

Mineralogical Society of Western Australia Inc July 2013 Newsletter

Editorial

Many thanks to those members supplying articles for this newsletter. Thank you to Ken Ireland for donating two items for door prizes; a DVD entitled "Interactive Mineralogy 2012" and the book on "Garnets". Congratulations to the two winners of these door prizes. The policy that members may submit short adverts free of charge will remain.

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Recent Activities.

General Meeting held on15th May, 2013.

Following the General Meeting, Susan Stocklmayer, Gemmologist, gave a talk entitled "Alexandrite and other rare beryllium minerals".

The main focus of the talk was alexandrite (a rare chromium beryllium oxide gem); its history, discovery and most significant mineralogical and gemmological characteristics, including the colour change effect under lighting of different qualities, were given.

Alexandrite is found in several countries; most important gem sources are the Urals, Sri Lanka and Brazil, with Zimbabwe, noted for good crystal specimens. Russian alexandrite, discovered in 1833, only a few years after the first finds of emerald in the Urals (1830), was investigated by some of the leading mineralogists of the day and named for Alexander, son of the imperial family.

Alexandrite is a rare gem and is associated with other beryllium minerals, particularly emerald, in many world occurrences. In the Urals, the ratio of alexandrite to emerald is about 1:200 and to the miners its appearance was considered to preclude the finding of emeralds and consequently it was regarded as an ill omen, indicative of poor finds of emerald.

Alexandrite has been described from Dowerin in Western Australia where the host rocks are of higher metamorphic facies than the usual amphibolite facies host rocks. Very small crystals of alexandrite occur at Poona, associated with emerald, ruby, sapphire and topaz.

Phenakite, a beryllium silicate mineral, was described as a new mineral within the same historical period as the first alexandrite (1833/34) by the Finnish mineralogist Nordenskold. It is also sometimes found associated with both alexandrite and emerald occurrences, not necessarily in close proximity but within the same host, a phlogopitic rock also referred to as glimmerite or "blackwall'.

Phenakite is noted as a precursor of emerald and may occur as inclusions within emerald. The availability of aluminium and silica determine the mineral formation; abundant silica results in the occurrence of phenakite (a silicate) whilst abundant aluminium gives rise to alexandrite and emerald (aluminates).

Phenakite crystals, some reaching up to 75mm, are recorded from the Wonder Well emerald site in Cue, Western Australia.

Euclase, a beryllium aluminium silicate, is most commonly found within granitic pegmatites or greisens where it has been recorded as replacing beryl. Historically, Western Australian euclase was only recorded from the Dalgaranga pegmatite. Recently, Susan Koepke discovered a small loose crystal of euclase at the Giles pegmatite in the Coolgardie area.

Following the talk, Minsocwa members showed their beryllium related specimens that included beryllium metal and a black beryl crystal from Russia (Clive Daw), various chrysoberyl crystal specimens from Zimbabwe (Sue Koepke) and the euclase crystal from Coolgardie (Sue Koepke).



Intergrowth of alexandrite and emerald shown in natural light (upper image) and incandescent light (lower image). Specimen 39mm x 22mm. Location is unknown. Courtesy of Thomas Hainschwag



Cyclic twin of alexandrite, comprising an intergrowth of three crystals (trilling). One of many types of twinned crystal groups found for both chrysoberyl and its alexandrite variety. Faces shown are: a - pinacoid, o and n - bipyramids, and b – pinacoids. Artwork is courtesy of Karl Schmetzer



Cyclic twins (trilling) of alexandrite from the Urals. Fersman Museum 5.5 x 7cm. Photograph courtesy Karl Schmetzer.

After the talk, Bert Macray of the Rock Shop showed us some beautiful specimens of crystalline gold.



Portion of a native gold nugget showing its welldeveloped crystalline nature. Specimen had dimensions of 60mm by 44mm.

Activity Night held on 19th June, 2013.

John Porteous submitted the following summary of the evening.

A group of over 20 members braved a chilly night at the Rivervale Lapidary Clubrooms on June 19th to hear 3 interesting speakers.

Our first speaker was the entertaining and most knowledgeable Katie Dyl who, despite a developing cold, delivered a fascinating talk on "Mineralogy from Water-Rock Reactions in Primitive Meteorites."

Katie Dyl joined Curtin University as a Research Fellow in 2012. She received her B.S. in Geochemistry from the California Institute of Technology in 2004 and her Ph. D. in Geochemistry from the University of California, Los Angeles, in 2011. Her undergraduate research focused on the spectroscopy of prebiotic molecules in newly-forming star regions; however, she developed an interest in mineralogy and metamorphic petrology that led her to study meteorites.

Her thesis, "Correlating Oxidation State and Oxygen Isotopic Composition to Nebular and Parent Body Processes in Chondritic Meteorites," used petrography, thermodynamics, and mass spectrometry to explore the role of oxidation and water-rock reactions in primitive planetesimals. She was a postdoctoral researcher at Imperial College, London and a research associate at the Natural History Museum, London from 2010-2012.

Katie showed a number of slides depicting meteorite slices with a variety of magnifications. Discussion centred on the origin of some of these meteorites and of course their composition. Katie is particularly interested in the role of oxygen and water in the formation/evolution of our solar system.

Katie was followed in fine style by geologist and leading Mineralogical Society member (most recently associated with the DeGrussa Copper Mine) Murray Thompson. Murray's talk was titled: "Copper pseudomorphs of the DeGrussa copper mine, Western Australia".

Murray displayed more of the magnificent specimens to come from this fabled mine and indicated their location within the mine. He highlighted the difficulties which have been associated with specimen sampling at the mine and again reinforced the inevitable that few specimens will ever come from this mine again.

To conclude the night, we had the pleasure of meeting Matthew Webb from Victoria who has the enviable occupation of gem trader – travelling the world in search of gems for his own growing collection and to sell/trade on the open market. A most passionate collector, Matthew displayed some of his specimens including a glorious amethyst specimen from the fabled West Australian locality of Wyloo. He valued this specimen at \$9 500.00. He also showed us a radioactive/fluorescent specimen that glowed beautifully under the infrared light.

Matthew's website is well worth a visit: www.bluemoon.com/exclusiveminerals

Western Australia Lapidary and Rockhunting Club Inc. Exhibition held on weekends of June 8, 9 and June 15, 16, 2013.

This annual exhibition was well attended by numerous Minsocwa members, several of whom also had displays including one of DeGrussa copper minerals. With numerous lapidary displays, minerals for sale and various items of food and drinks available, a good time was had by all and Minsocwa members are encouraged to attend future exhibitions.



General view of the Lapidary and Rockhunting Club 2013 Exhibition



Minsocwa and Lapidary and Rockhunting Club member, Barbara Donati, with a box of DeGrussa native copper specimens for sale. The Lapidary and Rockhunting Club 2013 Exhibition

Joint Mineralogical Societies of Australasia 36th Annual Seminar held in Sydney during the period 8th to 10th June.

The Joint Mineralogical Societies of Australasia 36th Annual Seminar was held in Sydney during the period Saturday 8^{th} June to Monday 10^{th} June 2013 with a theme of -'**The**

Wonderful World of Minerals'. The seminar was attended by Sue Koepke, Geert Buters and Allan Hart; Allan provided some photographs.

The 37th Combined Mineralogical Societies of Australasia Seminar will be held on Fri 31st of Oct and Sat 1st of Nov once more at Te Rau Aroha, Waihi Beach on the NZ's North Island. <u>http://www.waihibeach.org.nz/facilities.html</u>.

We have block booked the whole complex from the 24th Oct through to the 3rd Nov and both meals and accom will be available. The majority of the accom is in shared bunk rooms where you will need to provide your own bedding. The Lodge (16 people) and Chalet (6-8 people) would be suitable for larger groups and bedding is available for hire in these units.

The NZ Micromineral Symposium will be held from Fri 24th Oct to Tues 28th of Oct. A series of fieldtrips will be held on the days between the 2 meetings with venues for these still to be determined. There may also be a trip organised for Sun the 2nd Nov.



Seminar dinner



Some of the seminar speakers

Dermot Henry



Ralph Bottrill Page 6 of 10

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Lyn Sutherland



Ian Plimer

Other Activities



Post Conference field trip to Kulnura Quarry



Behind the scene visit to the Australian Museum - Ross Pogson with a large calcite

July Meeting

There will be a General Meeting on the **17th July, 2013** at the WA Lapidary Club rooms located at 31, Gladstone Road, Rivervale (corner of Newey St).

This will be followed by a talk by Dr. Lena Hancock of the Western Australian Geological Survey entitled "**The HyLogger: spectral mineral identification in drill core and hand specimens**".

Australian State and Territory Geological Surveys have, for the past four years, been using CSIROdeveloped, semi-automated HyLogging spectral profiling systems for rapid, semi-quantitative measurement of mineralogy in drill core and rock chips. These instruments are now capable of detecting common rock-forming minerals (feldspars, quartz, pyroxenes, garnets, olivines, carbonates, phosphate), in addition to a number of OH-bearing minerals (kaolins, smectites, micas, chlorites).

I will demonstrate the use of HyLogging data in studies of the Minnie Springs Mo and the Cummins Range REE prospects. The audience will be given the opportunity to evaluate the mineral composition of several core specimens and then compare their interpretations with results from HyLogger data.

Lena Hancock obtained her PhD in 1994 in Moscow on mineralogy of lode and alluvial gold deposits in the Far East of Russia. As a mineralogist, she used to work at Curtin University and the WA Museum before she joined the GSWA in 2008 as a HyLogger Geologist.

2013 Future Meetings and Other Activity Dates

September, 18th. General Meeting. Speaker TBA.

November, 20th. General Meeting. Speaker Kevin Morgan on "Early Exploration and Mineral Collecting".

Society Notices

Field Safety

Tom Bateman, Field Trips Leader, came across the following items of interest in the latest newsletter from ExplorOz.com.

Coordinates Converter

The <u>Coordinates Converter article</u> contains a tool that enables you to enter the latitude and longitude coordinate for any given place in the format of either degrees, degrees minutes seconds, or decimal degrees to obtain the conversion to UTM, DEG, DMS, and DD formats.

Distance Calculator

The <u>Distance Calculator article</u> presents a method for easy calculation of distance, bearing and more between two latitude/longitude positions based on the spherical law of cosines.

Simply enter the known lat/long positions for any two points to obtain instant output of results.

For further information, could interested persons please contact **ExploreOz.com** who supplied this information.

<u>Field Trips</u>

Western Australia Lapidary and Rockhunting Club Inc.

By arrangement, members of the Mineralogical Society are able to go on field trips organized by the Western Australia Lapidary and Rockhunting Club Inc. If you are interested in attending these field trips please put your name on the notice board at the Lapidary and Rockhunting Club for the relevant field trip.

The following proposed events are shown on the notice board:

July 22 to August 10. Long trip to Marble Bar area.

Please register with Minsocwa Field Trip organizers prior to attending any of the field trips to confirm event details.

Committee Members

Committee Members		
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