



Gem and Lapidary

News

February 2015

Vol 41 No 1

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### **Events Next Month.**

#### **March**

1 <sup>st</sup>	Illawarra Rock Swap	Stuart Park <b>North Wollongong.</b>
7 <sup>th</sup>	Campbelltown Districts Open Day	Lot 1 Bensley Rd <b>Macquarie Fields.</b>
21 <sup>st</sup> & 22 <sup>nd</sup>	New England Lapidary & Fossicking Club 24th Annual Gem and Craft Show	Armidale Showground <b>Armidale NSW</b>
21 <sup>st</sup> & 22 <sup>nd</sup>	Canberra Lapidary Rock Swap	Wagtail Way EPIC <b>Canberra</b>

The **Gem & Lapidary News** is the official publication of the GEM AND LAPIDARY COUNCIL OF NEW SOUTH WALES, INC, PO Box 4233, Londonderry 2753. The executive and workforce of the Council are entirely composed of delegates from member clubs. Council is NOT an autonomous body.

The Gem & Lapidary Council is a member of AFLACA (Australian Federation of Lapidary and Allied Crafts Association).

**Life Councillors:** Ron Beattie, Dot Caladine (dec), Frank Hall (dec),  
Maurya Hutton, Marie Jenkins(dec), Dick Moppett (dec), Arthur Roffey, Bob Wright (dec) Joan Ball.

#### **EXECUTIVE:**

President: Barbara Try (Northern Districts) 0417 676 435m  
Vice Presidents: Colin Wright (Port Hacking)  
Tony Try (Central Coast)  
Secretary: Arthur Roffey (MinSoc) 0245 725 812 h  
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Minute Secretary: Marilyn Behrens (Parra-Holroyd) 02 9635 8218 h  
Assist Minute Sec Mick Lane (Blue Mountains)  
Treasurer: John Behrens (Parra-Holroyd) 02 9635 8218 h  
Assist. Treasurer: John Vincent (Hawkesbury Valley)  
Committee: Ron Jones (Parramatta-Holroyd)  
Wally Dove (Port Hacking)  
Marcia Hill (Western Suburbs)

Appointments: Public Officer, John Vincent; Honorary Auditor, J Smith OAM, FCPA, MACS, PCP; Editor, Sandra Maher:  
[editor@gemlapidarycouncilnsw.org.au](mailto:editor@gemlapidarycouncilnsw.org.au) John Behrens, Equipment Officer; Magazine-Newsletter Competition Judges: Wally Dove and John Behrens.

#### **HOT LINE TO THE COUNCIL - 0427 993 903**

Website: <http://www.gemlapidarycouncilnsw.org.au/> webmaster@gemlapidarycouncilnsw.org.au Webmaster Alex Maitland (please send updated information)

#### **COUNCIL MEETINGS**

EXECUTIVE: 4th Wednesday in the month  
MONTHLY: 4th Wednesday in the month, at 1.00pm  
The venue, unless otherwise stated,  
is at the Clubrooms of Parramatta-Holroyd Lapidary Club,  
73 Fullagar Rd, Wentworthville

**Visitors are welcome to attend Monthly Meetings**

#### **SUBSCRIPTIONS TO THE GEM & LAPIDARY NEWS**

\$20 if posted bulk to your club  
\$25 if posted to members private address  
\$30 for non-members of the G&L Council

#### **ADVERTISING RATES per issue in Black and White.**

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1/3 page - " " \$20,

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### NEXT COUNCIL MEETING

**Wednesday January 28th** at the clubrooms of the Parramatta-Holroyd Lapidary Club  
73 Fullagar Rd, Wentworthville

Please do come, you will be made very welcome

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\* DEADLINE FOR COPY for  
March, 2015 issue \*  
Friday February 27th 2015

Club Editors; please add me to your mailing list to receive your Club newsletters. Ed.

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#### *Disclaimer:*

*Opinions expressed are those of the original authors and do not necessarily reflect those of the Editor, Gem & Lapidary Council or its members. Persons acting on any opinion, advice, fact or advertisement published in this issue does so at their own risk*

## Reports from General Meeting held in December, 2014

### J&R Report:

The GEMBOREE 2017 competition schedule has been sent to AFLACA J&R for distribution.

**Education Report:** The cabochon judging course will be January 31-February 1. Applicants please contact Barbara Try on 04393 6168 or email [twotrys@bigpond.com.au](mailto:twotrys@bigpond.com.au) to arrange a date and venue.

Nelson will phone all who were interested in the faceting judges course last year, but were unable to attend. Planned to hold this course in the 2<sup>nd</sup> half of February. Applicants contact Nelson on 43854495 or email [nelsonrobertson1@gmail.com](mailto:nelsonrobertson1@gmail.com) to arrange a date and venue.

### GEMKHANA Report

The Clarendon Showground is presently closed for roadworks. The booking will be finalised when it re-opens.

**It is time for the competition schedule to be drawn up, BUT we need a competition organiser to do this. Any offers, please?**

Any assistance required is offered.

### GEMBOREE 2017: Lithgow – Easter

**Some roles have been filled, but there are still more. It is vital we find a Registrar very soon, and he/she will need the support of a club or clubs.**

1. The visit to Lithgow has been delayed until Wednesday, March 11, if that suits Alan. Need to plan areas for camping, tailgating, etc.
2. The competition committee's plan to use rhodonite for keeper trophies seems to have been well received and offers of rhodonite are coming in. Of course, it will take a lot of rhodonite to make over 30 such keepers, so please look in your stock to see if you have any to pass on. If any clubs or members have suitable stone they are willing to sell (at reasonable price) to make 35 trophies 100mm x 80mm x 10mm thick, please talk to Barbara Try as soon as possible. It would be appreciated if clubs would cut the pieces to size (that way they can keep offcuts for their own use).
3. Blaxland will be unable to lend showcases, but NSW may – need to ask.
4. Letters of interest for 2017 will be handed to dealers at the Horsham GMB, and posted to others who are not at Horsham.

**GEMBOREE 2016** Ulverstone, Tas, Barbara sent an email confirming our judges are willing to judge their entries and urging them to have their own judges attend to the novice and intermediate sections. They have new judges who need practice.

*Moved Parramatta-Holroyd, seconded Blaxland that reports be received.*

### GENERAL BUSINESS:

1. Joan has returned her Officeworks card.
  2. The meeting agreed an application be made to Officeworks for a card for Barbara.
  3. Arthur (and the rest of us) took great delight when he presented Joan Ball with the badge of a Life Councillor.
- The meeting closed at 1.30pm

## Annual General Meeting held December 10<sup>th</sup>, 2014

Election: Joan Ball was Returning Officer and declared all positions vacant. The following were elected:

President: Barbara Try (Northern Districts)  
 Vice-President Colin Wright (Port Hacking)  
 Vice-President Tony Try (Central Coast)  
 Secretary Arthur Roffey (Mineralogical Society)  
 Minute Secretary Marilyn Behrens (Parramatta-Holroyd)  
 Assist Minute Sec Mick Lane (Blue Mountains)  
 Treasurer: John Behrens (Parramatta-Holroyd)  
 Assist Treasure John Vincent (Hawkesbury Valley)  
 Committee Ron Jones (Parramatta-Holroyd)  
 Wally Dove (Port Hacking)  
 Marcia Hill (Western Suburbs)

Congratulations to all new executive members.

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## Reports from Meeting held 28<sup>th</sup> January, 2015

### J&R Report:

1. The new judging manual is at the printer now and will have a blue cover. It will first be available at Horsham. Barbara will not take NSW requirements to Horsham, they will be available from her at meetings or by other arrangement. NSW will require 300 copies.  
A submission will go to AFLACA re the cost per copy.
2. The cabbing judges course is next weekend and although there were four candidates, two have had to pull out.
3. The faceting judges course will be March 14 & 15, at Parra-Holroyd clubrooms. There are three candidates. Although the number of candidates is small for each course, they will still go ahead.

**Editor's Report:** This issue will be a little late due to bereavement in the family

**Education Report:** While there is no Education Officer, as all mail goes to the Secretary, requests will be presented at meetings when the whole committee will handle them.

### GEMKHANA Report October 3-4-5

The Hawkesbury Showground at Clarendon (near Richmond) has been booked and the deposit paid.

Without a competition committee there is no competition and, without a competition, this is no show. Delegates asked to bring suggestions/recommendations for such an organiser to the next meeting.

YOU are asked to please, consider if you have the ability to do this job. Any help-support-advice you need is available.

Arthur agreed to be Dealer Chairman.

### GEMBOREE 2017: Lithgow – Easter

**Some roles have been filled, but there are still more. It is vital we find a Registrar very soon, and he/she will need the support of a club or clubs.**

1. Arthur gave Barbara slabs of maple to use for trophy bases. So far, Barbara has 20 pieces of rhodonite and still requires another 20 pieces for the trophies. If you can help, please contact Barbara on 4393 6168, 0417 676 435 or [twotrys@bigpond.net.au](mailto:twotrys@bigpond.net.au).
2. Most positions on the GEMBOREE Committee have been filled, but we still need a Co-ordinator and a Registrar - if you, or someone you know has the capacity to do such a job, please contact Barbara, and the same if a club or clubs are willing to take on the fun activities.
3. The visit to Lithgow has been confirmed as Wednesday, March 11. Need to plan areas for camping, tailgating, etc. and get hall dimensions and limitations.
4. John Vincent has offered to print letterheads. Marilyn asked for 200 and will email him the master.
5. Previously there was a suggestion that any club taking an active role in planning/running the GEMBOREE be given free tailgating space at the event. This will be for the club's benefit, **not for the benefit of individual members.**

## VALE BOB WRIGHT

The lapidary movement in NSW and Australia is indebted to Bob for his dedication, knowledge and workload to the formation, growth and continuation of the hobby.

My first encounter with Bob was when the new "Gem Show Committee" held the exhibition in the Sydney Town Hall, in, I think, 1970. A number of clubs participated of which the Greenwich Cub was one - Bob's club. At the wind-up meeting of the Gem Show committee, it was decided to form a "state" body – called The Council of Gem & Lapidary Clubs of NSW – which would provide interaction among all NSW clubs and also other State bodies.

The next task was a Gemboree to include, for the first time, a National Gem Show incorporated into the GEMBOREE.

For this to be a success, a nationally recognised set of judging rules was needed. Bob chaired the weekend at the National Fitness Camp at Narrabeen when the first national set of rules for judging was agreed upon. It poured the whole weekend, Bob felt he was being tested to the extreme, but found in the end, he could not walk on water (his words, not mine!) and the input of others was critical for the good result.

Next, followed the formation of AFLACA by all State bodies and the handing over by NSW of the GEMBOREE and National Gem Show to AFLACA. Bob was at the initial meeting together with Frank Hall and Arthur Roffey Bob was also instrumental in starting the programme for the training of judges. His field was faceting and cabbing and he conducted the initial training courses which resulted in commonality in all States.

Bob continued into the new era with a change to The Gem & Lapidary Council of NSW. For all his activities Bob was awarded the position of Life Councillor of the Gem & Lapidary Council of NSW.

His legacy will continue to benefit the hobby well into the future.  
Job well done Bob, rest in peace.

Ron Beattie 27/12/2014

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3. Enamelling	Max 10
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6. Opal	Max 10
7. Silver Jewellery and Smithing	Max 10
8. Casting Lost Wax	Max 10
9. Casting Cuttlefish	Max 10
10. Wire Wrapping	Max 10

If you would like to see some photos from some of our courses please visit our gallery here <http://gemlapidarycouncilnsw.org.au/galleries/education-courses/>



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## Significant Rock Formations in Australia.

Australia is one of the most ancient continents and one of the most stable. Geologically this means that erosion has had time to uncover some interesting and monolithic rocks to be admired and studied.



### Karlwe Karlwe - Northern Territory

Karlwe Karlwe, or the Devil's Marbles, near Wauchope in the Northern Territory are a collection of large rounded granite boulders, many of which are precariously balanced on top of another. The granite here formed from molten rock which solidified beneath a layer of sandstone and developed vertical and horizontal fractures. Over time, the sandstone eroded away exposing the granite, which then weathered into soft sand and clay surrounding hard bits of granite called corestones. Gradual removal of the soft sand and

clay has exposed the rounded boulders, allowing them to be perched on top of one other. According to Aboriginal dreaming, the rocks are sacred and are the fossilised eggs of the Rainbow Serpent.



### Mount Augustus - Western Australia

The visible portion of the sandstone and conglomerate structure which makes up Mount Augustus, is twice the size of Uluru. Sitting on a bedrock of granite, the mountain is eight kilometres long and stands 858 metres above the surrounding plain and 1105 metres above sea level. Sometimes described as the world's largest monocline, it is estimated that the rock of the mountain is around 1000 million years old and was formed from an uplift which raised an ancient seabed of sedimentary proterozoic sandstone and conglomerate. The granite rock which lies beneath Mount Augustus is said to be 1650 million years old. The Indigenous name for Mount Augustus is Burringurrah.

### Wave Rock - Western Australia



#### Wave Rock near Hyden Western Australia

Formed more than 2700 million years ago, Wave Rock is 14 metres high, and 110 metres long. The granite cliff resembling a wave about to break is on the northern face of a large erosional remnant called Hyden Rock. This curved cliff face is 15 metres high and 110 metres long which has been rounded by weathering and water erosion, undercutting its base and leaving a rounded overhang. It was formed by water dissolving and re-depositing chemicals in the granite as it runs down the cliff face.

### Gulaga (Mt Dromedary) - New South Wales



#### Mt Dromedary (Gulaga) near Tilba Tilba NSW

The mountain is an isolated volcanic core rising 797 metres above sea level near the historical villages of Tilba Tilba and Central Tilba. Viewed from the sea the mountain resembles a dromedary camel. It was formed during volcanic activity which took place about 100 million years ago.

### Bald Rock - New South Wales/Queensland border



An inselberg, or isolated rock hill, Bald Rock is said to be Australia's largest exposed granite surface. It towers about 200 metres above the surrounding bushland, is 750 metres long, 500 metres wide and rises to 1277 metres above sea level. The granite which forms Bald Rock was emplaced into the surrounding metamorphic and sedimentary rock about 247 million years ago. Subsequent uplift and erosion has removed the majority of the surrounding sediments and metamorphic rocks, with Bald Rock remaining as a result of its resistance to weathering.

## ABORIGINAL BREAST PLATES OR GORGETS OF THE BATHURST DISTRICT

One item from our nation's Colonial history, as well as Aboriginal history, is an item known as an Aboriginal breast plate. They are also known as gorgets, king plates, or brassplates. Breast plates that were given to "a king" are known as "King plates" which were usually treasured by their owners and were often handed around to show visitors to the tribe. Many of the plates date back to the pre-1860s, though there are examples that are known to have been presented as late as 1930 in Queensland.

The breast plates, as the name suggests, were worn on the chest by means of a chain or leather thong and there has even been one found with the sinew from a kangaroo's tail tied to it. They were issued by early pioneers, landowners, politicians and the Government of the day. Aborigines were presented with the breast plates for various reasons and could include recognition that a man was acknowledged as the chief of the tribe, elders of the tribe, was a friendly aboriginal, as a reward for services rendered such as a black tracker when prisoners or criminals escaped or looking for a lost person. The Aboriginal skill of tracking was an early acknowledged fact.

These Aboriginal breast plates were made from various metals, the most common ones being made of brass, though some are made from copper or bronze. One fine example that exists has been made from silver. The blank shapes were produced either by sand casting or sawn plates. The sawn plates were then passed through a rolling mill to flatten them out properly with circular, oval, rectangular and even shield shapes known. The shape was not uniform although it appears that the crescent shape was the preferred shape. The recipient's name was usually engraved onto the plate as well as their 'title' and sometimes a location such as the Wiradjuri "JACOB - KING OF BATHURST".

The idea of the breast plates was probably based on the military gorgets used in the British Army so the idea of using the gorgets by the world powers was not new. They had been given to the Indian leaders and warriors in America by both the British and the French. The oldest known Aboriginal gorget or breast plate presented in Australia was dated 1815. They were made for Governor Macquarie and presented to King Bungaree (or Boongaree) and Bungaree's wife Queen Goosebury also received one. Macquarie made more presentations of these crescent shaped metal pieces at the first aboriginal feast at Parramatta. From the first gathering, when 179 attended, many other Aboriginal leaders and their people attended the annual gatherings. Food, liquor, clothing, blankets and other items were given out and many natives travelled long distances to attend, including Windradyne. Following Macquarie's example the colonists soon began to use the gorgets as "gifts" for the Aborigines. Macquarie gave away breastplates to thirty-eight "chiefs" in his time. Macquarie's successor Governor Thomas Brisbane, and his successor Governor Darling continued the practice only to see it abolished by Governor Bourke in 1835.

With the passage over the Blue Mountains and the opening up of the land around Bathurst from 1813 it was inevitable that some gorgets would be given out to the Wiradjuri and other tribes in the region. By the 1850s hundreds of the brass plates had been presented throughout the various colonies around Australia. However the Government persevered with the practice of distinguishing Aboriginal policemen or constables as well as "black trackers".

Many of the recipients wore their brass symbols with pride whilst others saw them as a symbol of the people who were taking the land that they had originally hunted and lived on. It does seem a little ironic that these gorgets were given out to "Aboriginal chiefs and kings" when traditionally the Aboriginal people did not have chiefs or kings in the sense we understand that a person holds the position. Elderly initiated men were usually held in high esteem within a tribe and were looked to for advice and leadership. Louisa Meredith who spent some time in the Bathurst area in 1844 noted that the Wiradjuri people paid great respect to old age. The best fighting men were the chief or head of the tribe, and in the case of his death, the next best takes their place and inherits his wives. She also noted that other respected warriors and old men form a council when matters of importance needed to be decided upon.



After an "Aboriginal king" died, the plates were sometimes returned to those who had issued them, which is probably why some turn up in old sheds nailed to the wall or kept in an old cupboard until located by some interested person. In other cases the plates have been buried with the departed recipient. In the New England area the plate was sometimes defaced to allow the dead man's spirit to escape and roam freely.

( Extract from Bathurst Stamp, Coin, Collectables & Lapidary Club Inc Newsletter No 6)



## Why collect rocks?

The minerals, fossils and gemstones that are found in most rock collections are part of a great story of the earth and how it came to be. Geologists examine these to tell us of when and how our earth was formed. They can tell us whether there was a disaster that changed our earth or weather patterns over time and whether there may be cyclical events. The rocks we collect because they are colourful or interesting remind us of where and when we collected them and perhaps of other people we met similarly engaged.

Although some collect only minerals or fossils and others perhaps gemstones, they are still telling the story of how we acquired that piece and if we care to learn about where it came from, we learn a part of the history of our planet. Even the young ones are getting into the act. A young man, Bruno Debattista found a fossil while holidaying in Cornwall that he took to school for “show and tell”. His teachers were more than impressed when it was discovered that it was in fact a 300 million-year-old fossil.

The agates that we collect for their beauty or because of their cutting qualities tell us about volcanic activity in times past. Agates are a form of chalcedony and are deposited by fluids that infiltrate voids in volcanic rocks. Geodes have a hollow interior usually filled with crystals of smoky quartz, quartz and amethyst. These are much prized by the avid collector.

Minerals are naturally occurring substances formed by geological processes. They are usually solid and feature a crystal structure as well as specific physical properties and chemical composition. Iron pyrites commonly known as “fool’s gold” is a great example of flawless symmetry in nature with its perfect geometric shapes. Volcanic crystal forensics is being used to understand the evolution of Mt. St. Helens and Long Valley volcano activity. It is the crystals in volcanic rocks that hold the key to understanding the evolution of magma at volcanoes — they record events in crystalline structure through crystal growth, changing compositions of the crystals or incorporation of radioactive elements that can be used to tell how time has passed.

Similarly, gemstones are the result of crystal changes and the minerals that attach to them to give them their colour and variety. Gemstones are mostly found in the earth’s crust and are a source of information about the local cycles of precipitation and evaporation and the layers of sediment.

So our rock collection tells two stories. The story of our Earth and our personal story of when and where we found that specimen, who we may have met, what the weather was like and what the site had to offer. Rock collectors and lapidaries acquire a deep appreciation of their country and their planet from the story that their collection tells.

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## Andalusite Gemstone Information (with permission from gemselect)

[Andalusite](#) is named after Andalusia, the Spanish autonomous community where it was first discovered. Andalusite is an aluminum silicate, closely related to both silimanite and kyanite. In fact, all three minerals are polymorphs, which mean they share the same chemical composition, but possess different crystal structures. Andalusite is a strikingly beautiful gem, but it is largely unknown to the general public and considered to be one of the lesser-known gem types in the trade.

[Andalusite](#) has a very distinct combination of colours, and a very pronounced level of [pleochroism](#), which results in the exhibition of different colours when viewed from different angles. Andalusite most often occurs translucent to opaque, with transparent gemstone-quality specimens being very rare. For many years, andalusite has primarily been a collector’s stone, but it has recently gained a lot of attention from many jewelry designers. It is becoming increasingly popular in jewelry designs. Andalusite possesses a good level of durability and hardness, making it suitable for any type of jewelry application. The attraction of andalusite is greatly owed to its play of colour, which can be seen during changes in its viewing angle. Similar effects are also seen when lighting strikes the gem from different directions.

There are only a few gem types that could be mistaken for andalusite, including tourmaline, chrysoberyl, sphene, smoky quartz and idocrase. Pleochroism in gems occurs in varying strengths; weak, distinct or strong. Pleochroic effects are the result of differing absorption of light rays, and the phenomenon can only occur with doubly refractive crystals. Andalusite is considered to be strongly pleochroic, along with iolite, kyanite, kunzite, sphene and tanzanite. Andalusite has trichroic pleochroism; when light enters the stone, it is parted into three sections, each containing a portion of the visible spectrum. Some pleochroic gems, such as kunzite, possess dichroic pleochroism, which means that they display only two different colours.



Andalusite typically occurs in placers, gneisses, and schists as a result of argillaceous sediment that has been metamorphosed. Andalusite rarely occurs in granite or pegmatites, but it does, it tends to yield the largest crystals. Andalusite deposits can be found in many locations, including South Australia, Brazil, Canada, Russia, Spain (Andalusia), Sri Lanka, Burma, Madagascar and the USA (California and Colorado).

Transparent andalusite is almost always table faceted with brilliant cuts. Andalusite is very rarely cut en cabochon, with exception to opaque varieties. Andalusite colour is greatly enhanced by specific orientation and cutting. Without proper cutting, andalusite would not display its desirable pleochroic shades of brown, green and reddish-brown. Oval, marquise and emerald cuts are very popular, due to their long axes. Square and round cuts are also popular.

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### Hemimorphite Gems

Hemimorphite is a zinc-containing mineral that was once known as calamine. In 1803 the British chemist and mineralogist James Smithson discovered that there were two different minerals under the heading of calamine; zinc carbonate and zinc silicate, which often closely resembled each other. Zinc carbonate was later named smithsonite in honour of Smithson, while zinc silicate was named hemimorphite. The name calamine is no longer in use in mineralogy; now it is used only for the pink mixture known as "calamine lotion", which contains zinc oxide and iron oxide.



#### ***Hemimorphite Rough Stone***

James Smithson was not only an important scientist, he was also a shrewd investor who amassed a fortune during his lifetime. Though he had never visited the United States, his will stipulated that his wealth should go "to the United States of America, to found at Washington, an establishment for the increase and diffusion of knowledge among men". In 1846 the Smithsonian Institution was founded with Smithson's fortune.



#### ***Blue Hemimorphite from Congo***

Zinc silicate (hemimorphite) is rarer than zinc carbonate (smithsonite). The name hemimorphite comes from the unusual character of its crystals; the crystals terminate in dissimilar faces. One end of the crystal is rather blunt, being dominated by a pedion face while the opposite end terminates in a pyramidal point.

Hemimorphite is an important ore of zinc, since the mineral contains over 50% zinc. Gem-quality hemimorphite is usually blue or green, and bears some similarities to chrysocolla, smithsonite and turquoise.

In aggregate form, hemimorphite often displays bands of blue and white, or is mixed with a dark matrix.

Hemimorphite has a refractive index of 1.614 to 1.636 and a density of 3.30 to 3.50. It has a hardness of 5 on the Mohs scale with perfect cleavage. Hemimorphite deposits are found in Australia, Algeria, Mexico, Namibia, the Congo, Austria, Italy and the United States.

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### **Happy New Year and Successful Lapidary Achievements in 2015**

It is another year and the first month has gone already – at this rate it won't be long until next year!!!

Easter and the GEMBOREE in Horsham is now only a few weeks away. This is the chance for lapidary enthusiasts to see how their standard of work compares with other enthusiasts from all over Australia. It is also a chance to be proud of your abilities and to put your club's name and reputation up in lights, because all results are put up on the Internet for the world to see. If you have entered in any of the competitions you will receive judging sheets with impartial comments that will assist you to improve your skills for the future.

If you have not been to a GEMBOREE before, this is the best chance to see what is available to you, and to meet and talk to others with the same passion. You will meet people from a range of backgrounds who approach problems from different perspectives, which will open your mind to what can be done and why. It is a fantastic opportunity to learn more about the various crafts, and the little tips learned from others can be invaluable.

As it is a National show it is the biggest of its type to be held each year, therefore you will have the best opportunity to see a great range of equipment, rocks and ideas to assist you in your own particular endeavours in the various lapidary fields. The "downside" is that you will no doubt see many things that will have your name on them, and therefore cause you to part with money. But, remember this – they will be "good" things

Safe travelling and see you at Horsham. R. R.



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### **Cubic Zirconia is classed nowadays as a Gemstone.**

I see many beautiful stones cut from Cubic Zirconia, many jewellery shops are calling it Created Sapphire and Created Simulated Diamond.

Cubic Zirconia is well known as a substitute for diamond, due to its high hardness and great fire. But in recent years, it has established itself as a gorgeous gem in its own right. CZ is a beautiful synthetic gemstone that is durable and inexpensive and comes in any colour of the rainbow making it even more desirable.

Cubic Zirconia is a cubic form of zirconium oxide that is created in a laboratory, thus it is not a mineral. However, it was found naturally occurring once at one site in the 1930's but has yet to be discovered since then. The mineral with the same chemical composition as CZ, but in the monoclinic crystal system, is baddeleyite.

Synthesised zirconium oxide, cubic zirconia, is hard (8.5 on Mohs scale of hardness) optically flawless and usually colourless but may be produced with a variety of colours. The refractive index of CZ is between 2.088 and 2.176, which is very high. Since CZ is transparent, it is often faceted. It can be made in nearly any colour and can be faceted into many cuts. Because of its low cost, durability, and close visual likeness to diamond, synthetic cubic zirconia has remained an important diamond simulant since 1976.

To produce CZ, baddeleyite (ZrO<sub>2</sub>) is heated to about 2300 degrees Celsius (almost 5000 degrees Fahrenheit). This causes the mineral to become isometric. However, this change is not permanent; it reverses upon cooling which is why a stabiliser must be added to prevent transformation upon cooling. If too much stabiliser is added, it results in a softer, less brilliant product. This requires such high heat that a special radio frequency 'skull crucible' must be used to melt the zirconia powder. As the zirconia melts, it leaves a thin shell that remains solid because it is cooled by the water in the copper fingers. As this occurs zirconia and the stabilising oxide are added to fill the skull the desired level. The contents are kept molten for several hours to ensure uniformity. To produce colours, oxides of cerium, copper, titanium, iron and nickel, and many other elements are added.

Cubic Zirconia was discovered in its natural state in 1937 by two German mineralogists von Stackelberg and Chudoba. It was in a highly metamict zircon given to them by B.W. Anderson. The zircon contained tiny crystals that were determined to be the cubic form of zirconium oxide by x-ray diffraction. The two mineralogists thought so little of their discovery that they did not even give it a name which is why it is still known by its scientific name, cubic zirconia. It wasn't until the 1970's however, that Soviet scientists learned how to grow the crystals in the laboratory. In 1977, it was first marketed under the trade name "Djevalite". But CZ really took off in the 1980's when Swarovski & Co, a world-renowned Austrian producer of leaded crystal, began producing cubic zirconia for mass consumption.

### **Caring for CZ**

Cubic zirconia can be cleaned with any conventional jewellery cleaner or detergent. With such a high hardness and durability, you can use a brush to clean off dirt or oil also. Ultra sonic jewellery cleaners may also be used on CZ and will not damage the stone. However, when using soaps or detergents to clean CZ, one should wipe the jewellery dry thoroughly to avoid residue from the soap leaving a film that will dull the brilliance of the stone. Cubic Zirconia should be cleaned frequently to remove oils from your skin that also dull the brilliance of the gem.

### **Compared to Diamond.**

To the untrained eye, cubic zirconia looks very similar to a good quality diamond, but CZ has slightly less brilliance or sparkle than a diamond but it has more flashes of colour. The overall visual effect is so similar that it can even fool a trained Gemmologist on occasion, but other tests can easily differentiate cubic zirconia from diamond.

One great difference between cubic zirconia and diamond is weight; CZ is about 60% heavier than diamond. A piece of CZ the same size as a one carat diamond weighs about 1.6 carats. CZ is also more brittle than diamond and softer. A cubic zirconia can be scratched by a diamond, ruby or sapphire, whereas, a diamond can only be scratched by another diamond. Cubic Zirconia is also flawless, whereas diamond usually contains impurities and inclusions. A colourless diamond with flawless clarity is extremely rare. On the other hand, most cubic zirconia is perfectly transparent and flawless under 10 x magnifications. One of cubic zirconia's shortcomings as a diamond simulant is that it is too perfect. ( Brian Warde, Parramatta-Holroyd, Oct, 2014 newsletter).





# **GEMKHANA NEWS**

***GEMKHANA 2015***

***October 3-4-5***

**Clarendon Showground, Richmond**

The Clarendon Showground has been booked for this year.

Camping is available on the Showground, at \$15 per night.

Once again, we need a Competition Organiser. Firstly to draw up the Schedule so it can be published very soon – it may well be very similar to this years, with a bit of tweaking. I am happy to talk to you if you would like to think about doing the job. There is always help/advise/support available.

We look forward to having lots of tailgaters – remember we now have commercial and non-commercial tailgating. Commercial tailgaters are those who attend markets/shows regularly and have their own public risk insurance (which we required to be \$20m of cover) and non-commercial tailgaters who are club members like most of us and only have a stall once in a while and who may buy their insurance cover from the G&LC on the day.

It's early days yet, but plans are being made for all aspects of the show. If you have any ideas to suggest, let me know.

Marilyn Behrens  
GMK 2015 Co-ordinator  
9635 8218

**When****What****Where****Feb**14<sup>th</sup> & 15<sup>th</sup>Orange Lapidary 50<sup>th</sup> Anniversary  
CelebrationSenior Citizens Centre  
Kite St **Orange**.**March**1<sup>st</sup>

Illawarra Rock Swap

Stuart Park **North Wollongong**.21<sup>st</sup> & 22<sup>nd</sup>New England Lapidary &  
Fossicking Club  
24th Annual Gem and Craft ShowArmidale Showground  
**Armidale NSW**21<sup>st</sup> & 22<sup>nd</sup>Canberra Lapidary  
Rock SwapWagtail Way EPIC  
**Canberra****April**3<sup>rd</sup>

GEMBOREE

Horsham **VIC****May**16<sup>th</sup> & 17<sup>th</sup>  
30<sup>th</sup> & 31<sup>st</sup>Lismore Gemfest  
Canberra Winter ShowShowground **Lismore** NSW  
Pavilion EPIC **Canberra****September**26<sup>th</sup> & 27<sup>th</sup>Bathex 2015 exhibition &  
Bathurst bicentenary  
White Cliffs Gemfest**Bathurst**  
  
Community Hall **White Cliffs**.Oct 3<sup>rd</sup>-5<sup>th</sup>**Gemkhana****Hawkesbury Showground**  
**Clarendon**.**Nov**7<sup>th</sup> & 8<sup>th</sup>**Spring Gemcraft & Mineral Show**  
**Canberra Lapidary Club**

EPIC – Mallee Pavilion

**GEMBOREE DATES**

<b>2015</b>	<b>-VIC</b>	<b>APRIL 3</b>
<b>2016</b>	<b>-TAS</b>	<b>MAR 25</b>
<b>2017</b>	<b>-NSW</b>	<b>APRIL 14</b>



**National Gem and Mineral Show.**

**3<sup>rd</sup>-6<sup>th</sup> April 2015**

**Horsham Vic.**