



SGA

News

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Activities of SGA Student Chapters

The SGA network links existing Chapters (Baltic Chapter with 52 members, <http://www.sga.agh.edu.pl>; Prague Chapter with 35 members, <http://sga.cuni.cz>; and Siberian Chapter with 15 members). This year two new Chapters were established: in Barcelona with 36 members (<http://www.bcn-sga.cat/index.php>) and in Colombia (Industrial University of Santander). New Chapters are expected to be formed in Nancy (France), Tehran (Iran), and Peru. The Barcelona SGA Chapter took the opportunity of the SGA Keynote Speaker Program that was created by the society in 2011. SGA student members can invite an SGA Keynote Speaker to present a lecture at their university. More info is available at the SGA website (<http://www.e-sga.org>). SGA also sponsored scientific session at various conferences and supported SGA students to attend the meetings like Goldschmidt 2012 in Montreal, IAS 2012 in Schladming, Austria, EMC 2012 in Frankfurt or the 11th Freiberg Short Course in Economic Geology. A student devoted programme is also planned for the 12th SGA meeting in Uppsala in 2013 (<http://www-conference.slu.se/sga2013/>). SGA Network is also open to everyone on Facebook (facebook: SGA Network).

This issue of SGA News wants to highlight the growing and very interesting activities of these Student Chapters by placing them at the forefront of the newsletter in the place usually dedicated to the leading article. Five reports on the most recent activities of the Prague, Siberian and Barcelona SGA Student Chapters are therefore presented in the following pages.

By this way we would like to put the accent on the important and active role of students in our society and on the initiatives they are carrying out to improve their own knowledge and understanding of geological processes associated with the formation of ore deposits. Seeing this we can say that the future of our Society is in good hands!

Massimo Chiaradia, Editor of SGA News
Jan Pašava, Secretary General SGA

1. Tin mineralization and alteration styles in the northwestern Bohemian Massif, Czech Republic: A field trip report from the SGA Student Chapter Prague

Vít Pe estý*, Matylda He manská and David Dolejš

Charles University in Prague, Czech Republic - sga.prague@gmail.com

The SGA Student Chapter in Prague, Czech Republic, devoted its first field trip in 2012 to cassiterite mineralization and associated alteration in the northwestern part of the Bohemian Massif. We visited the Hieronymus mine at Cista and the active quarry at Krasno. The Sn-W deposits are hosted in apical parts of highly evolved Li-F-rich granites of the Saxothuringian zone. These magmas represent final differentia-

tion products of magmatic activity during waning stages of Variscan continental collision in central Europe, emplaced at 324-312 Ma. This metallogenic province includes classical sites of tin exploration and mining, e.g., Krasno, Cinovec/Zinnwald, Altenberg, Sadisdorf, Ehrenfriedersdorf, Geyer and Krupka, that lasted from the 9th century.

page 2 ►

CONTENTS

Activities of SGA Student Chapters	1
New Members	5
Forthcoming events	7
34 IGC Congress - Report	14
Links between IUGS and SGA	15
SGA website	17
SGA Membership Application Form	20
SGA 12th Biennial Meeting, Uppsala, Sweden, 12-15 August 2013	21
SGA 13th Biennial Meeting, Nancy, France, 24-27 August 2015	32

MAIN FEATURES

Activities of SGA Student Chapters	1
34 IGC Congress - Report	14
SGA 12th Biennial Meeting, Uppsala, Sweden, 12-15 August 2013 - Second Circular	21

>>> page 1 *Activities of SGA Student Chapters*

The Cista tin deposit is a hydrothermal vein-type mineralization. Hydrothermal alteration processes were driven by fluids released during crystallization of the Kru-dum granite body. Subsequent decrease in temperature and pressure caused changes in chemical equilibria in aqueous fluids and caused the formation of postmagmatic greisens. The late stage of alteration is characterized by Sn-W mineralization, predominantly found along structural heterogeneities. The cassiterite and wolframite enrichment is related to two distinct settings: lenses or patches of hydrothermal quartz and subordinate individual quartz veins (up to 12 cm thick), found both in the granite and surrounding paragneisses. The second mineralization style is a heterogeneously disseminated ore (with grades up to 1.5 wt.% Sn) within the granite body that follows contact with the host paragneiss in a zone about 100 m thick.



The Hieronymus mine (photo by Jan Loun).

The occurrences of tin and tungsten mineralization had been explored and exploited in this area for several centuries. The first reference to extraction of ore near Čistá comes from the 14th century, however, the detailed history of mining near the Čistá town is difficult to reconstruct, because most of the documents were destroyed in a fire in 1772. The mining had progressed mainly at the beginning of 16th century, was maintained until 1631, when the mining operations ceased. The exploration and minor mining continued throughout the 19th century until the World War II. The total amount of tin mined from Hieronymus is estimated to be 500-700 tons. Although the tin grade in the Hieronymus mine has never been as large as in the other mines in the surroundings, it has great historical importance. At present, the Hieronymus mine serves particularly as a nice example of medieval mining with hand-made tunnels with well-preserved pickaxe cuts as well as some rock fragmentation techniques (fire setting) from the 16th century. Due to

its uniqueness, the mine is being prepared for the public opening as part of the Czech-Bavarian GeoPark.

The other field trip stop was the active quarry near Krasno. This open pit exploits alkali feldspar granites and alkali feldspathites as raw materials for ceramic, glass and



Open pit in Krasno (photo by Jan Loun).

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EDITORS

Massimo Chiaradia¹, Chris Heinrich²

¹Department of Mineralogy

University of Geneva

Geneva

SWITZERLAND

²ETH Zurich

SWITZERLAND

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INFORMATION FOR CONTRIBUTORS

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SGA NEWS – MAILBOX

Dr. Massimo Chiaradia

Department of Mineralogy

University of Geneva

Rue des Maraîchers 13

CH-1205 Geneva

Fax: +41 22 379 32 10

e-mail: editor-sga-news@e-sga.org

Massimo.Chiaradia@unige.ch

chemical industry. It is situated in a deeper part of the Krudum granite intrusion (in the footwall of tin-bearing greisen zones) that experienced substantial alkali feldspar alteration. The parental granites belong to the Li-F-rich, zinnwaldite-bearing granites but were affected by several stages of post-magmatic hydrothermal alteration. These include quartz dissolution, breakdown of zinnwaldite, and precipitation of albite and microcline. The feldspathization is a process that was synchronous with greisen alteration and tin mineralization in the Krudum granite body. The feldspathites occur

in the lowest portions of the granite body that was affected by influx of external, possibly meteoric or formational fluids into hot interior of the solidified intrusion. During outflow through the apical part of the intrusion, the fluids were cooling down and caused pervasive or vein-type greisen alteration accompanied by cassiterite precipitation. Because of its low Fe content (< 0.6 wt. % FeO) the feldspathites have widespread usage in ceramic and glass industry. The quarry is operated by KMK GRANIT Co. with annual production of 150-200 000 tons of fine-grained feldspatite.

To summarize, the field trip was successful and fulfilled our geological educational expectations, yet it provided several opportunities for mineral and rock collecting (we found particularly instructive specimens of zinnwaldite, smoky quartz, beryl and apatite). Finally, we would like to thank the staff members of the KMK GRANIT Co. for the possibility to visit the Krasno quarry and to members of the Hieronymus mine team for their permission and underground tour of the mine.

2. Volcanic-r rt of the SGA Student Chapter Prague

Matylda He manská, Luboš Vrtiška, Jan Soumar, David Dolejš

Faculty of Science, Charles University, 128 43 Praha 2, Czech Republic. Email: sga.prague@gmail.com

As in the previous years, the autumn field trip of the SGA Student Chapter Prague (Czech Republic) represents the main annual educational event. This year, our target was to visit various products of volcanic activity in the Neogene arc in the Carpathians (Slovakia) and inspect their associated mineralization types, ranging from skarn to porphyry, mesothermal and epithermal styles. During four days we were exploring different mineralization types associated with the evolution of the Miocene Štiavnica stratovolcano: gold mineralization of the intermediate-sulfidation type in Banská Štiavnica and Hodruša (museum and dump

of the Rozália mine), magnetite skarns in Úškrtová Dolina, and secondary mineralization in L'ubietová and Špania Dolina. We also had the opportunity to visit the secondary limnoquartzite deposits with plant remnants in the Kremnické Vrchy Mts.

The area is located in the western part of Slovakia. The Banská Štiavnica ore district is situated in the central zone of the largest stratovolcano in the Central Slovakian volcanic field of Neogene age, emplaced in the inner part of the Carpathian arc overlying the Hercynian basement. The volcanic activity was related to subduction of the flysch belt under the Carpathian arc and to

subsequent back-arc extension. Lexa et al. (1999) recognized in the Banská Štiavnica stratovolcano several stages of evolution: (1) eruption and construction of a large andesite stratovolcano, (2) pre-caldera andesite stage, (3) partial erosion of volcanic products and emplacement of diorite intrusion by subsurface cauldron subsidence, (4) continuing erosion of the volcano remnants and intrusion of granodiorite to quartz-diorite stocks and dyke swarms surrounding the granodiorite pluton where iron-rich skarns, base metal stock-work mineralization with advanced argillitic alteration developed, (5) subsidence of the caldera accompanied by extrusive activity of evolved andesites and simultaneous emplacement of quartz-diorite sills and dykes in the form of near-surface ring dykes, (6) renewed activity and eruption of more primitive andesites, (7) long-lasting uplift of a resurgent horst in the centre of the caldera accompanied by rhyolitic intrusions and volcanic products, occurred between 16.5 and 10.5 Ma. The late stage horst uplift was asymmetric and was responsible for deeper erosion of the northwestern part of the volcanic system. Construction stages of the stratovolcano were accompanied by various types of hydrothermal alteration and mineralization ranging from early intrusion-related iron skarns and porphyry-copper systems to late high-level base- and precious-metal veins. An epithermal system related to the post-caldera uplift has the dominant significance in the metallogeny of the ore district. According to their ore assemblages, the epithermal veins were divided into three types: (1) base-metal veins, (2) Au-Ag veins in



SGA Student Chapter Prague in the old mine museum in Hodruša (from the right: Zita Bukovská, Vít Peřestý, Jaroslav Řihošek, Matěj Němec, Michal Čurda, Tereza Jandová, Jan Bubal, Jan Soumar, Zuzana Šnellerová, Luboš Vrtiška, Michal Raisigl, Filip Podolský, Kateřina Sýkorová, Petra Rotová, Pavel Kohn, Petr Černý, Jan Loun and our guide in the mine Mr. Ivan Karsten)

the central or western part of the horst and (3) Au-Ag veins related to marginal faults of the horst. Formation of the hydrothermal system and precipitation of Au mineralization is related to the initial stage of caldera subsidence that changed the hydrologic conditions. Circulating fluids preferentially used open subhorizontal structures with limited connection to the paleosurface. The ring fractures acted as conduits that focused the hydrothermal ore-forming fluids. A differentiated shallow magma chamber was a probable source of heat and of the chemical components for the fluids.

The Hodruša-Štiavnica ore district has become famous for its long-lived silver and gold production from epithermal veins but

also extraction of copper, zinc and lead. The Rozália mine is located in the interior of the volcanic edifice. The Rozália sulphide-rich Cu-Pb-Zn-bearing vein is a part of an epithermal vein system related to the horst uplift and it contains very low concentrations of gold (0.4-0.5 ppm Au), classified as an intermediate-sulfidation stage of epithermal mineralization. The Au mineralization occurs as S to SE-dipping veinlets that are hosted in pre-caldera andesites that are intensely fractured and altered (pyritized and silicified hydrothermal breccia in the vicinity of a shallow granodiorite pluton). The orientation of the veins was affected by the presence of a set of quartz-diorite porphyry sills and by younger steeply dip-

ping Rozália base-metal veins. The base-metal veins are related to the resurgent horst uplift in the caldera centre, where three evolutionary stages can be distinguished: (1) pervasive silicification and pyritization with low grade mineralization, (2) formation of the main gold mineralization, and (3) a low-temperature stage (mainly quartz, Ca-Fe carbonates, pyrite and sphalerite). Pressure fluctuations during ore formation indicate opening of the hydrothermal system and transition from supra-hydrostatic to hydrostatic conditions at shallow depth (~550 m). Gold precipitation is considered to be the result of prolonged fluid boiling as the main driving mechanism for decrease in the Au solubility. Stable isotope data point to a mixed magmatic and meteoric origin of the fluids.

After visiting Hodruša we moved to the Úškrtova Dolina valley, which follows the contact of granodiorite stock and the surrounding carbonates (dolomitic limestones). This subvolcanic intrusion led to the formation of fassaite skarns along its exocontact. Skarns are rich in magnetite and mineralized with pyrite. From the mineralogical point of view, the locality is significant for small crystals of pleonaste, a variety of hercynite, which occurs as black thin laths or in small cavities. The Banská Štiavnica volcanic complex hosts a number of minerals that occur in hydrothermal cavities. Pervasive silicification led to the formation of secondary quartzites that host long prismatic quartz crystals often in aesthetic clusters. Another locality of this type was the occurrence of secondary minerals in the Špania Dolina valley. In one day we traversed mountains to examine the copper mineralization that is found in a 4 km long and 1.5 km wide zone with N-S trend between Panské dielo and Staré Hory. This Cu mineralization formed during three principal stages: (1) quartz-siderite stage with pyrite mineralization, (2) copper-sulphide stage mainly with chalcopryrite and (3) barite-sulphide stage. A similar mineralization style also occurs in L'ubietová, a district that we visited on the fourth day. Here, the assemblages are phosphorus-rich and host phosphates and arsenides as main secondary minerals. L'ubietová is also a type locality for libethenite and euchroite. The accompanying siderite-sulfide mineralization has a stockwork-impregnation nature emplaced in volcanosedimentary complexes related to Permian mafic volcanic activity. We completed our excursion program by



Dump in Špania Dolina.



Sphalerite, galena and chalcopryrite, Banská Hodruša.

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Mr. Sibonso Mtshali P.O. Box 1762 Thabazimbi 0380 SOUTH AFRICA
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Mr. Jurgen FITSCHEN 2 Protea Avenue Fish Hoek, 7975 Cape Town SOUTH AFRICA
Mr. KAZADI BANRA SAMUEL-BARRY 2nd Floor, 82 Maude Street Sandton SOUTH AFRICA
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- Miss Jenni NEVALAINEN Yo-Kyla 38 A 19 20540 Turku FINLAND
- Miss Evgeniia SEREDIUK Kroopilankatu 4A, 3 20610 Turku FINLAND
- Mr. Richard Siemssen Abo Akademi Vaha-Hamenkatu 12a B28 20500 Turku FINLAND
- Mr. Simon Dahlstrom Abo Akademi Vaha-Hamenkatu 5 B 22 20500 Turku FINLAND
- Mr. Mathias Backman Aninkaistenkatu 12 D 91 20100 Turku FINLAND
- Mr. Vincent CASANOVA University of Geneva 22A rue de geneve 74100 Annemasse FRANCE
- Mr. Emmanuel Owden KAZIMOTO Alte Lubecker Chaussee 7c Kiel GERMANY
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- Ms Andrea Coelho Beleque Avenida da Liberdade No 15 Vale de Milhacos Corroios 2855 385 PORTUGAL
- Mrs Kseniya Ustjugova Z. Kosmodemjanskoy 48-95 Syktyvkar Republic of Komi 167 009 RUSSIA
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- Mr. Tobias Kampmann Dep. of Civ., Env. And Nat. Res. Eng Devision of Geosciences Lulea University of Technology Se-971 87 Lulea SWEDEN
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- Mr. Abdulqadir Abdurrahman Camborne school of mines University of Exeter Tremough campus Penryn TR10 9EZ UK
- Mr. Joshua O'Brian 253 Science 1 Iowa State University Ames, Iowa 50011 USA
- Mr. Carson Richardson 1040 E. 4th Street University of Arizona Department of Geosciences, Rm 208 Tuscon, AZ, 85721 USA

Ms. Sibylle SCHEDEL Gruben 3 96272 Hochstadt GERMANY
 Mr. Ali SHOLEH No 24, No 6, Nohom Sharghi Laleh Shomali, Ferdows Gharb
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 Miss Urszula JANICKA Ul. Cechowa 47a 30-614 Krakow POLAND
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 Mr. Brett DAVIDHEISER Flat 2/1, 45 Edgemont st Glasgow UK

SENIOR MEMBERS

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>>> FORTHCOMING EVENTS <<<

* marks a new entry

2013

*April 7-12

EGU/SM1.5/ERE5.2 — European Geosciences Union, Vienna, Austria - Contact: <http://meetingorganizer.copernicus.org/EGU2013/session/12568>

*April 24-28

BASALT 2013, Gortitz, Germany - Contact: http://www.senckenberg.de/root/index.php?page_id=15387&preview=true

June 5-9

ECROFI — 22nd European Current Research on Fluid Inclusions, Antalya, Turkey - Contact: Dr. Gulcan BOZKAYA Cumhuriyet University Department of Geological Engineering TR-58140 Sivas/ TURKEY Dr.Nurullah Hanilci Istanbul University Department of Geological Engineering 34100 Avcilar -Istanbul TURKEY; Email: info@ecrofi2013.org; weblink: <http://www.ecrofi2013.org>

*July 7-12

17th International Zeolite Conference, Moscow, Russia - Contact: <http://www.ize17.com>

*July 10-13

11th International Congress of Applied Mineralogy, Mianyang, China - Contact: <http://www.icam2013.org/>

July 20-24

IAVCEI 2013 General Assembly: Forecasting Volcanic Activity, Kagoshima, Japan - Contact: <http://www.iavcei2013.com/>

August 12-15

12th SGA Biennial Meeting "Mineral Deposit Research for a high-tech World", Uppsala, Sweden - Contact: www.akademikonferens.uu.se/sga2013; e-mail: sga2013@sgu.se

*August 25-30

Goldschmidt 2013, Florence, Italy - Contact: <http://goldschmidt.info/2013/program/program-ViewThemes>

*September 1-5

9th International Symposium on the Cretaceous System, Ankara, Turkey - Contact: <http://www.cretaceous2013.org/en/>

September 1-6

11th International Conference on Paleogeography (ICP11), Barcelona, Spain - Contact: <http://www.icp2013.cat/>

*September 13-20

Gold deposits: from theory to exploration practise, SGA Short Course, Mokrsko gold deposit, Czech Republic - Contact: Zdenek Pertold zdenek.pertold@natur.cuni.cz, <http://www.e-sga.org>

December 15-19

AGU 2013 Fall Meeting, San Francisco, California, United States. Contact: <http://www.agu.org/meetings/>; AGU Meetings Department 2000 Florida Avenue, NW Washington D.C. U.S.A. 20009; Phone: (+1-202-777-7333)

2014

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>

2015

August 24-27

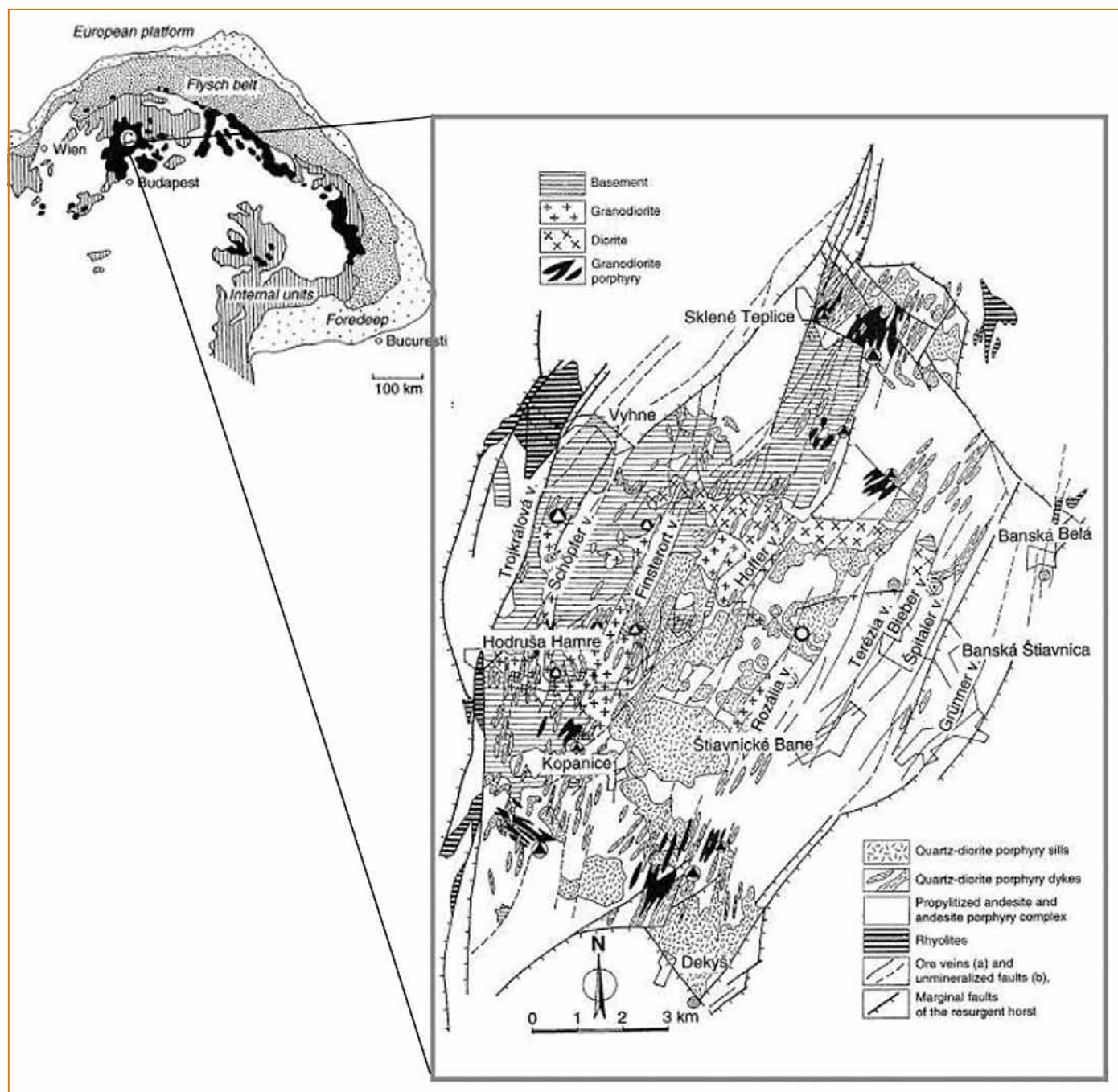
13th SGA Biennial Meeting "Mineral Resources in a Sustainable World", Nancy, France - Contact: sga-2015@univ-lorraine.fr

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Structural and metallogenetic scheme of the Banská Štiavnica ore district (Lexa et al., 1999).

a stop in Slaská (Kremnické Vrchy Mts.). These mountains are built up by andesite and rhyolite volcanics including pyroclastics. Late stages of volcanic activity were accompanied by widespread silicification leading to the formation of secondary quartzites. The postvolcanic silica mineralization is found in andesite lavas and pyroclastics but also in the form of precipitates in lakes. The limnoquartzites (hydrothermal precipitates) often contain remnants of fossil plants.

This field trip was the first excursion under guidance of our new chapter president

Luboš Vrtiška and its new treasurer Vít Peřestý. Since the SGA Student Chapter Prague continues to grow and accepts new members, these four days provided us not only with a rich educational experience in volcanic-related mineralization styles in Slovakia but also helped to revitalize the partly new team of our chapter. Finally, we would like to thank our guide in the Hodruša mine, Mr. Ivan Karsten, for his time and attractive explanations as well as Mr. Petr Černý for his support of this field trip.

References

Lexa J., Štohl J., Konečný V. (1999): The Banská Štiavnica ore district: relationship between metallogenetic processes and the geological evolution of a stratovolcano. *Mineralium Deposita* 34, 639-654.



3. Stratabound and vein mineralization in the northwestern Bohemian Massif, central Europe: A field trip report from the SGA Student Chapter Prague

Jan Soumar, Luboš Vrtiška, David Dolejš, Matylda He manská

Institute of Geochemistry, Mineralogy and Mineral Resources, Faculty of Science, Charles University, 128 43 Praha 2, Czech Republic

The metamorphic complexes of the northwestern Bohemian Massif host several mineralization styles that span stratiform base-metal deposits, stratabound skarn mineralization as well as low-temperature hydrothermal veins. During the second trip

in 2012, the SGA student chapter in Prague, Czech Republic, visited several examples of these mineralization styles, exposed mainly in historical mines.

The Mědník deposit, a calcic-ferroan skarn with stratabound sulfide mineraliza-

tion, produced silver, copper and iron since medieval times. The Mědník deposit is situated near the village of Měděnec (Kupferberg) in the central part of the Krušné hory Mts. (Erzgebirge) in the Czech Republic. The deposit is located in the Saxothuringian zone, hosted in Neoproterozoic supracrustal sequences but deformed and metamorphosed during Variscan orogeny at 380-340 Ma. The host rocks are medium-temperature and high-pressure metamorphics including mica schists, orthogneisses and migmatites with intercalations of eclogites, amphibolites, marbles and skarns. The skarn complex in the vicinity of Měděnec hosts magnetite ores and less often Cu-Pb-Zn sulphide ores. Late fractures are filled with calcite veins accompanied by Ag, As, Co, Ni, Bi represented by native silver, bismuth, rammelsbergite, skutterudite, akantite, and proustite etc.

The deposit has been known since the 15th century. Initially, the silver-bearing copper ores were mined but later, from 1540, pyrite and chalcopyrite were mined as raw materials for vitriol (sulphuric acid) production. The production of vitriol and consequently mining stopped in 1860, and the underground workings were re-opened as a tourist attraction (malachite caves) in 1890. Today remarkable traces of hand mining using pickaxes and fire setting can still be seen.

New mining activities started in 1950s in order to extract magnetite, followed by an unsuccessful attempt to produce uranium. Subsequently, production of garnets and mica concentrates as well as mining of copper with accompanying silver continued. The mine produced 323 tons Cu and 800 kg Au between 1968 and 1990.

The second location visited was Mýtinka, about 4 km SW of Měděnec, a complicated fold structure containing migmatites, orthogneisses and mica schists intensely fractured and filled with quartz gangue. Quartz veins located at fault intersection are usually mineralized with hematite that formed from low-temperature hydrothermal fluids. Overall, the field trip was very successful. We would like to thank Mr. Ivan Cáder, a local enthusiast, for his efforts to make the old Měděnec mine accessible for visitors.



Země zaslíbená mine in Měděnec



Země zaslíbená mine in Měděnec (the first line from the left: Jakub Trubač, Nikol Novotná, Zuzana Šnellerová, Luboš Vrtiška, Michal Raisigl, Hana Ditterová and our guide Ivan Cáder; the second line: Miroslav Šulák, Šárka Matoušková, Ondřej Krýza, Jan Bubal, Jan Soumar).

4. News from the Siberian Student Chapter

Ilya Prokopyev, Irina Tretiakova, Olga Gavryushkina

IGM SB RAS, Novosibirsk, Russia

In 2012 the Siberian Student Chapter organized the traditional mineralogical field trip in the Skalinsky open-pit mine (Novosibirsk region) for students from the Geology-Geophysics department of Novosibirsk State University.

For more than thirty years the Skalinsky open pit has been exploiting and provid-

ing a lot of regional enterprises with gravel material for building. The open-pit mine is situated in granite rocks of the Kolyvansky magmatic massive, in which pegmatites with cavities are widespread. Well-cut quartz crystals, microcline, albite, topaz, beryl and other minerals were found in these pegmatites.

During the field trip students had the possibility to observe features of pegmatite mineralization, including structure of veins and cavities, distribution of minerals and others. Moreover, the basic principles of open pit exploration were presented directly at the mine.

Several crystals of beryl, black quartz



1. Skalinsky open-cast mine (Novosibirsk region, Siberia, Russia).



4. Finds. A crystal of beryl.



2. Lecture about Skalinsky open-cast.



5. A beryl crystal.



3. The search for exclusive mineral samples.



6. Lectures for young geologist.



7. Mineralogical lectures.



8. Field trip of the 6th Siberian International early Career Geoscientists Conference.

and beautiful crystal of blue topaz, which is the largest one found in this open pit, were collected for the Novosibirsk mineralogical museum.

A second activity of the Siberian Student Chapter was the organization of mineralogical lectures for participants to the Siberian Geological Olympics. More than 100 pupils from different Siberian cities attended the

talks and showed interest to geological science. As a result, the Novosibirsk Club of Young Geologist invited students of the SGA Siberian Chapter to give a series of lectures.

One more interesting event was The 6th Siberian International Early Career Geoscientists Conference. The SGA Siberian Chapter participated in the organization

of two post-conference field trips: "Mineralogy and Metallogeny of Northwestern Altai" and "Geodynamic, Magmatism and Stratigraphy of Gorny Altai". Both excursions were unique opportunities to visit geological examples of different types of ore deposits, magmatic and sedimentary rocks, and geodynamic complexes and enjoy wonderful views of the Altai nature.

5. News from the Barcelona SGA Student Chapter

Thomas Aiglsperger (President) and Lisard Torró i Abat (Vice-President)

Dept. Cristal·lografia, Mineralogia i Dipòsits Minerals - Facultat de Geologia, Universitat de Barcelona, C/ Martí i Franquès s/n, 08028 Barcelona (Catalonia), Spain

First of all a short introduction: the Barcelona SGA Student Chapter was founded by

SGA student members from the University of Barcelona (UB) in summer 2012 and

has grown rapidly to 36 members by now. The SC includes currently undergraduate,



Figure 1: Participants of the SGA pegmatite workshop at the University of Barcelona (photo by Omar Corrales Cazorla).



Figure 2: SGA student members observing pegmatite samples during comprehensive lesson (photo by Omar Corrales Cazorla).



Figure 3: Participants of the SGA Scientific Session at the University of Barcelona (photo by Omar Corrales Cazorla).



Figure 4: Dr Marieke Van Lichtervelde from the Géosciences Environnement Toulouse (photo by Omar Corrales Cazorla).



Figure 5: SGA field trip to the Cap de Creus pagmatitic area at the Costa Brava (photo by Omar Corrales Cazorla).



Figure 6: Participants of the SGA field trip to Cap de Creus (photo by Omar Corrales Cazorla).

master and PhD students as well as two advisors (Prof. Joan Carles Melgarejo and Prof. Joaquin Proenza) and aims to attract pre-graduate geology students to the field of mineral deposits and economic geology. One of our main intentions is to create a hotspot at our faculty for research and knowledge in these topics and to establish a meeting point where professionals can easily make contact with their future co-workers/employees. For further information please visit our homepage www.bcn-sga.cat

First activities of the BCN-SGA Student Chapter

A three day workshop (10th - 12th of October) on pegmatites was organized by the Barcelona SGA Student Chapter at the University of Barcelona. A total of 50 persons participated in this first activity of our SC, including invited speakers from France, Portugal, Basque Country and Catalonia, as well as students from Portugal, Angola and Catalonia. The workshop started with a comprehensive two-hour lesson on the basics of pegmatites given by MSc Sandra Amores, covering sample observation of pegmatite characteristic minerals and textures. This lesson was gratefully acknowledged by the students, especially by those

who did not know much about pegmatites yet. The scientific session was held on October 11th with six outstanding talks given by our national and international invited lecturers. The diverse program included new findings from Lithium pegmatites exploration and exploitation in northern Portugal (Barroso-Alvão case study), an example of a complete evolution from granitic to highly evolved pegmatitic facies (Pinilla de Feroselle rare element pegmatite, Spain), geochemical zoning and evolution in pegmatite fields (example from Giraul River, Angola), description of fluid inclusions in pegmatites (Cap de Creus case study) as well as new experimental data from rare element pegmatites and its comparison with natural rocks. We would like to give our most sincere thanks to Dr. Alexandre M. Lima, Dr. Encarnación Roda, Dr. Joan Carles Melgarejo, Dr. Pura Alfonso, Dr. Salvador Martínez and Dr. Marieke Van Lichtervelde for following our invitation and for highlighting this event with their expertise. On the third day of the workshop we visited the Cap de Creus pegmatitic area at the Costa Brava. This field trip was led by Dr. Joan Carles Melgarejo and Dr. Pura Alfonso and allowed us to observe several types of pegmatites. It was a great opportunity to understand formation and evolution mechanisms

of these bodies, to see and interpret mineral zoning, and even to learn some exploration tricks on identification of the more evolved pegmatites: watch out for mitridatite!! The BCN-SGA Student Chapter wants to thank all supporters of this activity (SGA, UB, BKC, Zanuy Tex-Mex) who made this successful event possible.

Dr. Robert F. Martin from the McGill University (Canada) visited Barcelona for the 100th anniversary of our mineralogy department in October and kindly agreed to give two lectures for SGA students about „Punctuated anorogenic magmatism and its links with metallogeny“ and “Femic magma: a new player in the game”.

Carl E. Nelson, senior consulting geologist and since September 1988 president of Recursos del Caribe, S.A. (www.cbmap.net/consulting/carl-e-nelson), kindly agreed to give two talks for the SGA Barcelona Student Chapter during his stay in Barcelona in November: “The Pueblo Viejo deposit (Dominican Republic): characteristics and genetic models” and “The role of the geologist in a junior mining company: conversation with a 30-year experience consulting geologist”.

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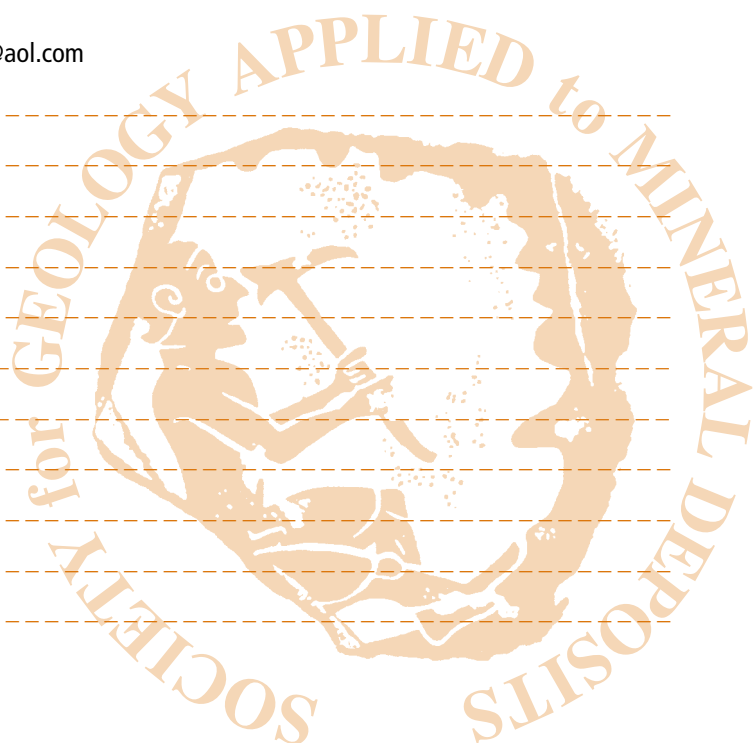
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34th International Geological Congress, Brisbane, Australia, 5–10 August 2012

Dave Huston

Minerals and Natural Hazards Division/GEOSCIENCE AUSTRALIA

The 34th International Geological Congress, held in Brisbane, Australia from 5th to 10th of August (see photos), was a major success with just over 6000 attendees. SGA had a significant presence at the congress, sponsoring two symposia and having a presence at the Springer booth. In addition, I represented SGA at the IUGS Council activities as part of the Australian delegation. Other SGA officers consulted at the conference about IUGS activities included Anna Vymazalova and Nikolay Bortnikov.

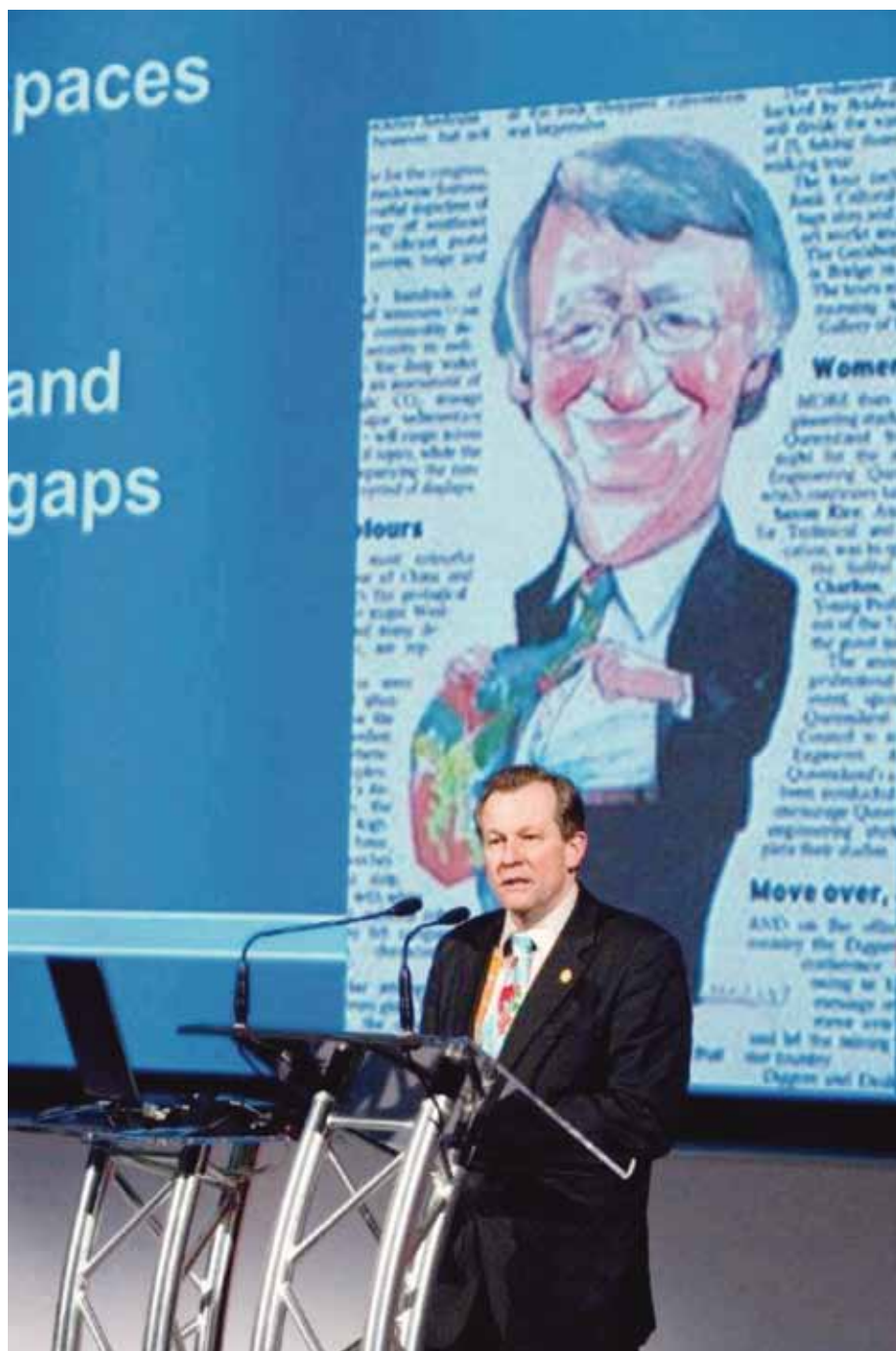
The two SGA-sponsored symposia, 7.1 (New age metals: the geology and genesis of ores required for a changing economy and a carbon constrained world), and 8.5 (Exploration and discovery: diagnosis and prognosis - are we in need of cure?) were very well attended, particularly symposium 7.1. This symposium, which was scheduled against a porphyry-epithermal symposium and several other economic geology-related symposia, consistently attracted an audience of over 100, with several presentations attracting well over 200. It was highlighted by keynotes by Rod Eggert on the economics of rare earth and other „new age metals“ and by Peter Collins on the geology of lithium and related pegmatite deposits. A total of 19 presentations and 13 posters were given at this symposium, which lasted a full day. It is planned that the results of this symposium constitute a special issue of *Mineralium Deposita*.

Symposia 8.5 was also well attended, with most talks attracting an audience over 100 and some attracting 200. The highlight was a keynote by Richard Schoddie on the exploration success rates in copper exploration. The symposium lasted half of a day with nine presentations and six posters. With one exception due to illness, all speakers presented in both symposia.

Four issues of significance to SGA were discussed at the IUGS Council meeting. As part of a strategic plan tabled and endorsed in principle by the council, it was proposed that affiliated organisations have a vote at the council. A second item that was highlighted was the SGA's short

course in metallogeny held in Burkino Faso (see photos and article in SGA News issue 31). The third item of importance was the selection of India (New Delhi) as the host

for 36th IGC (the 35th IGC will be hosted in Capetown in 2016). The vote for India was by a significant majority over the bid by Canada (Vancouver), although the Cana-



Paul Kay addressing Closing Ceremony with caricature of IGC President Neil Williams showing off the IGC tie.



Delegates meet the 'locals' in the exhibition hall.

dian team plan to bid for the 37th IGC. The Indians are considering moving the timing of the 36th IGC to March and not during the northern hemisphere summer when the meeting is traditionally held. The final issue was the election of IUGS officers: Roland Oberhänsli (Germany) as President, Ian

Lambert (Australia) as Secretary General, and Marko Komac (Slovenia) and Yildirim Dilek (USA) as Vice-Presidents.

During the meeting between the IUGS executive and affiliated organisations, the SGA short course held in Burkino Faso was again highlighted as activity that the

IUGS wants to promote. SGA currently is held in high regard by IUGS. SGA Council looks forward to a continued relationship with IUGS Council. A brief article on the role and activities of the IUGS is included below.

The International Union of Geological Sciences (IUGS) and links with SGA

Ian Lambert

Secretary General, IUGS (2012-2016)

What is the IUGS?

The IUGS is one of the largest non-governmental scientific organizations in the world. Founded in 1961, IUGS is a member of the International Council of Science (ICSU)

and is the scientific sponsor of the International Geological Congress.

With 121 national (or 'adhering') members, the Union aims to promote and encourage development of the Earth sciences

through the support of broad-based scientific studies relevant to the entire Earth system; to apply the results of these and other studies to preserving Earth's natural environment, using all natural resources wisely

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and improving the prosperity of nations and the quality of human life; and to strengthen public awareness of geology and advance geological education in the widest sense.

The IUGS has a number of initiatives to support the activities of over a hundred Affiliated Organisations, largely international geoscientific organisations such as SGA. IUGS also has a number of commissions that, among other things, establish international geoscientific standards. An example of this is the International Commission on Stratigraphy (www.stratigraphy.org) that has developed an established an international stratigraphic timescale and published global correlation charts.

The most visible activity of the IUGS is scientific sponsorship of the International Geological Congress. This series of scientific meetings began in 1878, with the first meeting in Paris, and have continued regularly every 3-4 years (except during periods of global conflict) over the past fourteen decades. Meetings have been held in all continents except Antarctica. Currently the

meetings are held every four years, with the next due in Cape Town in 2016. SGA regularly sponsors symposia at these meetings as an Affiliated Organisation.

The day-to-day running of the IUGS is through its Executive Committee (EC), which is at least partly renewed at the Council meeting held at each IGC. In fact, the 34th IGC in Brisbane saw new people endorsed for all but two Councillor positions on the EC.

Links between IUGS and SGA

The new EC is very motivated to increase the visibility and relevance of the Union and is keen to interact with Affiliated Organisations, including SGA, through side meetings at large international conferences where feasible, and formal and informal contacts. A major strategic direction for the new EC will be developing high profile international initiatives which ensure optimal geoscience inputs in initiatives addressing major challenges. One approach will be for IUGS to develop and seed fund some

multidisciplinary systems approaches to address these challenges, potentially in collaboration with IUGG and other GeoUnions under the International Council for Science (ICSU). SGA may wish to canvass ideas with other IUGS affiliated organisations with interests in future minerals and energy resources, with a view preparing a conceptual proposal for discussion, along with other ideas, at the IUGS' annual Executive meeting in February 2013.

SGA has already benefited from its association with the IUGS. IUGS monetarily supported the SGA short course on metallogeny in Burkino Faso and encourages similar activities, particularly in developing countries.

More information about the IUGS can be found at www.iugs.org, and more information about the next International Geological Congress in Cape Town can be found at www.35igc.org.

Ian Lambert

Secretary General, IUGS (2012-2016)

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

Dr. Jan Pašava

SGA Executive Secretary

Czech Geological Survey
Klárov 131/3
CZ-118 21 Prague 1
Czech Republic

Tel.: +420 2 5108 5506
Fax: +420 2 518 18 748
e-mail: jan.pasava@geology.cz

The SGA website

Daniel Layton-Matthews , Chief Editor SGA website

Queen's University, Kingston, ON K7L 3N6, Canada, dlayton@geol.queensu.ca

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[Click here for >>> Student sponsorship forms](#)
- **2012 Membership** dues: pay your membership before January 31 2012 and benefit the early bird lower rate! No fee increase in 2012. **Pay Here!**
New in 2012: Student members can select Print and electronic access to Mineralium Deposita and SGA News for 60 EUR.
- **Election of the new SGA Council.** **SGA Regular** and **Senior members** vote to elect the **new SGA Council**. Go to **Members>Election** and **vote**. [View the list of proposed officers](#), approved by SGA Council at its last meeting in Antofagasta.
- **CALL FOR PROPOSALS FOR ORGANIZATION OF 13th SGA BIENNIAL MEETING IN 2015**

SGA Council calls for proposals for the organization of the **13th SGA Biennial meeting in 2015** with a deadline for submission of bids on February 29, 2012. [More details in the Guidelines for the preparation of a proposal.](#)

- **Proposed changes to the SGA Constitution**, approved by the SGA Council in Antofagasta. [More here...](#)
- **NEW: SGA Keynote Speaker Program**

The [SGA Keynote Speaker Program](#) provides opportunities for SGA student members to invite a SGA Keynote Speaker to present a lecture at their university. The SGA Keynote Speaker should be visiting the region at the time of the proposed keynote talk. **Sponsorship requests** must be sent to the SGA

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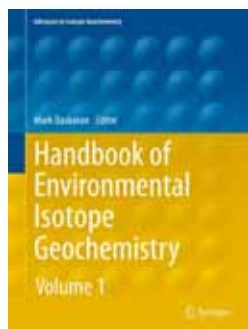
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M. Baskaran, Wayne State University, Detroit, MI, USA (Ed.)

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Society for Geology Applied to Mineral Deposits (www.e-sga.org)

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 Czech Geological Survey
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 CZ-118 21 Praha 1
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Phone: ++(420)-2-51085506
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 E-mail: secretary@e-sga.org

SGA Short course



Gold deposits: From theory to exploration practise

**Mokrsko gold deposit
Czech Republic
13th-20th September
2013**

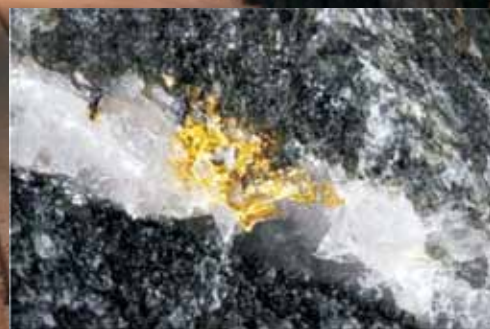
- Field training
- Underground mapping
- Exploration techniques

Key speaker prof. D.I. Groves, University of Western Australia

Contact person:

prof. Zdeněk Pertold
zdenek.pertold@natur.cuni.cz

An official short course website will be announced
at www.e-sga.org in mid-January 2013



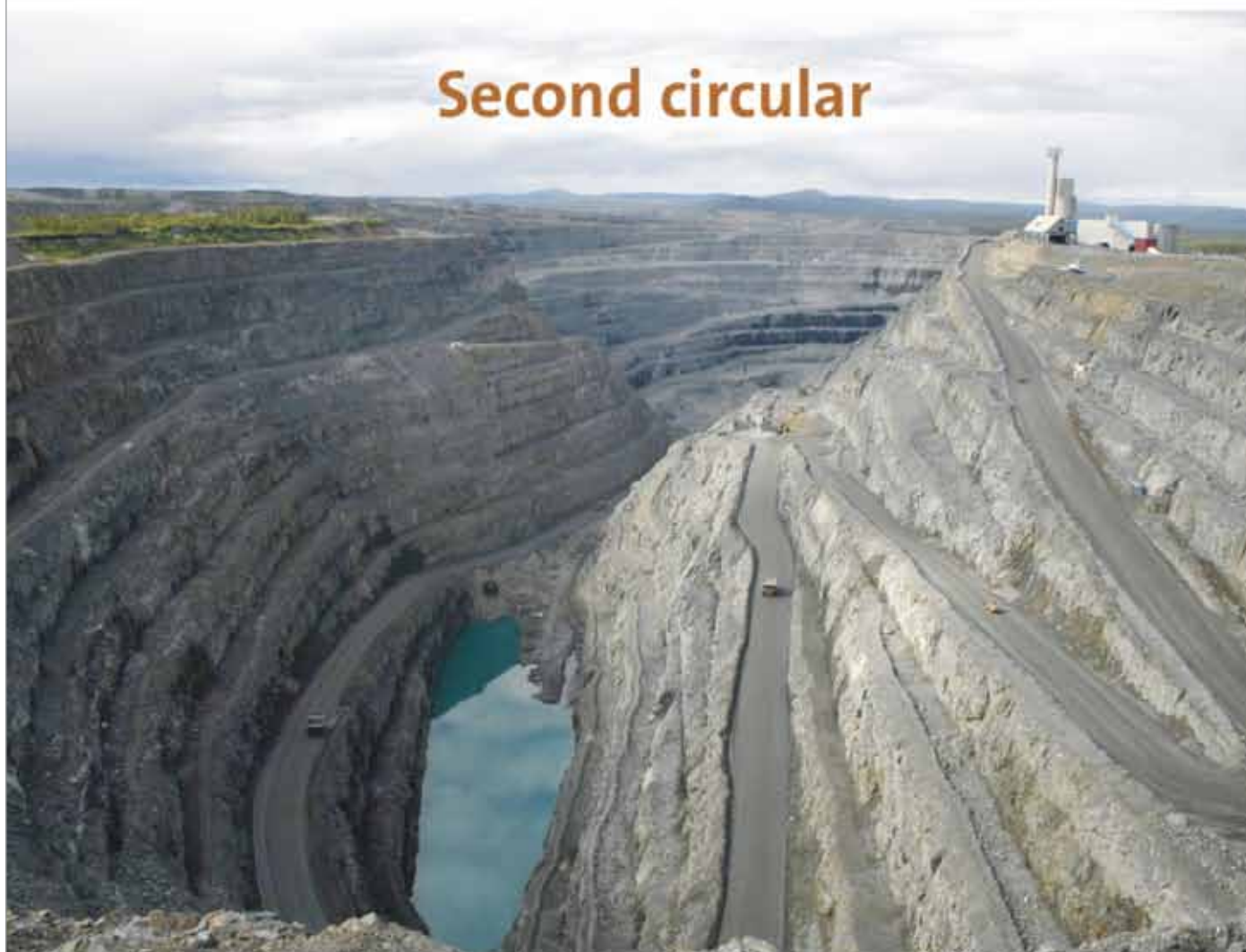
SGA, the Geological Survey of Sweden and the Nordic mining industry invite you to the 12th SGA Biennial Meeting:

Mineral deposit research for a high-tech world



12–15th August 2013, Uppsala, Sweden

Second circular



SGU

Sveriges geologiska undersökning
Geological Survey of Sweden

www.akademikonferens.uu.se/sga2013

Invitation

The Geological Survey of Sweden and the local organizing committee are proud to announce the 12th SGA Biennial Meeting which will be held in the university city of Uppsala. The meeting will take place at the Uppsala University main building within walking distance to most downtown hotels.

The 12th SGA Biennial Meeting will provide excellent opportunities to present and exchange knowledge within the field of mineral deposit research.

Sweden has a history of mining and metals refining stretching back more than a thousand years. Its metal ores and other mineral resources, and the knowledge about how to use them, have been key elements in building the prosperity of the country.

There will be a wide variety of activities available to both delegates and accompanying persons, in terms of excursions and of all the interesting social activities that Uppsala and nearby Stockholm have to offer.

It is my pleasure to warmly invite you to Sweden and Uppsala. We look forward to seeing you at the 12th SGA Biennial Meeting.

Kaj Lax

Chairman of the local organizing committee, Head of department, Geological Survey of Sweden.

Organisers



Front page: Aitik copper, gold and molybdenum mine. Norrbotten. Courtesy: Boliden Mineral AB.

Venue

The conference will be held at the Uppsala University main building, located in the centre of the town. Built in the 1880s and hosting a magnificent and spacious foyer and a Grand Auditorium, it is often used for academic ceremonies such as inauguration of full professors and the doctor's degrees ceremonies. The University main building also has many smaller lecture halls of vari-

ous sizes and it is therefore often used for conventions and conferences. The venue is centrally located in a beautiful area within walking distance to most downtown hotels. The building has free unlimited wireless internet access.

The workshops and short courses will primarily be held at Geocentrum – the Department of Earth Sciences at Uppsala

University and at the Geological Survey of Sweden.

The official language of the meeting, workshops and excursions will be English.



The University main building. Photo: Anders Damberg.

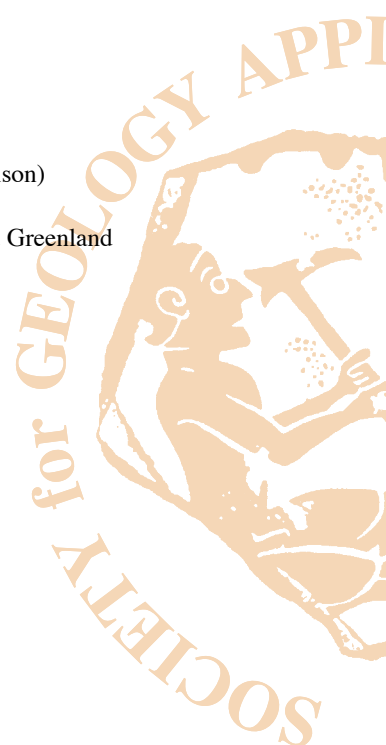
Committees

Local organizing committee

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Geological Survey of Sweden (chairman)
Alireza Malehmir
Uppsala University
Erik Jonsson
Geological Survey of Sweden
Iain Pitcairn
Stockholm University
Karin Högdahl Uppsala University
Katarina Nilsson
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Kjell Billström
Swedish Museum of Natural History
Magnus Ripa
Geological Survey of Sweden
Peter Hedin
Uppsala University (student representative)
Pär Weihed
Luleå University of Technology (SGA liaison)
Raimo Lahtinen
Geological Survey of Finland
Rodney Allen
Boliden Mineral AB
Rognvald Boyd
Geological Survey of Norway

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Axel Müller
Geological Survey of Norway
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Uppsala University
Gilles Bellefleur
Geological Survey of Canada
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Pasi Eilu
Geological Survey of Finland
Raimo Lahtinen
Geological Survey of Finland
Rodney Allen
Boliden Mineral AB
Thomas Wagner
University of Helsinki
Wolfgang Maier
Oulu University



Scientific Program

The scientific (technical) program of the meeting will be held over four days, from Monday the 12th of August to Thursday the 15th of August 2013.

Plenary sessions will be held during the mornings of Monday and Tuesday, with scientific sessions taking place in the afternoons. Wednesday and Thursday will be entirely devoted to the scientific sessions, excepting the SGA general meeting and awards presentations. Poster presentations will be organised during the entire four days, in two sets of sessions in association with relevant oral sessions.

Depending on submitted abstracts, the scientific committee may decide on changes, merges and cancellations of the suggested sessions and subsessions.

Scientific Sessions and Convenors

S1 Present and future of metals and minerals

S1.1 New metal needs and new deposit types. Pär Weihed

S1.2 Sustainability in mining and exploration: the role of geosciences. Jeremy Richards & Rognvald Boyd

S2 Methods and advances in mineral deposit studies

S2.1 3D modelling of ore deposits. Alireza Malehmir, Tobias Bauer & Gervais Perron

S2.2 New advances in geophysical mineral exploration. Christopher Juhlin & Hans Thunehed

S2.3 New analytical methods and applications in mineral deposit studies. Hugh O'Brien & Yann Lahaye

S2.4 Advances in mineral chemistry of Fe oxides: ore-forming processes and implications for exploration. Georges Beaudoin & Thomas Angerer

S2.5 Ore mineralogy and geometallurgy. Pertti Lamberg & Federica Zaccarini

S2.6 New advances in geochemical exploration. Pertti Sarala & Rob Hough S2.7 Predictive modelling. Vesa Nykänen & John Carranza

S3 Ore forming processes and deposit types

S3.1 Volcanic-hosted base and precious metal deposits. Rodney Allen & Fernando Tornos

S3.2 Sediment-hosted deposits. Ross Large & Jan Pašava

S3.4 Magmatic and hydrothermal hypogene and supergene iron ores. Steffen Hagemann, Paul Duuring & Thomas Angerer

S3.5 Porphyry systems and epithermal deposits. Jeffrey Hedenquist & Ferenc Molnar

S3.6 Ore deposits associated with mafic and ultramafic rocks. Wolfgang Maier & Michael Leshner

S3.7 Orogenic gold deposits. Pasi Eilu, Richard Goldfarb & Iain Pitcairn

S3.8 Hydrothermal ore-forming processes. Thomas Wagner & Kalin Kouzmanov

S3.9 New developments in the understanding of IOCG deposits. Roberto Xavier & Brian Rusk

S3.10 Tethyan metallogeny. David Leach & Zengqian Hou

S3.11 Metallogeny of the Urals. Richard Herrington

S3.12 Skarn deposits – 138 years after Törnebohm. Nils Jansson & Zhaoshan Chang

S3.13 Uranium and thorium deposits. Frank Bierlein & Michel Cuney

S4 Fennoscandian mineral deposits

S4.1 Metallogeny of Fennoscandia: The Shield, the Caledonides and the Oslo rift. Raimo Lahtinen & Krister Sundblad

S5 High-tech elements – deposits and processes

Yasushi Watanabe & Laura Lauri

S6 Industrial minerals

S6.1 Industrial minerals. Axel Müller & Håvard Gautneb

S6.2 Construction materials. Richard Prikryl & Karel Miskovsky

S7 Open session. Karin Högdahl & George Morris



5 mm long gold grain from the Pahtavaara mine. Photo: Jari Väättäinen, GTK.

Excursions

A number of pre- and post- conference excursions will be arranged in association with the SGA 2013 meeting in Uppsala. Excursions to Finland, Greenland, Norway, Russia and Sweden will be available. They will all mainly focus on mineral deposits, both metals and industrial minerals, and their settings, and offer opportunities to see several world- famous (in some cases even world- class) deposits and districts.

Details of each excursion will be available on the SGA 2013 webpage. They will be run depending on attendance.

Finland and Russia

FINRUS Ni-Cr, PGE deposits of Finnish Lapland and the Kola peninsula, pre-conference. RUS Gold Deposits of the Russian North East, pre-conference.

FIN1 Orogenic gold, Finland, post- conference. FIN2 Proterozoic base metal deposits along the Archean-Proterozoic boundary in central Finland, pre- conference.

Contact person: Raimo Lahtinen, Geological Survey of Finland (GTK).

Photo: Erik Jonsson.

Greenland

GRE South Greenland, post- conference. Contact person: Jochen Kolb, Geological Survey of Denmark and Greenland (GEUS).

Norway

NOR1 Metallogeny in the Oslo Rift and adjoining shield areas, pre- conference. NOR2 Fe-Ti and Fe-Ti-V-P deposits in the Rogaland Anorthosite Province, S. Norway, post-conference NOR3 Copper and gold-copper mineralizations in N. Norway, pre-conference. Contact person: Rognvald Boyd, Geological Survey of Norway (NGU).

Sweden

SWE1 The Skellefte district, geology and base metal deposits, pre-conference. SWE2 The gold line and Au-deposits in the Skellefte district, pre-conference. SWE3 Norra Kärr REE-Zr project and the birthplace of the light REEs, pre-conference.

SWE4 Bergslagen, post-conference. SWE5 IOCG and related deposits in northern Fennoscandia, post- conference.

SWE6 One day excursion to the historic Sala Ag deposit, post- conference. SWE7 One day excursion to the island of Utö, post-conference.

SWE8 City walks to see ornamental and building stones in the Uppsala cathedral. Contact person: Magnus Ripa, Geological Survey of Sweden (SGU).



Workshops and Short Courses

A number of workshops and short courses will be arranged in association with the SGA 2013 meeting in Uppsala. More detailed information will be provided on the conference webpage. Those interested in offering short courses or workshops, please contact the local organizing committee at: sga2013@sgu.se.

New proposals will be considered until December 7th, 2012.

Workshops

W1: 3D/4D Modelling of Mineral Deposits. Dr. Nigel Phillips & Dr. Gervais Perron, Mira Geoscience.

W2: Applied Structural Geology in Exploration and Mining. Dr. Chris Bonson, Dr. Ivo Vos and Paul Stenhouse, SRK Consulting.

W3: BIF-hosted iron ore systems: Genesis and exploration models. Prof. Steffen Hagemann, Thomas Angerer, Paul Duuring, Centre for Exploration Targeting-University of Western Australia. Prof. Lobado, Prof. Figueiredo e Silva, Prof. Rosiere Universidade Federal Minas Gerais at Belo Horizonte, Brazil.

W4: Archaean-Proterozoic basic and ultrabasic magmatism of the Karelian and Kola cratons. To be held pre- excursion in Oulu, Finland.

Prof. Eero Hanski, Prof. Wolfgang Maier, Oulu University, Finland.

Short Courses

S1: Global Orogenic Gold – Temporal and Spatial Distributions, Critical Characteristics and their Relevance for Exploration. Dr. Pasi Eilu, Geological Survey of Finland. Dr. Rich Goldfarb, US Geological Survey. Dr. Iain Pitcairn, Stockholm University, Sweden.

S2: Fluids, minerals and melts: Investigating hydrothermal processes using laser ablation-ICP-MS techniques. Dr. Brian Rusk, Western Washington University, USA.



Students

The future and development of economic geology depends on the involvement of graduate and postgraduate students. Therefore, students within a broad field of ore deposits research are invited and encouraged to submit abstracts and present their results at the 12th SGA biennial meeting in Uppsala. The meeting offers a great opportunity for students to interact with leading scientists, other young researchers and the industry in an inspired and informal environment.

Attractive benefits are being offered to students to encourage their participation in SGA2013 including:

Reduced registration fees

The registration fee for all students is at a reduced level, with SGA student members paying the lowest registration fee.

Student grants

To support participation of students at the conference, a limited number of grants are open for students who are senior authors of accepted abstracts. For these grants, SGA student members are prioritised. The student grants will be awarded upon the acceptance of an abstract for oral or poster presentation at the conference, and will be based on the financial need and scientific relevance of the submitted contribution. An application form for student financial support will be available on <http://www-conference.slu.se/sga2013/students>.

Free excursions

Several pre- and post-meeting excursions to Nordic countries and Russia are being organized. For students, a limited number of free registrations will be offered (only one per trip). An application form will be available on the conference website. The Greenland and North-east Russia excursions are excluded.

Student awards

The best student oral and poster presentation will be awarded a certificate and a prize of 300 USD.

Social evening 'Student & Industry'

All registered students are also invited to a social event organized by the industry to discuss future projects, employment opportunities or just to mingle with a range of different types and sizes of mining and mineral exploration companies, active in the Nordic countries and elsewhere. For further information about this event, please contact Rodney Allen: rodney.allen@boliden.com.

Do not hesitate to contact the Student Committee members if you have any questions, comments or suggestions.

The SGA Student Committee
 Anna Vymazalová
anna.vymazalova@geology.cz
 Jorge Relvas
jrelvas@fc.ul.pt

Student SGA2013 Local Organizing Committee Peter Hedin
peter.hedin@geo.uu.se Karin Högdahl karin.hogdahl@geo.uu.se

Social Program

Conference Banquet at Uppsala Castle

The Uppsala Castle dates back to the 16th century and is the site of numerous historical events. Today, the castle houses the art collection of Uppsala city and Uppsala University and a museum on peace. It is also the residence of the county governor. The conference banquet will include a three-course dinner in the magnificent Hall of State, where Queen Christina of Sweden abdicated her throne in June of 1654.

Location

The castle is located centrally: an easy 15–20 minute walk from several downtown hotels, and a 10–15 minute walk from the conference venue, also facing the beautiful botanical gardens.



The Hall of State at Uppsala Castle, prepared for a dinner hosted by SGU. Photo: Carl-Erik Alnavik

Destination Uppsala

Uppsala's profile as a city of learning, with close proximity to Stockholm and Stockholm-Arlanda Airport and a wide variety of modern and historical experiences that only the Uppland region can offer, lays the foundation for a winning concept for both national and international meetings.

A town with two universities

Uppsala is the fourth largest city in Sweden, with a steadily increasing population of around 200,000. The city retains the charm of a small town while offering major urban opportunities and attractions. Here are two universities, the Swedish University of Agricultural Science and Uppsala University, founded in 1477. Uppsala is considered to be the religious and historic centre of Sweden.

People

The city has a solid base of knowledge and tradition from which to progress. At the same time, the atmosphere is youthful, and more than 40,000 university students are a significant factor to this vivacity.

Uppsala also hosts Sweden's oldest botanical gardens, the Garden of Linnaeus, founded by the great natural scientist himself. Carl Linnaeus' professorial residence is situated in the garden.

Just outside of the city you can visit his summer residence, Linnaeus' Hammarby.

Sightseeing

Uppsala boasts the largest cathedral in Scandinavia, one of Sweden's most famous locations of prehistoric artifacts (Old Uppsala), a unique anatomical theatre built in the 1600's by Olof Rudbeck the Elder, the great university library (Carolina Rediviva) with the Silver Bible, Uppsala Castle dating back from the mid-1500's, and many more marvellous sites and attractions.

The city's geographical location, only 20 minutes from Stockholm- Arlanda airport and 45 minutes from Stockholm, the capital, has made Uppsala an attractive place for meetings and to establish new companies.



Getting to and around Uppsala

Transport

Uppsala has a well functioning public transportation system and taxis are also available at the Central Station.

Sweden has a highly efficient rail network spanning the entire country. For those traveling by car, Sweden offers a well-maintained network of roads and motorways which makes Uppsala easy to access by car. Delegates will also have the possibility to travel to Stockholm by boat. Ferries regularly connect Stockholm to Finland, Estonia, Latvia and Poland. Trains from Stockholm Central Station to Uppsala Central Station depart at least twice an hour from 6 am to 11 pm and the journey takes 40 minutes. Stockholm-Arlanda International Airport is situated between Uppsala and Stockholm. The airport offers 170 destinations worldwide and 70 airlines. Easy access buses and trains run frequently directly from the airport to Uppsala city centre and the trip takes 20–45 minutes. You can go by taxi straight from the airport to your hotel in Uppsala for approximately 55 €, if the price is agreed on beforehand (if not, the price may turn out much more expensive).

Currency

The Swedish monetary unit is the Swedish krona (SEK), divided into 100 öre. Exchange rates in October 2012:

Euro 1=SEK 9 USD 1=SEK 7 GBP 1=SEK 11. Major credit cards are accepted almost everywhere. There are several currency

exchange offices and cash dispensers at Stockholm Arlanda International Airport and in Uppsala. Exchange rates may vary. To see current exchange rates, please visit oanda.com, or x-rates.com.

Accommodation

There are several hotels and hostels within walking-distance from the conference centre. For more information, please visit the conference webpage.

Lunches

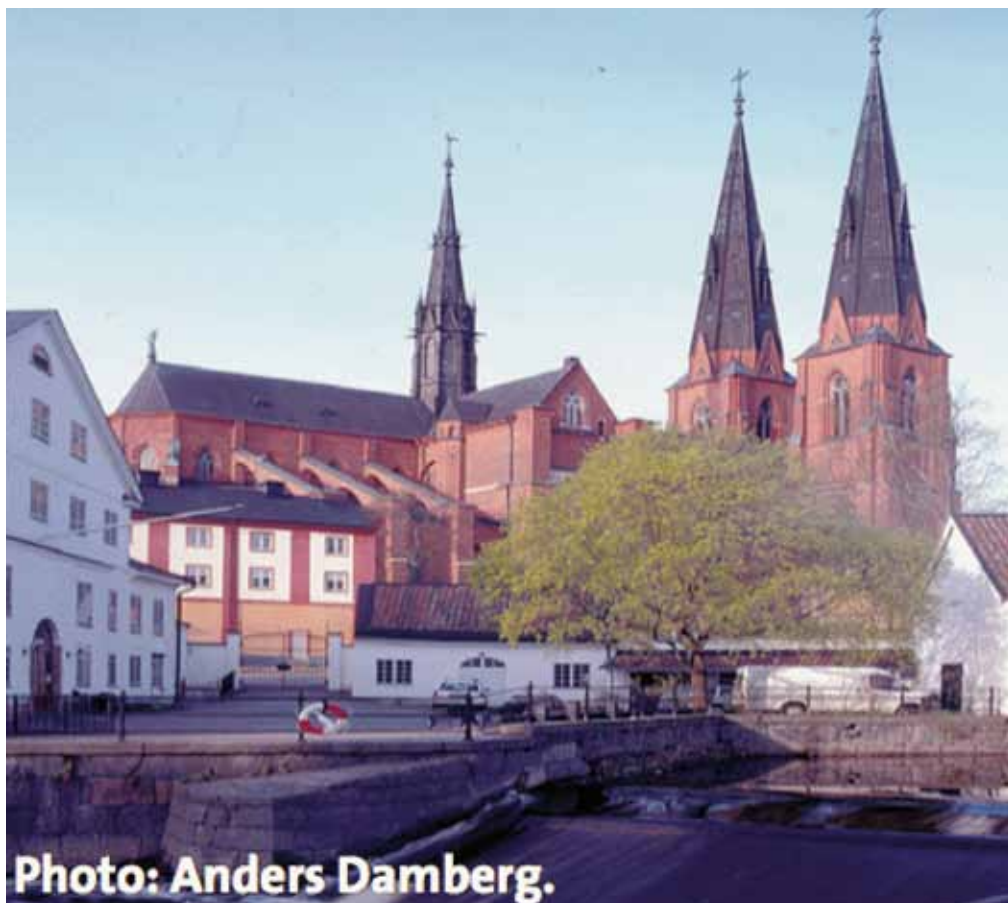
There will be an option to pre-purchase lunch at registration. However, there are several restaurants in downtown Uppsala. Prices vary between c. 10 and 15 €. Going downtown, eat lunch and walk back will take approximately 1 hour.

Security

Uppsala is a peaceful city and the only risk to consider is pickpockets – always keep an eye on your belongings. The same goes for Stockholm, where there are more tourists and therefore also more pickpockets.

Weather

At the time of the conference the weather in Uppsala is either sunny or rainy, due to thunderstorms. Temperatures vary from c. 15 to 25 °C and it might be windy.



Important information

Registration

Registration fees	By May 31 at the latest	After May 31
SGA member	SEK 4300	SEK 5000
Student, SGA member	SEK 2000	SEK 2500
Non-member	SEK 5300	SEK 6300
Student, non-member	SEK 2500	SEK 3000
Accompanying person	SEK 1000	SEK 1500

Registration fees include:

- Access to all technical and plenary sessions.
- Morning and afternoon refreshments.
- Ice breaker party.
- All meeting materials including the final programme and conference abstract volume in digital format.

Lunch is not included in the registration fee, but during registration lunch can be purchased for an additional fee of c. 580 SEK. A printed copy of the proceedings can be ordered in conjunction with registration for an additional fee.

Exhibits

Limited space is available for exhibits at the conference venue. Please contact the local organizing committee (sga2013@sgu.se) for more information regarding reservation and prices.

Sponsorship

Sponsorship is available in different categories – please contact the local organizing committee for a detailed offer (sga2013@sgu.se).

Please note

Only abstracts by authors who have paid their registration fee (limit two papers per first author) by May 31st will be included in the conference program and abstract volume.

Important dates

7 January 2013

- Opening of abstract-submission available via website.
- Registration opens.

8 February 2013

- Abstract submission deadline.
- Applications close for student support.

8 March 2013

- Editorial decisions from convenors.

5 April 2013

- Final revised abstracts from authors due.

30 April 2013

- Notification of final acceptance or rejection of abstract.

31 May 2013

- Deadline for early bird registration. Deadline for notification of student support. Last day to receive a full refund of registration.

15 June 2013

- Last day to receive partial refund for cancellation.

Information on field trip registration deadline varies between the different excursions and will be posted on the conference website.

For more information and registration:
www.akademikonferens.uu.se/sga2013



50th SGA Anniversary meeting

Welcome back to the roots of SGA

13th SGA Biennial Meeting



Nancy, France, August 24-27, 2015

Mineral Resources in a Sustainable World



Photo : V. Huault

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