The Mineralogical Society of Victoria Incorporated

A0001471E

Newsletter No. 233

May-June 2017

Fluorapatite, Lake Boga Quarry, Vic
Largest crystal 25mm (Photo: John Haupt)

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

General meetings are held on a varying roster of weekends (Sunday) and weeknight (typically Wednesday) during alternate months (except January and Public Holidays). Please see the Forward Diary in this Newsletter for upcoming meeting dates and locations.

Visitors are most welcome.

Newsletter of the Mineralogical Society of Victoria
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FORWARD DIARY

General Meetings are held on an approximately alternating monthly rotation of weeknights and weekends.

JUL 2 Sunday	Micro Group Meeting: John Haupt's home Topic: Minerals form Italy, Spain, Portugal and Switzerland
JUL 16 Sunday	Mineral Appreciation Group: 10:00am, Nunawading Lapidary Club, Oval Way, Nunawading. Topic: Tarnish, decay and pseudomorph – mineral changes.
JUL 19 Wed.	ANNUAL GENERAL MEETING 7:30pm, at Royal Society of Victoria Building, Cnr La Trobe and Victoria Streets, Melbourne Speaker: Alex Blount (MinSoc President), Geology of Melbourne – Some New Perspectives
JUL 30 Sunday	Micro Group Meeting: John Bosworth's home Topic: Arsenates from Australian localities.
AUG	General Meeting: Date and Location to be confirmed following July Annual General Meeting Please refer to Society website for updated (www.minsocvic.org.au)
AUG 20 Sunday	Mineral Appreciation Group: 10:00am, Nunawading Lapidary Club, Oval Way, Nunawading. Topic: Tecto-Silicates.
AUG 27 Sunday	Micro Group Meeting: Jo Price's home Topic: Minerals containing elements from Groups 8 to 11 (Transition Metals) category on the Periodic Table.
SEP	General Meeting: Date and Location to be confirmed following July Annual General Meeting Please refer to Society website for updated (www.minsocvic.org.au)
SEP 17 Sunday	Mineral Appreciation Group: 10:00am, Nunawading Lapidary Club, Oval Way, Nunawading. Topic: Minerals Containing Lead as the Primary Element (i.e. dominant by weight).
SEP	Micro Group Meeting: Location to be Confirmed Topic: To be Confirmed

MINERAL RELATED EVENTS

SEP 9-10	**Bendigo Gem Club Expo** Bendigo Baptist Church Hall, NOVO Centre, 767 McIvor Highway, Junorton
SEP 30 - OCT 6 Sat-Fri	**40th Joint Mineralogical Societies Annual Seminar** "Copper Minerals – Copper State" Hahndorf Resort Conference Centre, Hahndorf, South Australia
OCT 21-22	**Nunawading and District Lapidary Club Annual Exhibition** Dorset Primary School, Prospect Hill Road, Croydon (Melways map 50 K7)
NOV 25 Saturday	**"The Australian Fine Mineral Show", Melbourne** Location to be advised, information available from www.afms.com.au

NEXT ISSUE: Material for the August Newsletter to be with Alex Blount by **July 20th.**

FROM THE COMMITTEE

Having negotiated the Special General Meeting last year and carrying on some of the activities of the Society into 2017, we are again approaching an Annual General Meeting (see notice below, Wednesday 19th July). Important matters need attention:

1) WE NEED YOUR HELP.

A number of long-serving Committee members are looking to 'retire' this year. Without people putting their hand up to come on board and help, we will **again** be facing a Special General Meeting and proposal to 'wind up' the Society. All Committee positions will become vacant and Members can nominate for any position.

Please see the Notice of AGM and Nomination form attached at the end of the Newsletter.
Whilst we have some wonderful new additions to the Committee in 2016 and at least one new nomination for the Committee already this year, we do need more people.

Please note the day, date and time for the AGM. This is the 3rd Wednesday of the month, aiming to start a little earlier (7:30pm) so that we can finish 'on-time'.

2) ANNUAL SEMINAR 2018.

Yes the Annual Societies' Seminar for 2017 is coming up in September-October in South Australia, and details of the programme so far are provided in this Newsletter. In 2018 it is Victoria's turn to host the Seminar. Therefore we need to know whether we will be able to do so. This means we need a Committee appointed at the AGM and commitment from Members to assist in planning and running the Seminar.

The IMA (International Mineralogical Association) happens to be holding their 22nd Meeting in Melbourne during August 2018. This means two things:

- Our MinSoc members from Museum Victoria are likely to be very (very!) busy organising and hosting the IMA Meeting and therefore unable to assist with the MinSoc Societies' Seminar.

- Whilst we cannot combine with the IMA Meeting, it may make sense to run the MinSoc Societies' Seminar immediately adjacent to (before) the IMA Meeting. This may mean that people travelling form interstate for our Seminar could also attend the IMA Meeting if they wish, and may mean some speakers from the IMA Meeting are available for the Seminar.

3) MEMBERSHIP FEES.

Annual Subscription fees are currently due. Given the uncertain future we faced last year and the shuffling of meetings, we have not been prompting those Members whose fees are outstanding and understand that a number of Members may not be aware they are un-financial.

A membership renewal form is attached at the end of this Newsletter and a reminder notice is included below.
Note that fees can be paid by direct transfer to the MinSoc account, but please send an email to our Treasurer (address is on the renewal form) so that he knows who has paid!

4) LASTLY…

We are still working through ideas about what is the 'best' format for our regular General Meetings. We have trialled some weekend meetings; some evening meetings with Lapidary Clubs; and the usual weeknight meetings at the Royal Society Building.

Numbers attending have varied and we don't appear to be much clearer about what the majority of our people wish. Granted, our communication has not been ideal with some very last minute notification about events – which we know makes is difficult to plan. Some of this is because of the difficulty in scheduling speakers.

NEWSLETTERS

The standard delivery for Newsletters is now email. Postal (black and white) copy will only be sent to those who do not have email or who we specifically need to be supplied with printed copies (such as some Libraries). We highly recommend the email/electronic version - minerals were meant to be appreciated in glorious colour!

If you are NOT receiving the electronic/email version and you wish to, please send an email to either:

minsocvic@gmail.com or ablount@golder.com.au

2017/18 MEMBERSHIP FEES

Members are reminded that membership fees for the 2017/18 year were due and payable on the 1 April 2017. A list of the current fees is shown on the inside front cover of the Newsletter.

A Membership Renewal Form is included as the last page of this Newsletter. The form includes provision for an email address and members are encouraged to supply this information if they have internet facilities.

Please note that if fees are paid by direct deposit email advice advising of the payment has been made should be provided as per the renewal form.

In order to cast a valid vote at the forthcoming Annual General Meeting members must be financial for the 2017/18 financial year.

EXCURSIONS

As discussed at previous Meetings, excursions will be planned when and if suitable localities to visit are identified. As most members will be aware, this is a situation that has been around for a number of years and while we are keeping an eye out for new places to visit or old places to re-visit, there are no current locations of interest known to the Committee.

JOINT SOCIETIES' SEMINAR 2017

The Annual Seminar of the Joint Mineralogical Societies (40th Seminar) is being hosted by the South Australian Society and will run over Saturday 30th September to Sunday 8th October including pre- and post-Seminar fieldtrips. An initial (although quite detailed) program is available and runs to 6 pages so we have not included it all here, but will forward copies to all Members via email soon. The Seminar is based in Hahndorf, SA, registration forms are to be provided soon and key details are as follows:

Sat 30 Sep	Arrival in Hahndorf.	
Sun 1 Oct	Registration and Field trip	Field trip to Preaminna Mine.
Mon 2 Oct	Field trip	Field trip to Wild Dog Uranium prospect and Little Gorge pegmatite areas.
Tue 3 Oct	Field trip	Field trip to Milendilla and mines in Palmer area.
Wed 4 Oct	Seminar	Hahndorf Resort and Lakeview Conference Centre.
Thu 5 Oct	Seminar	Hahndorf Resort and Lakeview Conference Centre.
Fri 6 Oct	Micromount Session	Micromount session and Swap and Sell, Hahndorf Resort.
Sat 7 Oct	Field trip	Adelaide Gem and Mineral Club Exhibition, Felixstow, Adelaide
Sun 8 Oct	Field trip	Field trip to Kapunda-Nurioopta region quarries.
Mon 9 Oct	Field trips - Broken Hill.	Departure for field trips to Broken Hill region, details to be advised.

AUSTRALIAN JOURNAL OF MINERALOGY (AJM)

As many will know, the administration of the AJM was transferred over a team in the Western Australian Society last year. Following a lot of hard work by the new team, the next issue of the AJM (Vol 18, No.1) will be coming out soon (or may already be out by the time you read this!).

A subscription/order form is included at the back of this Newsletter and we encourage all our Members to support this, your national mineralogical journal.

SPECIAL INTEREST GROUPS

Micro Group Report

By Jo Price, Photographs: John Haupt©

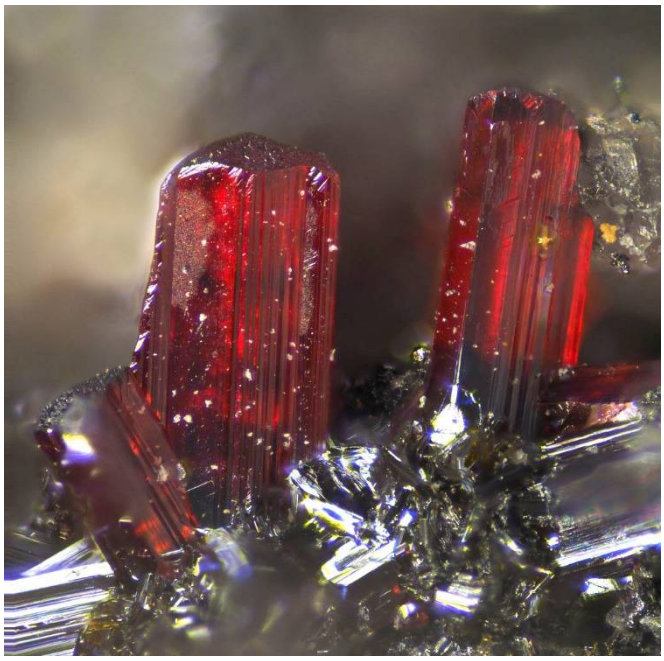
The topic of our February meeting was Africa (excluding Namibia)

Namibia was excluded from this topic as this country could be a considered separately because of its famous locality - Tsumeb. There were 2 countries which produced most of the members' specimens - Morocco and South Africa. The High Atlas Mountains in Morocco have produced many great mineral specimens, perhaps the best being from Bou Azzer (Refer Mineralogical Record Sept-Oct 2007 (V38, No5). The Kalahari Manganese Field in South Africa also needs little introduction. The Jan-Feb 2017 issue of the Mineralogical Record (V48, No1) features the beauty of minerals from the N'Chwaning mine. A few of the specimens we observed are shown below:

From Morocco:

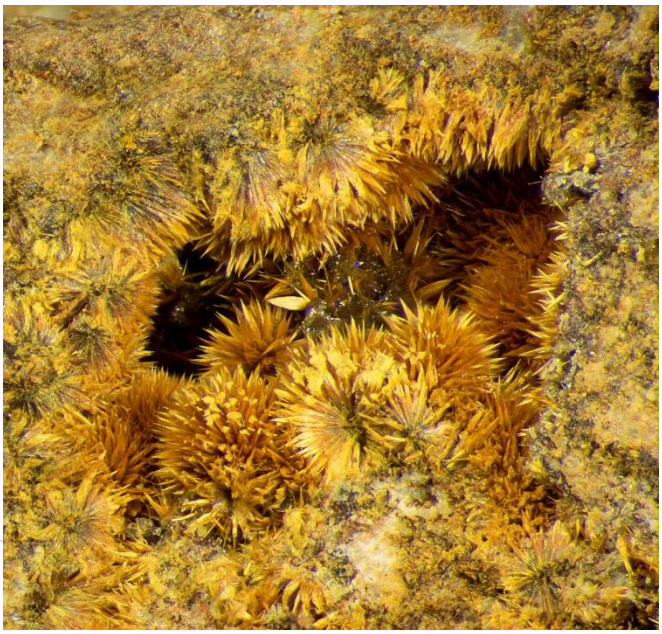
Left: Erythrite from Bou Azzer. 10mm FOV.

Right: Proustite from the Imiter mine. 2mm FOV.



Below left: Roselite from Bou Azzer. 12mm FOV.

Below right: Karibibite from the Oumilil mine, Bou Azzer. 5mm FOV.



From the Kalahari Manganese Field in South Africa:

Left: Sugilite from the Wessels mine, 6mm FOV.

Right: Tan coloured olmiite crystals with acicular bultfonteinite from the N'Chwaning II mine. 10mm FOV.

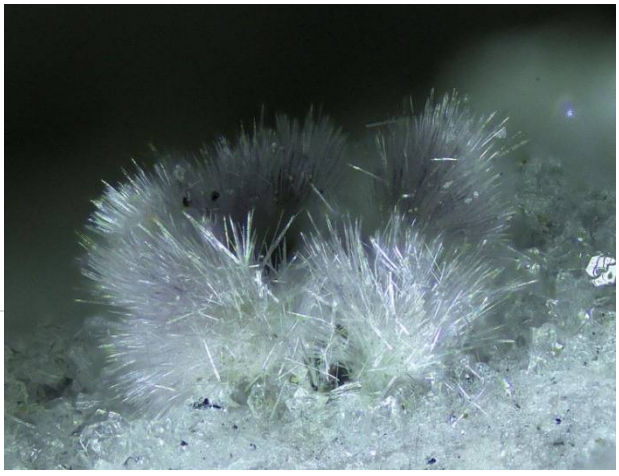
April meetings
With several members being unavailable, we did not meet in March, instead we had 2 meetings in April.

The topic for our first meeting was New Zealand minerals
A good variety of minerals were brought to the meeting. We saw adularia (orthoclase) from the Coromandel; apophyllite with stilbite, flat top quarry, Auckland; barite and chabazite, Bicker's quarry, Toka Toka; and nice overlapping 'wafers' of barite, Todd's quarry; cavansite, Aranga quarry; connellite with brochantite and cuprite, Maharana, Woodville; and a large cut specimen of copper from the Champion Mine, Southland. There were also cinnabar, Tui Mine, Te Aroha; cristobalite veins in obsidian, Taupo volcanoes; and cummingtonite from the Franz Josef Glacier.

There was a nice cluster of erionite needles from Moeraki; epistilbite, Stew Point; edenite and hematite from Henderson's quarry; and white rods of dundasite from the Tui Mine. There was fayalite, Henderson's quarry; fuchsite, Toka Toka; gismondine, Aranga quarry; heulandite, Coromandel; laumontite with stilbite, Te Hapua; and linarite, the Tui Mine.

Fayalite from Henderson's quarry. 2mm FOV.

Others included melanterite, Coromandel; mordenite, Hikoui; and motukoreaite, Brown's Island near Auckland; osumilite (green) also phlogopite, Henderson's Quarry; phillipsite with phacolitic chabazite, Lyttelton quarry, and phillipsite from both Whisky Bay, Moeraki and Aranga quarry; filiform pyrite, Toka Toka; stibnite with stibiconite, Puhi Puhi; and stilbite, Todd's River, Northland.
There was nice strunzite on vivianite, Glen Hope, Nelson; sulphur on pumice, Lake Rotorua; a talc pseudo after nepheline, Otago harbour; very good crystals of tuhualite, Mayor Island; and bright green micro crystals of torbernite, Buller Gorge,



Right: Pale mauve sprays of mullite from Ponui Point, Taupo. 2mm FOV.

Our topic for our second April meeting was Victorian phosphate minerals

There was a good variety tabled. We saw some very good vivianite from Wannon Falls, struvite and newberyite (T.L) from Skipton Caves, and several minerals from Wycheproof, including selwynite (T.L.), kosnarite, cyrilovite on wardite, rockbridgeite, and eosphorite.

From the south coast at Demon's Bluff, Anglesea, there were several nice examples of vivianite.

Moving north again to Phosphate Hill, Mansfield, there were good examples of cacoxenite, wavellite, and fluellite. The Edi Cheshunt workings produced very good turquoise specimens.

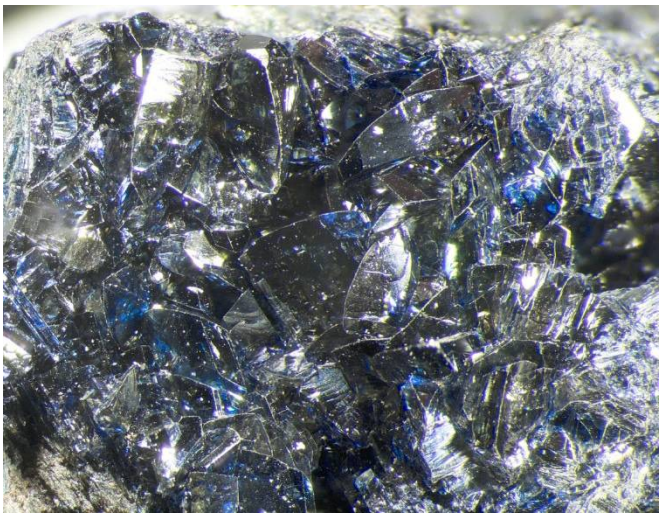
The quarry at Lake Boga was represented by green sprays of ulrichite (T.L), pink leucophosphite, saleeite, blue sampleite, metanatroautunite, pale blue crandallite, torbernite, wavellite (which was not common at that quarry), flourapatite, pseudomalachite, lakebogaite (TL), and meurigite-(Na).

In Gippsland, attractive translucent green pyromorphite was collected from Limestone Creek. Further South, at Lavers Hill, Fish Creek, we had collected both yellow and green wavellite, cacoxenite, and variscite.

Above: Newberyite. A 4mm crystal from the Skipton caves.
Below: Apatite crystal, 0.3mm tall, on cyrilovite from Wycheproof.

Above left: Cacoxinite 'balls' from Phosphate Hill, Mansfield. 6mm FOV.

Left: Green radiating crystals of wavellite from Phosphate Hill, Mansfield. 12mm FOV.



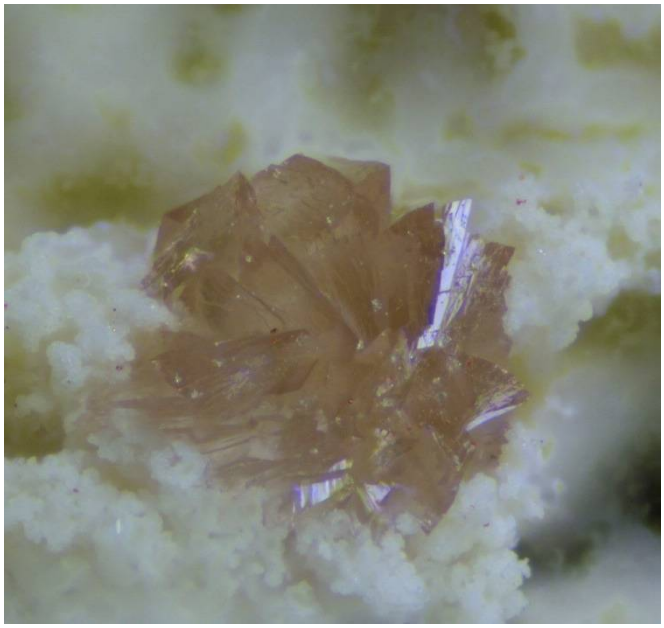
Above: Vivianite crystals from Anglesea, 10mm FOV.

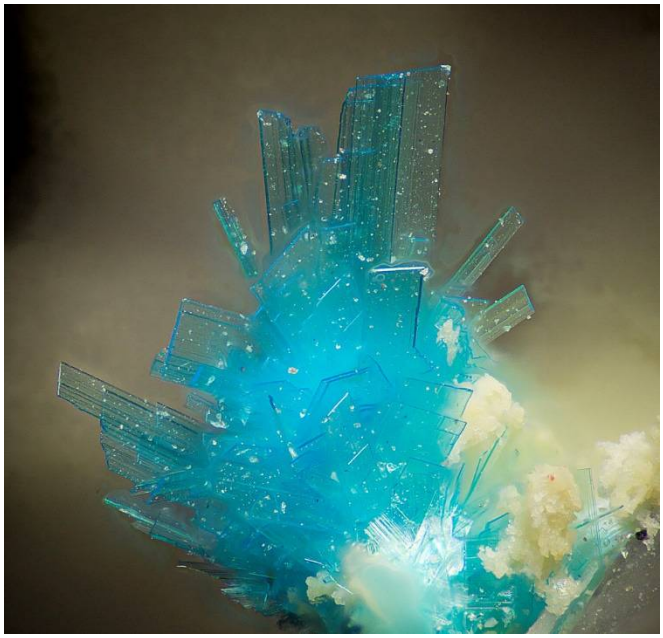
Above right: A pearlescent cluster of crandallite crystals from Lake Boga. 3mm FOV.

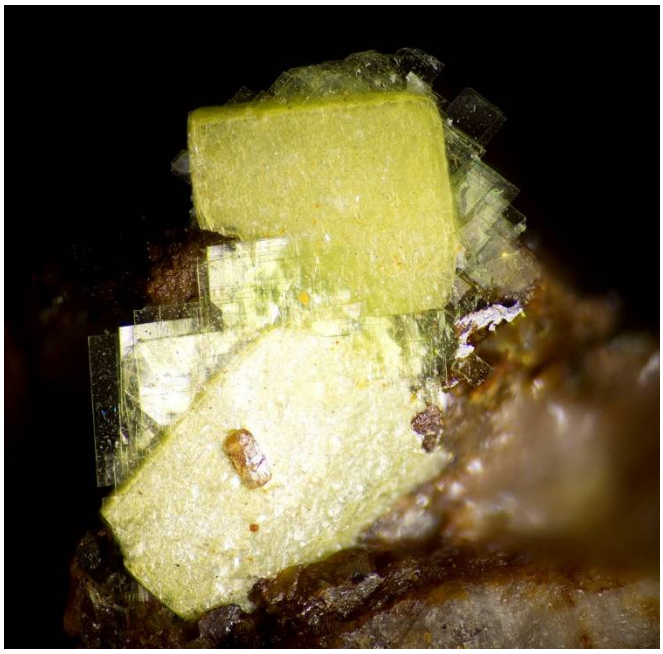
Right: A group of lakebogaite crystals, 2mm tall, from Lake Boga.

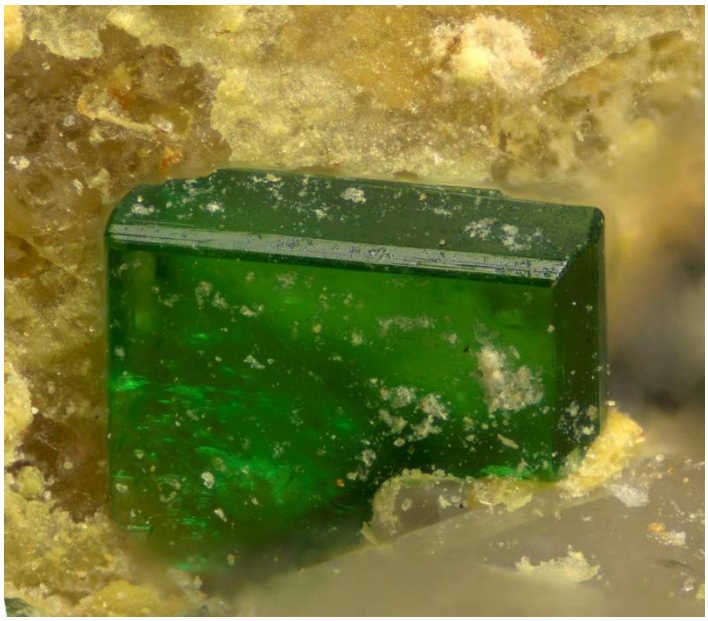
Below: Pink crystals of leucophosphite, 0.3mm across, from Lake Boga.

Below Right: 'Fluffy balls' of radiating crystals of meurigite-(Na) from lake Boga. 2 mm FOV.









Above left: Sampleite crystals from Lake Boga. 1mm FOV.

Above right: Tabular crystals of saleeite, 2mm across, from Lake Boga.

Left & below: Tabular torbernite crystals from Lake Boga. Both are 2mm FOV.

Mineral Appreciation Group Report

By Alex Blount

When occasionally complimented on the quality of the photos included in these (MAG meeting) reports, two things come to mind. 1) It is the specimens that look amazing and the photographs never do them justice, and 2) the MicroGroup meeting reports always put my photos to shame! We have however noticed the quality of my pictures is decreasing over time. Recently I have been using the camera in my mobile phone because it is convenient, takes good photos and is easy to then move the photos over to my computer for these reports. But over time it seems the camera 'sensor' in a mobile phone deteriorates, although there doesn't seem to be any particular evidence or reports (online) that support this. So this may be due to the software in the phone rather than the electronics, or the person pushing the button... Either way, in future we will be relying more on the good old-fashioned technique of 'actually using a camera to take photos…'

2017 began with the January meeting and the topic of 'silicates excluding aluminium', which was intended to look at one of the most abundant mineral chemistry groups (silicates) and exclude one of the most abundant elements from the Earth's crust (aluminium). Aluminium being third most abundant after oxygen and silicon themselves. Having assumed this may mean a small number of remaining species, it was therefore surprising to find there were significantly more silicates without aluminium, than there were with aluminium. MinDat suggests something in the order of 500 species with aluminium and 800 without aluminium.

The absence of aluminium presumably allows for a range of other elements to get involved and thus we see some of the very colourful specimens from people's collections. Cavansite and pentagonite from Wagholi in India; inesite from Broken Hill, California and from Kuruman, South Africa; titanate from Switzerland, France and Harts Range, NT; boltwoodite from Namibia; rhodonite from Broken Hill and from Huanuco, Peru. And of course there was dioptase from Tsumeb, Namibia which almost never photographs well enough!

As well as some of the less 'colourful' but none the less impressive specimens of okenite from various localities in Maharashtra, India; hemimorphite from Mapimi, Mexico; ilvaite from Dal'negorsk, Russia; datolite from Mexico; aegirine from Malawi; andradite from Graham County, Arizona; neptunite from San Benito, California.

And there was bustamite from Broken Hill, NSW. The usual thumbnail and finger-size crystals of brownish-orange material. But then, looming over those little pretenders we saw the King Kong of Bustamites. A 'cabinet'size' specimen only if you happen to have well-reinforced shelving in your cabinet.

Below left: hemimorphite, Ojuela Mine, Mexico. Below right: rhodonite, San Martin Mine, Huanuco, Peru.

Below: the king of all bustamites, with smaller examples cowering in fear, Broken Hill, NSW.

Below left: boltwoodite, Erongo Region, Namibia. ***Below right: andradite.***

The February meeting was a combined MAG and General Meeting format with guest speaker Laura Brehaut from the GAA. The topic was 'garnets' and Laura provided an incredibly interesting coverage of the different garnets, their chemistry and visual properties, complete with 'hand-around' examples of many different varieties. The MinSoc member's specimens were not up to the same standard as gemstones, but we made up for that in variety and (in the case of the Broken Hill district material) sheer size!

The March topic was 'pick and element and bring specimens from different chemistry groups'. The meaning of this, after some clarifications, was to select one element (for example copper) and then try to bring specimens that represented it as an element, a sulphide, a carbonate, a silicate, a sulphate etc..

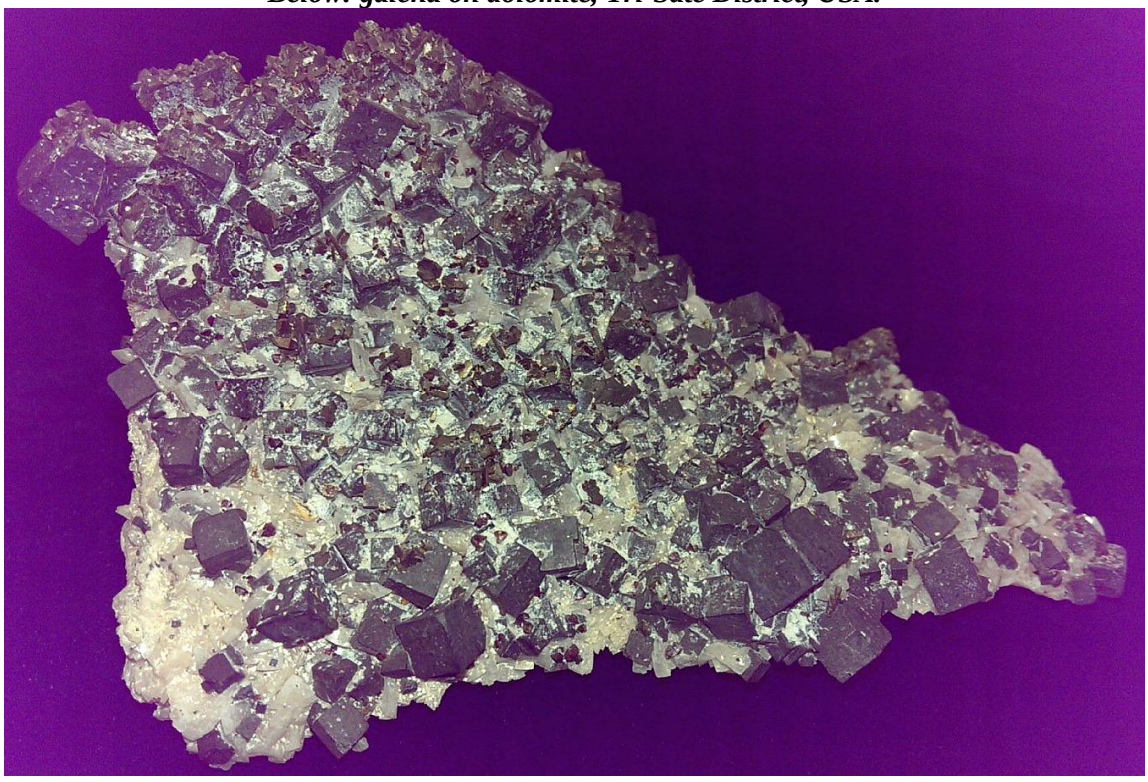
Selected elements included sulphur, nickel, lead, manganese and calcium. Thus we saw specimens of elemental sulphur; sulphates in gypsum, baryte, celestine and creedite; a wide range of sulphides. Lead saw some galena,

vanadinite, wulfenite and pyromorphite from Borken Hill and other wordwide locations.
Nickel provided several of the interesting species from Australian localities such as hydrohonnessite, gillardite and gaspeite from Western Australia; some elemental nickel (not natural); and some siegenite from Missouri, USA. Manganese of course provided some of the Kalahari species such as sturmanite and calcium provided specimens of species such as babingtonite from Yunnan, China; and stilbite-ca from Jalgaon, India.

Below left: stibnite, Hunan Prov., China.

Below right: pyrite, Navajun, Rioja, Spain.

Below: galena on dolomite, Tri-Sate District, USA.



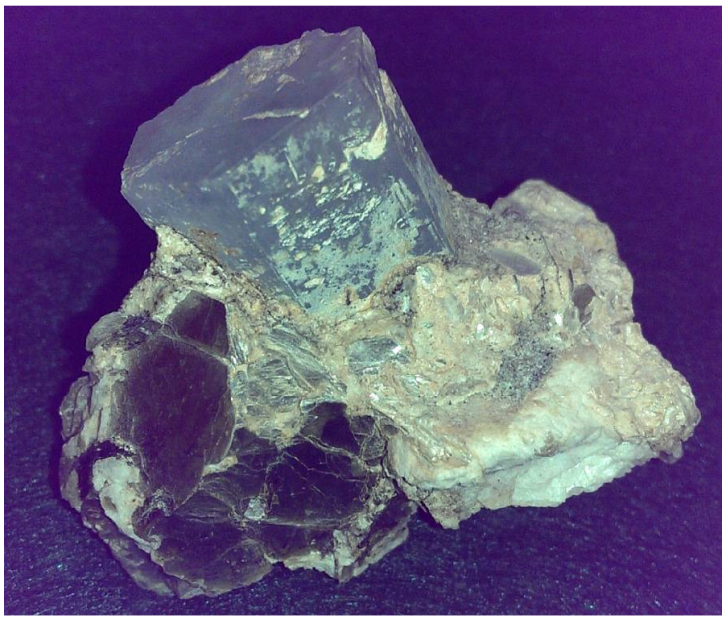
Below: sturmanite, N'Chwaning II Mine, Northern Cape, South Africa..

With no meeting in April due to Easter we met in May and continued our on-going 'silicates' topics where we looked at the cyclo- and ino- silicates. The cyclo-silicates are, as the name suggests, those made up of rings of silica-tetrahedra that are then linked together. The ino-silicates are the chain structures with interlocking chains of the silica tetrahedra and can be (usually) single chains or double chains, although there are also triple and 'multiple' chain ino-silicates as well.

Of cyclo-silicates we saw benitoite from San Benito, California; elbaite from various locations including several very nice crystals from Pakistan; and a variety of beryls from Australia, Pakistan, Brazil.

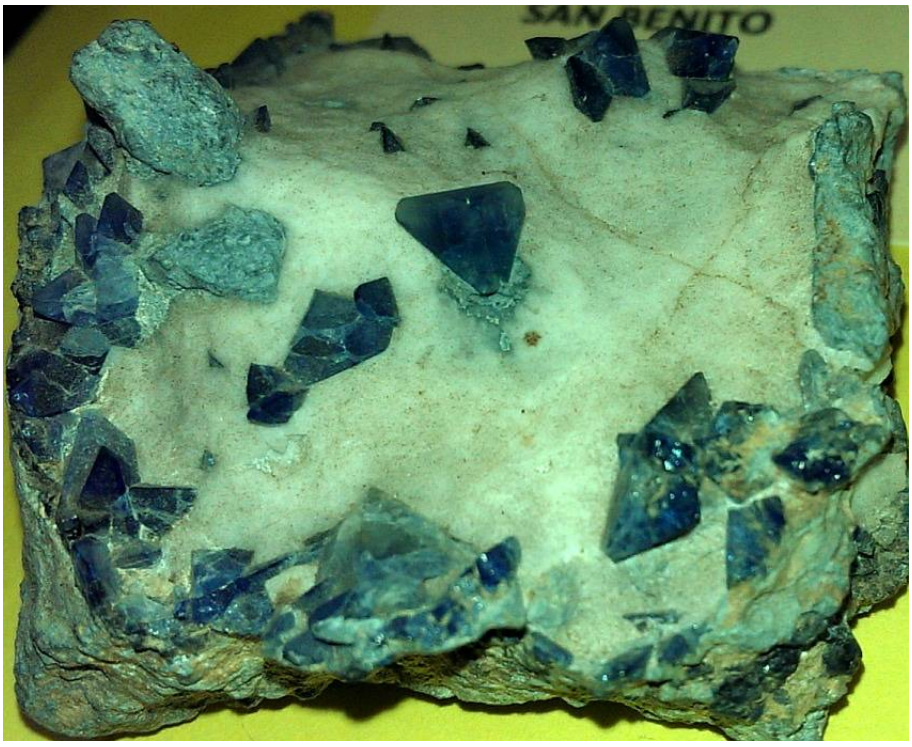
Of the ino-silicates we saw actinolite from Broken Hill; polished rhodonite from Tamworth and crystals from Huanuco, Peru; spodumene (kunzite var.) from Afghanistan; and bustamite from Broken Hill. The ino-silicates includes the large groups of pyroxenes and aphiboles so we saw quite a few examples of tremolite, some pargasite, enstatite, kanoite, diopside, hedenbergite and aegirine-augite.

Below left: beryl (v. aquamarine) NW Frontier, Pakistan. ***Below right: elbaite, Pakistan.***



Below left: Bustamite, North Mine, Broken Hill. ***Below right: spodumene (v.kunzite), Afghanistan.***

Below: benitoite on natrolite, San Benito, California, USA.



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The Lal Lal iron mine
by John Haupt

This article is based on a talk given at the December 2016 meeting

Introduction
Victoria's only commercial producer of iron operated for a short period at Lal Lal, 15km south of Ballarat. The iron mine and the early tourism at Lal Lal is of historical interest.

The Lal Lal Iron Mine
In 1857, outcrops of iron (massive hematite) were discovered on the west bank of Moorabool river some 15km south of Ballarat. By the early 1870s Ballarat had become a busy engineering centre, requiring large quantities of pig iron for the many foundries making mining machinery, ornamental cast iron & railway locomotives. In 1873, a group of Ballarat businessmen had a trial parcel of iron ore mined at Lal Lal and smelted in Ballarat. Tests on the iron produced showed that it was of 'favourable' quality. In January 1874, the Ballarat businessmen issued a prospectus for a company to work the iron deposit, which led to the formation of The Lal Lal Iron Co. Ltd. One of the promotors, Mr E. Swifte was appointed manager.

In July 1874, a furnace was being constructed using a converted boiler and Mr John Marshall was appointed as furnace manager. On Saturday, 20th February 1875 a group of company directors and shareholders witnessed the lighting of the furnace to test the air-blast. Whilst this was successful, it was not until Joseph Rowley from Tasmania was appointed furnace manager and further modifications were made to the machinery, that the furnace was put into operation. Rowley had probably worked for the Tasmanian Charcoal Iron Company operating its iron smelter at Port Lempriere near Beaconsfield.

The first iron smelted in Victoria was run-off on the evening of Tuesday 19th October 1875. A good smelt of grey iron was said to have been made, and by Wednesday the company had a sample of its pig iron on view in Ballarat. The manager of the Black Hill Gold Mining Company said that if it were made into stampers, it would last twelve times as long as those generally in use. In October 1875, the original company was wound up and a new No Liability Company and registered on 26th April 1876, with a proposed capital of $19,200 in 2,400 shares of $8.00 each.

By January 1876, the company had produced 127 tons of pig iron and constructed a cart-road up the steep incline on the lease, when the machinery broke down completely, ceasing production. Most of the machinery was removed and a larger steam engine, new boiler and machinery was ordered and installed with the existing furnace. The furnace was relit in October with the first tap being made on 18th October 1878. An official opening was held on the 26th Oct 1878, which was attended by State politicians & local dignitaries. The Chief Secretary for Victoria, Mr Graham Berry broke open a ceramic seal to release molten iron (see illustration). The Chairman of Directors of Lal Lal Iron Co., N.L., Mr W. Kelly then stated "and we were awarded a gold medal at the Paris Exhibition when competing against the product of the most perfect appliances in the world." About 800 kilograms of iron was run into moulds and made into plates which were afterwards polished by the company and presented to the various ladies who had attended. At this stage of development, the cost of production was about £4 ($8.00) and with the market price about £4 10s ($9.00), gave the company encouragement in its project.

The low output of the furnace however soon required the company to erect a furnace, capable of an output of 50 tons a week. A new furnace manager Mr C. Beudarick, who had considerable experience in other colonial smelting works, appointed to replace Joseph Rowley. The construction of the second furnace and its operation by Beudarick greatly increased the production of iron, but at the same time a greater number of men were required for making the charcoal fuel. The new furnace commenced production on 26th March, 1881 and by September 1881 had produced 570 tons of pig iron with the number of employees reaching 95 men.

In 1882, the British steel mills started shipping pig iron as ship ballast at a low price, which competed against local production. In July 1883, the Lal Lal Iron Company was floated as a limited company, purchasing the old No Liability Company. The capital of the new company was to consist of $45,000 divided into 15,000 shares of $3.00 each of which 7,500 shares were considered to have been fully paid up to $2.00 each. The new company established a pipe-making plant at Lal Lal and purchased a foundry in Urquhart Street, Ballarat. Unfortunately,

the company soon discovered that the cost of production was $11.70 a ton, well above that of imported pig iron of $9.00. In August 1884, the company unsuccessfully sought freight concessions from the railway, but instead were offered used steel rails for a tramway. The rails were received in January 1884 and a tramway was constructed from the Lal Lal railway siding to the works. Horses & gravity were used as motive power.

In 1884, Mr M. Gronholdt became furnace manager for the Lal Lal Iron Company Limited. At this time production peaked at 800 tons over the first nine months of 1884, with 160 men being employed at the works and on the tramline. Some disgruntled shareholders took action against the old No Liability Company which had not been wound up, claiming that the old company had misrepresented the cost of production. The matter was finally settled out of court, but the company decided to cease smelting at Lal Lal. The foundry in Urquhart Street continued to use the stored pig iron that had been made and by turning it into castings, was profitable. This considerably reduced the bank overdraft over several years, but when the Railway Department began pressing for payment of the rails which the company had used to make a tramway, a meeting held on 8th July 1889 decided to wind up the company. Several attempts were then made to sell the company assets, with an auction advertised on the 2nd July 1891, but no-one attended. The rails were removed and machinery was dispersed and the lease became void on the 5th July 1892.

During the peak production period from 1881-1884, 2260 tons of pig iron were produced from 4492 tons of ore. Despite the financial failure of the company, it was technically a great success in the face of many difficulties. By 1902 the blast furnace at Lal Lal was a ruin, a monument to wonder at and a place where occasionally iron founders and iron moulders of Ballarat would pilgrimage to pay homage to the men who "had a go" and who never made one 'penny' out of their enterprise.

Description of the Operations

A good description of the operations at its peak was in a letter published in the Argus newspaper on the 15 April 1884, by a person obviously well acquainted with the operation:

THE LAL LAL IRON WORKS.
TO THE EDITOR OF THE ARGUS.

Sir - I have from time to time noticed articles in your valuable columns on various local industries but have not observed one on an iron mine which I think, if brought to a successful issue, would be of great benefit to a colony so noted for its foundries and iron working establishments of various sorts. The mine is situated some four miles due east of the Lal Lal railway station on the western bank of the Moorabool. A visitor to the town inquiring for the mine would be directed to their tramway, starting from a dock at the railway running out to the mine; this has lately been constructed at great cost by the company. After ascending a range of hills the extensive works are seen, also a grand view of the surrounding country; the first thing met with being the quarries from which is obtained the ironstone. There are two separate deposits on the company's lease the extent of ore in each being 14a 9r 10p south and 11a 4r 10p north with an average thickness of 6ft. The stone when raised is taken along small tramways to bins or receptacles at the works which always present a very busy appearance, some of the men being engaged breaking up ironstone and limestone (which is brought from Leigh-road by rail, thence along the tramway), others at work with the coke charcoal and wood - these being the ingredients used to extract the purer metal.

Trucks so constructed that they hold about the requisite quantity of each are used to wheel the materials from the bins along a platform to the mouth of a very large furnace which is always kept filled. Descending a little further, the engine- house is next viewed. The machinery used is imported and very powerful, from which is obtained the blast used to keep the furnace up to the required temperature. Two large boilers drive the machinery. The bottom of the furnace and the place where the iron is run off into molds every 12 hours is now reached. Here are also erected two smaller furnaces used for melting when making castings etc. A visitor will always find the men employed at the different parts of the works willing to explain and give any information.

There are over 100 men and boys employed, and the works having to be continued day and night three shifts are worked; and in connection with the mine there is a general store, the place having every appearance of a small thriving township. After the iron has cooled it is taken to the dock at the railway, where there is some 500 tons of iron ore stacked of the various qualities. At present the company have not a market for the iron. This compels the company to utilise the iron themselves; they have therefore a very extensive foundry in Ballarat, from which castings of all sorts and descriptions are turned out, the iron being pronounced by competent judges the very

best obtainable for that purpose; fire-bars are also made in large quantities at the works. The company have now started the manufacture of iron pipes, the sample turned out having successfully withstood all the tests applied. The assumed quantity of ore to be quarried is 742,300 tons, which, if reckoned at 50 per cent (the School of Mines gave 60 to 75), would give 371,150 tons of iron, say at £5, would mean the circulation of £1,855,750

I am, &c ,
SUBSCRIBER
Lal Lal, April 14

The Blast Furnace ruins have an "A" classification from the National Trust as they are a highly significant site on the industrial history in Australia. The Department of Conservation and Natural Resources have stabilised the remains of the blast furnace and provided visitor facilities at the site.

Footnote:
The first ironworks in Australia were established at Fitzroy, near Mittagong, in 1852, and at Eskbank, near Lithgow, in 1875, but the production of pig iron and manufactures was only in small quantities. The existence of large quantities of iron ore in Tasmania was noted as far back as 1822, when Surveyor-General Evans alluded to the "surprising abundance of iron within a few miles of Launceston." A company known as the Tasmanian Charcoal Iron Company was formed to work these deposits, and commenced operations in June 1876. The presence of chromium rendered the pig iron so hard and brittle that the works were abandoned in 1877. It was not until May 1907 when iron production in Australia commenced on a much larger scale at Lithgow, NSW, with the ironstone being mined at Carcoar.

Other attractions at Lal Lal
Lignite mining
In 1857 lignite was discovered at Lal Lal, the first discovery of lignite (brown coal) in Victoria, when Mr John Ralph sank a shaft searching for a gold lead which cut several seams of lignite. Around 200 tons was extracted. In 1863 the Victoria Co. was formed to work the deposit and the Lal Lal Brown Coal Coy was formed in 1864 to mine an adjacent lease. A small siding was built off the main Geelong - Ballarat railway line, and the lignite was sold in Ballarat and Geelong. The deposit was extensively worked from 1873 to 1892 with 44,000 tons being produced before it closed. Several attempts were made to reopen the deposit in early 1900s, in 1921, by a small open cut, and in 1952 when the open cut was expanded but no further coal was produced. The water filled open cut is all that only remains.

Lal Lal Falls
By 1840 the waterfalls on the Moorabool River and at Lal Lal creek became known to European settlers. In 1855 the artist, Eugene von Guerard, visited the Ballarat goldfields and made a number of sketches, one being of the Lal Lal Falls. The well-known goldfields artist, S. T. Gill also made a water-colour picture of the Lal Lal Falls at this time. In 1857, the Government planned to sell the land on which the falls were located, but concern was raised in Ballarat calling for the area to be kept open for the public. This was partially adopted with the area of the Lal Lal Falls being reserved and the area of the Moorabool Falls being sold. In 1865 the Lal Lal Falls Scenic Reserve was established and it became a popular place for visitors.

Lal Lal Racecourse
With the Falls attracting many visitors, horse races were first held at Lal Lal in 1864, with the principal meeting being held on New Years Day. The Lal Lal Turf Club was formed at Ballarat in 1873 and a 28 hectare racecourse reserve was set aside. In 1885, a 3.2 km long branch line was constructed from the Lal Lal station to the racecourse. On race days up to 6 trains ran from Ballarat & 1 from Meredith, with a record attendance of 50,000 people attending the races. This, and the adjoining Falls, made Lal Lal a popular place to visit between Geelong and Ballarat. By 1932, the New Year's Day races saw a large decline in support for the railway racecourse specials, with fewer than 500 passengers being transported. Lack of patronage saw the last race meeting held on the 31st December 1938. The branch line was closed in 1940 and the rails removed.

A recent visit to Lal Lal showed the railway station was no longer in use, but the heyday of tourism was evident with the large station building and adjacent Lal Lal Falls hotel showing the earlier importance of the town.

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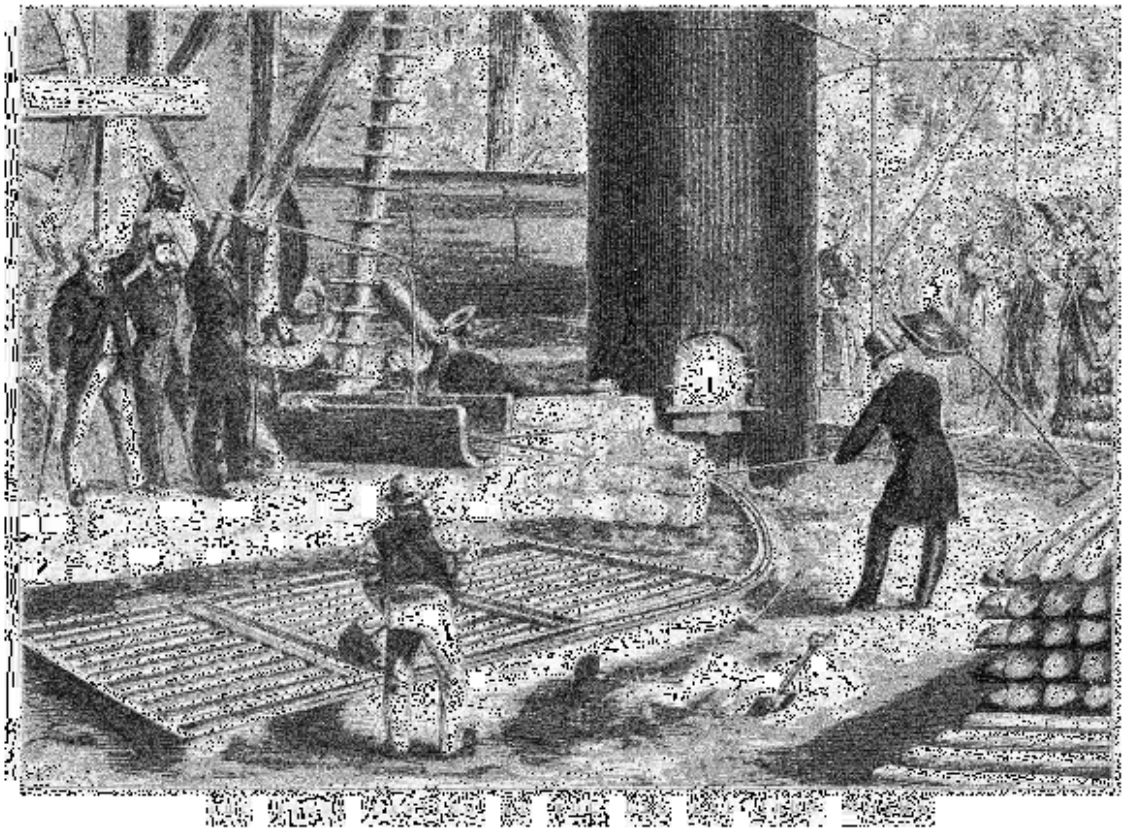
Staughton P.S., & Ashley, R.W.P.: Lal Lal Blast Furnace Report, 1976, 300p.

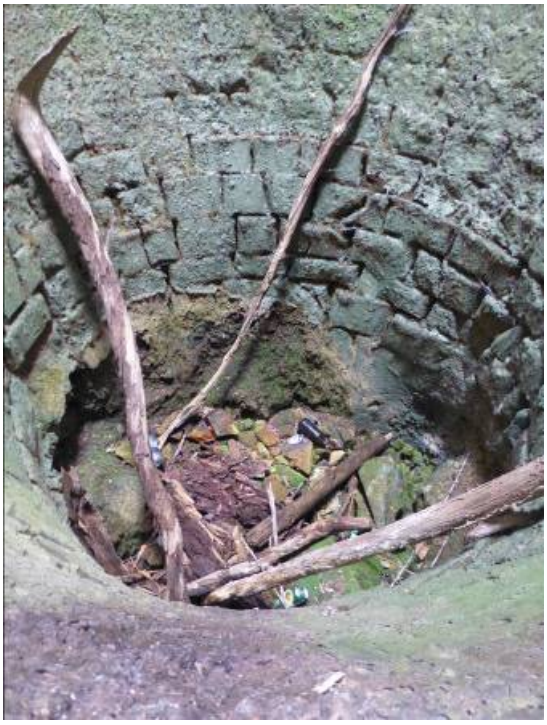


The official opening of the first blast furnace by the Chief Secretary for Victoria on 26th October 1878. Image: State Library of Victoria.

This is probably the northern most iron ore quarry at Lal Lal in 1882, showing the track and a mining skip used to move the ore to the furnace. Photograph: Victorian Mines Department.

The Lal Lal Iron Company's smelting works, early in 1884. Shows a tramway truck used to carry materials to & from the railway siding. The large charcoal shed is on the right and the blast furnace is in operation. Photograph: Lal Lal State School.

Left: The remains of the blast furnace in 2017.
Below: Inside the blast furnace.



The Lal Lal fall:.

Above: The Von Guerard sketch made in 1866.

Left: Similar view taken in 2017.

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MEMBERSHIP RENEWAL FORM

Membership fees for the year ending 31 March 2018
are due and payable on 1 April 2017

Surname: _____ **First Name:** _____

Family Members: 1: _____ 2: _____

3: _____ 4: _____

Address: _____

Suburb: _____ **Post Code:** _____

Telephone: Home _____ **Business:** _____

Email: _____ **Mobile:** _____

Signed: _____ Date: _____

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Melbourne Metropolitan		
Adult	$25.00	_____
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Student	$15.00	_____
Country/Interstate Membership		
Adult	$20.00	_____
Family	$30.00	_____
Museum Victoria - Mineral Purchase Fund		_____
(Optional Donation)		_____
Total Enclosed		$ _____

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Account Name: The Mineralogical Society of Victoria Incorporated
Please email advice of payment to ***pardalote9@iprimus.com.au***

The Mineralogical Society of Victoria

A001471E Incorporated

Notice is given that the 41st Annual General Meeting of The Mineralogical Society of Victoria Incorporated will be held on 19 July 2017 in the Burke and Wills room of The Royal Society of Victoria Building at 8 LaTrobe Street, Melbourne commencing at 7:30 pm.

The agenda for the meeting is:

Minutes of the previous meeting
Treasurer's Report
President's Report
General Business
Approval of annual subscription for 2017/18 financial year
Election of Office Bearers and Committee

A nomination form for Office Bearer and Committee positions is set out below together with a proxy form should you wish to vote on the motions but are unable to attend the meeting. The completed form(s) must be in the hands of the Secretary no later than 48 hours prior to the meeting.

The Mineralogical Society of Victoria Incorporated

Nomination Form

I wish to nominate ..... for the position of .....to be held until the Annual General Meeting in 2018.

Signature of Nominator: .....

Signature of Seconder: .....

Signature of Nominee: .....

The Mineralogical Society of Victoria Incorporated

Appointment of Proxy

I, ... of .....
being a financial member of The Mineralogical Society of Victoria Incorporated, hereby appoint ..... or if no person named, the Chairman, as my proxy to vote as shown below on my behalf at the Annual General Meeting of the Society to be held on 19 July 2017 and any adjournment thereof.

Signed ..... Date: / /2017.

Resolutions	For	Against
To adopt the financial accounts of the Society for the y/e 31 March 2017		
To elect Office Bearers and Committee (if required) as follows----------		
Other Resolutions (if any)		