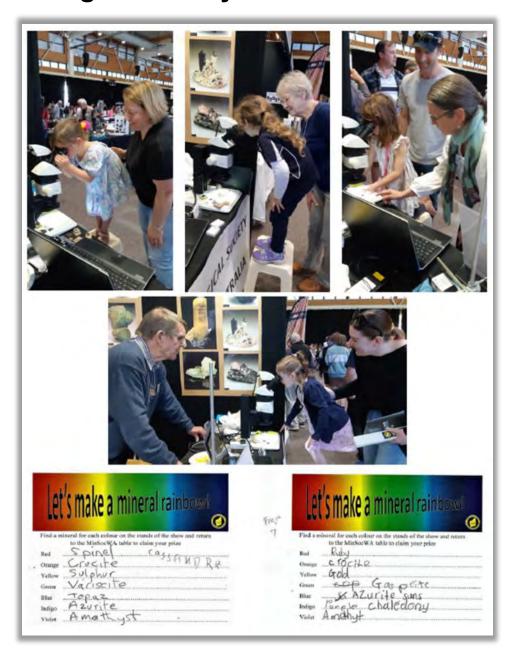


Mineralogical Society of Western Australia Inc.



NEWSLETTER Quarter 4, 2022

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Over page: The future of mineralogy: kids being introduced to the wonderful world of minerals at the MinSocWA table during the 2022 PGMS.



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

Welcome to the Q4 2022 newsletter, the last for this year, but we are already getting ready for plenty of activities for 2023.

We are kicking off in January with a Show & Tell on finds from the Karratha field trip (see report by Craig Bosel in this Newsletter) and an important discussion about minerals of particular significance to Western Australia — more about this to follow shortly, but this is a discussion of State significance, so you don't want to miss your chance to have your say.

NOTE THE CHANGE OF DATE for the JANUARY EVENT – now Tuesday 17th January. This is due to late maintenance at the Lapidary Club, and we apologise for any inconvenience.

To all those members and volunteers who contributed in 2022 in any way, big and small, to make our MinSoc a vibrant society, a heartfelt thank you from the Committee. Our special thanks also to all the sponsors who contributed to making our second PGMS an even bigger success — seeing the many happy faces of kids learning about minerals is a big reward that justifies the many months of planning and the hard work that goes on behind the scenes. Congratulations to the PGMS committee, and you'll be glad to know that plans are already afoot for the 2023 event.

We are still looking for a Newsletter Editor to coordinate the assembly of this Newsletter, so don't be shy to put your hand up. Many hands make light work!

Angela

Acting Newsletter Editor

SOCIETY ACTIVITIES

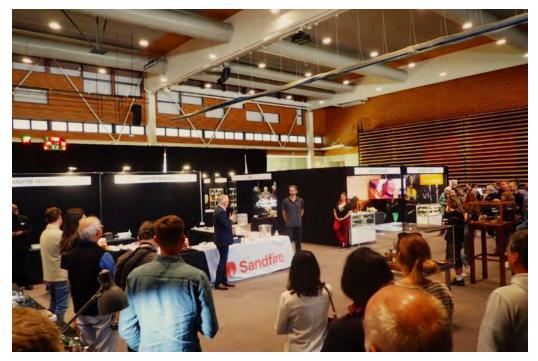
PGMS PICTORIAL

Some highlights from our gold-themed PGMS 2022 – we'll let the photos speak for themselves!

- Over 6000 people through the door
- 250 tables
- 25 businesses and science communicators
- 10 amazing seminars
- \$18 050 raised in our Charity Rocks auction for Street Science WA, Deadly Science, Kanyana Wildlife Rehabilitation Centre and MinSoc WA.

Thank you to all sponsors and volunteers that made this great event possible!

PGMS Organising Committee



The official opening





The 2022 PGMS organising committee. From left to right: Norton Kalleske, Mitch Elphick, Peter Willems, Casey Elphick, Nic Hebert, Kylie Matonia









Antique mineral books and collections on display







Perth Gem & Mineral Show

Proudly presented by the Mineralogical Society of Western Australia



4 - 16 **OCTOBER** 2022

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

Thank you to all our sponsors!



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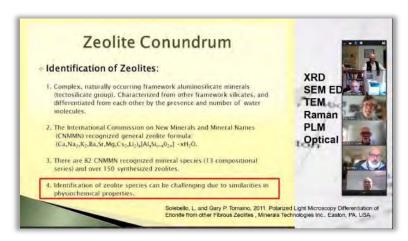


44th Joint Seminar of the Mineralogical Societies of Australasia

Summarized by Susan Stocklmayer

The 44th Annual Seminar of the Mineralogical Societies of Australasia, hosted by the New Zealand Micromineral Group, was held as two Zoom virtual conference sessions on Saturday 29th and Sunday 30th October 2022.

The seminar topic was *Zeolites* and the convenor, Rod Martin, gave a welcome and introduction on the subject as well as presenting three (erionite in New Zeland, vanadium minerals from Aranga quarry and the Oamaru mineral breccias) of the seven talks.

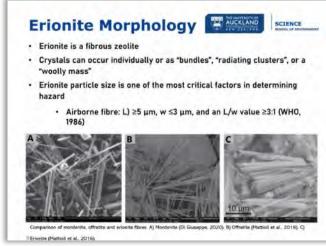


The introduction outlined the challenging work of the identification of zeolite group minerals as complex, naturally occurring aluminosilicate minerals differing from each other by the presence and number of water molecules, their small size range and similarities in the physiochemical properties of members. The International Mineral Association (IMA) recognizes 82 zeolite mineral species.

Erionite from New Zealand was discussed by Rod. His presentation served as introduction to a talk by Janki Patel, a student at the University of Auckland, who summarized a research project on the occurrence and health aspects of this mineral. Although the chemistry of zeolites (hydrous

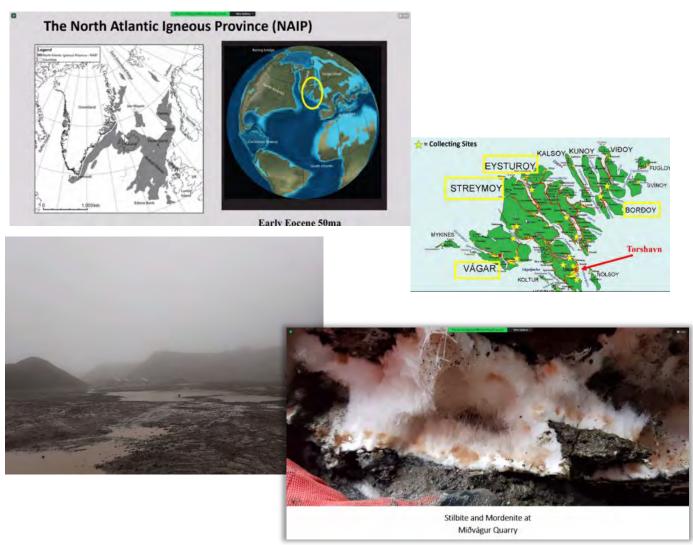
alkali minerals) is not the issue, it is the morphology of the crystals as microscopic fibrous bundles, radiating clusters and "woolly masses", particle size and L:W ratios of fibres that are critical factors linking erionite to malignant mesothelioma. This was first identified in Cappadocia, Turkey in the 1970s. Janki's research is specific to the Auckland area, with investigations of the Waitemata Group sedimentary rocks (early Miocene) at Riverhead and the Waitakere Group





volcanic rocks at Te Henga Quarry (mid-Miocene). Erionite was identified using SEM, TEM, XRDP and FT-IR Spectroscopy. Erionite in New Zealand occurs in basalts and volcanoclastic rocks and, left undisturbed, it poses little risk to humans although erosive processes may disturb fibres.

Luis Martins presented a talk on minerals of the Faroe Islands where several zeolites occur, including thomsonite, apophyllite, heulandite, stilbite, mordenite, and gave us a travelogue on the scenery, and climate challenges of these remote islands of the north Atlantic.





Linarite #7354 - Roughton Gill Mine, Cumberland Richard Bell Specimen and Photograph

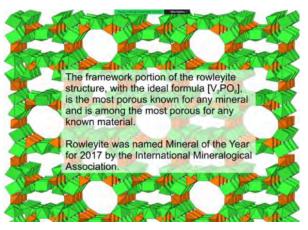
Martin Stolworthy conducted us on the mines and minerals of the Caldbeck Fells in the Lake District National Park (Cumbria), where 52 named mines were operating and from where 224 valid minerals occur, including one type locality for redgillite (hydrous copper sulphate) – named for the Red Gill mine. Tony Kampf presented his talk *The journey from an Unknown to a New Mineral* with rowleyite from Rowley Mine, Arizona USA, as his feature example. He was senior author of a 2017 paper in the *American Mineralogist* (v. 102, no. 5) introducing rowleyite, and it was named *Mineral of the year* by the IMA in 2017. Rowley Mine has a post-mining assemblage of phosphates,



vanadates, oxalates and organic molecules formed from bat guano interaction with mine walls and floor. In Redmond Mine, North Carolina a secondary assemblage of lead—zinc sulfates and thiosulphates has developed new mineral assemblages, Tony described the occurrence of fourteen new minerals that are under study. Methods used in identifications vary from identification on sight, properties and chemical tests, powder X-ray diffraction, energy dispersive analysis, Raman spectroscopy and structural determination. Examples of some of these results were shown, using gunterite (XRD), magnesiopascoite (EDS), huemulite, pascoite, schindlerite and lasalite (Raman). The

final segment of the talk guided us through the detailed and challenging processes of how a proposal for a new mineral would be presented to the IMA.







"Geology is a capital science to begin with as it requires nothing but a little reading, thinking and hammering." Charles Darwin, 1835. ... and a lot of high tech after the hammering!

NOVEMBER TALK - New Zealand - The place where greenstone grows

by Francine Payette – 9 November 2022

Summarized in the newsletter by the speaker (edited by Angela Riganti)

New Zealand is a country of rugged mountains, active volcanoes, frequent earthquakes and ... the place where greenstone grows! In her talk, Francine took us on a captivating trip through the geological formation of New Zealand, where the greenstone is found and how it formed, the different types, and the traditional shapes of greenstone jewelry.

New Zealand Formation

Our planet is estimated to have formed about 4500 million years (Ma) ago. All of earth's major continents contain extensive regions of bedrock that formed during the planet's earliest history. New Zealand, however, has no rocks from this early period. Its bedrock started to form at the beginning of the Cambrian (about 540 Ma ago).

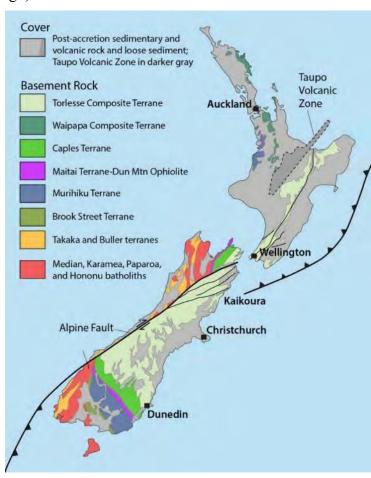
The main part of the New Zealand landmass formed on the margins of Gondwana during several cycles of deposition (three main periods) and mountain building (three periods of orogeny).

1. Early sedimentation phase -Cambrian to Devonian (540 to 360 Ma)

The earliest New Zealand rocks formed from the deposition of sediments on the sea floor just off the coast of Gondwana. One of the most widespread rocks from this period, found throughout the western side of the South Island, is a greenishgrey greywacke called the *Greenland Group*.

2. Tuhua orogeny - Late Devonian to Carboniferous (370 to 330 Ma)

A period of pressure and uplift. Sea floor sediments were pushed up, folded and melted together to form mountains; with metamorphism (formation of schist, gneiss) and melting (granite, diorite). Some sections of ocean floor caught in the collision were also metamorphosed, forming rocks that include 'pounamu' (New Zealand jade or greenstone).



Geological Map of New Zealand. Copyright: Marli Miller photo, geologictimepics.com

3. Second sedimentation - Carboniferous to Jurassic (330 to 145 Ma)

During about 200 million years, enormous thickness of sediments accumulated: some close to the shore (*Murihiku Terrane*, fossils rich), some in deep water (*Torlesse greywacke*).

4. Rangitata orogeny - Early Cretaceous (145 to 99 Ma)

The previously deposited sediments were compressed and folded. Then movements of the sea floor carried them towards the land (enlarging the land area of Gondwana); some seafloor was caught in the folding (*Dun Mountain* ophiolites).

5. Sedimentation, then the break-up - Cretaceous to Oligocene (99 to 25 Ma)

First, a long period of weathering and erosion. Then, about 85 Ma ago, a rift developed in Gondwana's crust (due to changes in patterns of mantle convection below the crust). Hot, molten rock welled up beneath Gondwana and moved outward, pulling the land apart.

This also resulted in the separation of the New Zealand region from the rest of Gondwana, and the formation of a new ocean floor by means of sea floor spreading (the Tasman Sea).

'Zealandia' was formed: a long, narrow microcontinent in the South Pacific Ocean, half the size of Australia, only 7% of it is above sea level.

6. Kaikoura orogeny - Miocene to Quaternary (25 Ma to present day)

New Zealand now lies on the boundary between two plates being pushed towards each other, but with different results in different parts.

To the east of the North Island and south of the South Island are two subduction zones, but no subduction is present in the intervening area. Here, the two tectonic plates meet along the major Alpine Fault, where two parts of the South Island are sliding past each other — the west side is moving northeast at about 1 to 10 cm per year, resulting in about 450 km of displacement along the fault.

New Zealand's "greenstone" Pounamu Formation



Pounamu deposits, South Island Source: Russell J. Beck with Maika Mason, Mana pounamu: New Zealand jade. Auckland: Reed, 2002, p. 26. From Basil Keane, 'Pounamu – jade or greenstone - Pounamu – several names', Te Ara - the Encyclopedia of New

Zealand, http://www.TeAra.govt.nz/en/map/7649/new-zealands-pounamudeposits (accessed 29 December 2022) The two main types of pounamu from New Zealand are *nephrite* and *bowenite*.

These formed probably at depths in excess of 10 kilometres, where hot fluids caused a chemical reaction in zones where ophiolites (fragments of oceanic crust) and sedimentary rocks were in contact.

The formation of these materials involved intense shearing, some mechanical breakdown, chemical reconstitution and growth of fresh crystals. This produced narrow deposits of nephrite usually surrounded by altered material (serpentine).

Deposits

Pounamu is found only in the South Island.

The action of rivers and glaciers released the stone from its host rock into screes, river gravel and glacial deposits, and carried it down to the sea.

The main deposit is located in a World Heritage area, 450 km from the mountainous north to the fiord-cut south, a stronghold of ancient flora and fauna.

Recovery

In accessible areas, exposed pounamu has been quickly collected. Boulders were often uncovered during alluvial gold mining and dredging.

Today, people sometimes use a helicopter to lift boulders from riverbeds.

The South Island deposits are legally protected, and taking material without Ngai Tahu permission has led to prosecutions.

Properties

Specimen	Nephrite	Jadeite	Bowenite
Composition	Ca ₂ (Mg,Fe) ₅ (OH) ₂ Si ₈ O ₂₂	NaAlSi ₂ O ₆	Mg ₃ (OH)O ₄ Si ₂ O ₅
	Amphibole	Pyroxene	Serpentinite (antigorite)
Crystal system	Monoclinic	Monoclinic	Monoclinic
Hardness	6 – 6.5	6.5 – 7	2.5 – 4
Internal structure	Intergrown fibrous aggregate	Interlocking granular	Compact
Tenacity	Toughest of gem minerals	Slightly less than nephrite	Sectile
Fracture	Splintery – fibrous	Splintery – granular	Conchoidal
Lustre	Vitreous to greasy	Vitreous to greasy	Greasy, waxy
Transparency	Opaque to translucent	Opaque to translucent	Translucent to transparent
RI	1.606 – 1.641	1.654 – 1.667	1.56 – 1.571
SG	2.9 – 3.02	3.3 – 3.4	2.4 – 2.79

Nephrite versus jadeite

Nephrite and jadeite are not as hard as some other minerals. But their interlocking crystals (or fibrous structures) make them very tough, so they do not break easily. Nephrite's felted structure makes it the toughest known natural mineral. Jadeite is not as tough because it is less fibrous.

Pounamu varieties

Māori recognized four main types of pounamu based on colour and transparency. Other names based on tribal variations.

- *Kawakawa* many shades, the most common.
- *Kahurangi* vivid green and highly translucent.
- *īnanga* pearly-white or grey-green, translucent to opaque.
- *Tangiwai* translucent like glass, but in a wide range of shades.

The first three are nephrite, while tangiwai is bowenite.

Different amounts of iron are responsible for the varying green colours.



Lapidary industry



Māori used *sandstone* to shape the pounamu to make weapons and tools for carving and cutting wood. Modern workshops use fast-cutting diamond tools. Boulders are sawn into slices with diamond slab saws, then cut down on a trim saw to the rough shape of the object.

The objects are fashioned, using either an abrasive wheel or a hand-held diamond cutting tool, and then polished.

Spiritual significance

Treasured, valuable and with

spiritual significance, pounamu has been used by Māori to denote status and authority, for adornment, and for making peace.

Pounamu weapons were used for fighting, but they were also carried by chiefs to show their high status.

There are *six* extremely popular symbols used time and time again in pounamu carving. They are the koru (spiral), the twist, the manaia, the tiki, the fish hook (hei matu) and the toki blade.

KARRATHA FIELD-TRIP REPORT — 26–27 November 2022

Summarized for the newsletter by Craig Bosel

The suggestion for the recent MinSocWA fieldtrip to Whim Creek in the Pilbara region of Western Australia came a couple of years ago from now-deceased member Des Lascelles. He had collected some terrific specimens from the abandoned underground mine back in the early '80s with his good friend Manfred. COVID ruined initial plans for a field trip there. Earlier this year Anax Metals (the new owners of the leases) were approached for permission to visit. They kindly consented, however sadly Des was not able see the fruition of his good idea.

The weekend of 26–27 November 2022 was most convenient for everyone concerned. Owing to the large distance from Perth it was decided not to hire a large bus from Perth but rather give members the flexibility to make their own way to Karratha. Some flew in whilst others drove up and made a larger holiday of it. Twelve members registered for the trip and eleven made it to Karratha. We hired a 12-seater Avis mine-spec minibus in Karratha (yours truly was the driver) and for convenience most of us booked accommodation in the same Latitude 20 motel (which was reasonably priced and very comfortable, albeit noisy in those rooms closer to the nearby popular 'The Tav' bar and restaurant, where we ate the first night).

Saturday saw us departing the motel around 6:30am to get to the Whim Creek mine site around 8am to meet up with Project Generation Manager, Wendy Beets (our gracious Anax hostess) along with Morella and Billy Jo. We were given a brief rundown of the operation



currently in care and maintenance while a feasibility study is ongoing into mining the sulfide remnant of the orebodies. Then for the rest of the day we were escorted to multiple locations on the lease, notably the Whim Creek and the Mons Cupri oxide pits and their nearby waste dumps, where we could take photos and fossick for specimens with great freedom. The old shallow underground workings (which produced all the world-class wulfenite specimens decades earlier) had been mined away in an opencut between 2005 and 2009. Members found small chunks of malachite at several spots, and occasional azurite, chalcopyrite and chrysocolla. One time after we'd piled into the bus to move off, Pete said 'Hold up guys, Kyle has found a really good spot



Down inside Straits' 'Mons Cupri' main pit

further up the hill'. We piled out and flocked like seagulls to a piece of bread, and some VERY nice specimens were found there, notably by Kyle and Nic. Classic Whim Creek 'malachite pseudomorphs after azurite' (see pic). However, no wulfenite was found despite everyone's best efforts. Wendy had kindly organized packed lunches for us, which we ate back at the office with the air-con running full bore after a satisfying time fossicking in the gruelling Pilbara heat and humidity. Their ice machine was a very welcome life saver!

That night we all went out to a local restaurant 'The Pearlers Rest' which happily could fit us all in at short notice and cooked a good meal. Rob and Nic had collected the greatest pile of goodies during the day. Rob had wisely paid ahead for excess baggage on the flight home!





Fieldtrip participants with Wendy at Whim Creek, Saturday 26/11/22.

Left to right: Rob Walker, Nic Hébert, Craig Bosel, Angela Riganti, Wendy Beets, Kyle Archer (back), John Mill (back), Peter Willems, Mike Belperio, Emma Tulsky, Allan Hart. Not in photo: Philippa Jahn.

Another early start on the Sunday morning saw us driving the minibus to Roebourne but in depleted numbers. Due to other commitments, we no longer had John, Mike, Emma, Kyle and Philippa in the party, leaving Pete, Angela, Alan, Nic, Rob, Wendy and myself to visit Azure



Konrad and Eleanore from Azure Minerals explaining Andover Project geology

Minerals' Andover Project leases. Our gracious hosts this time were geologists Konrad Behnke and Eleanore Dowling, who had gone the extra mile for us by collecting rock samples containing green beryl from a difficult-to-access pegmatite for us to keep. At their well-appointed core shed in town they ran us through inductions, the geology and the reported discoveries to date at the Andover Project. They then escorted us to several locations within the rugged Andover mafic—

ultramafic intrusive complex forming the hills close to town, in particular the discovery gossan of the Andover nickelcopper-cobalt deposit. A bit of malachite staining was seen but not much else mineralogically; however it was fascinating to see examples of the rare 'taxitic*' textures in the prospective mafic intrusive rocks.



*taxite | American Geosciences Institute = An obsolete term for a

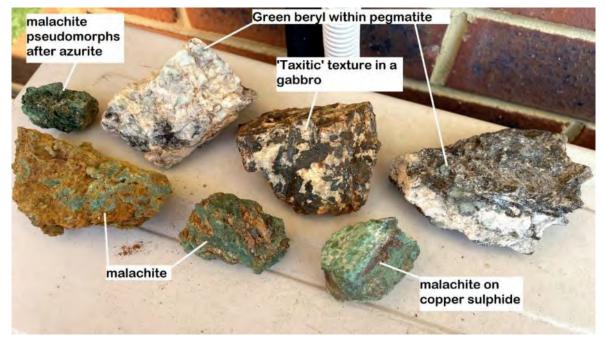
Field trip participants at the Andover discovery gossan, Sunday 27/11/22

volcanic rock that appears to be clastic because of its mixture of materials of varying texture and structure from the same flow. See also: ataxite [volc]; eutaxite.[[Editor's note: the term 'taxitic' has also been used in the geoscience literature to refer to pegmatoidal gabbros, i.e. gabbros with coarse-grained texture]

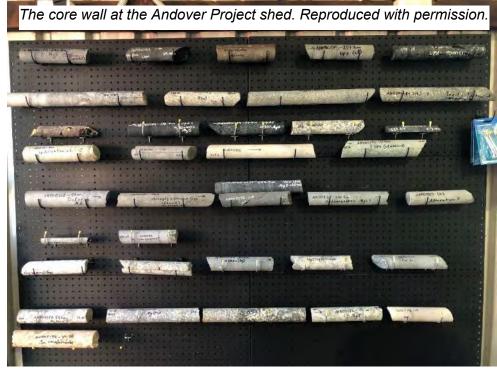
Part of the access route had the minibus driving along a huge Rio Tinto ore train heading out to the Port Sampson loading station at the coast. The Rio driving induction mentioned that each train can be carrying up to 31 000 t of ore and be over 2.4 km long.



Konrad and Pete in the Andover mafic-ultramafic intrusive complex



Some of the finds from the field trip



We had to get the minibus back to the Karratha airport by 4:30pm so we left with plenty of time to drive to the coast and enjoy a late picnic lunch at Honeymoon Cove with the sea breeze blowing. The day was another hot one, so Pete, Nic and Konrad went for a quick dip with the other holidaymakers there. We then all enjoyed refreshments at the

Point Samson hotel before saying thanks and goodbye to our hosts and driving back to Karratha where most of us took the evening flight home to Perth.

All told a great field trip. Great scenery, great conversations and company. And I'm pretty sure everyone got as many 'souvenirs' of their Karratha fieldtrip as they were happy to cart home, excess baggage and all! Many thanks to Peter Willems (MinSocWA President) et al for organising the whole affair and to both Anax Metals and Azure Minerals for their time and generosity in allowing the visit.



Relaxing at the Point Samson pub before returning home

FROM THE LIBRARY - recent arrivals

Missing Library Item

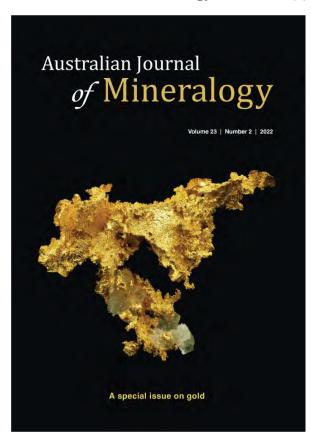
A recent audit of the MinSocWA library has revealed that the following item is missing:

Rocks and Minerals Vol. 96, No. 1. January/February 2021.

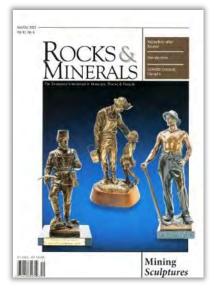
This item was donated to MinSocWA by Ken Ireland. If any member has this journal, or knows where it is, please let me know.

John Mill, Librarian

Australian Journal of Mineralogy, volume 23(2) – A special issue on gold







Rocks and Minerals Vol. 97, No. 6 Nov/Dec 2022

The MinSocWA has just received the latest hard copy of Rocks and Minerals Vol. 97, No. 6, Nov/Dec 2022.

The feature article by Terry Huizing and Günther Neumeier is on mining sculptures both in bronze and porcelain. It describes manufacturing techniques used from the early eighteenth century to the mid-late twentieth century.

This edition also features articles on glendonites, malachite pseudomorphs after azurite and an article on DeWitts Corners, Canada, where unusual spinel specimens and other minerals have been recovered.

Glendonites* – Enigmatic Mineral Pseudomorphs and their Ephemeral Precursors by George L. Kennedy. The name glendonite comes from the area of Glendon in the Hunter Valley of New South Wales where they were first described by JD Dana in 1839. Glendonites are usually calcite pseudomorphs after ikaite, a hexahydrate of calcite (CaCO₃.6H₂O). They usually feature radiating crystals of coarse-grained calcite but in some cases can be long, thin, single crystals called 'thinolites'. At White Cliffs, New South Wales, some stellate glendonite clusters have themselves been replaced by precious opal and are referred to as 'fossil pineapples'. There are many examples of glendonites from such widespread places as Alaska, Nevada and Western Russia. *See also article in AJM v. 21 no. 2 about Australian glendonites – the journal is available from the MinSoc library.

A pictorial article by Erin Delventhal follows the main article and shows glendonite examples from Maydena, Tasmania, and the sub-species 'thinolite' from Washoe County, Nevada.

The other main mineralogical article is titled *Malachite Pseudomprphs after Azurite part 2*, *Milpillas, Mexico And Other worldwide Localities*, by Peter KM Megaw, Bruce Cairncross, Malcolm Southwood (Wollongong University) and Evan A Jones. This well illustrated article focuses on specimens from the Milpillas Mine in Mexico and also some excellent specimens from other mines in the Mexico–Arizona area, as well as some interesting specimens from Namibia, Touissit, Morocco, and Sepon, Laos. Australian specimens illustrated include three images from the Sir Dominick Mine, Arkaroola, South Australia and although Broken Hill, Burra and Whim Creek are also mentioned, sadly no images of specimens from these mines appear.

DIGITAL ACCESS to The Mineralogical Record

Details of MinSocWA digital subscriptions to *The Mineralogical Record* (strictly limited to members only) were circulated with the December Bulletin. Below is an extract from their December 2022 Newsletter.



Another instalment of Tom Moore's popular online column about mineral news from the Internet has been posted. He scours the Internet and compiles notes on new mineral offerings in one place for your efficient reading - specimen photos included. Read it by clicking the link below:

Tom's Online Report #65

Read all previous What's New online columns by clicking below: https://mineralogicalrecord.com/whats-new

NEED A SPECIAL BOOK?

J.Lynn from Crystal Universe will be heading to the Tucson Gem Show in January and will be able to acquire a range of Academic and Technical Mineral books. Any requests can be sent directly to j.lynn@crystaluniverse.com.au

UPCOMING EVENTS & TALKS

Tuesday, 17 January 2023 NOTE CHANGE OF DATE

6.30 – 7.30 pm Show & Tell

7.30 – a panel discussion on the most representative WA minerals

Wednesday, 8 March 2023 – Journey to the centre of the gem. Dual talk by Tim Ivanic (GSWA) on the geology of diamonds and by John Chapman (Gemetrix PTY Ltd) on causes of colours in diamonds and synthetic diamonds.

SAVE THE DATE - November 2023 – 45th Annual Seminar of the Mineralogical Societies of Australasia – Tasmania (see preliminary program below). Talks welcome!

NEW MEMBERS, MEMBERSHIP AND MEETINGS

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

Alfie Gryg Amy Smith George Petersons Jacquelin Young Kyle Archer Hanin Shaharuddin Mark Greenwood Nathan Siddle Trevor Neal Robert Walker Zachary Elliot

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 www.minsocwa.org.au/membership.

Please also note that receipts for membership subscriptions for the 2020–21 and the 2021–22 financial years are available at the door at each meeting. A few early 2022–23 receipts are also available.

Meetings - Meetings of the Mineralogical Society of Western Australia Incorporated are usually held from **6.30pm 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). A Show & Tell, refreshment and socializing are followed by a talk starting around 7.30 pm.

The Society's microscopes, UV lamp and refractometer are available for use by members.

COMMITTEE MEMBERS FOR 2022/2023

President	Peter Willems	president@minsocwa.org.au	
Vice President	Susan Stocklmayer	baobab46@dodo.com.au	
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Committee Member	James Sherborne		
Committee Member	Nicolas Hébert		
Committee Member	Frank Doedens	frankdoedens@yahoo.com.au	

Patron - Mark Creasy

MinSoc WA LINKS

Web: http://www.minsocwa.org.au

Facebook Group:https://www.facebook.com/groups/minsocwaFacebook Page:https://www.facebook.com/MINSOCWAInstagram:https://www.instagram.com/MINSOCWA

YouTube Channel: https://www.youtube.com/channel/UC0S2TFVFIBLU-2zlEzE5VNA