THE
MINERALOGICAL SOCIETY
OF
NEW SOUTH WALES INC.

C/o School of Natural Science
B.C.R.I. Parramatta Campus University of Western Sydney
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Website: **www.minsocnsw.org.au**

NEWSLETTER

SEPTEMBER 2010

The September Meeting will be held on Friday the 3rd of September at 7.30 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 program will commence with a talk to be given by Dennys Angove on : -

'The QUEMSCAM Analysis of Minerals'

The talk will be followed by a lecture to be given by Allen Arnold on : -

'Collecting, A Wonderful World'.

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FORTHCOMING MEETINGS

Subject to circumstances some changes to the following schedule of program subjects and speakers may have to be made in due course.

October 8th: **(Second Friday this month, - <u>after</u> the long weekend**). Lectures on 'Mineral Catalogues' by John Rankin and on 'Plate Tectonics to Mineral Deposits' by Paul Carr.

November 5th: Member's Forum followed by a lecture by Glen Diemar of the University of Tasmania on 'The Roxby Downs Copper-Uranium Mine'.

December 3rd: Christmas Social

February 4th 2011: 'New Minerals Update' talk by Peter Williams and a lecture by Peter Leverett on 'Mines in the Mist – Mt Lyell'.

March 4th 2011: Tucson 2011 Update and a lecture by John Rankin on 'Collectors of the New England'.

April 1st 2011: Talk by John Smedley on 'Labels for Minerals' and a lecture by Gary Sutherland on 'Cousin Jacks – Cornwall's Mining Heritage'.

May 6th 2011: Member's Mini Auction.

June 3rd 2011: 'The Prospect Intrusion. Brief History, Geology & Member's Experiences.

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SOUTH COAST EXCURSION

When: Saturday 4th September.
Meet at the Kiama Blowhole car park at 10 am (near the lighthouse)

The excursion will be guided by Peter Williams and Paul Carr and will visit a number of localities in the Kiama-Wollongong area. It is based on a University student excursion and will concentrate on geology with only minor opportunities for collecting. Sites to be visited include Kiama Blowholes, Bombo Quarry, Wollongong Lighthouse and Austimer Beach. There will also be a viewing of the Howard Worner Collection housed at Wollongong University. More details about the sites to be visited will be included in a separate field trip notice.

Please advise John Chapman (phone 98083481, email chapmanjr@optusnet.com.au) if you will be attending, and include your mobile phone number (if you have one).

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WELCOME

Welcome to new Society member John Hann of Newtown

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THE ANNUAL GENERAL MEETING AUGUST 6th 2010

The 2010 A.G.M. was held in the LZG14 lecture room at U.W.S. North Parramatta as scheduled and attended by some forty members comprising a quorum. The Meeting was opened by the Society Vice-President, John Chapman, who welcomed all the members attending the Meeting and apologized for the absence of the President, Gary Sutherland who was still incapacitated with his Achilles tendon injury. In his place the Vice-President read out the Presidential Report for 2009/2010.

President's Report for 2009-2010

The Society has had another successful year with membership numbers remaining about the same. Attendances at meetings have been strong due mainly to a very diverse number of talks throughout the year. Subjects covered ranged from Aboriginal pigments and tools to Forensic Gemmology and there were a number of interesting talks covering historical aspects of mineralogy in Australia. We also had another very successful auction in May thanks mainly to the efforts of Jim Sharpe and Dieter Mylius our auctioneer for the night.

The Christmas social was another very well attended night with plenty of minerals for sale and again a great spread was provided by John Chapman and his many assistants. The good social atmosphere was also maintained on a number of field trips held during the year to Mineral Hill and Mudgee.

The micro group has been meeting regularly during the year and is always willing to welcome new members, please contact Graham Ogle if you are interested in attending.

It is hoped that the coming year will see the Society's website continue to develop and improve and become a key site for promoting mineralogy in NSW.

The year had it's sad periods as we saw the passing of 3 members and former members of the society, Peter Shales, Keith Gregson and John Lower, they will all be fondly remembered. On another sad note Jim Sharpe has indicated that he does not wish to stand for Committee this year. Jim has worked tirelessly for the Society over many years and I would, on behalf of the Society like to acknowledge the enormous effort he has put into his role as Treasurer and also his contribution in organising talks and auctions, not to mention the number of great talks he has given to the group for many years. He was also a key driver in implementing the donations to Kids with Cancer, we have donated $1,020 this year. Thanks Jim.

It is probably an opportune time for members of the Society to consider what they can contribute to the club. The current committee has been running the club for a number of years now and while positions are filled for the upcoming year I am sure that a number of the existing committee would welcome a break, to get some new blood involved at committee level for the following year. The workload is not high and seeing a successful Society can be fulfilling.

I also need to extend my thanks to the effort put in by all of the current committee members over the past 12 months. The success of the Society is largely due to your efforts and I would like to wish the incoming committee all the best for the coming year.

It would be very remiss of me if I didn't extend a special vote of thanks to Peter Williams and the University of Western Sydney for their continuing support of the Society in allowing us to meet on the University's premises at no cost to the Society. This allows us to maintain our very low membership fees.

Gary Sutherland
August 2010

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The Vice-President further advised that the Society Treasurer, Jim Sharpe, was also unfortunately unable to attend the A.G.M. but in his absence Graham Ogle would read out the Annual Financial Report.

ANNUAL REPORT 2009 – 2010 FINANCIAL STATEMENT

Balance in operating (current) account @ 30th June 2010	$6,104.71
Balance in CBA term deposit account, (Betty Mayne Bequest Account)	$31,966.32
Cash in hand	$46.00
Total Society funds at 30th June 2010	$38,117.03
Total Society funds at 30th June 2009	$35,413.61
Increase in funds since 30th June 2009	$2,703.42

Income

Membership subscriptions	$3,350.10
Sales of Australian Journal of Mineralogy	$40.00
Supper donations and mineral sales	$1,025.45
Sales of donated specimens for the Kids with Cancer charity	$1,020.00
Interest on current account	$22.35
Interest on term deposit	$1,598.31

	TOTAL	$7,056.21
Expenditure		
Payment to Kids with Cancer charity	$1,020.00	
Public Liability Insurance premium	$310.75	
Postage & stationery costs, Secretary & Treasurer	$625.00	
Xmas Social refreshments.	$660.19	
Monthly Meeting refreshments.	$646.77	
Binding Mineralogical Records into 2-year volumes	$560.00	
Annual subscription to Rocks& Minerals Magazine,	$59.08	
Affiliation fees and charges	$132.00	
Reimbursement for traveling expenses to speakers from outside Sydney	$150.00	
Other expenses	$189.00	
	TOTAL	$4,352.79
Income less Expenditure, $7,056.21 - $4,352.79 =		$2,703.42
Liabilities		NIL

The Vice-President then declared all the current Committee positions vacant and asked Society member Penny Williamson to assume the task of Returning Officer and to take the chair of the Meeting for the election of the 2010/2011 Society Office-Bearers and Committee members.

The Returning Officer first asked if there were any nominations from the floor for any of the Committee positions. With no others being made Penny Williamson noted that only single nominations had been put forward for all the Committee positions and she was therefore able to declare the nominated Committee members elected unopposed as follows.

PRESIDENT:	Dieter Mylius
VICE-PRESIDENT:	John Chapman
SECRETARY:	George Laking
TREASURER:	Graham Ogle
COMMITTEE MEMBERS:	David Colchester
	Arthur Roffey
	John Smedley
	Gary Sutherland
	Peter Williams

With the election of the 2010/2011 Committee concluded over the Returning Officer handed the chair back to the newly-elected Society President, Dieter Mylius. In taking the chair the President asked if there was any further business which members might wish to raise and with none being made he declared the 2010 Society Annual General Meeting concluded.

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The President then introduced the speaker for the evening, Society member Brian England who has had a very long career as a mineralogist. He retired a few years ago after working for most of his life for the B.H.P. company in Newcastle as a minerals analyst and has long pursued mineralogical interests across a wide variety of topics. He is the author of a considerable number of articles published in various journals including in the Mineralogical Record for some of which he has won awards and over the years has made an enormous contribution to Australian mineralogy.

The lecture was extensively illustrated by slides and the speaker has provided the following summary and references.

MINERALS OF THE GARRAWILLA VOLCANICS WARRUMBUNGLE RANGE NSW

Brian England

When the Warrumbungle Range is mentioned one immediately thinks of the spectacular remnants of the 18-13 myr old (Tertiary) Warrumbungle Shield Volcano to the west of Coonabarrabran, but although these spectacular peaks form part of the Warrumbungle Range, the Garrawilla lavas which host the World's most spectacular occurrences of heulandite and stellerite are much older and were erupted during the early Jurassic (160myr). The most extensive outcrops of these rocks lie to the east of Coonabarabran and form part of the Oxley Basin volcanic pile.

The physiography of the Garrawilla area comprises a group of scattered conical peaks and domes (including Mount Ruth, Mount Nombi, The Pinnacle, Pine Mountain, Goorindi, Boorindi and Ratz Castle) composed of phonolite and trachyte forming the Bulga Complex, which resulted from quiet extrusions of viscous lava erupted after a considerable volume of the Garrawilla lavas had already been removed by erosion. These peaks project above the low terraced hills representing eroded flows of alkali basalts, pyroclastic flows and agglomerates that form the remnants of the Garrawilla Volcanics. These volcanics were probably erupted through the underlying Permian-Triassic sediments from several isolated vents or fissures. Some of these rocks are extremely vesicular and even the agglomerates contain ample cavities, some several metres in extent, which provide open spaces for secondary mineral crystallisation.

Around 90 localities have been recorded. The first specimens of stellerite (then identified as stilbite) were found by Samuel Stuchbury in 1853.

Zeolites occur at all levels in the valleys of Garrawilla and Mitchells Creeks, with two extensive flows lying between impervious Mesozoic sandstones. Most of the better specimens have been found in the underlying unit, which acts as a local aquifer, and are concentrated in three separate levels up to 30m thick. The zeolites are found in vesicles, cavities and as irregular vein-like masses, with the best specimens coming from completely sealed vughs in solid basalt. Here the crystals are clean, unaltered and show good colour, but are difficult to extract without damage.

An observed paragenetic sequence including all species so far found in the Garrawilla Volcanics is shown in slide 4.

The principal zeolites and associated minerals are as follows:

ANALCIME

Glassy to milky white trapezohedral crystals of analcime from 1 to 5 cm in diameter occur lining vesicles up to 12cm across. Crystals are typically found alone and in certain horizons, but associated minerals may include heulandite, stellerite, laumontite, calcite and rarely natrolite.

NATROLITE

Natrolite is rare as acicular crystals to 2cm in length, usually associated with analcime.

HEULANDITE

Heulandite is widespread but much less common than stellerite. Heulandite from the Garrawilla Volcanics closely resembles the better-known specimens from the 65 myr old Deccan traprocks on India. Crystals are typically composite in nature, comprising several tabular individuals in near parallel growth. Divergence on b(010) is common, producing spectacular fan-shaped groups to 20cm across. Occasionally both

ends of the composite groups curve upwards, forming habits bearing some resemblance to Viking ships! Some of the vesicular basalts on Garrawilla Station have provided truly spectacular micromounts.

Crystals are usually highly lustrous and colour varies from colourless through salmon pink, orange, red, to deep burgundy.

The heulandite is commonly found in association with stellerite and/or drusy quartz, but is rarely associated with analcime.

STELLERITE

Stellerite is the most common zeolite in the Garrawilla Volcanics and is found at all levels as crystals from 1 to 12cm in length, lining vesicles up to a metre across or veins several tens of metres in length. Some flows contain up to 20% stellerite as vesicle infillings. Colour varies from pale peach pink to bright orange.

The crystals closely resemble stilbite and indeed had been identified as such by both collectors and museums until relatively recently, after Simon Pecover submitted a sample of "stilbite" to John Taylor of the CSIRO Division of Fuel Technology for neutron diffraction. The crystal had orthorhombic symmetry and so could not have been stilbite! Since then further research has proved their true identify. This identification was based on the following:

- Crystal structure determination based on neutron diffraction (Miller and Taylor, 1985)
- Chemical analysis (Fredrickson, 1985). Although there is no gap between stilbite and stellerite and the dividing line is somewhat arbitrary, the composition of crystals from the Garrawilla Volcanics falls well within the stellerite field, with no sodium detected.
- X-ray powder diffraction (XRD) (Slansky, 1985). The diagnostic 240 and 20-4 reflections for stilbite are absent in crystals from the Garrawilla Volcanics.
- Differential thermal analysis (Slansky, 1985)
- Crystal morphology. The crystals have obvious orthorhombic symmetry and show no twinning. The giveaway on most stellerite crystals is the presence of an often very small rhombic *c*(001) face lying on the crystal terminations at right angles to the sides of the crystals.

Crystals are distinctly tabular in habit. Isolated crystals are rare and usually the stellerite occurs as parallel to sub-parallel slightly divergent groups. Individual crystal faces are nearly always discernable.

Stellerite is commonly associated with earlier heulandite, laumontite, analcime and later radiating globular quartz and/or calcite. Up to four of these species can occur on individual specimens.

LAUMONTITE

Snow-white prismatic crystals of laumontite to 3cm long are found at all levels, usually as radial clusters associated with stellerite, but also with drusy and globular quartz and analcime. The crystals fall apart rapidly due to partial dehydration, once exposed to the atmosphere.

QUARTZ

Quartz is common at all levels, but is most abundant towards the middle of the volcanic sequence in the valley of Mitchells Creek. It typically forms globules of compact radiating crystals in which only the terminating faces are visible. These groups form continuous encrustations or occur as individuals up to 2cm diameter on stellerite. The quartz is usually colourless or white, but blue, pink, yellow, green grey and black varieties have been found.

CALCITE

Calcite is common, especially on the higher levels of Mitchells Creek valley. It is usually only present as coarse cleavable masses completely filling cavities, but several occurrences of crystallised calcite have also been found, including one localised abundance of pseudo-octahedral crystals to 2cm diameter.

PREHNITE

The main prehnite locality lies 13km to the northwest of the zeolite deposits. Small-scale mining has yielded spectacular specimens of grey, green, lemon and golden prehnite in both botryoidal and stalactitic habits, with individual stalactites reaching 9cm. Unfortunately most of the material is weathered and partially altered, leaving the crystal masses with poor lustre.

SAPONITE

A common weathering product of basalt, saponite is the most likely species forming tough clay-like coatings on many of the stellerite and heulandite crystals.

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WITH REGRET

It is with regret that the Society Committee has been informed that Ron Young, a long-time member of the Queensland Mineralogical Society, passed away on the 10th of August. He had been ill for some weeks after

the recurrence of a malignancy. Ron will be known if not well-known to a number of our members, he was a member and on the committee of the Queensland Society for many years. The following notice has been sent to other Mineralogical Societies by Steve Dobos of the Queensland Society.

Dear MinSoc Newsletter editors

It is with great sadness that we inform you that Ron Young passed away at 12.05 am Tuesday morning, at St Vincent's Hospital, Kangaroo Point.

Ron had been president of MinSocQ for nine years, and has been vice-president all the years thereafter and was well known to mineral collectors throughout Australia.

As we all know, Ron was a truly wonderful, caring and unselfish person, full of enthusiasm for the things and people near and dear to him. It is a measure of the man that over the last year, and especially in his last few weeks, that Ron was concerned for his friends and relatives, the Minerals Heritage Museum and MinSocQ, with no complaints or bitterness at the hand that fate had dealt him. We of MinSocQ mourn his passing; we will miss him, but we will remember him forever.

We extend our heartfelt condolences to Ron's family.

Steve Dobos
August 2010

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MEMBERS FORUM

To encourage dialog between members the newsletter will now include a trial member's forum segment. We would welcome any brief contributions be they suggestions, comments, questions or any item that would be of interest to our members. The committee is particularly interested in any suggestions for society activities eg field trips. It may be possible to accept photos so feel free to include one if relevant. Contributions should be emailed to John Chapman at chapmanjr@optusnet.com.au at least two weeks before the following monthly meeting.

- Would members be interested in keeping in contact with each other between MinSoc meetings using a social networking site like Facebook? If there is some interest, a Facebook page could be set up for MinSoc NSW and people could network, share mineral photographs and upcoming event information. Meagan Clissold
- Is there some mineralogical issue you would like clarified? How about a question and answer session (to take the place of a mini talk) where members could pose such questions to the meeting for answer by anyone who is able. For example a question such as 'what is a solid solution series' could be addressed by on of our learned members. John Smedley
- I recently came across an intriguing specimen in the Geological Survey's Economic Rock and Mineral Collection. It is the remains of a rusted pistol imbedded in cemented sediments found in a cave at Thornleigh. No other information other than it was donated in the mid 1970s. The iron released by rusting has lithified the surrounding sediment. John Chapman

FORTHCOMING EVENTS

CARLINGFORD GEM & MINERAL SHOW

Over Saturday and Sunday the 28th and 29th of August 2010
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.

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The 2010 NEW ZEALAND NATIONAL ROCK, MINERAL & GEM SHOW

From the 3rd to 5th September 2010 at the West Wave Recreation Centre,
Alderman Drive, Henderson, Auckland, N.Z.
Friday & Saturday, 9.00 a.m. to 5.00 p.m., Sunday 9.00 a.m. to 4.00 p.m.
Sales and displays of gems, jewellery, rocks, fossils, minerals and crystals.
Faceting demonstrations, lapidary tools and equipment. Fluorescent mineral display.
National competition entries and winners.
Contacts: Jill and Ron Anderson phone 09 626 3168 or e-mail : - ron_anders@xtra.co.nz

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GEMKHANA 2010

October 2nd, 3rd, & 4th. Saturday & Sunday 10am-5pm, Monday 9am-midday
At the Cessnock Indoor Sports Centre, Cessnock Showground, Mount View Rd, Cessnock.

The **GEMKHANA** will feature the competition of handcut stones, jewellery, carving, enameling, minerals & fossils. Dealers. Tailgaters. Displays. Demonstrations. Field trips are being planned.

On-site camping is $15 per night both powered and unpowered and the Big 4 Valley Vineyard Tourist Park. (02 4990 2573), is almost next-door, for those who prefer more comfort.
If staying off-site, book early. Cessnock is a popular weekend destination.
Refreshments. Plenty of parking. Wheelchair access.
Marilyn and John Behrens Gemkhana Co-ordinators
Telephone (02) 9635 8218 or e-mail : mbehrens@optusnet.com.au

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The 50TH ANNUAL GEMSTONE & MINERAL SHOW

Presented by members of the **Parramatta & Holroyd Lapidary Club**
over Friday, Saturday & Sunday, the 12th, 13th & 14th of November 2010
at the Clubrooms at 73 Fullagar Road, Wentworthville.

Competition, displays, demonstrations, sales. Sand sieve and fossicking heap.
Refreshments. Plenty of parking. Wheelchair access.

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47th GEMBOREE 2011

Easter 2011. Friday to Monday, April 22nd to 25th, in the Bathurst Showground, at Bathurst, N.S.W.

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