grenville subprovince is a matter of pride. The excessively critical and defeatist approach to grenville problems is not justified. »

Louise Corriveau

### BERNARD L. MUROWCHICK

Bernard ("Bernie") L. Murowchick passed away February 14, 2000, at the age of 78 at his home in Lakeland, FL. He had been fighting a brain tumor for nearly 5 years. He was a member of several professional societies, including the Mineralogical Association of Canada, and had many friends in the Canadian and American mining industries. He was employed by International Minerals and Chemical Corporation from 1950-1987, retiring as Chief Mineralogist only to be retained as a consultant.

Submitted by his son  
James B. Murowchick

## SPARKS

### A FEATURE ON PUBLIC AWARENESS OF SCIENCE

The ROXBOX kit was designed at Queen's University to support Grade 4 teachers in Ontario as they teach the new Earth and Space Science curriculum. About 480 of the 500 kits (20 kilograms each) which were assembled have been distributed to schools across Ontario. The web site <http://geol.queensu.ca/outreach/kit.html> has details about the kit. There are 6 modules in the kit covering the following themes: differences between a rock and a mineral, properties of minerals, types of rocks, geological maps, life through time, and erosion. The teachers guides and stu-

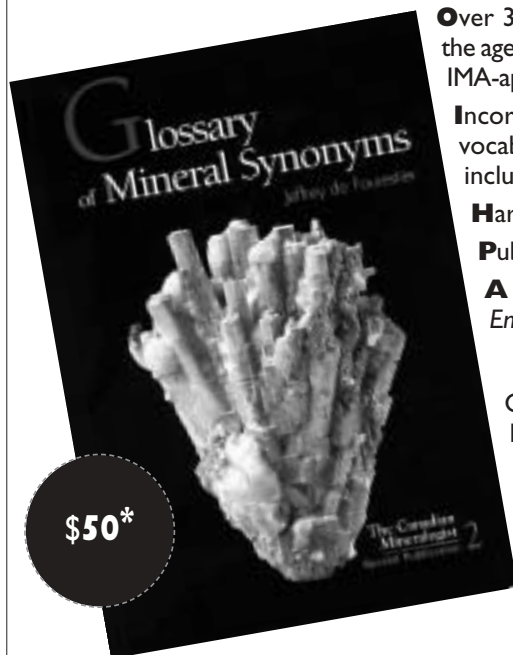
dent worksheets that cover these concepts are freely available for downloading from the web site. The secret password for MAC members is "schist".

As an example, one of the activities that we have designed is how to make a geological map. In the kit, there are 7 pieces of limestone, 7 pieces of schist and 7 pieces of granite. The teacher places these 21 numbered specimens around the floor in the classroom on small squares of masking tape on which the rock number has also been written. The teacher arranges the positions of the rocks so that some contacts are obvious and others must be inferred. The students have already

learned the difference between igneous, sedimentary and metamorphic rocks before they start this exercise. The grade 4 students make a base map of the classroom, with legend, scale and north arrow. (This is something some university students still need to learn!) The students then run traverses and make field notes. Back at "base camp" (their desk), they plot the data on the map and draw the contacts and colour their map. They are asked to predict what rock type they would encounter if they sunk a mine shaft under their desk.

Ron Peterson,  
Queen's University"

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\* in CDN\$ if shipped within Canada

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## OUTSIDE NEWS

### INTERNATIONAL GEOLOGICAL CORRELATION PROGRAMME

In 1972, a joint scientific research initiative between UNESCO and the International Union of Geological Sciences (IUGS) was started under the name of International Geological Correlation Programme (IGCP). The primary aim of IGCP is to encourage geoscientists from around the world to formulate new approaches to Earth sciences problems that deal with such topics as the discovery of mineral, groundwater and energy resources, mitigation of natural hazards, evaluation of human induced hazards, and so on. IGCP has defined clear scientific objectives on programs of global importance:

- improve living conditions by better understanding factors controlling the environment;
- develop more effective ways for locating, evaluating and sustainably managing natural resources;
- increase our understanding of geological processes and concepts;
- improve research capacities, techniques and methods including international collaboration; and
- promote multi-disciplinary cooperation within the UNESCO framework.

Ideas from geoscientists are put forward as formal proposals to the IGCP international board through the National Committee of each country. All successful proposals share certain features: scientific excellence, reliance on advanced methodology, contemporary societal relevance, as well as significant collaboration between developing and developed nations. Each project must be represented by at least one scientific leader who becomes responsible for annually reporting to the scientific board. Participating countries can nominate interested and qualified national leaders to represent and coordinate activities within projects in their own country. With an average life span of up to five years, IGCP projects succeed by reaching milestones associated with the general IGCP objectives. IGCP projects host regular international and national meetings, workshops, conferences, and fieldtrips. Global participation is imperative.

The IGCP consists of a board of 16 scientists representing various disci-

plines and regions around the world, as well as the Director of the Earth Sciences Division of UNESCO and the President of the IUGS. Members of the board have limited terms and are appointed by the Director General of UNESCO to specific working groups consisting of:

- 1) stratigraphy, sedimentology and fossil fuels,
- 2) Quaternary, environmental and engineering sciences,
- 3) mineral deposits, petrology and geochemistry, and
- 4) geophysics, tectonics and structural geology.

The board annually meets in Paris to deal with a number of issues. New project proposals are evaluated, reports from ongoing projects are assessed, funding levels for projects are established, and broader issues such as the Constitution and comments from National Committees of IGCP are discussed. Active projects are graded annually by the board and are assigned funding from low (< US \$4,000) to medium (US \$6-7,000) to high (US \$10,000) levels. Funding disbursed by the Scientific Board (circa US \$250,000) comes from UNESCO and IUGS.

The programme provides seed money to approximately 40 active projects per year. This money is used by thousands of geoscientists from about 150 countries to participate in their respective IGCP project. During 1999 the following projects with Canadian leaders were active:

- No. 380** Biosedimentology of Microbial Build-ups (Brian Pratt)
- No. 391** Groundwater and Sand Accumulations in the Sahara (Vern Singhroy)
- No. 396** Continental Shelves in the Quaternary (Heiner Josenhans)
- No. 406** Circum-Arctic Paleozoic Vertebrates (Mark Wilson)
- No. 408** Rocks and Minerals at Great Depth and on the Surface (Robert Linnen)
- No. 413** Understanding Future Dryland Changes from Past Dynamics (Dave Sauchyn)
- No. 415** Glaciation and Reorganization of Asia's Network of Drainage (Jim Teller)
- No. 418** Kibarian Events in Southwest Africa (Toby Rivers)
- No. 419** Foreland Basins of the Neoproterozoic Belts in Central to Southern Africa and South America (Pier Binda)

- No. 420** Continental Growth in the Phanerozoic: Evidence from East-Central Asia (Mike Brookfield)
- No. 425** Landslide Hazard Assessment and Cultural Heritage (Oldrich Hungr and Peter Bobrowsky)
- No. 426** Granite Systems and Proterozoic Lithospheric Processes (Sandra Barr)
- No. 427** Ore-Forming Processes in Dynamic Magmatic Systems (Mike Leshner and Sarah-Jane Barnes)
- No. 428** Past Climatic Change Inferred from the Analysis of the Underground Temperature Field (Jacob Majorowicz, Trevor Lewis and Hugo Beltrami)
- No. 429** Organics in Major Environmental Issues (Jim Baker)
- No. 432** Contourites, Bottom Currents and Palaeocirculation (D.W.J. Piper)
- No. 437** Coastal Environmental Change during Sea-Level Highstands (R.T. Patterson)
- No. 440** Rodinia Assembly and Breakup (Tony Davidson)
- No. 442** Raw Materials of Neolithic Artifacts (Victor Ownes)

The Canadian National Committee of IGCP (CNC-IGCP) consists of a Chair, the International Director of the Canadian Geoscience Council and six other board members who annually meet (teleconference in alternate years) to evaluate minor funding requests from Canadian participants in IGCP projects. Applicants request financial support to attend international conferences, sponsor meetings in Canada, or conduct other activities directly related to specific IGCP projects. A total of \$18,000 (Canadian) is provided annually to CNC-IGCP by the Canadian Geoscience Council for disbursement. Individual grant amounts are set by CNC-IGCP depending on the total amount of requests received in any one year. Presently allocated grants range from \$500 to \$1100.

Professional geoscientists in Canada are encouraged to participate in active IGCP projects by directly contacting the Canadian leaders. New projects are continually being accepted by the IGCP Scientific Board, so regular contact with CNC-IGCP members should be maintained. For more information on IGCP and CNC-IGCP please contact Peter Bobrowsky, International Director-CGC, c/o BC Geological Survey Branch, P.O. Box 9320, Station Provincial Government, Victoria, BC, V8W 9N3. Tel: 250-952-0395; Fax: 250-952-0382; Email: peter.bobrowsky@gems7.gov.bc.ca.

## St. John's 2001 – May 27-30, 2000



GAC and MAC will launch the new millennium by holding their 2001 Joint Annual Meeting in St. John's, Newfoundland. North America's oldest city, with a population of 102,000, is a vibrant mosaic of the old and the new. It lies at the eastern extremity of the North American Craton, facing the Atlantic Ocean, where it is ideally situated to inspire learned discourse on the Earth Sciences of the North Atlantic borderlands. Visiting scientists will appreciate the St. John's trans-Atlantic link to exotic Gondwanaland and the trans-Appalachian link to the ancient Canadian Shield of Laurentia. This panoply of geology will inform our discussions, which will also include the present-day continental shelves and the Atlantic Ocean itself. So come to St. John's in May 2001, join in our eclectic mix of scientific and social programmes, and help launch an exciting geoscience exploration from that historic gateway, St. John's, Newfoundland. For more information on all field trips that will run before and after the meeting, see our web site [www.geosurv.gov.nf.ca/stjohns2001](http://www.geosurv.gov.nf.ca/stjohns2001)

### SYMPOSIA

#### North Atlantic Mineral Symposium (NAMS)

*Richard Wardle and Koenraad Verbruggen*

The second in a biannual series of meetings sponsored by the Newfoundland and Irish Geological surveys and held this year in conjunction with GAC/MAC. Keynote components of the symposium will be Global Trends in the Mineral Industry, and Mineral Deposits of the North Atlantic region. Break-out sessions will focus on a number of themes including mineral policy, challenges to mining, mineral economics and mineral potential estimation.

#### Early Proterozoic – Archean Crustal Evolution/Metallogeny

*John Myers*

This symposium will involve comparisons/correlations between Northern Labrador, Greenland, and that exotic portion of the North Atlantic Borderlands, AustraliaNorth

#### Atlantic Margin Petroleum Resources

*Iain Sinclair (Hibernia management)  
and Judith McIntyre (CNOPB).*

#### Global Change and Its Impact on the North Atlantic Borderlands

*Moire Wadleigh, John Jacobs, and Don Forbes.*

### SPECIAL SESSIONS

Modern and Ancient Oceanic Ridge Processes  
*Jean Bédard*

Tectonic Integration of circum-Superior Orogens  
*Marc St. Onge, David Corrigan and Toby Rivers*

Quaternary Geology of Northwest Atlantic  
*David Liverman, Martin Batterson, Norm Catto  
and Trevor Bell*

High Pressure Granulites and Eclogites  
*Aphrodite Indares*

ODP Session  
*Matt Salisbury*

Geotechnical Session  
*John Gale*

Cosmogenic Dating Techniques and Applications  
*John Gosse*

Geophysical applications in the marine environment  
*Brian Todd, Dick Pickrill and Bill Collins*

New developments in LAM-ICP-MS analytical techniques  
*Paul Sylvester*

Geochemistry of Inorganic Sedimentary Rocks  
*Scott McLennan, Brian Fryer,  
and George Jenner*

Data Integration and Preservation of Geoscience Knowledge  
*John Broome*

Late Neoproterozoic evolution of the earth and life  
*Jim Gehling and Guy Narbonne*

Approaches to earth science education in urban settings  
*Nancy Chow.*

Proterozoic granitoids and anorthosites  
*Sandra Barr and David Corrigan*

Water as commodity  
*Bruce Broster*

The architecture, origin and evolution of the Paleozoic continental margin of Laurentia  
*Denis Lavoie.*

## Mineralogical Society of America Short Course

### **SULFATE MINERALS:**

### **GEOCHEMISTRY, CRYSTALLOGRAPHY, AND ENVIRONMENTAL SIGNIFICANCE**

There is considerable scientific interest in the geochemistry, crystallography, and environmental behavior of sulfate minerals. Sulfate minerals form in igneous, sedimentary, hydrothermal, and low-temperature environments and their study will continue to provide important insights into geochemical processes. Minerals of the alunite and jarosite groups are of interest to economic geologists for their use as exploration guides and to hydrometallurgists as vehicles for iron and aluminum removal from leach solutions. Stable isotope research on sulfates has provided insights on volatile evolution and mineral deposition in acid-sulfate hydrothermal systems. In the weathering environment, efflorescent sulfate salts from acid rock drainage affect the storage and release of potentially toxic metals such as aluminum, cadmium, copper, iron, and zinc. In neutral and alkaline environments, sulfate minerals and aqueous sulfate are important in marine and continental evaporite sequences and influence ground water chemistry in some major aquifers through processes of sulfide oxidation and sulfate reduction. This short course, and the related technical sessions at the annual MSA-GSA meeting, will be the most comprehensive group of sessions ever devoted to sulfate minerals.

The course is Saturday and Sunday November 11-12, 2000 (preceding the Mineralogical Society of America-Geological Society of America Annual meeting in Reno, Nevada) at the Granlibakken Resort and Conference Center, Tahoe City, CA, U.S.A. The course convenors are Charles N. Alpers U.S. Geological Survey, Sacramento, CA; John L. Jambor, Tsawwassen, BC; and D. Kirk Nordstrom, U.S. Geological Survey, Boulder, CO.

#### **Outline**

The crystal chemistry of sulfate minerals . . . . .	F.C. Hawthorne & P.C. Burns
Spectroscopy of sulfate in natural and contaminated earth materials . . . . .	S.B.C. Myneni
Sulfate minerals in evaporite deposits . . . . .	R.J. Spencer
Barite-celestite geochemistry and environments of formation . . . . .	J. Hanor
The chemistry of sulfate in alkaline environments . . . . .	S.J. Traina & S.B.C. Myneni
Metal sulfate salts from sulfide mineral oxidation . . . . .	J.L. Jambor, C.N. Alpers & D.K. Nordstrom
Fe and Al hydroxysulfate minerals from acid sulfate waters . . . . .	J.M. Bigham & D.K. Nordstrom
Alunite and jarosite group minerals: geochemistry, thermodynamic properties, and environments of formation . . . . .	R.E. Stoffregen, C.N. Alpers, J.L. Jambor & G.A. Lager
Jarosites and alunites in hydrometallurgy . . . . .	J.E. Dutrizac & J.L. Jambor
Kinetics and surface energy approaches to the dissolution and precipitation of the sparingly soluble alkaline earth sulfate . . . . .	A. Hina & G.H. Nancollas
Thermodynamic properties of sulfate minerals . . . . .	D.K. Nordstrom, I.-M. Chou, & B.S. Hemingway
Predicting sulfate mineral solubilities in concentrated waters . . . . .	C.J. Ptacek & D.W. Blowes
Solid-solution solubility and thermodynamics of sulfate minerals . . . . .	P.D. Glynn
Stable isotope systematics in sulfates . . . . .	R.R. Seal II, C.N. Alpers, & R.O. Rye

Cost is US\$360 for MSA members, US\$440 for non-members; US\$120 and US\$150 for students before 9/15/00. A limited number of student scholarships, including registration fee, lodging, meals, and ground transportation, may be available.

For more course information, visit the MSA Home Page (<http://www.minsocam.org>).

Registration can be done online, or contact the MSA Business Office, 1015 Eighteenth St NW Ste 601, Washington, D.C. 20036-5274, USA. Tel: 202-775-4344 Fax: 202-775-0018 E-mail: [business@minsocam.org](mailto:business@minsocam.org)).

The Mineralogical Association of Canada was incorporated in 1955 to promote and advance the knowledge of mineralogy and the related disciplines of crystallography, petrology, geochemistry and mineral deposits.

**President:** Brian Fryer  
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**Past President:** Jim Nicholls  
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University of Manitoba, MA

**Secretary:** Gina LeCheminant  
Geological Survey  
of Canada, ON

**Treasurer:** Mati Raudsepp  
University of British Columbia,  
BC

### Membership

Any person or organization engaged or interested in the fields of mineralogy, crystallography, petrology, geochemistry and mineral deposits can become a member.

Membership benefits include: six issues a year of *The Canadian Mineralogist*; 20% discount on publications of the Association; special discount on registration fee at our annual meeting held jointly with the Geological Association of Canada.

Individual membership	<b>\$90</b>
Institutional and corporate membership	<b>\$340</b>
Sustaining membership	<b>\$600</b>
Student or retired membership	<b>\$30</b>

For information on membership and publications, contact our business office at:

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# Mineralogical Association of Canada Short-Course

## VOLUME 28

# Fluids and Basin Evolution

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This short-course volume illustrates the methods, techniques and approaches used to trace the fluid flow histories of sedimentary basins and demonstrate how to use this information to evaluate the economic potential (both metal and petroleum) of large basins. The results from these studies are prerequisite for constraining large – and restricted – scale flow models, understanding the evolution of the crust, and refining exploration and exploitation strategies for mineral and petroleum deposits. The specific basins to be discussed include Proterozoic basins in Canada and Australia, Phanerozoic and Mesozoic basins in Western Canada, and Mesozoic and Cenozoic basins in Europe.

Most of the material presented is at a level of understanding for most upper undergraduate and graduate students although recent results and ideas presented throughout the presentations will appeal to both pure and applied researchers working in sedimentary basins.

The MAC Newsletter is published twice a year by the Mineralogical Association of Canada as a service to its members.

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