



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

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

**NEWSLETTER**

**DECEMBER 2016**

**The December Meeting will be held on Friday the 2<sup>nd</sup> of December at 7.30 pm in the clubrooms of the Parramatta and Holroyd Lapidary Club at 73 Fullagar Road, Wentworthville.**

The program will comprise the

**CHRISTMAS SOCIAL and SWAP N' SELL**

The Society will be holding its Christmas Social and 'Swap n' Sell' as usual this year but at the new venue of the **Parramatta and Holroyd Lapidary Club**. The program will be the same as in previous years; the evening will be 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 pm possibly with a few brief announcements but the Club rooms would be open from about 6.30 pm to allow time for members with material for sale to get set up.

There will be the customary 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.

In expectation that a larger number of people would be attending the Christmas Social than other meetings, with extra food available and being consumed and minerals being moved about members are **particularly asked not to place any objects on the Lapidary Club display cases around the room.**

Members are reminded that the Society Committee has previously 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 1<sup>st</sup>** any members who were unsure of their current financial status could pay their subscriptions for 2017 from now on and could then be taken as financial. A membership renewal form will accompany this Newsletter and members are asked to fill out a form particularly if any of their addresses, telephone number/s or e-mail details have changed. Please keep the Society up-to-date with this information.

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## Forthcoming Meetings and Programs for 2017

The Society does not hold General Meetings in January and the first Meeting in 2017 will be on February the 3rd. Meetings will be held on the first Friday of each subsequent month throughout the year.

February 3<sup>rd</sup> 2017: Lecture on **'Radioactivity and Minerals'** by Geoff Parsons.

March 3<sup>rd</sup> 2017: Lecture on **'The Milton Lavers Collection'** by Paul Carr.

April 7<sup>th</sup> 2017: Lecture to be given by John Rankin on : -  
**'19<sup>th</sup> Century European Minerals in the Australian Museum'**.

The above lecture programs will be accompanied by mini-talks on a variety of subjects to be decided and arranged. If any members have suggestions for mini-talks or can provide one, please advise the Committee.

May 5<sup>th</sup> 2017: Member's **Mini-Auction**.

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### The SOCIETY COMMITTEE

|                    |                  |                                   |
|--------------------|------------------|-----------------------------------|
| PRESIDENT:         | Dieter Mylius    | Tel: (02) 9477 1060               |
|                    | E-mail:          | <i>dieterm@internode.on.net</i>   |
| 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) 9868 4446               |
|                    | E-mail:          | <i>grahamo@diabetesnsw.com.au</i> |
| COMMITTEE MEMBERS: | Peter Beddow     | Tel: (02) 8810 8446               |
|                    | David Colchester | Tel: (02) 9449 3862               |
|                    | Geoff Parsons    | Tel: (02) 9548 3289               |
|                    | Simon Tanner     |                                   |
|                    | Edward Zbik      | Tel: (02) 9638 6586               |

(Note to members wishing to contact Ed Zbik. His e-mail address is no longer operable and he will be obtaining a new one, to be advised. For the time being please contact him by telephone).

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### FIELD TRIPS

**2017 Field Trip Program:** There are no Field Trips being planned for the hottest months of the New Year but a number of sites are being considered and investigated for future visits. If any members have suggestions for a field trip location, know a landowner with a mineral occurrence or have contacts with a commercial mining or quarrying company, we would like to hear from you.

One particular area still under investigation by the Society is **Tollwong** with several research trips being planned. Ed Zbik has invited all members who will be financial for 2017 to consider participation in planning trips and making visits to sites to locate and gather specimens to confirm the presence of known species and possibly identify ones not previously recorded from each site. The intention is to access remote parts of the **Morton National Park** along the edges of the **Shoalhaven Gorge** where the Tolwong mines are located, and the **Bungonia State Conservation Area** to examine several deposits including the old BlockUp mines and Long Gully sites.

The trips will be quite adventurous. Several are planned for varying lengths of time and degrees of rigorousness. Paths which will be mostly long overgrown have to be located and followed or possibly in places there would be no tracks through steep walled gullies and around at least four waterfalls. Participants will need to comply with the NPWS Science License and the Society's SWMS and to carry all their food, bush camping gear and definitely all their water. Water in the area is heavily contaminated. Camping may be from 2-4 days for each trip. The nearest vehicle access roads may be up to 5 to 10 klm away and members are encouraged to carry a CB radio with a 5 klm radius.

Fossicking for personal collection is prohibited in National Parks and doing so would result in heavy penalties. All specimens collected are for research and would be examined, identified and recorded and would remain in the custodianship of the Society Micro-mineral Group until June 30<sup>th</sup> 2017, (when the Society research Science License expires), to be ultimately turned over to the Australian Museum.

For more details contact Edward Zbik by phone (02) 9638 6586 or Mobile: 0401 538 480.

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## **The NOVEMBER MEETING**

The first lecture of the evening was given by Dieter Mylius on Calcite and he noted that in preparing for the talk this evening he had realised that he had given a mini-talk on Calcite earlier in the year at the March Meeting. He suggested that this would not matter since the mineral constituted a large subject about which information not previously delivered could be presented.

### **Calcite**

#### **Dieter Mylius**

The speaker presumed that all members would have specimens of calcite and in at least a few different forms and colours. The mineral is very wide-spread throughout the World and occurs in many different environments. Mindat lists over 27,000 localities. Calcite is chemically calcium carbonate and is the most common and stable of three chemically identical minerals, but with different crystal structures, calcite is trigonal, aragonite is orthorhombic and vaterite hexagonal.

Dieter Mylius ran through the physical features of calcite. The hardness is only 3 so specimens can be easily scratched. The mineral has perfect rhombohedral cleavage and can readily be split into smaller and smaller fragments. Being a carbonate it is very susceptible to attack by any acid which should never be used to clean specimens. A number of specimens had been brought in for display by members and these were referred to, the speaker noting various features including of one transparent cleaved rhombohedron displaying the double refraction for which calcite is well known, the specimen having been placed on its label which could be seen to have a doubled image of the print. Calcite occurs in a wide range of colours and specimens may be fluorescent and even occasionally phosphorescent.

After introducing the subject Dieter Mylius invited the members to contribute comments or any special information they might have about calcite in effect creating a brief discussion forum. A number of points were made and questions asked by members before Dieter Mylius introduced the main speaker for the evening. Ross Pogson is the Scientific Officer and Collection Manager, Geosciences (Mineralogy, Petrology & Palaeontology), at the Australian Museum Research Institute.

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## **‘Meteorites’**

### **Ross Pogson’**

Ross Pogson commenced his lecture by stating that Meteorites was a huge topic which he could have titled, ‘Everything You Wished To Know About Meteorites But Were Afraid To Ask’. It was a big topic which he would approach step by step. The lecture was substantially illustrated by a series of projected images.

Meteorites are not commonly found and the ones which have been recovered are only a small fraction of the material which lands on the Earth every year. Given that about 70% of the Earth’s surface is water any meteorites landing in the sea or ocean are lost. Conveniently however there are some areas of the (solid) surface where meteorites may be found more easily. These are the desert areas but particularly the Antarctic regions where the lack of vegetation ensures that meteorites can be more readily seen. Also in view of the freezing conditions in the Antarctic meteorites will not corrode as readily as they would in warmer moist tropical conditions.

Meteorites upon being found are not named after people, only after their geographical location after a county, city, river or mountain. Referring to figures from the year 2000 the speaker had found that by that time there had been over 22,500 named meteorites. Over 17,000 have been found between 1969 and 1993. Most meteorites are noticeably heavier than other surface rocks, the iron meteorites having a density generally around 7.5 grms per cubic centimeter.

Meteorites can vary in appearance. The Australian museum receives quite a number of suspected meteorites brought in for examination. The specimen may superficially resemble a meteorite having a smooth exterior and a brown surface colour where the iron content has been turned to oxide on its passage through the atmosphere. The specimen may have surface indentations called regmaglypts resembling thumbprints and caused by ablation whilst travelling through the air.

Meteorites arrive on Earth from various regions of the Solar system, notably the asteroid belt and from much further out, the Kuiper belt. A few have been identified as having come from the Moon and Mars. Specimens of the iron-nickel meteorites when cut open show a silvery metallic appearance of the cut surface whilst the stony specimens show a speckled surface. Mineral compositions vary substantially with over eighty mineral species identified in specimens, many present in extremely small amounts with some having been described in meteorites for the first time. The more common minerals to be found are olivines, mostly the magnesium-rich variety and calcium-rich plagioclase feldspar. There are also the ortho-pyroxenes – hypersthene and enstatite, and the clino-pyroxenes – augite and pigeonite.

The iron meteorites also contain a variety of minerals including alloys of iron and nickel such as taenite and kamacite. Other minerals include serpentine and troilite - iron sulphide and schreibersite - iron-nickel phosphide (Fe,Ni)<sub>3</sub>P. Carbon is sometimes found as graphite and very occasionally as very small diamonds. Haematite and magnetite are found mainly on the outside fusion crust of iron meteorites due to interaction with the air.

There are a whole lot of rarer minerals found in meteorites, some with quite elaborate chemical compositions and a list was shown by the speaker. Some of the rarer minerals included chrome-iron-sulphides, iron-nickel-cobalt carbides, and metal nitrides. Asking how can one tell one meteorite from another Ross Pogson referred to the classification system. There are three main types of meteorites, iron, stony and stony-iron.

The iron meteorites are effectively alloys of iron and nickel. The proportion of nickel varies which determines the type, hexahedrites have a lower amount of nickel, octahedrites have a larger amount and ataxites the highest. In analyzing and classifying iron meteorites the specimen would be cut through and the cut surface polished and then etched with a mixture of fairly weak 5-6% nitric acid and alcohol when a characteristic pattern called Widmanstätten may appear. This may only be found in specimens with a narrow range of nickel content and provides the classification. Octahedrites display the pattern, hexahedrites and ataxites do not and a number of images of the various types with and without the pattern were shown.

Stony meteorites are by far the most numerous of all meteorites comprising about 92.4% of all specimens found. They are divided into chondrites and achondrites depending on the presence or absence in the structure of chondrules. 'Ordinary' chondrites are the most common comprising about 86% of all known specimens. The name refers to their structure which is made up of chondrules, small, ½ to 4-5 mm spherical bodies composed of glass and silicates and fused together. The structure suggests a process involving rapid cooling from a very high temperature. They are divided up further on the basis of the amount of iron they contain, 'H' for high iron, 'L' for low iron and 'LL' for very low and further on the basis of the size and structure of the chondrules and mineral content. Achondrites do not contain chondrules and have a more igneous or metamorphic origin.

An unusual class of meteorites are the carbonaceous chondrites which are uncommon but account for about 4.5% of finds. They are mostly composed of silicates and sulphides but with a varying proportion of organic compounds and water.

Stony-iron meteorites consist of a fairly equal mixture of iron and silicates. They are also classed as achondrites having been subjected to metamorphism and are divided into mesosiderites which have a brecciated structure and pallasites which are a matrix of iron with embedded silicates such as olivine.

For the latter part of his lecture Ross Pogson worked through a large series of images of named meteorites, lists of minerals found in the various meteorite types and many images of thin-sectioned specimens photographed with transmitted or plane-polarized light showing the internal structures and how the various constituent minerals may be identified.

At the end of his lecture the speaker dealt competently and informatively with a large number of questions and comments

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## **FORTHCOMING EVENTS**

### **SYDNEY CRYSTAL SHOW**

Over Saturday 3rd & Sunday 4th December from 9.00am to 5.00pm each day  
To be held in the Fraser Park Pavilion, 100 Marrickville Road, Marrickville.

## Brochure Advertisement:

'The **Sydney Crystal Show** is Australia's Premier Mineral, Crystal and Fossil Show. Leading merchants from around Australia gather for two full days of incredible natural wonders, unique gifts and treasures. An astounding variety of minerals, crystals, fossils, gemstones, jewellery and lapidary supplies are available. The event is held twice yearly just 10 minutes from the centre of Sydney. Great care has been taken to select the best and most reputable traders, to provide an exotic mix of natural pieces for customers.

Great food is made freshly onsite and free car parking is available, quite a rarity in Sydney! This event is organised by RocknCrystals - Sydney's Mineral Shop.

For more information: [www.sydneycrystalshow.com](http://www.sydneycrystalshow.com)

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### **CANBERRA ROCK SWAP 2017**

The Canberra Lapidary Club Rock Swap will be held as usual on the camping ground at Wagtail Way in the EPIC showground alongside Northbourne Avenue in Canberra over Saturday and Sunday the 18<sup>th</sup> and 19<sup>th</sup> of March 2017 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](http://www.canberralapidary.org.au)

Or from the Club Show Convenor, Norm Menadue, on Tel: 02 6258 6631.

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### **GEMBOREE 2017**

Incorporating the 53<sup>rd</sup> 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 14<sup>th</sup> April to Monday 17<sup>th</sup> 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](mailto:coldel1@hotmail.com.au)

Or Arthur Roffey on 02 4572 5812 - [crystalhabit@bigpond.com](mailto:crystalhabit@bigpond.com)

Or Publicity Officer Alan McRae on 02 6331 5404 – [amcrae@lisp.com.au](mailto:amcrae@lisp.com.au)'

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

### MEMBERSHIP RENEWAL

Membership fees are due from January 1<sup>st</sup>

Please provide your full name, postal address, telephone number/s and e-mail address (if available). Unless otherwise indicated, members giving their e-mail address will receive the Newsletter only by e-mail.

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 wishes to receive hard copies of any Society correspondence or E-mail only. ? 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 put your name in the Memo line when making a direct debit/bank transfer so that the Society will know who the payment is from. If any of your address or telephone details have changed you should provide those details on this form and return it to the Treasurer - either: -

1) at the next General Meeting,

2) by e-mail to [grahamo@australiandiabetescouncil.com](mailto:grahamo@australiandiabetescouncil.com),

3) by post to the address below

#### 2). *Cheque or Australia Post Money Order sent with a completed renewal form to: -*

The 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*