



**THE
MINERALOGICAL SOCIETY
OF
NEW SOUTH WALES INC**

C/o School of Natural Science
B.C.R.I. Parramatta Campus University of Western Sydney
Locked Bag 1797 Penrith South DC N.S.W. 1797
Website: www.minsocnsw.org.au

NEWSLETTER

JULY 2012

The July Meeting will be held on Friday the 6th of July at 7.30 p.m. in the LZG14 lecture room 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 program will commence with a talk to be given by Gary Sutherland on : -

The Museum of Lead Mining at Wanlockhead in Scotland.

The talk will be followed by a lecture by Larry Barron on : -

Australian Diamonds

FORTHCOMING MEETINGS

Society General Meetings will be held on the first Friday of each month for the rest of the year. Subject to circumstances some changes to the following schedule of program subjects and speakers may have to be made in due course.

August 3rd : The Society Annual General Meeting will commence at 7.30 p.m. with the President's report for 2011/2012, the Treasurer's report and presentation of the annual financial accounts for 2011/2012 and the election of the Society Committee and office-bearers for 2012/2013.

The A.G.M. will be followed by the Betty Mayne Memorial Lecture to be given this year by Professor Peter Williams on : - 'Gazing into the Mineralogical Crystal Ball. Where is it all going?'

September 7th: Member's Forum: - 'Members Collections and Recollections – Kingsgate'.

September 7th: The Kingsgate Forum. **Members are particularly invited** to bring in specimens, information, collecting experiences and anecdotes from this significant and productive site. There will also be a talk to be given by Sylvia French on ‘Gem Analysis’.

October 5th: Lecture and photographic display by Gary Sutherland on ‘The Museums of England’.

November 2nd: Depending on the situation with the development of working at Mineral Hill and speaker availability it is hoped that there will be a lecture on ‘Mineral Hill Update’. Alternatively there may be a lecture to be given by Dr Peter Leverett on ‘New Minerals from Australia’.

December 7th: Annual Christmas Social and ‘Swap n’ Sell.

2012 ANNUAL GENERAL MEETING

Members are hereby duly notified that the Meeting on Friday the 3rd of August 2012 will be the Society **Annual General Meeting** which will commence at 7.30 p.m. in the LZG14 lecture room.

The Society Annual General Meeting will commence at 7.30 p.m. with the President's report for 2011/2012, the Treasurer's report and presentation of the annual financial accounts for 2011/2012 and the election of the Society Committee and office-bearers for 2012/2013. In accordance with the Society Constitution the entire current Committee retires at the commencement of the A.G.M. and all positions are open for nomination and election. Any other business may also be raised and discussed. The minutes of the previous 2011 A.G.M. were circulated in the September 2011 Newsletter. Copies of this will be available at the 2012 A.G.M. or may be obtained from the Secretary.

Nomination forms for election to the 2012/2013 Committee are being circulated with this Newsletter. Further copies may be obtained from the Secretary if required. According to the Society Constitution nominations should be received seven days before the commencement of the A.G.M. Only financial and Honorary Life members of the Society are eligible for nomination or allowed to participate in any voting.

Any members who feel able to serve on the Committee are urged to discuss this with any of the current Committee members and to make known their availability for nomination at the A.G.M. A member can be nominated for but cannot hold more than one position.

The SOCIETY COMMITTEE

PRESIDENT:	Dieter Mylius	Tel: (02) 9477 1060
VICE-PRESIDENT:	John Chapman	Tel (02) 9808 3481
	E-mail:	<i>chapmanjr@optusnet.com.au</i>
SECRETARY:	George Laking	Tel: (02) 9636 7145
	E-mail:	<i>bglaking@tech2u.com.au</i>
TREASURER:	Graham Ogle	Tel: (02) 9876 5224
COMMITTEE MEMBERS:	David Colchester	Tel: (02) 9449 3862
	Gary Sutherland	Tel: (02) 9871 1379
	Penny Williamson	Tel: (02) 4221 4075

WELCOME

Welcome to new member Peter Cartwright of Dundas

JUNE MEETING

At the commencement of the June General Meeting there were a few announcements.

The **Micro-Mineral Group** meeting held the previous weekend was attended by a number of members who met at Brian England's house in Maitland. Brian has a magnificent mineral collection including a substantial amount of micro-and thumbnail specimens. These included a number of pyromorphites from Leadville which were quite stunning and showed a variety of shapes. The next Micro-Mineral Group meeting is on the 21st of July when the group will be focusing on minerals from the south west of the USA, Arizona, Utah, Nevada and California. Anyone wishing to join the Micro-Mineral Group meetings would be very welcome, subject to them advising Graham Ogle or other organisers that they would be attending.

The Society President, Dieter Mylius, drew attention to a number of specimens that had been brought in for display by members who had collected from the Glendowda and Portobello farms during the recent **field trip** to the **Tambar Springs** area. A substantial amount of specimens, mostly of stellerite and drusy quartz must have been collected by all members who went on the trip and were probably similar to those collected on a previous Society trip to the Glendowda location about eight years ago.

Graham Delaforce also pointed out that he had bought four specimens from the petrified forest in Arizona to display to the meeting.

The President further drew attention to the **forthcoming Society AGM** and the need to elect a new Society Committee which currently was two members short. Any members who felt able to offer their services on Committee were urged to discuss this with any current members and make their availability for nomination known. New Committee members and therefore new ideas were very welcome. Nomination forms would be distributed with the July newsletter and members were urged to make use of them.

Finally the President announced that at the May Committee meeting a letter from a Society member was tabled which proposed that in view of his very long, in fact lifetime involvement with and long service to lapidary and mineralogy interests, to associations and the Mineralogical Society **Arthur Roffey** be granted **Life Membership of the Society**. The proposal was considered at the Committee meeting and was carried unanimously. According to the Society Constitution the proposal after acceptance by the Committee would be presented to a General Meeting to be confirmed by the membership, subject to there being a quorum. It was noted that at this meeting there were some forty members comprising the required quorum.

[The Society Constitution provides for Life Membership to be bestowed on worthy individuals subject to the proposal being made to and accepted by the Committee and then confirmed by the membership.]

19. QUORUMS

- a) The quorum at a General Meeting shall be fifteen (15) members or one fifth of the financial membership, whichever is the smaller.]

The President accordingly asked for approval of this proposal and upon there being no questions or objections the proposal was taken as carried. Congratulations were offered by the President to Arthur Roffey, and applauded by the membership. Arthur Roffey offered his humble thanks to the Committee and the members at the Meeting.

With there being no further announcements the President handed the meeting over to the first speakers of the evening, Penny Williamson and Doug Austen, who were to present a talk on : -

Diamond Crystal Forms

Penny Williamson and Doug Austen

Penny Williamson introduced the talk, describing how she had been interested in diamonds for a number of decades from the geological point of view, as well no doubt as a lady interested in jewellery. It was therefore with some interest that through the Mineralogical Society she met Doug Austen whom she found was one of the last remaining diamond tool cutters still working in Australia. Some time ago the University of Wollongong bought a very expensive microscope which can provide digital photography. In mentioning this to Doug Austen he indicated that he was very interested in photographing his material because over 46 years of working with diamonds he had been putting aside a number of the more unusual and interesting small diamond crystals which had passed through his hands. Accordingly the two people got together and commenced photographing the diamonds, the talk and screening of photographs this evening being the result of this collaboration.

As background Penny Williamson suggested that as everyone would probably know diamonds are formed deep within the Earth's mantle at a depth of from 140 to 200 km and have subsequently been brought up to the surface in kimberlite and lamproite pipes. Diamonds crystallise in the cubic system and forms are commonly octahedra, cubes, macle twins or combinations.

With the aid of a number of projected images Doug Austen proceeded to describe his work as a diamond tool cutter and also showed a selection of the variety of diamond crystals which he had found over the years. A number of examples of the diamond tipped tools which he had made were also shown and something of the way that these are fashioned for use. The tools included diamond dressers for dressing grinding wheels, diamond chisels for cutting stones to form and diamond points for measuring hardness in metals. A selection of some of the diamonds used was shown. Most of the stones were of about a quarter carat in size but with some up to seven carats. In displaying the images the speaker pointed out features such as surface 'snake-skin' or 'moon craters' which he had found were characteristic of Argyll diamonds. An unusual diamond from Russia was shown which displayed two colours red on one side and yellow on the other, quite a valuable stone. Another showed a small hexagonal inclusion of some other mineral. Several images were shown of diamonds displaying the familiar 'trigon' surface feature.

In photographing diamonds Doug Austen referred to a period about 10 years ago when with Jim Sharpe's help he had attempted to make a number of photographs of his diamonds. At that time there was clearly difficulty in photographing stones due to the limited depth of field provided by the microscope being used. By contrast, the speaker showed a few photographs which had been taken by Larry Barron with an electron microscope which showed much more detail of smaller stones, including a surface feature of circles named 'smoke' and another stone with a small garnet inclusion. Yet another stone was shown with a small bubble inclusion and Larry Barron had attempted to measure the internal pressure of the cavity which would possibly indicate its original depth and pressure of formation. For this purpose he had asked that the diamond be polished to provide a window into the stone for him to examine the feature.

Penny Williamson pointed out that in contrast to the first images shown the latter few images were indicating the difference between a \$1000 camera compared to a \$500,000 scanning electron microscope.

A few technical problems for the diamond cutter were mentioned by Doug Austen. One of these is the cutter finding a feature which he called 'knots' - similar in a sense to the knots found in wood. When occurring in a diamond these are very difficult to cut through or polish. The speaker also stressed that whilst diamonds are definitely the hardest substance known they can break - even, although very rarely, with relatively slight changes in temperature. Normally however in cutting and polishing a stone quite high temperatures are generated through the grinding wheel and especially when the cut stone is being set in a tool fashioned with powdered metal being annealed at 1,100°C. Diamonds will resist breakages at this temperature although these may still occur but also very rarely. In answer to a question the speaker advised that diamonds can be made to burn but this would need a temperature of about 1,800°C.

Moving on to describe the new Wollongong University digital microscope Doug Austen described how the operator would focus on the top of a stone and then on its bottom and then determine how many other levels should be focused upon in between. The microscope can be instructed to do this automatically and then add all the images taken at different levels together to provide a composite image completely in focus at all levels, thereby overcoming the depth of field problem. The number of levels focused upon and pictures taken of them can be eight or as many as 20 or more. All the images as they are taken are displayed on a computer screen attached to the microscope.

Doug Austen and Penny Williamson then continued to show a large number of images of diamonds they had taken with the new microscope explaining and pointing out as they went along various aspects of the stones and also technicalities of the photographic work. The speakers stressed that they were continually learning and gradually becoming more adept and familiar with the microscope. The presentation prompted a number of questions from the members at the Meeting which the speakers dealt with including aspects of the cutting work, inclusions found, the quite variable forms of even very small stones, sources of diamonds and the legalities associated with purchasing even small quantities for cutting.

At the end of the lecture Penny Williamson advised that two members had brought in a few diamonds to display to the Meeting. Barry Day referred to a half-carat stone which he had actually found on a fossicking trip, looking for sapphires in the Black Springs area and finding the diamond in his sapphire sieve. Ron Jacobson had brought in a small selection of very nice Argyll diamonds.

The second lecture of the evening was given by Paul Carr assisted by Penny Williamson

Recent Additions to the University of Wollongong Mineral Collection

Paul Carr and Penny Williamson

Paul Carr commenced the lecture by describing the main entrance foyer of the GeoSciences Building of Wollongong University which is enormous. It is about 45 m long and several slides were shown of the general layout of the foyer which now houses nine display cases, one with books only and the other eight with minerals and the speaker would be describing these this evening. Prior to the year 2000, the foyer was very bare, almost like a big barn with only a few noticeboards and a poor colour scheme. As a result of donations to the University of a large number of mineral specimens and obviously very considerable work put in by Paul Carr and Penny Williamson, first lobbying for funds to buy cabinets, then installing them, arranging all the specimens inside with labels and a number of photographs and explanatory plaques the GeoSciences building foyer at Wollongong University now boasts a world-class mineral display.

In the year 2000 the University of Wollongong received a donation of a very significant mineral collection from Howard Worner. Many Mineralogical Society members would know of Howard Worner. He was an eminent mineralogist and geologist, author of many articles and of the book 'The Minerals of Broken Hill'. He was a long-time member and patron for a time of the Mineralogical Society of Victoria and would have delivered lectures at many of the Mineralogical Seminars. He lived for many years in Victoria but moved to Wollongong in 1986 in partial retirement although continued to chair committees and work at the University. He passed away in 2006 aged 93.

Paul Carr continued relating a brief biography of Howard Worner who was one of three brothers growing up in the Mallee district of Western Victoria. Howard went on to study chemistry and geology first at the Bendigo School of Mines and then later at the University of Melbourne. Soon after that he became Professor of Metallurgy at the University of Melbourne and then went on to become Dean of Engineering. To this day he has been the youngest Professor and Dean of Engineering at the University. He was obviously a very learned and capable man and went on from these posts to become Director of Research at the BHP Company, (now BHP Billiton), and then Director of Research at CRA (now the Rio Tinto Company Ltd). He became chairman of various government energy bodies such as the Victoria Brown Coal Council and throughout his career amassed sixteen major awards and medals for academic achievements including the gold medal of the Bendigo School of Mines and a CBE.

Howard Worner started collecting minerals in 1932 when he was still a student and had occasion to attend an Australasian Mining and Metallurgy conference in Broken Hill. In being shown over some of the mines and mining operations there a lifelong interest in mineral collecting was kindled although over the years there were a few occasions when he decided to downsize his collection, disposing of much of it at intervals but then gradually building it up again. In moving to Wollongong in 1986 to live near to his daughter and her family Howard was supposed to have retired but never really did and became involved with research into metal smelting at the University of Wollongong. In the course of working at the University he met Paul Carr and Penny Williamson.

In moving to Wollongong Howard had downsized his collection to about 1,000 specimens and by the year 2000 he was looking to downsize his collection further but made it clear to the speaker that he would really like it to be placed on display which Paul Carr and Penny Williamson guaranteed to do. Accordingly the remainder of the Worner collection was donated to the University. The donation from Howard and some later smaller donations from other benefactors have led the speaker and Penny Williamson into a lengthy process of obtaining funds for display cases, setting these up in the University GeoSciences Building foyer and then arranging the specimens and labels inside the cases also with a few photographs, maps, and explanatory plaques. This considerable work and the result obtained was the subject of Paul Carr's lecture. The lecture was thoroughly illustrated by a series of photographs of the display cases and their contents.

To house the Howard Worner collection the curators needed three display cases but initially had to settle for two until more funds could be obtained. The first case described is about 3.6 meters long and 0.9 meters deep. It is called the Broken Hill cabinet and contains mainly Broken Hill specimens but also a number of other Australian minerals and the speaker showed images of most of these describing them in detail with histories of some of them as he went along. The cabinet was set up in 2000 and after setting up with all the specimens and labels it was firmly sealed by glaziers with no doors provided, partly for security considerations but also with the hope of keeping dust and insects completely out. This was not entirely successful and Penny Williamson has said that keeping dust out of a supposedly completely sealed cabinet is extremely difficult. Late last year there was some building renovation being done above the foyer and other cases were being erected so Penny Williamson took the opportunity to ask glaziers to temporarily open the sealed case so that she could clean it, removing a small eleven-year accumulation of dust and insects and cleaning the glass inside. A tip from a window cleaner to her and passed on to the members by Paul Carr was to use "only very clean water, no detergents or methylated spirits, just the cleanest water".

The second cabinet set up in 2000 is referred to by the curators as the Central Cabinet. It is about 8.4 meters long by 1.8 meters wide and is double sided. It is sub-divided into five major sections on each side with two end sections and holds in total about five hundred specimens and Paul Carr similarly showed images and described many of these specimens, a number in some detail and sometimes including a little of their histories. A few years after setting up the first two cabinets money was obtained for a third which was set up and contains a more varied display of specimens reflecting Howard Worner's particular collecting interests. Accordingly and since he was a metallurgist there are specimens of metals, magnesium, tin, zinc, nickel, bismuth and a number of polished slabs of agate with intriguing textures and patterns. There were also specimens from many Australian locations, a few crocoites and meteorites.

Within a few years of the foyer display being set up and possibly because its existence and quality had become generally known and had impressed many people other benefactors such as Matthew Webb and a few others started donating specimens. This led the curators to lobby for more money to build more cabinets to house more specimens and last year they were granted funds for this to be done. One of the new cabinets has been named the 'Illawarra Science on Show' cabinet and has been so called because the University was persuaded by the curators to provide some of the money as a Community Engagement grant and the cabinet is intended to demonstrate a connection to the community. Accordingly it displays minerals largely from the local area including a large calcite unexpectedly recovered from a coal mine.

The displays of minerals in the newer cabinets are still a work in progress and Paul Carr made clear that additions to the cabinets such as art-work for the backgrounds would be made in due course. This did not prevent the speaker from describing many of the specimens individually in some detail. Some of the heavy duty work involved in handling and setting up for display some very large geode and other specimens as well as the cabinets themselves was also described and illustrated. Other work associated with setting up a large mineral display or series of displays such as providing Perspex bases or stands for many of the specimens and the provision of adhesive rubber 'feet' on many of the specimens to prevent them 'creeping' along glass shelves was also described. The main foyer of a building would have numerous people walking through constantly and even on a concrete floor display cases will experience some vibration.

One of the cabinets displays fossils and the curators experienced the same problem with a very large clam shell fossil specimen as with the heavier geodes and the need to install the specimen with the glass removed and then fit the glass in afterwards. As well as the clam shell the cabinet displays spectacular trilobites, a dinosaur egg, a selection of Moroccan ammonites, a number of stromatolites and a world-class crinoid specimen obtained by Kevin Davy from W.A. many years ago. The crinoid was one of a number of specimens obtained by Davy which were originally well encased in sandstone and he took the trouble to bring an expert to Australia from the U.S. to prepare the specimens. The expert spent a number of weeks working ten hours a day with an air-abrasive tool gradually exposing the fossils from the sandstone with very commendable results. Penny Williamson advised that the same expert is now working with Tom Kapitany.

The smallest cabinet is a wall-mounted case 1.4 by 1.6 meters given the title 'World's oldest Rocks' and accordingly contains examples of very old rocks from Greenland with plaques explaining their stories of origin and formation. Another similarly-sized cabinet contains entirely books, mainly ones written by university staff members.

The last cabinet described is a very large floor to ceiling cabinet about 2.7 meters wide and 2.7 meters high and is called by the curators the 'Hobbit Case'. There are three art-work panels at the back, one on the hobbit fossils found on the Indonesian island of Flores, one is on human evolution and one is on climate change. The cabinet display is not complete with the human evolution and climate change displays to be set up in due time by other University personnel. The hobbit panel depicts the Liang Bua cave where the fossils were found and the cabinet is intended to contain a perfect replica of the first skeleton of a hobbit found although at the moment the replica has been taken to the Australian Museum for nine months to be studied.

The original skeleton of Homo Floresiensis is kept in Indonesia and has been dated to about 18,000 years old. It was decided to be that of a woman aged about thirty and like the other hobbits, of which remains of about thirteen individuals have now been found, she was about one meter tall as an adult. Her skeleton, found in 2003 by the workers in Flores who included people from Wollongong, remains the most complete one found so far. The curators intend that the replica of the skeleton will be eventually be on permanent display in the cabinet and presented in a standing pose from floor level which should be particularly eye-catching to students and visitors entering the foyer.

In conclusion Paul Carr advised that the GeoSciences building foyer display area is open to any visitors during normal week-day hours and Saturdays although warned that parking vehicles within a University campus is always a big problem. Outside term times is not nearly so bad and visitors were very welcome. Finally Penny Williamson advised that since the University does not have an exhibitions department all of the work setting up the displays, the cleaning, mounting of specimens, labeling, and the designing of the artwork has been done by her and Paul Carr. Her statement prompted a round of applause for the two speakers.

FORTHCOMING EVENTS

ANNUAL GEM, MINERAL & JEWELLERY SHOW CAMPBELLTOWN & DISTRICTS LAPIDARY CLUB

Over Saturday and Sunday July 21st and 22nd from 9 am to 4 pm at the
Greg Percival Community Centre (formerly Ingleburn Community Centre),
On the corner of Cumberland Road. and Oxford Road., Ingleburn

GEM SHOW by the BLAXLAND GEM & MINERAL CLUB

Over Saturday and Sunday, the 18th and 19th of August 2012

Being held in the Glenbrook Community Hall, Great Western Highway, Glenbrook, NSW
(Next to Glenbrook Theatre). Just west of Information Centre.

Displays of lapidary work and gem, mineral and crystal sales. Refreshments available.

<http://www.freewebs.com/blaxlandgemmineralclub/BGMCshow.htm>

8 am to 4 pm Daily. Entry: Adults: \$3 Children \$1

The CUMBERLAND GEM & MINERAL SHOW

Over Saturday and Sunday the 25th & 26th of August 2012

in the Roselea Community Centre, Pennant Hills Road, Carlingford

SALES of jewellery, gemstones, beads, opals, mineral specimens from all over the world,
tools and equipment for lapidary and beading work, metaphysical and healing crystals.

Displays of mineral specimens, cut & polished stones, carvings & gemstones.

GEMKHANA 2012

In the Showground at Mudgee over the long weekend Saturday, September 29th 10.00am-5.00pm;
Sunday, September 30th 10.00am-5.00pm; & Monday, October 1st, 9.00am to midday.

'We are returning to Mudgee Showground this year.

The competition brings entries from all across NSW and quite a few from interstate.
Dealers and tailgaters will attend. We will have children's activities. Refreshments will be available.

There is wheelchair access and plenty of parking. On-site camping is available.

Contacts are :- Una (Co-ordinator) 02 4759 2440, Marilyn 02 9635 8218, email to : -
gemlapidarycouncilnsw.org.au or Website *http://www.gemlapidarycouncilnsw.org.au/gemkhana.html*

ANNUAL GEM FESTIVAL by the CENTRAL COAST LAPIDARY CLUB

Saturday & Sunday October 13th & 14th at the Mingara Recreation Club,
Mingara Drive, off Wyong Road, Tumbi Umbi.

Saturday 13th 9.00 am to 5.00 pm, Sunday 14th 9.00 am To 4.00pm

Club Competition and dealers selling tools and equipment.

Beads, Crafts, Minerals, Faceting And Cabbing Materials.

GEM SHOW 2012

By the Northern Districts Lapidary Club

Theme: 'The Origin of Gemstones'

Friday, Saturday & Sunday, the 26th, 27th & 28th of October 2012.

In the Beecroft Community Centre, Cnr Beecroft & Copeland Roads. Beecroft.

Gems, Jewellery, Minerals, Fossils, Slabs, Lapidary Books, Machinery,

Workshop Demonstrations, Plants, Free Light Refreshments.

Small entry charge. Inquiries to :-

www.ndlapidary.org.au Telephone 9484 0014 or 9878 4073

The November

WINDSOR JEWELLERY, BEADING, GEM & MINERAL SHOW

Saturday & Sunday, November 24th & 25th 2012

In the Windsor Function Centre on the corner of Dight & Macquarie Streets, Windsor.

Next door to Windsor Public School.

Saturday open from 9.30 a.m. to 5.00 p.m. & Sunday from 9.30 a.m. to 4.00 p.m.

Admission \$5, children \$1. Light refreshments.

SALES of jewellery, gemstones, beads, opals, mineral specimens from all over the world,
tools and equipment for lapidary and beading work, metaphysical and healing crystals.

Inquiries to Peter Beckwith on 0412 333 150.

THE MINERALOGICAL SOCIETY OF N.S.W. INC

NOMINATION FORM FOR ELECTION OF OFFICE-BEARERS

AND COMMITTEE MEMBERS FOR 2012/2013

POSITION	Name of Nominee (Please print)	Signature of Nominee
OFFICE-BEARERS:		
PRESIDENT
VICE-PRESIDENT
SECRETARY
TREASURER
COMMITTEE MEMBERS		
MEMBER
MEMBER
MEMBER
MEMBER
MEMBER

PROPOSER:

Name (Please print):

Signature:

Date: