



THE MINERALOGICAL SOCIETY OF NEW SOUTH WALES INC

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NEWSLETTER MAY 2020

Society General Meetings held at the Parramatta and Holroyd Lapidary Club will remain cancelled until further notice in accordance with government restrictions against the COVID-19 pandemic .

Society Meetings will however definitely continue by means of the virtual mode. The first meeting held electronically on the 3rd of April was very successful. Almost forty members connected into the virtual program on Friday evening including some who have not been able to attend 'live' meetings due to living well outside Sydney and even interstate. Depending on the capability of their computers most members were able to connect in fully and converse with other members. The program provided small images of each person connected in, shown along the top or side of the screen. Only a few could be shown at any one time but the screen would switch to show the image of whoever was speaking.

The lecture on '**Dominion and Federation discoveries at Nymagee, NSW**' describing mineral research in the central NSW area was very well presented by Adam McKinnon who displayed a series of images projected on to the main screen whilst he described each one in turn and in detail. A report on his lecture will be provided in a subsequent Newsletter when Adam has obtained permission to allow the Society to use some of the imagery which is the property of his employers, Aurelia Metals Ltd.

All members with computers are recommended to connect in to the 1st of May Friday meeting at 7.30pm and also if needed to a practice session at 7.30pm this next Wednesday, 29th April. They should have downloaded the 'Zoom' program from the Internet and before the meetings commence John Chapman will send links by e-mail to connect to the sessions. (Different links will be given for the practice and main sessions). Graham Ogle who has installed the master Zoom program will run both sessions. Phone support will be available from Graham Ogle, John Chapman, Dieter Mylius and Ed Zbik.

FORTHCOMING PROGRAMS

The following list of meeting programs will be presented by means of the 'Zoom' facility until 'live' meetings can be re-instated.

May 1st : There will be a talk given by Dieter Mylius on '**Surprising Bismuth Minerals in the Australian Museum**'

June 12th (Second Friday): Murray Brooker will give a lecture on '**Salt Lake Mineral Exploration**'.

July 3rd : Dr Garry Lowder will give a lecture introducing his autobiographical book:- '**A Journey Through the Elements: Memoirs of a Fortunate Geologist**'. The 'Elements' referred to are Earth, Air, Fire and Water.

August 7th: The **Society A.G.M.** will be followed by the Mayne-Walker Memorial Lecture which will be given by Joanna Parr, research scientist of the CSIRO, on ‘**Seafloor Hydrothermal Mineralisation – The Where, Why, What and How of Mineral Formation at Seafloor Hydrothermal Vents**’.

The September 4th, October 9th (second Friday), and November 6th programs are not yet finalised.

The **43rd Joint Mineralogical Societies Seminar** which was scheduled to be held over the October 3rd to 5th long weekend has been cancelled. Whilst it is to be hoped that Coronavirus restrictions may have been largely lifted by October the disruption to planning before then has made holding the Seminar this year impractical. The intention is to hold the Seminar one year later over the long weekend in October 2021 on the original theme of ‘**43 Shades of Silver**’ in Sydney at the **Ryde-Eastwood Leagues Club**.

December 4th: **Society Annual Christmas Social and Swap n’ Sell**. Holding the Social will depend on whether the virus restrictions have been completely lifted by then.

REPORT ON THE 2019 MINERALOGICAL SEMINAR

Ed Zbik has provided the following information which members may wish to examine.

‘While most mineral shows are closed and you are self-isolating at home or keeping your social distance, check out this comprehensive report by George Stacey on last year’s Mineralogical Seminar in Perth, WA. <https://www.ajmin.org.au/events>

If you can’t go to a mineral event, you may as well read about an event you may have missed.

With Regards, Ed Zbik’

WELCOME

Welcome to new member Roger Jones of Juneec

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WITH REGRET

With regret it was learnt that Society member Mike Wright had passed away on the 15th of April in Lismore Base hospital. He was 81 and had sustained a severe stroke a few days earlier and did not recover. Mike had been a Society member for many years whilst living in Canberra and then moving to Lismore for the last twenty. A brief obituary in the Canberra Times described him as '*a sailor, (Commander RAN, retd), opal miner & fossicker extraordinaire*'

From Ed Zbik: 'Vale Michael Wright, the lapidary world will miss you.'

The MARCH MEETING

The main lecture presented at the March General Meeting was given Professor Ken McQueen who was introduced to the members by Peter Williams. The two academics had met in the mid-nineties when Professor McQueen was working for the CRC LEME, (Cooperative Research Centre for Landscape Environments and Mineral Exploration), in Canberra. Professor McQueen is currently Associate Professor at the University of Canberra and the Australian National University and has given several lectures to the Society in previous years.

The Mineralogical and Geochemical Evolution of the Cobar Landscape Professor Ken McQueen

Professor McQueen commenced his lecture by noting that a number of members will have visited the Cobar area and this evening he wanted to provide a different perspective on the Cobar landscape and how it evolved. Initially he stressed that there were two important tenets to the evolution process. These were that mineralogy essentially informs geochemistry and mineralogical (geochemical) processes are important controls on landscape evolution. Minerals make landscapes. The lecture was extensively illustrated by diagrams, maps and images of landscape forms.

The comparison or interaction between 'Physical' and 'Chemical' Landscapes was explained with diagrams the speaker noting the importance of the abundance and behaviour of water and biota on landscape formation. Many Australian landscapes are polygenetic with older, largely chemical landscapes modified to become predominantly physical landscapes.

Professor McQueen explained that his lecture would be essentially a two-part presentation, first to describe the mineralogical controls on landscape evolution and the importance of iron oxides, silica and carbonate, and then the implications for mineralogical (geochemical) anomalies. The chemical weathering of rocks was described by simplified diagram, rocks being weathered to quartz, clays and iron oxides. The processes involved were ferruginisation, silicification and calcification and images were shown of typical resultant landscapes.



Regolith sampling in the Cobar Region, western NSW.



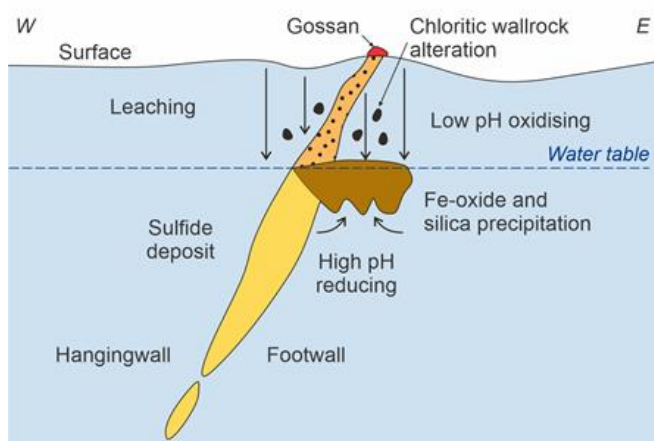
Silicified, (silcrete) cappings. Bacon Range N.T.

Ferruginisation is the weathering solution of ferrous iron (Fe^{2+}) under reducing conditions, mobilisation and precipitation of ferric (Fe^{3+}) oxides and oxyhydroxides under oxidizing conditions. Silicification occurs during periods of wetter climatic conditions and marked chemical weathering under alkaline conditions, silica released into solution can re-precipitate to silicify rock materials and regolith, particularly as resistate silcrete. Calcification occurs under semi-arid and alkaline evaporitic conditions. Calcium in solution can react with bicarbonate ions to form calcite-dolomite (calcrete) deposits, which can also act as resistate layers.

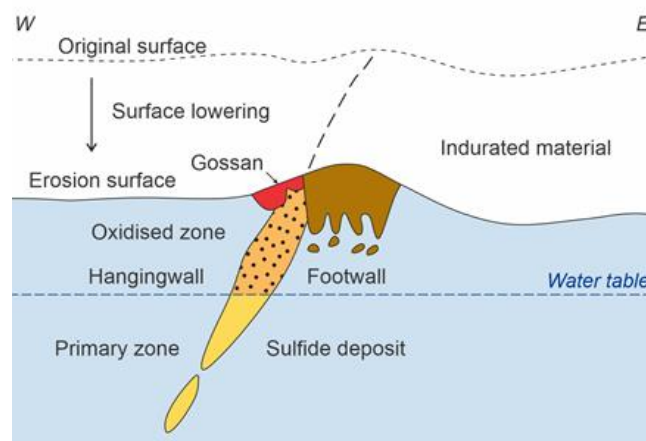
A large number of diagrams were displayed and explained by the speaker through the lecture. Some showed the total iron and manganese content through the regolith of the Cobar region comparing high and low areas in the catchment. Other diagrams indicated features of the paleo landscape. The present land surface conceals older landscape elements, including different generations of palaeo-valley systems infilled with transported regolith. The effects on mineral deposit weathering & element dispersion due to varying chemical conditions operating at different times through the Cenozoic Era, (66 million years ago to present day), were indicated.

Ore Deposits and Hills: An interesting feature of the Cobar region is that many ore deposits are found under hills. Often on the western side. This feature was explained by means of the diagrams : -

1. Intense chemical weathering, elemental leaching, and concentration of iron oxides and secondary silica at redox boundary in underlying footwall to sulfide deposit



2. Erosion, surface lowering and exposure of indurated footwall to form resistant hill. Oxidised sulfide deposit crops out on hangingwall side.



The lecture was extremely thorough, detailed and very well illustrated. At the end of his lecture Professor McQueen answered a number of questions and then paid acknowledgment to the people and departments which had contributed images for his presentation.



THE END:

Acknowledgements: CRC LEME staff and students, Mining Companies of Cobar, Cobar landowners
NSW Geological Survey & Stuart Jeffrey
