



The Mineralogical Society of Victoria  
Incorporated  
A0001471E

**Newsletter No. 205**

**June 2010**



Albite, Lake Boga, Vic  
3mm field of view

Print Post Approved PP332785/0015

The Mineralogical Society of Victoria Inc.  
P.O. Box 12162  
A'Beckett Street  
Melbourne Vic. 8006

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**Office Bearers:**

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Vice President:	TBA	Special Projects:	Dermot Henry
Secretary:	Lia Bronstijn	Resources (incl Library):	TBA
Treasurer:	John Bosworth	Publicity	TBA
Excursions:	John Haupt	Committee Persons:	Jo Price John Haupt Bill Birch

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Assembly and Circulation: John Haupt

<b>Contact Numbers:</b>	Excursions TBA	Micro-mineral Group Jo Price (03) 54 284 762	Mineral Appreciation Group Alex Blount 0407 879 097
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**Membership Details:**

Joining Fee	\$5.00		
City Adult Member	\$25.00	Country Adult member	\$20.00
City Family membership (2 adults & children under 18)	\$35.00	Country Family Membership (2 adults & children under 18)	\$30.00
Student Member (full time)	\$15.00	Newsletter only	\$15.00

(N.B. - Country membership - more than 50 km from Melbourne G.P.O.)

Applications for membership can be obtained by writing to:-

The Secretary, Ms. Lia Bronstijn,  
P.O. Box 12162,  
A'Beckett Street,  
Melbourne, Vic, 8006.

General meetings are held on the 2nd Monday of each month (except January) commencing at 8.00 pm at the Royal Society of Victoria, 8 Latrobe St. Melbourne.

Visitors are most welcome.

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Newsletter of the Mineralogical Society of Victoria  
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ISSN 0811-1855

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## **FORWARD DIARY**

**PLEASE NOTE:-** General Meetings of the Society are now held on the second Monday of each month, 8:00pm at the Royal Society Building.

- May 30      Micro Group Meeting – At John & Margaret Bosworth’s home. Topic: Type Localities.
- Jun 14      No General Meeting Due to Societies Seminar and Queen’s Birthday Long Weekend
- Jun 20      Mineral Appreciation Group – At Nunawading Lapidary Club Rooms, Silver Grove, Nunawading. Topic: Red minerals.
- Jun 27      Micro Group Meeting – At George & Muriel Lysiuk’s home. Topic: Minerals from U.K.
- Jul 12      Annual General Meeting & General Meeting: Speaker - Alex Blount Topic: The Colour of Minerals
- Jul 18      Mineral Appreciation Group – At Nunawading Lapidary Club Rooms, Silver Grove, Nunawading. Topic: Amphiboles & Pyroxenes – combined with Micro Group
- Jul 18      Micro Group Meeting – At Nunawading Lapidary Club Rooms, Silver Grover, Nunawading. Topic: Amphiboles & Pyroxenes – combined with Mineral Appreciation Group
- Aug 9      General Meeting: Speaker – To be advised. Topic: To be advised
- Aug 15      Mineral Appreciation Group – At Nunawading Lapidary Club Rooms, Silver Grove, Nunawading. Topic: Amorphous minerals and specimens.
- Aug 29      Micro Group Meeting – At Jo & David Price’s home. Topic: to be decided.

## **MINERAL RELATED EVENTS**

- Jun 12 – 14      33rd Joint Mineralogical Societies of Australasia Seminar, The Royal Society Rooms, Adelaide. Hosted by The Mineralogical Society of South Australia.
- Jun 17 (Thursday)      The Royal Society of Victoria - AW Howitt Lecture. 7pm, Royal Society Building, 9 Victoria Street, Melbourne. Dr Rick Squire, Monash University.  
**Supermountains Superlife:** clues from Victoria's geology on the rise of animals, humans and human civilization.

## **NEXT ISSUE**

**PLEASE NOTE:-** Material for the August Newsletter to be with Michael Hirst by **July 22<sup>nd</sup>**.

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## FROM THE COMMITTEE

June brings us to the time of the Annual Joint Societies Seminar, which this year is in Adelaide over the Queen's Birthday long weekend July 12-14. We'd encourage any MinSoc members to make the short trip over to Adelaide and support our sibling Societies, hear a range of informative and sometimes controversial speakers, swap and sell mineral specimens, partake of field collecting trips and generally have a great time catching up with the goings-on in the world of minerals.



With the approaching Annual General Meeting in July, our usual call goes out for anyone interested in joining the committee. We have a variety of roles available and the time commitment is tailored to the amount you can or wish to contribute.

Our Short Talk Roster is (almost) off and running now – apologies for the absence of a Short Talk at the May meeting, the President is getting forgetful! The Roster is included again below

Alex Blount  
President

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Special thanks to Jon Mommers ([www.earthstones.com.au](http://www.earthstones.com.au)) for providing the printing services and allowing us to present the Newsletter in colour.

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## SHORT TALKS

Below is the roster for member's Short Talks at the monthly General Meetings for the remainder of 2010. Remember that the talks only need to run for around 5 minutes or so (10 minutes maximum please) and can cover any topic of a 'mineralogical' nature. And if anyone would like assistance with putting together a 'Powerpoint' computer slideshow, please let a Committee member know.

DATE	SPEAKER
Mon 14 June	None – No Meeting due to Seminar
Mon 12 July	None – Society AGM
Mon 9 August	Joe Francese
Mon 13 September	Ed Richards
Mon 11 October	Pat Marley
Mon 8 November	Peter Hall
Mon 13 December	Jo Price

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### NOTICE FROM THE TREASURER

Members are reminded that the annual subscription for membership of the Society is due on 1 April 2010 for the year ending 31 March 2011. A renewal notice was included in the February 2010 issue of the Newsletter. Current membership fees are listed on the inside front cover of any Newsletter.

Members who have not renewed are encouraged to forward their subscription as soon as practicable.

## **EXCURSIONS**

### **Reports**

#### **March 27<sup>th</sup> The Anakies**

The excursion to the Anakies quarries was held on 27<sup>th</sup> March with 6 people attending. We first collected in the operating quarry on Eastern Hill, then went to the top of the hill, where a bulldozer had recently exposed the upper rock layer. With the main quarry closing at midday, we then went to the disused quarry on Middle Hill. Members collected specimens of magnetite, pseudobrookite and epidote (photo), occurring as crystals in small vesicles in the basalt lava.



Anakies



Flinders

#### **April 24<sup>th</sup> Flinders**

The Flinders excursion in April was disappointingly attended by 3 people. Despite an overcast and cool day, there was no rain and the tide was out. The walk down from the road is now through a thicket of banksias trees frequented by honeyeaters. Attractive specimens of natrolite, including some with pink crystals caused by hematite at their base (photo), gmelinite and a little thompsonite was collected. The long walk back up from the beach seemed a little easier with the cool weather. The following weekend had a report of a car being broken into and a wallet stolen from the same carpark.

### **Forward Diary**

No trips are planned over the winter period. Interest is still being sought from members in having a possible excursion to Kingsgate and the New England area in November. Any suggested localities for future trips would be most welcome.

John Haupt

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## **MUSEUM FUND**

As hopefully members will know by now, the Society is selling a selection of mineral specimens donated by Ian Strachan. The proceeds from the sale are being held in the Societies museum fund, which is made available to the assist Museum Victoria in the purchase of specimens for their collection.

A selection of the material for sale will be presented at each General Meeting, and localities that will be appearing in the next few months will include: Australia, United Kingdom, India and possibly Namibia..

We will also be providing photographs and details of new specimens that are acquired by the Museum with the help of the Museum Fund donations. The most recent purchase was an olmiite ( $Mn^{2+}$  dominant analogue of poldervaarite), from the N'Chwaning Mines, Kalahari manganese fields of South Africa.



Olmiite, N'Chwaning II mine, Kalahari Manganese field, Northern Cape Province, South Africa.  
The specimen is 5 cm long.

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## **PUBLICITY**

### **Micro Group Report**

For the 25<sup>th</sup> April meeting held at Judy Rowe's home, the subject was 'minerals containing Bismuth and/or Tungsten'.



Once again the country members out-numbered the city folk and we started the day with a hot cuppa and a homemade anzac biscuit, which was very fitting seeing as it was ANZAC day.

There was a lot of general discussion like: what is that 'yellow stuff' from Womobi? or what is this 'yellow stuff' from Pittong? So there was a lot of unknown 'yellow stuff' being passed around the table. Quite a few minerals containing Bismuth all starting with Bismut.. etc etc in the name went around, some of these were the hard to identify yellow stuff. It also makes it difficult to identify specimens of the same mineral that are a different colour or form, between one location and another.

While some of the yellow stuff labelled Koechlinite turned out to be Elsmoreite and some of the yellow stuff from Pittong was Pittongite, there are still a lot of unknowns – such as a little yellow sugary thing. However, it was the consensus of the group that some of the yellow stuff from Womobi was Russelleite.

A couple of exceptional examples of Raspite received questions like “how long have you had this” and “where did you get this from” when viewed under the microscope.

Some other good looking specimens were Francisite from Iron Monarch, Koechlinite, Ferberite and another (not exactly a micro mount but an exceptional) sample of Pittongite with lovely golden radiating crystals. Well worth adjusting the microscope to have a look at.

The locations were varied, some from overseas and some from Pittong, Womobi, Kingsgate, Morass Creek, Puttapa Mine and other Australian locations.

There was also a few boxes of nice giveaways, all labelled with location etc.

Another good day full of conversation, information and friends with a common interest, where we all learn from each other and the main thing is we all enjoy the experience. If you have an interest in the hobby of mineral collecting and want to learn more about it please consider coming along one day, just ring the host and let them know before-hand, you will be most welcome

Next Meeting:

27<sup>th</sup>. June at George & Muriel Lysiuk's home. Topic: Minerals from U.K.

The Group welcomes new members. Our meetings are informal and tea, coffee and cake are provided. It's only necessary to bring your lunch, microscope and any minerals you may have for the day's topic.

No minerals? No problem – come anyway as many minerals will be tabled for all to see, but if you haven't attended one of these meetings before, do let the host of the day know you are coming so that there will be enough seats for everyone.

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### Mineral Appreciation Group Report

The May meeting saw the group again join with the Micromineral Group, and the topic of discussion was minerals containing lithium, chromium and/or silver. The 'and' part of the topic was somewhat redundant, as a quick search of databases such as MinDat found no species at all who contained combinations of the three elements except in trace quantities. As individual components, the databases suggested 155 silver minerals, 100 lithium minerals and around 80 chromium minerals.

Of the silver-containing species we saw examples of native silver in various appealing wires and masses, tetrahedrite, the various 'argys' in pyrargyrite, chlorargyrite and iodargyrite, metallic acicular owyheeite, and some of the more colourful silvers in examples of proustite and boleite.

The lithium minerals provided an opportunity for specimens ranging from the colourful gem-like material of spodumene and the lithium tourmalines in elbaïtes and liddicoatite, through the metallic-looking-but-not-really-metallic micas from the 'zinnwaldite' series. A local example of one of the lithium minerals included lithiophorite from Campbells Creek in Castlemaine.

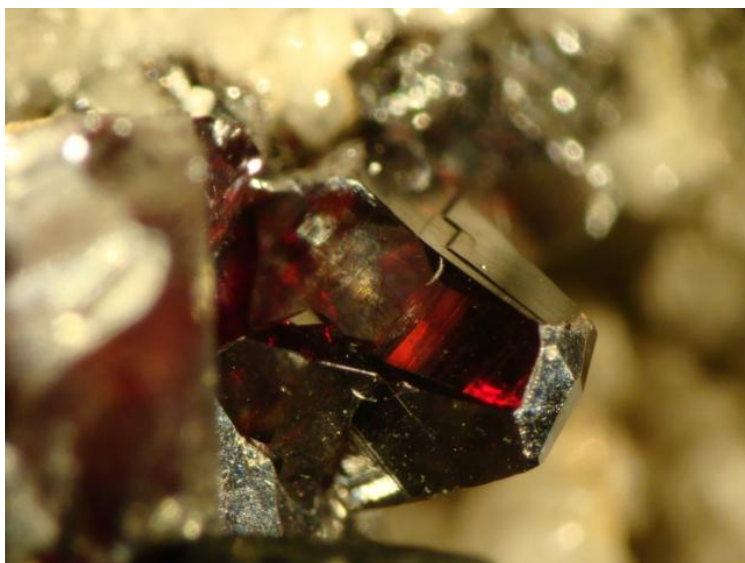


PHOTO: Proustite from Chile, image courtesy of Maurizio Dini.

The smallest of the three subject groups was the chromium minerals, although the species more than make up for this by their colour. Other than the expected selection of crocoites, of various locations, habits and associations from Tasmania were some impressive examples of the intense green uvarovite garnets, the purple to deep mauve stichtite and occasional small chromite crystal.

Whilst only a few members were able to attend the meeting on 16th May, there was a nice range of high temperature (>500 degrees C) metamorphic minerals to look at and discuss. Specimens included large crystals of spinel from Myanmar & Vietnam, corundum (sapphire and ruby) from Sri Lanka and India, kyanite from Brazil and Kornerupine from the Harts Range and forsterite (peridot) from Afghanistan. There

were nice crystals of several skarn minerals from Ontario, Canada including betafite, hornblende, biotite, edenite & flouorichterite.

Members attending this group enjoy looking through their collection for specimens to bring along and to learn more about their characteristics and mode of occurrence. The group highly encourages more Society members come along to these meetings to see an every-changing variety of different minerals on display.

The meetings are an open show and discussion format and all society members are welcome to attend. Meetings typically aim for people to arrive around 10:00am for a 10:30am start, allowing time for people to unpack specimens. If you wish to attend, have any questions or have suggestions for topics you would like to see covered then please catch up with Alex Blount.

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## RESOURCES, NEW PUBLICATIONS & REFERENCES OF INTEREST

If any Society members become aware of new publications relevant to mineralogy or existing items that they feel would be of benefit to members, please feel free to let a committee member know. Where appropriate, the Society can look to obtain copies for inclusion within the library.

New journals, publications and newsletters received include:

Supplement to The Mineralogical Record – Jan-Feb 2010

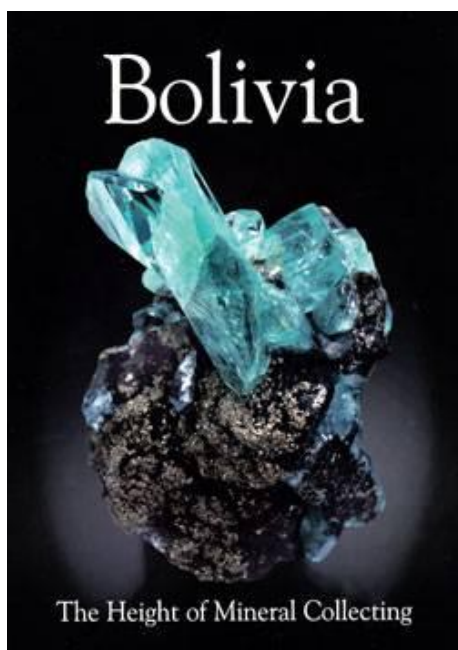
- The Lindsay Greenbank Collection: Classic Minerals of Northern England



Down Under. Mineral Heritage in Australia. By Arvi Parbo, an AusIMM monograph.

This book gives an easy-to-read outline history of mining in Australia from the 1790s, very well illustrated.

What's Hot in Tucson 2009. 2 full DVDs “with over 4 hours of informative and mouth-watering footage” Some of this was shown at the April meeting.



The library has several issues of the Extra Lapis – English series, which are easy to read and provide exceptional photography and articles of interest on the specific topics. The subjects/issues to date include:

Madagascar; Emeralds; Tourmaline; Gold; Calcite; Pakistan; Elba; Beryl; Fluorite; Opal; Garnet; and Bolivia.

The library is open for borrowing at every monthly meeting – so why not check it out next time.

The library shelves are now in approximate order. There are lots of fascinating books on mineralogy and related topics, just waiting for members to borrow and enjoy them – so, happy hunting and good reading!

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## SOCIETY MICRO-MINERAL COLLECTIONS

Broken Hill Collection – Alex Blount

Iron Monarch Collection – Alex Blount

Victorian Collection – Alex Blount

Western Australia – Alex Blount **NEW!**



The collections currently contain over 600 micro-mineral specimens from their respective regions. We are always looking for new donations of specimens (preferably mounted but not essential), especially from new or recent finds, but updates or multiples of existing species are also appreciated.

The collections are available to all members to borrow on a monthly basis and they provide an excellent way to compare your own material from field-trips with 'already identified' reference specimens. If anyone wishes to borrow the collections or peruse a copy of the catalogue, please catch up with the curators listed above.

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### **WANTED**

Mineralogical Record Back Issues Vol 2 No 2 & Vol 2 No 5 for the **MinSoc Library**.

Please contact any committee member if you can assist with these.

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### **FIELD NATURALISTS CLUB OF VICTORIA** *GEOLOGY SPECIAL INTEREST GROUP*



Meetings take place at 8pm at the FNCV Clubrooms at 1 Gardenia Street, Blackburn, 3130 (Melway 47 K10) Further information on the talks and excursions is available from Rob Hamson, 9557 5215 AH, [robhamson1949@hotmail.com](mailto:robhamson1949@hotmail.com), Clem Earp 9885 1548 AH or Noel Schleiger 9435 8408 AH.

Details of field trips appear in the issue of the *Field Nat News* published the month before the date of the excursion. As a voluntary organisation funded entirely by our members' subscriptions, we welcome visitors but there is a charge of \$2 per non-member for each meeting and \$5 per excursion attended to help cover our costs. Members of affiliated clubs pay \$2.50 for excursions.

Membership: Joint/Family \$85, Single \$65, Concession \$50, Student \$25. Further details from FNCV Office 9877 9860.

### **GEOLOGY CALENDAR**

Contact Ruth Robertson 03 9386 5521 [rutherob@hotmail.com](mailto:rutherob@hotmail.com)

#### **June**

Wed 23rd – *Yarra Riverkeepers* - Speaker Rob Ingham.

This will be a different talk than the one given to the day group in February.

#### **July**

Wed 28th – Uplift of the Eastern Highlands – Speaker Fons Vandenberg, Senior Geologist Geoscience Victoria.

#### **August**

Wed 25th – Dinosaur Dreaming - The story continues – Speaker Dr David Pickering, Museum Victoria.

#### **September**

Wed 22nd - Supermountains and what triggered the 'Big Bang' in animal evolution – Speaker Dr Rick Squires, Monash University.

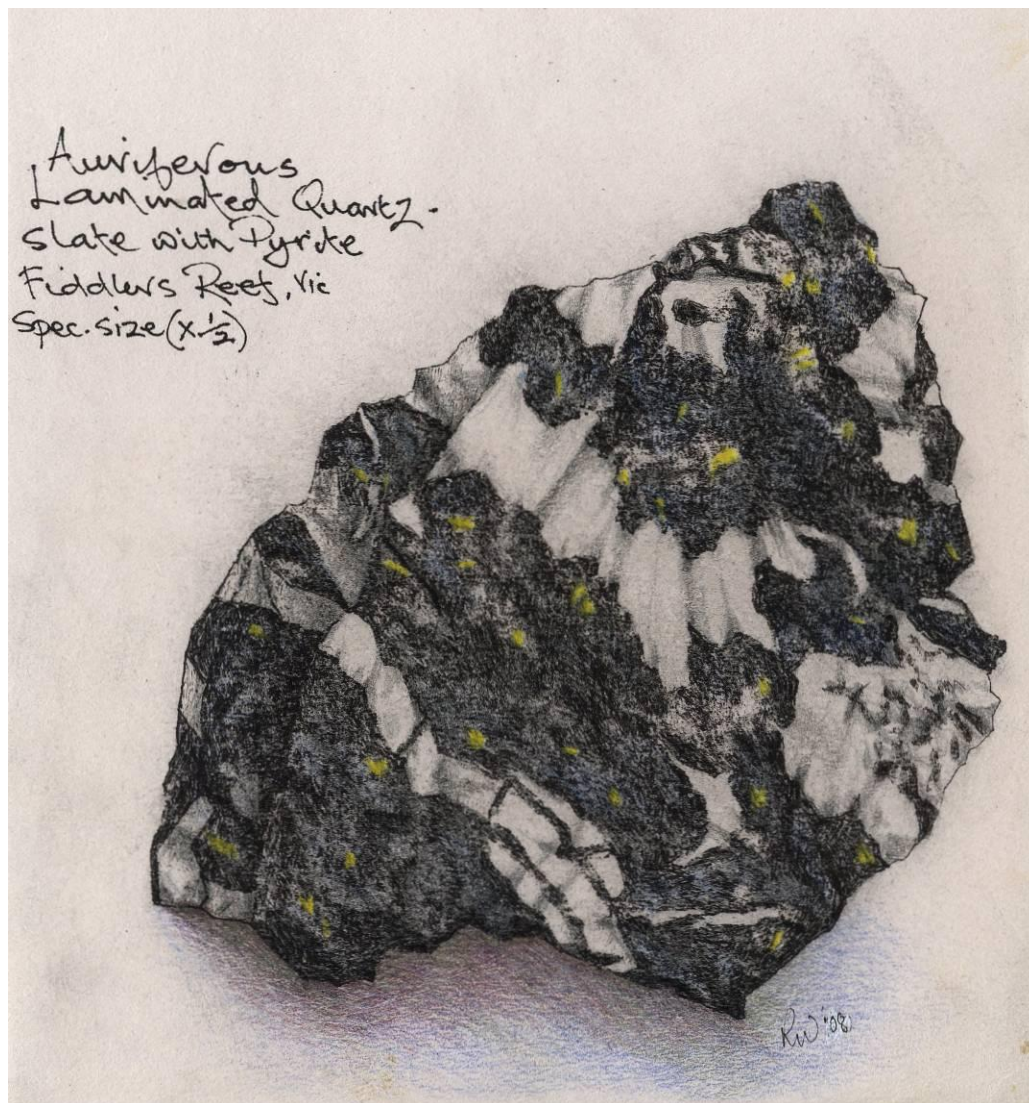
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## THE MINSOC TRADING POST

Society members can submit brief descriptions of specimens, equipment or other mineral related items that they wish to sell, swap or give away.

At General Meetings there are often some minerals for sale after the meeting.

This is open to all – feel free to bring your minerals along.



Pencil and watercolour sketch  
By Richard Wright ©

Many thanks to Richard Wright for offering his sketchbook to the Editor to copy, and providing permission to use his sketches in the Mineralogical Society of Victoria Newsletter.

# SOME MINES AND MINERALS OF EASTERN VICTORIA

## Part 1

*by John Haupt*

### **An Introduction**

Apart from a relative abundance of gold in Victoria, there are few other economic metallic mineral occurrences. However an inspection of the map of the Mineral Deposits of Victoria shows a range of silver-lead, copper and tin occurrences in eastern Victoria (see Fig 1). This series of articles will describe some of the mines and minerals that have been found in this part of Victoria.

Most of the deposits were only worked as small prospects with little, if any, ore being produced, principally due to the area being isolated and access difficult. Also very few mineral specimens appear to have been collected from these localities.

After completing photographic albums on other Victorian locations, the Society's Photographic Group commenced photographing minerals from some localities in eastern Victoria. Where appropriate, these photographs will be used in this series of articles.

Access to the localities mentioned in these articles may be difficult. Some are now within National Parks, some are under active mining leases (especially for gold), and others only accessible by 4WD or by walking. Most were visited during our family holidays in the region during the 1970s and 1980s.

### **Benambra copper mine**

The Benambra copper mine is the largest base metal mine in Victoria. It is located approx 14 km east of Benambra township and south of the road to Wulgulmerang.

Originally identified as the McDougal Spur gossans by prospectors in the late 1800s, several companies conducted geochemical surveys in the region under several exploration licenses in the 1960s. In 1974, Western Mining, in a joint venture with BP Minerals, commenced an extensive programme of soil and stream sediment sampling with aeromagnetic surveys over an area east of Benambra. This was followed up by a drilling program at two localities, named the Currawong and Wilga prospects. Several cores at the Wilga prospect intersected a vein of massive sulphide mineralization up to 25 m thick. However the consortium decided that the deposit was of insufficient size to warrant mining and relinquished the lease to Denehurst mining. Denehurst had earlier taken over mining at the Woodlawn mine in NSW. Denehurst installed a crushing plant and floatation plant at the mine site and worked the Wilga prospect between 1992 & 1996. During this period, some 700,000 tonne of ore was mined and 45,800 tonne of copper was produced. The ore concentrate was trucked from the mine to Port Kembla in NSW for extraction of the copper. The Mineralogical Society visited the mine on their excursion to East Gippsland in April 1996 and collected specimens from the ore dumps.

Low commodity prices and problems with zinc led to the company going insolvent. It was optioned by Denehurst's administrator to a newly floated company called Austminex. But Benambra proved to be too difficult for Austminex as well, and they walked away in late 2001, leaving the clean-up to the Victorian Department of Primary Industry (DPI). The Victorian government then spent \$5.7 million in cleaning up the site and the associated streams and removing the mine plant. (The Age Oct 13<sup>th</sup> 2006).

The DPI then called for expressions of interest for the rights to explore and potentially mine the deposits. It used the Denehurst figures to promote the idea that the deposits "may contain resources valued up to \$US2 billion (\$A2.67 billion)". In June 2007, Jabiru Metals Limited was announced as the successful tenderer. (Jabiru Company Announcement 24 May 2007). Jabiru currently mine the Jaguar deposit at Teutonic Bore, 300 km north of Kalgoorlie in Western Australia and were recently granted a mining licence for the nearby Bentley deposit. Their Benambra operation, named Stockman, is currently undergoing further work to delineate the extent and grade of the deposits. The company's latest estimate, in Sept 2009, is a total indicated and inferred resource of 12.5 million tonne, grading 2.1% Cu, 0.7 Pb, 4.4% Zn and 38 gpt Ag.

## **Mineralisation**

The sulphide deposits occur in the Mid to Upper Silurian Cowombat Rift in the southernmost part of the Lachlan Fold belt. The Wilga deposit is a single mineralized lens of massive sulphides in an ellipsoidal body up to 300 m long and 37 m thick, with several parallel stringers of chalcopyrite rich ore in chlorite. The nearby Currawong deposit consists of 2 major and at least 2 minor mineralised lenses.

The sulphides mainly consist of pyrite rich bands interspersed with sphalerite containing blebs of chalcopyrite and minor galena. Minor ore minerals are magnetite, pyrrhotite and a trace of busmuthenite and arsenopyrite. The gangue consists of quartz, sericite and carbonates. Where chalcopyrite is abundant, chlorite is the main gangue mineral (Allen & Barr).

Few crystallised specimens appear to have occurred and there has been little opportunity to collect at the locality. The main minerals collected on the Society's excursion in 1991 were samples of the massive ore veins, with chalcopyrite and some zoned dolomite-ankerite-siderite crystals on joint planes.

## **Sardine Creek copper mine**

This is one of several small copper occurrences scattered throughout eastern Victoria. Originally known as Booth's Fancy mine, it is located on Copper Creek on the northern slope of Mt Sardine, 24km north of Orbost. In the early 1900s a series of pits and a tunnel was driven on a quartz vein containing sulphide ore. The lode occurs at the contact between granodiorite and Ordovician cherts. The mineralization occurs in a quartz vein up to 0.6 m wide and consists of chalcopyrite, pyrite and some galena (Cochrane, 1982).

A shed, a hoist over a shaft and small ore dump existed at the time of my visit in 1986. The sulphide vein consisted of galena, chalcopyrite and pyrite. Small vughs in ore contain crystals of pyrite, siderite and the occasional cerussite crystal.

## **Acknowledgement:**

Dr Bill Birch kindly confirmed the identity of some minerals collected from the Benambra copper mine.

## **References:**

Allen, R.L., & Barr, D.L., 1990: Benambra Copper-Zinc deposits. *In Geology of the Mineral Deposits of Australia and Papua New Guinea. Australasian Institute of Mining & Metallurgy*, 1311-1318.

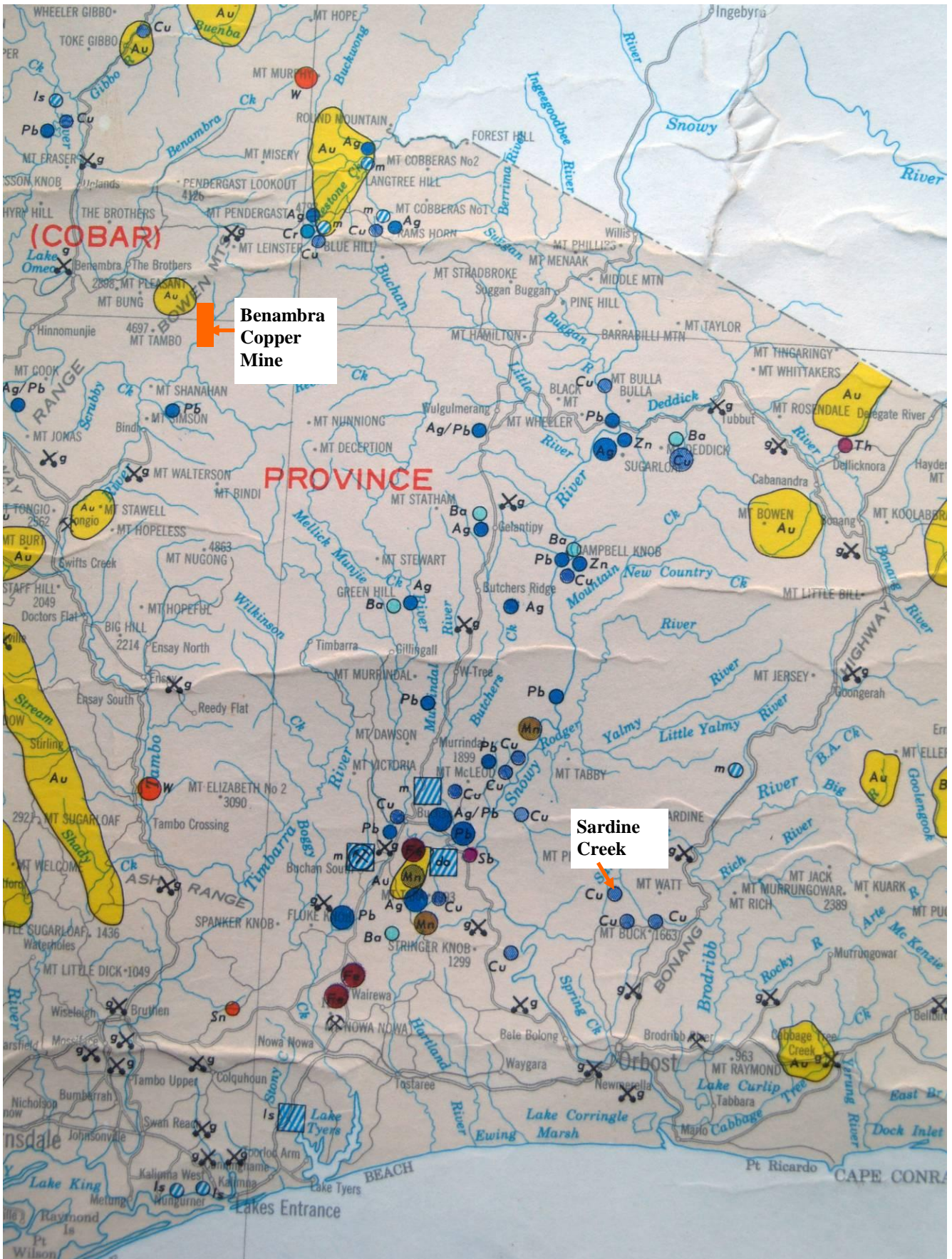
Cochrane, G.W., 1982: Copper, Lead, Zinc and Barium Deposits of Victoria. *Bulletin of the Geological Survey of Victoria*, 61, 154.

Rising metals cause Benambra Return, *The Age*, Oct 13, 2006.

Website: <http://www.jabirumetals.com.au/exploration/stockman.html>

**Fig 1: Mineral map of part of Eastern Victoria.**

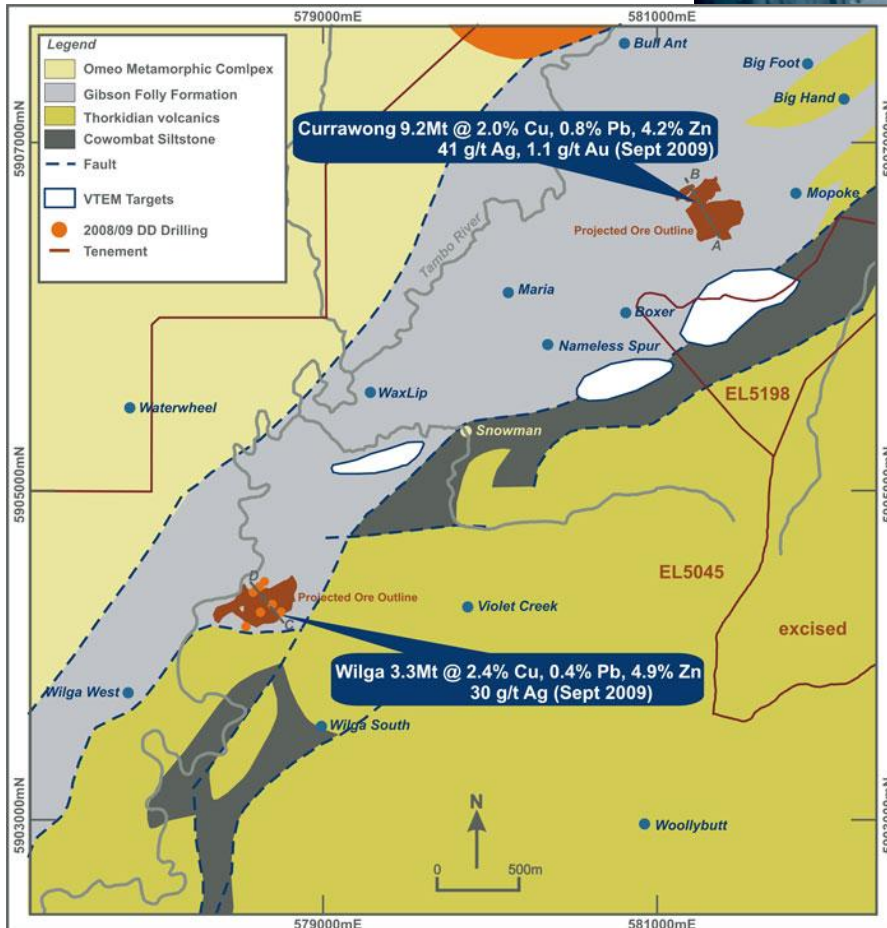
The blue dots show the Cu, Ag & Pb occurrences.





Left and below: The Benambra copper mine showing the workings of the Denehurst Company. Photos: F. Robinson.

Taken on the Min Soc field excursion in April 1996.



**Right: Chalcopyrite ore with blebs of chlorite from the Benambra copper mine. Specimen is 5 cm across.**



**Dolomite-ankerite-siderite zoned rhombs to 1 mm on joint planes in the ore veins from the Benambra copper mine.**

**Pink calcite with sulphide ore from the Benambra copper mine. Specimen is 7 cm across.**





**Above: Sardine Creek copper mine workings in 1986.**



**Left: Cerussite, siderite and pyrite crystals in an ore vugh from Sardine Creek. Field of View ~ 3mm.**

**Below: Galena, chalcopyrite and pyrite ore from the Sardine Creek copper mine. Specimen is 10 mm across.**

