German Mineralogical Society

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MEETING OF THE MINERAL MUSEUMS AND COLLECTIONS WORKING GROUP, FREIBERG, GERMANY

The Mineral Museums and Collections Working Group, part of the German Mineralogical Society (DMG), meets every two years at a German museum to exchange news and attend two days of talks on a variety of themes related to mineral museums. This year, 26 members (mostly curators) met in Freiberg, Saxony, on March 10 and 11.

In addition to the usual program, the group had a unique chance to attend an in-depth and behind-the-scenes tour through the recently opened Terra Mineralia museum in the Schloss Freudenstein castle, led by the conveners of the meeting, Karin Rank and Andreas Massanek. The exhibit displays minerals of excellent quality, permanently on loan by Dr. Erika Pohl-Ströher from Switzerland. The castle has been renovated exclusively for this new mineral museum.

Mineral Museums and Collections Working Group attendees in front of the Mineralogy Department in Freiberg, Germany.
Photo Renate Schumacher

Schloss Freudenstein, location of the recently opened Terra Mineralia museum in Freiberg, Germany.
Photo Renate Schumacher

Gerhard Heide, head of the Mineralogy Department, gave us a warm welcome and an account of the impact on local geoscience by the establishment of the new Terra Mineralia museum. Jochen Schlüter, spokesman for the working group, gave the introductory remarks. Anja Sagawe from Dresden showed a movie on the application for the M&M7 meeting to take place in Germany in 2012 (see article by Pete Modreski in *Elements*, December 2008, p. 426). Further talks on both days of the meeting addressed topics related to public relations, teaching and special exhibits (Udo Neumann, Tübingen; Melanie Kaliwoda, Munich; Eckhard Mönnig, Coburg; Renate Schumacher, Bonn); web-related activities concerning the catalogue of German type minerals (Jochen Schlüter, Hamburg); museum and collections management as well as "survival work" (Birgit Kreher-Hartmann, Jena; Susanne Herting-Aghte, Berlin; Gisela Lentz, Lütjenburg; Angela Ehling, Berlin); and research activities (Rupert Hochleitner, Munich; Jochen Schlüter, Hamburg). During break, attendees had a chance to examine the systematic collections exhibited in the Freiberg Department of Mineralogy. We also received wonderful support from the technical staff and were even served home-baked cakes.

We spent the evening (and part of the night) in the impressive new Terra Mineralia museum, receiving much information on the setup of the museum. We also had the privilege to visit the not-yet-opened Asia Hall, with its excellent mineral specimens and informative geoscientific interpretive panels. Following the talks of the next morning, the group split up to join one of three excursions: a visit to a crystal-growth lab, a tour to the show mine Reiche Zeche / Alte Elisabeth, and a visit to a collection of wooden models related to mining, handcrafted in the 18th and 19th centuries. The group was impressed by and thankful for the colourful program, which Karin Rank and Andreas Massanek had arranged despite their tight schedule setting up the new exhibits at Schloss Freudenstein. The next meeting, in two years, will take place in the Museum of Natural History in Coburg.

Renate Schumacher, Mineral Museum, University of Bonn

GEMSTONE SHORT COURSE AND WORKSHOP

A five-day short course and workshop entitled "Non-Destructive Analysis of Gemstones and Other Geo-Materials" was held on March 2–6, 2009, at the Institute of Mineralogy and Crystallography, University of Vienna, Austria. The event was held as a teaching activity in the framework of the Marie Curie Chair of Excellence for Mineral Spectroscopy and was organized by the chair-holder, Prof. Lutz Nasdala. The workshop brought together 44 experts, professionals and students to review the applications, current state, progress and challenges in the field of gemstone analysis. Participants came from 12 European countries, Russia, the United States and Thailand.

Gemstones may undergo various manipulations to enhance their perceived quality. As technology advances, confirming the authenticity of gemstones becomes more and more difficult, creating a large demand for non-destructive, time-efficient methods for determining the composition of gemstones and precious metals. Gemstones are geo-materials whose analysis is not always straightforward. First, the analytical tasks reach far beyond simple phase identification; they include problems such as distinguishing between natural and synthetic materials and unravelling different sorts of treatment/enhancement. Second, analyses need to be done non-destructively, and typical preparation procedures cannot be applied in most cases.

Key techniques involve X-ray analysis (single-crystal and powder analysis of unprepared samples) and spectroscopic methods with a main focus on Raman and luminescence, and also IR and optical absorption spectroscopy. The short course included both a theoretical basis and practical training in these analytical methods through a series of 'hands-on', expert-led, interactive teaching sessions (use of analytical systems, data reduction and interpretation of results), followed by group discussions on instrumentation and tools, development of protocols and technique capability. Participants were also given the opportunity to analyse their own samples.

Participants on the roof of the Museum of Natural History, Vienna. In front (sitting) is course co-organizer Dr. Vera M. F. Hammer

The organizer's aim was to put participants in a position to use the above techniques in their own research. An overview of modern analytical applications in gemmology was delivered through a number of talks presented by invited experts in the field and, to a limited extent, by course participants in 15-minute short talks. The seminars included invited presentations by Thomas Hainschwang (Gemlab Gemological Laboratory, Balzers, Liechtenstein), Wolfgang Hofmeister (Institut für Edelsteinforschung, Idar-Oberstein & Mainz, Germany), Tobias Häger (Johannes Gutenberg-Universität Mainz, Germany), Michael S. Krzemnicki (SSEF Swiss Gemmological Institute, Basel, Switzerland) and Lioudmila Tretiakova (GCAL Gem Certification and Assurance Laboratory, New York, USA). The workshop also addressed future collaborative opportunities and allowed time for discussion on the development of a more widespread and rigorous approach to achieving analysis. Such an approach should leave little room for deception and should apply both qualitative and quantitative functions that enable one to distinguish quality gemstones and precious metals from stones and metals that are counterfeit or have undergone chemical enhancements.

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