



THE
MINERALOGICAL SOCIETY
OF
NEW SOUTH WALES INC

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NEWSLETTER

APRIL 2017

The April Meeting will be held on Friday the 7th of April at 7.30 pm in the clubrooms of the Parramatta and Holroyd Lapidary Club at 73 Fullagar Road, Wentworthville.

The program will commence with a minitalk to be given by Dieter Mylius on : -

Organic Minerals

The talk will refer to minerals other than carbonates which contain carbon.

If any members have such minerals available they are invited to bring these in to help illustrate the talk.

The talk will be followed by a lecture to be given by John Rankin on : -

19th Century European Minerals in the Australian Museum

Forthcoming Meetings and Programs

Meetings will be held on the first Friday of each month throughout the year.

May 5th : Member's **Mini-Auction**.

June 2nd: Lecture by Simon Peckover on :- **'The Origins of the High Grade Sapphire Deposits of Kings Plains.'**

July 7th: Lecture by Peter Williams on **'The Floating Stones of Stonehenge'** or **'Where did the Metamorphic Stones of Stonehenge Come From?'**

August 4th: Society **Annual General Meeting** followed by the Betty Mayne and Edna Walker **Memorial Lecture**. This year the Memorial Lecture will be given by Society member Lee Spencer on gemstones in Burma/Myanmar titled **'Up the Irrawaddy'**.

MAY MEETING MINI-AUCTION

The annual **Member's Mini-Auction** will be held at the 5th of May Meeting and will take up the entire evening from 7.30 pm to sell about eighty specimens.

Members intending to enter lots in the Auction are asked to limit themselves to ten specimens each. During the Auction if someone feels that bidding on any of their specimens is not proceeding high enough they can bid for the specimen themselves. The Society takes no commission on the sales and will not enter into any transactions which must be entirely between the vendor and purchaser.

So that an auction list can be prepared and distributed in advance please provide Jim Sharpe with a list of your specimens to be auctioned by April 21st. Contact Jim by phone (02) 9871 2502 or by e-mail: sharpejames@tpg.com.au

In addition to the regular auction minerals can also be sold by silent auction. Members can bring in a tray of specimens to leave on a table accompanied by a bid form which will be provided. There will be no need to advise Jim in advance regarding the silent auction as the boxes will not be listed.

Please clearly label all your specimens and boxes.

FIELD TRIP

APRIL Field Trip to Tallawang Magnetite Commercial Mine

Date: Saturday 8th and Sunday 9th April 2017

Requirement: Members must be 'SWMS Certified', have Industrial PPE and be a current financial member. We will be collecting in an expired calcic magnetite skarn.

To register and obtain additional details e-mail Edward Zbik at ecjz@optusnet.com.au
or SMS 0401 538 480 or call (02) 9638 6586 up to 10:00 pm.

The SOCIETY COMMITTEE

PRESIDENT:	Dieter Mylius	Tel: (02) 9477 1060
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	Edward Zbik	Tel: (02) 9638 6586
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The MARCH MEETING

At the commencement of the March Meeting the President, Dieter Mylius, reported that the **Kids with Cancer** sale held at the February Meeting had generated almost \$1,400 for the charity and he complimented and thanked those members who had donated the specimens.

Graham Ogle announced that the next meeting of the **Micro-Mineral Group** would be held at his house a week on Saturday and the theme would be 'Minerals of the Northern Territory'. For the following month the meeting would be held at Brian England's house in Maitland, the theme then being on South Australia minerals.

Graham Ogle further reported on a recent visit that he had made to Los Angeles in California when he had the opportunity to visit the **La Brea Tar Pits** site and the adjoining **George C. Page Museum**. The tar pits are a natural phenomenon of heavy oil seeping to the surface from underground deposits and with more volatile components evaporating left pools of asphalt or tar. ('Brea' is Spanish for tar). Over some 50,000 years the pools had been trapping animals which had wandered into them and accumulated a very large number of fossils, mostly of mammals, including a number of now extinct species such as mammoths, dire wolves, ground sloths and sabre-toothed tigers as well as remains of many smaller animals. Over one million fossils have been recovered from the site with excavating continuing and many are on display in the museum. Graham Ogle strongly recommended that anyone visiting that part of America should make a point of including a visit to the Tar Pits and Museum.

Ed Zbik reported that investigations and arrangements for a number of **Field Trips** was a work in progress with a number of sites under consideration. He was definitely hoping to arrange a visit to Kingsgate in May at the same time as the Lismore Show but had so far been refused a permit to visit Hornsby Quarry which was scheduled to be filled in by spoil from the NorthConnex tunnelling work.

Ed Zbik also reported that the adoption of the GDA94 (**Geocentric Datum of Australia, 1994**) coordinate system, was replacing the Australian Geodetic Datum 1966, (AGD66). The new system had indicated that references including site and property boundaries given on older maps had become inaccurate by up to a few meters and were being corrected. Some of the inaccuracy has been caused by tectonic movement of the Australian plate.

Geoff Parsons addressed the meeting to add a few points to the lecture on **Radioactive Minerals** that he had given to the previous General Meeting. He warned that if anyone looked for information through the Internet on radioactive minerals and elements they should be wary because there were a lot of errors and inaccuracies. He had also brought in a disc of silicon to display.

Terry Van Hoff reported briefly on this year's **Tucson Show** which he had attended and provided a brief overview of the event. He had noted that there was quite an amount of new material coming on to the market and was on display at the Show, notably some amazing material from Inner Mongolia.

The first talk of the evening was given by John Chapman on : -

‘An Introduction to Types of Mineral Deposits’

John Chapman

There are a large number of features by which a mineral deposit may be classified. These would include the mineral and metal content, shape and size of the deposit, the host rock and geological setting and the genesis. With the aid of a number of images of diagrams of mineral deposition systems, rock and mineral ore exposures and minerals to be found in different environments as well as a number of sites and minerals referred to during his lecture John Chapman presented a thorough overview of his subject.

Gradually and in reference to a number of mineral deposits and mines in Australia as examples the speaker described the groups of rock types and the mineral assemblages likely to be found in the various types. Speaking in general about some mineral associations in host rocks, ultra-mafic rocks, (igneous rocks high in iron and magnesium with low silica), tend to contain platinum-group metals, nickel, chromium and diamond etc; mafic rocks tend to contain copper, lead, zinc and silver and felsic rocks, granites etc, tend to contain tungsten, rare earths, tin and molybdenum. Rock types and groups with the minerals likely to be associated with them were further described in detail including pegmatites, metamorphic and magmatic deposits, skarns, porphyry, epithermal and hydrothermal deposits. Lists of minerals and the rocks in which they were most likely to be found were shown and explained as well as at intervals images of some of the minerals being referred to.

At the end of his talk John Chapman introduced the next speaker for the evening. Dr. Larry Barron had originally hailed from Canada and immigrated to Australia in 1970. Before leaving North America Dr Barron had played American football and in Australia took up playing rugby for some years. He had worked for many years at the Geological Survey as a petrologist but with a wide range of interests including investigating sources and origins of diamonds and other gemstones. John Chapman recalled an occasion when Dr Barron came back from a trip to Iran with a very unusual rock which was veined with carbon. The carbon had originally been diamonds which would have thoroughly studded the rock but which had all been retrograde metamorphosed back to carbon.

Dr Barron had previously given a lecture to the Society at the August 2012 Meeting on Australian Diamonds.

‘The Hornsby Diatreme’

Dr. Larry Barron

Dr Barron commenced his lecture by relating the circumstances of how he had come to Australia. Many years ago his paternal grandfather had qualified as a blacksmith and decided to travel to South America and work his way back to Canada, blacksmithing all the way. The speaker must have been impressed with the story and upon obtaining his degree from a university in Montreal decided to work his way around the World. Apparently the first stop on this tour was Sydney and as the speaker put it, he “had been stuck here ever since!”

A diatreme is a volcanic pipe formed by magma rising from depths and expanding usually explosively as it reaches the surface to form an inverted cone structure. Due to the explosive action of the magma when it reaches the surface the diatreme often leaves a depression which becomes a lake.

Diatremes are quite common throughout the World and sometimes in rising from great depths they may carry diamonds to the surface. The kimberlite pipes in South Africa are diatremes.

The diatreme rock at Hornsby is basalt and was quarried to about 100 meters depth for road base from the early 1900s until 2002. It is currently about half filled with water and closed to the public because sections of the edges of the steep sides are regarded as unsafe. This has been unfortunate because views of the east face are significant in providing a cross-section of the structure. The future of the excavation is that it is intended to dump into it some of the spoil from the NorthConnex tunneling works and then to rehabilitate and vegetate the site.

The Hornsby Diatreme is the largest of about 95 pipes in the Sydney area and is of Jurassic age, (about 200 million years old). It has many features typical of diatremes but also some unusual features. Initially Dr Barron described the tectonic movement of crustal plates involving six 'super continents' that have moved about the Earth's surface. More locally he noted that basalt underlies the entire Sydney basin and was pierced by many small intrusions of the basalt pushing through the overlying sediments to the surface. The speaker indicated on images of maps that basalt has produced many diatremes over much of eastern Australia, images being shown of Mt Gambier in South Australia and sites in Queensland as well as many in New South Wales.

Dr Barron spent the greater part of his lecture showing and explaining the significance of a number of images of the Hornsby Diatreme quarry from earlier years commencing with maps showing the location and diagrams of the geological formation. Many images were of the quarry walls, the speaker particularly pointing out the variety of rock types, bedding planes and formations in the walls of the excavation. In general terms the speaker maintained that diatremes are used for a number of purposes. They may be quite scenic and the soil more fertile than surrounding land supporting farms and orchards.

Diatremes are also important in some parts of the World because they may be diamondiferous and Dr Barron showed an image of a 600 carat diamond recently recovered from a diatreme mine in Africa but noted that mines in Russia, Canada and Brazil have also produced very large stones. He stressed that the diatreme is merely the 'train' which brings up the diamonds from a great depth. Interestingly in referring to other large diamonds Dr Barron reported that researchers had recently managed to identify small inclusions of nickel metal beads in some specimens. The only way that this finding could be explained is that the diamond must have grown near the border between the Earth's metal core and the mantle, at an enormous depth.

Other findings from this research is that the isotopes of carbon in diamonds have been measured leading to a conclusion that diamonds have been made from originally living plants! The indication for this is that of the two naturally occurring stable carbon isotopes, C^{12} and C^{13} , plants will tend to absorb the slightly smaller molecule preferentially. This has led to diamonds being composed of a greater proportion of the lighter isotope C^{12} than the normal proportion of the two, (99:1) in the surface environment. The plant carbon then has been transported down to a great depth by subduction and since this is presumably ongoing, diamonds are probably being formed today.

Moving on to describe research being conducted on diamonds and other gemstones found in New England, Dr. Barron noted that over two million diamonds have been recovered from alluvial deposits in the New England by miners who had been originally looking for cassiterite. The origin of the diamonds would have been from diatremes. Many of the diamonds from this area have a distinctive 'soccer-ball' shape with curved faces. Interesting inclusions found in some of the stones were of coesite, the high temperature and high pressure form of quartz, indicating the type of process which had produced the stones. The speaker had been involved in the research into the New England diamond deposits during his work for the Dept of Mineral Resources and finally showed a few images of the researchers.

FORTHCOMING EVENTS

GEMBOREE 2017

Incorporating the 53rd NATIONAL GEM & MINERAL SHOW

To be held at the Tony Luchetti Showground on the corner of Barton & Geordie Streets in Lithgow over Easter 2017 from Friday 14th April to Monday 17th April.

‘Come and see the wonderful displays of gems, crystals, fossils and jewellery.
National Exhibitions and Competitions.

Over 20 leading Australian Dealers in attendance – lapidary, jewellery, and mineral trading.
Tailgating – where hobbyists trade their arts. Refreshments.

Enquiries to :- Colin Wright on 02 9521 2688, - coldel1@hotmail.com.au

Or Arthur Roffey on 02 4572 5812 - crystalhabit@bigpond.com

Or Publicity Officer Alan McRae on 02 6331 5404 – amcrae@lisp.com.au’

27th Lismore GEMFEST 2017

Will be held in the Lismore Showgrounds, Alexandra Pde, North Lismore, over the weekend of the 20th & 21st of May next. Saturday from 9am to 5pm and Sunday from 9am to 3pm.

Quoting from the Lismore Lapidary Club Website Show promotional information :-

‘Lismore GEMFEST is the biggest annual event in the country devoted to lapidary and allied arts and is organised by the Lismore Gem & Lapidary Club Inc. Exhibitors come from all parts of the country and range from amateurs to the most experienced professionals. Everything from rough stone for cutting, through to finished jewellery in all price ranges, along with mineral specimens, fossils, gold nuggets and meteorites are to be found on display. There are gem sieving activities for children, demonstrations of jewellery making and other craft activities.’

Further information from :- bruce.copper@bigpond.com, Telephone 02 6688 8280

Or from the Website :- www.gemclublismore.org.au

The BANKSTOWN GEM & MINERAL FAIR

To be held in the Arena Sports Club at 140 Rookwood Road in Yagoona, over the weekend of the 3rd & 4th of June . Saturday 9.30 am to 5 pm, Sunday from 9.30 am to 4 pm.

The Fair is supported by the Bankstown & Districts Lapidary Club.

There will be a large range of items on sale including jewellery, gemstones, beads, opals, gem rough, carvings, fossils, crystals and mineral specimens.

Refreshments available, plenty of parking, admission fees.

For more information on the Bankstown Show contact :- Peter on 0412 333 150

Or the Club website www.bankstownlapidary.com

BLAXLAND GEM & MINERAL CLUB GEM SHOW

Being held over Saturday and Sunday, August 19th and 20th 2017
in the Glenbrook Community Hall, Great Western Highway, Glenbrook, NSW.
(Next to Glenbrook Theatre), just west of the Information Centre.

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

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

Refreshments available.

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

THE JOINT MINERALOGICAL SOCIETIES OF AUSTRALASIA 40TH ANNUAL SEMINAR

The 2017 Seminar will be held over Wednesday the 4th and Thursday the 5th of October in the Hahndorf Resort Conference Centre, Hahndorf, S.A. and is being hosted this year by the **Mineralogical Society of South Australia**.

The Theme will be '**Copper Minerals - Copper State**'

The entire seminar with a program of events including a number of field trips will run from Saturday the 30th of September to Friday the 6th of October.

'The formal proceedings, opening address and lecture program will take place over the two days of Wednesday the 4th and Thursday the 5th of October with various activities including field trips scheduled from October 1st through to the 6th. Additional field trips are planned for the 9th – 14th October to the north of S.A, and to locations and collections in and around Broken Hill.

The Seminar will be based in the historic German settled village of Hahndorf, only 30 minutes' drive by car from Adelaide City. A range of accommodation options are available including at the seminar venue. The theme of 'Copper Minerals - Copper State' has been selected in view of South Australia's early copper mining history. A number of field trips to copper, uranium and phosphate deposits are currently being planned. There are a number of tourist-interest places to visit in the region including dozens of wineries.'

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