



Mineralogical Society of Great Britain and Ireland

www.minersoc.org

SOCIETY MEETINGS GO FROM STRENGTH TO STRENGTH

In January 2013, the Volcanic and Magmatic Studies Group held its largest ever gathering, in Bristol, UK, with 240 delegates. Also in January, we supported the annual Mineral Deposits Studies Group conference, held in Leicester, UK, another storming success, with over 220 delegates.

The Society is also working hard at preparing for a new event, "Minerals for Life: Overcoming Resource Constraints" (17–19 June 2013, www.minersoc.org/minerals-for-life.html; see next page), at which we aim to reach out to new communities to discuss applications of minerals. There is huge interest, and several of the Society special interest groups are involved.

In March we are supporting the conference "Volcanism, Impacts and Mass Extinctions: Causes and Effects" (27–29 March 2013), which will be held at the Natural History Museum (details at www.minersoc.org/mass-extinctions.html).

Below, you can find details about yet another important meeting, this one being organized by the Metamorphic Studies Group, with support from others, including the Volcanic and Magmatic Studies Group.

A key part of the Society's mission is to support such activities, and it is wonderful to see the number of participants at these events.

In order to ensure the ongoing health and success of our special interest groups (SIGs), MSGBI President Jon Davidson has initiated discussions about their future structure and organization. This will take place in the late spring/early summer of 2013. All our SIGs will be represented. If you are interested in coming along but don't currently have an active role in a SIG, please contact Kevin Murphy (kevin@minersoc.org). Your input is sought and welcome.

CALL FOR NOMINATIONS FOR SOCIETY MEDALS



The deadline for making nominations for the Society medals for 2014 is April 26, 2013. Please visit the awards page on the Society website (www.minersoc.org/awards.html) for details about how to make a nomination.

"BUILDING STRONG CONTINENTS" MEETING

The Metamorphic Studies Group (a joint special interest group of the Mineralogical Society and the Geological Society) is hosting an international, interdisciplinary, three-day meeting called "Building Strong Continents," which will focus on the geochemical, geophysical and geobiological processes that have governed the evolution of the continental crust through time. These processes include, but are not limited to, metamorphic, igneous, structural, sedimentological and biological, and their interrelationships, and the meeting aims to attract key researchers within these different themes. "Building Strong Continents" will offer a world-class programme of presentations and discussions designed to foster interdisciplinary research into continental crust evolution.

Conference plan

- Pre-conference workshop on in situ analytical techniques, Saturday, 31 August and Sunday, 1 September. The workshop will include presentations by Matt Horstwood (LA-MC-ICPMS), Bruce Charlier (NanoSIMS, microdrilling for isotope geochemistry), Richard Hinton (SIMS and HR-SIMS), Nick Roberts (LA-HR-ICPMS), James Darling (EBSD for in situ sampling strategies), Sarah Sherlock (in situ Ar–Ar geochronology) and Ben Buse (FEG-EPMA).
- Icebreaker, Sunday, 1 September (barbecue), Portsmouth
- Main oral sessions (one focused linear session rather than multiple parallel sessions), 2–4 September, with poster sessions
- Conference dinner, Tuesday, 3 September, on HMS Warrior, Portsmouth (www.hmswarrior.org)
- Post-conference fieldtrip to Guernsey, Sark and Brittany, 5–12 September
- Post-conference fieldtrip to NW Scotland (Lewisian Complex), 5–12 September



We intend this to be an open and collaborative meeting, with plenty of time for discussion leading to some real agreement on the state of the art and any key missing areas of research and collaboration. To facilitate this, our plan is for theme leaders to summarize the main points arising from contributions during the conference. A panel of theme leaders will then discuss suggestions of key questions arising, areas of collaboration that could address any key questions and resources that may be required. They may then make recommendations, which could include publications, collaborative working parties and future meetings/workshops. They will address the delegation with their findings and open up the floor for discussion.

Convenors: Craig Storey (craig.storey@port.ac.uk), Mike Fowler (mike.fowler@port.ac.uk), Rob Strachan (rob.strachan@port.ac.uk), James Darling (james.darling@port.ac.uk) and Emilie Bruand (emilie.bruand@port.ac.uk), University of Portsmouth; Metamorphic Studies Group (p.treloar@kingston.ac.uk)

Website: www.port.ac.uk/special/buildingstrongcontinents/

"MINERALS AS MATERIALS" MEETING

After a false dawn or two, physicist colleagues at the CERN Hadron Collider have finally confirmed the existence of the Higgs boson. This elusive particle plays quite an important role in the world of matter because it gives mass to atoms. A carefully coordinated public relations campaign has secured worldwide press coverage for this work and will go some way to secure future funding for the institution and the people employed there.

The world of mineralogy rarely presents itself in such a bright light (apologies for the pun). It isn't just the general public who suffer from the clichéd view of lab-coated boffins peering earnestly at a mineral specimen using a hand lens. (Mineralogists do this of course, but it's not all they do!) Fellow scientists are often blissfully unaware of the breadth of things covered by our science. It is true to say that we might sometimes be accused of being inward looking and unaware of the work going on in related fields, for example, materials science.

While believing fervently in the need for continuing funding for fundamental research (the mainstay of a healthy proportion of Mineralogical Society members for many years), we should also be prepared to consider how sizeable chunks of our science can be applied in technological or applied science areas. In other words, a healthy balance is required.

The world is running short of several vital materials. The arrival of peak oil has led many countries to revisit the need to invest more heavily in nuclear power. Many countries have felt obliged to tackle properly, once and for all, the need to dispose of radioactive waste safely and correctly and with a long-term site required. How do we figure out which is the best/safest/most cost-effective site? We are also spending increasingly large amounts of money on alternative carbon fuels, including gas from shales. Is it safe to do so? The debate continues. Phosphorus is also becoming scarcer and therefore more expensive. This has an immediate effect on the cost of agricultural fertilizer, with obvious consequences for food-production prices.

We use fine-particle clays every day, to coat our paper, to thicken the paint on the walls in our houses, in packaging, and in slow-release medicines. Clays and carbonates are studied extensively, often for their properties more than for their composition.

Man-made pollution of the biosphere is extensive and continues to grow. How can we ameliorate the environmental problem? Key is the reduction of CO₂ emissions. Will pumping them into a hole in the ground work?

We now know that microbial action has led to or has had a significant effect on many geological features we see today. Increasingly we discover new ways in which microbes interact with natural materials, and this can be used mineralogically and technologically to help us with many of the questions outlined above.

All the points above are being actively investigated by mineralogists. They are also being worked on by engineers, physicists, geophysicists, geologists, geochemists, materials scientists, chemists, microbiologists, etc. But mineralogists occupy a unique niche: they study directly, and at scales from nano- to megascopic, the interface between natural materials and the surrounding biosphere/critical zone. It is not an exaggeration to say that mineralogists are at the centre of the action.

At a number of recent conferences in which the Mineralogical Society has been involved, many of the points outlined above have been dealt with. What we need to do now is to create a forum where the different strands of science come together to see where they overlap. What problems are chemists working on that mineralogists have already solved? And inversely, what techniques can we apply in minerals science that materials scientists use already? Just as significantly, perhaps, what do scientists more familiar with working in an academic regime need to do to relate better with those who use “minerals” as “materials”? Interaction with that community will grow as understanding and trust increase.

To this end, the Mineralogical Society is helping to build an important new meeting in 2013: “**Minerals for Life: Overcoming Resource Constraints.**” It will be held in Edinburgh on 17–19 June 2013. We have sought and secured input from other organizations from the sciences mentioned above: the Geological Society, IoM³, the British Zeolite Association, the Royal Society of Chemistry and the Society for General Microbiology. Input from regulatory agencies is also sought (Environment Agency, SEPA, DEFRA, HSE, etc.).

The meeting will have four themes.

Strategically Important Mineral Resources – This theme will include the sustainability of mineral resources, such as strategically important elements (considering both primary and secondary sources), ethically/responsibly sourced metals and gems, and related topics such as resource recovery and management. Recycling of minerals will be addressed here as appropriate.

Functional Materials and Minerals – This topic will include nano-, micro- and mesoporous materials (both synthetic and natural), such as zeolites, pillared clays and the like; thin films of (or on) mineral surfaces;

and mineral catalysts. The topic may include any “functional” mineral application (or mineral-derived material), such as sensors and transducers, sorbents, ion-exchange media and others.

Minerals for Environmental Protection – This theme will include both nuclear and non-nuclear applications and consider the use of minerals as retarding media in engineered chemical barriers, alongside physically engineered subsurface structures such as mineral liners; permeable reactive barriers; and examples of environmental remediation in which mineral technology has had significant impact. Carbon capture and storage is another important part of this theme, as is CO₂ remediation/mitigation (i.e. how planned use of appropriate minerals may reduce CO₂ embodied in a process). The recycling of minerals will be addressed here as appropriate.

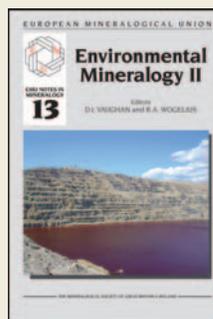
Biological Processes in Mineral Science and Technology – The topic will span a range of biological processes, both naturally occurring and industrially applied. These will include both biomining and bioremediation applications, and also emerging biological synthesis routes for commercially useful materials, for example, in biomedical applications and other areas of science of technology. Other geologically important biomineralization processes, in both prokaryotic and eukaryotic systems, will also be of interest.

We will be actively courting attendance by decision-makers from government, regulatory agencies and knowledge-transfer networks. We hope to include a session on the final day, where a rapporteur will lead a panel discussion on some of the key topics discussed during the meeting, with a view to presenting the information in a digestible format to non-specialist delegates and to helping discussion.

So, this is where we are. Can you add something? Who would be a good speaker? You? Collaboration is key here. Help shine the mineralogical light. Join us in Edinburgh next June.

Kevin Murphy and Mark Tyrer

EUROPEAN NOTES IN MINERALOGY, VOLUME 13: ENVIRONMENTAL MINERALOGY II



The latest volume in the EMU series has been published. *Environmental Mineralogy II* is a significant revision of the first edition published in 2002. The book begins with a review of the analytical, experimental and computational methods that are of importance in environmental mineralogy (R. A. Wogelius and D. J. Vaughan). These include long-established techniques used to characterize minerals and mineral associations, and the newer methods that can be used to study very fine-particle solids, mineral surfaces and interactions between mineral surfaces and fluids. Examples are given of analytical, experimental and computational approaches applied to important mineral systems. There follows a major section addressing what are termed “key environmental systems.” First, soils are reviewed by D. A. C. Manning in regard to the mineralogical aspects of soil formation and anthropogenic impacts on soils. Then the mineralogy of modern sediments is discussed by A. Aplin and K. Taylor, including the processes of sediment formation and modification through natural mechanisms and through association with pollutants. Microbial interactions with minerals are discussed by S. Welch and J. Banfield, and the mineralogy of atmospheric aerosol particles are considered by M. Pósfai and Á. Molnár. The five other major chapters are each devoted to discussing a specific environmental problem in the context of the relevant mineralogy. These are: metalliferous and related minewastes (D. Blowes, C. J. Ptacek and J. Jambor), industrial and domestic waste disposal and containment (R. Hermanns Stengele and M. Plötze), nuclear waste (C. D. Curtis and K. Morris), the buildings and monuments that constitute our collective cultural heritage (G. Chiari), and the particular relationship between minerals and human health (H. C. W. Skinner). The book is available (£40 to institutions, £25.50 to individuals) from the Mineralogical Society’s online bookshop (www.minersoc.org) and also through the online bookshops of the Geological Society (www.geolsoc.org.uk) and the Mineralogical Society of America (www.minsocam.org).