



THE MINERALOGICAL SOCIETY OF NEW SOUTH WALES INC

C/o School of Natural Science
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NEWSLETTER

DECEMBER 2014

The December Meeting will be held on Friday the 5th of December 2014 from 6.30 p.m. in the LZG14 lecture theatre on the ground floor of Building LZ in the Science campus of the University of Western Sydney on the corner of Victoria Road and James Ruse Drive in North Parramatta.

The December Meeting will be the annual

CHRISTMAS SOCIAL and SWAP N' SELL

At the December Meeting there may be a few announcements made but otherwise there will be no formal program or lecture, the evening being devoted entirely to the sale or exchange of mineral specimens and mineralogical material, books, magazines and equipment. The Meeting would be officially opened at 7.30 p.m. but the venue would be open from about 6.30 pm to allow members with material for sale time to get set up.

There will be a substantial and comprehensive range of snack food refreshments and drinks. Members, guests and visitors attending the **Christmas Social Meeting** will be charged \$10 towards the cost of the refreshments. There will be a lucky door prize awarded by raffle. Tickets will be issued to each person as they arrive. Please make sure you receive one.

Members are reminded that the Society Committee has determined that anyone attending the Christmas Social who was not currently financial may buy but would not be allowed to sell minerals. Since **Society membership subscriptions are due from January 1st next** any members who were unsure of their current financial status could pay their subscriptions for 2015 from now on. A membership renewal form will accompany this Newsletter.

Membership payments may be made to the Secretary or Treasurer at the Christmas Social especially if the member is unsure of his or her financial status. Membership renewal forms will be available and members are asked to fill out a form particularly if any of their address, telephone number/s or e-mail details have changed.

FORTHCOMING MEETINGS AND PROGRAMS FOR 2015

Subject to circumstances some changes to the following schedule of program subjects and speakers may have to be made in due course. The Society does not hold General Meetings in January, the first Society Meeting in 2015 will be on **Friday February 6th**. Meetings will be held on the first Friday of the months after January except before the long weekends of April, June and October when it will be held on the second Friday.

February 6th 2015: Minitalk by Jim Sharpe on : - **‘Tenorite; Not pretty but interesting’** followed by a lecture by Vera Munro-Smith on **‘Cobalt Mines of the Cloncurry District’**

At the February Meeting there will also be a **Mineral Sale** to raise money for the **Kids With Cancer Foundation** and members are invited to start looking from now on for surplus specimens that they could donate for this sale.

Information about donations should be communicated to Jim Sharpe on (02) 9871 2502 or e-mail sharpejames@tpg.com.au by mid-January 2015 in order to provide a sale list of specimens for distribution in advance. Compiling and providing a complete list is not essential however and further donations could be brought in on the sale evening.

March 6th 2015: Report on the **2015 Tucson Show** by Penny Williamson, and a lecture by Paul Carr on **‘The Burning Question of Mt Wingen – When did the Fire Start?’**

April 10th 2015: Minitalk by Jim Sharpe on : - **‘Sampleite, An Undervalued Mineral’**.
(Second Friday). Lecture by Jeff Davis on **‘Applications of Mineralogy in Forensic Science’**.

May 1st 2015: Member’s Mini-Auction.

June 12th 2015: Member’s Forum on **‘Kingsgate Revisited’**. Overview of the history, geology and minerals. Member’s experiences, mineral display and discussion.
(Second Friday)

July 3rd 2015: Mini-talk, to be confirmed, probably on other minerals found at Mt Knowles or at other Mudgee locations. Followed by a lecture to be given by David Colchester and John Chapman on : - **‘Mudgeeite. Establishing a New Mineral.’**

August 7th 2015: A.G.M. and the Betty Mayne and Edna Walker Memorial Lecture to be given by Noel Kennon on : - **‘The History of Broken Hill’**.

The SOCIETY COMMITTEE

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	John Chapman	Tel: (02) 9808 3481
	David Colchester	Tel: (02) 9449 3862
	John Rankin	Tel: (02) 9482 7474
	Edward Zbik	Tel: (02) 9638 6586

THE NOVEMBER MEETING

Jim Sharpe addressed the Meeting reminding members about the forthcoming annual **Kids with Cancer Mineral Sale** next February which he expected would include some interesting minerals. Two items which he would be donating himself for the sale and which he had brought in to display at this Meeting were from Prospect Quarry. One was a large specimen of pectolite and the other comprised a water-clear calcite on prehnite which was originally collected in the 1930s. Since he had no idea what price to put on these specimens they would be sold by silent auction at the February sale.

Jim urged members to look to donate specimens for the sale and ideally to provide him with details during January in order to compile a sale list of specimens for distribution in advance. This would help the sale but was not essential and further donations could still be brought in on the sale evening.

Ed Zbik reminded members about the forthcoming **Field Trip** to Hartley Vale and Bathurst being held over the 22nd and 23rd November weekend. The party would be visiting the Hartley Vale shale deposits and workings with the possibility of finding samples of jet. Some of the party would camp overnight at the Flat Rock camping area on the Tarana Road, between Tarana and O'Connell.

On Sunday there would be a visit to the Warren Sommerville Collection in Bathurst where Ed had negotiated a discount entry fee for Society members of \$7, normally \$12. In the afternoon the party would visit the Sunny Corner and Nevada mines.

Geology and Mineralogy of the Kulnura Quarry

Brian England

Brian England has been visiting the Kulnura basalt quarry, situated on the Peats Ridge Road about one hundred kilometres north of Sydney since 1975. His first trips were made with the Newcastle Lapidary Club and much later after a gap of some twenty years due to the quarry being closed to visitors for that period he had made a number of subsequent visits now totaling over twelve. On the occasion of his first visits the quarry workings had opened only two benches in the upper part of the basalt but the deposit had already become well-known for magnificent aragonite specimens. These were not common but if one of the few breccia pipes were struck the collector might be rewarded with a bonanza.

Another mineral found at that time was calcite in quite a variety of habits but mainly in 'spherulitic' form, which the speaker noted was a term no longer approved for calcite, and which was now restricted to volcanic rocks. In more recent years when permission to visit the quarry has been obtained and visits by Society parties have also been made the mineralogy was found to have changed considerably. The workings have now extended down to fourteen five meter benches and the number of different environments which have been exposed are very considerable.

The most prominent feature of the quarry which would be instantly noticed by the visitor is the very pronounced columnar jointing of the basalt, exposed in virtually all the sides of the workings. The basalt had filled what was once a deep lava lake which appears to have occupied the upper part of the explosion crater of a volcano. On one of his visits to the quarry many years ago Brian England had examined an area on the southern side of the deposit where there were indications of horizontal alternating layers of volcanic ash and basalt. This finding suggested to the speaker that the formation had moved from a diatreme, (volcanic pipe), to a maar, (explosive vent), to a straight-out volcano.

Some explanation was offered by the speaker for the pronounced jointing which may have been due to repeated disturbance of the lava lake by later basalt upwelling or by ground water infiltration whilst the lava was still cooling but he advised that the experts do not really know.

Apart from Kulnura there are ninety-five other known diatremes in the Sydney basin with only a small number composed of basalt. It is thought that they are Jurassic in age although the speaker has yet to see any dating of these rocks. Some years ago Ian Graham had suggested an age of 54 million years to him but Brian England has not seen any confirmation of that figure.

A quantity of breccia briefly exposed on the southern boundary of the basalt deposit in the early years of the quarry working was referred to by the speaker. It was mostly a type of hornfels which has been reported by others to contain fragments of coal although Brian England has never found any at the Kulnura deposit. What was found in the early years were specimens of the 'spherulitic' calcite and occasionally phillipsite and very occasionally some other minerals. These included a few specimens of very small cubic crystals of pyrite, up to a half a millimetre in size and the speaker once found a single crystal of brookite about two millimeters long and coated by saponite.

An explanation for the formation of zeolite minerals was provided in a paper published by workers in 1989 who stated that formation of zeolites occurs in a closed system under conditions of high steam pressure. These conditions would have prevailed at Kulnura, vesicular basalt blocks trapping steam, possibly being covered over by later flows and remaining hot for a number of years gradually forming the zeolites.

The speaker then moved to describe the minerals that have been found at Kulnura most of which have been in vesicles in the basalt. Occasionally analcime has been found in the cooling joints in the basalt columns but is extremely rare with very small crystals. Mineralised veins transecting the basalt along minor faults contain magnesite which is not common in that type of situation. Very small and widely scattered specimens of phillipsite were found in the first two top benches in the early years.

On the occasion of a Mineralogical Society field trip to Kulnura in 2002 held in company with a group of members of the Hunter Valley Amateur Geological Society the visiting parties effectively struck a natrolite bonanza. It was found that the quarry workings at that time had exposed a level containing large amounts of natrolite with undoubtedly a large number of specimens collected, in spite of the speaker remembering that the temperature on that day was about 44 degrees on the quarry floor !. A number of examples of the mineral were pointed out among the specimens brought in by members to display.

Over the years of his visits to the quarry Brian England has made a point of collecting as many kilos of the vesicular basalt as he could manage to pack into his car each time, about 40-50 kilos per trip and over a dozen trips since 1975. The material has all been gradually broken up into less than thumb-nail size and examined carefully by the speaker taking about three months per trip-load and amounting to his looking at about 40,000 vesicles over the years. In the process he has established the presence of a substantial number and variety of minerals notably amounts of phillipsite, analcime, heulandite, chabazite and smaller amounts of others or a total of ten minerals with a wide range of habits.

One unexpected finding was a small amount of siderite which took some years to identify and one or two as yet unidentified minerals. Brian England speculated that other collectors might have specimens from Kulnura with some siderite but this might not be apparent since the crystals would be coated with saponite which would need to be removed first. Aragonite was found in the basalt in the top of the deposit but at lower levels it has been replaced by calcite. Some gypsum was found during the Society field trip to Kulnura in 2013 as part of the Seminar activities at that time. The speaker felt that this would be a very late-stage secondary mineral and would not have been among the minerals formed in the vesicles.

Pyrite appears in some of the vesicles and interestingly a specimen sent to the speaker by a Society member some years ago was suggested to be of cuprite. This would be a very unusual finding although subsequent analyses by Ross Pogson on Kulnura specimens had indicated the presence of some copper. The 'cuprite' specimen however turned out to be octahedral pyrite with a patina of haematite which had made the crystals look red !.

Calcite is not very common and is usually found as colourless to white rhombohedra up to one cm in size. The analcime from Kulnura is very spectacular under a microscope as small very sharp trapezohedra up to 1.5 to 2 millimetres in size often with prominent cube faces. One of the most spectacular minerals, apart from the phillipsite is chabazite Ca which forms colourless to magnificent pale yellow water-clear rhombohedra twinned on the 'c' axis. Heulandite K forms very small crystals, usually less than one millimeter and associated with earlier or later phillipsite and globular calcite.

Phillipsite is by far the most abundant and spectacular of the vesicle minerals and most familiar to the micro-mount specimen collectors. It is ubiquitous in the vesicle environment, generally as water-clear deep yellow crystals and mostly as Marburg twins. An unusual problem with examining phillipsite crystals by scanning electron microscopy which needs the specimen to be in a vacuum is that under that condition the mineral decrepitates rapidly within less than a minute and turns to a powder. Another zeolite which undergoes this process is chabazite but much more slowly taking 15-20 minutes before it falls apart. The speaker was not certain what causes the yellow colour in phillipsite but in examining a few weathered examples of basalt from some of the older dumps at Kulnura he had found that phillipsite crystals whilst pristine, totally transparent and with no cracks, had completely lost their colour.

An interesting and curious feature at Kulnura which the speaker felt occurred at every zeolite location World-wide was that the analcime, chabazite and heulandite occurred in isolated groups of vesicles typically only associated with earlier or later saponite. Upon asking Lin Sutherland why this should be so Brian England was advised that "*This would be due to the complexity of nature at work*".

With this observation the speaker finally showed a series of slides of views of the Kulnura quarry and invited questions or comments from the members. The evening ended with a discussion about the minerals and referring to the large number of them which had been brought in to display

FORTHCOMING EVENTS

GEM CRAFT

The NEPEAN AND DISTRICT LAPIDARY CLUB invites visitors to an Information and Sale Day on Saturday 6th December from 9.00 a.m. to 4.00 p.m. at the newly-opened club rooms at 27 Swanston Street, St Marys. Club members and guests will have on sale a variety of gifts and collectables, minerals, hand-made leather goods and jewellery. Refreshments available. Tailgaters welcome (fee).

For further information and bookings call 0429 774 105.

MILTON LAVERS COLLECTION SALE

The very important **Milton Lavers Mineral Collection of Broken Hill minerals** is being offered for sale at the Ausrox/Crystal Universe showrooms in Port Melbourne, Victoria, over Saturday and Sunday, the 13th & 14th of December 2014. Mineral curators, Broken Hill collectors and gem and mineral club members who would wish to attend are requested to register by 1st December 2014 for security and catering purposes. Inquiries and registration may be made to the Ausrox/Crystal Universe Showroom by telephone (03) 9646 1744 or to rob@crystaluniverse.com.au

ILLAWARRA LAPIDARY CLUB ROCK SWAP 2015

Being held in the Stuart Park Wollongong on Sunday 22nd February 2015.
From 8.30 a.m. to 2.30 p.m.

'Come along and enjoy our 2015 Rock Swap at Stuart Park Wollongong. The rock swap starts at. with lots of members and tailgaters selling anything from lapidary items including rough, slabs to finished cut cabochons, faceted stones and finished items of silver and even gold jewellery. A rock scramble for children is at 11a.m. Noon and 1p.m. – Very popular with the kids.'

CANBERRA ROCK SWAP 2015

The Canberra Rock Swop, organized by the Canberra Lapidary Club is being held on the camping ground at Wagtail Way in the EPIC park alongside Northbourne Avenue in Canberra over Saturday and Sunday the 21st & 22nd of March 2015 from 8.30 am to 5.00pm each day.

Fossickers & dealers, Crystals, minerals, rough & cut gemstones, opals, fossils, jewellery.
More information on www.canberralapidary.org.au

The NEW ENGLAND LAPIDARY & FOSSICKING CLUB INC.

Presents the 24th ANNUAL GEM AND CRAFT SHOW

Over Saturday March 21st, 9 am to 5 pm and Sunday March 22nd 2015 from 9 am to 3 pm
In the Armidale Showground

Gems, Rocks, Crystals, Jewellery, Gifts, Craft, Beads and Lapidary Books/Supplies/Equipment
Light refreshments available. Stall holders welcome, Public Liability Insurance Required.
For details contact the organisers on (02) 6778 5122 after hours or e-mail nelfc@hotmail.com .

GEMBOREE 2015 HORSHAM, VICTORIA

AUSTRALIA'S 51st NATIONAL GEM, LAPIDARY, JEWELLERY AND MINERAL SHOW.

Presented by the Australian Federation of Lapidary & Allied Crafts Associations Inc. (AFLACA).

GEMBOREE 2015 is to be held in the Wimmera Events Centre on Longerenong Road, Dooen, via Horsham, over Easter, the 3rd to 6th of April 2015.

Showcase displays of 1,000 + National Competition Entries, Demonstrations of gem cutting & faceting, lapidary work, enameling and beading. Gemstone identification. Trade stands of a huge range of gemstones, minerals, fossils, jewellery, beads, meteorites, lapidary equipment and dozens of tailgating stalls. Program of social activities, lectures and field trips. Camping catered for with powered sites.

Gemboree booklets, information and registration from gemboree@victoriangemclubs.asn.au
Information on accommodation and other information on the area from www.visitorhorsham.com.au
or call the Horsham and Grampian Visitor Information Centre on 1800 633 218

The 26th Annual LISMORE GEMFEST

Presented by the Lismore Gem & Lapidary Club Inc over the weekend
of the 16th & 17th May 2015 in the Lismore Showgrounds

The 26th Gemfest will be held as by now long-established in the Lismore Showground. The last Show in May 2014 saw a large number of dealers and over 130 stall-holders and tailgaters who displayed and provided minerals, fossils, cutting material, cut stones, jewellery findings, tools, machinery and finished jewellery.

Information: Postal enquiries to P.O.Box 743, Lismore, NSW 2480,
General enquiries to Bruce Copper on 02 6688 8280 or e-mail : - bcopper@bluemaxx.com,
Tailgate enquiries to Jan Thompson on telephone 02 6621 4703.
or visit the Website www.gemclublismore.org.au.

THE WINTER GEMCRAFT & MINERAL SHOW

by the Canberra Lapidary Club

Held over Saturday and Sunday the 30th and 31st of May 2015 from 10.00 am to 5.00pm each day
in the Mallee Pavilion in the EPIC park alongside Northbourne Avenue in Canberra.

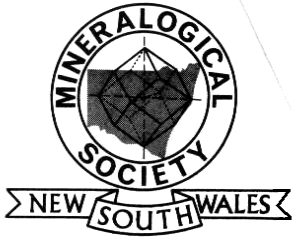
Entry \$5 adults, \$10 family, \$2 children/concession.

Dealers in Minerals, fossils, jewellery, rough & cut gemstones,
lapidary equipment & supplies, opals, beads & supplies.

For information : - www.canberralapidary.org.au

Email : canberralapidary@gmail.com

Phone: 02 6260 5322



THE MINERALOGICAL SOCIETY OF N.S.W. INC.

MEMBERSHIP RENEWAL

Membership fees are due from January 1st

Please provide your full name, postal address, telephone number/s and e-mail address (if available). Unless otherwise indicated, members with e-mail capability will be able to access the Society Website to view information and will not be sent hard-copy Newsletters unless they specifically request this.

NAME:

POSTAL ADDRESS:

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Telephone (ah)..... (bh)..... (mobile).....

E-mail address

If an E-mail address is supplied please indicate if the member also wishes to receive hard copies of any Society correspondence. ? E-mail only: ? Hard Copy also:

FEES: Adult membership, Sydney metropolitan area \$30

Adult membership, country or interstate \$25

Child/youth (under 18 years), or student member \$20

Additional family members (spouse/partner and children only) can be admitted for membership at the cost of \$5 each (after the first member's costs as per the list above). If applying for additional family members, please list the name(s) here:

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OPTIONS FOR PAYMENT

1). Direct Credit / bank transfer to the Society's account

The account details are: - Account Name: Mineralogical Society of NSW Inc.
BSB: 062016 Account number: 28023647
Please ensure that your name is placed in the Memo line.

Members paying by bank transfer would not need to fill out and send in this form unless your details, address, telephone or e-mail etc have changed.

2). Cheque or Australia Post Money Order, (please do not send cash by post), - sent to :-

The Treasurer,
Mineralogical Society of New South Wales Inc.
58 Amazon Rd,
Seven Hills,
NSW 2147

3). Cash or cheque delivered to the Treasurer, or in his absence the Secretary, at any General meeting