International Mineralogical Association

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FROM THE PRESIDENT

Walter Maresch, IMA President

Founded in 1958 to promote and further international cooperation in the mineralogical sciences, the IMA can point to more than 50 years of rich and varied history. Nevertheless, the years from 2010 to 2012 may well come to be considered a transition period of considerable importance. The revision of the IMA constitution was finalized by delegate voting at the 20th General Assembly in Budapest in 2010. The new rules were put into practice during the IMA business and Council meetings at the European Mineralogical Conference 2012 (EMC2012) in Frankfurt, 2–6 September. Past President Takamitsu Yamanaka was the last long-serving Council member of the "old guard." In the future, officers and councilors will be replaced on much shorter cycles (see F. Wall, *Elements*, 2010, p. 342). I will be president for the next two years, succeeding Ekkehart Tillmanns. In addition, the delegates at the second IMA business meeting unanimously voted for Sergey Krivovichev as the new 1st vice-president (i.e. president-elect for 2014) and Jane Gilotti as a new councilor. As we look forward with this new Council, we regretfully also have to look back. Nicolay P. Yushkin, a former councilor who went on to serve as 2nd vice-president from 2001 to 2010, passed away shortly after the EMC2012 meeting. Our heartfelt condolences go out to his colleagues and family.

During the Council and business meetings, Vice-President Sabine Verryn presented a status report on preparations for the 2014 IMA General Assembly in South Africa; these preparations are coming along very well. See the banner on this page highlighting the meeting logo and website. As a country with a large mining and mineralogical industry, as well as strong mineralogical, geological, and geochemical research initiatives, South Africa is highly appropriate to host such a meeting. Calls for session proposals have led to a comprehensive array of topics and themes, and an extensive list of exciting field trips has been compiled. In addition, the organizers are raising sponsorships to assist students and working scientists from the developing world. For all these reasons, I urge you to give IMA2014 and Johannesburg a prominent place in your 2014 meetings calendar.

The second business meeting also clarified the venue for the IMA General Assembly in 2018. After a convincing presentation by Pete Williams at the first business meeting, the delegates unanimously voted to accept Australia's offer to hold the General Assembly in Melbourne.

The EMC2012 meeting in Frankfurt (see report in the December 2012 issue of *Elements*) was a resounding success. We owe a debt of gratitude to local organizers Gerhard Brey and Heidi Höfer and their team. This meeting signaled a new intermediate level of cooperation among mineralogical societies on a regional scale. For EMC2012, ten European societies took the lead, but participation was far wider. Alternating with IMA general assemblies, such regional meetings will enrich and strengthen international cooperation in mineralogy. The idea certainly warrants serious consideration elsewhere in the world. A highlight at EMC2012 was the presentation of the IMA Medal for Excellence in Mineralogical Research to David H. Green. The next medal will be presented in 2014.

The 2011 IMA Medal for Excellence in Mineralogical Research was awarded to David H. Green at the EMC2012 meeting in Frankfurt.

As you read this, a totally rejuvenated IMA website (a task initiated by former secretary Maryse Ohnenstetter) will be operational and should offer discussion forums from the commission or working group level up to the international member level. An IMA archive has finally been established, thanks to diligent help from colleagues in Budapest, and calls for material will be going out at intervals in the future. Plans are also underway to identify a mineral of the year.

My personal feeling is that IMA needs to become more assertive. The naming and classification of minerals is only one of the tasks that IMA is charged with; yet this aspect is often the only one associated with IMA. Perhaps many underestimate the volume of work accomplished by the Commission on New Minerals, Nomenclature and Classification. Clearly, mineral classification schemes of complex mineral groups will never be able to please everyone. Some want no firm rules at all whereas others have even suggested that IMA also consider the legal ramifications of defining mineral species that pose health risks (how could we possibly acknowledge jurisdiction in 38 different countries??). My Latin teacher used to answer my complaints with the argument that rules are a prerequisite for functional language and science, even if people on the streets in ancient Rome were not forced to and most probably did not speak grammar-book Latin. It seems that an atmosphere more conducive to compromise might help us all here. On the one hand, colleagues with strong feelings on classification should get involved as early as possible in the decision-making process, which is open to anyone; on the other, some leeway should be possible to encompass historical definitions that have existed for many years.

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TOWARDS GEO-GOGGLES: AN IMA COMMISSION ON APPLIED MINERALOGY WORKSHOP ON QUANTITATIVE MINERALOGY, LIÈGE, BELGIUM, 23 MAY 2013

Every one of us would dream of having geo-goggles to painlessly identify rock-forming minerals, and we would be definitely addicted if this technology could offer an estimate of mineral proportions. Although this is still science fiction (sorry), more and more technologies that deliver (semi-)quantitative mineralogical information in both the field and the lab have become available in recent years. This is particularly important in geological exploration and also in mineral processing, where a clear understanding of geometallurgical attributes is a decisive advantage for process optimization.

The Commission on Applied Mineralogy (CAM) of the International Mineralogical Association recently sponsored a one-day event entitled Quantitative Mineralogy at the University of Liège to demonstrate state-of-the-art technologies in this field. Hosted by the GeMMe (Génie Minéral, Matériaux & Environnement) Department, this event attracted more than sixty participants from all corners of Europe and beyond (Nancy, Liège, Aachen, Luxembourg, Amsterdam).

After a general introduction by CAM's president, Prof. Eric Pirard, under the title "Reinventing Docimasy," Dr Erick Ramanaidou (CSIRO, Perth) spoke about recent advances in a very exciting lecture titled "Using VNIR-SWIR-Raman spectroscopy in exploration." In a talk entitled "X-ray diffraction spectra," Qmineral's director, Dr Gilles Mertens (KU Leuven), presented a comprehensive review of the possibilities and limits of the method. The second part of the workshop was dedicated to microscope imaging techniques. A lecture by Dr Alan Butcher, FEI's principal petrologist, was on the subject "Quantitative mineralogy and petrography using automated SEM-EDS technology." This lecture highlighted recent case studies using automated mineralogy to support operations in oil and gas as well as in mining. The last lecture of the day was given by Ing. Laura Perez-Barnuevo (UP Madrid), during which she demonstrated the benefits of multispectral microscopy and presented a series of new textural indices aimed at supporting a geometallurgical description of individual particles.

A general conclusion from the workshop is that sampling and sample preparation are still very critical steps. Innovation in sample preparation is needed to shorten the response time of microscopy-based techniques while at the same time allowing an increase in the representativeness of the measured surface. On the other hand, there is little doubt that other breakthroughs will occur in the near future in terms of fast and accurate mineral-mapping techniques, whether using Raman spectroscopy, hyperspectral imaging, or LIBS (laser-induced breakdown spectroscopy)-based instruments. CAM's president reiterated his intention to set up a round-robin test in quantitative mineralogy and invited interested labs to send suggestions, or simply statements of intention to participate, to CAM's secretary, Dr Megan Becker. The final event of the workshop was also the most rewarding: the traditional Belgian beer tasting. It certainly smoothed the networking among participants and facilitated the elaboration of future cooperative projects.

Invited lecturers at the IMA-CAM Quantitative Mineralogy workshop held in Liège. From left to right: Alan Butcher (FEI), Laura Perez-Barnuevo (UPM Madrid), Eric Pirard (Université de Liège), Erick Ramanaidou (CSIRO, Perth) and Gilles Mertens (KU, Leuven)

As a follow-up, CAM will hold a series of sessions on archaeometallurgy, X-ray CT and remote mineral mapping at IMA's upcoming 21st general meeting. We look forward to meeting more passionate mineralogists in Johannesburg in 2014.

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IMA2014: THE 21st MEETING OF IMA – CALL FOR ABSTRACTS AND REGISTRATION

For the first time in its history, the International Mineralogical Association (IMA) will hold its General Meeting on the African continent, and it has selected South Africa as the host nation. Taking place at the Sandton Convention Centre in Johannesburg on 1–5 September 2014, the prestigious forum will showcase research excellence in the field of mineralogy. Preparations are coming along well, with close to 70 session proposals received. A wide variety of topics and themes has been put forward, making for a comprehensive and stimulating scientific programme of oral and poster sessions, workshops and short courses. The call for abstracts opened on 1 August 2013, and those interested in submitting abstracts are encouraged to respond to the call. A number of exciting field trips have also been proposed, and these alone promise to attract many people. Please visit our website, www.ima2014.co.za, to submit an abstract and for updates on the conference, or e-mail us at info@ima2014.co.za with any queries.

Registration also opened on 1 August, and early-bird registration will close on 15 January 2014. We look forward to welcoming you to South Africa in 2014.

Dr Sabine Verryn, IMA2014 Conference Chair,
and **Dr Desh Chetty**, IMA2014 Scientific Committee Chair

TYPE MINERALS FROM SOUTH AFRICA

South Africa is currently home to 75 type species of minerals. Daltry (1997) published an exhaustive work on the region's type mineralogy, and this was subsequently updated by Gait (2002). This short article serves to bring the listing up to date as of 2012. Of the 75 South African type species approved by the IMA, 42 are named after people and 15 after the locality where the mineral was discovered, and 18 others have derivations of names, most based on chemical composition.

South Africa is world renowned for its rich economic mineral deposits, so it is no coincidence that many of the type species were discovered during the exploitation of the country's commodities, such as platinum, chrome, and manganese. To date, the Kalahari manganese field (KMF), located north of Kuruman in the Northern Cape Province, is the most productive producer of type minerals (Table 1), surpassing the Bushveld Complex, which long held the number one spot. There are 13 valid type species known from the Bushveld Complex (and these are mostly platinum-group minerals; Table 2), while the Kalahari manganese field has produced 20, with two new species awaiting validation by the IMA. Furthermore, the most prolific single producer in South Africa is the Wessels mine located in the KMF. It is interesting to note that seven of the type species from the KMF contain copper. This metal is extremely rare in these manganese deposits and appears to be partitioned into rare and esoteric species.

Table 1 TYPE MINERALS FROM THE KALAHARI MANGANESE FIELD, SOUTH AFRICA

1980	Braunite II[a, #]	$Ca(Mn^{3+},Fe^{3+})_{14}SiO_{24}$
1983	Sturmanite*	$Ca_6(Fe^{3+},Al,Mn^{2+})_2(SO_4)_2[B(OH)_4](OH)_{12}•25H_2O$
1990	Orlymanite[b]	$Ca_4Mn^{2+}{}_3Si_8O_{20}(OH)_6•2H_2O$
1992	Vonbezingite[b]	$Ca_6Cu_3(SO_4)_3(OH)_{12}•2H_2O$
1993	Poldervaartite[b]	$Ca(Ca_{0.5}Mn^{2+}{}_{0.5})(SiO_3OH)(OH)$
	Hennomartinite[b]	$SrMn^{3+}{}_2Si_2O_7(OH)_2•H_2O$
	Kornite[b]	$(K,Na)(Na,Li)_2(Mg,Mn^{3+},Li,Fe^{3+})_5Si_8O_{22}(OH)_2$
1994	Effenbergerite[b]	$BaCu(Si_4O_{10})$
1995	Nchwaningite[c]	$Mn^{2+}{}_2SiO_3(OH)_2•H_2O$
1996	Wesselsite[b]	$SrCu(Si_4O_{10})$
2002	Manganvesuvianite[b]	$Ca_{19}Mn^{3+}(Al,Mn^{3+},Fe^{3+})_{10}(Mg,Mn^{2+})_2Si_{18}O_{69}(OH)_9$
2005	Holtstamite[b]	$Ca_3Al_2(SiO_4)_2(OH)_4$
2006	Manganipiemontite-(Sr)[b] (formerly tweddillite)	$CaSr(Mn^{3+},Fe^{3+})_2Al[Si_3O_{12}](OH)$
2007	Olmiite[c]	$CaMn[SiO_3(OH)](OH)$
2010	Guidottiite[c]	$(Mn_2Fe^{3+})(SiFe^{3+})O_5(OH)_4$
2012	Lavinskyite[b]	$K(LiCu)Cu_6(Si_4O_{11})_2(OH)_4$
	Scottyite[b]	$BaCu_2Si_2O_7$
	Colinowensite[b]	$BaCuSi_2O_6$
2013	Cairncrossite[b]	$Sr_2Ca_7(Si_4O_{10})_4(OH)_2•15H_2O$
	Diegogattaite[b]	$Na_2CaCu_2Si_8O_{20}•H_2O$

Two new type species are pending, one from Wessels mine and one from N'Chwaning II mine.

[a] Black Rock mine; [b] Wessels mine; [c] N'Chwaning II mine

* Incorrectly attributed to Black Rock mine; most likely from N'Chwaning II mine

[#] Not approved by the IMA

Table 2 TYPE MINERALS FROM THE BUSHVELD COMPLEX, SOUTH AFRICA (FROM DALTRY 1997)

Atokite[a]	Pd_3Sn
Braggite[b]	PtS
Cooperite[c]	PtS
Genkinite[d]	Pt_4Sb_3
Geversite[e]	$PtSb_2$
Hollingworthite[e]	RhAsS
Irarsite[d]	IrAsS
Merenksyite[b]	$PdTe_2$
Platarsite[d]	PtAsS
Rustenburgite[b]	Pt_3Sn
Stibiopalladinite[f]	Pd_5Sb_2
Stumpflite[e]	PtSb
Tetraferroplatinum[g]	PtFe

[a] Atok mine; [b] Rustenburg mine; [c] Rustenburg Layered Suite; [d] Onverwacht dunite pipe; [e] Driekop dunite pipe; [f] Tweefontein; [g] Mooihoek dunite pipe

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