



## THE MINERALOGICAL SOCIETY OF NEW SOUTH WALES INC

Website: [www.minsocnsw.org.au](http://www.minsocnsw.org.au)

Please address all correspondence to :-  
The Secretary, 58 Amazon Road, Seven Hills, NSW 2147

### NEWSLETTER      DECEMBER 2019

**The December Meeting will be held on Friday the 6<sup>th</sup> of December at 7.30 pm in the clubrooms of the Parramatta and Holroyd Lapidary Club at 73 Fullagar Road, Wentworthville.**

### CHRISTMAS SOCIAL and SWAP n' SELL

The Christmas Social will comprise the sale or exchange of mineral specimens and mineralogical material, books, magazines and equipment. The Meeting will be officially opened at 7.30 pm 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 a comprehensive range of snack food refreshments and drinks including a pizza delivery at about 8.00 pm. Members, guests and visitors attending the Christmas Social will be charged \$10 upon entry 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 and pay their \$10. Please make sure you receive one.

During the Social evening members are **particularly asked not to place any objects on the Lapidary Club display cases around the room.** The Lapidary Club management has also insisted that there should be **no food-stuffs taken into the rear work-room** of the Club. At the Christmas Social in previous years a certain amount of congestion has been experienced in view of the finite amount of floor space inside the Lapidary Club room and the larger number of people who would be attending and tables utilised for sales. It is hoped to alleviate this situation by setting up some of the tables with the refreshments on the lawn outside the Clubroom, (depending on weather conditions).

In order to assess the amount of table space which will be required by members intending to sell at the Social they should have advised the Secretary in advance of the amount of table space they require and which can then be reserved for them, limited to not more than one table per seller. Table space for selling cannot be guaranteed for a seller who has not booked in advance.

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.** Any members who were unsure of their current financial status could pay their subscriptions for 2020 from now on and they would then be taken as financial. Membership fees are in any case due from January 1<sup>st</sup>. Members are particularly recommended to pay their subscriptions by **direct-debiting as much as possible** since this will provide both the members and the Society separately with bank account records of their payments. In direct-debiting the payer should make certain to add their name to the payment panel to show who the payment is from.

It is also ideal for members to avoid assailing the Secretary or Treasurer at the Christmas Social with subscription payments when they would prefer to be looking at minerals.

The Society account details are: -      Commonwealth Bank  
Account Name: -      Mineralogical Society of NSW Inc.  
BSB: 062016      Account number: 28023647

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## FORTHCOMING MEETINGS AND PROGRAMS

**2020:** The Society does not hold General Meetings in January and the first Meeting in 2020 will be on February the 7th. Meetings will be held on the first Friday of each subsequent month through the year unless the first Friday is before a long weekend when the Meeting would be put back one week. This will be necessary in June and October next year.

There is a full schedule of **General Meeting Evening Programs** being planned for 2020 with lectures to be given on a number of subjects. These may include:- A Report on the 2019 Mineralogical Seminar in Perth; Opal Classification, Gold from the Beta Hunt Mine; Update on the Minerals of the Cobar Region; Description of the Ted Elliott Collection at Georgetown; Historical Hill End Photographs by Beaufoy Merlin; Minerals of Santori; Bismuth Carbonates; Mines of Cornwall.

There will also be the annual **Kids with Cancer Sale** held at the February 2020 meeting. Members will be invited to bring donations to the sale on the evening; a table will be set aside. The donor should label specimens with the name, source location and the price.

The Society has been organising the sales for over ten years now and each year has generated between one and two thousand dollars for the **Kids with Cancer Foundation Australia**. All donations are 100% for family assistance and for the cancer wards in children's hospitals with no management fees taken. The Foundation, (<https://www.kidswithcancer.org.au/>) is a non-profit Public Benevolent Institution (PBI) and registered charity with the 'Australian Charities & Not for Profit Commission, (ACNC).

The **2020 JOINT MINERALOGICAL SOCIETIES SEMINAR** will be held in Sydney at the **Ryde-Eastwood Leagues Club** over the October long weekend and the activities may last from Friday the 2nd to Tuesday the 6<sup>th</sup> of October or later depending on the length of the field trip program.

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## WELCOME

Welcome to new member Josh WEAL of Llanarth

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## The SOCIETY COMMITTEE

PRESIDENT:	Dieter Mylius	Tel: (02) 9477 1060
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VICE-PRESIDENT:	John Chapman	Tel: (02) 9808 3481
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	E-mail:	<i>quartzandsirius@hotmail.com</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
	E-mail:	<i>ecjz@optusnet.com.au</i>

## The NOVEMBER MEETING

At the commencement of the meeting the President, Dieter Mylius, referred to the very sad loss of Arthur Roffey who had passed away a week before on the 26<sup>th</sup> of October. The President advised that the funeral would be held next Thursday, the 7<sup>th</sup> of November, at 11.00am at the Castlebrook Memorial Park in Rouse Hill.

The **Micro-Mineral Group** meeting would be held on the 30<sup>th</sup> of November at a venue to be advised and would be the Group's Christmas party.

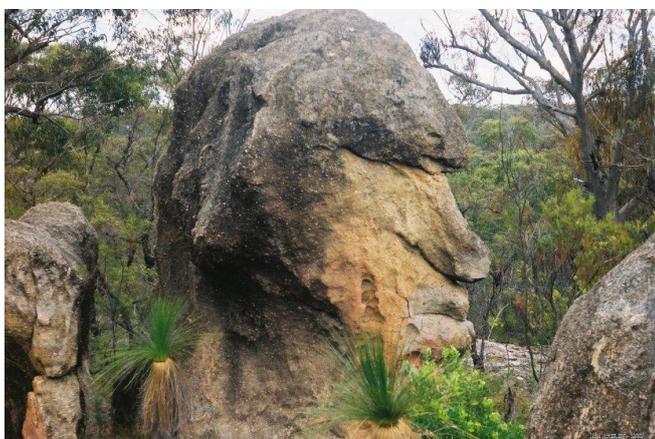
The first talk of the evening was given by Society member Brian Holden.

### Collecting at Torrington, (with a Twist)

**Brian Holden**

In commencing his talk Brian Holden suggested that virtually all members present at the meeting would have visited the Torrington area of New England, probably a number of times. The whole of New England has seen an amount of diverse mining activities over the years which have left a number of features of the work to be seen today. Over the course of his talk the speaker provided an introduction to the mining history of Torrington and displayed a collection, with a 'twist', - of a series of images first the countryside and some of the interesting rock formations to be seen in the area, then the remnants of the mining work, machinery, buildings, and dwellings of the people who worked there. He also referred to some of the early workers and mines, the processing of ores by the methods used in earlier years, machinery used and remains of the buildings and workers dwellings compared to some of the more modern buildings in Torrington and other New England towns.

'Collecting with a Twist' also referred to the collecting by people in the mining areas of materials, old machinery and tools, bricks from abandoned processing works and even the liquor license for the Torrington 'Tableland' pub which was 'collected' by someone around the time of the 2000 Olympics. The pub was a useful source of information from talkative locals about the area and providing fossicking tips.



? Easter Island



The Tableland Hotel, Torrington

From about 1845 Chinese miners looking for gold would probably have been the first to conduct any prospecting and mining in New England. Later on some of these miners converted themselves into commodity suppliers and shopkeepers. The Chinese were followed by other prospectors and miners looking for and by the 1860s finding deposits and amounts particularly of tin in the Torrington area but also of copper, tungsten, antimony, topaz and sapphires establishing mining operations in Torrington, Emmaville, Tingha, Inverell, Elsmore, Hillgrove and other sites. Early mining effectively was scratching the surface until companies with more capital were established with heavier machinery brought in and deeper mining enabled.



Some of the Chinese stayed on in New England and set up trading stores. This one in Glen Innes, established in 1886, now in a more recent building.

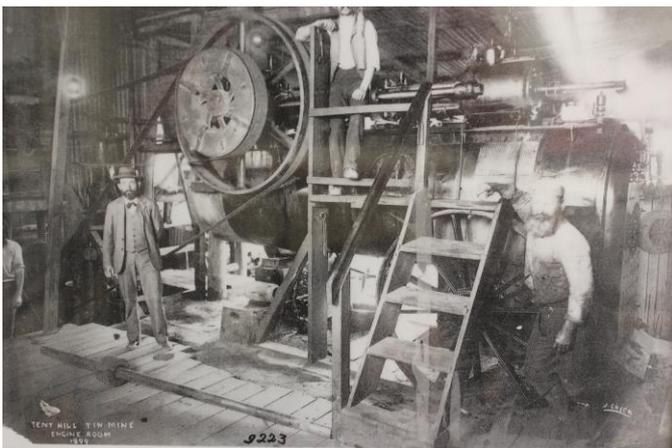


A collection by a local of tools and artefacts.

Alluvial tin being recovered from deposits was enhanced by the application of high-pressure water hosing and gravity separation of the heavier minerals with sometimes the need to ask local residents to move their temporary accommodation because the ground underneath the houses was tin-bearing. This problem in Emmaville with some building foundations being undermined led to a decision to move the village main buildings about two kilometers west to where it is today. Bringing equipment and supplies into mining areas and taking tin ore out was quite an operation in the earliest years given that a railway did not reach Deepwater until the 1880s. Up to then ore had to be taken by horse-dray to Grafton on the coast and loaded on to steamships which in those days plied up and down the NSW coast.

Gradually processing of ores was established at various mines with roasting ovens being built up hillsides. An image of the remains of one roasting oven was shown which had been built using about a half a million bricks, produced locally. Calcining ores also provided recovery of arsenic which was sublimed during the roasting and later scraped off the brickwork by workers with spades and loaded into wheelbarrows to be bagged up and transported away. The arsenic was used for insecticides and sheep-dip. Some of the bricks from the structure when it had ceased operation were 'collected' by local people for other building purposes, even although being contaminated with arsenic should have been a concern.

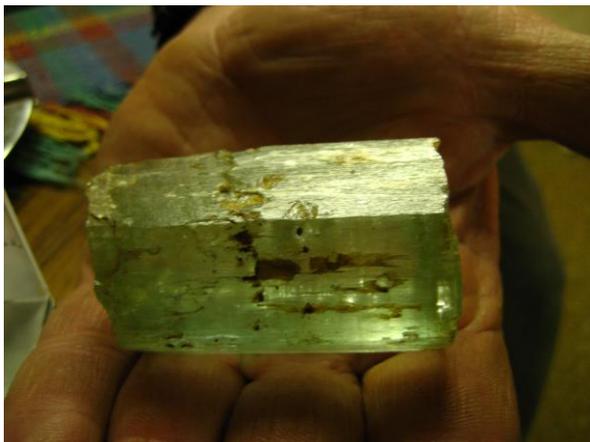
Deep mines became established such as the Curnow which is the third deepest tin mine shaft in Australia and drops 1,000 feet straight down. It is beaten by the Silver Medal mine in Tasmania with a shaft 1,200 feet deep. Mining areas are littered with the remains of old equipment including steam boilers, two of which came from old wooden Sydney ferries. An important non-metalliferous commodity collected within the mining areas was timber, notably stringy-bark which was needed for buildings and to shore up underground mine-workings.



Tent Hill tin mine engine room 1899



A Southern Cross drilling machine which has seen better days, Now in a local collection.



660ct beryl crystal from the Bismuth mine.  
Now in the Brisbane Mineral Heritage Museum



Cassiterite and quartz specimen  
from the Gulf mine

Brian Holden's talk was substantially illustrated by images taken in Torrington and elsewhere in New England which he had collected over the years and the information he provided was very thorough showing his intimate and extensive knowledge of the history of the area.

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## **MINERAL MATTER IN COAL**

### **Where, How, What and Why?**

**David French**

Initially David French introduced himself. He is a Principal Research Scientist at the CSIRO, a PhD and a visiting Senior Fellow at the School of Biological, Earth and Environmental Science, UNSW. He has worked as an exploration geologist and has studied base and industrial minerals particularly coal, coal geology, coal mineralogy and inorganic chemistry, coal utilization and coal by-products. As the speaker commenced his talk which was substantially illustrated by images of lists of minerals and other materials in coal including biological inclusions such as shell fragments and diatoms, diagrams and charts, analyses of coals and components, examination by optical and x-ray diffraction of drill cores taken through coal seams etc, it became apparent that the science of coal is a very large subject.

In commencing his lecture the speaker apologized for his subject since in being invited to give a lecture to the Society he had been advised that lectures were usually about attractive and colourful minerals. Unfortunately as he acknowledged, coal and its inclusions did not fall into that category. The science and knowledge about coal was however quite complex.

All coals contain an amount of what the researchers call mineral matter. Generally and for most purposes to which the coal is to be used the less mineral matter the better. The mineral matter abundance is inversely related to the coal grade. The matter includes all components in the dry coal that are not organic represented by non-mineral inorganic elements which may be dissolved in the pore water or attached to or within the organic molecules and crystalline or "true" mineral particles. Ash is the non-combustible residue of the mineral matter.

Lists of the most common and then the less common minerals that may occur in coal were illustrated, the more common minerals being quartz, clays such as kaolinite, calcite and pyrite. The less common were a large number of silicates, carbonates, sulphates, phosphates, sulphides and a few others.

## Formation of Mineral Matter in Coal

### Syn-depositional

Biogenic remains  
Detrital input  
Chemical precipitates

### Early Diagenetic

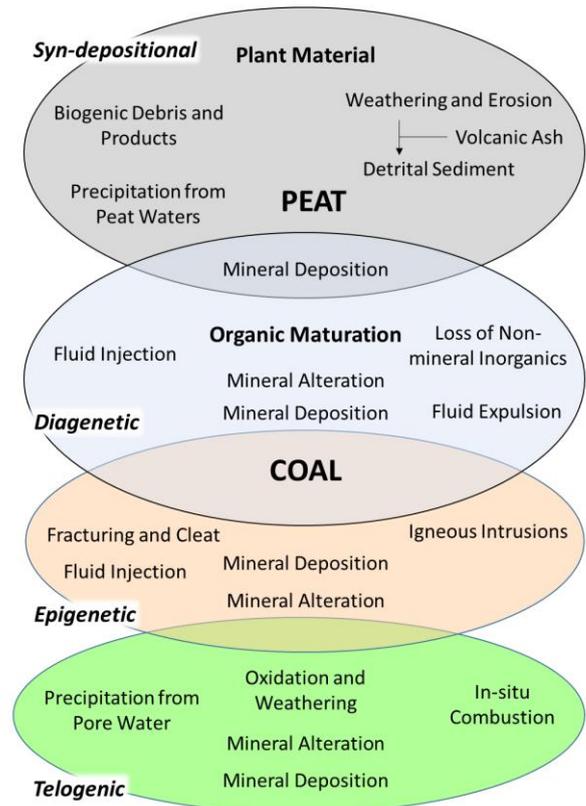
Mineral alteration  
Chemical precipitates  
Fluid injection and expulsion

### Late Diagenetic - Epigenetic

Cleat infillings (solution and precipitation)  
Rank advance and igneous intrusions  
Fluid injection and related effects

### Telogenic

Oxidation and weathering  
Precipitation from pore water  
In-situ combustion effects



## Significance of Minerals in Coal Seams

**Quartz** – silicosis and frictional ignition in mining; abrasion in mining and use.

**Pyrite** – release of sulphur, acidic waters and potentially toxic metals.

**Apatite and goyazite** – phosphorus in coking coals.

**Smectite and I/S** – slaking and dispersion from stockpiles.

**Carbonates** – ash slagging in combustion; permeability reduction in gas drainage

David French moved on to describe the methods of determining the quality of coals in regard to their mineral content, the sources of the minerals and the mode of formation of the coal. Methods involved examination by Itrax Core Scanner, X-ray Micro-tomography and QUEMSCAN of drill cores taken through coal seams.

The last image presented by the speaker at the end of his lecture was a humorous note to anyone whose attention had failed. In fact the lecture was very well-prepared, interesting, very well illustrated and informative.

Thank you for your patience





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

MEMBERSHIP APPLICATION / 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). Members with e-mail capability will receive the Newsletter and other information only by e-mail.

NAME: .....

POSTAL ADDRESS: .....

.....

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

E-mail address .....

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: - Commonwealth Bank  
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 *quartzandsirius@hotmail.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**