



The Mineralogical Society of Victoria
Incorporated
A0001471E

Newsletter No. 209

February 2011



Calcite (ferrian), Bundoora, Vic
6mm field of view

Print Post Approved PP332785/0015

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

Patron: Professor Ian Plimer FTSE, Hon FGS, FAIG, Hon SGA, BSc(Hons), PhD

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Vice President:	TBA	Special Projects:	Dermot Henry
Secretary:	Lia Bronstijn	Resources (incl Library):	TBA
Treasurer:	John Bosworth	Publicity	TBA
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Assembly and Circulation: John Haupt

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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.

Newsletter of the Mineralogical Society of Victoria
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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.

- Feb 14 General Meeting: Topic: Tucson Show Videos.
- Feb 20 Mineral Appreciation Group – Nunawading Lapidary Club, Silver Grove, Nunawading
Topic: Calcite (and describe / discuss one crystal habit)
- Feb 27 Micro Group Meeting – John Bosworth’s Home. Topic: The scheelite and scorodite groups.
- Mar 14 General Meeting: Speaker – Dr David Vince. Topic: Mineralogical Adventures in China.
- Mar 20 Mineral Appreciation Group – Nunawading Lapidary Club, Silver Grove, Nunawading
Topic: Minerals Named after Germans
- Apr 10 Micro Group Meeting – Venue to be advised. Topic: To be advised
- Apr 11 General Meeting: Speaker – Jacqueline Miles, Monash University. Topic: Volcanology
- Apr 17 Mineral Appreciation Group – Nunawading Lapidary Club, Silver Grove, Nunawading
Topic: Baryte
- June NOTE – There will be no General Meeting in June due to the Joint Societies Seminar being held over the previous weekend.

MINERAL RELATED EVENTS

- Apr 22-25 47th Australian Gemboree. Bathurst Showgrounds, Bathurst, NSW
- Jun 11-12 33rd Joint Mineralogical Societies of Australasia Seminar. Melbourne, Victoria.
Hosted by The Mineralogical Society of Victoria. Topic: “Mineralogy into the Future”

NEXT ISSUE

PLEASE NOTE:- Material for the April Newsletter to be with Michael Hirst by **March 16th**.

FROM THE COMMITTEE

Welcome back to everyone for 2011 and we hope all of our Society members had a safe holiday season and managed to avoid the worst of the weather.



The planning stages of the June Seminar are continuing and more information will be coming out shortly. Because the June General Meeting would normally fall on the Monday immediately after the Seminar, we will not hold a Society meeting in June – as we hope that 2 days of the Seminar will be enough mineralogy to keep everyone going until July

Alex Blount
President

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

SHORT TALKS

Below is the roster for member's Short Talks at the monthly General Meetings for the first half of 2011. 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. The "warning bell" will be appearing this year!

Talks do not have to be technical – in fact some of the best subject material can be your own specimens, experiences and opinions on the world of minerals.

DATE	SPEAKER
Mon 14 February	Peter Hall
Mon 14 March	Volker Hoppe
Mon 11 April	Steve Sorrell
Mon 9 May	Bob Kuchel
Mon 13 June	No Meeting (Seminar)
Mon 11 July	Annual General Meeting

EXCURSIONS

No collecting excursions are planned for the immediate future, pending the identification of suitable locations. As previously mentioned in this Newsletter and at Society Meetings, we rely on our Members to suggest new places to visit and let us know of any old favourites that you are keen to return to.



Report

The 2010 end of year BBQ was held in December back at Stanley Park in Macedon. Aside from an early group beating us there before making their way off to a wedding and then a small family group arriving later, we had the park area to ourselves. Whilst the weather threatened with dark clouds and the BBQ tried its best to be temperamental, the food was cooked and eaten, the day remained fine and everyone seemed to have a good afternoon.

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.

PUBLICITY

Micro Group Report

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.

Mineral Appreciation Group Report

Choosing to avoid a last-minute Christmas rush, the group did not hold a meeting in December but moved straight into the new year in January with "Self Collected Specimens". A chance to see what the real world of collecting is all about and of course a chance to trip down memory lane and recall some collecting excursions.

In this day and age of professional collectors, restricted mine access and international on-line mineral markets, the finest and rarest specimens are more likely to be obtained with a credit card than with a hammer and chisel. However, many a great mineral locality probably only even came to notice after amateur collectors (likely locals), ventured in to have a look and see what was in the 'dumps'.



Self-collected material also has a history and mystique attached to it, where every single specimen comes with a memory of the collecting trip. The weather be it good or bad, the people we collected with or met along the way, the travel to remote sites, the flies/ants/snakes. Much like those who fish (fishermen? fisherpeople?), we've even heard the tales of 'the one that got away' – that almost mythical specimen both rare, large and perfect, that was found by someone else in a boulder

that we had only just discarded ourselves but moments before.

This topic and meeting was therefore more about history and stories than about the mineral specimens, but of course we looked at many of those as well!

From a trip to South Australia, via mini-bus, with pleasant days in the sun and cool breeze, we looked at malachite and azurite from Burra and brookite from Spalding.

From the basalts of road cuttings being made for the Eastern Freeway in Abbotsford (before the days of 24 hour security guards, 24 hour construction works or 3 hour health and safety inductions), we saw aragonite, calcite and chabazite. More Victorian zeolites were presented from the regular Society trips to Flinders, both trips from the past and recent material, including chabazite, gmelinite, analcime and natrolite.

PHOTO: Gmelinite-Na, Cairns Bay, Flinders, Vic.



Interstate collecting in NSW provided memories of blue minerals in the azurites from the Mineral Hill Mine and sampleite from the Northparkes Mine. To the south and Tasmania recalled travelling to the Magnet Mine via the old tramway in typically wet and slippery conditions – finding the gossan partially excavated for a new roadway and brief access to collecting specimens of mimetite and yellow and straw varieties of cerussite.

Returning to the basalts of Victoria and there were stories of treacherous collecting ventures to the cliffs of the Nobbies and Phillip Island, of being washed off rocks by waves and collecting specimens of thick natrolite needles, calcite, aragonite and (possibly) dolomite in large vesicles and attractive crystal groupings.

As many of the locations people spoke of are either inaccessible or have little or no material left to collect, the minerals sitting in our collections and our recollections of those past days are an irreplaceable and should always increase in value to the mineral community.



PHOTO: Smithsonite on stalactitic coronadite, Kintore Open Cut, Broken Hill.

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 ever-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.

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:

The Mineralogical Record Sep-Oct 2010

Famous mineral localities: Ilfeld, Harz Mountains, Thuringia, Germany
(Thomas P. Moore)

Collecting manganite at Ilfeld after 1922 (Gunnar Färber)

The Heidelberger Mineralien-Comptoir (Wendell E. Wilson)

Cubic magnetite crystals from Balmat, New York (Steven C.

Chamberlain, George W. Robinson, Marian Lupulescu, Timothy C.

Morgan, John T. Johnson & William M. deLorraine)

Recommendations regarding the handling and sale of your collection
(Wendell E. Wilson & Don Newsome)

THE MINERALOGICAL RECORD



Rocks & Minerals – Nov-Dec 2010

Jordi Fabre i Fornaguera, Collector of the Exquisite (Carles Curto Milà)

Mineralogy of the Alpine-type Fissures and Talc Deposit at Saint-Pierre-de-Broughton Quebec, Canada
(László Horváth and Elsa Pfenninger-Horváth)

Update on the Mineralogy of the San Rafael Mine, Nye County, Nevada (Martin Jensen, Tony Nikischer,
Tom Loomis, and Jason Herrmann)

Connoisseur's Choice: Tetrahedrite, Cavnic, Romania (Paul W. Pohwat)

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!

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.

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.

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 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.

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.

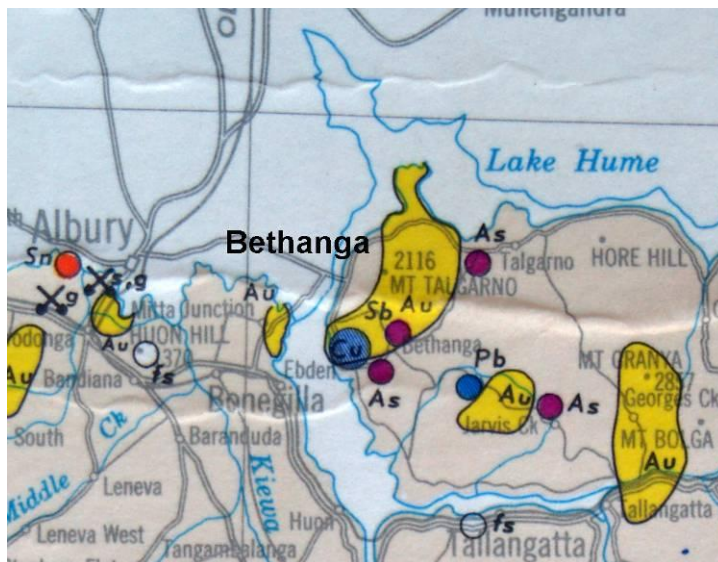
SOME MINES AND MINERALS OF EASTERN VICTORIA

Part 5

by John Haupt & Frank Robinson

Bethanga

Alluvial gold was reported from a location 19km east of Albury, which was probably sluiced from workings in Ruby and Gold Gullies, north-east of Mt Talgarno. This led to the discovery of gossanous reefs at Bethanga, most likely the Excelsior and Welcome reefs and set the scene for the extensive Bethanga-Talgarno goldfield. By 1876, twelve reefs were being prospected and eight mills were in operation. The ore was initially extracted from the oxidized zone, which extended to a depth of 10 m, which was underlain by refractory ore with a high sulphide content. Although Bethanga-Talgarno was essentially a goldfield, it had the highest sulphide content of any of the Eastern Victorian goldfields and became one of the main copper producing regions in the State.



Gold was successfully extracted from the oxidized ore by amalgamation with mercury. However, by 1878, sulphide ore was reached. It was called 'Black Jack' by the miners and many considered it worthless as it did not yield any gold by traditional extraction methods. The occurrence of copper (chalcopyrite) in the ore and apparent similarity to the copper mines in Cornwall led to some declaring Bethanga to be the Burra Burra of Victoria. Two separate groups were established to erect smelting plants to extract copper - Harris and Hollow, obtaining ore from the Gift group of mines and Wallace and Company obtaining ore from other reefs that were under their control. As most miners did not have the resources to construct their own smelters, the oligopoly formed by these two smelters caused the smaller mines to close. The smelters were each designed to produce 6 tonne of copper regulus per week, with the concentrate being sent to Germany or Wales for refining the copper and extracting the gold and silver. The returns from overseas sales proved unsatisfactory. In an effort to maintain viability, they went public in 1881, becoming the Bethanga Company and the Bethanga Copper Mining and Smelting Company respectively.

John Wallace, a mining entrepreneur who controlled the Wallace and Company operations, expended considerable effort and money during the 1880s in experimenting with extraction techniques. He brought smelting experts out from Wales to design and construct different furnaces and later used electricity to extract copper. However the high iron content of the ore remained the source of difficulty. It is reported that the smelter was costing £1,000 (\$2,000) a month to keep in operation. Despite this, they produced most of Victoria's copper over the next 10 years. The two companies were amalgamated in 1884 into the Wallace Bethanga Co, but smelting ceased in 1887, when open furnaces were forbidden due to air pollution and the company went into liquidation, having spent many thousands of pounds and never paying a dividend. A year later, Wallace attempted to refloat the company and attracted interest from an English company who unsuccessfully experimented with chlorination under pressure. However, it was his own works manager, Thomas Martin who got the wet chlorination process with open vats working satisfactorily and rebuilt the roasting ovens.

In 1895, Wallace attracted a takeover offer and Bethanga Goldfields Ltd was formed to produce gold as their primary product. They produced some 8,000 oz of gold each year between 1897-1902. With Wallace now out of the way, others were attracted to Bethanga and mining was revitalised in 1907/8, with the New

Bethanga Gold Mining Company and the Mt Currajong Gold and Copper Mining Company, treating ore from the Excelsior and Welcome reefs respectively. Copper matte and silver was produced but the operations were unprofitable and in 1912 mining again ceased. A Government battery was erected in 1908 for the small miners, but was little used and it was removed in 1916. An unsuccessful attempt was also made to treat the accumulated tailings with a new blast furnace and the works closed in 1918.

During the 1960s, geophysical surveys of the area were conducted by Western Mining and CRA Exploration, with reserves estimated between 50,000 and 500,000 tonne. In 1985 Pan Australian Mining reopened the adits at the Conness mine and mapped and sampled the lodes, but no mining eventuated.

The recorded production from the field was 2430 kg (78,000 oz) of gold and 618 tonne of copper. An unknown quantity of silver and arsenic was also produced.

The ore minerals associated with gold were pyrite, arsenopyrite, pyrrhotite, marcasite, and chalcopyrite. Minor to rare amounts of galena, sphalerite, cubanite, digenite, covellite magnetite & native bismuth are also recorded. The gossanous oxidation zone yielded malachite, azurite, cuprite and native copper. Several other minerals have been recorded from the area. These include the tourmaline species schorl, sillimanite and gem minerals, almandine, monazite and zircon, from alluvial gravels.

The only specimens that appear to exist from this locality come from the mining period and now reside in the Museum Victoria's collection. Photographs of some of these specimens are on the following pages.

Acknowledgements

Dr B. Birch and D. Henry, Museum Victoria for access to the Bethanga specimens in the Museum's collection.

References

Anon: Victoria: Its Mines and Minerals. *Special Edition of the Australian Mining Standard*. June 1, 1899. 95-98.

Cochrane, G.W., 1982: Copper, Lead, Zinc and Barium Deposits of Victoria. *Bulletin of the Geological Survey of Victoria*, 61, 123-129.

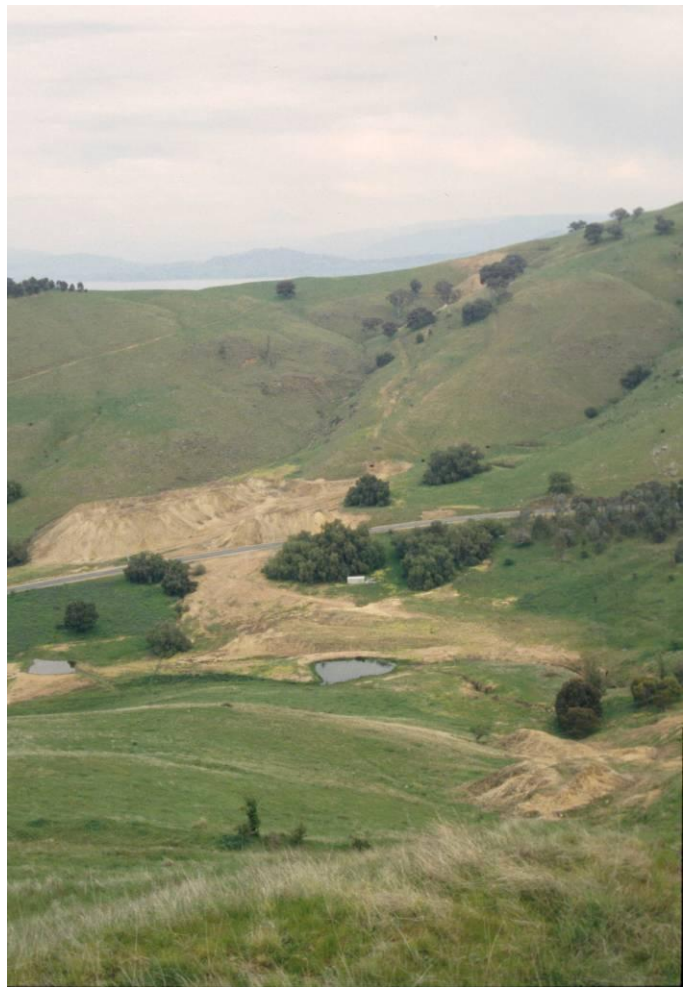
Morrison, R.J., 19: Bethanga Gold Deposits. In *Geology of Australian Gold Deposits*, Australian Institute of Mining and Metallurgy, 1307-8.

Philipp, J.A., 1987: A Poor Man's Diggings: Mining and Community at Bethanga. Hyland House. 222p.

Historic Mines Assessment Project: Bethanga Goldfield
www.dpcd.vic.gov.au/__data/assets/pdf_file/0011/44597/Bethanga.pdf



Above: Line of lode looking north from Gift mine.



Right: View of the remains of the Gift mine workings in 1999. The large mullock dump is adjacent to the main road. Photo: F. Robinson.

Below: View of Upper Bethanga from the Gift workings in 2008. Photo: J. Haupt.





Left: Wallace's smelting works at Bethanga c1880.

Below: Wallace's smelting works c 1900. Note the flue and chimney to dissipate fumes.

Photos: Picture Collection. State Library of Victoria



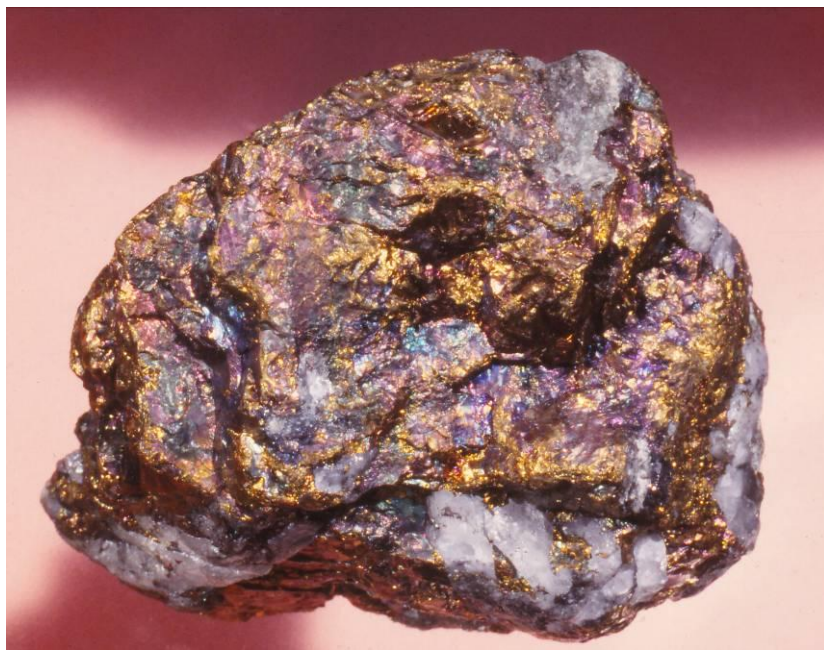
Below Left: The remains of Wallace's smelting works, 2008.

Below Right: workings on the Gift lode, 2008. Photos: J. Haupt.

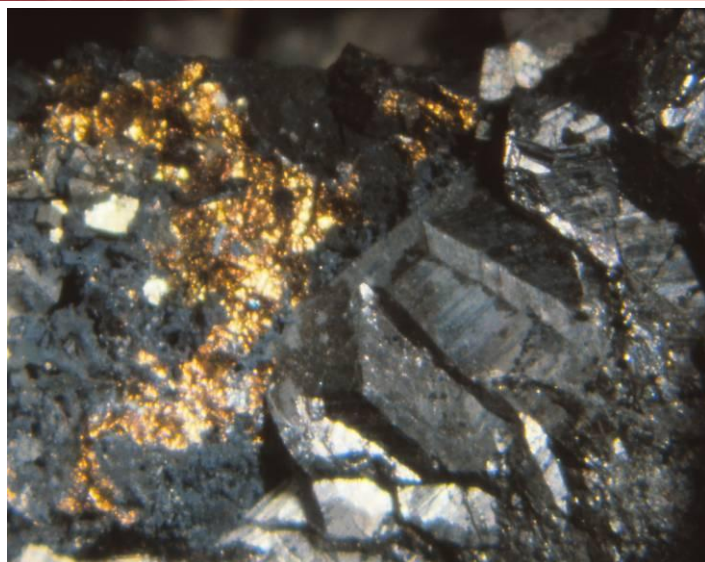




**Above left: Arsenopyrite crystal 3mm across.
Specimen: Museum Victoria M412. Photo: F. Robinson.**



**Above right: Chalcopyrite ore, 6 cm across.
Specimen; Museum Victoria M20280. Photo:
F. Robinson.**

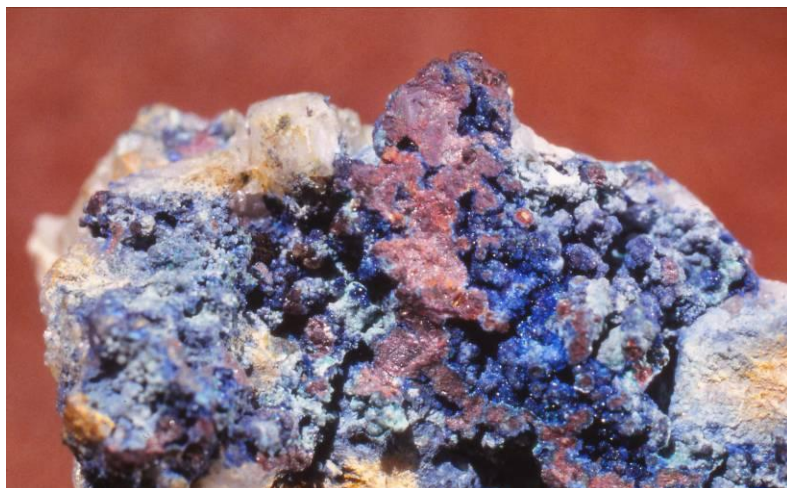


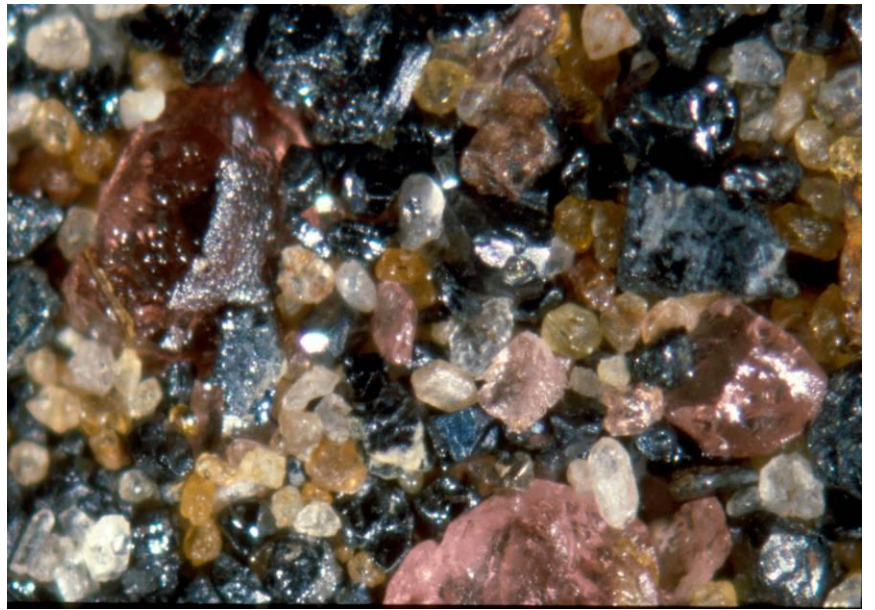
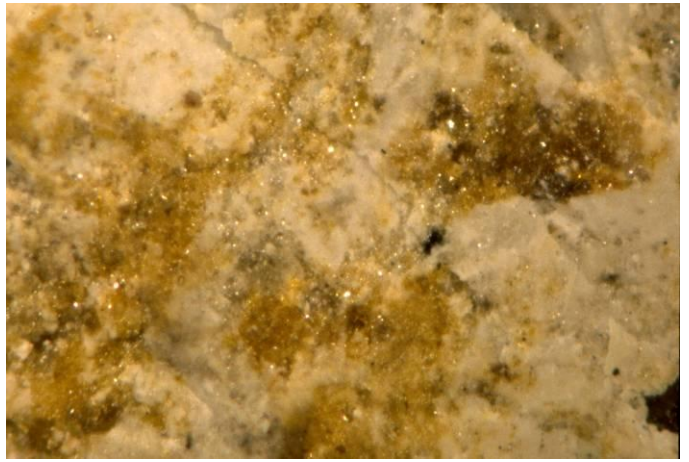
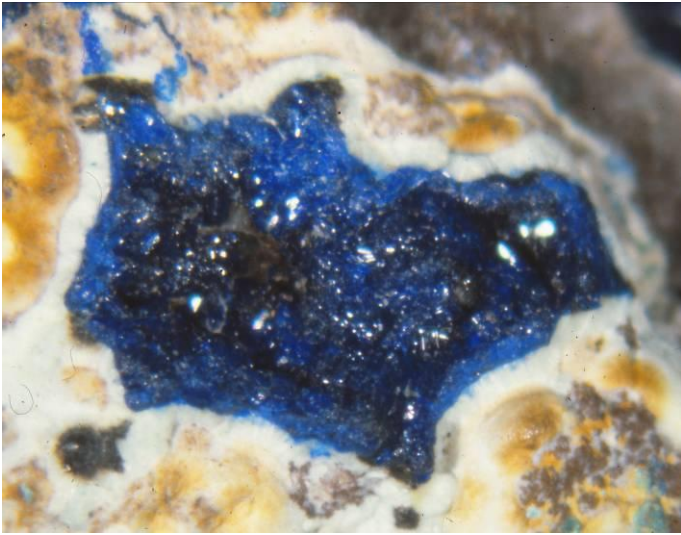
**Below: Schorl crystal aggregate, 5cm tall.
Specimen: Museum Victoria M10859. Photo:
F. Robinson.**



**Above: Arsenopyrite and chalcopyrite 8 mm across, from
Williams shaft. Specimen: Museum Victoria M41903.
Photo: F. Robinson.**

**Below: Azurite, malachite, cuprite & native copper from
Flagstaff claim. 20 mm across. Specimen: Museum
Victoria M42823. Photo: F. Robinson.**



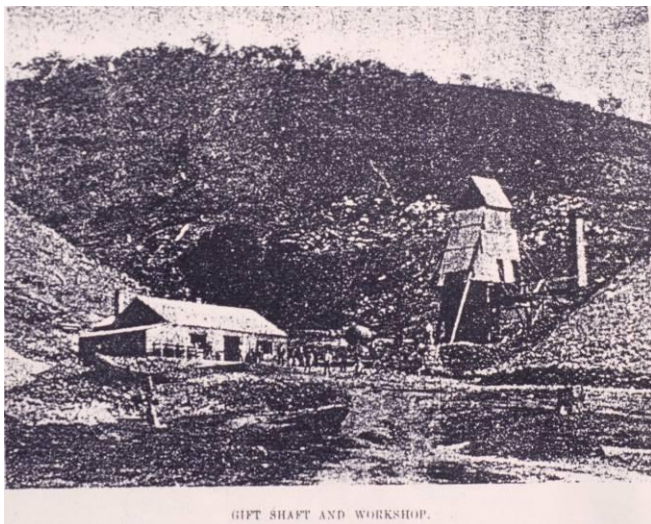


**Top: Azurite crystal druse 5mm across.
Photo: F. Robinson.
Specimen: Museum Victoria M12406.**

**Above: Almandine, monazite & zircon gravels. 4mm FOV.
Photo: F. Robinson. Specimen: Museum Victoria M38777.**

**Above: Chalcantite, 4mm crystals.
Photo: F. Robinson. Specimen Museum
Victoria M308.**

**Below: Gold workings at Bethanga. From Australian
Mining Standard 1899.**



GIFT SHAFT AND WORKSHOP.



EXCELSIOR SHAFT.