



SGA

News

August 2014
Number 35

Activities of SGA Student Chapters

The main article of SGA News 35, like that of SGA News 32, is a compilation of reports that highlight the various activities of five SGA Student Chapters around the world: Colombia, Prague, Siberia, Nancy, and Barcelona.

1. Colombia Student Chapter Vetás-California Mining District Field Trip

Rojas M. José. J, Botello. B. Fabian, Claro V. Dalton. A

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The SGA COLOMBIA STUDENT CHAPTER was founded by students of the Industrial University of Santander (Universidad Industrial de Santander, UIS) in December 2012, with the aim of forming a regional student chapter with the purpose of creating spaces in which students and professionals could share information, knowledge and new discoveries related with ore deposits and economic geology by promoting activities such as field trips and short courses.

The first organized event was the short course "Ore-forming processes in hydrothermal systems: the example of iron oxide-copper-gold (IOCG) deposits", held at the Camacho Caro auditorium at UIS, between 3rd and 4th of April 2013 with a duration of 16 hours. The course was lectured by Dr. Roberto Xavier, professor of the UNICAMP, Brazil (Fig. 1) and was organized by Jose J. Rojas, Fabian Mauricio Botello and Dalton Claro. The course started with the reception of participants and the delivery of the SGA promotional material, continued with the welcoming speech of the Geology School headmaster Sait Khurama and the president of the student chapter Jose J. Rojas. On the first day the lecture was focused on the ore-forming processes in hydrothermal systems regarding the origins

and evolution of hydrothermal fluids in the Earth's crust, metal ions transported by fluids, and consequently alterations developed in rocks. The second day was about a case study, taking as an example the Carajás deposit, focusing in the processes and environments related to the ore formation in iron oxide-copper-gold (IOCG) deposits. The short course was successfully completed on May 4th 2013 with the result of 28 participants, 14 of which signed up as new SGA members (Fig. 1).

The SGA Colombia Student Chapter contributed to the Latin American Geosciences Student Conference (LAGSC, event sponsored by the SGA), and within the LAGSC, with the development of the short course "Fluid Inclusions and stable isotopes – principles and applications to ore deposit systems". The LAGSC main event was held in Medellín from April 8th to 11th treating different topics, including those related to mineral deposits, exploration, mining projects, guidelines for mining, etc. The short course was lectured by Dr. Roberto Xavier between April 6th and 7th. The first day lecture was about the evolution of hydrothermal fluids, the transport of metallic

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News of the Society

SGA Ordinary Council Meeting, April 2, 2014 Nancy, France

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

Anne Sylvie André-Mayer welcomed Council Members (G. Beaudoin, S. Decree, P. Eilu, H. Frimmel, J. Kolb, N. Koglin, B. Lehmann, J. Pašava, A. Piestrzynski and J. Relvas) on behalf of the SGA 2015 LOC. After introduction and a welcome address by the Jean-Marc Montel (director of ENSG), G. Beaudoin (SGA President) thanked on behalf of SGA Council for organization of the meeting and the ENSG director for hosting it. Then Council approved suggested agenda.

Minutes of previous Council Meeting (April 11, 2013 Lisbon, Portugal)

After checking the actions, the Minutes were unanimously approved.

Results of SGA 2013 ballot (J. Pašava)

J. Pašava presented the results of recent SGA 2013 ballot and welcomed new SGA Officers.

Reports of officers on Council (to be received prior to meeting) and matters arising from these reports

After discussion, Council approved the presented reports with great thanks and the following motions:

G. Beaudoin to discuss a long-term agreement with Barrick Gold on future of SGA-Barrick Young Scientist Award and report to Council at its next meeting.

D. Houston to prepare a call for nominations for SGA awards with updated deadlines (newly March 31, 2015) for upcoming SGA Newsletter to be submitted to M. Chiaradia by May 31, 2014 with a copy to N. Koglin-SGA webmaster for highlighting this info through SGA website).

A. Piestrzynski to negotiate with KGHM President the most suitable date for meeting with SGA EC Officers in fall 2014 (late October/early November),

A. Piestrzynski to identify art people and requested budget/s for preparation of a design/s for SGA-KGHM Krol Silver Medal (J. Pašava to provide photo of G.L. Krol) and report back to SGA EC so that the proposals for medal layout could be discussed and approved at the next Council meeting in fall 2014 in Cracow, Poland (date and venue to be announced in due time).

H. Frimmel to transfer EUR 50,000 to SGA EF. Council approved that possible future profits from SGA Biennial meetings will be transferred to SGA EF (except of SGA management fee that will go to the SGA regular budget).

J. Pašava to send a copy of the last SGA-Springer contract to G. Beaudoin and B. Lehmann to be pre-negotiated at the upcoming editorial meeting (May 2014).

H. Frimmel and J. Relvas to prepare a proposal to define which activities will be financed from which budget (eligible expenses from SGA regular budget and those associated with supporting activities from SGA EF).

P. Eilu to prepare a list of promotional items that need to be replenished.

G. Beaudoin/B. Lehmann to discuss with Springer possible financial budget for SGA promotional items and highlighting SGA 50 Anniversary on MD and SGA Newsletter during a joint editorial meeting in May 2014.

P. Eilu to coordinate with M. Chiaradia for sufficient amount of advertising material for the upcoming UNESCO-SEG-SGA Metallogeny Course in Quito (May 2014).

J. Slack to report on the progress regarding the status of the preparation of a book on North African Metallogeny and other newly suggested book topics in the next Council meeting.

N. Koglin to contact Blueways company to initiate transferring SGA website.

N. Koglin to make a call for proposals for SGA sponsorship of selected scientific sessions/workshops for IGC 2016 (Cape Town). SGA Council will then select some of them that would be SGA sponsored.

J. Relvas to inform M. Chiaradia about Council decision to reserve half page in SGA News for advertisement of logos of donors of SGA EF.

SGA News

No. 35 August 2014

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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

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Items for publication may be sent to:
SGA News (see address below)

Manuscripts should be sent by e-mail using Microsoft Word for text and Jpeg or Tiff formats for pictures and figures (the latter must be in grey level tones, not colour!). Please always send a paper copy and indicate the format you are using.

DEADLINE FOR SGA NEWS No. 36
31 October 2014

SGA NEWS – MAILBOX

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SGA 2013 – Final report

The report was presented by P. Klingbjer. P. Klingbjer informed Council on a decision to donate the SGU part of the meeting's profit to SGA EF. Council greatly appreciated the report and decision of the LOC and once more thanked all involved for their great work which resulted in such a successful SGA Meeting.

Action: G. Beaudoin to write a letter of thanks to DG SGU and ask if they wish to be publicly acknowledged by the SGA EF.

SGA 2015 – status of preparation

The report was presented by A.S. André-Mayer and partially by M. Cathlineau. The SGA 2015 Conference website address is <http://sga2015.univ-lorraine.fr>. After discussion Council approved the presented report with great thanks and the following motions:

Anne Sylvie André-Mayer to send comments to MOU to J. Pašava and to implement approved actions into the proposal of the Second Circular for SGA 2015 (adapted deadlines, registration fee, SGA GA, session topics/chairs etc.). The text of the Second Circular to be mailed to J. Pašava who will distribute it to Council for comments/approval before making it public.

Anne Sylvie André-Mayer to prepare an updated txt on SGA 2015 for upcoming SGA News (by May 31 to be sent to M. Chiaradia).

A. Vymazalová to get in touch with F. Tourlin to instruct him on actions/deadlines related to student issues at SGA 2015.

G. Beaudoin to ask A. Buettner to provide a new access to the Springer abstract handling system to LOC SGA 2015 and to ask about copyright ownership in case we would print Proceedings volumes with Springer.

SGA 2017 – Discussion of bids and selection

This item was chaired by J. Relvas (SGA VP). G. Beaudoin (SGA President and proponent of one of the two received bids) left the meeting room. Council then voted on procedure of Council vote on SGA 2017 meeting and approved that the SGA 2017 venue will be selected via on site vote. J. Relvas introduced the first bid (U.K. from Glasgow prepared and submitted by A. Boyce et al.) and coordinated presentation and discussion of the U.K. bid between Council members and A. Boyce et al. via Skype conversation. After that G. Beaudoin was invited to present and reply Council questions regarding the Canadian bid. After G. Beaudoin leaving the room again Council voted on the two presented very high quality proposals in favour of the Canadian bid. The 14th SGA Biennial Meeting will be held in Quebec City, Canada, August 20–23, 2017.

Action: J. Pašava to inform A. Boyce about a difficult Council decision on SGA 2017 Meeting which resulted in approval of the Canadian bid.

SEG – SGA collaboration (J. Pašava)

The report was presented by J. Pašava and G. Beaudoin. After discussion Council approved the following motion:

G. Beaudoin to inform current SEG President that SGA Council appreciated info on planned SEG major events and approved a proposed model for future collaboration (complimentary exchange of booths and promotion of respective meetings).

Progress report on membership drive from the last SGA Council Meeting (P. Eilu et al.)

The report was presented by P. Eilu. He highlighted an increase in membership by 13% with a new record of 1305 members (by the end of 2013). He also reported that student chapters and recent

meetings, workshops and short courses brought a majority of new members. The main task for SGA remains to keep new membership as long as possible. 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-paying members.

All RVP's in collaboration with Council members should contact the members who haven't paid their fees for 2014. If anyone of Council members would be approaching some of those members, it's important to inform relevant RVP to avoid repeated reminders. S. Lange to email reminders to all who didn't renew SGA membership at least 4 times a year (every 3 months).

Status of development of SGA Student and Young Scientist network – Reports from Chapters (A. Vymazalová and J. Relvas)

The report was presented by J. Relvas. Six reports were presented from SGA Chapters (Baltic, Barcelona, Colombia, Nancy, Prague and Siberia). No report was received from the Peruvian SGA Chapter. After discussion Council approved the presented reports with great thanks and the following motions:

A. Vymazalová to inform Representatives of Student Chapters about approval of their 2014 budgets (Baltic – 3000 EUR, Barcelona – 4000 EUR, Colombia 1500 EUR, Nancy – 2500 EUR, Prague – 3000 EUR, Siberia – 1500 EUR).

Requests for sponsorship

- Request to sponsor Data Metallogenica (A. Goode) – AUD 5,000 for becoming sponsoring member. The request was presented by G. Beaudoin. The benefits of SGA becoming a Founding Sponsor of DM were then discussed by Council members, including the new support for students. The decision of Council was based on a careful examination of the proposal by A. Goode. Council determined that becoming a Founding Sponsor was not in the best interest of SGA membership. Action: G. Beaudoin to inform A. Goode about a Council decision on a possible sponsorship to Data Metallogenica.
- Short Course in Gold Systems in the Bohemian Massif – SEG Student Chapter Brno (Czech Republic) – approved EUR 400 to support SGA student members – V. Wertich

Any other business

- SGA award for recognition of special services to the society – update (A. Piestrzynski, J. Pašava). This item was covered under the Report of President which also included discussion on future of the SGA-Barrick Young Scientist Award.
- IUGS initiative on Resourcing Future Generations – update (D. Houston). J. Pašava informed about resignation of Ian Lambert, Secretary General of IUGS. No update was received on RFG.
- Proposal for organization of SGA Field Courses in Western Australia (Steve Micklethwaite and Cam McCuaige). No update was received on this topic.

Date and Place of the Next Council Meeting

Suggested October/November 2014 in Cracow, Poland (A. Piestrzynski). Date and place will be announced in due time.

Informative list of past activities

- 12th SGA BIENNIAL MEETING (August 12–15, 2013 Uppsala, Sweden – www.akademikonferens.uu.se/sga2013) – P. Weiher, P. Klingbjer et al.
- Workshop on mineral deposits related with granitic intrusions

- (19–21 September, 2013) – asking EUR 1,950 for SGA Keynote Speakers Program-already decided by SGA EC (granted EUR 1,000)
- SGA Short Course „Gold deposits“ (September 13–15, 2013 Prague, Czech Republic) – flagship course promised to industry sponsors of the SGA EF – D. I. Groves, Z. Pertold et al.)
 - 8th annual Ore Deposits Models and Exploration workshop, Hefei University of Technology, Hefei, China (December 9–15, 2013). For further information, contact in either Chinese or English Dr. Fan Yu <fanyu@hfut.edu.cn>. Co-sponsored by SGA.
 - “Ore deposits models and exploration” workshop traditionally held in China (January 13–19, 2013 Guangzhou, China) – SGA keynote D. Leach – support 1500 USD
 - The 3rd Short Course on African Metallogeny (29 September – 3 October 2014, Marrakech, Morocco) – A. Cheilletz et al. – jointly with IUGS, UNESCO, GSaf, SEG and others. A. Cheilletz to send the final txt of the 2nd Circular of the 3rd African Short Course to M. Chiaradia and to write B. Hoal (SEG Executive Director) to ask for selection of one of the suggested speakers for SEG support. H. Frimmel to encourage Ethiopian link to prepare a proposal for the 4th Short Course on African Metallogeny.
 - XVII Peruvian Geological Congress (October 12–15, 2014 Lima, Peru) – a letter of invitation received from E. Ferrari – suggested short course and/or session and/or keynote speaker (F. Tornos)-Council encouraged E. Ferrari and F. Tornos to work out a proposal and get back for Council approval. J. Pašava to inform E. Ferrari and F. Tornos about approved scenario of SGA presence at the Peruvian Geological Congress (2014).
 - Workshop on Mineral Resources (September, Rennes, France). S. Decree et al. – 1500 EUR approved for SGA keynote speaker.
 - SEG Meeting (September 27–30, 2014 Keystone USA) – invitation from SEG to have a complimentary booth. J. Pašava to address Council members on possible participation in the 2014 SEG Keystone meeting.
 - „Réunion des Sciences de la Terre“ – “Colloque de Launay” (October 2014, Pau, France). A. Cheilletz and S. Decree et al. SGA booth pre-paid.

Informative list of future activities

- UNESCO-SEG-SGA Latin American Metallogeny Course, May 19–26, 2014 Quito, Ecuador – M. Chiaradia SGA link.
- EUROGRANITES 2014 (July 12–18, 2014 South-West England) – organized by Camborne School of Mines and the University of Exeter – SGA approved EUR 1000 to support SGA student members - Jens Anderse
- XII International Platinum Symposium (11–14 August 2014, Yekaterinburg, Urals, Russia) – SGA two special session – A. Vymazalová (approved 2,000 EUR for SGA student members)
- IAGOD Symposium (August 19–22, 2014 Urumqui, China) – two session sponsored by SGA: MVT, SEDEX, and VMS deposits through geological history – F. Tornos et al. and Black shale-hosted mineral deposits – B. Lehmann and J. Pašava
- Session on Gold Deposits at the IMA Meeting (September 1–3, 2014 Johannesburg, South Africa – L. Greyling (approved 1,500 EUR for a keynote speaker)



SGA Ordinary Council Meeting (Nancy, France, April 2, 2014) – from left: H. Frimmel, B. Lehmann, S. Decree, P. Klingbjer (guest), A.S. André-Mayer (Chair, SGA 2015 LOC), N. Koglin, G. Beaudoin, P. Eilu, J. Relvas, A. Piestrzynski, M. Cathelineau (guest), J.J. Royer (guest), Jean-Marc Montel (director, ENSG), A. Cheilletz (guest) (photo by J. Pašava).

En route for Nancy

Georges Beaudoin (SGA President)

Georges.Beaudoin@ggl.ulaval.ca

Starting my President mandate, I want to thank outgoing council members that devoted their time and energy for the progress of the SGA. The SGA is a volunteer-based organization, and we exist through the involvement of our members in the society's activities. I also welcome the new members of council for several years of fruitful collaboration.

The SGA held a very successful 12th Biennial Meeting, in Uppsala (Sweden). A large participation, with more than 600 delegates, a very strong scientific program (25 symposia and special sessions!), short courses (6), wonderful fieldtrips (12), and a memorable gala dinner in Uppsala Castle attest to the success of the meeting. On behalf of the SGA Council, I want to thank the local organizing committee (LOC), headed by Per Klingbjör, for the excellent organization and countless efforts. The LOC benefited from strong support from the Geological Survey of Sweden, with assistance from Boliden, Uppsala University, Stockholm University, Luleå University of Technology, the Geological surveys of Finland and Norway and the Swedish Museum of Natural History. Their contributions in staff and in-kind were instrumental in the success of our latest biennial meeting and are greatly appreciated. The Uppsala meeting was also a financial success, which will contribute to continued SGA support of student activities and of regional metallogeny short courses in Latin America and Africa.

Our next meeting, the 13th SGA Biennial Meeting, will take place in Nancy (France) from August 24–27 2015. Expect another exciting meeting, organized by a European, franco-german-belgian, consortium, led by Université de Lorraine (Anne-Sylvie André-Mayer and Michel Cathelineau), with Université de Liège (Eric Pirard), KU Leuven (Philippe Muchez) and RZTH Aachen (Michael Meyer). With this meeting, the SGA goes back to the roots of its foundation, in 1965, by a group of European geologists, as this will mark the 50th anniversary of the SGA. The 1st SGA Biennial Meeting took place in Nancy in 1991, so it is with great excitement that we will hold our next meeting in Nancy. That will be worth celebrating.

In 2013, the SGA Educational Fund was established to receive donations from individuals and corporations. The fund's purposes are to provide financial support for training activities in mineral deposit geology, by:

- 1) to support student, and professionals from economically disadvantaged backgrounds, participation to national and international scientific meetings organized or sponsored by the SGA, and to interact with high-quality professional geoscientists there;
- 2) to support student, and professionals from economically disadvantaged backgrounds, participation to field trips, workshops and short courses sponsored by the SGA;



- 3) to support SGA-sponsored activities for students and professionals from economically disadvantaged backgrounds.

The SGA has contributed start-up money to launch the fund. We are very pleased by donations by Anglo-Gold Ashanti, Sinotech and Barrick Gold. Finally, the Uppsala LOC has generously donated its share of the last meeting's profit to the SGA Educational Fund.

I would like to remind our membership that the publisher of Mineralium Deposita, Springer, is offering a 33% discount on all Springer books to SGA members. Do not hesitate to make good use of this generous rebate! Visit www.springer.com/SGA to order.

APPLICATIONS to SGA for meeting sponsorship must be submitted to Jan Pašava, SGA Executive Secretary, on appropriate forms available at the SGA home page on Internet: www.e-sga.org

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

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SGA Executive Secretary

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Promotion Manager	P. Eilu (Finland)
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Student Represent.	A. Vymazalová (Czech Rep.)

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

LIST OF NEW SGA MEMBERS (March 15, 2013–October 31, 2013)

16 Regular, 124 Student and 2 Senior Members applied for membership during this period

REGULAR MEMBERS

De'en Wang (Industry) CHINA
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>>> **page 1** *Activities of SGA Student Chapters*

ions, recognition of ore-bearing fluids by the study of fluid inclusions, and basic principles of microthermometry, phase changes, composition of fluids, P-T conditions and interpretation of data. The second day was about basic principles of stable isotopes (D/H, $^{18}\text{O}/^{16}\text{O}$, $^{13}\text{C}/^{12}\text{C}$, and $^{34}\text{S}/^{32}\text{S}$ systems), their major application to the study (and exploration) of ore deposits and constraints of genetic models regarding stable isotopes.

The last event in 2013 organized by the SGA Colombia Student Chapter was the short course “The chain of processes forming porphyry-type and epithermal ore deposits”, held on UIS facilities from August 5th to 6th, with a duration of 16 hours, and the associated field trip on August 7th to the Vetás-California Mining District in Santander, Colombia (the field trip report is given separately below: “Colombia Student

Chapter Vetás-California Mining District Field Trip”). The course was given by Dr. Christoph A. Heinrich (Fig. 3) of the ETH Zürich (Switzerland) and made possible by the logistic collaboration of the SEG student chapter, and Mauricio Castañeda (Continental Gold Ltd.). The capacity for the short course was limited due to transportation (field trip) and to laboratories capabilities, giving first priority to SGA and SEG members (Fig. 2). However, to compensate these limitations, an open talk was given during the second day.

The main idea of the short course was that ore deposits formation is the exotic result of processes working concurrently as a chain, each “shackle” contributing to its development. On the first day it was spoken about magma generation contemplating the lithosphere evolution and the upper crustal magma chambers, consequently it was spoken about fluids exsolved from magmas, their geochemistry, P-T diagrams, fluid-rock interactions, precipitation and trans-

port of minerals, and the study of altered rocks with samples brought by the lecturer and participants. The second day was about magma evolution (its source and precipitation controls), fluid inclusion principles and P-T diagrams. Also, during the second day was held the public talk “Geological processes contributing to selective Au, Cu enrichment in magmatic-hydrothermal systems” and the activity of recognizing and studying fluid inclusions on thin sections which were brought by the lecturer.

Colombia Student Chapter Vetás-California Mining District Field Trip

The field trip was led by Ph.D. Luis Carlos Mantilla Figueroa, MSc. Hernando Mendoza and Ph.D. Christoph A. Heinrich. Luis and Hernando are professors of the Universidad Industrial de Santander and researchers of mineral deposits, Christoph A. Heinrich is a Professor of Economic

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Figure 1: Course participants with the lecturer, Dr. Roberto Xavier.



Figure 2: Short course finalization.

Geology at the Institute of Geochemistry and Petrology at the ETH Zürich. Seventeen geology students from the Industrial University of Santander (UIS) and five professionals of different mining companies (such as AngloGold Ashanti and AUX) participated in this field trip which was sponsored by SGA, SGA-Colombia Student Chapter and SEG-UIS Student Chapter to the Vetás-California Mining District (VCMD), located in the central part of the Santander Massif (Colombian Eastern Cordillera), 40 km NE of Bucaramanga in the Santander Department, Colombia. The area hosts important porphyry and epithermal style Au and base metal mineralization (Mantilla et al., 2013).

The oldest rocks in the VCMD belong to the Santander Massif and comprise at least three principal metamorphic units older than 471 Ma. The main unit is the Bucaramanga Gneiss, overlain by the Silgará Formation. Both are intruded by early Paleozoic granitic orthogneiss. The most prominent and volumetrically important intrusive units observed in the study area are multiphase

plutons and dikes ranging in composition from tonalite and diorite to granodiorite and quartz-monzonite. These are all unaffected by regional metamorphism. These intrusive rocks can be classified into three groups based on the observed cross-cutting relationships and geochronology. Recently reported geochronological data (Mantilla et al., 2009), indicate that some of these intrusives span ages between 10.9 ± 0.2 and 8.4 ± 0.2 Ma. This Miocene magmatism in the VCMD temporally coincides with reactivation and sinistral transpressional movement of the Santa-Marta Bucaramanga fault (SMBF), likely related to the accretion of the Chocó block, and rapid uplift of this part of the Eastern Cordillera.

The main objective of the field trip was to recognize the different lithologies of porphyry and epithermal style mineralizations outcropping along the California-Vetas road. The Field trip took place at three key points for the recognition of hydrothermal and supergene alterations. The first place was the road that leads from Vetás to California, the second was the California-La

Baja road and finally, the third place was in a tunnel 50 m near the second place. During fieldwork, three main lithological varieties were recognized. Precambrian rocks of Bucaramanga Gneiss, Late Triassic rocks such as “Alaskite I” and andesitic porphyries of the Miocene.

On California-Vetas road, locally are recognized Mo + Qz veinlets or type-B Veins, which are hosted in Alaskitic rocks. Around these veinlets, alteration minerals coeval with the formation of these hydrothermal structures are not recognized, due to the subsequent pyrite-quartz-sericite hydrothermal alteration.

Sericitic alteration is the most predominant in the California-Vetas road and it usually looks slightly yellowish-white colored by the pervasive replacement of feldspars. Several quartz-pyrite-sericite halos veinlets or type-D Veins are observed which are oxidized in the majority of cases. These veinlets exhibit straight geometry, with thicknesses between 0.5 and 3 cm. These veinlets were formed at low temperatures and crosscut Late Miocene alaskites and porphyritic rocks.



Figure 3: a) and b) On California-La Baja road at La Virgen.

On the California-La Baja road there is a place called La Virgen (Fig. 3; a, b). At La Virgen advanced argillic and argillic alteration assemblages were observed, comprising zones of quartz-alunite alteration surrounded by kaolinite-illite alteration overprinting sericite-quartz alteration. Advanced argillic and argillic alteration assemblages have been observed to affect the gneissic rocks. Alunite-quartz alteration is the main ore zone comprising vuggy quartz and massive alunite alteration. Kaolinite-illite alteration shows a pervasive alteration in which feldspars are completely replaced by those minerals. These hydrothermal alterations are due to the increase of acid fluids

in shallow environment at epithermal deposits. At 50 meters from La Virgen there is a tunnel and some outcrops on the California-Vetas road, which present a secondary copper enrichment as Cu_2CO_3 . Malachite (Green) – Azurite (blue) are formed as by-products of leaching of copper oxides and supergene alteration (Fig. 4; a, b).

During the field trip, it was observed that the mining district has a high potential in precious metals such as gold, silver and copper. Through cutting relationships, veinlets and hydrothermal alteration, we can infer a typical deposit, from an emplaced porphyry systems to a high sulfidation epithermal environment.

The SGA Colombia Student Chapter is grateful to the SGA (Society for Applied to Mineral Deposits) for its constant academic, personal and financial support, to the professors Chris Heinrich, Luis Carlos Mantilla and Hernando Mendoza, whose knowledge has made this a great field trip, to students and professionals who participated in the short course and field trip, to the Universidad Industrial de Santander, especially to the school of geology for its continuous support in logistics during these student events and particularly to Continental Gold Vice President of Mining Exploration; Mauricio Castañeda, who made possible the realization of this course (Fig. 5).

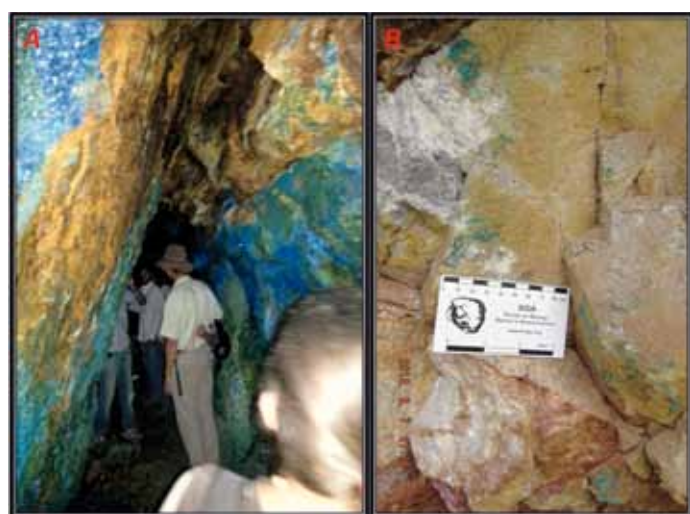


Figure 4: a) Entrance to tunnel with Chris Heinrich.
b) Malachite in Alaskite Rocks on California-Vetas road.



Figure 5: Participants of the field trip and short course "Colombia Student Chapter Vetas-California Mining District Field Trip".

2. SGA Student Chapter Prague 2013 second field trip – Western Carpathians deposits near Slovakia-Hungary border

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The second field trip organised by the SGA Student Chapter Prague in October 2–6, 2013, was aimed at Slovakia and Hungary. Purpose of this excursion was to get acquainted with different geological settings than those of the Bohemian massif. The major part of Slovakia and the northern part of Hungary (Tokaj Mountains) are situated in the mountain range of the Western Carpathians. This system evolved during the Alpine orogeny and it is the northern branch of the Alpine-Himalayan fold and thrust system called the Alpine belt.

Our first stop was in the Slovakian second biggest town, Košice, where we attended a

geological lecture about the geology of the Western Carpathians focused on its neo-volcanism presented by Mr. Pavel Bačo and visited local mineralogical collections, both in the local museum. After that we moved to the Maglovec quarry, within the intrusive body of amphibole-pyroxene diorite porphyrite altered by the post-volcanic mineralisation processes giving origin to a varied mineral association. This locality is famous for its beautiful crystals of chabazite (up to 4–5 cm). After that one of the highlights of this excursion came – the opal deposit of Dubník. This deposit was the only precious opal deposit mined in Europe and – before

the discovery of opals in Australia – the only one in the world. The beginning of opal mining is unknown, the first written reference being from 1597. Mining operations (mainly performed by locals) continued for centuries until 1922, when the mines were closed because of strong competition of the Australian opals. Opal is located in cracks in the andesitic rock together with hyalite, marcasite, antimonite and barite. Sadly, in this locality we were able to find samples of low quality only because of intensive collector activity in recent years.

The next day we planned to visit two other localities in Slovakia – Herlany

*Maglovec quarry**Opal – Herlany*

(a massive opal locality) and the ore district of Dobšiná. The old spa town of Herlany is situated in an area of volcanic rocks where opal outcrops can be found. This opal was used since the 19th century for collector purpose only. The outcrop is situated in a forest in a valley of a local creek and can be easily reached from the road. After finding some fine specimens of massive opal, we moved to the ore district of Dobšiná. This locality is famous for its mining history which is longer than one thousand years. The first reference comes from as early as 1243 when originally Fe-Cu, later also Co, Ni and Ag ores were mined (Cu ore from the oxidation and cementation zones of the siderite deposits). Since the 18th century, Fe-ores were mined mainly in open pits and processed in a factory nearby where fine steel was made.

The surroundings of the deposit are formed by epi-metamorphosed phyllite, metabasite tuffs, tuffites, metabasalts, and green schists belonging to the Gemicum

*Participants in the Mád quarry (owner of the quarry Dr. Tibor Mátyás first on the left)*

and Veporicum units. The mineralisation appears mainly in the form of hydrothermal veins and metasomatised associations, out of which the vein mineralisation of

the carbonate-quartz-sulphide type carrying mainly Ni-Co mineralisation is the most interesting. Variegated vein filling is formed mostly by siderite, ankerite and quartz.

*Surroundings of Dobšiná**Zeolite from Mád quarry*

Sulphide minerals are abundantly represented by chalcopyrite, tetrahedrite, arsenopyrite, lollingite and gersdorffite. In the northern margin of Dobšiná a large serpentinite body occurs in Lower Triassic schists whose cracks are filled mainly by chrysotile asbestos mined in huge volumes until 1999. In the 1980s, around 90,000 t of serpentinite were mined yearly providing 400 t of fibrous asbestos and 15,000 t of micro-asbestos. The next stop was in Hungary in the ore district of Rudabánya. This Fe-Cu deposit was exploited with a few stops from the 13th to the 18th century. In the Middle Age, Ag was also mined from galena. In the 20th century the deposit was exploited by a quarry 4 km long and hundreds of meters wide. The Fe-ores are bound to the Triassic dolomitic rocks. Metasomatic processes transformed the original dolomite into the siderite iron ore with an average Fe content of 25 %. The siderite ore also contains calcite, barite, quartz and pyrite. Native copper aggregates up to 40 kg were found here together with 4–5 cm large crystals of azurite and cuprite and up to 10 cm malachite aggregates.

The last stop in Hungary was near Mád in the alunite-kaolinite alteration zone. Remains of small basins formed during late stages of volcanism in several parts of the Tokaj Mountains contain washed illite, bentonite, kaolinite and also diatomite and porous zeolites. We visited a quarry owned by Dr. Tibor Mátyás where zeolite (mainly clinoptilolite) is still mined.

We would like to thank all our kind guides: Dr. Pavel Bačo for his lecture about geology and deposits in Western Carpathians, Dr. Ondrej Rozložník for the

tour of the Dobšiná deposits, Ing. Martin Šarocký head of the Maglovec quarry for the possibility to visit the site, Istvan Horvath for accompanying us in Rudabánya, Dr. Tibor Mátyás for showing us the

Mád quarry and its technology, and – last, but not least – Mr. Petr Černý for his support of this field trip.



Malachite sample from Rudabánya



Rudabánya deposit

3. A field trip report from the SGA Siberian Student Chapter: Sinyuhinskoe – largest gold deposits in the Altai Mountains

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In May of this year the first field trip of the Siberian Student Chapter was organized to the only currently exploited gold deposit in the Altai Mts (Sinyuhinskoe), that is located in the Choya region of the Altai Republic (Russia), about 550 km from Novosibirsk. Fifteen participants participated to this excursion, who were members of the SGA Siberian Chapter and students of the Geology and Geophysics Department of the Novosibirsk State University, who are planning to carry out their future scientific work on the geology of ore deposits.

The Sinyuhinskoe deposit, which is operated by the Siberia mining company, has proved resources of 18.9 tons of gold and inferred resources (to a depth of 500 m) of 70 tons of gold. This deposit is of the gold-skarn type and is located in garnet-wollastonite and garnet-pyroxene skarn bodies of complex morphology. Small bodies of iron-bearing skarns are locally found, almost entirely consisting of magnetite. The deposit area extends over more than 10 km². Major minerals are wollastonite, garnet, calcite, epidote, chalcopyrite, pyrite, bornite, covellite and gold. Gold is mostly disseminated and often associated with zones of sulfide mineralization (mainly bornite-chalcopyrite and bornite-covellite) with erratic distribution. Ore minerals form nests and stockworks. Their formation is evidently related to late hydrothermal

alteration of the skarns. The whole-rock content of gold is up to 5–6 grams per ton. Exploitation of the deposit started in 1952 and it has been mined in an open pit and in underground mines (it goes down to a depth of about 200 m). Production of gold is about 400 kilograms per year. In addition to gold, the mine is producing a copper concentrate. Mechanical processing of ore involves its crushing to 10 cm size, and then up to 0,037 mm in size. Between these two stages of grinding harmful impurities of magnetite are removed by magnetic separation. The gold is segregated from finely ground ore by gravity separation. From the remainder ore, a bornite-covellite-chalcopyrite concentrate is obtained by flotation. This concentrate is delivered by truck transportation to the nearest railway station in Byisk, which is located 200 kilometers from the deposit. From there it is sent to Pyshma, in the Urals, to the „Uralelectromed“ company.

Furthermore, several years ago, on the deposit site a factory was built for the processing of wollastonite which is used in the construction industry. Reserves of wollastonite in the Sinyuhinskoe deposit are estimated at about 9 million tons.

Participants of the field trip visited mines, quarries, dumps and mine tailings led by Ilya Babanskiy – Chief Geologist of Sinyuhinskoe Mine. The guide spoke in detail about the history of the deposit, methods

of mining and ore processing. Participants saw how the miners work and collected some samples of bornite, chalcopyrite and wollastonite from quarry dumps. In the oxidation zone everyone was able to find a sample of skarn with thin flakes of gold up to 1 mm, visible to the naked eye. Later a large skarn sample from this place was crushed by the students and carefully panned. In the resulting heavy concentrate we also found clearly visible gold flakes. The trip was particularly interesting for the new young members of the SGA Siberian student chapter. Since the beginning of this year 5 students of the Geology and Geophysics Department of the Novosibirsk State University applied for SGA membership. They have gained valuable experience in rock sampling and gold panning.

We are grateful to the management of the Sinyuhinskoe Mine and to the Institute of Geology and Mineralogy SB RAS for assistance in organizing this trip.

Now many members of the Siberian SGA Student chapter are engaged in organizing regional meetings of students (<http://geosciences-2014.ipgg.sbras.ru>) and the young geoscientists conference (<http://conf.nsc.ru/sibconf2014>), which will be held in August and November of this year in the University field training center in the Khakasia Republic and in Novosibirsk.



Participants of the field trip with Chief Geologist of mine.
Photo by Fedor Zhimulev.



Ore transportation from the adit.
Photo by Evgeniy Naumov.



Students trying to find gold in the old open pit.
Photo by Maria Cherdantseva.



Students trying to find gold in the old open pit.
Photo by Maria Cherdantseva.



Banded garnet-pyroxene-wollastonite skarn. Photo by Fedor Zhimulev.



Main types of ores at Sinuhinskoe deposit. Left – bornite and covellite in massive garnet skarn. Center – garnet-wollastonite skarn. Right – grains of native gold in garnet skarn. Size is about 2 mm. Photo by Andrey Vishnevskiy.

4. Events during 2013–2014 organized by the SGA Student Chapter of Nancy

François Turlin

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Uranium Workshop in Nancy

On the 12th and 13th of December 2013 took place the Uranium Workshop in Nancy (Université de Lorraine, France). About 75 researchers from several countries (China, Canada, Australia, France...) were present to this event which was concluded by two theses defenses: Aurélien Eglinger (Uranium cycle and tectono-metamorphic evolution of the Panafrican Lufilian belt, Zambia) and Christophe Bonnetti (Genesis of roll front deposits in the Erlian Basin, China).

Indeed, this workshop was initiated by these two PhD students of the Université de Lorraine (Nancy) who were working on



Michel Cuney during his talk.

uranium deposits. They made of their these defenses, an international event about uranium metallogeny in collaboration with the team of the SGA Student Chapter of Nancy.

The members of the Student Chapter are grateful to Aurélien Eglinger, Christophe Bonnetti, Michel Cuney, Anne-Sylvie André-Mayer and Olivier Vanderhaeghe for the organization of this workshop.

Today employment opportunities in mineral resources

On the 4th of February 2014, the SGA Student Chapter of Nancy organized a presentation for students and researchers about the employment opportunities of the mineral resources domain. This talk was given by Michel Jébrak (UQAM) and Campbell McCuaig (CET, UWA).

They respectively presented the opportunities in industry and academic career in Canada and Australia. Mostly students and researchers, about 85 persons in total, were present to discuss about today employment. The discussion continued after these talks in a convivial atmosphere.

The members of the Student Chapter are grateful to Michel Jébrak and Campbell McCuaig for their participation and their availability.

Movie and discussion about rare earth elements economy

On April 2, 2014, some 90 people were present in the ENSG of Nancy to attend the projection of the movie „The nasty war of rare earths elements“ (translated from its original title in French: “La sale guerre des Terres rares”), by Guillaume Pitron and Serge Turquier. This documentary redrew the story of the economic conflict which led to the Chinese massive production of rare earth elements (REE), and the devastating consequences for the people and the environment... Indeed in a very few years, China, which is the first producer of rare earth elements, will not be any more able to extract enough REE for its own needs. The whole world dashes into the search for rare earths elements, which are little known by the society but nevertheless omnipresent in our screens, cell phones, bank notes... Numerous mines reopened, and the problem of a „clean“ exploitation ceaselessly arises. A very interesting debate followed which was led by Dr. Michel Cuney (GeoResources, Nancy, France), Prof. Anne-Sylvie



Michel Jébrak (UQAM) during his talk.



Anne-Sylvie André-Mayer and Michel Cuney animating the discussion.

André-Mayer (GeoResources, Nancy, France) and Prof. Bernd Lehmann (Technische Universität, Clausthal, Germany), in the course of which the members of the assembly actively participated.

The members of the Student Chapter are grateful to Alain Cheilletz, Anne-Sylvie André-Mayer, Michel Cuney and Bernd Lehmann for their participation in the organization of this event, for the animation of the discussion and for their availability.

Field trip in the Vosges

A first large-scale gathering had place at the end of March in the Vosges, a massif of the northeast of France. Seventeen people, students and specialists, took part in the day dedicated to the regional geology. First of all, we went to the center Terrae Genesis, to attend a talk of Maryse Ohnenstetter, about the context of formation of this part of the Variscan belt, as well as about the structural setting of the zone. Afterward, a visit of the site took place: this museum

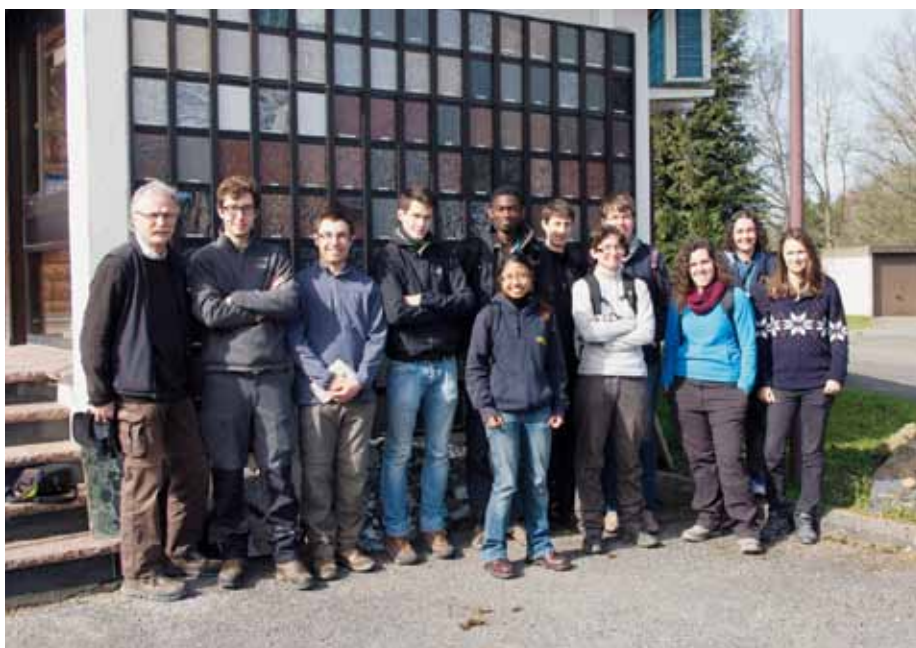
exposes very beautiful collections of minerals, regional rocks, as well as regional fossils. A permanent exhibition deals with the work of the granite, a local prospering industry during 19th century: numbers of Parisian and French streets are paved by beautiful Vosgian granites, with euhedral feldspars.

Then, the members went to “Hautes-Mynes du Thillot”, a former copper exploitation which was active from 1561 until 1760. The miners exploited veins of chalcopryite there. The work consisted first of all in spotting features characterizing the presence of a vein (relief, vegetation, fault scarp, etc.). Then the workers drilled wells by following these veins. Various techniques of drilling were used on this mining site, among which the usual techniques of the hammer and fire. But it is in this mine that the technique using the black powder was implemented for the first time, in 1613. The members of the Student Chapter had the opportunity to visit the vestiges of galleries shaped for two centuries by the arms of the miners. They all came out enriched by this first archeo-mining experience and impressed by the amount of work done for the extraction. Indeed after the tiring work of extraction, followed the separation with the peak of the ore and the sterile. A stage of microgrinding followed, by means of ingenious systems, and then a stage of settling. The copper and the iron were extracted by heating in a foundry, situated in the bottom of the valley, and then put in the form of easily transportable ingots. The metal extracted allowed to shape weapons, in particular rifles and artillery, very appreciated during the Thirty Years War affecting Europe at that time.

The members of the Student Chapter are grateful to the managers and the guides of Terrae Genesis and Hautes-Mynes du Thillot, and to Maryse Ohnenstetter for her presentation. They also want to thank Alain Cheilletz and Anne-Sylvie André-Mayer for their presence and their support.



Bernd Lehmann and Anne-Sylvie animating the discussion.



SGA Student Chapter members and accompanying professors in front of Terrae Genesis (Vosges, France), from left to right: Alain Cheilletz, François Turlin, Matthieu Harlaux, Clément Texier, Wilédio Bonzi, Laetitia Raobelina, Guillaume Barré, Amandine Sartégou, Vincent Bernard, Hélène Legros, Anne-Sylvie André-Mayer and Marion Grosjean.

5. Barcelona SGA Student Chapter: our sophomore year!

Lisard Torró i Abat

Dpt. de Cristal·lografia, Mineralogia i Dipòsits Minerals, Facultat de Geologia – Universitat de Barcelona (Spain), lisardtorro@hotmail.com

With 70 members, the second year of our Student Chapter was clearly the year of its strengthening. As the first year, the past one was a year full of activities, experiences and knowledge revolving around the world of the Ore Deposits, our favorite world.

SGA workshop on mineral deposits related to acid magmatism

Due to the success of the first workshop devoted to pegmatites organized by the Barcelona Student Chapter a year ago, a second

workshop was developed in September the 19th–20th 2013. In this occasion the topic was „ore deposits related to acid magmatism“.

The workshop, held at the Faculty of Geology of the University of Barcelona, was

addressed to students and young researchers interested in this type of ore deposits, as well as to professors, researchers and professional geologists who wanted to increase their knowledge and be up to date with the latest research on this topic. Therefore, the aim of this workshop was to provide an advanced overview of mineral deposits related to acid magmatism, including mineralogy, textures, petrology, geochemistry and economic interest of these deposits.

The workshop included an enlightening two-hour introductory lesson entitled “Felsic magmatism and hydrothermal systems” kindly given by Prof. Bernd Lehmann (Technical University of Clausthal – Germany) (Fig. 1).

The main day of the workshop consisted of lectures given by international experienced specialists on this topic (Fig. 2). Thus, the talk by Prof. José Mangas (Universidad de las Palmas de Gran Canarias – Spain), entitled “Spanish Sn deposits associated with Hercynian granitic intrusions” explained the three stages of formation registered in the Spanish deposits deduced from the study of fluid inclusions. Prof. Mangas also emphasized the economic potential of tin mines,

most of them closed, in countries such as Spain, Portugal, Germany or the Czech Republic. Prof. Fernando M.P. Noronha (Universidade do Porto) moved from tin to tungsten deposits with the talk entitled “Tungsten ore deposits in the Central Iberian Zone”; all the audience could enjoy his talk in which the Panasqueira mine was clearly the main focus. Prof. Bernd Lehmann (Technical University of Clausthal – Germany), with his talk “Granite-related rare-metal mineralization”, explained the geochemistry of tin and tantalum in the magmatic-hydrothermal system and their concentration mechanisms. Finally, Dr. Hildebrando Leal-Mejía (University of British Columbia – Canada) explained the evolution of the Phanerozoic acid magmatism in the Colombian Andes and its relation with Gold Deposit genesis.

Homage to Prof. Antonio Arribas Moreno

During the workshop, a well-deserved homage to Prof. Antonio Arribas Moreno was celebrated to honor his career and his con-

tribution to the study and research in the field of mineral deposits.

Antonio Arribas Moreno was born in Madrid in 1922. He obtained the degree of Natural Sciences in 1948 and afterwards he graduated in Economic Geology in 1961 in the University of Madrid. Even so, his entire academic career was developed at the University of Salamanca where he founded the department of Crystallography, Mineralogy and Ore Deposits in 1965 – the first official Ore Deposit department settled in the Iberian Peninsula. He was the dean of the School of Sciences from 1970 to 1987 as well as the director of the Spanish Institute of Applied Geology from 1980 to 1987. During his academic life he directed more than 125 final degree projects and around 35 PhD Theses, and worked with people from all around the globe. Antonio, without a doubt whatsoever, is one of the fathers of Ore Deposit research in the Iberian Peninsula and other territories such as the Western Sahara, where he supported until very recently several field investigations in collaboration with students and professors from the University of Barcelona.



Fig. 1: Prof. Bernd Lehmann during the introductory lesson of the workshop.



Fig. 2: Participants of the SGA workshop on mineral deposits related to acid magmatism.



Fig. 3: Prof. José Mangas, Prof. Fernando Noronha and Dr. Joan Carles Melgarejo during the homage to Prof. Antonio Arribas Moreno.



Fig. 4: Prof. Antonio Arribas Moreno expressed his gratitude for the homage.



Fig. 5: Dr. Joan Carles Melgarejo explaining the geological setting of the visited areas in the Barberà Basin.

The homage, leaded by Prof. José Man-gas (Figs. 3–4), served for introducing this important personality in the world of the mineral deposits to those who did not know his very active and complete scientific live. Prof. Antonio, who is now 90 years old, kindly attended our workshop. Some personalities such as Prof. Fernando Noronha and Dr. Joan Carles Melgarejo took advantage of the homage to publicly thank Prof. Antonio for their support during the development of their scientific careers. Some videos of people who could not attend the workshop such as those recorded by Saleh Lehibb (PhD student from the Sahara Occidental) and Prof. Antonio Arribas Jr. (president of the SEG and son of Prof. Antonio Arribas Moreno) were watched. Finally, Prof. Antonio Arribas Moreno was proposed as Honorary Advisor of our Student Chapter. After he accepted (with pleasure, according to his words) this position, we are so pleased and honored of announcing that Prof. Antonio Arribas Moreno is now our Honorary Advisor.

Fieldtrip to the Barberà Basin (Catalonia)

A fieldtrip leaded by Dr. Joan Carles Melgarejo, advisor of the Barcelona Student Chapter, to the Barberà Basin (Conca de Barberà) took place (Figs. 5–6). During this one-day fieldtrip the attendance could observe the quartz-tungsten veins in Hercynian granitoids, polymetallic sulphide mineralisations (Pb-Zn-Cu-Au-PGE-Bi-Te-As-Ni-Co-V-Cr), barite veins and 16th century alum mines. Mineralogical and petro-

graphical aspects of the ores and host rocks were combined with geochemistry, fluid inclusion data and large-scale tectonics, in order to have a broad view of the visited ore deposits and their environment.

Fieldtrip to Priorat (Catalonia)

This fieldtrip, longly expected by most of our students, took finally place on September 16–18th 2013. The fieldtrip was kindly led by our advisor, Dr. Joan Carles Melgarejo, who did his PhD thesis, entitled „Metallogenetic study of the Paleozoic in the south of the Costero-Catalan ranges“, in this area of our country.

The fieldtrip to this region of great geological and metallogenetic interest included a first day in which different outcrops and mines near the Bellmunt del Priorat town where visited. Thus, we walked next to the Siurana River to see the pre-Cambrian rocks outcropping there and containing small concentration of sulfides (Fig. 7). Different abandoned mines, some of them now converted into wine cellars or touristic mines, where also visited. Mines such as „La Serrana“, a stratabound Mn mine, „Règia“ mine and „Eugènia“ mine

(mined mainly for Pb until the 70s) and „Linda Mariquita“ barite mine were visited. We would like to highlight the visit to the underground work of the Eugènia mine. The second day other mineralized areas such as the occurrences in the „Mas del Mestre“ area, close to Falset, and some outcrops close to Valls town were visited. At the end of the second day, a summary of the regional tectonic, magmatic and metallogenetic setting was carried out by Dr. Joan Carles Melgarejo; the graphic material he presented was really helpful in order to understand the complex geologic history of the area.

In addition to the geological aspects of the fieldtrip, the attendants could enjoy some of the most delicious wines of all the country (and world).

Geological side of High Tech Metals (HTM)

In connection with the exhibition about High Tech Materials held at our Faculty, the BCN-SGA Student Chapter organized this activity on Wednesday February the 12th 2014. It consisted of several talks devoted to a better understanding of the geological side of these materials. The activity was thought as a plain explanation of the importance of these elements and materials as essentials for our society. The critical importance of the HTM for the European Union was introduced by our advisor Dr. Joaquín A. Proenza. Conventional and non-conventional deposits were explained by Marc Campeny and Thomas Aiglsperger respectively. Finally, a debate entitled Mining YES/NO?, moderated by our advisor Dr. Joan Carles Melgarejo, discussed during 1 hour beyond topics about the convenience of mining in the widest sense.



Fig. 6: Fieldtrip to the Barberà Basin.



Fig. 7: Pre-Cambrian rocks containing sulfides in Bellmunt del Priorat.

Talks

Several talks given by specialists from all over the world about the most diverse topics were organized by our Student Chapter. The list includes:

- Dr. José Alberto Batista Rodríguez (Universidad Autónoma de Coahuila, Escuela Superior de Ingeniería, México): Scope of the geophysical methods during the prospection of ophiolite related mineral deposits.
- Dr. Fernando Gervilla Linares (Dept. Mineralogía y Petrología, Instituto Andaluz de Ciencias de la Tierra, Universidad de Granada, Spain): The Ni-Cu-PGE Keivitsa deposit, Northern Finland: an example of hydrothermal remobilization of the platinum group elements.
- Dr. Giorgio Garuti (Dept. of Applied Geosciences and Geophysics, University of Leoben, Austria): Massive sulfide deposits of the northern Apennine ophiolites (Italy).
- Dra. Federica Zaccarini (Dept. of Applied Geosciences and Geophysics, University of Leoben, Austria): Electron microprobe and Raman spectroscopy applied to the identification of platinum group minerals (PGM).
- Dr. Carles Canet Miquel (Dept. Recursos Naturales, Instituto de Geofísica & Dept. Geoquímica, Instituto de Geología, Universidad Nacional Autónoma de México, México): The Sonora stratiform barite deposits: relation and analogy with the methane cold seeps.
- Carl E. Nelson (Recursos del Caribe SA): Hot Spring Gold Deposits of the Circum-Pacific Region.

- Dr. Antoni Camprubí I Cano (Centre of Geosciences and the institutes of Geophysics and Geology, Universidad Nacional Autónoma de México, México): IOCG deposits in Mexico: more questions than answers?
- Dr. José María González Jiménez (Geochemical Evolution and Metallogeny of Continents (GEMOC), Dept. Earth and Planetary Sciences; Macquarie University, Australia): Origins of platinum-group minerals in upper mantle rocks.

International mobility

Twenty-three members of the Barcelona SGA Student Chapter attended the 12th SGA Biennial Meeting at the University of Uppsala, Sweden. During these four

days we attended different talks on different kinds of mineral deposits from all over the world. It was also an opportunity for various mining companies to promote themselves and to look for students which may be interested in joining them for future jobs or internships. The BCN SGA SC found this evening activity very positive for the students. We hope we will participate in the next SGA Biennial Meeting in Nancy (France)!

In addition, eight members of our Student Chapter had the opportunity to attend the "Gold deposits: from theory to exploration practice" course, held at the "Faculty of Science, Charles University Prague, Czech Republic" and given by professor David Groves.

Finally, a member of our Student Chapter attended the workshop about Uranium organized by our colleagues from Nancy in December 12–13th, 2013.

T-shirts

We are thrilled to present the T-shirts of the BCN Student Chapter (Fig. 8). The main theme of this design is the Gaudí-style hammer which is the official logo of our association, combined with the sentence "All you need is Ore" making reference to the popular song by The Beatles, capturing our devotion to ore minerals. If you are interested to purchase this exclusive T-shirt, please send your request to the official electronic address of the BCN Student Chapter (student.chapter.ub.sga@gmail.com). And remember... All you need is Ore!!!

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Fig. 8: Five models wearing the Barcelona SGA Student Chapter T-shirts with the slogan "All you need is ore".

>>> FORTHCOMING EVENTS <<<

* marks a new entry

2014

August 11–14

XII International Platinum Symposium, Ekaterinburg, Russia. Contact: <http://12ips.uran.ru>

***August 18–22**

GES-10 Geochemistry of Earth's surface, Paris, France. Contact: <http://www.ipgp.fr/pages/040933.php>

***August 19–22**

14th Quadrennial IAGOD Symposium 2014, Kunming, China. Contact: <http://www.14iagod.org/en/>

***August 25–September 3**

EMU School 2014 – Planetary mineralogy, Glasgow, Scotland, United Kingdom. Contact: <http://eurominunion.org/?p=571>

August 30–September 6

IMA 2014 General Meeting – 21st General Meeting of the International Mineralogical Association, Johannesburg, South Africa – Contact: <http://www.ima2014.co.za>

***September 1–5**

GeoMod 2014 Modelling in Geosciences, Berlin, Germany. Contact: <http://www.geo-x.net/geomod2014>

September 1–5

IMA 2014 General Meeting – 21st General Meeting of the International Mineralogical Association, Sandton, Gauteng, South Africa. Contact: <http://www.ima2014.co.za/>

September 1–6

31st International Conference on Ore potential of Alkaline, Kimberlite and Carbonatite Magmatism, Antalya, Turkey. Contact: Email: alkaline2014@akdeniz.edu.tr; <http://alkaline2014.com/>

September 4–6

ERES 2014 – The 1st conference on European Rare Earth Resources, Milos, Greece. Contact: <http://milos.conferences.gr/>

***September 7–11**

DCM2014 International Conference on Diamond and Carbon Materials 2014, Madrid, Spain. Contact: <http://www.diamond-conference.elsevier.com/>

***September 7–14**

Annual Meeting of the Meteoritical Society, Casablanca, Morocco. Contact: <http://www.meteoriticalsociety.org/>

***September 8–13**

Up-to-date Information Technologies In Fundamental Research in Earth Sciences, Petropavlovsk-Kamchatsky, Russia. Contact: <http://kamchatka2014.fegi.ru/ru>

September 10–12

Planet Formation and Evolution 2014, Kiel, Germany. Contact: <http://www1.astrophysik.uni-kiel.de/~kiel2014/main/>

***September 9–13**

Cities on Volcanoes 8, Yogyakarta, Indonesia. Contact: <http://citiesonvolcanoes8.com/>

***September 14–18**

Near Surface Geoscience-2014, Athens, Greece. Contact: <http://www.eage.org/events/index.php?eventid=1013&Opendiv=s3>

September 21–24

GeoFrankfurt 2014 – Earth System Dynamics, Frankfurt/main, Germany. Contact: <http://www.geofrankfurt2014.com/>

September 21–25

UMH VII – 2014 – Uranium Mining and Hydrogeology 2014 International Conference, Freiberg, Germany. Contact: <http://tu-freiberg.de/umh-vii-2014>

September 27–30

Society of Economic Geologists (SEG) 2014 Conference, Building Exploration Capability for the 21st Century, Keystone, Colorado, USA. Contact: www.seg2014.org

***September 29–October 3**

3rd SGA-SEG-UNESCO-IUGS Short Course on African Metallogeny “Mining in Africa”, Marrakech, Morocco. Contact: alain.cheilletz@univ-lorraine.fr; <http://e-sga.org/>

***October 4–14**

6th orogenic Lherzolite Conference, Marrakech, Morocco. Contact: <http://www.gm.univ-montp2.fr/Lherzolite/>

October 19–22

2014 Geological Society of America (GSA) Annual Meeting, Vancouver, British Columbia, Canada. Contact: <http://www.geosociety.org/meetings/2014/>

December 15–19

AGU Fall Meeting, San Francisco, CA, USA – Contact: <http://www.agu.org/meetings.shtml>, AGU Meetings Department 2000 Florida Avenue, NW Washington D.C. U.S.A. 20009; Phone: (+1-202-777-7333)

2015

August 16–21

2015 Goldschmidt Conference, Prague, Czech Republic. Contact: <http://www.geochemsoc.org/programs/goldschmidtconference/>

August 24–27

13th SGA Biennial Meeting “Mineral Resources in a Sustainable World”, Nancy, France – Contact: sga-2015@univ-lorraine.fr, <http://www.e-sga.org/index.php?id=5>

September 20–25

8th Hutton Symposium on Granites and Related Rocks, Florianópolis, Brazil. Contact: <http://www.hutton8.com.br>

November 1–5

Geological Society of America Annual Meeting, Baltimore, MD, United States. Contact: <http://www.geosociety.org/meetings/>

2016

***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/>

June 26–July 1

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

Acknowledgements

We gratefully acknowledge the SGA for the economic and logistic support that allowed

the organization of all these activities; SGA Student Grants also allowed the participation of the Barcelona SGA Student Chapter members in the 12th SGA Biennial Meeting and in the “Gold deposits: from theory to exploration practice” course. We would also

like to thank the Faculty of Geology of the University of Barcelona for handing over free of charge the rooms for the different activities we organized. We would like to express our very great appreciation to all the lecturers that kindly agreed to enlighten us.

Elucidating granites and associated mineral deposits during the 12th Freiberg Short Course in Economic Geology

Patrick Krolop and Tobias W. Höfig

TU Bergakademie Freiberg, tobias.hoefig@mineral.tu-freiberg.de

The Freiberg Short Course in Economic Geology, which is annually held at the TU Bergakademie Freiberg, brings together well-experienced professionals from academia and industry as well as young graduate and postgraduate students from all around the world to share knowledge and discuss varying topics in the field of economic geology.

Last December, a record number of 128 participants from 18 countries, including a significant number of (post)graduate students from abroad supported by highly acknowledged SGA travel grants, came to the old historic mining town of Freiberg to gain insights into granite-related mineral systems (Fig. 1), thereby connecting to each other for lively discussion guided by five distinguished scientists.

The research on granites and associated mineral deposits is thriving and long-standing. The debate on the origin and evolution of granitic rocks has been moving the scientific community since the end of the 18th century,

when James Hutton published his groundbreaking „Theory of the Earth“ (1788), and still continues. It has thus been only a question of time when the Freiberg Short Course in Economic Geology would address the research on ore deposits related to the formation and alteration of granitic rocks.

To give an understanding of these systems, last year's Short Course was privileged to gather five leading experts in their respective fields of research (Fig. 2): Andreas Audétat (Bavarian Geoinstitute at University of Bayreuth, Germany), Roman E. Botcharnikow (Leibnitz University Hannover, Germany), D. Barrie Clarke (Dalhousie University, Halifax, Canada), Francois Holtz (Leibnitz University Hannover, Germany), and Jean-Louis Vignerresse (Nancy-Université, Nancy, France). There were supported by Martin Griebmann (Australian based Vital Metals Ltd) and Freiberg colleagues.

Subsequent to some welcoming words addressed by Jens Gutzmer on behalf of

the hosting Division of Economic Geology and Petrology, Axel Renno (Helmholtz Institute Freiberg for Resource Technology), who brought the lecturers together for the 2013 Freiberg Short Course, set the context for the five workshop days by giving an introduction to granites and associated ore deposits and how their investigation has been connected to the TU Bergakademie Freiberg ever since its establishment, focusing on the local granite-related orebodies historically mined in the Erzgebirge (Ore Mountains) and surrounding area.

This was followed by D. Barrie Clarke's talk on the classification of granites and rules applied to subdividing granitic rocks (Fig. 3). In an exemplary manner and humorous way: „I show you something of what has no future“, he referred to both scientifically reasonable and completely inappropriate ways of classification according to specific purposes. After acquiring a certain level of understanding, the audience was introduced to one of the primary examples



Fig. 1: Gathering of all participants and lecturers in the stairway of the "Werner-Bau" (Photo: Xiaoli Wang).



Fig. 2: The 12th Freiberg Short Course officials (from left to right): Jens Gutzmer, Francois Holtz, D. Barrie Clarke, Jean-Louis Vigneresse, Axel Renno, Thomas Seifert, Andreas Audétat, Anne Engler, Martin Griebmann, Tobias Höfig (Photo: Jörg Neßler).

in terms of granite-related world-class deposits: the South Mountain Batholith (Nova Scotia, Canada), which has been one of the major study areas of Barrie Clarke during his scientific career. This lecture ended up with a general model for granite-related mineral deposits. Finally, he provided the audience with exploration guides referring to physical and chemical characteristics of granite-related mineral deposits. Later on, this topic was picked up again during the Short Course.

Specific excursions on granites and related mineral deposits from the Erzgebirge (e.g., greisen deposits) were then given by the Freiberg colleagues Axel Renno and Thomas Seifert, presenting the state of the science for that part of the Variscan orogenic belt. This overview was finally highlighted by introducing both the Ore Deposit and Petrological Collections of the TU Bergakademie Freiberg to the Short Course participants with special reference to exhibited samples of Erzgebirge-hosted granite-related mineral deposits (Fig. 4).

Afterwards, the lectures went on to focus on petrological issues of granite formation and evolution, particularly referring to the magma evolution in terms of elucidating the role of volatiles and their release during late-stage processes. This section was given by the Hanover duo consisting of Francois Holtz and Roman E. Botcharnikov. The

third day of the Short Course was spent on the traces of volatiles and magmas trapped in minerals: fluid and melt inclusions. In this regard, Andreas Audétat put a special focus on these inclusions in helping petrologists to decipher the partitioning of metals and processes leading to their precipitation. Later, he and Roman shared a talk on sources of metals in general and metallogenic trends related to mafic and felsic magmas, focusing on porphyry-type deposits among other things. Roman concluded this lecture block by addressing immiscibility in melts and fluids from the thermodynamic principles of phase separation to the importance of immiscibility in generating mineral deposits related to granitic/rhyolitic systems. A talk given by Francois Holtz concluded the insight into late-stage processes by comparing the role of differentiation and low-degree melting in generating silicate-rich melts and elucidating the impact of highly incompatible volatiles on crystallization. This guided the audience to focus on the main parameters of enriching trace metals in evolved silicate melts with an emphasis on pegmatites and the competing models of their formation. Discussions on that topic continued in the following “evening session” within the scope of the highly appreciated 2013 Short Course dinner given at Freudenstein Castle,

which hosts the so-called “Terra Mineralia” exhibition representing the world’s largest private mineral collection (Fig. 5).

A case study from northeastern Australia presented by Martin Griebmann (Vital Metals Ltd) marked the beginning of the penultimate day of the workshop. Since 2012, Martin has been involving with the exploration of the Watershed tungsten deposit in far north Queensland. This prospect is characterized by a vein-type scheelite mineralization, being intimately associated with hydrothermal alteration linked to em-



Fig. 3: Communicating research – D. Barrie Clarke during his talk on the classification of granitic rocks (Photo: Tobias W. Höfig).

placement of granitic intrusive bodies. By providing insights into the exploration of a granite-related deposit, Martin demonstrated the mode of applying knowledge of such systems in the field, connecting his talk to the exploration guidelines introduced by Barrie Clarke at the beginning of the workshop. The remaining time of the Freiberg Short Course was initially devoted to geophysical and geochemical modeling techniques. Moreover, alternative concepts of investigating ore genesis and magma evolution, established by Jean-Louis Vigneresse and his team in Nancy, were introduced to the audience. This kind of modeling makes use of the chemical reactivity of elements in terms of acting as either (hard/soft) acids or bases. Jean-Louis finally explained how this concept works for silicate liquids, particularly with respect to ore genesis in granitic magmas.

The general final discussion of the 12th Freiberg Short Course in Economic Geology shed light on the reigning paradigms in Earth sciences, addressing the status of granite science. This ended up with a lively debate on the mantle plume model.

The Division of Economic Geology and



Fig. 4: Introducing the granite-related mineral deposits of the Erzgebirge (Ore Mountains) – Thomas Seifert guiding participants through the renowned Ore Deposit Collection of the TU Bergakademie Freiberg (Photo: Tobias W. Höfig).

Petrology at TU Bergakademie Freiberg is grateful for the overwhelming interest the 2013 Short Course received. We hope to get the same feedback to the 13th Freiberg Short Course in Economic Geology (De-

cember 8–12, 2014), which will address another booming field of research: “Rare Earth Element Deposits”. So, join us and stay tuned on the SGA website for more information coming in July! Glück auf!



Fig. 5: Having dinner in front of mineral treasures – The Short Course dinner at Freudenstein Castle, hosting the „Terra Mineralia“ (Photo: Jörg Neßler).

The SGA website

Nikola Koglin , Chief Editor SGA website

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SGA Educational Fund

"Training the next generation of economic geologists to discover mineral deposits"

It is widely acknowledged that there is a worldwide shortage of well-trained young professionals in the field of mineral deposit research and economic geology. By establishing the SGA Educational Fund (SGA EF), the SGA wishes to contribute to training the next generation of economic geologists by providing support for educational activities in mineral deposit geology for students and professionals from economically disadvantaged backgrounds. This includes participation to national and international scientific meetings, field trips, workshops, short courses or other related activities organized or sponsored by the SGA.

Your contribution to the SGA Educational Fund will help achieve these objectives. The donation levels are as follows: Diamond (€10,000 or more), Platinum (€5,000 to 9,999), Gold (€2,500 to 4,999), and Silver level (€1,000 to 2,499). Contributions will be acknowledged in SGA News, the SGA website and at SGA's Biennial Meetings for a period of one year.

To show how serious SGA Council is about the implementation of this educational initiative, SGA has already contributed €70,000 towards the SGA Educational Fund. We ask all in the mining and exploration industry to meet this challenge and contribute to the SGA Educational Fund – a worthwhile investment into the future of your enterprises. To learn more about how you and/or your company can contribute to SGA EF, support the next generation of economic geologists, and push forward the future of mineral industry please visit our website at <https://www.e-sga.org> and/or contact...

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Call for SGA award nominations

David Huston

Mineral Systems Group – Resources Division/GEOSCIENCE AUSTRALIA, David.Huston@ga.gov.au

At Nancy 2015, the Society for Geology Applied to Mineral Deposits will recognise the achievements of two scientists for geological research applied to mineral deposits. The SGA-Barrick Young Scientist Award, which recognises scientists at the beginning of their careers, consists of a citation, prize money of EUR1500 and travel to Nancy 2015. Previous award winners have included Noreen Vielreicher (2003), Alexandre Raphael Cabral (2005), Gilles Levresse (2007), David Holwell (2009), Kalin Kouzmanov (2011) and David Dolejs (2013).

The SGA-Barrick Young Scientist Award is based mostly 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 on 01 January 2015 (i.e. born on or after 01 January 1975). Eligibility is not restricted by the candidate's nationality, place of employment, or membership in the Society. Nomination forms can be downloaded from the Society's web site (<https://www.e-sga.org/index.php?id=133&redirect=-1%25253B>). Nominations should include a biographical summary of the candidate, a list of publications upon which the award is based, a statement explaining the significance of the

research, other scientific contributions and accomplishments and the name and contact details of the nominator. In addition, copies of abstracts for most important (maximum five) papers upon which the nomination is based should be attached to the application.

The SGA-Newmont Gold Medal recognises the career of the awardee involving "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, a 999.99 fine gold medal, and travel to Upsala 2015. Previous medalists include Zdenek Johan (2007), Shunso Ishihara (2009), David Groves (2011) and Michel Cuney (2013).

The SGA-Newmont Gold Medal is based upon career accomplishments. It must be stressed that published scientific research is only one measure; other measures include leadership, both in research and in industry; success in exploration or mining geology; and service to SGA and like organisations. The award covers all aspects of research applied to mineral deposits, from field geology

and mineral exploration, through development of analytical techniques, ore system models and metallogeny, and to the management of research and exploration projects and institutions. Eligibility is not restricted by the candidate's nationality, place of employment, or membership in the Society, and nomination forms can be downloaded from the Society's web site (<https://www.e-sga.org/index.php?id=133&redirect=-1%3B>). Nominations must include the name and address of the candidate as well as a summary of the candidate's education, significant accomplishments and publications, and the name and address of the nominator.

For both awards, letters of support from three SGA members are required. All nomination forms and letters should be sent to the SGA Executive Secretary with a copy to the Chairman of the Awards Committee, whose addresses can be found on the nomination form. All nominations and letters of support (either digital or hard copy) must be received by 31 March 2015.

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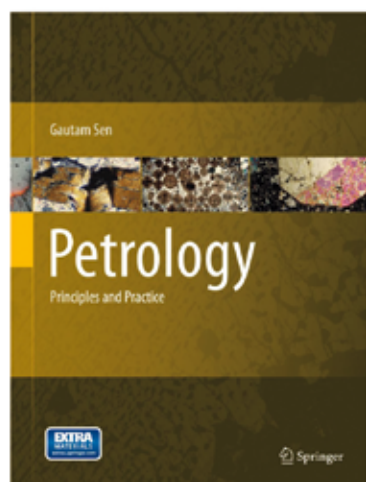
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Petrology

Principles and Practice

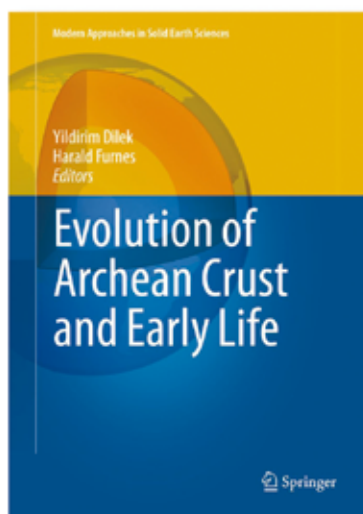
- Incorporates the latest research on petrology
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The book will be attractive to researchers in academia and in industry, and to senior undergraduate students, graduate students and faculty in earth and natural sciences.



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The 8th Ore Deposit Models and Exploration Workshop – Hefei University of Technology Geological Society of Anhui, China Hefei, December 9–15, 2013

Taofa Zhou¹, Fan Yu¹ and Steven D. Scott²

¹Ore Deposit and Exploration Centre, Hefei University of Technology (ODEC), Hefei 230009, China

²Department of Earth Sciences, University of Toronto, Toronto, Canada M5S 3B1

The second workshop held in 2013 on Ore Deposits Models and Exploration, number 8 in the continuing series in China, was held with remarkable success December 9–15 in the Conference Centre of Hefei University of Technology in Hefei. The workshop was co-sponsored by Hefei University of Technology; Geological Society of Anhui, China; Society for Geology Applied to Mineral Deposits (SGA); Society of Economic Geologists (SEG); Bureau of Geology and Mineral Exploration of Anhui Province, China; Public Geological Survey Management Center of the Department of Land and Resources of Anhui Province, China; Ore Deposit and Exploration Centre, Hefei University of Technology (ODEC); and National Natural

Science Foundation of China (NSFC). The organizing committee was led by Professors Steve Scott, Noel White and Taofa Zhou.

The instructors of this workshop course were Steven Scott from the University of Toronto, Canada; Richard Goldfarb from the US Geological Survey in Denver, USA; Dave Leach, a consultant formerly from the US Geological Survey in Denver, USA; David Cooke from the University of Tasmania in Hobart, Australia; Chusi Li from Indiana University in Bloomington, USA; Noel White from Hefei University of Technology, China; Kaihui Yang from Zijin Mining Group Company Limited, China; Zhaoshan Chang from James Cook University, Australia; and Huayong Chen from the Guangzhou

Institute of Geochemistry, CAS, China. Joan Scott organized the laboratory sessions and took care of logistics. Lectures were given in English with sequential translation in Chinese and all slides were bilingual. A special session on Chinese deposits by eight Chinese scholars (Jingwen Mao, Zenqian Hou, Yanjing Chen, Jinawei Li, Yuling Xie, Shaoyong Jiang, Xieyan Song and Taofa Zhou) was given on the last day.

The workshop covered a wide range of ore deposit types and topics, including volcanic-hosted massive sulphides (Steve Scott), Pb-Zn deposits in sediments (Dave Leach), BIF and other types of iron deposits (Noel White), porphyry and epithermal deposits (David Cooke), skarns



Opening of the workshop.



Steve Scott with students in the lab.



During the workshop.



Group photo of the workshop participants.

(Zhaoshan Chang), orogenic gold deposits (Rich Goldfarb), magmatic Ni-Cu sulfide deposits (Chusi Li), iron oxide Cu-Au deposits (Huayong Chen), the importance and application of ore deposits models to exploration (Noel White), and implications for exploration and mineral potential in China (Kaihui Yang). The workshop featured a daily two-hour lab session with over 500 representative samples as well as maps/sections/photos from typical well-known ore districts world-wide.

The workshop attracted more than 350 participants, demonstrating the continuing strong

interest in China for such a presentation. The workshop typically attracts 250–300. About 200 participants in the Hefei workshop were explorers from geological surveys and mining companies. More than 150 were young researchers and students from 15 major Chinese universities across the country, researchers from institutes of both the Chinese Academy of Sciences and the Chinese Academy of Geological Sciences. Five participants were from Australia and the USA. As in previous workshops, the instructors appreciated very much the enthusiasm shown by the participants to the

lectures and in the labs. The instructors were constantly surrounded by participants, answering questions, discussing exploration/research issues and giving advice to the students.

The next workshop, number 9 in the series, will be held 9–14 November 2014 in Fuzhou, Fujian Province. For information, contact in English or in Chinese Qianjie (“Jay”) Wang, Director of Overseas Exploration Group for Jijin Mining Group, e-mail <Wang_quianjie@zjky.cn>, telephone +86 592 293 3619.



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Mineral Resources in a Sustainable World

Preliminary list of scientific sessions

- Geodynamics, orogenic cycle and mineral systems
- Ultramafic and mafic processes
- Epithermal and porphyry deposits
- VMS session - *dedicated to J. Franklin*
- Modern marine resources
- Iron ores including IOCG
- REE and other mineralization associated to carbonatites and alkaline rocks
- Strategic metals: their sources, and ore-forming processes
- Uranium symposium - *in honour of M. Cuney*
- Sediment-hosted deposit including Kupferschiefer symposium - *in honour of J. Pašava*
- Surficial process involving metals including laterites
- Organic matter and metals
- Fluids and ore genesis
- Metallogeny of North and West Africa
- 3D modeling symposium - *in honour of J.L. Mallet*
- Developments in elementary and isotope geochemistry, source tracing and Geochronology



CENTRE PROUVE GRAND NANCY

- Geometallurgy
- Processing of low grade ore
- Phytomining
- Sustainable mining and environmental issues
- Industrial minerals and Gems

Field trip - Preliminary list

- Precious and base metal deposits in Anti-Atlas and Hercynian belts, Morocco
- NW Iberian metallogeny, gold and tungsten, Spain and Portugal
- Sn(-W-Mo), Ag-base metal, U, Bi-Co-Ni deposits of the Erzgebirge, Germany
- The Carpathians porphyry and epithermal deposits, Romania
- Geology and Archaeology of the Lavrion Cu-Pb-Zn-Fe occurrences, Greece
- Ste Marie-aux-Mines (Co-Ni-Ag old mines), France
- Halite Underground Mine (Salins du Midi, Varangéville), France
- Central Pyrenees metallogenic belt: Salau (W-Au), Luzenac (Talc), MVT (Pb-Zn), France
- Kaolin-Sn-W-Ta (Echassieres), The Poitou High (Melle, Les Sables, Chaillac, F, Ba-Pb-Zn), RM pegmatites, French Massif Central, France
- Pb-Zn deposits of the Vardar Zone, Kosovo
- Polish Kupferschiefer, Poland
- The epithermal and porphyry in the Caucasus
- Palaeocene-Eocene Phosphorites Deposits, Tunisia
- Orogenic gold, Eastern Greece
- Soultz geothermal field, France
- ANDRA nuclear waste underground laboratory, France

Preliminary list of shortcourses

- Geomodeling
- Fluid Inclusions
- Geochemical exploration tools
- Phytomine
- Structural geology
- Ore processing (pilot plant)
- Underground mining



Important dates

- 1st of September 2014: Second circular and call for papers
- 15th of January 2015: Abstract submission opening
- 28th of February 2015: Abstract submission closing
- 15th of April 2015: Final revised abstracts from authors due
- 1st of May: Notification of final acceptance or rejection of abstracts
- 31st of May: Deadline for early bird registration
- 1st of July 2015: Detailed schedule with presentations and posters

