Australia and New Zealand Micromineral News

Issue 2 – December 2011



Cover photo: Mimetite "sandwich", Magnet mine. ~2mm across. Photo: Steve Sorrell. Specimen: Peter Harris.



steve sorrell

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Editor: Steve Sorrell steve@crocoite.com

Introduction

Well, that three months came around fast! We're almost into the Silly Season!

The first issue of the Australia and New Zealand Micromineral News has proven to be very popular, not just within this region, but right around the world. The subscriber list contains more than 100 names, and I know that many more have been recipients of a copy.

This second issue contains another piece from John Haupt, this time focussing on one mineral, mimetite, from the Magnet mine in northwest Tasmania. I have been fortunate to have collected there myself on many occasions. If you have been there, you will know that you only have to look at the gossan to turn brown!

Contributions – We Need Your Input!

Articles should be submitted to the editor in Word format, and any photos should be of a sufficient quality for publication. If you believe that you can provide a suitable article for the next issue, please advise the editor as soon as possible. Planning for the next issue begins as soon as the current one is published!

Contacts

If you want to find out what's happening in your region with micromounting or microminerals, get in touch with one of the following:

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Forward Diary

Please send details of upcoming events (up to six months ahead would be good) for inclusion in the next issue of the Australian and New Zealand Micromineral News.

Perth, WA: June 9-10, 2012. Joint Seminar includes a micromount session.

Mimetite from the Magnet mine, Tasmania.

by John Haupt

Introduction

The Magnet silver mine, near Waratah in Western Tasmania, has produced a range of attractive mineral specimens. Many occur as small crystals and make excellent micros (Haupt *et al*, 1995). Some of the best micros are of the lead arsenate mineral, mimetite, $Pb_5(AsO_4)_3Cl$, which occurs in a variety of habits and colours at the Magnet mine.

Most of the minerals that have been collected at the Magnet mine occur in the heavily decomposed gossan, which consists of an earthy iron and manganese oxides. The locality has been a popular collecting locality since the 1970s and is now a designated fossicking area (Bacon & Bottrill, 1985).

Mimetite

Mimetite crystals are relatively common, forming as small individual crystals up to 5mm in voids in the gossan. The colour ranges from white, yellow, orange and red. The crystals can be transparent, translucent and opaque. The crystals are generally free standing and range from flat tabular hexagons to long hexagonal prisms. In some instances fibrous growths emanate from the c axis of the crystal. Frost *et al*, (2008) attribute the colour range from brown to orange-yellow to varying impurities of iron and copper in the crystal structure.

The red hexagonal crystals were identified as vanadinite by Petterd (1897) as "occurring in groups of closely compact hexagonal prisms and incrusting on sulphate of lead, of a deep reddish brown to almost crimson colour with a resinous lustre". Similar crystals were found in the 1970s (e.g. Lancaster, 1974) and continued to be called vanadinite until the writer had specimens tested by XRD and identified as mimetite (W. Birch, pers. comm., 1989). The red colour is attributed to chromium impurities (Bottrill et al, 2008). A chromian mimetite has been reported from the Santa Ana mine, Tocopilla province, Chile (Mindat).

Mimetite is commonly associated with cerussite (both white and yellow forms), crocoite (uncommon at the Magnet) and pyrolusite/chalcophanite.

The following pages show the diverse range of colours and forms that the Magnet mine has produced.



Figure 1: A columnar hexagonal mimetite crystal, 2mm tall



Figure 2 (above): Transparent yellow thin tabular crystal, 0.5mm across on pyrolusite



Figure 3 (above): Yellow crystal showing growth patterns, 1mm across.

Figure 4 (below): Yellow interpenetrant crystals, 0.8 mm crystals showing growth patterns.





Figure 5 (above): Group of lustrous yellow crystals, 4mm field of view.

Figure 6 (left): Lustrous yellow tabular crystal 0.5mm across.

Figure 7 (below): Cluster of white mimetite crystals with zoned terminations on the c axis. 4mm field of view.





Figure 8 (left): Clear to white hexagonal prisms. 4mm field of view.



Figure 9 (right): Tabular hexagonal crystal with fibrous overgrowth on the c axis. 4mm field of view.



Figure 10 (left): Cluster of white mimetite crystals with zoned terminations on the c axis. 4mm field of view.



Figure 11 (above): Columnar hexagonal crystals with additional growth on c axis. 4mm field of view.



Figure 12 (below): Acicular mimetite crystals. 4mm field of view.





Figure 13 (above): Cluster of resinous red mimetite crystals. 3mm field of view.

Figure 14 (below): Lustrous red mimetite crystals on goethite. 4mm field of view.





Figure 15 (right): A 0.2mm crystal on 'limonite' gossan.



Figure 16 (left): Resinous 0.1mm crystals on pyrolusite.



Figure 17 (right): Group of 1mm orange prisms.



Figure 18 (above): Corroded mimetite crystal, 2mm across.

All photographs were taken by John Haupt and were digitally layered using Combine Z©

References:

Bacon, C. A., & Bottrill R.S., 1985: Fossicking areas in Tasmania, Mineral Resources of Tasmania, 20-24. (Downloadable on the MRT website as FOSSICK 2005 COLOUR. PDF)

Bottrill, R.S. & Baker, W.E., 2008: A catalogue of the minerals of Tasmania. Bulletin Geological Survey of Tasmania, 73, 120-122.

Frost, R.L., Reddy, B.J., & Palmer, S.J., 2008: The structure of mimetite, arsenian pyromorphite and hedyphane – a Near Infrared Spectroscopic study. Polyhedron, 27(6), 1747-1753. (manuscript accessible at http://eprints.qut.edu.au).

Haupt, J., Bottrill, R. & Sorrell, S., 1995: The Minerals of the Magnet Mine. Australian Journal of Mineralogy, 1(1), 3-19.

Lancaster, K., 1974: The Magnet. Australian Gems & Crafts Magazine, 4, 12-14.

Petterd, W.F., 1897: Notes on some recently discovered and other minerals occurring in Tasmania. Papers & Proceedings of the Royal Society of Tasmania, 1897, 62-65.

Around the Region



Alex Blount (centre, President, Mineralogical Society of Victoria) and Bendigo Gem Club members Pat Sutton (right) and Jake Mildren with some micromounts on display at this year's Bendigo Gem Club Gemerana in September. Donations of micromount material from members are sold by the club with the proceeds used to help cover running costs. The club has a large number of boxed specimens, mainly from Australian localities.

Bendigo Gem Club can be contacted at P.O. Box 1059, Bendigo 3552.



Micro-mounting

While in general I like to collect minerals on matrix, sometimes a very small specimen or tiny single crystal is irresistible for its perfection and can be quite a challenge to mount. I've used dried thorns (these are approx. 25 mm long and tapered) from a berberis shrub with some success, painted black and cut to the length needed. Then in a model railway shop, I found a length of clear acrylic round rod, about 3 mm across and really easy to saw into short lengths using a vice and fretsaw. A file will quickly smooth any rough bits. An advantage is that, for example, a tiny green beryl crystal mounted with Aquadhere on the acrylic post loses none of its colour as it can if mounted on a black pedestal. Since then I've found thicker acrylic rod is equally quick and easy to cut to make pedestals for raising some larger flat specimens off the floor of the box.

Jo Price.

News from the British Micromount Society (BMS)

You may already be aware, but if not, we have nearly completed the task of scanning and uploading all the back issues of the British Micromount Society Newsletter (back to 1981) available to download free of charge from the BMS web site at: http://britishmicromountsociety.homestead.com/BMSNewsletterBackIssues.html

There are 71 issues available with a wealth of interesting stuff. We shall continue to upload another issue each time a new one appears, with a three issue lag (so that we don't lose all of our paying members!).

You might also be interested in a short article I posted to Mindat reviewing the recently reopened galleries at the Royal Museum of Scotland, Edinburgh, where, yet again, the "designers" have screwed up the mineral displays with dreadful lighting and inadequate (i.e. no educational content) labelling. It just seems to be a trend that is repeated over and over again. Very strange.

http://www.mindat.org/article.php/1289/National+Museum+of+Scotland%2C+Edinburg h%2C+Re-visited

If you click on each photo in turn it will enlarge and pull up a screen with a narrative panel / caption.

Best wishes from the UK.

Roy Starkey

Hon.President, British Micromount Society.

Horst Windisch (South Africa)

The Federation of Southern African Gem and Mineralogical Societies have sadly announced the passing of well known micromounter Horst Windisch. Mr.Windisch passed away after illness on August 23.

Horst Windisch was born in Gibeon (South West Africa, now Namibia) on 24th April 1932. Moved to Pretoria with his parents in March 1935, where he has resided ever since. Attended the Deutsche Schule Pretoria and the Technical College in Pretoria during his school years. Started his working career as a millwright apprentice in January 1950 at ISCOR (South African Iron and Steel Works). Worked all his working life at ISCOR in various maintenance departments, culminating as Project Leader for the first commercial COREX plant in the world, before he retired on pension in May 1991.

His outside activities included gem and mineral collecting, hiking, touring and photography. As far as other related activities are concerned, he founded the South African Micromount Society (SAMS) in 1975 and Sand Collectors International (SCI) in 1985. Was up until 2001 the driving force behind SAMS and editor of "Micro News and Views" (the quarterly Newsletter of SAMS) (when due to health problems, had to scale down his activities). However, since 2005, is back again as editor. Was elected into the Micromounters Hall of Fame in Baltimore (USA) in September 1991on which occasion he was also instrumental in the founding of the International Federation of Micromount Societies (IFMS). Here he was elected as President of the IFMS, a position which he still holds today. (He has more than 7 000 mounted micromounts in his collection) As far as sand is concerned, he is editor of the quarterly Newsletter "The Sands of Time". He has close to 6000 sand samples from all over the world in his collection.

Posted by Joe Mulvey on Mindat

Anatomy of a Mineral Specimen

by Steve Sorrell

Introduction

Any given mineral specimen can surprise when you look closely. Prof Pete Williams wrote a guest editorial for the December 2001 issue Australian Journal of Mineralogy. Pete advised that many specimens in a collection may have smaller amounts of other minerals in addition to the species indicated on the label. He recommended that "a careful examination of specimens will inevitably lead to a rapid increase in the number of minerals in any collection". This is where a microscope comes in handy as often these extras are not obvious – the "Hidden Collection".

Alabandite, Uchucchacua Mine, Peru

I recently received a couple of alabandite specimens from the Uchucchacua Mine, Oyon Province, Lima Department, Peru. Now these alabandite specimens are pretty spectacular in themselves, but there is more to be found when you look closely. As you can see from the photos below, there are quite a few other species present, the challenge being how to accurately identify them.

A recent article in Rocks and Minerals has identified that specimens mined since the original find in 2008 have been cleaned with an air-abrasive device. Although the cleaning makes for lustrous alabandite specimens, it also removes a new silver-manganese sulphide mineral as well as a secondary growth of alabandite microcrystals. My specimens don't appear to have been so-cleaned (but I don't know what the new mineral looks like!).

What I have found is small fluorite crystals, tabular (truncated prisms) micro-alabandite crystals, almost bipyramidal quartz, and a suspected, but unidentified, sulphosalt mineral.

References:

Pohwat, Paul W. 2011: Connoisseur's Choice: Alabandite, Uchucchacua Mine, Oyon Province, Lima Department, Peru, Rocks & Minerals, 86(6), 530-535.

Williams, P.A., 2001: Guest editorial: the hidden collection. Australian Journal of Mineralogy, 7(2), 46-47.



Figure 1 (right): Alabandite, rhodochrosite and quartz Specimen width 35mm Steve Sorrell photo and specimen



Figure 2 (above): Fluorite on alabandite, photo width 4mm. Steve Sorrell photo and specimen.



Figure 3 (above): Bipyramidal quartz, photo width 4mm. Steve Sorrell photo and specimen.



Figure 4 (above): Unidentified sulphosalt(?), photo width 2mm. Steve Sorrell photo and specimen.



Figure 5 (above): Alabandite microcrystal, photo width 4mm. Steve Sorrell photo and specimen.



Figure 6 (above): Modified fluorite(?) on alabandite, photo width 4mm. Steve Sorrell photo and specimen.

Classifieds

Want to advertise something related to micromounting or microminerals? You can do so here. Willing to trade or sell, want lists, etc. Simply email the editor: steve@crocoite.com to get your listing in the next issue. Please keep ads as short as possible.

Mineral Paradise – Richard Bell

Periodic listings of mainly British micro and thumbnail-sized mineral specimens made available for sale or swap. To view, go to http://www.mineral-paradise.net

Sauktown Sales - Jim Daly

Periodic listings of micro mineral specimens for sale. Jim also sells micromounting supplies. To view, go to http://www.sauktown.com

The Mineral Pocket Created by Nature - Steve Sorrell

Minerals for sale by auction, many micro-material specimens regularly listed. To view, go to http://crocoite-rockroom.blogspot.com