

Report from the Chair in Magmatic Metallogenie 2009

Activities

Most of 2009 was taken up with writing a grant proposal to renew the chair and at the same time to obtain a new LA-ICP-MS. After 9 months of anxious wait I am happy to report both applications were successful. In support of the renewal of the chair we presented results at a number of conferences; the International Applied Geochemistry conference in Fredericton (Page and Dare), AGU Toronto (Barnes and Dare), Ni symposium and field trip Xi'an, China (Barnes, Dare and Page), Geoanalyst 2009 Drakensburg South Africa (Bedard and Savard). The trip to China was impressive; Socially it was eye opening I had not expected things to be so modern and activity in the towns was almost frenetic, I had the impression that China is bursting at the seams with growth. From the tourism point of view there was so much to see it is impossible to list it all, but the clay army in the emperor's tomb is unforgettable. On the geological side we visited Jinchan one of the world's biggest Ni mines so I can tick another deposit off of my life list.

The laboratory continues to grow and so we decided to get university accreditation so as to protect our space and give recognition to the laboratory staff. In the process we had to come up with a name for the laboratory and Paul out did himself with "LabMaTer". A pun in french meaning either Earth's materials laboratory or laboratory of my earth. The laboratory web page is www.dsa.uqac.ca/~pbedard

Arrivals and Departure

This year saw the arrival of two new M.Sc. Students; Mr. Clifford Pattern and Mr. Matt Querrufus. Clifford will work on *in situ* determinations of PGE and chalcophile elements in MORB sulphides and Matt will work on the use of S/Se ratios as an exploration technique. In addition Dr. P.V. Sunder Raju from the National Geophysical Research Institute, Hyderabad has joined as a post doctoral fellow to work on trace elements in magnetites as an exploration technique. Ms. Julie Fredette took up the post of laboratory assistant. Mr. Dany Savard submitted his M.Sc. thesis and now will work full time as the ICP-MS operator.

The only departure this year was the administrative assistant Mr. Jerome Aubin, who left to begin his M.Sc. In linguistics at the University of Ottawa. Jerome created the LaMaTer web page and renovated my web page while he was here. We wish him luck in his studies.

During the summer we had two visitors. Mr. Fabien Rabarol from the Universite Beauvais, France, completed an internship on calibration of the LA-ICP-MS for trace elements in magnetite. Dr. Ruben Pina from the University of Marid who came to determine PGE in the Aguablanca Ni-sulfide deposit.

The team is now quite large consisting of Dr. Page on chromites, Dr. Dare on PGE in Sudbury sulphides; Dr. Raju on magnetites; Mr. Djon on PGE in Lac des Iles, Mr, Munoz

on PGE in the Bell River Complex, Mr. Pattern on MORB sulphides, Mr. Querrufus on S/Se, Mr. Savard as ICP-MS operator, Ms. Fredette as laboratory assistant.



1. Clifford PATTEN
2. Matthias QUEFFURUS
3. L. Paul BÉDARD
4. Sarah DARE
5. Sarah-Jane BARNES
6. Dany SAVARD
7. Julie FREDETTE
8. Moise Lionnel NGUE DJON
9. P.V.SUNDER RAJU
10. Philippe PAGÉ
11. Carlos Mario MUNOZ TABORDA

Report from the Chair 2008

Arrivals and Departures

There were a number of departures from the Chair this year. Ms. Tafa Gomwe, graduated to become Dr. Gomwe. She now works for Innov Explor. After four years of helping us improve our analytical facilities Dr. Richard Cox left for the University of Ottawa. Ms. Veronique Honsel, administrative assistant, left to finish her teaching degree and to have a baby. We wish Tafa, Richard and Veronique success in their new positions.

Every departure implies new arrivals. Dr. Sarah Dare joins us, as a post doctoral fellow, from the University of Cardiff. Dr. Dare worked on the composition of chromites from the Oman Ophiolite for her Ph.D. so she and Philippe have plenty to talk about. She will work on PGE concentrations in base metal sulphides from Sudbury for her post doctoral project. Mr. Carlos Munoz and Mr. Lionnel Ngue join us as M.Sc. candidates. Carlos is from Columbia and will work on a PGE occurrence in the Bell River Complex. Lionnel comes from Cameroon and will work on phases controlling PGE concentrations in the Lac des Iles complex. Finally we have a new administrative assistant, Mr. Jerome Aubin.

With the departure of Richard from the laboratory, Mr. Dany Savard was promoted to ICP-MS operator and I have hired Ms. Jullie Fredette as a laboratory assistant.

Equipment

In the laboratory, most of this year was taken up installing and calibrating all the new equipment that was purchased with the 2007 Leaders Opportunity Fund grant obtained by Richard, Ed and myself. We now have a working clean room and high pressure asher for carrying out precise low level PGE work. We also have a micro-XRF, a high powered microscope and image analysis system to characterize the samples before dissolving them or lasering them with the ICP-MS. For a tour of our new equipment see www.dsa.uqac.ca/~pbedard/index.html.

Conferences

As usual this was a busy year for conferences. We participated to the Australian Earth Sciences Conference and organized special sessions at the GAC-MAC in Quebec City in May and the Goldschmidt in Vancouver in July. In addition Dr. Bedard gave workshops at both conferences on how to assure the quality of your geochemical analyses. During the year I took part in two workshops on the formation of magmatic ore deposits, one at Laurentian University in April and an SEG workshop at Laval University.

The highlight of the year for me was the GAC-MAC-INCO trip to Voisey's Bay in May.



Voisey's Bay Massive Ore



Voisey's Bay Field Trip Contact

Report from the Chair 2005-2006

Organization of symposiums

- Symposium "Ça sent le gaz en métallogénie" in the ACFAS Conference at UQAC, tuesday may 15th 2005.

Participation to international events

- Workshop on Highly Siderophile Element Geochemistry, Durham (UK), July 2006
- GAC-MAC, Montréal (Canada), May 2006
- Platinum Symposium, Oulu (Finlande), August 2005
- Goldschmidt, Moscow (Idaho, USA), May 2005

Geological excursion

Geological excursion in South Africa,

Field Trip Finland





Report from the Chair - 2006 -

This year saw a change in staff with departure of Professor Wolfgang Maier and Miss Julie Larouche and the arrival of Dr. Philippe Pagé. Professor Maier has left for the University of Western Australia and Miss Larouche has joined Agnico-Eagle. While we are sorry to them go we wish them both successes in their new positions. Dr. Pagé joins us as a post-doc from INRS, Québec City. His PhD was on ophiolites of the Eastern Township but, he is now about to become an expert on layered intrusions as his post-doc will be on the Stillwater Complex, Montana.

The team now consists of: Dr. Cox (ICP-MS operator), Dr. Pagé (post-doc); PhD candidates: Miss Godel, Miss Gomwe, Miss Lafrance and Miss Tollari; M.Sc. candidates: Miss Dionne-Foster and Mr Savard; B.Sc. project: Miss Guérin.



Congratulation to Miss Julie Fredette, who despite the challenge of motherhood, managed to complete her M.Sc. this year.

In terms of publications and conference presentations this has been a busy year with five publications and fifteen conference presentations. For many of them this was their first publications and I hope that despite the challenge of publishing they will continue to make the effort.

The GAC-MAC conference in Montreal was well attended mixture of academic and social events with the team giving eleven presentations.

The highlight of conferences for myself was the Durham meeting on highly siderophile elements in July with team giving 3 presentations.

Dr Cox was successful in obtaining his first NSERC grant, an important milestone for a young researcher, congratulations Richard. We also obtained an important grant towards upgrading the laboratory, the leader opportunities fund of CFI. This grant will pay for an XRF mapper, a clean room, new digital microscope and an HPLC system for the ICP-MS. Finally, we have received a “blue sky” in exploration grant from DIVEX to develop the use of selenium isotopes in exploration.

The laboratory continues to develop and we are now comfortable with in situ La-ICP-MS for silicates and sulphides. There are a number of students using this we have published two papers using the technique and there a number of paper submitted and in preparation. Next year, will see the arrival of Dr. Ambre Luguet from the University Durham, England. She will oversee the installation of the clean room with aims of developing rhenium-osmium isotopes and low level PGE analyses at UQAC.

The coming year should see the graduation of a number of students sad though it will be to see them go. We look forward to the arrival of the “next generation” 2007.



REPORT FROM THE CHAIR 2003-2004.

2003-2004 represents the initial year of the chair in magmatic ore deposits and much of the year was spent on development of contacts with other researchers, installation of new equipment and hiring of new staff. With the money provided by FCI the geochemical laboratories and preparation facilities received a long overdue renovation. Further, new equipment in the form of a sulfur and carbon analyzer and a new state of the art ICP-MS laser ablation machine was installed. The ICP-MS requires a specialist to operator it and we pleased to have hired. Dr. Richard Cox for this purpose. The chair funds have also allowed us to hire three undergraduate assistants to help in the development of trace element analysis for diamond, nickel and platinum exploration. Overall the laboratory continues to be under the capable supervised by a Dr. Paul Bedard..



Funds from the chair also assisted in paying for invited speakers to our special session on new methods for chalcophile element analyses at the American Geophysical Union meeting in Montreal in May.

The chair has developed a number of collaborative projects with other institutions. Dr. Ania Peregoedova (post-doc) is working with the chair, and Prof. D. Baker of McGill University on experimental simulation of platinum deposits. In 2003-2004 two new graduate students (Ms. B. Godel and Ms. N. Tollari) started jointed project involving practical and course work here at Chicoutimi and experimental work at CNRS Nancy with Dr. M. Toplis. The link with Nancy was further re-enforced by the visit of Dr. Maryse Ohnesetter as Ph.D. examiner for Hassan Nabil, who successfully defended his thesis on oxides of the Sept Iles and Duluth intrusions in December. Finally the arrival of the new ICP-MS and operator has resulted in a new project for diamond exploration in Quebec and this is in part funded by DIVEX (a collaborative project between, UQAM, UQAC, INRS, Laval and McGill) see www.divex.ca

Funds from the chair have also allowed four students [T. Gomwe (Ph.D.), H. Bachari (M.Sc.), D. Savard (B.Sc.), N. Tollari (M.Sc.)] to attend conferences, both to present their results and learn about developments in their field. In total 11 conference presentations were delivered by members of the chair team at a Varsity of international and national conferences. In addition 7 referred journal publications were published see www.dsa.uqac.ca/~sjbarnes.

Prof. Barnes gave a number of invited lectures (Geological Society Thunder Bay, October; INCO Sudbury, April; Goldschmidt 2004 Copenhagen; University of Ottawa, April) and was one of the lecturers for the Advanced Workshop on Magmatic Ore Deposits, Laurentian University Sudbury.

The chair team now consists of the chair, a research associate, one post-doc, 2 Ph.D. candidates, 3 M.Sc. candidates, 3 undergraduate assistants. While most of us are now Canadians 7 of the eleven members of the team originate from 6 different countries