



# European Association of Geochemistry

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## PRESIDENT'S CORNER

### *The Need for Diversity*



Chris Ballentine

Diversity in a biological context is always reported as a system's strength, our oceans and rainforests being amongst the richest of our planet's ecosystems if measured in terms of biodiversity. Diversity also provides strength in science, whether it is in the educational base of scientists starting their career or in the science environment that supports academic endeavour. Science societies have an important role to play in providing an academic environment. This includes organising discipline conferences, making publications available, promoting workshops, ensuring outreach and providing an outward-facing profile for the public, industry, politicians and funders alike. But why does geochemistry need more than one society? It is a question I have been asked several times, and I always respond with the same answer – the need for diversity. After all, no one would expect all geochemistry publications to appear in only one journal, with one editorial structure and one set of editors; this would be unhealthy in the extreme, and the same is true for our community's societies.

Smaller societies can be focused on one scientific discipline and operate effectively to enhance their field. Larger societies can encompass more areas within the broad umbrella of geochemistry, help coordinate these fields and often have the resources to host larger conferences and organise publications. All are subject to the personalities who run them and, for longer-established societies, to the culture that has grown up with them. Societies are all different, and each has its own focus and strengths. It has been one of the pleasures in my role as EAG president to discuss and work with my counterparts in other societies to coordinate our respective activities; these colleagues have the same goal as EAG: to promote and enhance geochemistry and the Earth sciences. The richness of the many activities around us attests to the vigour of our community, and *Elements* provides a superb example of what can happen when societies pool their resources.

The smooth running of a society nevertheless has some associated risk. Large science societies can sometimes seem more like a corporate entity and risk losing a sense of ownership by their members. Any society that slumbers or becomes complacent will soon find its meetings and members diminish as other organisations respond better to the ever-changing community needs; but this happens only if there are active, healthy societies operating in related areas. In this sense both diversity and a level of friendly and supportive competition among societies is essential to keep the vigour of our community's science environment.

EAG supports society diversity through the Goldschmidt conferences, which it organises with the Geochemical Society (GS). Goldschmidt provides a forum for other societies to meet, conduct their business and present their awards under the greater umbrella of the meeting. EAG and the GS have been helped by the Geochemical Society of Japan over many years to bring this meeting to the community, and the GS and the Geochemical Society of Japan now have a formal memorandum

of understanding that cements our support of each other's interests through Goldschmidt. EAG has just signed a similar agreement with the Mineralogical Society of Great Britain and Ireland. EAG is working with several other societies at present to forge similar agreements. If you are reading this and think such an arrangement might be useful for your society, please contact us. We won't charge you corporate rates to have a booth at the Goldschmidt meeting; EAG will provide support to organise booths and workshops and to host society functions at cost. I don't want our community to be dominated by a monolithic society culture as some have become; rather, I want to celebrate and support the diversity of societies that provides the richness and strength we see today in our geochemical community.

**Chris Ballentine**, EAG President

## EAG LECTURE TOUR 2013



Thomas Röckmann

Being nominated as an EAG Distinguished Lecturer was a great honor, but also a challenge. The Earth's atmosphere, my area of expertise, is not the classical geochemical topic. So the goal of my lectures was to show how our common tools – isotope measurements – are applied in atmospheric research to get information about biogeochemical cycles of atmospheric trace gases.

My tour started in Budapest, where Csaba Szabo and his group hosted my lectures at the Eötvös University. The visit was perfectly organized, except for the weather. So no sightseeing, but an intensive and interesting science-seeing program! I was impressed by the university's mineral collection, and I got a nice tour of the atmospheric aerosol-measurement observational program run by Imre Salma's group. Finally, I visited the Hungarian Academy of Sciences and Attila Demény's group, where we had some real isotope talk.

The same evening I continued my trip to Babeş-Bolyai University in Cluj Napoca, Romania, where I was warmly welcomed by Calin Baciu and Alida Timar, who took great care of me during my stay. I was very interested to learn about the research activities related to the emissions of methane from mud volcanoes in Romania, a natural source of this important greenhouse gas that is still not well understood. My hosts took me on a tour through town and for lunch and dinner, so I got to see quite a lot of the town and the picturesque landscape. The venue for my two lectures the next day was a beautiful old theatre at the university, and the lectures were attended by what seemed like the entire student population of the department.



Attentive audience at Babeş-Bolyai University, Cluj Napoca, Romania

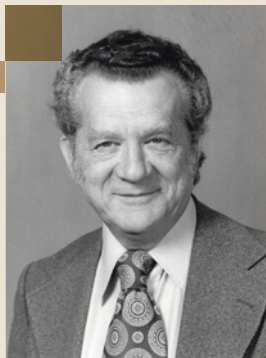
The following stop was the University of Science and Technology in Krakow, where I was more on home terrain, because Kazimierz Rozanski's group has an active research program on atmospheric trace gases. Jaroslaw Necki was my local host and made my first trip to Krakow a memorable experience. He took me to several

## THE LIVES OF GREAT GEOCHEMISTS

*Samuel Epstein (1919–2001)*

Sam Epstein's career can be viewed as a thread linking the first developments in stable isotope geochemistry with its evolution into the mature science we know today. Born in 1919 near Kobryn in what was then Poland, Samuel Epstein emigrated with his family in 1927 to Winnipeg, Canada. He graduated from the University of Manitoba in 1941 with a BSc in chemistry and geology and in 1942 obtained his MSc in chemistry. His PhD (1944) in chemistry at McGill involved an investigation of the reaction kinetics of the high explosive nitroamine (RDX).

Sam's subsequent research took him into the field of rare gas fission products whilst working on the Canadian Atomic Energy Project in Montreal. During this period he met his wife, Diane, and Harry Thode, who proved to be a lifelong friend and great influence on his subsequent career. It was Thode who persuaded him to move to McMaster University, stimulated his first interest in isotope geochemistry, and, perhaps most importantly, in 1947 recommended him to Harold Urey at Chicago as the ideal scientist to work on a new isotopic palaeotemperature project he had initiated.



Sam and Diane moved to Chicago, renting an apartment above the garage of Harold Urey's home. The next few years proved to be a seminal period as Sam and his group, including John McRea, Charles McKinney, Heinz Lowenstam and Toshiko Mayeda, solved the instrumentation and analytical challenges of making oxygen isotope palaeotemperature measurements. It is a testament to his leadership, intellectual rigor, hands-on approach and technical expertise that today we still use the same sample preparation and analytical techniques for oxygen isotope thermometry measurements of carbonate minerals. At this time Sam also produced the first surveys of the isotopic compositions of

natural waters. In 1952 he moved to Caltech, where he established one of the most innovative isotope geochemistry groups of the time. Together with numerous students, many of whom also became world leaders, entirely new areas of isotope geochemistry were initiated. These include the oxygen isotope composition of meteorites; carbon isotope fractionation and processes in plants, including studies of the isotopic composition of plant cellulose and lipids; oxygen isotope variations in coexisting minerals in igneous rocks and applications to geothermometry and fluid-rock interactions; the first major isotopic studies of dolomites and cherts; the preservation of the oxygen isotope record in ancient sedimentary rocks; and isotopic studies of glaciers and Antarctic snow, ice and firn. In the 1970s Sam also worked on the isotopic composition of lunar samples returned as part of the Apollo missions. Sam Epstein remained at Caltech, working until his death in 2001.

This list is just a partial reflection of the breadth of Samuel Epstein's interests, and serves to highlight the unique part he played in the development of stable isotope geochemistry and his role as a teacher and mentor, inspiring generations of isotope geochemists.

**Paul Dennis**, University of East Anglia

interesting spots inside and outside the city, away from the typical tourist routes. The next day, we discussed in detail possible collaborations, and two of them have actually been started. My lecture in Krakow was part of a seminar series for the physics and computer sciences faculty, quite a different audience from the student-dominated talks before.

Two weeks later, I made another visit to the Czech Geological Survey in Prague. I landed in thick fog, and luckily Petr Dobes picked me up at the airport and brought me safely to the institute. I got an interesting tour of the impressive laboratory facilities there, and then went to an enjoyable lunch with Martin Novak, a gifted science entertainer. My two lectures in Prague were separated by a short coffee break, so I shortened them a bit, and I hope that I managed not to overload the audience with too much "atmosphere".

What I will remember from this lecture series is the excellent organization and the warm hospitality of my hosts at each location, and the wide variety of science topics I learned about during the discussions and visits. And finally, it brought to mind again how nice it is to be able to travel, in such a short period of time and without any complications, to many countries in Europe and experience the differences – but also the strong similarities – among the various cultures.

**Thomas Röckmann**, EAG Distinguished Lecturer 2013

Videos of the lectures given by Thomas Röckmann are available on the EAG YouTube Channel (the link is provided on the EAG website).

## EAG AT EGU GENERAL ASSEMBLY 2014

At the EGU General Assembly held in Vienna, Austria, 27 April to 2 May, EAG was proud to co-sponsor six sessions highlighting the importance of geochemistry in various fields such as mineralogy, biogeoscience, the water cycle, atmospheric science and sedimentology, as well as present the 2014 EAG Eminent Speakers Award to Dan Yakir, professor at the Weizmann Institute of Science (Rehovot, Israel). Dan Yakir developed very early on the use of stable isotopes to trace carbon and water fluxes at the scale of the leaf and soil, up to the global scale, and is now one of the best-known experts dealing with ecosystems and the carbon cycle. EAG also had a booth and wishes to thank all the delegates who visited us, and we particularly welcome our new members.



Dan Yakir (right) receives the EAG Eminent Speakers Award from Marie-Aude Hulshoff, EAG Business Manager.