



# Mineralogical Society of Western Australia Inc.

## March 2018 Newsletter

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### Editorial

At all meetings the Society's microscope and UV lamp are available for use by members.

We finally have our own lockable cupboard located in the Lapidary Club premises. The library is currently housed there together with some equipment. The key to the cupboard can be obtained from Stewart Cole.

The policy that members may submit short advertisements free of charge will remain. Additionally, commercial advertisements will be accepted for a nominal charge.

The Australian Journal of Mineralogy has been reducing its back-copy stockpile, and is now looking for a smaller storage space. The ideal solution would be to find a volunteer who can provide free, long term storage. We need about two square meters to house the racking on which the stock is stored. The space needs to be dry, clean, secure, and rat, mouse, and silver fish free. Access is only required infrequently. If you have some unused space and would like to help AJM, please email the secretary, Geert Buters, on [ajm.secretary.treasurer@gmail.com](mailto:ajm.secretary.treasurer@gmail.com).

## Recent Activities

The General and Annual General Meetings of the Mineralogical Society of Western Australia Incorporated are now held at 7.30pm on the **second** Wednesday of every odd month at the WA Lapidary Club rooms located at 31, Gladstone Road, Rivervale (corner of Newey Street).

### Ordinary Meeting, Wednesday January 10, 2018.

The door prize of orbicular granite donated by Sylvie Chanoni was won by Sue Koepke and a prize of a poster on tektites donated by Vernon Stocklmayer was won by Ted Fowler.

At the meeting, members were advised that MinSoc Victoria had agreed to host the 2018 Joint Mineral Societies Seminar and were requesting the names of those who would attend as they needed at least 40 paying attendees to break even.

The speaker for the evening was Kirsten Rempel, Lecturer at the Western Australian School of Mines, Department of Applied Geology, Curtin University, who spoke on "Kalgoorlieite, a new telluride found in Golden Mile ores: Discovery of a mineral".

Kalgoorlieite, with a simplified formula of  $As_2Te_3$ , occurs as microscopic grains found in sample 8657 collected from the Tetley Lode and housed in the WA School of Mines Museum. The presence of As was detected using a benchtop SEM-EDS. Kikuchi diffraction showed that the structure matched that of synthetic  $As_2Te_3$ .

Properties were determined as:

**Crystal system:** Monoclinic

**Space group:**  $C2/m$

**Colour:** Pale cream, similar to calaverite or pyrite

**Hardness:** 2-3 (Mohs scale), similar to gold

**Lustre:** Metallic

**Bireflectance:** Medium

**Pleochroism:** Distinct (creamy white to brownish grey)

**Anisotropy:** Strong (shades of straw yellow, red-brown, blue-grey)

*Most physical properties (cleavage, habit, streak) couldn't be observed – thin section only!*

Kirsten then went on to describe requirements to describe a new mineral which included:

- Approval (by vote) from the Commission on New Minerals, Nomenclature and Classification (CNMMN), of the International Mineralogical Association (IMA)
- General info, e.g., occurrence, associated minerals, mineral origin
- Mineral appearance & physical properties, e.g., colour, hardness, cleavage, habit
- For metallic minerals, reflected light microscopy properties, e.g., reflectance, pleochroism, anisotropy  
(*Different requirements for non-metallic & metallic minerals*)
- Crystallographic data, e.g., crystal system, space group, crystal lattice parameters, unit cell volume (*usually determined with single-crystal or powder X-ray diffraction (XRD)*)
- Empirical formula, from microprobe analysis
- Catalogue no. (type material must be hosted by a curated museum)

The procedure is very lengthy and took nearly 30 months in the case of kalgoorlieite. Fortuitously, synthetic  $\text{As}_2\text{Te}_3$  was so well-described that thermodynamic properties were available, and this can be used in combination with other minerals found in contact with kalgoorlieite to help determine conditions of mineral deposition.

Kirsten concluded that new mineral discoveries were not very rare and that In 2015, 126 new mineral proposals were submitted to the IMA. As of 09/17, there were 5291 (currently valid) unique mineral species.

### **Social Function. Welcome to 2018, Saturday February 3**

This was held at the home of Susan and Vernon Stocklmayer in Lesmurdie. Some 15 members and guests attended and enjoyed an evening of good company and food. Several specimens were produced for identification; the most enigmatic of which was Max's glowing pebble supposedly of untreated jadeite which he obtained in Myanmar.

One of the resident bandicoots (quendas) was determined not to allow people to put it off his nightly snack and provided some good photo opportunities for those not fortunate enough to have them living in their garden.



A convivial evening. Photograph by Mike Freeman



The resident bandicoot. Photo by Vernon Stocklmayer

## Workshop – mineral identification using crushes, February 18.

Lee Hassan compiled the following report on this activity.

On Sunday 18<sup>th</sup> February, Susan Stocklmayer held two workshops at the Lapidary Club premises on the identification of minerals in a mineral crush using a petrological microscope and refractive index liquids. Geert Buters, Sue Koepke, Max Taylor and Stewart Cole attended the morning session and John Mill, Alan Longbottom, Lesley Daniels and Lee Hassan attended the afternoon session. Nimal Perera was an observer. The two groups mingled over lunch.

Minerals to be tested were crushed using a small hammer on an anvil made of a small piece of railway track or, if soft, crushed between two glass slides. A tiny amount of the powder was then transferred to a glass slide and a drop of oil with RI close to RI of the suspected mineral was placed close to the pile of mineral. A cover slip was then placed over the oil and mineral and moved around until the oil covered the mineral (a tricky process that sometimes required the addition of another drop of oil). The mineral crush was then observed under the microscope. If the bright line separating the mineral and oil moved into the oil when the objective was raised, then the mineral has a lower RI than the oil. If the mineral is not visible except when the polariser is crossed, then at least one of the RI's of the mineral have been matched.



Vintage petrological microscope made by J.Swift and Company London, loaned to the Mineralogical Society by Barbara Donati.

Everyone learnt a lot. For some at the workshop, this was the first time they had used a petrological microscope. Even someone like myself, who had used a microscope frequently to identify minerals in thin section, learnt a lot about identifying minerals without having a thin section. I was very happy that I could confirm the identity of some white spodumene in a sample I had brought back from Greenbushes.

I would like to thank Susan for giving her time, sharing her knowledge and for allowing us to use her RI oils and glass slides.

## Upcoming Meetings and Activity Days

### Ordinary Meeting, Wednesday, March 14, 2018.

This will be a member's night with two short talks.

The first is by Mike Freeman on "The Riddock Amphibolite ruby corundum". Mike has kindly offered to donate a specimen of this as a door prize.

The second is by Susan Stocklmayer, a long-time MinSoc WA member and co-author of Gemstones of Western Australia, on "A recent staurolite identification".

### Field trip, Easter weekend, 30<sup>th</sup> March to 2<sup>nd</sup> April 2018.

The following information has been supplied by Rod Berrell, Field Trip Leader

- Friday 30<sup>th</sup> March 2018 (Good Friday) Drive Perth – Norseman  
Norseman is located 720 kilometers east of Perth, approximately 8 hours driving time. Today is a driving day. Please be aware of double demerits over the Easter long weekend.

- Saturday 31<sup>st</sup> March. Woodcutters Pegmatite – Eastern Goldfields  
Superterrane – Yilgarn Craton.

9am meet outside the Tourist information center located at LOT 1781 Roberts St, Norseman WA 6443. Travel in convoy to the Woodcutters Pegmatite. Ensure that you have water, food and appropriate clothing for a day in the field.

Mineral Species include: Zoned pink tourmaline? Cassiterite, pink elbaite, garnet, albite, lepidolite, microcline, quartz, biotite, muscovite, beryl, schorl and zinnwaldite.

- Sunday 1st April

Visit back to Woodcutters? Possible pegmatite on the Hayden-Norseman Road? Prase area?

- Sunday 1<sup>st</sup> April afternoon / Monday 2<sup>nd</sup> April morning

Travel back to Perth

Rod has also supplied the following information regarding camping in Norseman.

I have been in contact with Norseman Caravan Park, they have cabins with ensuite for \$138 per night, basic cabins with no ensuite for \$98 dollars twin share and camping is \$15 dollars per person.

You can contact them on (08) 9039 1500 or [gateway@acclaimparks.com.au](mailto:gateway@acclaimparks.com.au)

Please note that a **Miners Right** is required for this trip and you must be a financial member for insurance purposes.

## Miscellaneous

### Annual Joint Mineral Societies Seminar, Ballarat, 2018

After some initial hiccoughs, planning for this seminar is now well under way. The latest news from Victoria is:

### All is Good!

I've just about locked in a new venue in Ballarat that will also provide the catering and can also do the Saturday night dinner.

By early this week everything should be back on track.

I've had great moral support from everyone and speakers are well on track with their topics, abstracts and bios.

I hope to send out the registration booklets via email by next weekend and also make it available on our website [www.minsocvic.org.au](http://www.minsocvic.org.au).

I'll ask Tony Forsyth to also publish it on his web site [www.mineral.org.au](http://www.mineral.org.au).

All you now have to do is drum up support from your societies members and other interested parties.

### Annual Joint Mineral Societies Seminar, Perth 2019

The organizing sub-committee has met on two occasions and has started planning for the forthcoming seminar to be held in Perth in August/September 2019.

The title of the conference is *Traps in mineralogy – pseudomorphs, look-alike minerals, fakes and synthetics*.

Currently the following have volunteered to assist in the planning: Angela Riganti, Rodney Berrell, Allan Hart, Lee Hassan, Sue Koepke, John Mill, Susan Stocklmayer, Vernon Stocklmayer, Stewart Cole and Murray Thompson.

### Contacts

The Committee for 2017/2018 is shown below.

President	Stewart Cole	0414904168
Vice President	Sue Koepke	0417990688
Secretary/Treasurer	Lee Hassan	93975197
Field Trip Leader	Rodney Berrell	0407081025
Newsletter Editor	Vernon Stocklmayer	92919043
Committee Member	Angela Riganti	92437472