



Mineralogical Society of Western Australia Inc.

September, 2015 Newsletter.

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Editorial.

At all meetings the Society's microscope and UV lamp are available for use by members.

The Society has a library from which members may borrow free of charge. The library is housed at Stewart's office in West Perth, and the catalogue is available from the Secretary.

The policy that members may submit short advertisements free of charge will remain. Additionally, it was accepted that commercial advertisements will be accepted for a nominal charge.

Recent Activities.

Note: The General and Annual General Meetings of the Mineralogical Society of Western Australia Incorporated are now held at 7.30pm on the **second** Wednesday of every second month at the WA Lapidary Club rooms located at 31, Gladstone Road, Rivervale (corner of Newey Street).

General Meeting on 8th July, 2015.

The General Meeting was cancelled.

Mine Visit on 14th August, 2015.

Eighteen MinSocWA members were treated to a day visit to the mineralogically exciting DeGrussa copper mine north of Meekatharra. The Management of Sandfire Resources NL generously agreed to fly the MinSocWA party to DeGrussa and to provide all the ground logistics required to enable the collection of mineral specimens. Juan Buelga, John Mill and Murray Thompson were responsible for organizing the trip whilst Murray Thompson did a fantastic job in coordinating the travel and ground logistics.

A huge thankyou to the Management and staff of Sandfire Resources NL and to Murray Thompson.



The MinSocWA field trip to DeGrussa copper mine on Friday 14th August.
Photo from Susan Stockmayer

The DeGrussa copper-gold deposits, located about 10 km east of the Great Northern Highway and about 140 km north-northeast of Meekatharra, were discovered in 2009 by Sandfire Resources NL. Drilling established substantial resources of copper-gold comprising four lenses of high grade copper-rich massive sulphide mineralization, one of which is referred to as DeGrussa.

Volcanic-hosted massive sulphide ores are present as massive lenses of primary pyrite, chalcopyrite and pyrrhotite with minor magnetite, sphalerite, galena and arsenopyrite. The base of the massive sulphide is chalcopyrite rich with magnetite, passing upwards into iron sulphides with decreasing copper and increasing zinc contents. Gold is associated with the chalcopyrite-rich zones and occurs as a high-silver electrum.

The oxide mineralisation is located vertically above Conductor 1 and DeGrussa. Beneath a hardpan cap there is about 80 metres of weathering over the sulphide lenses. Within the

weathering profile is an upper, residual, gold-oxide zone overlying an oxide-copper zone.

This complex, multi-stage mineralogical overprinting in the oxide zone results in a huge diversity of mineral species giving what is referred to as a “mineralogical rainforest”.

Spectacular native copper specimens are found from deeper in the oxide zone, malachite is present as large, radiating masses of silky, acicular, crystalline clusters while other specimens display narrow zones of azurite bordering the malachite. Carbonate alteration gives rise to aragonite crystals, some large enough to be faceted. Late-stage silicification forms turquoise blue chrysocolla, often replacing the malachite, and white to colourless chalcedony and drusy quartz.



Large bladed aragonite crystals in stellate clusters. DeGrussa oxide zone.

Photo: Susan Stocklmayer

The following description of the visit was supplied by Susan Stocklmayer.

Eighteen members of the MinSocWA were fortunate to spend a day on site at DeGrussa copper mine. We joined with Company workforce personnel on the early morning flight from Perth. On arrival, we began the day with Murray briefing us on mine safety and the geology of the copper deposits and were then equipped with hats, boots, high visibility vests and goggles.

We were then taken by bus to the first of the dump sites where broken ore has been accumulated and has weathered over a period of months. These dump sites contain ore originating from different parts of the deposits (Conductor1 and DeGrussa) and at each site there is a good likelihood of finding and collecting particular mineral assemblages.

We stayed at each site for about three quarters of an hour and there were many triumphant cries by members following the discoveries of mineralogical successes. Good examples of native copper, mostly in foliated form; cuprite, often as octahedra, and dolomite crystals were amongst these discoveries. Dolomite was a common encrustation mineral, usually in botryoidal habit and much of what we saw presented a pearly lustre over the specimens.

Between each inspection site we were bussed for refreshment and comfort breaks and after a picnic lunch and the first re-examination of collected specimens we returned to the final site where chrysocolla and malachite were best exposed. Included at this site was one large boulder specimen, shot with the vivid colours of chrysocolla and malachite and weighing several tonnes.

Overall, malachite and azurite specimens were fairly rare, with both minerals formed as small crystals, generally as drusy fillings and often with dolomite and fine micro quartz. Magnification of these druses reveals the euhedral forms of all these minerals as a micro world, with malachite in perfect well formed rhombs and much of the tiny quartz crystals doubly terminated. Some crystal encrustations showed copper-bearing green colouration of the dolomite.

The day ended with a massive sort out of all members' collected samples and the sounds of hammering as specimens were trimmed to achieve the fixed weight allowances for the return trip.

All members who went on the trip were very satisfied with their day's efforts and the specimens collected and much appreciated the generosity shown to us all by the Sandfire Resources N and, in particular Murray and Barry who conducted us around and Rob who took us on the various bus rides on site.

Once we have all had some time to examine our samples, we hope that members will share their observations and contribute to a comprehensive mineralogical report.



Large boulder with fractures and surfaces showing chrysocolla and malachite. On site at DeGrussa
Photograph: Susan Stockmayer

Future Activities.

Annual General Meeting on 9th September, 2015.

In accordance with the Society Constitution the entire current Committee retires at the Mineral Society Of Western Australia Incorporated. September 2015 newsletter.

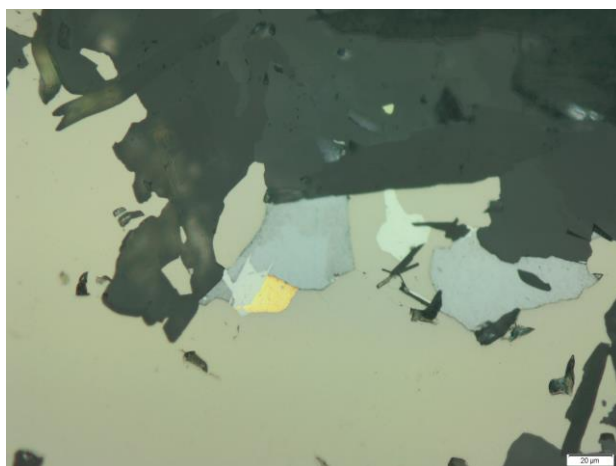
commencement of the A.G.M. and all positions are open for nomination and election

After the Annual General Meeting, Lee Hassan will present a talk entitled “Tellurides and other minerals in the Yuinmery and Austin VMS (volcanogenic massive sulfide) deposits”

Lee completed her PhD on “Mineralogy, geochemistry and origin of the Kalgoorlie gold deposits, Western Australia” in 1978 under her maiden name of Lee Golding. Lee then worked as an exploration geologist for 10 years for EZ Industries and the Sons of Gwalia Group of Companies before her daughter was born. Once her daughter started school, Lee joined the Geological Survey and has been with the Survey for 21 years. Since the beginning of this year Lee has been in a managerial role but prior to that spent several years researching VMS (volcanogenic massive sulfide) deposits including Yuinmery and Austin.

The Yuinmery and Austin volcanogenic massive sulfide (VMS) prospects are in the northwestern part of the Youanmi Terrane of the Yilgarn Craton in Western Australia. Just Desserts is the main deposit at Yuinmery and is copper-rich whereas Austin is zinc-rich. Tellurides have been found at both prospects, commonly in association with native gold, but the suite of tellurides at each prospect differs. The presentation will focus on the tellurides but a brief description of the geology, sulfide mineralogy and alteration minerals of each prospect will also be given.

Tellurides and gold. Yuinmery 2. Photograph courtesy of Lee Hassan.
The white scale bar is 20 microns in length.



New Members.

Applications for membership to the MinSocWA were received from Daryl Baker and Bill Blakers. Both nominations were accepted at the Committee Meeting held on Saturday 29th August.

Committee Meetings

The committee meetings are held at 15, Colin Grove, West Perth. The next meeting is

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scheduled for Saturday 10th October.

Field Trips

Western Australia Lapidary and Rockhunting Club Inc.

By arrangement, members of the Mineralogical Society are able to go on field trips organized by the Western Australia Lapidary and Rockhunting Club Inc. If you are interested in attending these field trips please put your name on the notice board at the Lapidary and Rockhunting Club for the relevant field trip.

Please register with MinSocWA Field Trip organizers prior to attending any of the field trips to confirm event details.

Committee Members.

The following are the MinSocWA committee members.

President	Stewart Cole	0414904169
Vice President	Ida Newton	
Secretary	Sue Koepke	0417990688
Treasurer	John Mill	0411420921 or 92934664
Field Trip Leader	Juan Fernandez Buelga	0416316321
Newsletter Editor	Vernon Stocklmayer	92919043
Member	TBA	

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