even though Jodi Rosso had assisted with several volumes and edited 2.5 of the 13. With my wife's gentle encouragement, I retired, knowing that Jodi would accept the job of Series Editor for both GS and MSA beginning with Volume 54.

RiMG in Cyberspace

By 2003 MSA had joined GSW (GeoScience World), an aggregate of Earth science societies bonded together to market their electronic publications, all of which are designed to exploit the search capabilities of AGI's GeoRef.

Although the means of individual access to RiMG has not yet been determined, the five volumes printed in 2003 and 2004 are already online through GSW, thanks to Jodi and Alex. The plan is to continue electronic publication of RiMG and in the near future to post volumes dating back to 2000 and earlier.

RiMG in Orbit?

The next volume to appear will be Volume 57 *A New View of the Moon* to be published in cooperation with NASA.

Conclusion

It would be false modesty to underestimate the impact on the disciplines of mineralogy, petrology, and geochemistry of the work of 963 different authors of 716 chapters (30,314 pages) in 56 volumes. For the curious: the entire series occupies nearly 6 feet (1.8 m) of shelf space and weighs 103 pounds (46.8 kg). More than 170,000 books have been sold to individuals over 30 years; about 40,000 are in libraries, and more than 42,000 are in inventory. Now that the number of books in print has exceeded the number of miles from Manhattan to the Moon, RiMG would appear to have a solar if not a stellar future.

Looking Forward to the Past: A Session in Honor of Paul Ribbe and the Reviews in Mineralogy and Geochemistry

Mineralogists young and old from all over the world gathered in Denver last November, at the annual meeting of the Geological Society of America, to contribute to a session in honor of Paul Ribbe. The title of the session reflected the fact that, as reviewed by Michael Hochella (Virginia Tech), Paul Ribbe's career as a teacher and researcher in mineralogy became so intertwined with the development of the Reviews volumes that it is difficult to separate one from the other.

The session was opened by Michael Carpenter (Cambridge), with a picture of Paul Ribbe (reproduced here) that Paul had submitted as part of his application to the University of Cambridge back in 1959. At Cambridge, Paul determined the crystal structures of several feldspars and was the first to show that the structure of low albite had an effectively fully ordered distribution of Al and Si atoms. Throughout Paul's career, the underlying theme of his feldspar research was the connection between the details of the crystal structures at the atomic level and their macroscopic thermodynamic properties and lattice parameters. This was emphasized in a review by Ross Angel (Virginia Tech) of high-pressure crystallographic studies of feldspars that have been made since the feldspar RiM volume was last revised in 1982, and by Ian Parsons (Edinburgh) who discussed the fascinating exsolution microtextures in perthites from the Klokken intrusion, which can only be understood in terms of the coupling between ordering and un-mixing within the feldspars.

The other early volumes in the Short Course Notes series were also devoted to specific mineral groups and built on the same "micro to macro" theme that was to become the subject of a later RiM volume in its own right. Progress in understanding bonding in sulfides through high-pressure crystallographic studies was reviewed by Charlie Prewitt (University of Arizona), a contributor to that first sulfides volume. "Changing Perspectives" was the very apt title chosen by David Vaughan (University of Manchester) for his presentation that emphasized both the development of studies of the *interactions* of sulfide minerals and the environment over the last 30 years, and the novel experimental tools that have been developed to enable those studies. Having started as critical reviews of the structures and properties of specific mineral groups, the RiM volumes have evolved over the years to encompass "even petrology", as noted by Darrell Henry (Louisiana State) in his talk on Ti in biotite, as well as experimental techniques. Robert Bodnar (Virginia Tech) took up his theme in reviewing the progress in fluid inclusion research since the publication of the only single-authored volume in the RiM series—volume 12 by Edwin Roedder. Novel computational methods have also revolutionized mineralogy on all scales from bonding in minerals (Jerry Gibbs, Virginia Tech) and molecular interactions (Jim Kubicki, Penn State) to km-scale modeling of metamorphism (Barb Dutrow, Louisiana State).

The last part of the session returned to the theme introduced by David Vaughan, that of mineralogy being an integrated study of the interaction of minerals with their environment. Mickey Gunter (University of Idaho) discussed the health issues arising from mineral dusts. Patricia Dove (Virginia Tech), editor of the recent RiMG volume on biomineralization, reviewed the incredible structures built by various organisms out of calcite that must reflect some "vital" or biological effect. Both she and Jill Pasteris (St. Louis) also emphasized the importance of quantifying such effects so as to be able to use the compositions of biominerals as a proxy for the environment in which the organisms originally lived. Bob Hazen (Carnegie Institution of Washington) looked back to the origin of life and the problem of understanding how life's essential molecules, such as amino acids and sugars, became handed or "chiral." He suggested that chiral mineral surfaces may have played a key role in separating left- from right-handed molecules or in catalyzing chiral synthesis reactions. And he looked forward to the exciting new experimental techniques, borrowed from biochemistry, that are starting to be used to characterize the interactions between mineral surfaces and biomolecules. Bob Downs (University of Arizona) looked even farther forward with his presentation of a recently developed hand-held Raman spectrometer that was straight out of Star Trek!

The breadth of the talks and posters in the session emphasized the influence of the RiM volumes on the careers and thinking of most mineralogists. Jim Kubicki (Penn State) reflected the feelings of many in saying that being asked to edit a RiM volume was one of the highest honors he had received in his career. Several speakers concluded their talks with either news of forthcoming volumes in the series or informal proposals for new volumes, clearly demonstrating that the series Paul Ribbe founded and developed over thirty years remains a vital endeavor and a valuable resource for mineralogists. While all participants at the session expressed their thanks in various ways to Paul Ribbe for his service to the mineralogy community and for his incredible patience with authors and editors, the last slide of Bob Hazen's talk said it best. It simply read, in large friendly letters, "Thank you Paul".

Ross Angel and Nancy Ross
Virginia Tech
Blacksburg, November 2004

International Gemmological Conference, Wuhan, China

The 29th International Gemmological Conference (IGC) was held at the China University of Geosciences in Wuhan, China, September 13–17, 2004. The conference, founded in 1951 by Dr. Edouard Gübelin and a number of his fellows, is designed to bring together professional research gemmologists worldwide to discuss the latest developments in gemmological research and other items of gemmological interest. It is held every two years, in the odd years, and usually alternates between venues in Europe and the other continents. The 29th conference was deferred until 2004 because of the SARS scare in China in 2003.

Attendance is by invitation and is limited to two delegates per country (though there may be extra observers). The 29th IGC welcomed delegates from Australia, Bahrain, Canada, China, Czech Republic, Germany, Holland, India, Indonesia, Japan, Korea, Russia, Singapore, Spain, Sri Lanka, Switzerland, Taiwan, Thailand, UK, and USA.

Delegates to the conference are expected to deliver papers on their current research. Papers given at the 29th session covered such diverse topics as "Study of Crystal Defects in Synthetic Diamond with Synchrotron Radiation X-ray Diffraction Topography" (Dr. Chen Tao) and "Trace-element geochemistry of gem corundum from various gem fields of Madagascar" (Dr. T. Thanasuthipitak). Willow Wight, research associate at the Canadian Museum of Nature and editor of the *Canadian Gemmologist*, spoke on her recent work on the non-nacreous pearls of *Placopecten magellanicus* scallops from Digby, Nova Scotia, Canada.

The Mengyin diamond mine, China

Although the conference itself lasts for one week, there are both pre- and post-conference tours. For the 29th session, the pre-conference tour included the Jurong Shi pearl farms and the Ma'anshan turquoise mine. The post-conference tours covered the Changle sapphire deposits, the Mengyin diamond mine, and the Damaping peridot mine.

The Ma'anshan turquoise mine lies some 30 km southwest of the city of Nanjing. Turquoise was discovered here in the 1960s as a result of examination of iron deposits in a Mesozoic volcanic sequence. The major item of interest during our visit was a single, 20-tonne slab of turquoise that had just been mined and was being crated for shipment.

After the conference, we flew to Jinan and drove from there to Changle, 150 km to the east. Sapphire occurs in Changle county in two types of deposit. Primary sapphires are obtained as megacrysts in specific layers in alkalic basalts 16–17 million years in age; secondary sapphires are recovered from ancient stream beds buried beneath 10–12 metres of alluvial soil. The sapphire-producing area covers 420 km^2, and is basically agricultural.

The Mengyin diamond mine is also some 150 km from Jinan, to the south-east. Diamonds were discovered here in 1965, and subsequent exploration located the kimberlite (micaceous peridotite) pipes and veins. The age of the kimberlite intrusion is estimated at around 80 million years, although the diamonds themselves are probably more than 450 million years old.

Sorting diamonds by hand

Mining first took place as an open-pit operation, but the work went underground in 2001 and now reaches a depth of 210 metres. The kimberlite "carrot" divided at depth, and reached the surface as two separate entities, the larger of which is 75 × 45 metres, and the smaller 75 × 20 metres. The smaller pipe is the more productive of the two. The kimberlite, apparently controlled in a NE to NW fan by the Tanlu fault, also occurs in small veins that are generally short (10–100 metres) and range in width from 0.5 to 2 metres. Other exposures are known in the area.

The mine produces an average of 300 carats per day, for an annual gross of 100,000 carats, 20% of which are gem quality. On the day of our arrival, they had already found 800 carats, much to the delight of the mine manager, who insisted that we had brought them luck. The primary habit is octahedral, and the colours range from black through brown and yellow to completely colourless. A tiny percentage of very small crystals are pink, but no blue diamonds have been seen to date. The largest diamond recovered from the area (in 1977) was a 158.79-carat yellowish crystal. The largest one found directly in the pipe was a 119.01-carat rounded octahedron (in 1983).

The mine shaft and buildings are at the edge of a small village and, apart from the incredible noise, have a very casual air about them. Ore brought from the shaft first goes through a jaw crusher, then a cone crusher, before being delivered to the grease belts. The fines recovered from the grease are sorted by hand by five or six very sharp-eyed young women who can spot a diamond of infinitesimal size with ease.

In the crushing house, the noise is deafening, there is water everywhere, and the entire building vibrates. In fact, it may be vibrating to pieces: there were holes in the walls. Interestingly, two-thousand-year-old technology works well. The crushed material is moved to an upper level by a huge Archimedes screw.

The final stop on the tour (besides the Great Wall, which is *de rigueur* for everyone) followed a flight to Beijing and a 240-km drive northwest from there to Zhangjiakou. The Damaping peridot mine is a further 30 km north of Zhangjiakou, in a series of Miocene alkaline basalt flows. As in Changle, there are alluvial and in situ deposits. One area of the hillside on the long climb up to the mine appears to be covered by fine, green peridot sand. The peridot is essentially 90% forsterite. Development in the area is slowing because of weaker markets, but the resources have not been exhausted.

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