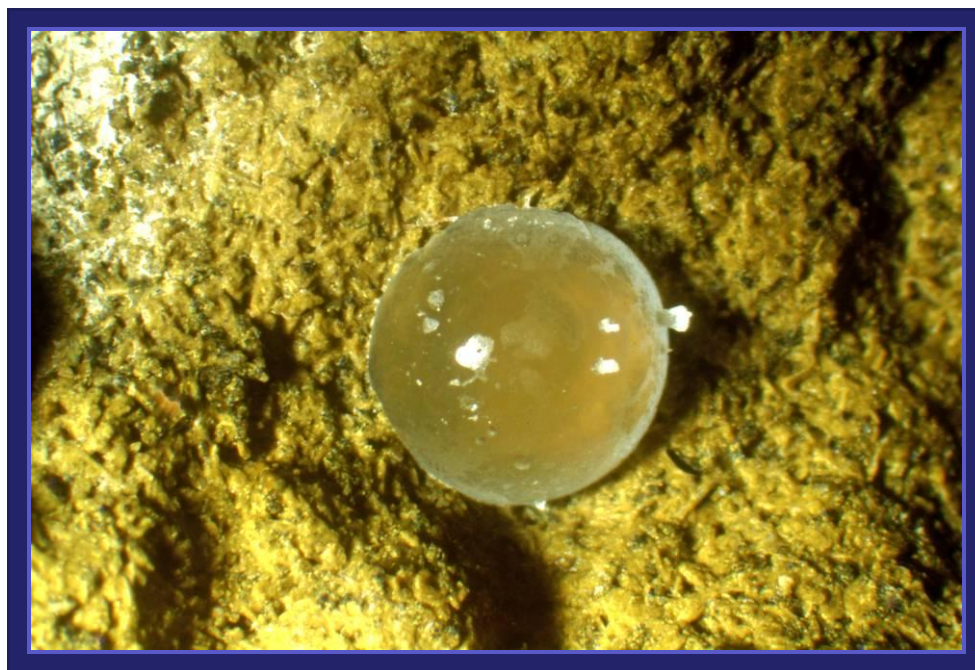




The Mineralogical Society of Victoria  
Incorporated  
A0001471E

**Newsletter No. 202**

**December 2009**



Thomsonite, 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

**Office Bearers:**

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

**Newsletter:** Editor & Layout: Michael Hirst  
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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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**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.

- Dec 6      MinSoc BBQ. Venue: Brimbank Park, Keilor East. Mel 14 J9  
Meet at the Visitor Centre at 11:30AM
- Dec 14     General Meeting: Assoc. Prof. Stephen Gallagher, University of Melbourne.  
Topic: Eighty million years of climate change in Victoria.
- Dec        Mineral Appreciation Group – No meeting due to Christmas.  
Micro Group – No meeting due to Christmas.
- Jan 17     Micro Group Meeting – At Nunawading Lapidary Club Rooms, Silver Grove, Nunawading.  
Topic: Minerals of Tasmania (combined meeting with MAGroup)  
Mineral Appreciation Group – At Nunawading Lapidary Club Rooms, Silver Grove,  
Nunawading.  
Topic: Minerals of Tasmania (combined meeting with Micro Group).
- Feb 8      General Meeting: Dr Kia Wallwork, Australian Synchrotron. Topic: To Be Advised
- Feb 21     Micro Group Meeting – At Volker Hoppe’s home.  
Topic: Minerals of the Northern Flinders Ranges. See comments in Micro Group report.
- Feb 21     Mineral Appreciation Group – At Nunawading Lapidary Club Rooms, Silver Grove,  
Nunawading.  
Topic: Metamorphic Minerals – “Low Temperature” (<500°C)
- Mar 8      General Meeting: Speaker and Topic: To Be Advised

**MINERAL RELATED EVENTS**

- March 6,7 2010      Victorian Gemkhana, Morshead Park, Rubicon St, Ballarat
- Apr 2 – 5            Gemboree, Devonport Recreation Centre, 24 Forbes St, Devonport, Tasmania
- Jun 12 – 14         33rd Joint Mineralogical Societies of Australasia Seminar, The Royal Society  
Rooms, Adelaide. Hosted by The Mineralogical Society of South Australia.

**NEXT ISSUE**

**PLEASE NOTE:-** Material for the February Newsletter to be with Michael Hirst by **January 27<sup>th</sup>**.

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## FROM THE COMMITTEE

**A**s we reach the end of another year, we are looking forward to the prospect of getting a few things back on track in 2010. After a few disruptions during the year, we wrestled with the change of meeting night and room, had a few gaps appear in the speaker's schedules due to cancellations and struggled to find suitable locations for field collecting trips to offer Members something new. The Committee is well into planning activities for the new year and details should be settled in time to give Members plenty of warning.



As always, the Society and the Committee is here to provide for the wishes of the Members. That means You! No idea, plea or suggestion will go unheard, we are always keen to hear what you want from your Society – and also what you don't want!

On the subject of the Members - Short talks. We have been relying heavily on the efforts of a small minority of Members for our Short Talks at the General Meetings. As good as these talks are, we really need to spread the load around. Remember that these talks don't need to be technical and only need to run for around 5-10 minutes.

So, we shall be starting a Short Talk Roster, and Members will be drafted onto the list! We will publish the Roster well ahead of time to give you all plenty of time to prepare, but please start thinking about possible topics as your name will probably appear on the list soon.

The Society has also been asked if we wish to provide a stand/table at the Victorian Gemkhana in Ballarat during March 2010. In the past we have struggled to find enough Members available to supervise stands over both days of mineral shows. However, if anyone is planning to attend the Gemkhana and is interested in helping with a table, please let the committee know.

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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## EXCURSIONS

### Forward Diary

Pending the appointment of a new Excursions Officer, the committee is looking at some localities and in preliminary planning for the next 12 months. Potential future trips may include a return to Broken Hill, Phillip Island, other areas of NSW and some new localities in eastern Victoria.



### **December 6<sup>th</sup> – Sunday**

MinSoc Annual BBQ – Brimbank Park, Keilor East, Melways Map 14 J9. As this is a large park, we will meet at the visitor centre at 11:30 and move to a spot from there. Latecomers should call one of the committee members via mobile if possible.



Above: John Bosworth looking for micros in a macro rock, Anakies quarries, Vic.

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## **PUBLICITY**

### **Micro Group Report**

In November the group met with the Mineral Appreciation Group at the NDLC clubrooms.

The topic, “Minerals in Granites” was not always easy to interpret as we were sometimes unsure if a given rock was in fact a granite. However for some localities there was no doubt.



Minerals were tabled from Lake Boga Quarry, Wycheproof, Pyramid Hill and Glenrowan in Victoria; from Wolfram Camp in Queensland; from the Harts Range, N.T.; from Mt. Bischoff, Rossarden and Moina in Tasmania; Emmaville and Torrington in NSW; and Londonderry and Ravensthorpe in W.A.

From overseas we saw minerals from Pikes Peak, Colorado, from Pakistan and Afghanistan.

Next meeting:

January 17 at the Nunawading Lapidary Club rooms, again a joint meeting with the Mineral Appreciation Group. Topic – Minerals of Tasmania, combined meeting with the MA Group, and an opportunity to make reference to the newly published Catalogue.

February 21 at Volker Hoppe’s home, Topic – Minerals of the Northern Flinders Ranges, that is, north of Wilpena Pound. Included are places such as the Beltana (Puttapa) Mine, Lyndhurst, and Arkaroola. See pages 236-7 in the Catalogue of South Australian Minerals. The topic does not include Reaphook Hill which will form part of a later meeting looking at minerals of the Olary Province.

The Group welcomes new members. Our meetings are informal and tea, coffee and cake are provided. It’s

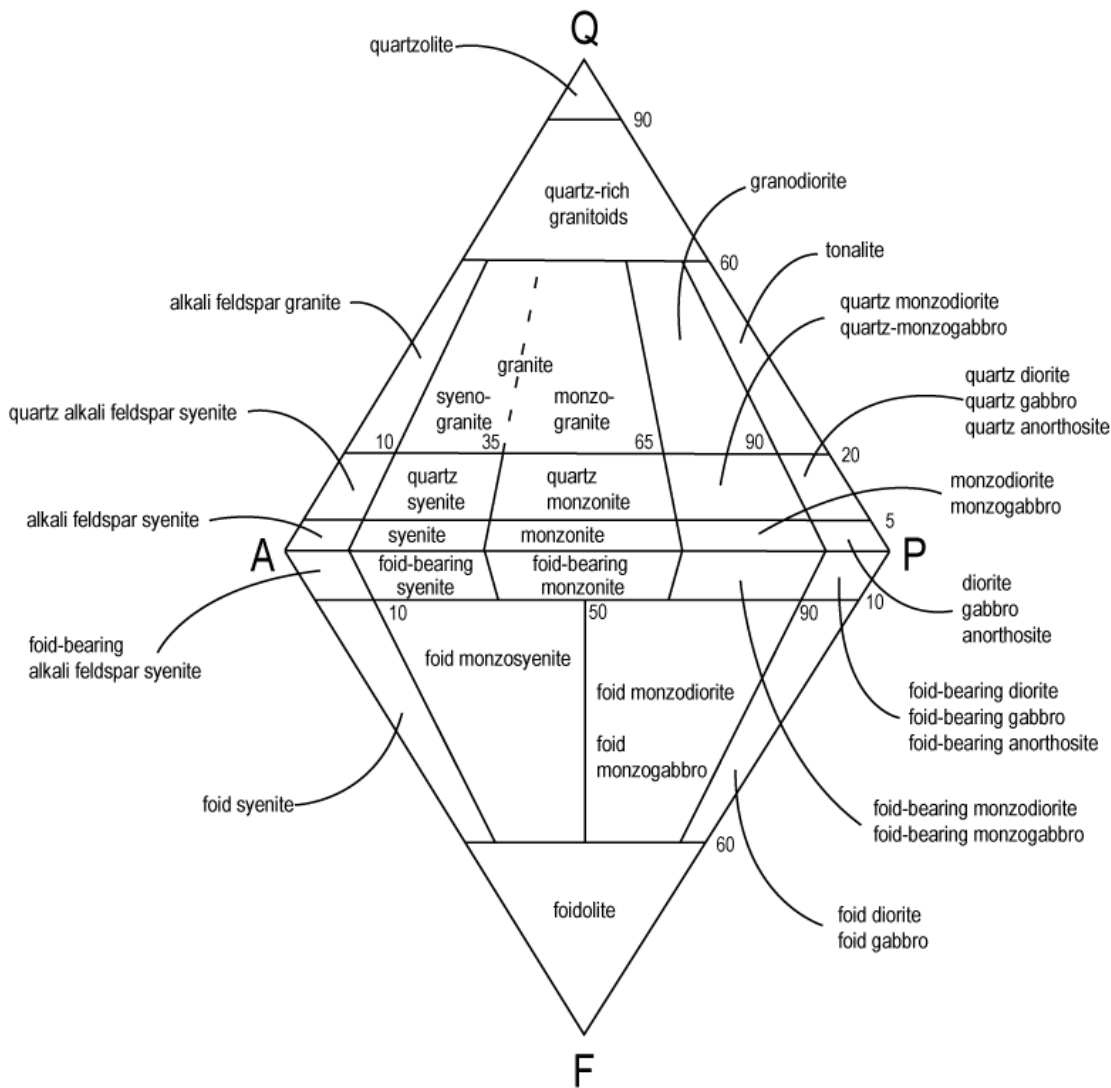
only necessary to bring your lunch, microscope and any minerals you may have for the day's topic.

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**

With no meeting in October, the group had an extra month to study and select specimens for the November meeting. The topic, “Minerals in Granites” was a combined session with the Micro Group and one which proved to be either extremely interesting, extremely frustrating, or possibly both – depending on the approach taken.

There was a lively discussion on what exactly constitutes ‘granite’. As ‘granite’ can be either a strict geological/geochemical definition of a type of rock, or possibly a more generic term for ‘granite’ like rocks, or possibly rocks with granitic textures.



Above: QAPF Diagram of plutonic rock types based on quartz, alkali-feldspar, plagioclase and feldspathoid mineral composition.

Some chose to interpret the topic as minerals that can form in granites, even though the particular specimen presented may not have been from granite itself. Some chose to stick strictly to the geological classification of granite, and thus found a much smaller range of localities to choose from. And some elected to go by instinct – selecting specimens that looked like they could be in granite – or at least in something like granite.

However, one thing was (relatively) clear. We generally don't record or even pay too much attention to the type of rock in which our minerals are found. While for some specimens and localities we instinctively know that they are in basalt or rhyolite, but for many others the answer isn't clear.

The combined meeting with the Micro Group did allow us to appreciate the smaller minerals available from many localities, that otherwise would not have been as convenient. From localities such as Lake Boga we saw mostly micro examples of ulrichite, torbernite, saleeite, kidwellite, chalcocyanite, cyrilovite and others, but also a few larger hand-size specimens including smoky quartz and fluorapatites.

For other localities (some granites, some almost-granites), we saw schorl and torbernite from Royal George mine in Tasmania, corundum from Hartz Range in Northern Territory, various types of mica minerals from the Londonderry pegmatites in Western Australia and microcline ("amazonite") and smoky quartz from Pikes Peak, Colorado in the USA.

From Victorian localities we saw titanite and allanite-Ce from Mount Cole, almandine from Mt Lady Franklin, schorl and quartz from Pyramid Hill, topaz from the Womobi Mine and almandine from Dog Rocks near Geelong.

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:

The Mineralogical Record  
Sep-Oct 2009  
Merelani, Tanzania



Newsletter – Mineralogical Society of Western Australia  
Sep 2009



Newsletter – Mineralogical Society of Tasmania  
Nov 2009



Newsletter – Nunawading Lapidary Club  
Oct 2009

International Micromounters Journal – Jul 2009

Peter Hall has kindly donated the two 2009 issues of The Australian and New Zealand Mineral Collector Magazine to the library. Thanks, Peter.

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 – Coming Soon!!



Above: Analcime on calcite, Bundoora Quarry, Vic – Photo Volker Hoppe.

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)

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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.

**For Sale**

Minerals of Broken Hill book. The original version published by AMS in 1982. Unopened and in the original mailing box.

Price: \$200 plus postage (from the UK) Surface mail \$25.00, Airmail \$50.00

Enquiries to John Haupt [john.haupt@bigpond.com](mailto:john.haupt@bigpond.com) or (03) 9876 3059

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# MINERALOGICAL TRAVELS IN EUROPE

## Part 12: Cornwall, England (Continued)

By John Haupt

Specimens of Cornish minerals are found in many collections around the world. Interest in Cornish minerals extends over a period of 300 years. In 1682, Dr Johann Becher published a work on mining and smelting in Truro, during a visit to study Cornish mining. It contains the words '*I believe there is no other place in the world which excels Cornwall in the quantity and variety of {its minerals}*' (Embrey & Symes, 1987). Many mineral collectors say that this view continues to be true today.

The latter part of the 18<sup>th</sup> century saw an upsurge of interest in collecting and acquiring minerals for scientific study throughout Europe. With the Cornish mines in their heyday, they were the source of many fine mineral specimens. Some of the notable collectors and collections of Cornish minerals are:

### **Philip Rashleigh (1729-1811)**

Rashleigh was Cornwall's most famous mineralogist. Born in 1729 in Aldermanbury, London, he was the son of Jonathan Rashleigh, a landowner and Member of Parliament. He was educated at Oxford and succeeded his father as Member of Parliament for Cornwall. He lived in the family's 16<sup>th</sup> century mansion at Menabilly, near St Austell. Rashleigh developed an early interest in natural history and especially mineralogy and by 1764, when he took over his family's estates, he started to obtain mineral specimens from the local miners and mine owners whilst also self collecting many. To further expand his collection, he purchased and exchanged specimens with mineral dealers, collectors and mineralogists both in England and abroad.

Rashleigh's collection of Cornish minerals is so complete, it is said to contain every mineral rarity found in Cornwall. Some specimens are particularly rare as these mines were only worked for a short time. Rashleigh dedicated a room in his house to the collection, which was housed in eight cabinets and ten metres of wall cases. He also meticulously recorded the source and localities of the specimens in a large catalogue. He did not travel much, but corresponded with many scientists. In recognition of his collection and his knowledge of Cornish minerals, he was elected to the Royal Society and to the Society of Antiquaries in 1788. He left his mineral collection to his nephew William (1777-1855) and it largely remained at Menabilly until 1902, when the collection was purchased through cash donations and presented to the Museum of the Royal Institution of Cornwall, together with Rashleigh's manuscript catalogue. Part of the collection was retained by William's son John and was later purchased by Sir Arthur Russell. The Rashleigh mineral collection is still largely intact and is housed in the Royal Cornwall Museum in Truro and the British Museum (Natural History) in London. (Wilson, 1994).

### **Richard Talling (1820-1883)**

He was the greatest Cornish dealer of all time. He started his business from a shop in Lostwithiel in 1844 at the peak of Cornish mining. He became '*the dealer from whom the National Collection {British Museum} has received a very large proportion of its finest Cornish minerals*'. He obtained most of the famous bournonite and tetrahedrite specimens from the Herodsfoot mine. His persistence in getting specimens from this mine resulted in the mine's manager imposing a ban, which he duly circumvented by buying a share in the mine! Talling was exceptionally well-placed at Lostwithiel. Within a 15-mile radius of his front door were many of Cornwall's most famous specimen-producing mines.

Talling was directly responsible for the discovery of the minerals langite (1864), devilline (1864), bayldonite (1864), botallackite (1865), churchite (1865), woodwardite (1866), andrewsite (1871), tavistockite (1874), and ludlamite (1876), the last species being named in celebration of Henry Ludlam (1824-1880), one of Talling's best customers. The new mineral *tallingite* was named in his honor in 1865, but has been discredited and is now a synonym of connellite.

Talling left his stock of minerals to his executor and friend, Francis Butler, who subsequently became a well known British mineral dealer.

### **Sir Arthur Russell (1878-1964).**

It was from his mother, Lady Constance Russell, that Arthur first acquired his interest in minerals. She had started out having elementary lessons in mineralogy from Miss Henson, the sister of Samuel Henson the London dealer and had spent her pocket money buying specimens. It was her small collection that was the foundation of Arthur's. Sir Arthur was educated at Eton and studied chemistry at Kings College, London. He took up an appointment with the London and South Western Railway, continuing the family connection with railways. He later became involved with running the family estate of Swallowfield Park, near Reading and succeeded to the family title on the death of his brother in 1948.

When he was about 8 years old, Arthur made his first underground visit to a working mine, the Wheal Providence at St. Ives. Three years later he went underground at Botallack, thereafter he was to visit every mine in Great Britain and Ireland, and to go into every metalliferous mine in the British Isles that had been worked during his lifetime. He devoted special attention to both working and abandoned mines. In the former he spent whole days and nights underground securing specimens that otherwise would never have seen the light of day. He had a keen eye for good specimens, especially for the rarer and more unusual species, which tended to be overlooked by the miners. He paid great detail to the conditions under which minerals formed and had an instinctive feeling for where minerals might be found. Russell had a great sense of humour and a friendly personality, getting on well with almost everyone and making many friends among mine and quarry managers, miners, and quarrymen. As a result he was usually notified of any interesting discoveries in mines or quarries, and therefore was able to acquire many fine specimens which might have otherwise been destroyed.

Over the years Russell acquired a considerable number of collections, some dating back to 1800, many containing specimens no longer available. The Russell collection contains many outstanding specimens, but special mention is made of the excellent suites of chalcopyrite, chalcocite, fluorite, barite, pyromorphite and mimetite.

Following his death in February 1964, aged 86, the whole of his superb collection, amounting to some 12,000 specimens, was passed to The British Museum (Natural History), together with storage cabinets, maps, notes and many books by Russell's generous bequest, on condition that it would not be dispersed but kept as a British regional collection.

The Russell Society, named after Sir Arthur Russell, was formed in 1972 and it is the pre-eminent mineralogical society in Britain.

### **Royal Cornwall Museum, Truro.**

Owned by the Royal Institution of Cornwall, The museum was founded in 1818 for the promotion of knowledge in natural history, ethnology, the arts and science, with particular relevance to Cornwall. The heart of the mineral collection is the Rashleigh collection, arguably containing the best specimens of many Cornish minerals. Other additions made to the collection include the collection of Mr James Wickett (1922) and specimens from Richard Barstow (1970-1982).

### **British Museum (Natural History), London.**

A must see for anyone visiting London, A large mineral gallery contains a systematic collection of great mineral specimens from around the World. Naturally, Cornish minerals are well represented, with many coming from the Rashleigh and Russell collections.

## Visiting Cornwall

There is much to see of Cornwall's mining heritage. Stone engine houses and chimneys dot the landscape, many are falling down or overgrown ruins, but some, such as the Levant mine, have been restored and operate as a visitor attraction. The towns and villages also retain their mining heritage, with miners cottages, managers houses and Inns being generally well maintained.

In many cases the mine dumps have been removed and little remains for collectors. Those that remain have been well searched over by a number of keen local collectors. Searching along the sea cliffs can yield an occasional find, a notable one being botallackite at the base of Cligga head at Perranporth (Merry & Weiss, 2007). The working china clay pits were a source of interesting minerals, but are currently out of bounds to collectors. Sheila Harper in Newquay advertises organized mineral collecting holidays in Cornwall and there is the possibility of arranging mining heritage tours through the local tourist offices.

I trust that this series has encouraged members to look out for minerals from the localities that I have mentioned. They each have an interesting mining history and specimens should have a special place in your collection.

### References:

There are many publications and articles written on the Cornish mines and minerals. The following selection has been used in preparing this article. The Embrey & Symes book is available from the Society's library and it provides a good introduction to Cornish mines and minerals.

Betterton, J, 2000: Famous Mineral Localities – Penburthy Croft mine, St Hilary, Cornwall. UK Journal of Mines & Minerals, 20, 7-37.

Bruce, I & Aubrey-Jones, D., 1998: Famous Mineral Localities – Ting Tang mine Gwennap, Cornwall. UK Journal of Mines & Minerals, 19, 18-23.

Embrey, P.G., & Symes, R.F., 1987 : Minerals of Cornwall & Devon. British Museum (Natural History). 154p.

Golley P., & Williams, R. 1995: Cornish Mineral Reference Manual. The Royal Geological Society of Cornwall. 71p.

Bancroft, P. & Weller, S., 1993: Cornwall's Famous Mines. The Mineralogical Record, 24(4), 259-283.

Bancroft, P. 1984: Herodsfoot Mine, Liskeard, Cornwall, England. In Gem & Crystal Treasures, Western Enterprises/Mineralogical Record, 377-380.

Merry, M., & Weiss, S., 2007: Botallackit vom Cligga Head, Cornwall, Lapis 32(9), 33-36.

Penhallurick, R., 1997: The Mineral Collection of the Royal Institution of Cornwall. UK Journal of Mines and Minerals, 18, 17-32.

Wilson, W.E., 1994: The History of Mineral Collecting, The Mineralogical Record, 25(6), 71-74.

Weiss, S., 1994: The minerals of the china clay pits in Cornwall, UK Journal of Mines & Minerals, 14, 21-33.

### Websites:

[www.cornwallinfocus.co.uk/history/scrofty.php](http://www.cornwallinfocus.co.uk/history/scrofty.php) [www.geevor.com](http://www.geevor.com)  
[www.macminerals.com/artmbian.htm](http://www.macminerals.com/artmbian.htm)

## Cornish Minerals

A reference manual of Cornish minerals by Golley & Williams was published in 1995. It provides a list of the Cornish mineral localities and references. This has been supplemented by information from the on-line mineral database MINDAT. A total of 466 species have been confirmed from Cornwall, of which 32 have Cornwall as their type locality. The minerals with Cornwall as the type locality are listed below:

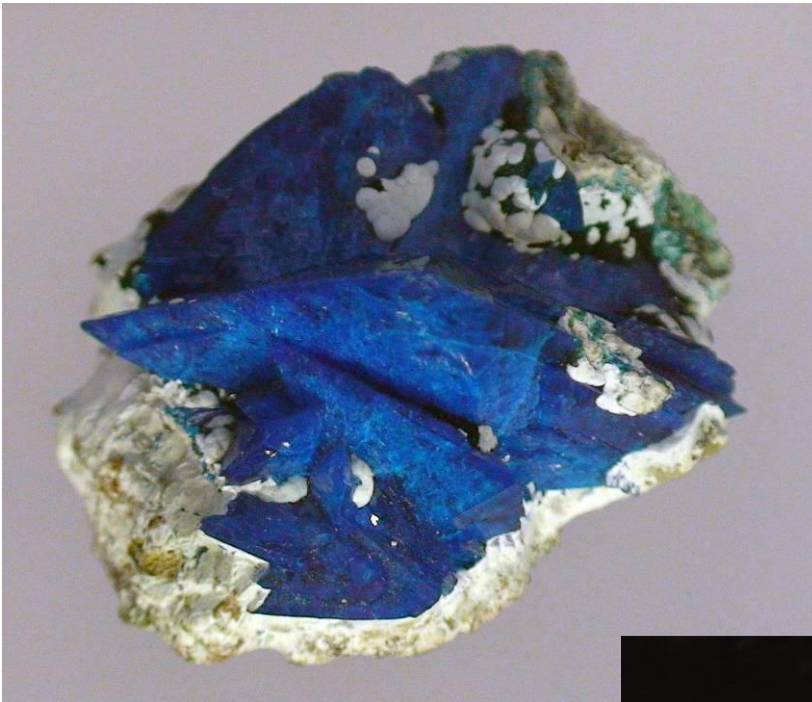
Mineral	Composition	Locality
Arthurite	$\text{CuFe}_2^{3+}(\text{AsO}_4, \text{PO}_4, \text{SO}_4)_2(\text{O}, \text{OH})_2 \cdot 4\text{H}_2\text{O}$	Hingston Down Consols Mine, Calstock
Barstowite	$3\text{PbCl}_2 \cdot \text{PbCO}_3 \cdot \text{H}_2\text{O}$	Bounds Cliff, St Endellion
Bassetite	$\text{Fe}^{2+}(\text{UO}_2)_2(\text{PO}_4)_2 \cdot 8\text{H}_2\text{O}$	Wheal Basset, Redruth
Bayldonite	$\text{Cu}_3\text{Pb}(\text{AsO}_4)_2(\text{OH})_2$	Pemberthy Croft mine, St Hilary
Botallackite	$\text{Cu}_2\text{Cl}(\text{OH})_3$	Wheal Cock, St Just
Bournonite	$\text{PbCuSbS}_3$	St Endellion
Chalcosiderite	$\text{Cu}^{2+}\text{Fe}_6^{3+}(\text{PO}_4)_4(\text{OH})_8 \cdot 4\text{H}_2\text{O}$	Wheal Phoenix mine
Chenevixite	$\text{Cu}_2\text{Fe}_2^{3+}(\text{AsO}_4)_2(\text{OH})_4 \cdot \text{H}_2\text{O}$	Wheal Gorland, St Day
Churchite-(Y)	$\text{YPO}_4 \cdot 2\text{H}_2\text{O}$	Trefoil mine, Lostwithiel
Clinoclase	$\text{Cu}_3(\text{AsO}_4)(\text{OH})_3$	Wheal Gorland, St Day
Connellite	$\text{Cu}_{19}\text{Cl}_4\text{SO}_4(\text{OH})_{32} \cdot 3\text{H}_2\text{O}$	Wheal Gorland, St Day
Cornubite	$\text{Cu}_5(\text{AsO}_4)_2(\text{OH})_4$	Wheal Carpenter, Gwinear
Cornwallite	$\text{Cu}_5(\text{AsO}_4)_2(\text{OH})_4$	Wheal Gorland, St Day
Devilline	$\text{CaCu}_4(\text{SO}_4)_2(\text{OH})_6 \cdot 3\text{H}_2\text{O}$	Cornwall
Ferrokesterite	$\text{Cu}_2(\text{Fe}, \text{Zn})\text{SnS}_4$	Cligga mine, Perranporth
Fluellite	$\text{Al}_2(\text{PO}_4)\text{F}_2(\text{OH}) \cdot 7\text{H}_2\text{O}$	Stenna Gwyn, Near St Austell
Jamesonite	$\text{Pb}_4\text{FeSb}_6\text{S}_{14}$	St Endellion
Langite	$\text{Cu}_4\text{SO}_4(\text{OH})_6 \cdot 2\text{H}_2\text{O}$	St Blazy & St Just
Liroconite	$\text{Cu}_2\text{AlAsO}_4(\text{OH})_4 \cdot 4\text{H}_2\text{O}$	Wheal Gorland, St Day
Lizardite	$\text{Mg}_3\text{Si}_2\text{O}_5(\text{OH})_4$	Eastern Cliff, Kennack Sands
Ludlamite	$(\text{Fe}^{2+}, \text{Mn}, \text{Mg})_3(\text{PO}_4)_2 \cdot 4\text{H}_2\text{O}$	Wheal Jane, Truro
Olivenite	$\text{Cu}_2\text{AsO}_4 \cdot \text{OH}$	Wheal Gorland, St Day
Pharmacosiderite	$\text{KFe}_4^{3+}(\text{AsO}_4)_3(\text{OH})_4 \cdot 6\text{--}7\text{H}_2\text{O}$	Carharract, St Day & Tincroft, Carn Brea
Russellite	$\text{Bi}_2\text{WO}_6$	Castle-an-Dinas mine, St Columb
Stannite	$\text{Cu}_2\text{FeSnS}_4$	Wheal Rock, St Agnes
Stokesite	$\text{CaSnSi}_3\text{O}_9 \cdot 2\text{H}_2\text{O}$	Roscommon Cliff, St Just
Tennantite	$(\text{Cu}, \text{Fe})_{12}\text{AsS}_{13}$	Cornwall
Tristramite	$(\text{Ca}, \text{U}^{4+}, \text{Fe}^{3+})(\text{PO}_4, \text{SO}_4) \cdot 2\text{H}_2\text{O}$	Wheal Trewavas, Breage
Uranospathite	$\text{HAl}(\text{UO}_2)_4(\text{PO}_4)_4 \cdot 40\text{H}_2\text{O}$	Wheal Basset, Redruth
Vivanite	$\text{Fe}_3^{2+}(\text{PO}_4)_2 \cdot 8\text{H}_2\text{O}$	St Agnes
Vochtenite	$(\text{Fe}^{2+}, \text{Mg})\text{Fe}^{3+}[(\text{UO}_4)(\text{PO}_4)]_4 \cdot 12\text{--}13\text{H}_2\text{O}$	Wheal Basset, Redruth
Woodwardite	$\text{Cu}_2\text{Al}_2\text{SO}_4(\text{OH})_{12} \cdot 2\text{--}4\text{H}_2\text{O}$	Cornwall

'Pigs Eggs' – fine grained muscovite after felspar, occur in kaolin in the China Clay Pits.





Above: The picturesque seaside village of St Ives



Left: Liroconite from the Wheal Gorland mine. The largest crystal is 22 mm across. Specimen: Rashleigh collection, Royal Cornwall Museum, Truro.



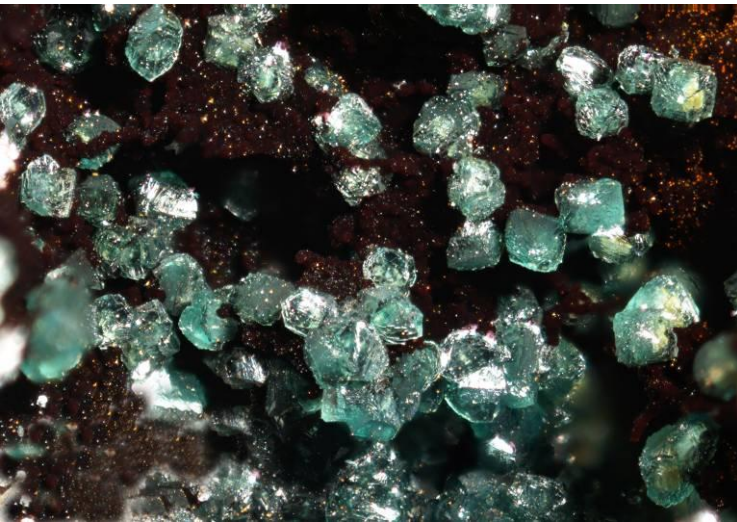
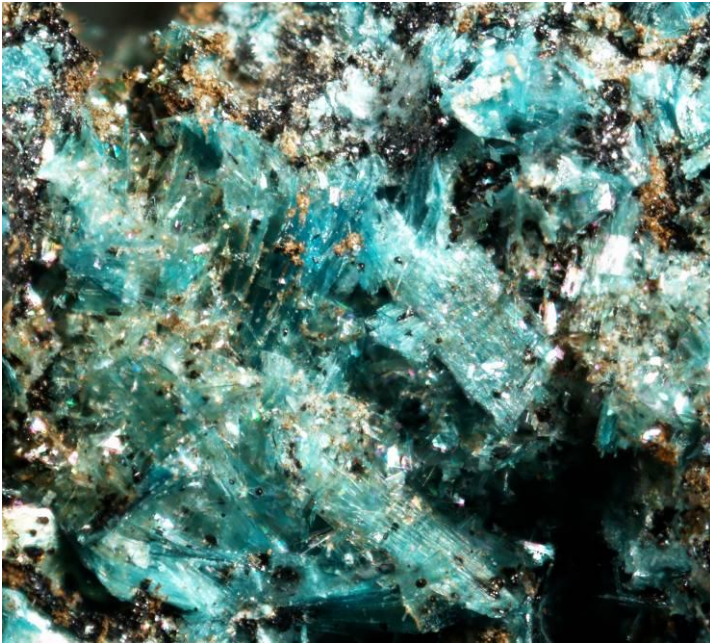
Right: Bournonite from the Herodsfoot mine. Specimen: Private collection, Cornwall.



Above: Bournonite, approx 15cm across, from the Herodsfoot mine. Specimen: British Museum (Natural History), London.

Below: Straw Cerussite, 13 cm across from the Pentire Glaze mine, St Minver. Specimen: Private collection, Cornwall.





Above left: Botallackite, Cligga head, Perranporth. Specimen: J. Haupt.

Above: Arthurite, Hingston Downs Consols mine, Calstock (Type locality). Specimen: J. Haupt.

Left: Chalcosiderite, Phoenix United mine, Linkinhorne (Type locality). Specimen: J. Haupt.

Below: Cuprite & native copper, 6 cm across. Carn Brea mine, Camborne. Specimen: J. Haupt (ex J&D Leach collection).







Above: Rashleigh collection, Royal Cornwall Museum, Truro.

Below: Mineral Gallery at the British Museum (Natural History), London.

