

### Mineralogical Society of Western Australia Inc.



# NEWSLETTER July 2021

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Cover page: GREEN 'N GOLD – Photographs from Murray Thompson's upcoming talk on Western Australian Chrysoprase and coarse nugget gold from Kambalda.



#### 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

Firstly, I would like to thank Lesley Daniels for her amazing contribution on the Mineralogical Society of Western Australia's newsletter since taking over from Vernon Stocklmayer.

Can you believe that we are halfway through the year already?

With the change in Newsletters editors from Lesley to myself we see a change in the number of Newsletters hitting your inbox. The first change is that the committee is trialling a quarterly newsletter, reducing the newsletters down to only four a year – but don't worry, we will make sure that they are jammed filled and as action-packed as ever!

The other change that we are implementing is a monthly activities bulletin, this will be your one stop guide to events, happenings and more.

Should you have any questions, comments, or concerns – please get in touch.

Happy collecting

Rodney

#### NEWS

Botswanan Diamond Discovery – Could be the worlds 3<sup>rd</sup> largest stone – from BBC News



A diamond believed to be the third largest ever found has been put on display in Botswana.

The stone - weighing 1,098 carats - was shown to President Mokgweetsi Masisi, two weeks after the diamond firm, Debswana, unearthed it.

The huge gem is only slightly less heavy than the world's second-largest diamond which was also found in Botswana in 2015.

Botswana is Africa's largest producer of diamonds.

"This is the largest diamond to be recovered by Debswana in its history of over 50 years in operation," said Lynette Armstrong, Debswana Diamond Company's acting managing director.

"From our preliminary analysis it could be the world's third largest gem quality stone."

Debswana is a joint venture between the government and global diamond giant De Beers and up to 80% of the income from sales goes to state coffers through dividends, royalties and taxes.

An estimate of the stone's potential cost has not yet been released but in 2017, the second-largest diamond ever found, Lesedi La Rona, was sold for 53m (£39.5m).

The biggest diamond ever discovered was the 3,106 carat Cullinan diamond found in South Africa in 1905.

#### American Museum of Natural History – Unveils a new Hall of Gems and Minerals



Watch the full story <u>here.</u>

#### **Argyle Diamond Mine – The last tender**



Rio Tinto's last Argyle Diamond Tender

MELBOURNE, Australia--Rio Tinto has unveiled a preview of its final showcase of rare Argyle pink, red and blue diamonds from its iconic mine in the remote east Kimberley region of Western Australia.

Mining ceased at Argyle on 3 November 2020 and the 2021 Argyle Pink Diamonds Tender is the final collection of the rarest diamonds from the final year of Argyle operations.

The Argyle Pink Diamonds Tender, an annual invitation-only event for the past 38 years, is widely considered to be the most anticipated diamond sale in the world, showcasing the pinnacle of Argyle's production to an exclusive group of collectors, diamond connoisseurs and luxury jewellery houses.

Chief executive of Rio Tinto Minerals, Sinead Kaufman said, "I am delighted to launch this historic collection of extraordinary diamonds, a testament to the amazing Argyle ore body and the men and women who have worked so hard to bring these diamonds to market."

Comprising 70 diamonds weighing 81.63 carats, the 2021 Argyle Pink Diamonds Tender has a record number of diamonds larger than one carat. The collection is headlined with Lot Number 1, Argyle Eclipse<sup>™</sup>, a 3.47 carat diamond that is the largest Fancy Intense Pink diamond ever offered at the Tender.

Patrick Coppens, General manager of Sales and Marketing for Rio Tinto's diamonds business who has been involved throughout the history of the Argyle Pink Diamonds Tender said "The Argyle pink diamond story has continued to enthral throughout the years following the remarkable discovery of the Argyle mine in 1979. The final Tender collection of these beyond rare diamonds will be keenly sought after as heritage gemstones of the future, coveted by collectors and connoisseurs from around the world."

Titled The Journey Beyond, the 2021 Argyle Pink Diamonds Tender takes its reference from the 1.5 billion year journey from creation to discovery and their remarkable impact on the world diamond and jewellery history. The Tender collection comprises five 'hero' diamonds selected for their unique beauty and named to ensure there is a permanent record of their contribution to the history of the world's most important diamonds:

Lot 1: Argyle Eclipse<sup>™</sup>, 3.47 carat, radiant shaped Fancy Intense Pink diamond Lot 2: Argyle Stella<sup>™</sup> 1.79 carat, square radiant shaped Fancy Vivid Purplish Pink diamond Lot 3: Argyle Lumiere<sup>™</sup> 2.03 carat, square radiant shaped Fancy Deep Pink diamond Lot 4: Argyle Solaris<sup>™</sup> 2.05 carat, radiant shaped Fancy Intense Pink diamond Lot 5: Argyle Bohème<sup>™</sup> 1.01 carat, radiant shaped Fancy Red diamond Also offered alongside the 2021 annual Argyle Pink Diamonds Tender are 41 lots of carefully curated Argyle blue diamonds, weighing 24.88 carats in total. Titled Once in a Blue Moon, these are the very last blue and violet diamonds to emerge from the Argyle mine.

Jewellery historian Vivienne Becker said, "this final epoch-making offering of pink, red and blue diamonds encapsulates the near-impossible rarity and compelling beauty of the natural treasures gifted to the world by the east Kimberley region of Western Australia. Over the near four-decade life span of the Argyle mine, Rio Tinto has built a unique diamond brand of integrity and authenticity, an Australian icon and source of national pride, now recognised and asked for, by name, across the globe."

The 2021 Argyle Pink Diamonds Tender will be showcased in Perth, Antwerp, Singapore and Sydney, subject to COVID-19 protocols. Bids close on September 1, 2021.

Information from Rio Tino's website (<u>https://www.riotinto.com/en/news/releases/2021/Rio-</u> <u>Tinto-reveals-its-final-showcase-of-Argyle-diamonds</u>)



#### 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 interestingarticles and photos.

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

Dr Madden only writes about specimens he has personally seen and takes all his own specimen photos.



"Argentum"

Meaning white or shining, argentum is the Latin word from which silver (Ag) gets its name. Silver is a metal that occurs in the Earth's crust in native elemental form, as alloys with other metals and as complex minerals. Silver has the highest electrical and thermal conductivity as well as brightness of any metal, making it a staple of the human condition for around the last 5000 years. This example of naturally occurring, native silver wire with branching-dendritic crystals of silver is from the Elura Mine in NSW, Australia.

First discovered in 1974, the Elura Mine is a classic Australian silver–lead–zinc–copper deposit hosted by a transitional Early Devonian sedimentary sequence. Mineralisation at Elura is contained mainly in limestones and very fine-grained sediments (claystones/siltstones). These rock types are well suited for the development of these beautifully delicate silver structures.

The Elura deposit is a syn-diagenetic (silver mineralised while the sedimentary rocks were lithified) massive-sulphide deposit formed by mixing of metamorphic fluids derived from basement and basinal brines discharged along active faults. Major fault structures that were active during both sedimentation and mineralisation controlled the distribution of different sedimentary facies during basin formation as well as the flow and concentration of metal-bearing fluids.

#### SOCIETY ACTIVITIES

#### Standing on the shoulders of giants: Mesozoic insects of Australia

Dr Sarah Martin took members of the Mineralogical Society of Western Australia on a tour looking specifically at the Australian fossil record of insects through the Mesozoic Era (The Age of Reptiles or The Age of Conifers) lasting between 250 and 65 Ma.

Insects are the most diverse living group with a long, rich fossil history and extreme resilience with the Cretaceous-Paleogene mass extinction having had comparatively little effect. They also exhibit extraordinary post-mass extinction recovery as shown in the Triassic with the early Triassic record showing rare fossils with low diversity but by the Late Triassic there were numerous fossils with great diversity.

#### Map of Australia showing localities that have produced fossil insects



The first Australian insect described in 1870 was from NSW, but there have been relatively few local workers. This paucity of researchers could partly account for the apparent uneven distribution of fossil insects throughout Australia, as shown in the map above. On a worldwide basis Australian insect fossil sites are few.

In Western Australia locations of the Early Triassic Kockatea shale and the Lower Jurassic, Cattamarra Coal Measures are our two insect fossil sites.

Insects have evolved to inhabit all terrestrial niches and their diversity of lifestyles includes living and interacting sociably or otherwise. The images of fossil insects shown covered many of the sites listed on the map, and some of the fine detail of body parts of many of these. Evidence of fossils is shown preserved in various sediments and coprolites, as whole-body details, or as wings and fragmentary parts, but also tracks. The trail of a leaf mine preserved in the Eocene (40mya) Battle Camp Formation, Queensland, providing an example.

Sarah touched on fossils from many species producing a pie-diagram showing that the most common, by far were Coleoptera and Blattodea (beetles, cockroaches and termites) making up over 90% of the total. The mosaic below shows a selection of some of the beetles from the Late Jurassic locality of Talbragar Fish Beds.



Some of the amazing insects from the Late Jurassic locality of Talbragar Fish Beds in western New South Wales, Australia.

Dr. Martin's talk concluded that the Australian record for Insects is very diverse and yet understudied.

#### Gingin Field Trip by Susan Stocklmayer

Trip to Gingin Molecap Quarry with MinSoc WA members — 5th June 2021

Geology - Upper Cretaceous age (Santonian, 83 to 86 Ma) chalk overlying Molecap Greensand of the Perth Basin.

The small disused quarry was initially operated to obtain glauconite from the Molecap Greensand Formation. Most of the current quarry edges are composed predominantly of greensand, a dark coloured quartz sandstone containg glauconite and nodules of glauconite, with a thin veneer of overlying fossiliferous Upper Cretaceous Age chalk The chalk horizons outcrop between Gingin and Badingarra and attain thicknesses of no more than 19 m and both chalk and greensands are fossiliferous.

Reference guide is the Western Australian M museum 1993 publication "A guide to the fossils of the Gingin Chalk" by McNamara, Friend and Long.

Fifteen MinSocWA members and friends visited the chalk quarry near Gingin on a day that brought good weather conditions for fossicking and clambering around the quarry. The quarry is a short walk from the centre of Gingin providing easy access and a short stroll across private land occupied by sheep. Our leader, Rod Berrell, gave us an introduction to what has been found at the site over many years of collecting by specialists.



Fragments of Inoceramus shell amongst the chalk spoils from the quarry



Main access at the quarry



Left – Mineral crush, showing fragments of *Inoceramus*. Below – Larger *Inoceramus* fragment showing typical prismatic layering.



Displays of some of the fossils can be viewed at the E.de C.Clarke Museum on UWA campus. Abundant, literally littering the upper pathway, are the platy fragments of *Inoceramus* shell, a genus of extinct clams, shown in the accompanying image. A crush of this material reveals its compositional calcite as layers of prismastic crystals (~1mm length fragment). Transverse sections shows prismatic "cross fibre" crystal growth.

Group members collected several small brachiopods and spines of echinoids. Some spurious fossils also numbered with the finds collected by our members!



A large almost 1m sized *Inoceramus* from the Edward de Clarke Earth Sciences Museum at The University of Western Australia.

Three brachiopods, all show radial ribbed pattern under magnification and folded form of the shell margins, the largest diameter shown is 15mm. Also in the image are two remnant echinoid spines, both patterned with tubercles and ridges. All the fossils are of calcite.





The specimen on the left shows a brachiopod in situ (in chalk), showing valves agape and an internal structure that is part of the feeding mechanism.

#### SIMPSON PROJECT UPDATE



Since the last newsletter, 11 preliminary mineral write ups have been prepared, and we can add the following minerals: ashburtonite, ernienickelite, lucasite, chenevixite, diaboleite, murdochite, otwayite, spionkopite, linarite, putnisite and stilbite-Na. Sole contributor of this group is Vernon Stocklmayer. The total number of reserved minerals is 82 and there have not been any new takers.

#### Some back stories -

Most new mineral species are named after people, with considerably fewer named after localities. The work on the Simpson update has shown that there are some, however, that have more obscure names and a few of these are described below.

#### Euclase

Euclase in Western Australia has only been noted from two areas – the Neoarchean Dalgaranga and Giles pegmatites, making these finds probably the oldest euclase specimens discovered in the geological record to date.

The name derives from Greek and refers to its ease of cleavage.

### Diaboleite

Diaboleite, a bright blue copper-lead chloride, has been noted from Bali Hi and the Moolyella pegmatite field.

The name for the mineral was chosen to distinguish it from the similar species boleite (from the Greek "dia" = apart).

#### Pollucite

Until its discovery at what became known as the Sinclair mine located in the Norseman– Wiluna Greenstone Belt, pollucite was known from two LCT pegmatites, Greenbushes and Lepidolite Hill.

It is named for <u>Pollux</u>, the twin of Castor in Greek and Roman mythology, with the name based on the fact that it is often found associated with <u>petalite</u> (previously known as *castorite*).

#### Tranquillityite

Tranquillityite was first discovered in basalts collected during the Apollo 11 mission to the Sea of Tranquillity (*Mare Tranquillitatis*) on the moon in July 1969. Subsequently, it has been identified in six dolerite dykes and sills from Western Australia and possibly has a more widespread occurrence.

#### Acanthite

Acanthite is the stable form of silver sulphide below 173°C (343°F). There are numerous occurrences in Western Australia and the tarnish on sterling silver is chemically the same as acanthite.

The name is from the Greek "akantha" meaning thorn or arrow, in reference to its crystal shape.

#### NEW MEMBERS, MEMBERSHIPS AND MEETINGS

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

• Greg Amalric

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 receiveall MinSocWA communications. Membership forms can be downloaded from the MinSocWA web page here: www.minsocwa.org.au/membership.

#### 2021 – 2022 Membership renewals

For those who have not yet renewed their membership, normal rates (see below) will apply from the 1st of July.

We have a lot of events planned for the coming year, so you don't want to miss out!

Annual Membership fees:

- Ordinary \$35.00
- Junior \$15.00
- Spousal \$60.00 per couple (does not include children). If your spouse is already a current financial member, additional membership fee is \$25.00.

Notes

Membership year is 1 July to 30 June. If membership is paid after 1<sup>st</sup> January, membership will extend to 30th June of the following year.

To pay your annual renewal to the Commonwealth Bank:

Account: Mineralogical Society of WA Inc

BSB: 066 124 Account: 10168786

Do not forget to put YOUR NAME / PHONE NUMBER in the transaction reference.

#### 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 & Rockhunting Club rooms at 31 Gladstone Road, Rivervale (corner of Newey Street). The venue will be open from 7pm for refreshments and socialising.

At all meetings the Society's microscopes,

UV lamp and refractometer are available for use by members.

NB - a small entrance fee applies: \$3 for members and \$5 for visitors.

#### **NEW MinSocWA WEBSITE NOW LIVE!**



The long-awaited redesign of the MinSocWA website has been completed and the new site is now live at <u>https://minsocwa.org.au/</u>.

The website is now dynamic (i.e., pages change in size for easy viewing on mobile devices).

Upcoming events are prominent on the landing page and take you to detailed information about them, and there are more crossover links between pages.

New pages have been developed or expanded, such as the PGMS page (go there to find out all about it and download the form to book your table!), the page for the AJM (collectively 'owned' by all MinSocs) and the Simpson WA Project page.

All past Newsletters have been scanned and are also available for reading.

The colour yellow was chosen as the overall colour to match our logo, with a black background on the header to complement it.

Some pages are still under constructions (e.g., Mineral Education Resources), and we welcome your contribution to these. There is always room for beautiful photos of minerals, so please submit any you own the copyright for to our secretary at <a href="mailto:secretary@minsocwa.org.au">secretary@minsocwa.org.au</a>. Also let us know if you spot any mistakes!

#### **COMMITTEE MEMBERS FOR 2020/2021**

President	Sue Koepke	0417 990 688	president@minsocwa.org.au	
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<b>Committee Member</b>	James Sherborne		jamessherborne@hotmail.com	

#### Patron - Mark Creasy

#### MinSoc WA LINKS

Web:http://www.minsocwa.org.auFacebook Group:https://www.facebook.com/groups/minsocwaFacebook Page:https://www.facebook.com/MINSOCWAInstagram:https://www.instagram.com/MINSOCWAYouTube Channel:https://www.youtube.com/channel/UC0S2TFVFIBLU-2zIEzE5VNA

#### ADVERTISING

Any member can advertise in this section – please send your details to the newsletter editor - <u>newsletter@minsocwa.org.au</u>

## Treasure Island: A Fossicker's Guide to Australia, is a new book by Rodney Berrell and Nicole Kelly



The book is a treasure trove for anyone keen to learn more about geology, minerals, gems and fossils. Through inspirational commentary, marvellously illustrated maps and photography, it explores over eight different areas across Australia including over 50 gemstone, mineral or fossil locations. Whether you are a professional or just starting out, this book will set you on an incredible journey – the history and formation of Australia and its geology. Contact Rod Berrell at rodneyberrell@yahoo.com

to order your copy

#### The Australian Journal of Mineralogy

#### https://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 1, 2021

#### 43rd Annual Mineralogical Society of Australasia Seminar









Specimens from the collection of the Australian Museum. Photos John Chapman

The Mineralogical Society of NSW invites all members of Australian and New Zealand mineral societies to:

### 43rd Annual Combined Mineralogical Societies of Australasia Seminar

"43 Shades of Silver" "43 Shades of Silver" "43 Shades of Silver" "43 Shades of Silver"

"43 Shades of Silver"

## "43 Shades of Silver" **43 Shades of Silver**

Seminar location: Ryde-Eastwood Leagues Club, Sydney

There is plenty of parking and an easy walk from West Ryde train station. About 35 min from Sydney CBD by train.

Given the unknowns due to COVID and some people's reluctance to travel, this will be a hybrid live and online function, so you can attend in person (recommended) or join in on Zoom.

Seminar dates: Saturday and Sunday, October 2-3, 2021 The Seminar Dinner will be held on Saturday, October 2 Micromineral and Buy, Swap and Sell sessions on Monday, October 4

We are calling for 12-14 presentations on:

Silver & silver coloured minerals, secondary silver minerals, Silver deposits and mines, associated minerals in silver deposits, Silver in history, uses of silver Chemistry of silver, silver in the periodic table, and Not everything that looks like silver is.

#### Field trip

There will be an associated field trip after the seminar. Several options are being considered, and given the changes continually happening in the minerals industry and the influence of COVID, a trip will be finalised closer to the time. The trip will start after the seminar and is envisaged to be of 4-6 days duration, with access suitable for 2WD vehicles

> The Micro Mineral and the Buy, Swap and Sell sessions will be held at the Parramatta-Holroyd Lapidary Club in Wentworthville,

Hotel/motel style accommodation is available between 1.5 and 5km away from Ryde-Eastwood Leagues Club

A caravan park is located at Lane Cove Holiday Park, just under 8km away

For more information and registration, contact: www.minsocnsw.orq.au

Please note: Given the uncertainty presented by COVID, the Mineralogical Society of NSW reserves the right to change details at any time.