

Celebrating 50th



**SGA Anniversary
(1965–2015)**

SGA News

December 2015
Number 38

SGA 2015, 13th SGA Biennial Meeting

**"From Source, Transport
and Metal deposits...
...to Mineral Resources in a
Sustainable World"**

Anne-Sylvie André-Mayer

GeoResources – ENSG, Université de Lorraine, France, e-mail: anne-sylvie.andre@univ-lorraine.fr

The 13th Biennial Meeting of the SGA was organized by the CNRS (Centre National de la Recherche Scientifique) and a consortium of Universities, including the Université de Lorraine in Nancy, the KU Leuven, the Université de Liege and RWTH Aachen University representing the regions of Lorraine, Flandres, Wallonie and North-Rhine-

Westphalia along the borders of France, Belgium and Germany, regions that retain a strong historical heritage of both coal and iron mining activities.

The first biennial meeting of the Society for Geology Applied to Mineral Deposits took place in Nancy in 1991, and some of the SGA2015 participants were among the



CONTENTS

SGA 2015, 13th SGA Biennial Meeting	1
News of the Society	2
News of the SGA General Assembly	4
SGA Awards at Biennial Meeting	13
The 7th Annual Baltic Student Chapter Meeting	20
News from Barcelona SGA-SEG Student Chapter	26
News from the Colombia SGA Student Chapter	28
News from the Morocco SGA Student Chapter	29
News from the Prague SGA Student Chapter	30
The 2015 Latin America Metallogeny Course – A Brazilian twist	32

MAIN FEATURES

SGA 2015, 13th SGA Biennial Meeting	1
SGA Awards at Biennial Meeting	13
News from the Baltic, Barcelona, Colombia, Morocco and Prague SGA Student Chapters	20–31
The 2015 Latin America Metallogeny Course – A Brazilian twist	32

News of the Society

SGA Ordinary Council Meeting, Nancy, France, August 23, 2015

J. Pašava (SGA Executive Secretary), Czech Geological Survey, Prague,
jan.pasava@geology.cz

Anne Sylvie André-Mayer welcomed Council Members on behalf of the SGA 2015 LOC. G. Beaudoin (SGA President) thanked on behalf of SGA Council for organization of the meeting. Then Council approved suggested agenda.

Roll call and apologies

Present: G. Beaudoin (SGA President), S. Decree, P. Eilu, J. Gutzmer, K. Kelley, N. Koglin, B. Lehmann, J. Pašava, S. Piercey, J. Richards, J. Slack, A. Vymazalová and J. Wilkinson. Apologies for absence: F. Barra, F. Bierlein, N. Bortnikov, E. Campos, H. Chen, M. Chiaradia, H. Frimmel, H. Fan, L. Greyling, Ch. Heinrich, D. Huston, J. Kolb, W. Maier, A. Piestrzynski, J. Relvas and S. Roberts.

Guests: A.-Sylvie André-Mayer (Chair of the SGA 2015 LOC for Item 5), and T. Christie (for Item 4).

Minutes of previous Council Meeting (May 4, 2015 Nancy, France)

Reports of officers on Council

- Report from President (presented by G. Beaudoin)
- Report from Executive Secretary (presented by J. Pašava)
- Report from Treasurer (presented by G. Beaudoin)
- Report from Promotion Manager (presented by P. Eilu)
- Report from Chief Editor, SGA News (presented by J. Pašava)
- Report from Chief Editors, MD (presented by B. Lehmann)
- Report from Chief Editor SGA Special Publications (presented by J. Slack)
- Report from the Chief Editor SGA website (presented by N. Koglin)
- SGA Educational Fund (presented by G. Beaudoin)
- Reports from Regional VPs (Asia, Australia/Oceania, Europe presented by S. Decree, North America)

After discussion, Council approved the presented reports with great thanks and the following motions: J. Pašava to use name, city and country when preparing a list of newly approved SGA members for publishing in SGA News. P. Eilu to provide files with SGA posters to N. Koglin who will make them available at website.

B. Lehmann and G. Beaudoin – with increasing number of submitted manuscripts to MD to keep a high quality of the journal and continue publishing invited papers possibly in every first issue of MD. H. Frimmel to prepare a proposal for revision of the level of different categories of SGA membership fee (report to next Council meeting).

J. Slack to send the MS of the book on “Mineral Deposits of North Africa” to Springer by October 15, 2015. All Council members are encouraged to consider themselves or find someone willing to publish a summary type of work including basic information and models on mineral deposits/districts within Springer “Briefs”. SGA contact person is J. Slack.

J. Pašava to provide N. Koglin with info on eligibility for SGA voting and also a hard copy of voting slip for those of SGA members who are not able to use electronic application. N. Koglin to offer PayPal and an option to donate contributions to SGA EF through website payment.

N. Koglin in collaboration with G. Beaudoin (Chair, LOC SGA 2017) to look into a possibility to introduce an universal registration system for conferences/workshops and also abstract handling (submission, reviewing, editing) to be applied for future SGA Biennial Meetings from SGA 2017 on.

J. Pašava to remind all RVP's and Council members that name and email address on new SGA membership application forms have to be inserted in block letters (very often not readable).

J. Pašava to thank J. Trubač for his great on SGA facebook.

K. Kelley to look after SGA EF since 1.1.2016.

S. Decree to re-negotiate with L. Robb a possible publishing of a book which resulted from

SGA News

No. 38 December 2015

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SGA News is a publication of SGA (Society for Geology Applied to Mineral Deposits) and appears twice a year.

SGA News can be also read in the SGA homepage on Internet:
<http://www.e-sga.org>

CONCEPT AND PRINTING

WMXDesign GmbH
Heidelberg, Germany

LAYOUT

Massimo Chiaradia, Geneva, Switzerland

INFORMATION FOR CONTRIBUTORS

Items for publication may be sent to:
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DEADLINE FOR SGA NEWS No. 39
31 March 2016

SGA NEWS – MAILBOX

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SGA sponsored session at EUG in SGA Special Publications Series Huayong Chen jointly with D. Leach to represent SGA in the 10th International Ore Deposit Model shortcourse (Xi'an, China).

H. Chen to advertise SGA in local Chinese geo-events and also in other Asian regions where possible.

D. Huston and H. Chen to represent SGA at SEG 2015 (Hobart).

S. Piercy to organize SGA presence at GAC-MAC 2016 (Whitehorse) and to provide relevant info on a planned Goldcorp Challenge to N. Koglin to be distributed to SGA membership. Also to advertise SGA 2017 where possible.

G. Beaudoin to contact B. Hoal on a possible inclusion of SGA-activities (e.g., a workshop and/or keynote speaker) in the SEG 2016 Meeting in Turkey and also in SEG 2017 and 2018.

S. Piercy to act as SGA liaison with the SGA 2017 LOC. N. Koglin to find out if SGA membership application forms could be filled out and submitted on line with a possibility of checking student status and sponsorship of other membership categories.

A. Vymazalová to inform President of the Iranian Chapter and Ch. Linge about Council approval of a budget (EUR 500) for 2015. Money will be transferred upon providing transfer details to Ch. Linge.

D. Huston to contact A. Mueller to find out if he would be willing to go finalize description of Meggen and Rammelsberg deposits available at the SGA website for "Springer Briefs" and to report to the next Council meeting.

All Council members to help M. Chiaradia to identify suitable main article for the upcoming SGA News (deadline for submission of contributions is May 31, 2015).

J. Relvas to coordinate preparation and distribution of letters to seek funding for the SGA EF.

Presentation of a potential bid for the SGA 2019 in New Zealand (T. Christie)

With respect to a planned call for organization of the SGA 2019 meeting Council members listened to the presentation of a potential bid by T. Christie (N. Zealand). No decision was made by Council as the final decision on SGA 2019 venue will be made after evaluation of all received bids in spring 2016.

SGA 2015 – status of preparation

The report was presented by A.S. André-Mayer (Item 5). The SGA 2015 Conference attracted cca 649 participants (the final number to be added) and 30 exhibitors. Conference papers were published in five volumes of Conference Proceedings on 2134 pp). After discussion Council approved the presented report with great thanks and the following motions:

A.S. André-Mayer to send one set of Conference Proceedings to the SGA ES Office and also one set to ISI Thomson Reuters (cover letter and address to be provided by J. Pašava). Remaining Conference Proceedings will be mailed to P. Eilu – SGA PM who will distribute them to SGA RVPs for display. A.S. André-Mayer to write a final report on SGA 2015 Anniversary Meeting for SGA News and to provide a link to photos taken by a professional conference photographer.

SGA 2017 – update

The report was presented by G. Beaudoin (see Item 6). The 14th SGA Biennial Meeting will be held in Quebec City, Canada (August 20–23, 2017). A grant (cca 10 000 CAD) was received by the LOC from Tourisme Québec for covering early expenses and promoting the meeting. The LOC prepared a flyer which was

advertised in Nancy (also inserted to SGA 2015 attendee's bags). More advertisement is planned throughout 2016. The conference website address is <http://www.SGA2017.ca>

Council approved the report with great thanks and the following motions:

G. Beaudoin to continue promotion of SGA 2017 in NA and with a help of SGA Council also in other regions.

Updated list of nominated officers approved by Council

The report was presented by G. Beaudoin (see Item 7). Council acknowledged suggested revised and already approved list with great thanks.

Actions:

G. Beaudoin to present the adapted list in the SGA GA.

N. Koglin in collaboration with Ch. Linge and J. Pašava to organize SGA 2015 elections (both electronic and hard copy vote) with opening election on October 15 (at the latest) and enabling 30 days for delivery of both electronic and hard copy vote. J. Pašava will provide a hard copy of the voting slip.

Progress report on membership drive from the last SGA Council Meeting

The report was presented by P. Eilu (Item 8). The Society had at the end of 2014 1139 members. At the moment SGA has 1146 paying members. During the past four months, we have got 45 new members: 14 regular and 31 student members. Of these, an event at Tehran, Iran, brought 12 student members, and activities at Toulouse, France, five regular members. More new members are expected to join at the SGA 2015 and also through newly establishing SGA Chapters (Colombia and Morocco). After discussion Council approved the report with great thanks and the following motions:

G. Beaudoin to address all RVPs with a request for their collaboration regarding non-renewing members.

N. Koglin to send automatic reminders regarding membership renewal (for early fee: 30.9. – to start the new payment turn for the new year on 1.10./1.11/1.12/beginning of January – to remind of the approaching end of early fee; for general reminder: 1.4. and 6.6.).

Report of Award sub-committee: future of SGA Young Scientist award

The report prepared by D. Huston and K. Kelley was presented by K. Kelley (Item-9). After discussion Council approved to get back to the SGA Young Scientist Award (price money of EUR 1,500 plus certificate) instead of introducing a new Agricola Medal.

Action: J. Pašava to remind Council members of the importance of active involvement in seeking new nominations for SGA awards (a new call will be announced through SGA website and News in early 2016).

Status of development of SGA Student and Young Scientist network including student support at SGA 2015

The report was presented by A. Vymazalová and J. Relvas and a proposal for a new Chapter in Iran (Item 10) was approved by Council. Council also agreed on providing EUR 500 initial budget for the new Chapter. Thanks to the SGA EF altogether 78 grants were distributed mostly among students from different continents (with a total value of grants cca 27 000 EUR). The report was accepted with great thanks and the following motions:

A. Vymazalová to inform Representatives of the Iranian Chapters about approval of its 2015 budget (EUR 500).

Requests for sponsorship

Council was deciding on incoming requests for sponsorship continuously using an electronic vote organized by ES.

Any other business

SGA presence at the 35th IGC, September 2016, Cape Town – invitation from chair of the Scientific Program Committee (a joint SGA-SEG session on gold) – update (H. Frimmel)

Not discussed due to the absence of H. Frimmel at the Council meeting.

– Workshop on “Ore deposits models and exploration” in China – planned changes (Huayong Chen)

From 2016 on Huayong Chen will replace S. Scott and his wife Joan in organization of this workshop. SGA Council expressed great thanks to Steve and Joan for their enormous efforts related to setting up and the organizing this traditional and very successful mineral deposit educational event in China which is strongly supported by SGA.

Date and Place of the Next Council Meeting

Suggested: Spring 2016, Lisbon, Portugal – organized by J. Relvas (more info on precise venue and timing will be provided in due time).

Informative list of past activities

- 13th Freiberg Short Course in Economic Geology, Freiberg, Germany, December 8 – 12, 2014 – T. Höfig et al.
- MDSG Meeting, Southampton, UK – 18–19 December 2014 – SGA promotion by S. Roberts

- PACRIM 2015, Hong Kong, China, March 18–21, 2015 – SGA session, booth – Fan Hongrui, Huayong Chen, R. Skirrow, D. Huston
- 4th SGA-SEG-UNESCO-IUGS Short Course on African Metallogeny, Addis Ababa, Ethiopia, March 23–31, 2015 – H. Frimmel et al – this event had to be cancelled due to insufficient sponsorship from industry.

Informative list of future activities

- Prague SGA Student Chapter field trip to IPB, April 20–29, 2015 – J. Relvas et al. – up to EUR 750 approved in support of lowering trip expenses
- SEG Student Chapter Brno: SEG Field Exploration Geology Vol. IV Mineral deposits and geology of the Oberpfalz, May 4–8, 2015 | Czech Republic/Germany – EUR 400 approved for participation of SGA student members – V. Wertich et al.
- Goldschmidt 2015, Prague, Czech Republic, August 16–21, 2015 – 6 SGA sponsored sessions approved EUR 2000 for student support approved by Council
- SGA 13th Biennial Meeting, August 24–27, 2015 Nancy, France
- SGA Seminar on Northern Fennoscandian Ore Deposits and 3/4D Modelling, Lulea Sweden, September 7–8, 2015 – SGA sponsorship of EUR 800 approved for keynote speaker
- SEG 2015 Conference, Hobart, Australia, September 27–30, 2015 – SGA booth, plenary speaker, SGA session– R. Skirrow
- SGA 2017 Meeting, Quebec City, Canada, August 20–23, 2017 – G. Beaudoin (www.SGA2017.ca)

News of the SGA General Assembly (August 25th, 2015, Nancy, France)

J. Pašava (SGA Executive Secretary)

Czech Geological Survey, Prague, jan.pasava@geology.cz

The General Assembly was opened by the SGA President, G. Beaudoin at 11.00 and closed at 12.00. The meeting was attended by over 100 people.

1. Report of the President (G. Beaudoin)

After presentation of the agenda by J. Pašava (SGA Executive Secretary), G. Beaudoin (SGA President) delivered the SGA activity report that covered the period from the previous SGA General Assembly (August 13, 2013 Uppsala, Sweden) to date. He highlighted the 50th Society Anniversary, the introduction of a new Society Award – SGA-KGHM Krol Medal given for outstanding services to the Society, the importance of development of the SGA Educational Fund, increasing interest of students in joining Society, increasing participation in Biennial Meetings, increasing quality of the Society journal *Mineralium Deposita* and will of SGA to continue making Society more attractive especially to students and young scientists. The report was approved by the General Assembly.

2. Report of the Treasurer (G. Beaudoin on behalf of H. Frimmel)

G. Beaudoin presented the Financial Report covering the period from August 2013 to August 2015. The Balance on SGA accounts on 31/12/2013 was €715,346.96 and on 31/7/2015 was €760,166.80

which evidences that the Society is financially healthy. The balance on SGA EF on 31/7/2015 was €77,208.84. All SGA books for the Years 2012, 2013 and 2014 were audited by SGA members who do not serve on Council (as per constitution) and Dr. T. Graupner and Dr. U. Schwarz-Schampera found no discrepancy with the accounting. The report was approved by the General Assembly.

3. Report of the Executive Secretary on past and future SGA activities (J. Pašava)

Jan Pašava summarized major past (September 2013 – August 2015) and future SGA activities.

He highlighted continued geoeeducational activities in Africa (Short Course on African Metallogeny in Morocco in 2014) and other numerous activities co-organized or sponsored by SGA (e.g., SGA sponsored 6 sessions at the Goldschmidt 2015 in Prague).

4. Report of the Vice-President on the SGA Educational Fund (J. Relvas)

The SGA EF was established in May 2013. The objective of the SGA Educational Fund is to provide financial support for training activities in mineral deposit geology. SGA EF sponsorship should

be a seal of approval of the scientific validity of the training activities in relation to understanding mineral deposit formation and how to explore to find new mineral deposits. Specific objectives are:

- 1) to support student participation to national and international scientific meetings organized or sponsored by the SGA;
- 2) to support student participation to field trips, workshops and short courses sponsored by the SGA;
- 3) to support SGA-sponsored student activities.

Thanks to generous contributions from the Geological Survey of Sweden, SGA, Sinotech and AngloGold Ashanti Australia we were able to support over 70 students at this SGA 2015 Anniversary Meeting and also enable student's participating in the Gold Short Course (Prague, September 2013) and the African Metallogeny Course (Kitwe, Zambia, 2013). The report was approved by the General Assembly.

5. Report of Student Chapters Representatives (A. Vymazalová et al.)

Anna Vymazalová (Representative on Student Affairs on the Council) guided this part of the SGA GA when Representatives of Baltic, Barcelona, Nancy-Rennes, Prague, and Siberia Chapters briefly informed about their past and future activities.



Presentations by the SGA Executive officers at the SGA General Assembly (from left: J. Pašava - SGA ES; G. Beaudoin-SGA President and J. Relvas-SGA VP).

6. Presentation of the list of the Officers nominated for SGA 2015 ballot (G. Beaudoin)

G. Beaudoin presented a list of nominated officers for the upcoming SGA ballot which was completed by the Nomination Committee and approved by SGA Council. The ballot will be distributed to SGA Membership in October 2015.

7. Miscellaneous

Jan Pašava informed about a planned release of a call for proposals for the 15th SGA Biennial Meeting – 2019.

8. Invitation to the SGA 2017 Biennial Meeting (G. Beaudoin)

On behalf of the LOC, Georges Beaudoin (current SGA President) from the Université Laval (Québec City, Canada) informed about the status of the preparation of the 14th SGA Biennial Meeting, which will be held in Quebec City, Canada in August 20–23, 2017. He extended a warm invitation to this Meeting, for the first time organized in North America. More information is available at <http://www.sga2017.ca>

In Prague, September 7th, 2015

Reviewed and accepted by: G. Beaudoin (SGA President) and J. Relvas (SGA Vice-President)



Representatives of the SGA Student Chapters after their reporting to the SGA General Assembly (from left: Tobias Kampmann – Baltic Chapter, Francois Turlin – Nancy-Rennes Chapter, Tereza Jandova – Prague Chapter, Maria Cherdantseva – Siberia Chapter, Maria Clara Roman – Barcelona Chapter, Sandra Baurier – Barcelona Chapter, Anna Vymazalova – SGA Council).

REDUCED PRICES FOR SGA PROCEEDINGS

BEIJING (2005) – Mao and Bierlein (eds) – Mineral Deposit Research: Meeting the Global Challenge, 2 Volume, over 1600 pages incl. CD-ROM

NOW available for 30 EUR plus shipping costs

DUBLIN (2007) – Andrew et al. (eds): Digging Deeper, 2 Volumes, over 1600 pages incl. CD-ROM

NOW available for 50 EUR plus shipping costs

Please contact Christine Linge (VAe), Lehrstuhl für Geodynamik u. Geomaterialforschung, Institut für Geographie und Geologie, Am Hubland, 97074 Würzburg, Germany
Tel. 0931/ 3185421, Fax. 0931/ 3187345

SGA COUNCIL 2016

SOCIETY FOR GEOLOGY APPLIED TO MINERAL DEPOSITS

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Vice-President (Student Affairs)	A. Vymazalová (Czech Rep.)
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N. Africa-Mid. East	M. Bouabdellah (Morocco)
North America	S. Piercy (Canada)
Sub-Saharan Africa	L. Greyling (S. Africa)
South America	D. Moncada (Chile)

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S. Roberts (U.K.)
S. Archibald (Canada, East Asia)
W. Maier (Finland)
A. Piestrzynski (Poland)
F. Hongrui (China)
J. Kolb (Denmark)
D. Huston (Australia)
E. Campos (Chile)

Councillors: term ending on December 31, 2019

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S. Naumov (Russia)
B. Orberger (France)
Yongjum Lu (Australia)

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President	M. Jingwen (China)
Publication Manager	R. Seltmann (U.K.)

LIST OF NEW SGA MEMBERS (April 1–October 31, 2015)

21 Regular and 85 Student Members applied for membership during this period

REGULAR MEMBERS

- Dr. Evgenii Pushkarev Ekaterinburg RUSSIA
- Mr. Abdelhaleem Haron Abou Abdalla Wadī Halfa SUDAN
- Mr. John Black Colorado USA
- Mr. Steven A. Harnish Kowloon HONG KONG
- Mr. Kevin Heather La Serena CHILE
- Dr. Gulcan Bozkaya Denizli TURKEY
- Mr. Raul Eigenheer Meloni Manaus BRAZIL
- Ms. Valérie Bécu Québec CANADA
- Mr. Bryan MacFarlane Tempe USA
- Mr. Nikos Nestora Thessaloniki GREECE
- Mr. Tom Wesby London UNITED KINGDOM
- Dr. Mohamed Nasraoui Beauvais Cedex FRANCE
- Dr. Olivier Vanderhaeghe Toulouse FRANCE
- Ms Jessica Bonhoure-Kafi Beauvais Cedex FRANCE
- Mr. Lucien Corbineau Beauvais Cedex FRANCE
- Mr. Xiaojun Zhang Wuhan P.R. CHINA
- Dr. Adrienne Hanly Vienna AUSTRIA
- Mr. Geert Trappeniers Leefdaal BELGIUM
- Dr. Olga Yakubovich Saint-Petersburg RUSSIA
- Mr. Alok Porwal Mumbai INDIA
- Mr. Veselin Mladenov Sofia BULGARIA

STUDENT MEMBERS

- Mr. Arnau Blasco Ruiz Barcelona SPAIN
- Mr. Joan Gutiérrez León Barcelona SPAIN
- Mr. Miquel Estany de Millan Barcelona SPAIN
- Mr. Miquel Garcia Badal Barcelona SPAIN
- Mr. Eric Ottenberg Halle GERMANY
- Mr. Wilson Bonner Reno USA
- Mr. Cesar Anthony Chavez Machaca Arequipa PERÚ
- Mr. Mutlu Gökay Oulu FINLAND
- Mr. Isa WitickTurku FINLAND
- Ms Jenny Manelius Abo FINLAND
- Miss Cecilia Aarnio Abo FINLAND
- Mr. Jens Johansson Turku FINLAND
- Mr. Erik Leino Abo FINLAND
- Mr. Markus Lindewald Abo FINLAND
- Mr. Tarmo Juhani Hannula Sirkka FINLAND
- Ms Riina Hannula Sirkka FINLAND
- Miss Maiju Kaartinen Turku FINLAND
- Miss Heidi Penttinen Turku FINLAND
- Ms Jennifer Juslenius Abo FINLAND
- Mr. Aleksis Vigdorciks Jurmala LATVIA
- Mr. Eduardo Rojas Torres Bogota COLOMBIA
- Mr. Jairo Jhon Valencia Valenzuela Bogota COLOMBIA
- Mr. Alarcón Rodríguez Juan David Bogota COLOMBIA
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- Mr. Castillo Diaz Camilo Andrés Bogota COLOMBIA
- Mr. Cruz Bacca Sebastian Bogota COLOMBIA
- Mr. Erazo Hernandez Edison Sebastian Bogota COLOMBIA
- Mr. Fajardo Aristizabal Alejandro Bogota COLOMBIA
- Mr. Gaviria Villadiego Edwin Elias Bogota COLOMBIA
- Mr. Gongora Bohorquez Juan Diego Bogota COLOMBIA
- Mr. Gonzales Bogotá Nicolás Bogota COLOMBIA
- Miss Grajales Garavito Camila Bogota COLOMBIA
- Mr. Granados Ruiz Pedro José Bogota COLOMBIA
- Miss Lopez Suarez Maria Camila Bogota COLOMBIA
- Miss Mantilla Salas Sofia Bogota COLOMBIA
- Mr. Martinez Niño Fabian Enrique Bogota COLOMBIA



- Miss Mesa Gomez Jenny Lizeth Bogota COLOMBIA
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- Mr. Saavedra Quintero Jeimer Bogota COLOMBIA
- Mr. Suarez Carvajal Carlos Felipe Bogota COLOMBIA
- Miss Torres Rodríguez Natalia Bogota COLOMBIA
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- Mr. Hamid Peernajmodin Tehran IRAN
- Miss Mina Boveiri Konari Tehran IRAN
- Mrs. Narges Yasami Tehran IRAN
- Mr. Pouria Mahmoodi Tehran IRAN
- Mr. Sajad Hasankhanloo Tehran IRAN
- Mr. Seyed Hedayatalah Mousavi Motlagh Tehran IRAN
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Other requests will be not considered.

Your suggestions and ideas for any topic of interest to SGA are welcome!

They can be addressed to any Council member or to

Dr. Jan Pašava
SGA Executive Secretary

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>>> page 1 SGA 2015, 13th SGA Biennial Meeting

main actors of this 1st meeting, which was centered on the basics of metallogeny: "Source, Transport and Metal deposits".

This year, the 13th SGA-meeting was again held in Nancy to celebrate the 50th anniversary of the society. Economic growth results in a global increase in demand for mineral raw materials, which have to be supplied in a reliable but also responsible way to meet the requirements of a sustainable world. Thus the 2015 meeting focussed on: "Mineral Resources in a Sustainable World".

Venue

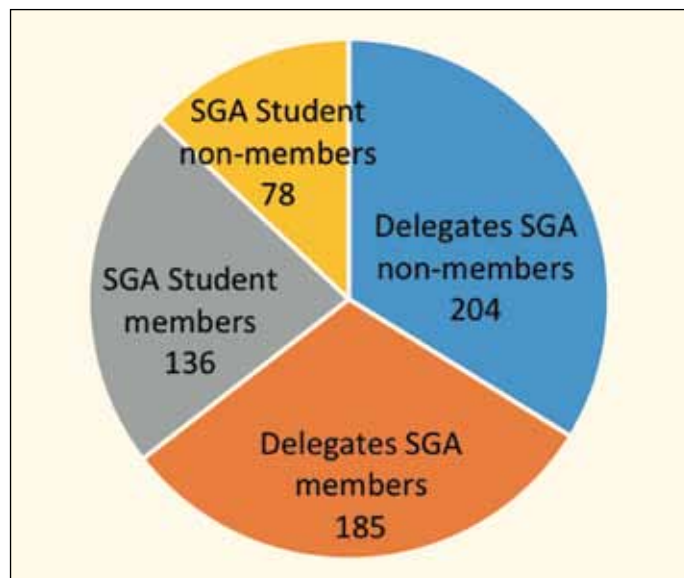
Nancy was the former capital of the dukes of Lorraine and has a rich historical and cultural heritage. SGA2015 delegates and accompanying persons were able to discover the XVIIIth century heart of the city, a UNESCO World Heritage site that includes the famous Place Stanislas, one of the most beautiful squares in the world. Nancy is also one of the birthplaces of Art Nouveau.

The main conference took place in the Centre Prouvé, located in the heart of Nancy and which was inaugurated in 2014. The 20,000m² congress center provided SGA2015 delegates highly adaptable and functional conference space, facilities and equipment.

Participation

The 712 conference attendees included:

- 603 registered delegates of 60 nationalities
- 8 plenary speakers
- 32 accompanying persons
- 19 exhibitors
- 50 volunteers



MAIN CONFERENCE PROGRAM

International research on mineral deposits and related topics was presented and discussed within 16 scientific sessions, 5 symposia and 8 plenary talks.

SYMPOSIA

The symposia honored four scientific researchers known for their contributions to economic geology:

- Jan Pasava, Sediment-hosted deposits
- Michel Cuney, Uranium deposits
- James Franklin, Volcanogenic Massive Sulfide ore deposits
- Jean-Laurent Mallet, 3D Modeling.



PLENARY SESSIONS

The plenary sessions widened the vision around minerals resources to include both exploration needs and environmental and social challenges:

- Pär Weihed, The human need of metallic raw materials – Why exploration matters!
- Sven Petersen, News from the seabed: the current ups and downs in marine mineral resources.
- Julie Hunt, Geometallurgy: bridging gaps and breaking down silos.
- Michel Bouchard, Social licence to operate and the environmental and social challenges of the mining industry.



SCIENTIFIC SESSIONS

During the scientific sessions, both convenors and delegates created a dynamic scientific atmosphere, through 212 high-quality oral presentations and 300 posters. All of this scientific content is presented in the five volumes of the SGA2015 proceedings, which include 518 extended abstracts over 2134 pages, e.g. the state of the art covering the entire spectrum of scientific topics from economic geology to mine environment and geometallurgy.

These abstract volumes testify to the high scientific quality of the 13th SGA-meeting and the numeric files available now at : <http://www.e-sga.org/home/>

This conference created inter-generational links between established researchers, including many well-known leaders in the field of

metallurgy, and numerous Masters and Doctoral students. Fifty of these young scientists, from nearby schools and Universities (ENSG, ERASMUS Mundus Emerald et Département des Sciences de la Terre de l'Université de Lorraine et de Liège) served as dynamic and friendly volunteers.

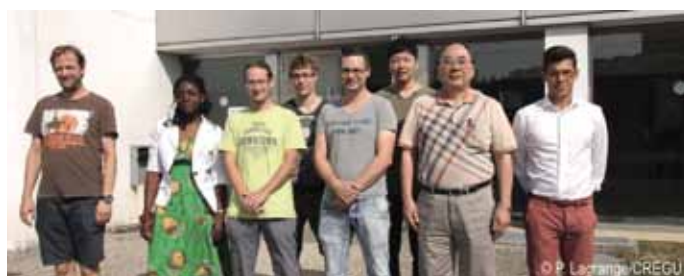
EXHIBITORS

Throughout the week, the main 1600 m² hall of the conference was shared by both poster sessions and exhibitors, offering the nineteen exhibitors plenty of opportunity for exchange with the delegates.



WORKSHOPS

Six of the 8 workshops originally proposed for SGA2015 were finally opened and enjoyed by 123 participants.



Workshop 4. Spectroscopies for field work. J. Cauzid (GeoRessources)



Workshop 5. Fluids and metals. J. Dubessy (GeoRessources)



Workshop 7. Latest advances in our understanding of the genesis of Ni-Cu-Pge mineral systems and associated review of exploration targeting. J. Barnes, M. Le Vaillant (CSIRO), M. Fiorentini (CET, UWA).



Workshop 8. SEG. Geology and Geochemistry of gold deposits. R. Gold-farb (USGS) and S. Simmons (EGI-University of Utah).



Workshop 3. Agromining: from soils to refined metal products. G. Echevarria (LSE) and M.-O. Simonnot (LRGP).

FIELD TRIPS

Four of the twelve originally proposed SGA2015 fieldtrips took place in the days just after the conference.

Morocco

Ten delegates visited a selection of precious and base metal deposits of the Anti-Atlas and Jebilet Precambrian and Variscan belts, Morocco. Trip organizers. M. Bouabdellah (University of Oujda), Jean Cauzid (Université de Lorraine-GeoRessources), with the collaboration of L. Maacha, A. Saquaque, and M. Zouhir, geologists at Managemgroup, the mining company owner of the mines.



SGA2015 – Field trip Morocco

French Massif Central

This field trip allowed 15 participants to discover the most typical rare metal granite, pegmatite, and subvolcanic rare metal occurrences of the NW French Massif Central, a ferberite stockwork and their relationships with the two mica peraluminous granite complexes.

Trip organizers. M. Cuney and Ch. Marignac (GeoRessources, CNRS and Mines Nancy)



SGA2015 – Field trip Massif Central.

Vosges Mountains

Twenty two delegates participated in this field trip centered on Cu-Pb-Ag-As Polymetallic Deposits of Sainte-Marie-aux-Mines, Vosges, France, and had the opportunity to discover both geological and archeological features of this old mining district.

Trip organizers. M. Ohnenstetter and S. Bourlange (GeoRessources, Université de Lorraine), P. Fluck (Mulhouse).

Kupferschiefer in Poland

Ten SGA2015 delegates enjoyed the geology of the European Kupferschiefer, Lubin, Poland. Trip organizers. A. Piestrzynski, W. Zygo, T. Cwiertnia (AGH-UST, Krakow, Poland).



SGA2015_Field trip Kupferschiefer.

STUDENT GRANTS

Thank you to the SGA Foundation that received 105 applications asking for support for the Nancy meeting. Grants were awarded to 77 students from 20 countries and two young scientists from economically disadvantaged countries.

STUDENT INDUSTRY MINING NETWORKING

The SGA Nancy student chapter organized this event, in a bar to provide an opportunity for students to make valuable contacts with industry professionals and peers. Thank you to the few industry professionals that attended this event.



Student Industry Mining Networking - L'Appart

SOCIAL EVENTS

Several social events were offered to the delegates during the week, allowing more informal scientific exchange and memorable and enjoyable moments.

ICE BREAKER



Ice breaker, at Nancy Town Hall, Place Stanislas

WINE AND CHEESE AND BEER-CHARCUTERIE PARTIES

During the poster sessions, SGA2015 delegates enjoyed a Wine and Cheese party with music from "Jeudi Soir" on Monday evening, and a Beer and charcuterie party with the group "Double Scotch" + a rock "openmic" hour on Tuesday.



GALA DINNER

300 delegates and volunteers enjoyed a typical French meal accompanied by French music. This dinner provided the occasion to thank Sabine Lange for her contribution to the SGA, to celebrate the birthday of Jan Pasava and of course the 50th anniversary of the SGA, created in 1965.



SGA delegates enjoying the gala dinner



Georges Beaudoin and Sabine Lange



Jan Pasava and Georges Beaudoin



Scientific exchanges during the poster session



SGA Board and the SGA 50th anniversary «croquembouche» cake

THANKS

Many thanks to the SGA board, who trusted the LOC for the organization of SGA2015 and who accompanied us in the logistical and scientific preparations since 2012. Thanks to all the SGA2015 delegates and exhibitors who created a thoroughly enjoyable and dynamic scientific atmosphere during this 13th SGA biennial meeting.

We also thank warmly all the conveners of sessions, workshops and excursions, and all who made this meeting possible by their tremendous efforts during the last months.

And of course, we would like to express here our sincere gratitude to the local organizing committee and the scientific, technical and student staff.



**THANKS
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SGA Awards at the 13th Biennial Meeting in Nancy, France

Jan Pašava (SGA Executive Secretary)

Czech Geological Survey, Prague, email: jan.pasava@geology.cz

Similarly as at the 11th and the 12th SGA Biennial Meetings, the Awards Ceremony was a part of Opening Ceremony at the 13th SGA Biennial and at the same time 50th SGA Anniversary Meeting in Nancy. The following SGA awards were presented during the Opening Ceremony, which was held on August 24, 2015 from 8.30 to 10.00 and attended by Mr. Patrick Landais (Director of Strategy, Research and Evaluation, BRGM), Mr. Eric Pacquet (Director of Research and Development, AREVA), Christophe Choserot (Vice-president for Higher Education and Research, Lorraine Region) and Mr. Didier Marquer (Manager of Georessources and geotechnologies DGRI – MENSUR).

The SGA-Newmont Gold Medal

The SGA-NEWMONT Gold Medal was established in 2006 to be awarded biannually primarily in recognition of a full career in performance of „unusually original work in the mineral deposit sector, which shall be broadly interpreted to encompass major contributions to (1) the science through research and (2) the development of mineral resources through mine geology, exploration and discovery. The award consists of a citation, pure gold medal, and travel to the Biennial meeting for the presentation.

The first recipient of this most prestigious award was Dr. Zdeněk JOHAN (France) at the 9th SGA Biennial Meeting in Dublin, Ireland (2007).

The second recipient of the SGA-Newmont Gold Medal became Dr. Shunso ISHIIHARA (Japan) at the 10th SGA Biennial Meeting in Townsville, Australia (2009).

The third recipient of the SGA-Newmont Gold Medal became Dr. David GROVES at the 11th SGA Biennial Meeting in Antofagasta, Chile (2011).

The fourth recipient of the SGA-Newmont Gold Medal became Dr. Michel CUNNEY at the 12th SGA Biennial Meeting in Uppsala, Sweden.

The fifth recipient of the SGA-Newmont Gold Medal became Dr. Steve D. Scott who was nominated by J. Peter and finally selected by SGA Council out of

five pre-selected candidates. After introduction and explanation of the history of the medal by J. Pašava, citation of J. Peter was presented by J. Pašava. The medal was presented by G. Beaudoin (SGA President) who also congratulated on behalf of G. Simon (Vice-President, Exploration Newmont) and J. Pašava (SGA Executive Secretary). Then S. Scott, who accepted the award presented the acceptance speech.

The following citation prepared by J. Peter (Geological Survey of Canada) was delivered by J. Pašava:

Mr. Chairman, Ladies and Gentlemen, I am honoured to present the citation of Dr. Steven SCOTT – the fifth recipient of the SGA-NEWMONT GOLD MEDAL. I have known Steve for more than 30 years since coming to do postgraduate studies with him in Toronto. Dr. Scott graduated from the University of Western Ontario in 1963 with his B.Sc. and in 1964 with his M.Sc. He then studied at Pennsylvania State University, graduating in 1968 with his Ph.D. Immedi-

ately thereafter he joined the University of Toronto as an Assistant Professor, and was promoted to Full Professor, and then in 1998 became the Norman B. Keevil Professor in Ore Genesis (emeritus since 2006). He is also visiting professor at the University of Bretagne Occidental in France, near where he lives for several months of each year, and Honorary Professor at the China University of Geosciences in Beijing.

He has authored and/or co-authored 188 papers, 8 book chapters, 30 short course chapters, including papers in Nature, Geology, Mineralium Deposita, and Economic Geology. He also recently edited a volume of the Treatise of Geochemistry on the geochemistry of mineral deposits.

Dr. Scott is a world leader in two research areas:

The first is the application of experimental sulphide, oxide, and silicate equilibria to ore deposits. His landmark contributions provided the tools to estimate the temperature, pressure, and redox conditions of ore deposit formation and/or metamorphism.



Fig. 1 Presentation of the SGA-Newmont Gold medal during the Opening Ceremony of the 13th SGA Biennial and 50. Anniversary Meeting in Nancy, France (from right to left: S. Scott – recipient of the award, J. Pašava – SGA Executive Secretary and G. Beaudoin – SGA President). Photo by Patrick Lagrange.

The second is his research focused on the genesis of, and exploration for, volcanogenic massive sulphide (VMS) deposits, together with their modern analogues (seafloor massive sulfides). He contributed significantly to our understanding of the physical and chemical parameters of their formation, the enrichments of precious and other metals, magmatic contributions in these deposits, and the development of exploration methodologies for them. His pioneering work on seafloor massive sulfide deposits and comparison with their ancient VMS counterparts contributed significantly to the recent global focus on exploration of modern submarine arcs.

A major achievement with colleague Ray Binns of the Australian CSIRO was the discovery in 1996 of the large and rich Solwara 1 Cu-Ag-Au seafloor massive sulfide deposit at 1600 metres water depth in the Manus Basin off the east coast of Papua New Guinea that will be mined by Nautilus Minerals starting in 2018 thus establishing a new multibillion dollar industry.

He has been an exemplary mentor of undergraduate and postgraduate students, supervising or co-supervising 24 Ph.D., 21 M.Sc., and 26 B.Sc., and students, together with 10 postdoctoral fellows and several research associates, many of whom have made major contributions to academia, government and mineral exploration.

He has been President of the International Marine Minerals Society, served as councillor of SGA for 9 years, and has served on numerous Canadian and international committees and editorial boards. He has been organizer and convenor of numerous symposia at international conferences and been invited as a keynote speaker at many others.

Dr. Scott has been recognized for his scientific contributions by many organizations and countries. He has won 11 awards or medals from Australia, Canada, and USA, including the Lindgren Award and Silver Medal of the Society of Economic Geologists, the Past President's Medal of the Mineralogical Association of Canada, the Michael J. Keen Medal of the Geological Association of Canada, the Haddon Forrester King Medal of the Australian Academy of Sciences, the Bancroft Award of the Royal Society of Canada, and the Moore Medal of the International Marine Minerals Society.

More recently, he has consulted to the ocean mining industry on the methodology and strategy of mining seafloor massive sulphides in the southwest Pacific Ocean. For the past 9 years with SGA's financial

support, he has organized and presented workshops with colleagues from four countries on ore deposits models and exploration to very large and enthusiastic audiences at several venues in China. The 10th workshop will be in Xi'an in November.

Many of us have had the pleasure of interacting and collaborating scientifically with Dr. Scott. Although now retired, he remains an influential force in science and industry. On behalf of SGA I would like to congratulate Dr. Scott on this and his other successes and we look forward to his continued contributions in the geosciences, and enjoyment in his private life that he and his wife of 52 years, Joan, spend in Toronto and on the Brittany seacoast of France.

The following acceptance speech was delivered by S. Scott:

Thank you Georges, Jan Peter (in absentia) and Jan Pasava.

Dear friends and colleagues:

I was sitting comfortably savouring my morning coffee and gazing out at the sea from our oceanfront home in Brittany, casually reading my e-mail, when I came across one from SGA President and good friend, Georges Beaudoin. I said to myself "What does Georges want now?" Well, what he wanted was to tell me that I was to receive the SGA-Newmont Gold Medal at SGA's 50th anniversary meeting in Nancy. I got so

excited that I almost spilled my coffee over my tablet!

As you have heard from the citation, this is not the first award I have received but it holds a special place in my heart. I have always had a fondness for SGA as it has provided a venue to meet so many scientists from various countries where meetings are held. I count as close friends many members and officers of SGA. In my younger years, I served on the SGA council, a most gratifying experience that I heartily recommend to others who have a desire to influence their science.

My first medal, also gold, was for being top of my graduating class at the University of Western Ontario in Canada. A relative was admiring it when it dropped onto the road. It rolled straight for a sewer grate but fortunately stopped just a few centimetres from disappearing forever. I will see that anyone who examines the SGA-Newmont Gold Medal does so well away from danger!

Something I want to highlight is SGA's constant support over 10 years of the 5-day "Ore deposits models and exploration" workshop held annually in China. The enthusiasm we receive from the Chinese students and professionals is palpable. No workshop has had fewer than 250 participants; the last one in November had 450, including 120 via teleconference from 11 remote locations organized by our host,



Fig. 2 Steve Scott (recipient of the 2015 SGA-Newmont Gold Medal) delivering his acceptance speech at the 13th SGA Biennial and 50. Anniversary SGA Meeting in Nancy, France. Photo by Patrick Lagrange.

the Zijin Mining Group. SGA can take great pride in initiating the workshop at the 2005 biennial meeting in Beijing and their continuing support. The next workshop, number 10, will be held in November at Chang'an University in Xi'an, the home of the famous terra cotta soldiers.

I know well three of the four previous recipients of this prestigious medal – Zdenek Johan from France, Shunso Ishihara from Japan and David Groves from Australia and I met the 2013 recipient, Michel Cuney, last evening at the ice breaker. All four have had exceptional careers in ore deposits and it is both exciting and humbling to be a member of this exclusive club.

An occasion like this gives me an opportunity to think back over my career – the ups and downs, the successes and failures. Happily I had more ups and successes than downs and failures primarily because of the superb supervision I received during my PhD from Hu Barnes at the Pennsylvania State University in the late 60s and the many exceptional people who chose to work with me at Toronto – undergraduate and graduate students, postdocs and visiting professors – plus from other institutions such as Ray Binns at CSIRO in Sydney. The University of Toronto made it possible for me to be away at sea for weeks to months, often during the academic year.

Although “retired” since 2006, I am not finished yet. I am involved in a research project with colleagues from Greece and China that I instigated on submarine weathering of sulfide chimneys. My last and final marine expedition, number 30, in the northern Aegean Sea with the Hellenic Centre for Marine Research and the Institute of Geology and Mineral Exploration of Greece has generated another project.

Let me close with the observation that nominations for an award like this don't just happen. It takes dedicated people who are willing to spend the time to put together a nomination and steer it to eventual acceptance. In my case, it was Jan Peter of the Geological Survey of Canada. He was accompanied by Mark Hannington, Paul Spry and Dan Layton-Matthews. I thank them profusely. I also thank the SGA council for agreeing with Jan's nomination and Newmont for continuing to provide this most important gold medal. Most of all, I thank Joan and the rest of my family for being so very supportive of my far flung and eclectic career spanning 5 decades.

Thank you all!

The SGA-Barrick Young Scientist Award

The former SGA Young Scientist Award (established in 2003) was approved to be changed to the SGA-Barrick Young Scientist Award from 2007. The award is offered biannually to a young scientist who has contributed significantly to the understanding of mineral deposits. It consists of a citation, certificate, EUR 1500 and travel expenses to the place of the Biennial Meeting for the presentation. The award is given for contributions to economic geology published before the author's 35th birthday. The recipient must be less than 40 years of age on January 1 of the year in which the award is presented.

The first recipient of this award was Dr. Noreen Vielreicher (Australia) – 2003

The second recipient of this award was Dr. Alexandre Raphael Cabral (Brazil) – 2005

The third recipient of this award was Dr. Gilles Levresse (France) – 2007

The fourth recipient of this award was Dr. David Holwell (UK) – 2009

The fifth recipient of this award was Dr. Kalin Kouzmanov (Bulgaria) – 2011.

The sixth recipient of this award was Dr. David Dolejš (Czech Republic) – 2013

The seventh recipient of the SGA-Barrick Young Scientist Award became Dr. Huayong CHEN (China) who was nominated by D. Leach and finally selected

by SGA Council out of five candidates. After introduction and explanation of the history of the award by J. Pašava, citation was read by G. Beaudoin (SGA President), who jointly with J. Pašava (SGA Executive Secretary) and M. Bardoux (Barrick Gold) presented the award. Acceptance speech was delivered by Dr. H. Chen (China).

The following citation was prepared and presented by G. Beaudoin (SGA President): The SGA-Barrick Young Scientist Award is offered biennially to a young scientist who contributed significantly to the understanding of mineral deposits. The award is based mainly upon senior-authored papers published early in the candidate's career. To be eligible for this award, the awardee must be less than 40 years in January in the year of the SGA Biennial Meeting. I am most pleased to introduce to you, Dr. Huayong Chen, the winner of the 2015 SGA-Barrick Young Scientist Award.

Huayong Chen received his B.S and MS in Geology and Geochemistry from Peking University in Beijing and his PhD in Economic Geology at Queens University in 2008. He was a Research Fellow at CODES University of Tasmania from 2008 until he joined the Guangzhou Institute of Geochemistry, Chinese Academy of Sciences in 2012.



Fig. 3 Presentation of the SGA-Barrick Young Scientist Award during the Opening Ceremony of the 13th SGA Biennial and 50. Anniversary Meeting in Nancy, France (from left to right: G. Beaudoin – SGA President, M. Bardoux – Barrick Representative, Huayong Chen – recipient of the award and J. Pašava – SGA Executive Secretary). Photo by Patrick Lagrange.

Huayong has a rather remarkable research publication record for someone only at the start of a promising career. He has almost 50 peer-reviewed papers published or accepted. Some are in leading Chinese journals, but many are in leading western journals, including *Economic Geology*, *Mineralium Deposita*, *Ore Geology Reviews*, *Geochimica et Cosmochimica Acta*, *Geological Journal*, *Gondwana Research*, *Lithos* and the *Geological Magazine*. He has contributed substantially to the field of economic geology, with emphasis on iron oxide copper-gold deposits, but he also published on orogenic and epithermal gold deposits and porphyry copper-gold deposits.

Huayong's selection for the SGA-Barrick Young Scientist Award is evident from the important head-authored papers considered for this award. Huayong made a major contribution to the understanding of IOCG deposits based on his fundamental research work in Peru where he addressed some of the long-standing problems in the genesis of these deposits. His research on the Marcona-Mina Justa deposits, published in *Mineralium Deposita*, is a major contribution to the understanding of the magmatic-hydrothermal system that characterizes this complex and unusual Andean ore system. The relationship between "Kiruna-type" magnetite-apatite deposits, which are barren with respect to copper and gold, and economic copper-gold bearing IOCG deposits was studied in a district where both deposit types are present. His clarification of the independent origins of these spatially associated ores was presented in publications in *Mineralium Deposita* and *Economic Geology*.

In *Ore Geology Reviews*, Huayong subsequently proposed a new classification for the IOCG class that is based on the role and sources of sulfur. More recently, Huayong has stepped back and nicely looks at the big picture, relating the Andean IOCG metallogeny to patterns of supercontinent history in his 2013 *Economic Geology* publication. A paper in *Ore Geology Reviews* further highlights his contributions to our knowledge of this difficult to understand group of ores by trying to address many of the outstanding problems in IOCG classification.

Furthermore, Huayong is extremely involved with the international geological community through presentations of numerous workshops and lectures at professional meetings. He is actively involved with the SGA, now serving as the SGA Regional Vice President for Asia and in 2016, Huayong will assume the leadership

for the highly successful SEG-SGA "Ore Deposit Model and Mineral Exploration" workshops held each year in China

SGA expects the SGA-Barrick Young Scientist Award to Huayong Chen will just be an early step in a long and successful career. Congratulations to Huayong Chen.

The following acceptance speech was delivered by Huayong Chen:

Thanks to SGA, without SGA, no this award and I can not stand here.

Thanks to Barrick, without you, no money, which is sad for a young economic geologist.

Thanks to my nominator: Dr. Dave Leach who gave me lots of courage and help during application. Also thanks to my three referees: Dr. Rich Goldfarb, Dr. Dave Cooke and Dr. Noel White. They have used their best words for me although I can only give back to them a big hug.

During my short academic life (not very short if count from my first year entering university), there are many people giving me abundant selfless help. Although I can not mention all of them (which will take me hours to do this), I want to address four people here and show many thanks.

Professor Yanjing Chen, who was my supervisor for my bachelor and master thesis study in Peking University, is my first "talent scout", without him, I don't even know what's economic geology and why we need to study ore deposits (now I often ask my students this question). After I finished my master thesis study, I went to Queen's University in Canada for a further Ph.D. study and met my two supervisors, Prof. Alan Clark and Kurt Kyser. I have to say, they are two totally different person, the most distinguished difference between them is: Alan is English and Kurt is American. This is the first time I see how different between English and American, before this, I thought they should be the same language and both imperialist countries. Alan is very strict to his students, if you don't believe, you can ask Dr. Dick Sillitoe, who was his first Ph.D. student. Anyway, I spent 6.5 years to get Ph.D. from Alan and our head of department told me: "Congratulations, you finally survived from Alan". I still remember the last comments from Alan, to my acknowledgements in my Ph.D. thesis, in which I said "Alan used his sharp axe to open my granite brain in this 6.5 years", Alan commenced: "it's a little bloody, but I like it". I have to say, this is the most "polite" comment I ever got from Alan. Kurt is different; he didn't use sharp axe,

but money and sweet hart. Especially during my last 3 years for Ph.D. without Kurt's financial help, I may have to drop from university. Thanks to Prof. Alan Clark and Kurt Kyser, without you, nobody in economic geology field today will know my name. My Ph.D. study at Queen's is my most important period in my life. The last but not the least, I want say great thanks to Prof. Dave Cooke, who is my big boss during my work as a postdoc at CODES, University of Tasmania. Dave is probably the most generous and considerate economic geology professor I have ever seen. Especially when I got the current professor position in China but the contract with UTAS not finished yet, he kindly helped me to get this job but not stop me or kill me (even he can easily do this). Honestly speaking, I don't like my postdoc to do this to me because I am not Dave.

Thanks to all people who have given me help in my young academic life. This award is very important for me even I know I am not perfect. Chinese old saying said "no the best, only better". I am probably not the best, but I promise I will do better in the future.

Thank you!

The SGA-KGHM Krol Medal

The objective of this new award is to recognize outstanding service to the Society. The medal is to be awarded to worthy candidates at SGA Biennial Meetings and also on ad hoc basis.

This new award was for the first time presented at the SGA 2015 Anniversary Meeting in Nancy. The medal is named after Gerardus L. Krol (1912–1984) who played a key role in the foundation and development of the Society and became its first President. The award consists of a medal minted from three troy ounces of pure silver, citation and travel to the place of presentation of the award.

The first recipient of this award became Dr. Francis Saupé from France who was nominated by J. Pašava and accepted by the SGA Council. After introduction of the award and citation presented by J. Pašava, the award was presented by G. Beau-doin (SGA President) and J. Pašava (SGA Executive Secretary) at the presence of G. Krol (son) and F. Hillenius-Krol (daughter) of G.L. Krol. Acceptance speech was delivered by Dr. F. Saupé (France).

The following citation was prepared and presented by J. Pašava (SGA Executive Secretary):



Fig. 4 Presentation of the SGA-KGHM Krol Medal during the Opening Ceremony of the 13th SGA Biennial and 50. Anniversary Meeting in Nancy, France (from right to left: J. Pašava – SGA Executive Secretary, G. Beaudoin – SGA President, F. Hillenius-Krol – daughter of GL Krol after who the award was named, G. Krol – son of GL Krol after who the award was named, F. Saupé – recipient of the award and H. Hillenius – husband of F. Hillenius-Krol). Photo by Patrick Lagrange.



Fig. 5 F. Saupé, recipient of the SGA-KGHM Krol Medal delivering his acceptance speech at the 13th SGA Biennial and 50. Anniversary SGA Meeting in Nancy, France. Photo by Patrick Lagrange.

Mr. Chairman, Ladies and Gentlemen,
I am honored to present the citation of Dr. Francis SAUPÉ – the first recipient of a newly established SGA-KGHM KROL MEDAL.

Francis R. Saupé was born on May 21, 1934 in Strasbourg (France). He first attended German elementary school, due to the annexation of Alsace by Germany from

1940 to 1944, and then in 1945 he attended French High School in Strasbourg. After that, he studied Earth Sciences at the University and School of Geology in Nancy, graduating with a Licence and an Ingénieur géologue degree. He obtained a Fullbright stipend and a graduate assistantship at the Missouri School of Mines (Rolla, Missouri) and a Ms. Min. E. (Application of

Statistical Methods to the Evaluation of Mineral Deposits). He served active duty in the French Corps of Engineers, in France and Algeria for 30 months between 1960 and 1962. Then he joined the Centre de Recherches Pétrographiques et Géochimiques (Vandoeuvre, France), part of the Centre National de la Recherche Scientifique. He fluently speaks and writes French, German, English and Spanish, and he has published and given talks in these languages.

In 1973, after obtaining his Doctorat d'Etat (Habilitation) with the first monograph on the geology of the Almadén mercury deposit (Spain), he spent one year in Heidelberg on an Alexander-von-Humboldt Dozentenstipendium (1973–1974). In 1976, he was a visiting scientist at the US Geological Survey in Menlo Park, California.

His scientific interests were mercury deposits in general and also sulphur isotope geochemistry, including performing mass spectrometry. He also studied geochemistry of black shales. After retirement, he collaborated for several years with archeologists working on the use of cinnabar in Turkey and Mexico.

He directed or co-directed some 20 theses, including field work on Hg, Fe, Pb-Zn, magnesite and baryte deposits in France, Italy, Morocco, Algeria, Tunisia and Turkey. He was a lecturer of elementary geochemistry at the University of Nancy and gave many talks in France and abroad. He has authored and/or co-authored over 60 publications and coordinated several proceedings. He acted as reviewer for various scientific journals, such as Mineralium Deposita, Chemical Geology and others.

Dr. Francis R. Saupé is the last of the living SGA founders who served four years as SGA Treasurer (1968–1972) and eight years as the SGA Executive Secretary (1981–1988). He wrote the first, trilingual, Constitution of the Society in 1966 and improved it in 1982. Dr. Saupé also built the SGA Archive, which is presently held in Prague with the acting SGA ES. During sabbatical stay of Prof. J. Guilbert in Nancy, Dr. Saupé and Professor J. Guilbert, who became Vice-President of SEG International Affairs, had discussions about collaboration between the SGA and SEG societies. During his term as the SGA ES, Dr. Saupé organized several international meetings.

Many of us have had the pleasure of interacting and collaborating scientifically with Dr. Saupé. Although now retired, he



Fig. 6 The Kroll family members (from right to left: G. Kroll and F. Hillenius-Kroll – son and daughter of GL Kroll after who the award was named and H. Hillenius – husband of F. Hillenius-Kroll) who joined the Award Ceremony for the SGA-KGHM Kroll Medal which was firstly given at the SGA 2015 Meeting for outstanding services to SGA. Photo by Patrick Lagrange.

remains interested in mineral deposits. On behalf of SGA, I would like to congratulate Dr. Saupé on this and his other successes and we wish him all the best.

The following acceptance speech was delivered by Francis Saupé:

I warmly thank you, Dear President, Jan and the Council of SGA for this distinction. I am especially proud to be the first recipient in presence of the family of G. KROLL, because I personally knew him and keep a very vivid and grateful image of him. Thanks to you, Jan for your citation. The combination of the two sponsors of this medal, SGA and KGHM, well represents the spirit of G. KROLL, uniting unseparately teaching, science and industry, one being a leading society in economic geology and the other, one of the diversified world leaders in mining and metallurgy.

Ladies and Gentlemen,
this is a welcome opportunity to insist on the crucial role G. KROLL played in the first times of SGA and Mineralium Deposita. C. AMSTUTZ was the first to see the necessity of a trilingual European journal of economic geology and of an international scientific society to support it. Thus, in June 1965, he gathered in Heidelberg a group of 7, besides himself, André BERNARD, Gerardus KROLL, Jean LOMBARD, Albert MAUCHER, Paul RAMDOHR, and

Pierre ROUTHIER. They decided to establish a journal and the Society for Geology Applied to Mineral Deposits, to set up a Provisional Executive Committee with G. KROLL as the President. The title of the Journal, Mineralium Deposita, an awkward Latin but a great hit, was proposed by P. ROUTHIER and unanimously accepted.

G. KROLL called in the first Committee meeting in November 1965, again in Heidelberg, with an enlarged group. Soon, the Treasurer, J. OTTEMANN had to resign for health reasons and I was asked to jump in. This was quite challenge for a young scientist to take over this responsibility and to work with these well established scientists, all in age to be his father. As I am the only survivor of this first SGA Committee (some kind of a dinosaur of SGA ...), I share in thought this distinction with them, since we did a cooperative work.

It was a great time working with G. KROLL and under his guidance. Besides his innate sense of diplomacy, he brought from his professional experience as the Chief Geologist and a Director of Billiton Maatschappij a great capacity of management, the ability to coordinate people with different backgrounds and nationalities, to take the right decisions rapidly, to limit discussions in time and to develop a great efficiency. Without him, SGA would not have started as easily and rapidly.

J. GUILBERT also deserves mentioning. During my secretaryship, he spent a sabbatical in Nancy in the 80' and at that time was Vice-President of SEG in charge of International Affairs. Our discussions improved the mutual understanding of both societies, although a simplified admission procedure for members of one society to the other already existed, as well as an „ex officio“ membership in the



Fig. 7 Presentation of the Award for the best paper in Mineralium Deposita during the Opening Ceremony of the 13th SGA Biennial and 50. Anniversary Meeting in Nancy, France 2015 (from right to left: B. Lehmann – Chief Editor MD, European Office, D. Groves – on behalf of recipients of the award, G. Beaudoin – SGA President and Chief Editor MD, North American Office and J. Pašava – SGA Executive Secretary). Photo by Patrick Lagrange.



Fig. 8 Presentation of Student Awards during the Closing Ceremony of the 13th SGA Biennial and 50. Anniversary Meeting in Nancy, France 2015 (from left to right: A. Vymazalová – Chair, Conference Student Committee, J. Relvas – SGA Vice-President, four student winners: D. Navarro-Ciurana, R. Strachan, M. T. Bellver Baca, V. Selvaraja, J. Kolb – Council member, A. Cheilletz – member, Conference Student Committee). Photo by Patrick Lagrange.

Council of one society of the President and Secretary of the other.

Later as a President (1983–1985), P. EVRARD launched the idea of Biennial meetings to complete the symposia, excursions and workshops SGA already organized each year. For organizational reasons, this was postponed until the 25th anniversary of SGA, when M. PAGEL, then Executive Secretary of SGA, masterly organized the first Biennial meeting of SGA in Nancy in 1991. It was the great exit, many still remember.

Let me close with the last sentence of my farewell letter when I resigned from the position of Secretary in 1988: „Much has been done, more remains to be done“. Over the years, I saw with pleasure the positive evolution of SGA: the Biennial meetings continue with growing exit, the membership tripled, the impact factor more than doubled, there is an increasing implication of non-Europeans in membership and management of the Society, just to quote a few of them.

Again my warm thanks for this distinction and long life to SGA!

The SGA Award for the Best Paper in Mineralium Deposita

The award (established in 1999) is presented every two years at the Society Biennial Meetings and consists of a citation, certificate, EUR 1500 and travel expenses for the first author associated with the receipt of the award.

Based on pre-selection of five papers by Chief Editors, MD, and after Council vote it was decided that the paper by Maier WD, Barnes SJ, Groves DI (2013) The Bushveld Complex, South Africa: formation of platinum–palladium, chrome- and vanadium-rich layers via hydrodynamic sorting of a mobilized cumulate slurry in a large, relatively slowly cooling, subsiding magma chamber, published in *Mineralium Deposita* 48: 1–56, will receive the award.

After introduction by J. Pašava and citation by B. Lehmann, the award was presented by B. Lehmann (Chief Editor, MD, European Office), G. Beaudoin (SGA President), and J. Pašava (SGA Executive Secretary). On behalf of the authors the award was accepted by D. Groves.

The SGA Awards for the Best Student Oral and Poster Presentation

In order to encourage students to participate in the SGA activities and to reward excellence in their scientific work, the Best Oral and Poster Presentations given by students were awarded.

A Conference Student Committee constituted by Pedro Acosta-Gongora, Alain Cheilletz, Jochen Kolb, Jorge Relvas, Ryan Taylor and Anna Vymazalová based on high quality and scientific merit of the student's presentations decided to attribute the awards to three students for oral presentations and two students for poster presentations (each of them received a certificate,

300 USD and a book written by David Groves „The Digital Apocalypse“).

The best student oral presentations:

Rebecca Strachan: Gold mineralization during progressive deformation along the Ashanti Belt: Wassa Mine, Ghana.

Maria Teresa Bellver Baca: High Sr/Y magmas and porphyry-type deposits: what is the role of timescales of magmatic processes?

Vikraman Selvaraja: Sulfur sources in the Glenburg Orogenic gold deposit.

The best student poster presentations:

Diodac Navarro-Ciurana: Geochemical evidences and heat-transport simulations for warm fluid involvement in the formation of Riopar MVT deposit (Prebetic Basin, SE Spain).

Matthew Brzozowski: Variation in vein mineralogy and mineral chemistry around the Marathon Cu-PGE deposit, Ontario: insights into the development of an exploration tool.

On behalf of SGA, we wish to congratulate once more all awardees!

The 7th Annual Baltic Student Chapter Meeting

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The Baltic student Chapter members currently are from four universities in the Baltic Sea Region – AGH University of Science and Technology (AGH), Luleå University of Technology (LTU), University of Oulu (OU) and University of Turku (TU). They represent the countries of Poland, Sweden and Finland respectively. Our custom is to organize the annual meeting in one of the different countries each year.

On 11th to 15th of May 2015, the 7th annual meeting of the SGA Baltic Student Chapter was held at the Luleå University of Technology (LTU). 32 students took part in the meeting and for the Polish and Finnish people, accommodation in students flats in Luleå was arranged to reduce the expenditures. Thanks goes to Tobias Kampmann, Emelie Hedlund, Nilsson, Emma Bränn, Nils Edblom, Olle Bertilsson, Anton Lidström, and Per Kautto who all put a lot of effort in organizing the meeting.

The program of the meeting included a field trip to New Boliden in the Skellefteå ore district which hosts a significant number of Zn-Cu-Au deposits, as well as a trip to the Råneå pegmatites (Fig 1.). At the LTU, activities included a presentation of the metallurgical laboratory, special lectures in gemstone geology and geome-

tallurgy, as well as a session of student presentations and numerous social events. An additional task for chapter members from each country was to prepare an evening with their national cuisine and entertainment, with the intention to exchange cultures and enhance interrelations.

The Meeting began on 11th May with the registration at the LTU campus, where each participant received a “welcome bag” with a meeting program, brochures about the LTU and a giveaway’s from Luleå. The registration was followed by a welcome ceremony during which the 7th annual meeting was declared open, information about the meeting and the town of Luleå was presented. In the evening, during the Ice-Breaker party, the Swedish students pleased the participants with their special cuisine of homemade meatballs and crayfish (Fig. 2).

On Tuesday morning, the 12th of May the participants departed to the Skellefteå district and Boliden, for a two days study visit at the New Boliden mining company. After arriving at the New Boliden office an interesting introduction was held by Martin Eman about the company’s operations and politics. The company operates in Boliden area since early XX century and has been extracting Pb-Zn-Cu ore

from more than 30 mines during this time. Nowadays, New Boliden operates in the Skellefteå ore district five polymetallic and gold mines and a concentrator at Boliden, where it produces Cu-Au and Zn concentrates. Company operates also the Rönnskär smelter, where Cu-Ag concentrate is processed.

After lunch the participants were divided into two groups visiting different operation sites. The first group saw a presentation and short lecture about geophysics before visiting the geological office and the drilling site (Fig. 3). The second group went to the concentrator plant where they could observe each step of processing the polymetallic ore (Fig.4).

In the evening “Kubb” was introduced, a traditional Scandinavian game where you throw sticks and try to hit a wooden cube (Fig. 5). However the peaceful evening took a rather interesting turn, when a suggestion to go for mineral hunt in nearby waste rock dumps at the Björkdal gold mine, were made.

Björkdal gold mine is an active mine operating in the underground workings and an open pit mine. At the end of XX century it was the biggest Au mine in Europe. Gold is hosted in the quartz veins within a biotite-altered granodiorite and it occur

as simple grains and in association with pyrite. The gold ore has increased content of Te, W and Bi. At the mine dumps (Fig. 6) it is possible to find colorful quartz, tourmalines, chlorite and schelite. After an hour of hunting, some interesting findings were made; 2-3 mm rutile crystals and the tiny flake of native gold. A perfect ending to a very long day!



Fig. 1 Map of visited localities.



Fig. 2 Participants of 7th Annual Meeting enjoying typical Swedish meatballs. Photo by Tomasz Ćwiertnia



Fig. 3 One of New Boliden's drilling sites. Photo by Tomasz Ćwiertnia



Fig. 4 New Boliden concentrator plant producing Cu-Ag and Zn concentrates. Photo by Krzysztof Foltyn



Fig. 5 Practicing "Kubb" after field trip day one. Photo by Emelie Hedlund



Fig. 6 Mineral hunting on Björkdal gold dump. Photo by Bartosz Piotrowski



Fig. 7 Listening closely during the tour at Rönnskär copper smelter. Photo by Emelie Hedlund

In the morning of the 13th of May the groups switched operation sites. Group 1 went to the concentrator plant, where they after the tour received a specially prepared bucket with ore from the Kristineberg deposit. Group 2 went to the geology office and the drilling site. At midday the two groups reunited to enjoy lunch provided by New Boliden in their mining canteen. The study trip continued to Rönnskär copper smelter outside Skellefteå (Fig. 7).

We could see the pouring of molten copper into giant forms. A rather breath-taking view and actually quite warming, even though the group was safe located behind protective glass.

By leaving Rönnskär an exciting two-day study trip ended and the group headed back to Luleå. There bad news were waiting – the food prepared for Finnish evening was thrown away! However with little help Finnish team prepared other

dishes in no time so everyone could enjoy classical hot-dog instead of reindeer stew.

On Thursday, 14th May, the official chapter meeting was held during the morning. Discussions about future activities and meetings were held, followed by student presentations (Fig. 8). Five speakers presented results of their bachelor's or master's thesis projects: Anne Brandt Johannsen – ("Nickel mineralization in the Paleoproterozoic Johan Petersen intrusion, Ammassalik intrusive

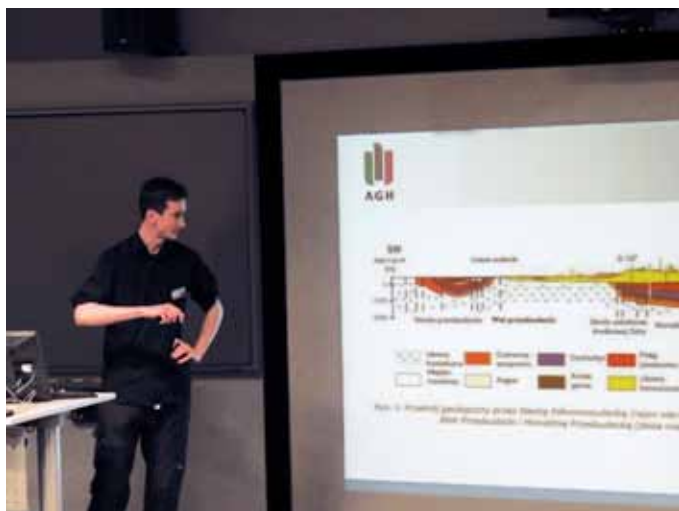


Fig. 8 Krzysztof Foltyn presenting results from his BSc thesis.
Photo by Jakub Okrzesza



Fig. 9 Black tourmaline founded on Râneå pegmatites.
Photo by Krzysztof Foltyn



Fig. 10 Field trip to the Râneå pegmatites. Photo by Tomasz Ćwiertnia



Fig. 11 Participants at the 7th annual chapter meeting. Photo by Tomasz Ćwiertnia

complex, southeast Greenland”), Piotr Kopeć – (“Estonian kukersite in ordovician strata”), Eligiusz Gugala – (“Noble metal occurrence in Polish Kupferschiefer type deposits”), Krzysztof Foltyn – (“Geochemical analyses of organic matter as a useful tool in exploration of Kupferschiefer-type deposit”), Adrian Krzemiński (“Sb-Au mineralization in Nižna Bocá, Slovakia”).

In the afternoon, we have visited the Râneå pegmatites, approximately 35 km N off Luleå (Fig. 1), known for mineralization with several species of garnets (almandine), tourmaline (schorl), beryl, and rare Nb- and Ta- rich minerals, like columbite, euxenite, monzanite, etc. In the Râneå area there are numerous pegmatite veins within the granite massif. The mineralization has been recognized by numerous open pits and outcrops. We have managed to find coarse-crystallized, black tourmaline and red garnet specimens, up to 50 cm in size (Fig. 9). Some

of us found, with a little luck some apatite, beryl and topaz.

The cold weather invigorated a campfire at the site to warm cold mineral hunters and to barbeque some sausages (Fig. 10). After the field trip the Polish fellows prepared their national soup “żurek” and “schabowy” (pork chop) bites with typical polish snacks (dry sausage, pickled cucumbers, eggs with tatar sauce) and beverages. It was a strengthening meal after an afternoon outside in the cool weather.

On friday, 15th of May, lectures were held for the participants given by Professor Olof Martinsson regarding gemstone geology and by PhD student Mehdi Parian regarding geomaterials and its applications. The lectures were followed by a guided excursion to the LTU metallurgy laboratory where a small-scale version of industrial processing equipment was displayed. The equipment is used by researches to prepare the metallurgical tests

and to improve the existing procedures at processing plants. The day ended with a farewell party at the Old Brodie’s pub which put a nice finish to the day and the meeting (Fig. 11).

We would like to acknowledge all the organizers, presenters, and participants who made the 2015 Meeting a great success. We hope for a successful continuation in 2016, when we will welcome everyone to Oulu for the 8th annual meeting of the Baltic Student Chapter.

The organizing committee would like to express profound gratitude to the New Boliden for welcoming us and giving a helping hand in organizing the field trip, to Lantliv Österjörn for providing accommodation during the visit to New Boliden and to Professor Olof Martinsson and Mehdi Parian for their very interesting lectures.

Dziękuję/Tack/Kiitos!

Extension of trip to Scandinavia by Polish students on the occasion of the 7th Annual Baltic Student Chapter Meeting

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In addition to the 7th Annual Baltic Student Chapter Meeting five students from the AGH University of Science and Technology organized an additional trip to interesting mine sites in Scandinavia (Fig. 1). We took the opportunity to extend our stay in Scandinavia and to spend some extra days to discover other places, learn geology and collect samples. Our travel route was flexible, since we did over 5,000 km by car both ways, from Krakow to Luleå in Sweden (Fig. 2).

The trip started in the evening the 7th of May with departure by car from Kraków. During the way to Luleå we have sightseeing the Baltic countries' capital's – Riga, Tallinn, and Helsinki. The first geological stop on the way was in Haapalouma and Kaatjala pegmatites in western Finland (Fig. 3). Those pegmatites are enriched in REE, lithium and borate. More than 40 different minerals occur there e.g. schorl, elbaite, lepidolite, columbite, cassiterite, spodumene, almandine, apatite, beryl. Kaatjala is type locality for katialaite

($\text{Fe}(\text{H}_2\text{AsO}_4)_3 \cdot 5\text{H}_2\text{O}$) which is formed during weathering of lölingite. In both places we have found beautiful crystal of pink elbaite (Fig. 4), pink lithium micas,

spodumene, schorl, blue apatite, spessartine, and muscovite up to 15 cm long.

Much more geological sites we have seen on our way back. The first target on the way back to Krakow was the Bruvann Ni-Cu deposit (Norway, Fig. 5), mined between 1989–2001 for nickel, copper and olivine (used as flux for iron smelting). In total 8.2 Mt @ 0.52% Ni was mined. Deposit is located in ultramafic Råna intrusion, approximately 20 km south-east from Narvik (Fig. 5). The mineralization is hosted by peridotite near the contact with surrounding metamorphic rocks. Pentlandite, chalcopyrite and pyrrhotite are main metal minerals. In addition Ni is partly bounded in olivine. Currently host rocks are mined for road construction aggregate but we could observe traces of mineralization and old mining works.

Next stop was Aitik, the world's most efficient porphyry Cu-Au mine. The deposit is situated near Gällivare in Sweden. Main open pit is 3 km long,

500m wide and 450m deep. Calculated reserves have 1085 Mt @ 0.22% Cu, 1.5 ppm Ag, and 0.14 ppm Au. Chalcopyrite mineralization occurs as stockwork, is hosted in footwall mainly in biotite and muscovite schist close to the fault (Fig. 6). Gold occurs as free grains and as inclusions in chalcopyrite and pyrite. During the trip to the open pit we could observe the main fault and different lithology's on the walls. The most impressive were mineralized fragments of muscovite schist and usually barren pegmatite dykes.

On next day, 19th of May, we came back to Finland to visit the active orogenic Au Kittilä mine. Kittilä is an underground mine with estimated 29 Mt of ore containing 4.5 mln ounces. The deposit is hosted in Proterozoic



Fig. 1 Participants on the Baltic Seashore. From left: Adrian Krzemiński, Eligiusz Gugęła, Jakub Okręsa, Piotr Kopeć, Filip Zych. Photo by J. Okręsa



Fig. 2 Scandinavia map with marked localities.



Fig. 3 Kaatjala pegmatite quarry flooded with perfectly clean water. Photo by E. Gugala



Fig. 4 Pink tourmaline elbaite sample with visible zoning. Haapalouma quarry. Photo by A. Krzemiński



Fig. 5 Bruvann deposit. Visible host rock of the Råna intrusion. Yellow dot in the middle is one of participants. Photo by E. Gugala



Fig. 6 NE corner of the Aitik pit. Blasted muscovite schist ore on right. Photo by E. Gugala



Fig. 7 Looking at Fe-Ti-V massive ore outcrop at Otanmäki. Photo by E. Gugala



Fig. 8 Euhedral, 5mm, green garnet uvarovite crystal in skarn. Photo by A. Krzemiński

greenstone belt. Known ore zone is 4.5 km long and up to 2 km wide. The highest Au grades are observed close to the fault zones in the black graphite schists. Most of the gold is connected to the arsenopyrite and pyrite, only 4% is the “free” gold. This so called refractory type ore makes processing and extracting very difficult. In Kittilä we had a guided tour on surface. In small open pit we observed the exposed shear zone, the

black graphite schists with sulphide mineralization. Next we visited mine drill cores storage where we received high-grade ore samples.

On the 20th of May we arrived in Otanmäki, magmatic Fe-Ti-V deposit, mined between 1953–1985. This place was of our special interest, since in the north-east Poland exists a similar deposit buried under a thick overburden. In contrary to Poland, the

deposit is almost on the surface. In Otanmäki we could observe the geology and collect ore samples by the old open pits (Fig. 7). Deposit is hosted in the mafic gabbro-anorthosite intrusion. Massive ore occurs in form of irregular lenses of different sizes. The main ore minerals are magnetite and ilmenite, with minor pyrite. Content of V₂O₅ in magnetite ore as 0.38%, and it was responsible for approximately 60% of the revenue.



Fig. 9 Cr-diopside crystal. Photo by A. Krzemiński



Fig. 10 Picked massive sulphide chalcopyrite-pyrrhotite ore in Kylylahti deposit. Photo by E. Gugala

Next day, 21st May, the Siilinjärvi carbonatite deposit was visited. The deposit is mined in open pit for apatite used as agricultural fertilizer. P₂O₅ content is 4.2% and it is one of lowest in active mines. Siilinjärvi with age of 2.6 Ga is one of the oldest carbonatite complexes in the world. It is also famous for its huge and perfectly shaped zircon, but unfortunately that day nobody was lucky to find any crystals.

The same day we went to the Outokumpu, Finland's most known Cu-Co-Zn district. Outokumpu ore district is related to the ophiolite belt composed of the black shists, serpentinites, and siliceous rocks. Due to unique rock assemblage during metamorphism rare Cr-bearing minerals were formed. In the old Mikkilä quarry we were able to find some uvarovite (Fig. 8) and Cr-diopside (Fig. 9).

The last day, 22nd May we visited the recently opened Kylylahti mine (Cu-Zn,

VMS type). After a short introduction we went underground by car, where we could collect pieces of massive and semi-massive chalcopyrite, pyrrhotite, and pentlandite ore (Fig. 10). After return to surface we visited the core storage where we checked the use of the portable XRF device. Unfortunately everything usually comes to an end and after quick visit in the mine core storage we started our way back home, and we finally arrived back in Krakow by the evening of the 23rd of May.

Scandinavia is exciting area for Economic Geologists, with numerous deposits and mines of different geological type and commodities. Sweden, Norway and Finland are important countries on the metallogenic map of Europe, hosting base metals, precious metals, rare pegmatites, all of the with high scientific and economic value.

It was a thrilling experience to observe the deposits types, that we know only from

lectures. We have learnt about the Scandinavian geology and gain detailed knowledge of the visited deposits. Experience we gain will grow in future. Collected samples improved University collection and partly, will be topic of students research.

Such interesting and successful trip wouldn't be possible without the help of many people and especially the very friendly attitude from the mining companies. We would like to express profound gratitude to Sofia Höglund and Max Forsman from New Boliden, Jukka Valimaa from Agnico Eagle, Aleks Salo from Yara Suomi, and Jouko Jylänki from Otanmäki Mine Oy for kindly welcoming us and giving interesting tours, to Katherina Shloglova for help in planning, and to Günther, Anna and Lauri for kind hosting.

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News from the Barcelona SGA-SEG Student Chapter: 2015th Summer Closure Event, Attendance to the 13th SGA Biennial Meeting at Nancy and 2015th field-workshop

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Spring and summer of 2015 consisted of eventful months for the Student Chapter of Barcelona. Numerous activities were being fore-planned whilst others took place simultaneously. Preparation for our forthcoming 2015 workshop and the last details of the abstracts developed by student to present in Nancy's Biennial Meeting were taking place shoulder to shoulder with organized talks and short presentations.

2015 SUMMER CLOSURE EVENT

2015 academics' year ending consisted in diverse outstanding talks given by both undergraduate and graduated students (PhD):

Lisard Torró presented a broadening one-hour talk about "Weathering profile of the Cerro de Maimón VMS deposit (Dominican Republic): textures, mineralogy, gossan evolution and mobility of gold and silver" in the well-known activity organized by the Barcelona Student Chapter: Pope for an hour, whilst short 10 minutes talks (enlisted below) were imparted by other students in English (Fig. 1).

Daniel Rodríguez: "Au mineralisation in

listvenites from a serpentinised ophiolite complex in Mina Descanso (Central Cuba)".

Mariona Tarragó: "Diffusion of heavy metals during vitrification of chromium sludge in a basaltic matrix: model of a melting pond in an alumina crucible".

Miriam Pastor: "The San José-Itos mines, Oruro, Bolivia: Structure and Ag-Sn Mineralization". Lisard Torró: "Geochemistry of the VMS bearing Maimón Fm. (Central Cordillera, Dominican Republic): assignment to a fore-arc environment in a nascent intraoceanic island arc".

Cristina Villanova: "Ni-enrichment processes revealed by TEM imaging on garnierites".

Clara Román Alday: "The Romero Cu-Au-Zn deposits, Cordillera Central, Dominican Republic: Preliminary data on the mineralogy and geochemistry of mineralization".

These presentations consisted in the exposition of final degree Projects (TFG), final master Projects (TFM) and even other post-master research projects, all of them resulting in successful talks which enhanced motivation and participation within attend-

ants. After these sessions a coffee stand was displayed and every participant could enjoy the company of our colleagues and bid farewell to our friends before entering the forthcoming summer.

In addition, we would like to thank the Faculty of Geology for their logistic and economic support.

13th SGA Biennial Meeting at Nancy

After enduring long busy months developing micro-research projects, finally 12 students from the Barcelona Student Chapter comprising undergraduates, master and PhD attended to the 13th SGA Biennial Meeting at Nancy, France, which took place from the 24th to the 27th of this last August. These members had the opportunity to present as i) poster or ii) oral presentation micro-research projects or Final Degree Projects (TFG) (Fig. 2). For some of them this experience was a reminder of other conferences (Uppsala 2013), for others their first time exposing. Either way, everybody concluded that the time spent



Fig. 1: Collage presenting different 10 minutes talks. These talks took place in the Faculty of Geology of the University of Barcelona.



Fig. 2: Combination of pictures taken of some members whilst presenting their poster at Nancy's Biennial Meeting in Centre Prouvé.

there was just wonderful. The list below comprises both oral presentations and posters presented by our members:

Thomas Aiglsperger with “Multistage PGE nugget formation in Ni-Laterites: from hypogene to supergene, new insights from Falcondo (Dominican Republic)”

Sandra Baurier with “Chromian spinel composition, PGE geochemistry and mineralogy of recently discovered chromitite bodies from the Loma Caribe peridotite, Dominican Republic”

Andreu Cacho with “Huanuni, Bonanza and la Suerte mines: mineralogy, geochemistry and structure”

Abigail Jimenez with “Mineralogical characterization of Sn deposits from the Santa Fe district, Bolivia”

Daniel Rodríguez with “Au mineralisation in listvenites from a serpentinised ophiolite complex in Mina Descanso (Central Cuba)”

Clara Román Alday with “The Romero Cu-Au-Zn deposits, Cordillera Central, Dominican Republic: Preliminary data on the mineralogy and geochemistry of mineralization”

Guillem Sánchez with “Au- and PGE-rich massive sulphide deposits associated with serpentinized peridotites of the Havana-Matanzas Ophiolites, Cuba”

Mariona Tarrago with “Diffusion of heavy metals during vitrification of chromium sludge in a basaltic matrix: model of a melting pond in an alumina crucible”

Lisard Torró with “Geochemistry of the VMS bearing Maimón Fm. (Central Cordillera, Dominican Republic): assignation to a fore-arc environment in a nascent intra-oceanic island arc”

Cristina Villanova with “Fe-Ni-rich serpentines in the saprolite horizon of Ni-laterite Caribbean deposits: a new approach from thermodynamic calculations”

The opportunity to meet experts of specific fields and establish conversations, to attend to the diverse and rich oral presentations given by speakers from all around the world, the chance of presenting the results obtained of your own work and acknowledging others', and finally getting to know people and the members from other Student Chapters; all of it consisted in an amazing experience.

2015 Barcelona Student Chapter's workshop: ultramafic Ronda & Ojén massifs: Petrology, Geochemistry and Cr-Ni-PGE associated mineralization

Instead of undergoing a workshop consisting of several introductory lectures and a one day fieldtrip the Barcelona Student Chapter's workshop of 2015 consisted

of a two day field-workshop entitled “Ultramafic Ronda & Ojén Massifs: petrology, geochemistry and Cr-Ni-PGE associated mineralizations”. The whole field-workshop was developed in the two small massifs of Ronda and Ojén (Málaga) during the 11th and 12th of September.

The peridotite massif of the Serranía de Ronda comprises three massifs (Ronda, Ojén and Carratraca) located in the westernmost internal zone of the Betico-Rifean Cordillera, which constitutes the westernmost segment of the Alpine belt in Europe. These massifs are made up primarily of lherzolite and harzburgite with minor dunite and pyroxenite layers. They represent portions of subcontinental lithospheric mantle tectonically emplaced at high temperature and high pressures into Paleozoic metasediments during the 20/22 Ma Alpine orogeny. Peridotites are zoned into three main lithological domains: a) spinel ± garnet tectonic domain, b) granular peridotite domain and c) plagioclase tectonic domain.

A small group of members including undergraduate, master and PhD students was led by Fernando Gervilla; full professor of the University of Granada and Joaquín Proenza (advisor) during the whole fieldtrip (Fig. 3). These students had the opportunity to learn from an invited professor who has dedicated years of his research on the study of the Ronda peridotites; and furthermore, recently co-authored “Liquid immiscibility between arsenide and sulphide melts: evidence from a LA-ICP-MS study in magmatic deposits at Serranía de Ronda (Spain)”.



Fig. 3: Group photograph taken in an outcrop characterised by chromitite and nickeline altered to annabergite mineralisation. Close to this outcrop spinelites mineralisation.

The first day was devoted to a cross-section study of the orogenic lherzolites of the subcontinental mantle which crop out in the Ronda massif. Firstly observed; the garnet peridotites where graphite pseudo-morphs after diamond have been described (Crespo et al. 2006). Later on; the spinel peridotite and finally the peridotites with plagioclase.

During the second day small chromite and Ni arsenide mines were visited: ex) Gallega Mine (Fig.4) where students had the opportunity to search for interesting hand-samples and acquire the experience of discerning between the diverse mineralogies present.

We gratefully acknowledge Professor Fernando Gervilla for his overwhelming guidance during the whole fieldtrip and his interest in forming part of our fourth annual field-workshop, to everybody who was involved in it and gave us support. We also express our most true gratitude to the SGA for the economic support offered, which allowed us to develop and carry out all the programmed activities and made out of it a successful field-workshop.

We would like to remind that for any more information feel free to consult our Student Chapter checking out our page web <http://bcn-sga.cat>.



Fig. 4: Left image: Local acid dikes of granitic composition. Right image: Gallega mine. Observation of chromite and nickeline mineralisation. Some of these veins also containing cordierite.

News from the Bucaramanga – Colombia SGA Student Chapter: Participation in the XV Colombian Geological Congress

Alfredo Pinzón, M. Juliana Puente, Luis F. Páez, Danilo Gonzales

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The XV Colombian Geological Congress was developed from August 21 to September 5, 2015, in the city of Bucaramanga. At the opening ceremony, We was appointed as one of the chapter of all the country that contributes to the development of activities and active participation in the geological events such as the technical week of the Colombian Geology and the Geological Congress.

This time we participate in the organization with support from the Industrial University of Santander with two courses of emphasis on mineral deposits, economic geology and mining; the first participation by geologist Roberto Perez Xavier which is part of the Universidad Federal de Campinas (UNICAMP), Brazil. With the course entitled „Hydrothermal alteration and ore assemblages: recognition and interpretation“ on the 31st of August with a duration of one full day and the next day on September 1 the participation Geologist Jose Affonso Brod belonging to the University Federal University Goias in Brazil with the course „Metallogeny of Alkaline-Carbonatite Complexes“ with duration of a day. The participation of these two



Figure 1. During the course of Roberto Perez Xavier in the maximum classroom CENTIC in the Universidad Industrial de Santander (UIS).

international professionals also had two speeches at the XV Colombian Congress of Geology, which had an important assistance of people.

For us it is a pride that our student chapter can contribute in the realization of the

major geological events in our country and we to seek opportunities to generate knowledge and to try to have a closer contact to what is reality in your performance as geologists.



Figure 2. Resolving some doubts about this course of Roberto Perez Xavier, „Hydrothermal alteration and ore assemblages: recognition and interpretation“.



Figure 3. During the course of Jose Affonso Brod in the maximum classroom AGORA in the Universidad Industrial de Santander (UIS).

News from Morocco SGA Student Chapter

Zaineb Hajjar, Said Ilmen (Phd students)

sgachapter.marrakech@gmail.com; zaineb.hajjar@edu.uca.ma; said.ilmen@edu.uca.ma

After the short courses organized in the collaboration between SGA and MANAGEM group (September 29th to October 3th, 2014, at Marrakech, Morocco). Some Phd and under-graduated students from the Cadi Ayyad University decided to adhere SGA and create an SGA Student Chapter in Morocco.

thermal, Skarn deposit, Carbonate Replacement deposit, hydrothermal, ophiolite-related deposits and Gold-copper ore porphyry. Half of student members have already published their works in specialized journal.

The SGA-MSC comprises members from Cadi Ayyad University (Marrakech) and

and field trips related to Economic Geology and Geology in general, in order to complement the undergraduate studies of the Student Chapter's components, of other students of geology, and to enrich the training of geologists interested in those topics.



Photo of the participation of SGA-MSC members in the 13th SGA Biennial meeting (August, 24th to 27th, 2015, Nancy, France). From the left to the right: Abdelmajid Jarni, Amal El Arbaoui, Said Ilmen, Anna Vymazalová, Jorge Relvas, Mohamed Bhilisse, Zaineb Hajjar.

The SGA-Moroccan Student Chapter (SGA-MSC) was created in September 2015 and it is the first student chapter from the North Africa. The Chapter is hosted by the Cadi Ayyad University (Marrakech, Morocco) and is formed by 16 members (11 PhD students and 5 Master students). All the members of this student chapter have already developed mineralogical studies on a wide range of deposit types, including epi-



Zaineb Hajjar (Phd Student, 4th Year): mineralization related to ultramafic rocks.

Mohamed 1er University (Oujda). We attempt to cover a major part of university to promote exchange between students of universities.

This Chapter has been established with the aim of organizing short courses, lectures



Amal El Arbaoui (PhD Student, 3th Year): epithermal mineralization



Position of Marrakech city in the Moroccan Map.



Said Ilmen (PhD Student, 4th Year): Au, Bi, Cu, Pb, Zn mineralization.

Planned Activities

1st: Exposition in the Centre Cultural, Atlas Golf Marrakech.



November, 19th 2015

2nd: The First Meeting of Moroccan Student Chapter



18th – 23th May 2016

Officers

- President: HAJJAR Zaineb (PhD Student, 4th year)
- General Secretary: ILMEN Said (PhD Student, 4th year)
- Treasurer: EL ARBAOUI Amal (PhD Student, 3rd year)
- Webmaster: N' DIAYE Ismaila (PhD Student, 5th year)
- Responsible of External Relationship: JARNI Abdelmajid (PhD Student, 3rd year)

Scientific Advisor

- Pr. Mohammed Bouabdellah (Regional Vice-President SGA, N. Africa-Mid. East)

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- ZEMRI Oussama (PhD Student, Faculty of Science, University Mohamed 1er, Oujda)
- BAIDADA Bouchra (PhD Student, Faculty of Science Semlalia, Cadi Ayyad University)
- GUILLOU OMAR (PhD Student, Faculty of Science Semlalia, Cadi Ayyad University)
- OUMMOUCH Abdellah (PhD Student, Faculty of Science Semlalia, Cadi Ayyad University)
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- CHRAIKI Ibtissam (MSc Student, Faculty of Science Semlalia, Cadi Ayyad University)
- ELMACHI Imane (MSc Student, Faculty of Science Semlalia, Cadi Ayyad University)



Ismaila N'Diaye (PhD Student, 5th Year): massive sulfide deposits

- ELGHAZALI Mohamed (MSc Student, Faculty of Science Semlalia, Cadi Ayyad University)

SGA-MSC Network

E-mail: sgachapter.marrakech@gmail.com

Facebook: [Facebook/SGA Moroccan Student Chapter](https://www.facebook.com/SGA-Moroccan-Student-Chapter)

Volcanic-hosted massive sulfide deposits from the Portuguese part of the Iberian Pyrite Belt (SGA Student Chapter Prague)

Ondrej Kratky

Faculty of Science, Charles University, 128 43 Praha 2, Czech Republic

The SGA Student Chapter Prague organized its first field trip in 2015 to the Portuguese part of the world-class metallogenic province – the Iberian Pyrite Belt. This province is situated at the SW of the Iberian Peninsula extending from Seville in Spain to the south of Lisbon in Portugal. This district has a long and rich mining history - from the pre-Roman times to present and is also known for an extraordinary density of the giant volcanic-hosted massive sulfide deposits (VHMS). This VHMS belt contains more than 85 massive sulfide deposits with total mass exceeding 1600 Mt of massive ore to which more than 2000 Mt of low-grade stockwork mineralization should be added. The mineralization is distributed between eight supergiant and a

significant number of other smaller deposits. During the last hundred years approximately 80 mines have been operating. In total they produced ~300 million tons of polymetallic ores (Pb, Zn, Cu, Au, Ag, Sn), although sulfur and copper have been the main commodities processed in most cases.

The main attraction of this field-trip was the underground visit of the active mine Neves-Corvo (SOMINCOR company) – Cu-Sn-Zn ores. We have also visited the Lousal (S-Cu ores) closed mine with its wonderful science center, old open pit Sao Domingos (Au-Ag-Cu ores), which was mined for copper and gold since the roman times and several other localities in the field. Not mentioning the beautiful city Lisbon and its

surroundings. The 5 students participated in this 7-days field-trip, which was led by professor Jorge Relvas.

The Iberian Pyrite Belt is formed by the three main stratigraphic units – the footwall Phyllite-Quartzite group (served as the source for leaching metals), the Volcano Sedimentary complex in the middle and in the hanging wall – the Baixo Alentejo flysch group. Massive sulfide deposits of the Iberian Pyrite Belt are stratigraphically associated with the volcano-sedimentary units which also contain significant amounts of black shales. Whole Belt is interpreted to be a tectonostratigraphic terrane sutured to the Iberian Massif during Variscan times as a thin-skinned foreland thrust and fold belt.



Fig. 1. Black shales emplaced into the massive pyrite body, the underground of the Neves-Corvo mine.

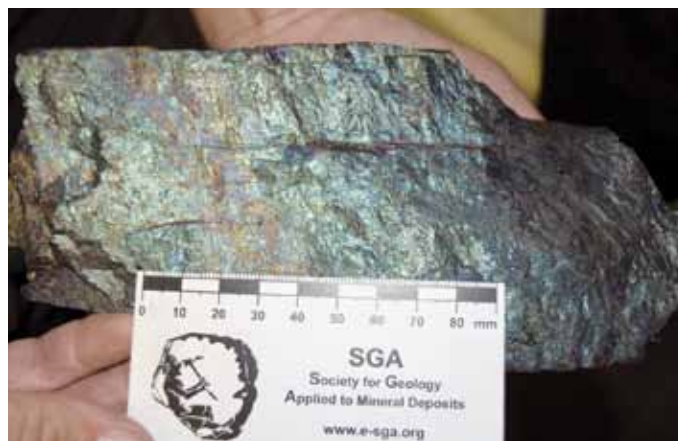


Fig. 2. Sample of the ore from the bornite zone (Neves-Corvo mine) with copper grade reaching 44.1 %.

Accumulations of the sulfide minerals occur in shapes of lenses or blankets. They show classical morphology and occur as stratiform massive bodies which are sometimes underlain by cross-cutting stringer zones, in which sulfides occur in veins or as a pervasive disseminations. Mineral composition of the ores is characterized by relatively few major sulfide minerals. Most abundant sulfide mineral is pyrite followed by sphalerite, galena, chalcopyrite, tetrahedrite, arsenopyrite and pyrrhotite. The most common minor mineral phases include Bi-Sb-Pb-As sulfosalts, stannite, cassiterite, magnetite, electrum, and cobaltite. Mineralized zone is surrounded by the typical alteration zones for the VHMS deposits which resulted from the interaction between the sea-water (modified into hydrothermal fluid) and the host-rocks. They include chlorite zone (core of the hydrothermal system), sericite zone (it represents less altered host rocks) and finally the albite zone, where alteration is least intense and original textures of the rocks can be observed.

After two great days in Lisbon we have headed south for our first stop – the Neves-Corvo mine. This massive sulfide deposit is one of the largest (>300 Mt of ore) and

richest VHMS deposits in the Iberian Pyrite Belt and in the world. Five orebodies (out of six known) were discovered in 1977. This deposit is unique due to its extremely high Cu and Sn ore grades (45 Mt at 6 % Cu, 4.5 Mt at 12 % Cu and 2.2 % Sn). More than 300,000 metric tons of tin metal is contained in several types of tin mineralization that grade from 500 ppm to 60 percent of Sn. At this deposit, there is a strong evidence for the input of the magmatic fluids (this phenomena is rare at the VHMS deposits) into the hydrothermal system, which has produced the tin ores (only deposit in the Iberian Pyrite Belt with tin ores) and the bornite zones (where copper grades are up to 44.1 %).

On the next stops we have paid attention to the closed but famous localities. The Lousal mine was a pyrite-producing mine, active from the 1900 to the 1988. At its deepest part it reached 500 m below the surface. Total 50 Mt of the sulfide minerals in this area are distributed between 18 bodies. Average grade of the ore was 45 % of S and 0.7 % of Cu. Nowadays, the mine and its surface facilities are rehabilitated and transformed into the science center. For more information about the Lousal and

whole rehabilitation project please read the SGA News n. 31.

The Sao Domingos mine represents an abandoned open pit mine with the processing plant located in the vicinity of the open-pit. This area was exploited for the first time by Romans for the gold and silver only. After the Romans left the area, the mine was not operation till the 19th century, when it was re-opened for the copper production. About 25 Mt of ore had been extracted till the closure of the mine in 1966.

This field trip gave us a great opportunity to visit a famous metallogenetic province with its spectacular massive sulfide accumulations. The Lousal and the Sao Domingos mine represents an examples of old mining operations in the Iberian Pyrite Belt and serve as a reminders of its rich mining history. On the other hand the Neves-Corvo mine represents a modern mine operating at an extraordinary deposit. We would like to thank to all our guides for their time and efforts especially to professor Jorge Relvas for his guidance and help with preparations, then to Joao Matos for his assistance in the field and to the geologist of the Neves-Corvo mine who made the underground visit possible.



Fig. 3. The area of the Lousal mine.



Fig. 4. Open-pit of the Sao Domingos mine.

The 2015 Latin American Metallogeny Course – A Brazilian twist

Fernando Tornos

Centro de Astrobiología (CSIC-INTA), Ctra Ajalvir km 4, 28850 Torrejon de Ardoz (Madrid, Spain); e-mail: ftornos@cab.inta-csic.es

The XXXIII edition of the Latin American Metallogeny Course has been organized this year by the Instituto de Geociencias de Campinas (Brazil), with the collaboration of Roberto Xavier, Carolina Monteiro, Maria Jose Mesquita and Caetano Juliani. As realized in the previous edition in Belo Horizonte (2009), the courses in Brazil are somewhat different those carried in other South American countries. Here, the native language is Portuguese and not Spanish and the geology is very different to the Andean geology and metallogeny to which most South American geologists are used to. There were 71 attendants, mostly from the academy and mining companies with a well represented group of graduated students. Not surprisingly, most of them were Brazilian but we had also a good number of students from other countries including Argentina, Bolivia, Chile, Colombia, and Peru. The theoretical part (1 to 4th July) was held in the main campus of the Campinas University and included two days of theoretical classes on the general geochemistry of ore deposits, orogenic gold deposits, carbonatites and related mineralization, IOCG, and intrusion-related gold deposits. The third day was devoted to four excellent seminars on “Pathfinders to ore”, “Geochronology of ore deposits”, “Fluids in magmatic-hydrothermal systems” and

“Isotope Geochemistry” while the last one included an introduction to the geology and ore deposits of Central Brazil and the field trip. This year, the international speakers were Andreas Audetat (International Exchange Lecturer, SEG), Craig Hart and Fernando Tornos (SGA Lecturer) while the Brazilian speakers included José Afonso Brod (Federal University of Goiás), Caetano Juliani (University of São Paulo), Carlos Roberto de Souza Filho (University of Campinas), Colombo Tassinari (University of São Paulo), Elson P. de Oliveira (University of Campinas), Lena Monteiro (University of São Paulo), Lydia Lobato (Federal University of Minas Gerais) and Roberto Xavier (University of Campinas); all the speakers presented their talks in their native language and the experience was highly rewarding.

It has become a tradition in these courses that the students present their ongoing research. This year we had a large number of posters covering very different aspects of ore deposits in South America and three of them (Geological characterization of the Borrachudos IOCG-deposit, Carajas Province, Pará, Brazil [Mariângela Previato], Base metals in Paracatu region – outlook on district geology, GIS-compilation and insights for Zn-Pb mineral exploration targeting [João Gabriel Motta] and Metallogenesis

of the San Pedro mining district and the link with the gondwanic magmatism, San Rafael massif, Mendoza [Anabel Lina R. Gomez]) were voted as the best ones. The authors received a small present and a one year free subscription to Mineralium Deposita.

As it should be in Brazil, one of highlights of the course were the evening meetings. One of the days, there was a great samba night while another was devoted to the America’s Soccer Cup final between Chile and Argentina – perhaps the most stressful moment of the course.

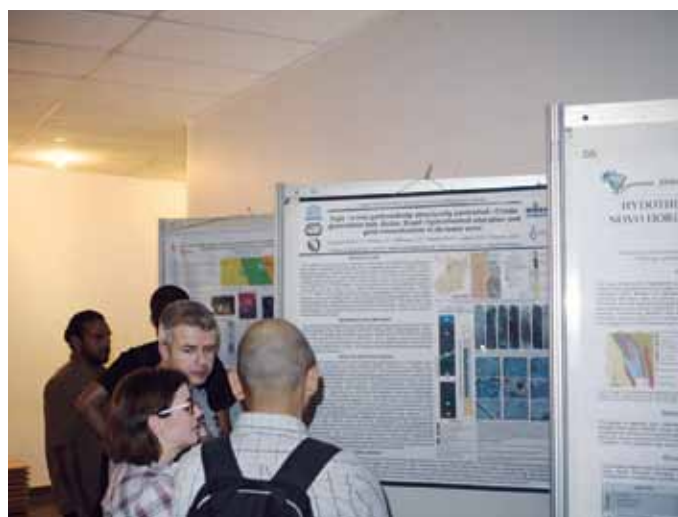
Unfortunately, not everybody could attend to the Field Trip (5 to 9th July) – efficiently led by Maria Jose Mesquita and Lena Monteiro. The first mine visit was to Catalao (Anglo American), which makes part of the Nb world leading district of Goiás. Here, Nb is found as pyrochlore in carbonatite-nelsonite pipes of Cretaceous age. This ore forming environment is unfamiliar for most of us but the geologic team of the mine gave an excellent talk, showed great drillcore and took the group to the open pit, where they clarified (most of) our doubts. The second day we visited another unusual deposit, the Vazante Zn mine, where the ore is willemite (zinc silicate) but not sphalerite. After an introductory talk on this enigmatic ore district, we had the chance of seeing the ore in



Drill core warehouse of Anglo Gold Ashanti, with the exploration geologist Adriana Castro. Ibagué/Tolima.



Drill core warehouse of Anglo Gold Ashanti, with the exploration geologist Adriana Castro. Ibagué/Tolima.



situ in the pit and have a look to the hosting stratigraphic sequence. The geologic team of Votorantim and Lena Monteiro guided us and leaded excellent discussion on the guides to ore and the different genetic models proposed for this uncommon sulfur-poor deposit. The third day was devoted to the regional geology of the area with visits to key outcrops of the hosting Neo-Proterozoic rocks. During

the afternoon we had a look to drillcore from other nearby mines including the Morro Agudo MVT deposit or the similar Ambrosia prospect. The geology finished with a road section of the Morro de Ouro (orogenic) gold-bearing sequence. Obviously, the field trip finished with an excellent dinner in the Paracatú town, where we had the chance of meeting again with the local geologists.

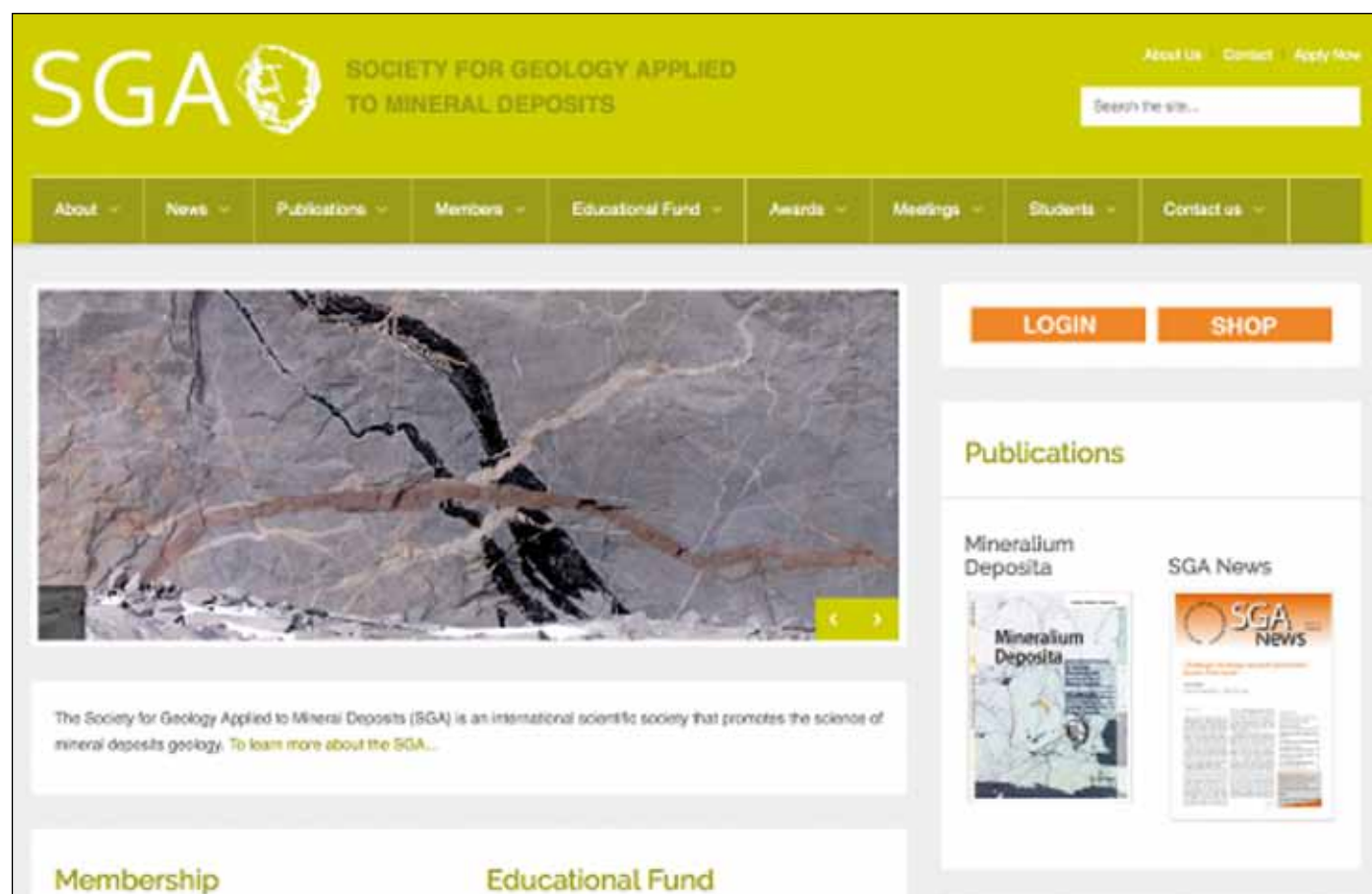
The Organizing Committee would like to acknowledge the people of the University of Campinas their excellent work and careful organization as well as the local and international speakers and the attendants for making possible this edition of the course. The next one will organized by the Universidad de Atacama (Copiapó, Chile) in 2016 and devoted to the Andean magmatic-hydrothermal systems, porphyry,



More information can be found in http://cms.unige.ch/sciences/terre/research/Groups/mineral_resources/latinometal/latinometal.html.

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<http://www.e-sga.org>



13-17 JUNE 2016
NOVOSIBIRSK**THE 8TH INTERNATIONAL SIBERIAN EARLY CAREER GEOSCIENTISTS CONFERENCE**

Novosibirsk State University
V.S. Sobolev Institute of Geology and Mineralogy SB RAS
A.A. Trofimuk Institute of Petroleum Geology and Geophysics SB RAS

- IMPORTANT DATES**
- 6 April 2015 – 1st circular, early bird opening and subscribing
 - September 2015 – 2nd circular and abstract submissions starting
 - 20 February 2016 – abstract submission deadline
 - 15 March 2016 – accepted abstract notification
 - April 2016 – 3rd circular

- 13-24 June 2016 – The 8th International Siberian Early Career GeoScientists Conference and fieldtrips

- PRECONFERENCE ACTIVITIES**
- 13-14 June 2016 – pre-conference short courses
 - 15-17 June 2016 – the 8th International Siberian Early Career GeoScientists Conference
 - 18-24 June 2016 – post conference field trips

Registration can be made at the Conference website <http://sibconf2016.igm.nsc.ru>.

THE MAIN TOPICS OF THE CONFERENCE

- Petrology and geochemistry of igneous rocks
- Petrology and geochemistry of metamorphic rocks
- Geochemistry and geochronology
- Mineralogy and experimental mineralogy
- Mineral and ore deposits
- Geodynamics and tectonics
- Evolution of sedimentary basins
- Geomorphology and neotectonics
- Paleocology and paleoclimatology
- Petroleum geosciences
- Economic geology
- Geoecology and natural hazards
- Hydrogeology and applied geology
- Geophysical researching
- Mining machinery and technology for the development of mineral deposits
- Geoinformation systems in the Earth Science

According to uploaded materials the list of sections can be changed



IGM SB RAS

<http://sibconf2016.igm.nsc.ru>

Novosibirsk University

<http://sibconf2016.igm.nsc.ru>

IPGG SB RAS

<http://sibconf2016.igm.nsc.ru>SGA
www.e-sga.org<http://sibconf2016.igm.nsc.ru>SEG
www.segweb.org<http://sibconf2016.igm.nsc.ru>**FIELD TRIP**

Post-conference field trips will be offered to conference attendees and accompanying persons.

The field excursion includes en-route and camp-based field observations of the major geological structures of the Gorny Altai– Middle Paleozoic suture-shear zone, which separates the Siberian and Kazakhstan-Baikar continents.

The Northwestern Altai is a famous ore-bearing region in which a number of types of mineralization have occurred. The trip includes visits to the polymetallic, copper, and gold mines, as well as to pegmatite veins with mineralization of rare metals and deposits of jasper and quartzite.

Post-conference geophysical excursion will be interesting as well. The trip includes near surface geophysical exploration by electrical resistivity, electromagnetic and magnetic methods, interpretation and 2D-3D modeling at study region. Data correlation with logging results is proposed.

MEDICAL CARE

Please take care about your health insurance during the conference. Also health insurance from an insurance company that provides international insurance policy program is required during field trips. Novosibirsk, Gorno-Altai and Rubtsovsk cities should be included in your health insurance. Please don't forget your specific medicine if you could need one during stay in Novosibirsk or in the course of field trip

All information about Russian visa is available at the Conference website <http://sibconf2016.igm.nsc.ru>

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>>> FORTHCOMING EVENTS <<<

*** marks a new entry****2016*****January 23–24**

SEG Course at AME BC Roundup – Geology of Granite-Greenstone Terranes and Their Mineral Deposits, Vancouver BC, Canada. Contact: www.amebc.ca/roundup/short-courses

***January 23–24**

Microdiamonds Short Course, UBC Earth Sciences Building, Vancouver, BC, Canada. Contact: www.mdru.ubc.ca/home/courses/sc88 Microdiamonds/Microdiamonds_2016.php:

***January 25–28**

AME BC Roundup, Vancouver, Canada. Contact: www.amebc.ca

February 15–June 17

Melt in the Mantle, Isaac Newton Institute for Mathematical sciences, Cambridge, United Kingdom. Contact: <http://www.newton.ac.uk/programmes/MIM/>

***March 6–9**

PDAC, Toronto, Canada. Contact: www.pdac.ca

***March 21–23**

NAC+ 2016, Edinburgh, UK. Contact: www.bgs.ac.uk/NAC2016

***May 9–11**

7th International Conference & Exhibition on Mass Mining – MassMin 2016, Sydney, Australia. Contact: <http://www.massmin2016.com/>

***May 16**

Resolving planet formation in the era of ALMA and extreme AO, Santiago, Chile – Contact: <http://www.eso.org/sci/meetings/2016/Planet-Formation2016.html>

***May 16–18**

7th International Geochemistry Symposium, Antalya Side, Turkey. Contact: Yusuf Kagan Kadioglu; Phone: [+905323970313]; Email: ykadioglu@gmail.com; <http://jeokimya.ankara.edu.tr/en/>

***May 25–27**

EGE 2016 – 14th Conference of the Geological Society of Greece, Thessaloniki, Greece. Contact: Phone: [+30-2310-223461]; Email: info@ege2016.gr; <http://www.ege2016.gr>

***June 1–3**

Margins Through Time – GAC-MAC 2016 Meeting, Whitehorse, Yukon, Canada. Contact: <http://whitehorse2016.ca/>

***June 13–17**

The 8th International Siberian Early Career Geoscientists Conference, Novosibirsk, Russia. Contact: <http://sibconf2016.igm.nsc.ru>

***June 19–24**

GRC Gordon Research Conferences “Geochemistry of Mineral Deposits – From Deep Earth to Surface: Metals for Society”, Les Diablerets Conference Center, Swiss Alps. Contact: <https://www.grc.org/programs.aspx?id=13503>

June 26–30

AESC 2016 – Australian Earth Sciences Convention, Adelaide, Australia. Contact: <http://aesc2016.gsa.org.au/>

June 26–July 1

2016 Goldschmidt Conference, Yokohama, Japan. Contact: <http://www.geochemsoc.org/programs/goldschmidtconference/>

***July 10–15**

International Geoscience and Remote Sensing Symposium (IGARSS), Beijing, China. Contact: <http://www.igarss2016.org/>

***July 26–29**

Conference on Enceladus and the Icy Moons of Saturn, Boulder, United States. Contact: <http://www.hou.usra.edu/meetings/enceladus2016/>

***August 1–3**

Unconventional Resources Technology Conferences (URTeC), San Antonio, United States. Contact: <http://urtec.org/2016/Why-URTeC/About>

***August 24–26**

Atlantic Conjugate Margins Conference, Ipojuca, Brazil. Contact: <http://www.conjugatemargins.com.br/index.html>

August 27–September 4

35th International Geological Congress, Cape Town, South Africa. Contact: <http://www.35igc.org/>

***September 5–9**

13th International Nickel-Copper-PGE Symposium, Perth-Fremantle, Western Australia. Contact: <http://www.iagod.org/node/58>

***September 5–9**

International Conference on Mars Polar Science and Exploration, Reykjavík, Iceland. Contact: <http://www.hou.usra.edu/meetings/marspolar2016/>

***September 11–15**

2nd European Mineralogical Conference, Rimini, Italy. Contact: <http://emc2016.socminpet.it/>

***September 25–28**

SEG 2016 Conference – Tethyan Tectonics and Metallogeny, Cesme, Turkey. Contact: www.seg2016.org

September 25–28

The Geological Society of America (GSA) 2016 Annual Meeting, Denver, United States. Contact: <http://www.geosociety.org/meetings/>

***October 23–26**

GRC Annual Meeting, Sacramento, United States. Contact: <http://www.geothermal.org/meet-new.html>

***October 31–November 6**

African Rift Geothermal Conference (ARGeo), Asmara, Eritrea. Contact: <http://theargo.org/files/ARGeo-C6%20Flyer.pdf>

***December 4–10**

American Exploration and Mining Association Meeting, Reno, NV, USA. Contact: www.mining-america.org

***December 11–14**

Arabian Plate Geology Workshop, Abu Dhabi, United Arab Emirates. Contact: <http://www.eage.org/event/index.php?eventid=1406>

2017***June 4–7**

FUTORES II (Future Understanding of Tectonics, Ores, Resources, Environment and Sustainability), Townsville, Australia

October 22–25

The Geological Society of America (GSA) 2017 Annual Meeting, Seattle, United States. Contact: <http://www.geosociety.org/meetings/>

***December 3–9**

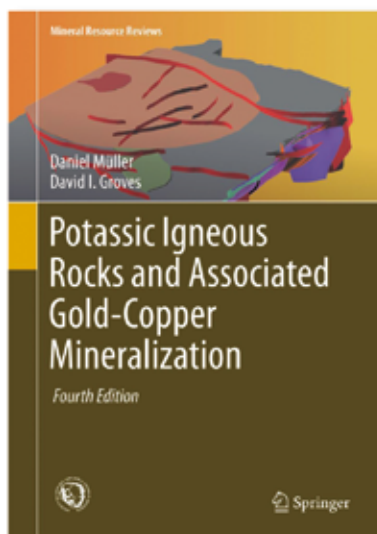
American Exploration and Mining Association Meeting 2017, Spokane, Washington, USA. Contact: www.miningamerica.org

2018***August 13–17**

IMA 2018 – XXII Meeting of the International Mineralogical Association, Melbourne, Victoria, Australia. Contact: <http://www.ima2018.com/>

***November 4–7**

The Geological Society of America (GSA) 2018 Annual Meeting, Indianapolis, United States. Contact: <http://www.geosociety.org/meetings/>


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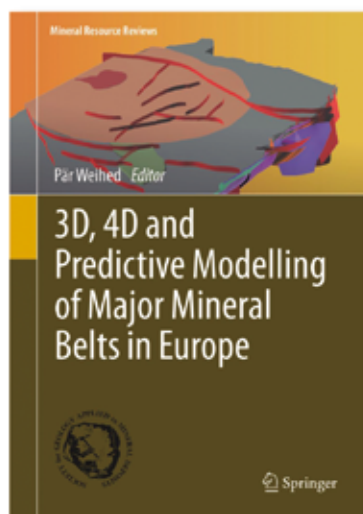
- New, updated and expanded edition that includes new chapters on the major Cadia, Cripple Creek, Oyu Tolgoi, Peschanka, and Skouries gold-copper deposits
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- Elucidates the tectonic setting of modern and ancient terrains

This book reviews the geochemical and petrological characteristics of potassic igneous rock complexes, and investigates the different tectonic settings in which these rocks occur. The authors provide an overview and classification of these rocks and elucidate the geochemical differences between barren and mineralized potassic igneous complexes. High-K rocks host a number of epithermal gold and porphyry copper-gold deposits. In recent years, there has also been growing recognition of an association of such rocks with iron-oxide copper-gold (IOCG) deposits, intrusion-related gold deposits (IRGDs) and possibly even Carlin-type gold deposits. This book is not only relevant to academic petrologists working on alkaline rocks, but also to exploration geologists prospecting for epithermal gold and/or porphyry copper-gold deposits in modern and ancient terrains. This fourth, updated and expanded edition incorporates new data and references from Africa, Australia, Brazil, China, Greece, Iran, Mongolia, North America, Russia and Turkey, including new maps and sections and new color plates of high-grade gold-copper ore from major deposits hosted by potassic igneous rocks.



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P. Weihed (Ed.)

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Efficiency of ore-forming processes, J. Cline (UNLV, USA)

Surface processes and ore deposits, R. Herrington (NHM, UK)

Magmatic-related ore-forming systems, M. Chiaradia (UNIGE, Switzerland)

Ore-forming systems in sedimentary environments, S. Gleeson (GFZ, Germany)

Belt- to district-scale fertility indicators, and ore deposit vectoring, D. Tosdal (Folly Beach, USA)

Geometallurgy: Improving metal extraction, R. Baumgartner (Gold Fields, Peru)

Microbes, organic matter and the formation of ore deposits, P. Emsbo (USGS, USA)

Outlook: Creative research for the needs of industry and society, S. Enders (RenResPartners, USA)

Conference chairs:

Robert Moritz, University of Geneva, Switzerland: robert.moritz@unige.ch

François Robert, Barrick Gold Corporation, Canada: frobert@barrick.com

David Cooke, University of Tasmania, Australia: d.cooke@utas.edu.au



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