



Mineralogical Society of Western Australia Inc.



NEWSLETTER Quarter 1, 2022

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Cover page: A photograph from Nicolas Hébert's talk on minerals from Mogok, Myanmar.



Mineralogical Society of WA Inc.

Meetings held at the WA Lapidary & Rockhunting Club rooms
31 Gladstone Road, Rivervale (corner of Newey Street)
Registered Society No. A1009304P

*To encourage mineralogical study by amateur and professional alike and,
in so doing, discover, document and preserve the Earth's and in particular
Western Australia's natural history.*

EDITORIAL

2022 is looking like another great year for the Mineral Societies around Australia and New Zealand. While COVID is still there, restrictions are being wound back and people are starting to find their freedoms again!

Unfortunately, the planned mineral market for April has had to be put back to May!

However other events across Australia and New Zealand are looking amazing:

- 58th National Gem & Mineral Show 15th – 18th April 2022 – Mudgee, NSW
- Astro – Rock Fest 16th – 18th September 2022 – Mount Magnet, WA.
- 44th Annual Seminar of the Joint Mineral Societies of Australasia 28-29th October 2022 – hosted in New Zealand.

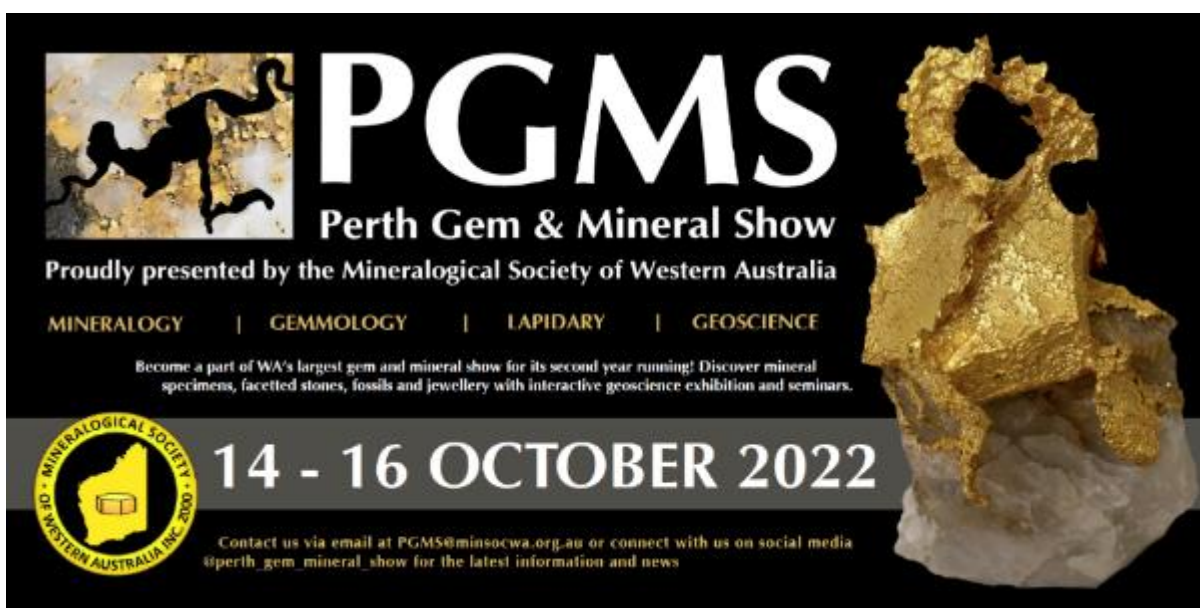
And there are many more! Check out <http://www.mineral.org.au/shows/shows.html> for a listing of mineral shows across Australia.

And don't forget our very own PGMS, this year scheduled for 14-16 October.

See you on the road, somewhere

Rod

Newsletter Editor



The poster for the PGMS Perth Gem & Mineral Show features a black background. On the left, there is a small image of a fossilized animal track in a rock matrix. In the center, the text 'PGMS' is written in large, bold, white letters, followed by 'Perth Gem & Mineral Show' in a smaller white font. Below this, it says 'Proudly presented by the Mineralogical Society of Western Australia'. A horizontal line separates this from the next section, which lists 'MINERALOGY | GEMMOLOGY | LAPIDARY | GEOSCIENCE' in white capital letters. Below this, a line of text reads: 'Become a part of WA's largest gem and mineral show for its second year running! Discover mineral specimens, faceted stones, fossils and jewellery with interactive geoscience exhibition and seminars.' To the right of the text is a large, detailed image of a gold specimen, possibly a nugget or a piece of gold ore, with a rough, crystalline texture. At the bottom left, there is a circular logo for the 'MINERALOGICAL SOCIETY OF WESTERN AUSTRALIA INC. 2000' with a map of Western Australia inside. To the right of the logo, the dates '14 - 16 OCTOBER 2022' are written in large, bold, white letters. At the very bottom, a line of text provides contact information: 'Contact us via email at PGMS@minsocwa.org.au or connect with us on social media @perth_gem_mineral_show for the latest information and news'.



SCHOOL OF ROCK - DR ROBERT MADDEN

Dr Robert Madden is an avid science communicator writing small geology vignettes, geology stories and educational resources on his social media account “School of Rock”.

This segment of our newsletter shares some of Dr Madden’s incredibly interesting articles and photos.

You can follow Robert’s ‘School of Rock’ for more geoscience content on Instagram @drrhcmadden.

Robert typically only writes about specimens he has in his collection and takes all his own specimen photos.

Kyanite is the schist

The Mozambique Belt is a band of the Earth’s crust that runs from East Antarctica through East Africa and into Arabia. This huge belt formed as a suture between plates when Gondwana formed and includes components created when the Mozambique Ocean opened and from when it later closed. The belt is home to some truly beautiful rocks like this fuchsite–kyanite–schist from the Arusha Region of Tanzania.

The closure of the Mozambique Ocean took place between the Congo-Tanzania block in the West and the India–Madagascar block in the east. This closure began ~700–580 million years ago with final closure ~600–550 million years ago. Over this approximately 100 million years or so, sediments laid down in shallow marine settings along a former passive margin were metamorphosed into the spectacular rocks we see today, such as this one, at upper amphibolite facies.



Fuchsite–kyanite–schist from the Arusha Region of Tanzania.

CLUB ACTIVITIES

TALKS

Abandoned Mines Program — From mine sites to old workings

Talk by Tara Read (GSA, DMIRS) – 12 January 2022

Summarised in the newsletter by Angela Riganti

Tara Read, General Manager of the Abandoned Mines Program (AMP) run by the Department of Mines, Industry Regulations and Safety (DMIRS), introduced us to several aspects of the project, illustrating how sensitive abandoned mining sites are assessed — be they old, small workings such as Donnybrook, or large abandoned infrastructure such as the famed Ellendale mine.

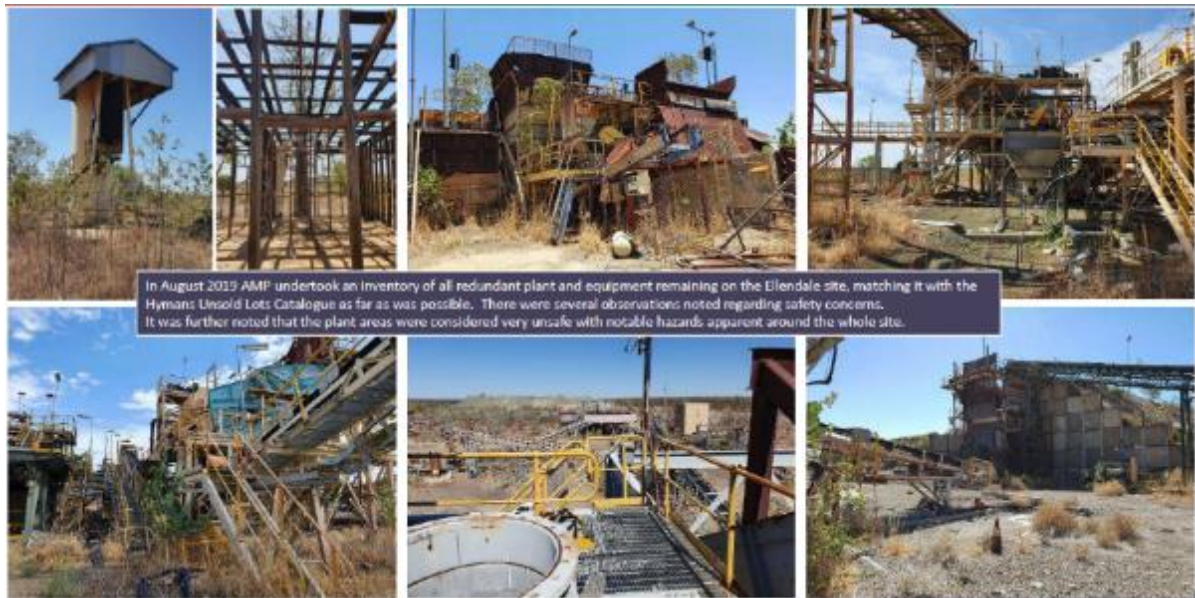
The project started in 2015 following the enactment of the [Mining Rehabilitation Fund Act 2012](#) (MRF Act). The MRF collects levies from mining companies to provide a source of funding to address abandoned mine features in WA. It was created to ensure that the community does not pay for the rehabilitation of mining operations that may become abandoned in the future (principal funds) and also to provide a source of funds (interest collected) to address legacy sites abandoned prior to the establishment of the MRF. It leverages off the work previously undertaken by the department's Geological Survey of Western Australia (GSA), which commenced development of an inventory of abandoned mine site features in 1999 and published the report [Inventory of Abandoned Mine Sites Progress 1999–2011](#). This Inventory can be viewed through the Mines and Mineral Deposits (MINEDEX) database by selecting the 'Abandoned Mine Features' menu or via GeoVIEW by selecting the 'Abandoned Mine Inventory' map layer. NB A 'feature' is one recorded item such as an open pit, a shaft or a TSF. Many features may be recorded at one mine site. MINEDEX holds the records for over 190,000 abandoned mine features.

Several sites are currently being worked on (see figure at end of report), and to illustrate the type of work carried out by the AMP, Tara singled out the Ellendale mine in the north of the State that was the source of the *Fancy Yellow* diamonds and the old gold workings at Donnybrook in the southwest.



The **Ellendale diamond mine** operated from 2002 to 2015 and is unique in the sense that for the first time a *Notice of Disclaimer of Onerous Property* in accordance with the *Corporations Act 2001 (Cth)* has been lodged over a Western Australian mining operation. This effectively terminated the company's rights and obligations to rehabilitation in respect of the disclaimed property on the mining tenements. The mine does however still hold diamond resources, so it is DMIRS objective to ensure the site remains viable for future responsible resource development. Specifically, the project is addressing 3 key points:

- **SAFETY** - Mitigate the risk of serious incident and/or harm to DMIRS employees / the general public / incoming new tenement holders by removing obsolete redundant infrastructure.
- **COMPLIANCE** - Meet AMP obligations through good stewardship of the Ellendale abandoned mine site and to minimise environmental and cultural risks ensuring alignment with AMP Policy and obligations.
- **DELIVER BENCHMARK PROJECTS** – Explore cost reduction opportunities by evaluating alternatives for demolition methodologies, disposal methods and re-use/re-sale/recycle opportunities.



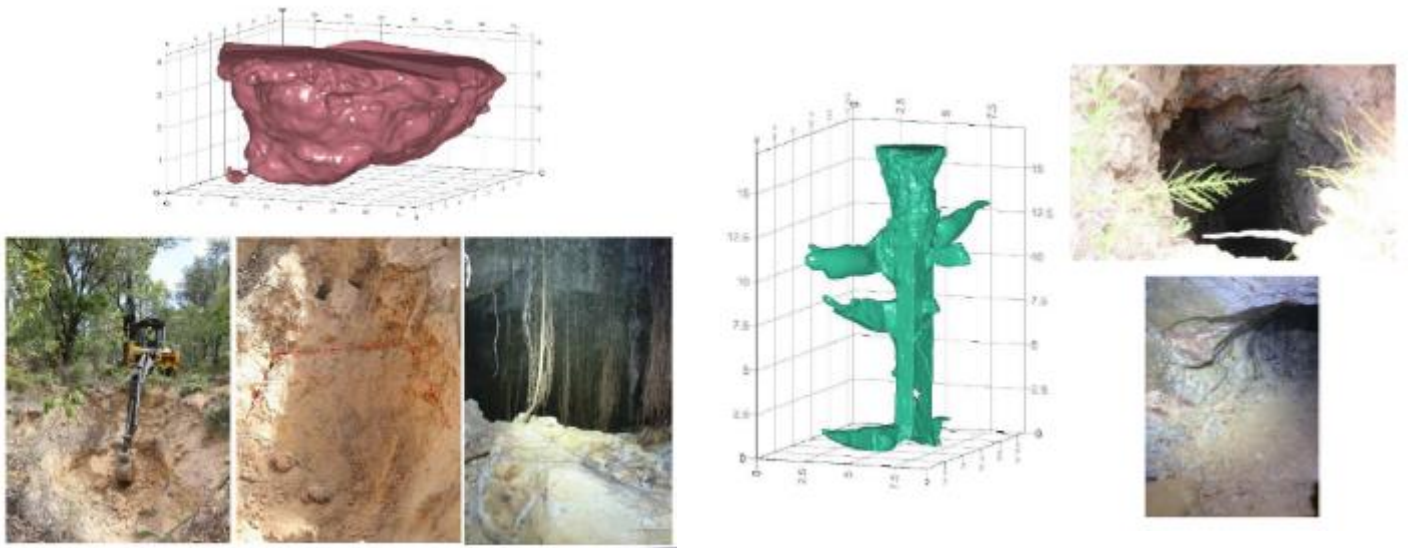
The objectives of the planned work are to:

- Remove/demolish redundant, not fit for use, mining and non-mining infrastructure (**Safety**);
- Optimise disposal options by evaluating alternative methods such as reuse, resale and recycle (**Deliver Benchmark Projects**);
- Ensure alignment with rehabilitation obligations and that infrastructure removal and disposal outcomes meets AMP, regulator and community expectations (**Compliance**); and
- Ensure no harmful elements are left behind that can have a long lasting effect on fauna and flora (**Compliance**).

In contrast to Ellendale, the **Donnybrook gold shafts** were worked for gold between 1897 and 1903. They are located in protected forest on lands managed by Department of Biodiversity, Conservation and Attractions (DBCA), and safety for forestry workers and bushwalkers is a prime concern for this site. The AMP completed a flora and dieback survey, a Heritage review, a geotechnical assessment and a Remediation Options study. Ten priority features (from the many in the area) were selected based on AMP's risk assessment and prioritisation process. Fieldwork



included inspection of features from ground surface, minor excavation and testing of the base of features, photos and video of features and possible horizontal workings, LiDAR scanning of the features and surrounds, monitoring for noxious or flammable gases, as well as later drilling from access track to intercept horizontal workings at three of the features, 76mm diameter hollow flight augers at depth between 5m and 10m. Some of the shafts were very shallow and with no horizontal workings (exploratory), but one reached a depth of 16 meters. Some voids were encountered, and areas of partial collapse.



Key outcomes of the geotechnical study were that the 10 features studied were overall stable, with low risk of collapse (when beneath tracks), and with no evidence of harmful gases or trapping of fauna. In order to prevent personnel or equipment falling into the features (especially in potentially dangerous situations such as during a fire with smoke limiting visibility), different remediation options were assessed, and a recommendation was put forward to

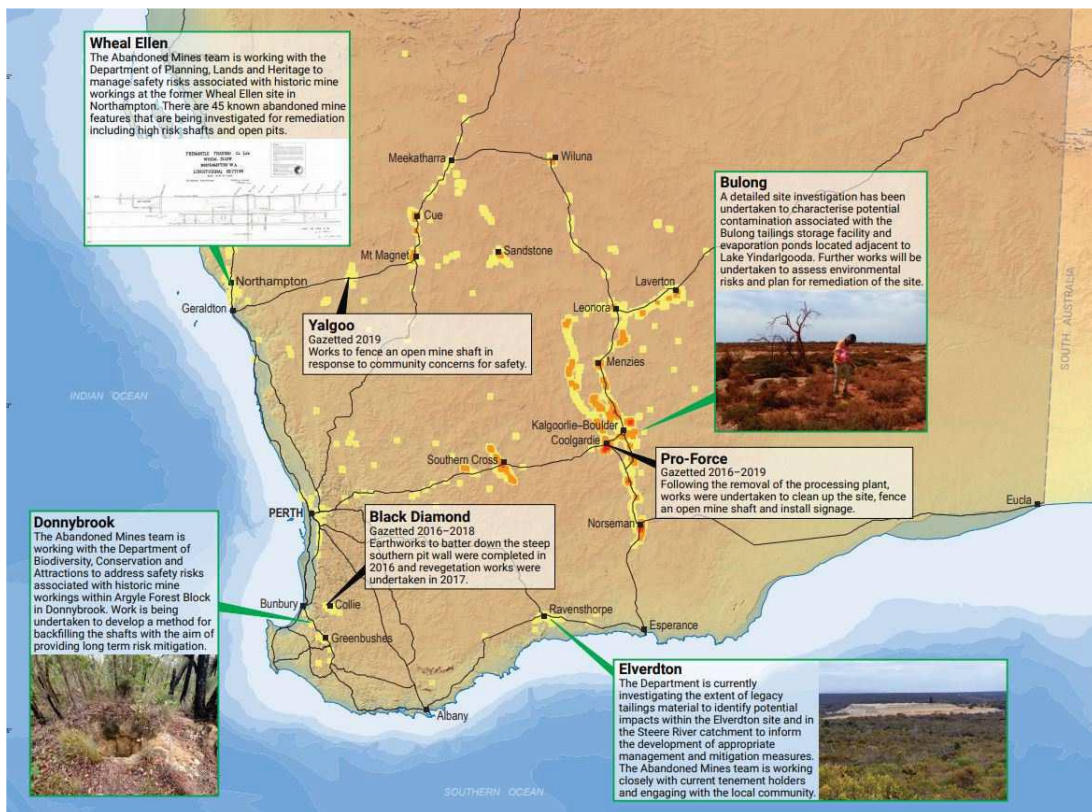
- Backfilling of features with granular soil (sand or gravel) and mounding of material above surface level
- Compaction of material at surface.

Important considerations and challenges for the AMP include striking the right balance between protecting resources but ensuring safety (Tara provided interesting evidence of rocks weathering and degrading into run-offs from the various stockpiles) and avoid environmental degradation (including these areas becoming a magnet for random dumping of rubbish). Also important is to take into consideration different land uses (including those outside of prospecting and mining), as well as consultation with the many stakeholders to understand expectations.

The talk certainly provided a different perspective on abandoned mine sites and the many aspects to be taken into account while assessing them!

More info on the AMP can be found on the DMIRS webpage. Anyone can contribute to the inventory of WA's by submitting a form to [report an abandoned mine site](#), should you come across any.

Abandoned Mines Program 2020–21



Orange fluorescent minerals from Mogok, Myanmar, from the scapolite-feldspathoid bearing marbles to hackmanite.

*Talk by Nicolas Hébert - 9 March 2022
Summarised in the newsletter by Niels Dahl*

On 9th March 2022, Nicolas Hébert introduced us to his samples of feldspathoids, rubies, scapolites and other minerals, e.g., hackmanite, from the calc-silicate rich area of Mogok, a city north of Mandalay in the centre of Myanmar at our Show & Tell before his presentation on a study of their fluorescence. They fluoresce yellow, red, orange and blue, but in his talk, Nicolas focused specifically on the orange-fluorescent minerals.

Nicolas concentrated on the silica under-saturated mineral groups and had two parts to his presentation. Part one was about the fluorescence on a chemical and atomic level, in part two he tried to explain the progenitor rocks hosting this phenomenon. Fluorescence, together with luminescence and tenebrescence (the darkening of a crystal upon absorption of radiation), follows the laws of quantum mechanics, so fluorescence is dependent on the crystal structure and on the energy of bonds between atoms.

In part one, he explained how combinations of S (S_2^- , S_2^{--}) anions substituting for Cl^- in cavities of the crystal lattices later enabled spare electron removal triggered by UV excitation or radioactive decay. An inverse relationship between fluorescence and tenebrescence was also discussed following this theoretical approach.

In his second part, Nicolas worked backwards from the chemistry of the minerals to equate them with the chemistry of the host rock with added metasomatic overprinting, for example Cl and S from evaporites, Al from clays and C from the carbonate members in the host suite. Several minerals were mentioned which the present writer had never heard of before, e.g., hackmanite and balliranoite.

Nicolas included so much in his presentation, that this writer thinks everyone in the audience absorbed some, but not all of his vast knowledge about the subject. The fluorescence of the presented minerals in Nicolas shown collection was wonderful to see.





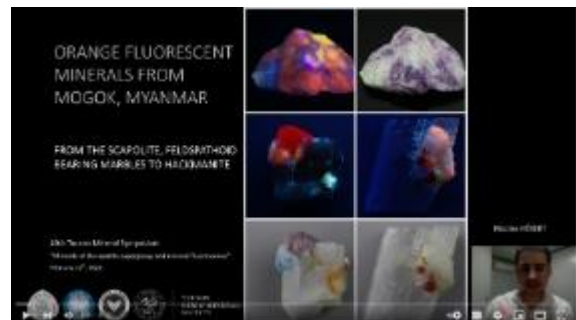
TOP - A suite of mineral on spathic calcite matrix from Dattaw, reflecting the diversity of phases and assemblages found on that part of the marble arc. The poorly expressed blue phases are the feldspathoids, that exhibit different hues of blues, sometimes white and even greenish tinge. Associated with phlogopite mica, and the ruby and pink sapphires. Scapolite is present too, mostly scattered in the matrix. In the top right corner is a specimen resembling diopside, and an isolated apatite in the upper middle.

MIDDLE - In longwave, apart from the corundum fluorescing red, there are different levels of orange fluorescence coming from the feldspathoids and scapolite.

BOTTOM - The shortwave UV reveals the yellow fluorescence of the phlogopite, with faint reaction from the feldspathoids.

And more from Nic!

Nic's version of the talk that was presented at the Tucson Mineral Show is available on YouTube at <https://youtu.be/kdpIorC-a58>



Also available on YouTube is the talk *A journey in the world of blue spinel*, that he presented at the 43rd Joint Mineralogical Society Seminar last October. View it at <https://youtu.be/-1dabFKJ9rc>

FIELD TRIPS and OTHER ACTIVITIES

Show & Tell – Wednesday, 9 March 2022

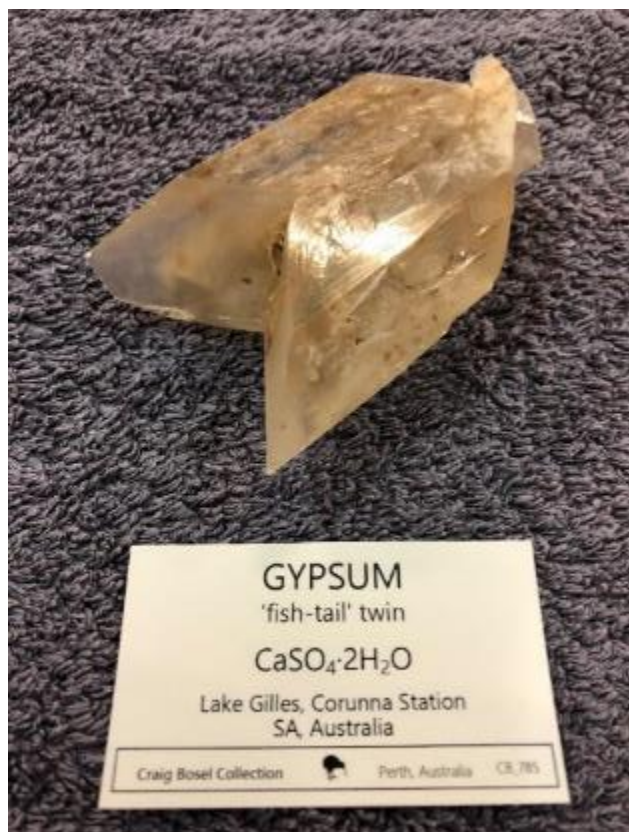
By Angela Riganti

COVID restrictions and a last-minute decision by the Lapidary Club to close meetings to the public for March and April did not dampen the enthusiasm of a few members for the opportunity to show off some of their specimens before the talk. Gypsum was a suggested theme, and several very attractive specimens were on display, both from WA and overseas. Although none approached the size visible in the magazine brought by Craig, some very fine examples of different types of twinning and crystals of very respectable size were shared by Craig and Susan.

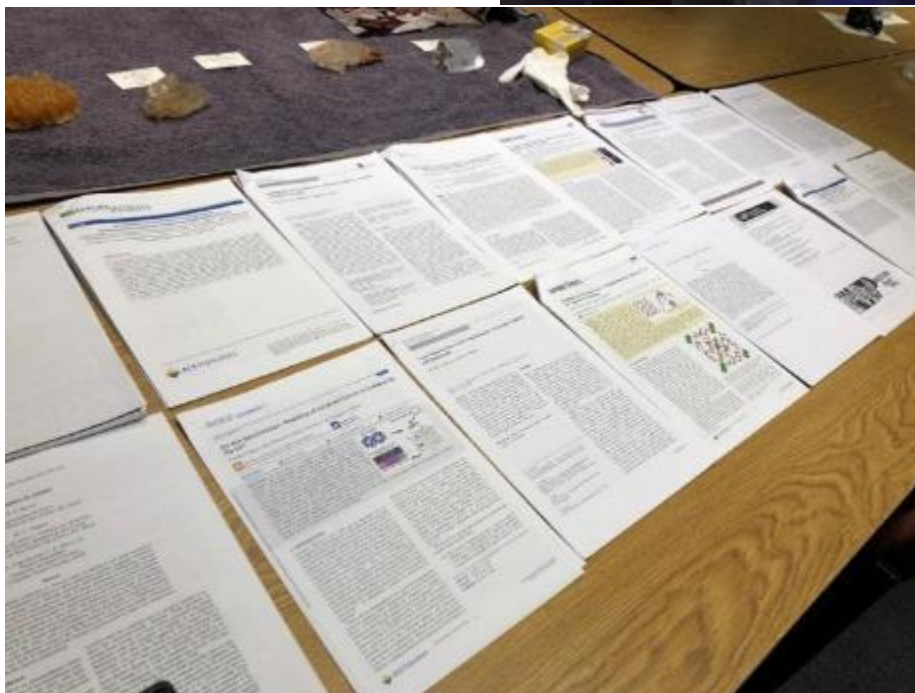
Nic had a sizable array of specimens of fluorescent hackmanite from the scapolite–feldspathoid-bearing marbles of Mogok (Myanmar) that he is investigating and were the subject of his talk for the evening (see report elsewhere in this Newsletter) – the UV lamp got a good workout!

The door prize, a calcite specimen with secondary coating from Bunnan (NSW) was won by Barbara Donati.





Nic's many specimens from Mogok (Myanmar)



Plenty reading and studying for the March talk!

Welcome to 2022 – Pizza at Craig's, 8 January 2022

Members of MinSocWA and partners gathered to welcome the new year with pizza and their drink of choice at the household of Vice-president Craig Bosel.

For those who had not had the opportunity before, in addition to the lovely socialising there was the opportunity to see Craig's collection and especially the sizable display of epidote specimens.



Photos Allan Hart



Desert Fire Designs workshop visit – Saturday, 26 February 2022

Summary provided by Karen Garn-Jones, photos by Angela Riganti and Allan Hart

What an inspiring and informative morning we spent in the light industrial area of Willetton. Two groups of members had the privilege of visiting the Desert Fire Designs studio, salesroom and workshop space.

To begin, downstairs we were able to view a wide variety of rock, gem, mineral and fossil specimens displayed and for sale, many of which came from classic WA and Australian localities (see some examples in photos below). It appeared most of us were very happy to add something special to our collections.

Upstairs we were treated to an informative tour of the various work-stations set up for creating their “limited edition, world-class gem pieces”. Murray Thompson described the machines, products and processes used to achieve their distinctive jewellery while we gazed longingly at the state-of-the-art cutting, polishing, smouldering and setting equipment. The jewellery on display upstairs was jaw-droppingly beautiful.

Back downstairs we were invited to a fine morning tea and had time to meet and chat with fellow enthusiasts.

Thank you to everyone involved in making this workshop tour a great success.





PERTH GEM AND MINERAL SHOW

Work for the organisation of the next PGMS is well underway!

We have the venue booked for 14-16th October 2022 and will be reaching out for sponsors and vendors in the coming weeks. If anyone would like to submit an early expression of interest, please contact Kylie at pgms@minsocwa.org.au

With the WA borders now finally open, we look forward to welcome interstate sponsors, vendors and collectors, so secure your spot early.

PGMS Organising Committee



[perth_gem_mineral_show](#)



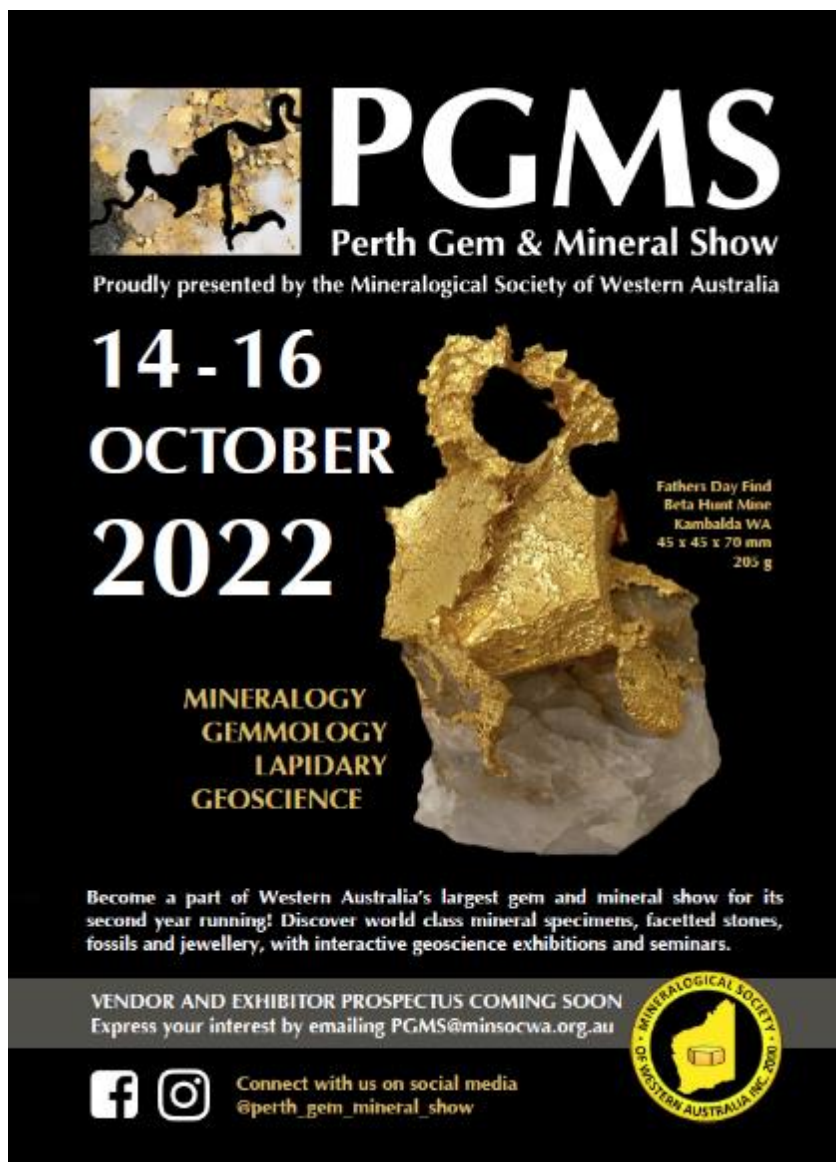
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PGMS
Perth Gem & Mineral Show
Proudly presented by the Mineralogical Society of Western Australia



**14-16
OCTOBER
2022**


**MINERALOGY
GEMMOLOGY
LAPIDARY
GEOSCIENCE**

Fathers Day Find
Beta Hunt Mine
Kambalda WA
45 x 45 x 70 mm
205 g

Become a part of Western Australia's largest gem and mineral show for its second year running! Discover world class mineral specimens, faceted stones, fossils and jewellery, with interactive geoscience exhibitions and seminars.

VENDOR AND EXHIBITOR PROSPECTUS COMING SOON
Express your interest by emailing PGMS@minsocwa.org.au


  Connect with us on social media
[@perth_gem_mineral_show](#)



FROM THE LIBRARY

And if you still want to read more about Mogok and the minerals found there, MinSocWA has just received the January-February 2022 issue of *The Mineralogical Record*, which is dedicated to this locality.

Contact John Mill at millrock@iinet.net.au if you would like to borrow it. TOC shown below.

		Mogok!	
		Title	Title Page number(s)
		History, Mines and Minerals of the Mogok Stone Tract, Mandalay Division, Burma T.P. Moore, M. Mauthner, W. E. Wilson	13- 140
		Featured Collection Pages	
		Scott Rudolph Collection	4
		Steve Smale Collection	142
		Paradise Woods Collection (Poster Insert)	
		What's New In Minerals	
		Denver Show 2021 T. P. Moore	149- 165
		Munich Show 2021 T. P. Moore	165- 177

John Mill

UPCOMING EVENTS

CANCELLED - Regrettably, the **MinSocWA Mineral market** scheduled for 10 April 2022 had to be cancelled due to the venue not being open for public events. It will be rescheduled asap.

44th Joint Seminar of the Mineralogical Societies of Australasia – New Zealand, October 2022



NEW MEMBERS, MEMBERSHIPS AND MEETINGS

The Mineralogical Society of WA would like to welcome the following new members:

- Alyssa Barber
- Frank Chmela

Due to an administrative oversight, Jon Standing and Mark Richards were not officially welcomed in the December Newsletter – we apologise for this.

All members are asked to ensure that all your contact details are up to date with the Secretary. If you change your email address or phone number, please let us know so that you continue to receive all MinSocWA communications. Membership forms can be downloaded from the MinSocWA web page here: www.minsocwa.org.au/membership.

Meetings

Meetings of the Mineralogical Society of Western Australia Incorporated are usually held at **7.30pm on the second Wednesday of every odd month** at the WA Lapidary & Rock hunting Club rooms at 31 Gladstone Road, Rivervale (corner of Newey Street). The venue will be open from 6.30pm for Show&Tell, refreshments and socialising.

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

A new format and time for MinSocWA talk meetings

We'd like to encourage more members to share their specimens and their knowledge. To that effect, from March we will start our evening meetings earlier to allow some Show&Tell and some swapping (strictly no sales). So, the following timetable will apply:

- 6.30 door opening – now free entry to both members and visitors
- 6.30 – 7.20 – Show, swap and tell session
- 7.20 – 7.30 – preparation for the talk to start at 7.30.
- 7.30 start of talk (usual time).

Please help us make this a successful (even if short) activity by abiding to the timetable and consider taking some specimens along to share!

COMMITTEE MEMBERS FOR 2021/2022

President	Peter Willems	president@minsocwa.org.au
Vice President	Craig Bosel	
Secretary	Angela Riganti	secretary@minsocwa.org.au
Treasurer	John Mill	treasurer@minsocwa.org.au
Field Trip Leader	Vacant	fieldtrips@minsocwa.org.au
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Committee Member	James Sherborne	jamessherborne@hotmail.com

Patron - Mark Creasy

MinSocWA LINKS

Web: <http://www.minsocwa.org.au>
Facebook Group: <https://www.facebook.com/groups/minsocwa>
Facebook Page: <https://www.facebook.com/MINSOCWA>
Instagram: <https://www.instagram.com/MINSOCWA>
YouTube Channel: <https://www.youtube.com/channel/UC0S2TFVFIBLU-2zIEzE5VNA>

ADVERTISING

The Australian Journal of Mineralogy

www.ajmin.org.au

The Australian Journal of Mineralogy now has its own website. It lists all the issues of the journal, and visitors can use the site to pay for subscriptions or purchase past issues. There is a free index, and a PDF of the now out-of-print V1.1, also free of charge. It has photo galleries, a mineral events calendar, handy links, and more.



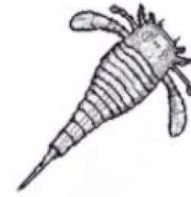
Cover and contents of Volume 22, Number 2, 2021

GEMBOREE 2022



GEMBOREE 2022

incorporating the
**58TH NATIONAL GEM &
MINERAL SHOW**



*at Mudgee's Australian Rural Education Centre, 267 Ulan Road,
Bombira, NSW*

JEWELLERY, GEMS, CRYSTALS & MINERALS



Friday, Saturday, Sunday & Monday

15th – 18th April, 2022 (over the Easter Long Weekend)

Open 10am – 5pm Friday, 9am – 5pm Saturday & Sunday, 9am – 1pm Monday

Adults \$10, Concession & Students \$5 (must have cards) Child U/16 free, Child over 16 \$10.

Free Parking available - ATM's on Site

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Fossicking Trips, Excursions for non-lapidary partners. Great Food Outlets. Age of Fishes Display. 100's of Lapidary Displays, Crystals Minerals, Gemstones, Fossils and Jewellery.

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Contact : Co-Ordinator - Tony Offord M 0404269953 Email: tonyofford@optushome.com.au

Facebook Contact: <https://www.facebook.com/GemLapidaryCouncilNSW/>

Publicity Manager – Alan McRae ph 02 6331 5404: amcrae@lisp.com.au