



## THE MINERALOGICAL SOCIETY OF NEW SOUTH WALES INC

Website: [www.minsoconsw.org.au](http://www.minsoconsw.org.au)

Please address all correspondence to :-  
The Secretary, 58 Amazon Road, Seven Hills, NSW 2147

### NEWSLETTER      SEPTEMBER 2020

**The September Meeting will be held on Friday the 4<sup>th</sup> of September at 7.30 pm by virtual mode.**

The prospects seem to be that current pandemic restrictions will be continued for some months yet and Society Meetings will have to continue in virtual mode. Whilst small groups of people, adequately separated from one another, are being allowed in certain venues, the Parramatta and Holroyd Lapidary Club building is owned by Parramatta Council which wishes it to remain closed until further notice.

The program at the virtual Meeting in September will include a lecture to be given by Noel Kennon on :-

#### **‘Fleischer’s Glossary of Mineral Species’.**

Work on substantially re-designing and adding a number of features and a lot more information to the Society’s Website has been continuing for some months and is almost finished. Graham Ogle will deliver a mini-talk describing the changes, features and facilities of the site.

#### **‘Our New Website’**

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### FORTHCOMING MEETINGS AND PROGRAMS

**October long weekend:** In place of the Joint Mineralogical Societies Mineralogical Seminar this year the Society will be hosting a **Virtual Seminar** on the Zoom platform to be run over two half days, Saturday and Sunday, the 3<sup>rd</sup> and 4<sup>th</sup> of October. The program will be for a total of about four hours each day for about one and a half hours each session either side of midday with a one hour lunch break. It is hoped to present three speakers per session or a total of twelve for the two days.

Since the intention is to invite as many members as possible of other mineralogical societies to attend from across the country and over the Tasman Sea, from W.A. and New Zealand, the program schedule has had to be devised to accommodate the different times zones across this region.

A further novelty to the program timing is that daylight saving commences in some Australian states at 2.00 am on Sunday morning. The program is being scheduled to commence at 10.45am in NSW which would be 8.45 am in Perth and 1.45 pm in NZ. There would be an hour break for lunch at 12.30 pm (NSW) and an afternoon session ending at 3.00 pm which would be 1.00 pm in W.A. and 6.00 pm in NZ. The virtual Seminar will be held in place of a Friday General Meeting in October.

**November 6<sup>th</sup> :** The program for November is still to be finalised but should include a minitalk and lecture.

**The Society Annual Christmas Social and Swap n' Sell. December 4<sup>th</sup> - 6<sup>th</sup>:** Date to be confirmed. It is definitely intended that the Society will hold a Christmas Social as usual this year but with pandemic regulations possibly still in place it may be held during the afternoon of Saturday the 5<sup>th</sup> or Sunday the 6<sup>th</sup> of December. The venue is also to be confirmed but the Social would probably be held outside the Parramatta and Holroyd Lapidary Club building, - depending on weather conditions.

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## **GEOLOGICAL EDITOR AND PHOTOGRAPHER REQUIRED**

Kevin Capnerhurst, senior geologist with the Geological Survey of NSW in Orange has asked for the following notice to be circulated to members.

### **Seeking EOI for contract geological editor and mineral photographer.**

The Geological Survey of NSW is seeking contractors to work intermittently with its Geoscience Information unit throughout 20/21.

An experienced **geological editor** is required to work remotely, assisting in production of a range of items including technical manuscripts, geological maps, geotourism brochures, posters, general interest flyers and geotrail apps.

A skilled **photographer** with mineral handling experience is required to photograph minerals from our Economic Rock and Mineral Collection onsite at the W B Clarke Geoscience Centre, Londonderry. This will include unwrapping mineral specimens, validating mineral labels, and using your own photographic equipment.

Contractors will need public liability insurance, workers compensation insurance and an ABN. Please provide a short summary outlining your interest, skills, experience, photographic equipment, availability and pay rate to:

[simone.meakin@planning.nsw.gov.au](mailto:simone.meakin@planning.nsw.gov.au) (editing)

[Kim.marchiori@planning.nsw.gov.au](mailto:Kim.marchiori@planning.nsw.gov.au) (photography)

Cheers Kevin

**Kevin Capnerhurst**  
**Geologist – Geological Survey of NSW**

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## **Minutes of the ANNUAL GENERAL MEETING AUGUST 7<sup>th</sup> 2020**

Guidelines provided by the Department of Fair Trading in view of the pandemic restrictions have indicated that associations conducting A.G.M.s or other meetings by virtual mode would be acceptable to the Dept. [*USE OF TECHNOLOGY: ..... associations may conduct committee meetings and general meetings using technology even if this isn't stipulated in their constitutions. .... Members must still be able to participate (in) an association (by) using technology, such as Zoom or Skype meetings.*]

The 2020 Mineralogical Society Annual General Meeting was conducted by virtual mode commencing at 7.30 pm on Friday the 7<sup>th</sup> of August and was opened by the Society President, Dieter Mylius. The President explained that information from the Department of Fair Trading had been considered in view of the pandemic restrictions, including the provision that if necessary any association's A.G.M. could be postponed for a year, subject to the Dept being notified.

However the Society Committee decided that given the present degree of familiarity with the Zoom virtual program and the DFT stipulation that associations could conduct their meetings if desired '*with appropriate technology*', the Committee had decided to go ahead and hold the A.G.M.

There were a few announcements.

Graham Ogle advised that the **Micro-Mineral Group** meetings would also continue by virtual mode and that any members interested in attending a meeting to listen to one or more short talks should contact him to be put on the e-mailing list. The next meeting would be on Saturday the 11<sup>th</sup> of September.

Ed Zbik reported that the trip to the Gumble area west of Orange in the middle of July had been very successful and a report had been provided in the last Newsletter. He was planning subsequent **Field Trips** later in the year to Tuena and Cordillera, probably during September and October and was searching for a leader to conduct a trip around Lowes Mountain.

The President then delivered his report for the year.

## President's Report 2020

'What an extraordinary year it's been. You may have thought that one Minsoc President's Report is very similar to those of previous years, and in the past you may have been right.

But everything has changed, and we do not know how things will pan out in the future.

Until early 2020 we had our usual interesting and varied programs, meetings and field trips, we could meet together face to face, talk minerals, check out the \$1 box, and show others our latest acquisitions. And of course have a wine or a cuppa.

The outgoing committee was dedicated, with its membership seemingly rusted in place. Currently they are John Chapman, Graham Ogle, Ed Zbik, David Colchester, Geoff Parsons, Peter Beddoe, Simon Tanner, and of course, the person who keeps us all together, our own living treasure, George Laking. I thank all the committee members for making the President's job so easy. And I thank all society members for your enthusiasm, encouragement, help and support throughout the year

Enter COVID-19 and most things changed. Physical meetings stopped, as have most field trips. Micro group meetings are a challenge. It was decided early on by us and the owners of our meeting venue, that meetings in our venue had to cease. We cannot return to the venue until it is considered safe. This is out of our hands. We have and must continue to err on the side of caution, even though the lack of meetings is disappointing. The committee has continued to manage the Society through social isolation and will eventually manage the return to a more "normal" program.

One result of this is that our membership has dropped slightly to around 100, but as you will hear from our Treasurer shortly, we remain in a healthy state financially.

Early on Graham Ogle identified that we could meet on a virtual platform such as Zoom, and we have embraced that opportunity completely. Zoom was originally tried for a committee meeting and then general meetings and micro mineral meetings, with, I believe, great success given the circumstances. In fact, some members prefer it. We can now see people that are distant or prefer not to travel, that could normally not attend a physical meeting. This has prompted the committee to look at continuing Zooming even when we can meet face to face.

During the year it was decided that the MinSoc Web Page could be much improved, also enabling it to be more secure. We engaged Toby Ogle to do the development and design, and the work is progressing well and, from what I have seen, is looking great. We hope to have it up and running in the next month or so.

It was with great sadness that during this last year Arthur Roffey left us. Arthur was a member of the society since the beginning and served on the committee and as president in years past. Always generous with his help and knowledge, he is sorely missed.

This was to be the year that the Mineralogical Society of NSW hosted the annual Joint Mineralogical Societies of Australasia Seminar in October. This has had to be deferred to 2021, with all that that entails not only for us, but other societies around the nation and New Zealand. We obtained agreement from all other societies to defer the ongoing program of seminars by a year.

In its stead we will be holding a virtual seminar over two half days of the October Long Weekend (3rd and 4th), which is open to anyone who wishes to "attend". We will be using Zoom. There is no set topic or theme, so we are hoping for a varied program of speakers. More details will be released closer to the time, but the seminar will be free and you can join from anywhere you can get an internet or WiFi connection.

The future. We all may have crystals, but no crystal balls. Unfortunately, no-one can answer the question when things will return to "normal", whatever that will mean.

We all want to resume face to face meetings. But to do so, we must ensure everything will be safe for everyone. Ed Zbik has produced a COVID-19 Safe Plan, which you may have seen in an earlier newsletter. When the time comes, this will form the basis on which we resume our activities.

From time to time, field trips will be offered to those able and willing to attend. There will be rules, some new and possibly annoying, but everyone is asked to abide by them.

In the meantime, we aim to keep monthly meetings on the Zoom platform, with an interesting and varied program. So on the first Friday each month, grab a beverage, sit back in your favourite chair and join us. It is encouraging for all us to see your faces. We hope that you will continue to join us, until the new normal is with us.

I thank you all for continuing your support of the Mineralogical Society of NSW, for your enthusiasm and passion. Please stay safe, sensible and healthy.

I wish the incoming committee for 2020/21 a successful and interesting year ahead, as they navigate the new "normal".

Thank you                      Dieter Mylius'    August 2020

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The President then called on the Treasurer, Graham Ogle, to deliver the Annual Financial Report.

A spreadsheet of the Society finances for the year was projected on to the virtual screen.

## MINERALOGICAL SOCIETY OF NEW SOUTH WALES INC.

FINANCIAL STATEMENT 2019-2020

		2019-20	2018-19
<b><u>Funds in hand:</u></b>	Balance in Operating Account CBA # 06 2016 28023647 @ 30th June 2020	\$ 7,487.40	\$ 7,220.74
	Funds in CBA Term Deposit 1 - Betty Mayne Bequest	\$ 31,966.32	\$ 31,966.32
	Funds in CBA Term Deposit 2 - Walker Bequest	\$ 68,346.04	\$ 67,256.68
	Cash in Hand	\$ 46.00	\$ 46.00
<b><u>Liabilities:</u></b>		\$ Nil	\$ Nil
<b><u>Total Funds at 30th June</u></b>		<b>\$ 107,845.76</b>	<b>\$ 106,489.74</b>
<b><u>Increase in funds</u></b>		<b>\$ 1,356.02</b>	<b>\$ 1,281.92</b>
<b><u>Income:</u></b>	Membership subscriptions	\$ 2,250.00	\$ 2,805.00
	Supper donations and mineral sales	\$ 1,170.40	\$ 1,277.40
	Sale for Kids with Cancer	\$ 1,380.00	\$ 1,425.00
	George Smith book sales	\$ 322.44	\$ 270.00
	Interest on operating account	\$ 30.61	\$ 33.38
	Interest on term deposit (into operating account)	\$ 735.23	\$ 783.17
	Interest on term deposit (reinvested into term deposit)	\$ 1,089.36	\$ 1,816.03
	<b>Total</b>	<b>\$ 6,978.04</b>	<b>\$ 8,409.98</b>
<b><u>Expenditure:</u></b>	Supper items	\$ 1,020.49	\$ 1,262.69
	Rent - hall hire	\$ 680.00	\$ 330.00
	Transfer of money raised for Kids for Cancer	\$ 1,380.00	\$ 1,425.00
	Printing, postage, stationery, Subs, PL ins., Dept Fair Trading, PAI, Speaker, Website, Library, Equipment etc.	\$ 2,541.53	\$ 4,110.37
	<b>Total</b>	<b>\$ 5,622.02</b>	<b>\$ 7,128.06</b>
<b><u>Income - Expenditure:</u></b>		<b>\$ 1,356.02</b>	<b>\$ 1,281.92</b>

**Other assets:**

Mineral trimmer, UV lamp, Geiger counter  
 Microscopes (2), Library and shelving UHF radios  
 George Smith books Projector, PA system, Urn

The above statement indicates that the Society is in a sound financial position.

Graham Ogle Treasurer 1<sup>st</sup> August 2020

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The Treasurer explained that the sheet was presented in the same format as the previous year's reports with two columns of figures given, one for the financial year just ended, July 1<sup>st</sup> 2019 to June 30<sup>th</sup> 2020 and for comparison the second column of figures for the previous financial year of 2018/2019.

The key figures were high-lighted in yellow. The Society total funds were \$107,845.76 and were contained in three accounts, as shown, one operating cheque account and two term deposits. The interest from the Walker term deposit had been added to the capital during the year whilst the interest from the Betty Mayne deposit was added to the cheque account. The total Society funds showed a small increase over the previous year due to the interest from the term deposits because other Society income was less than previous. Undoubtedly this was due to the virus pandemic effect which had cut down membership subscriptions slightly but had also reduced expenditure. Commendably Society members had again contributed a sum of \$1380 to the Kids with Cancer Foundation, Westmead.

In addition to funds there were some valuable assets, particularly the Society Library, and also an amount of important equipment including two microscopes, a UHF lamp, Geiger counter, UHF radios, etc and a few George Smith reprint books. Notably by now the Society has recouped all the money that was spent to publish the books and had hopefully provided an important help to mineralogy.

The Treasurer noted that it was customary to have all the financial report figures checked by a second person and that Jim Sharpe had provided that service in previous years. This had not been done yet due to the concerns over the virus pandemic but in due course Graham Ogle would take all the books and bank statements to Jim Sharpe to be double-checked.

Overall the Treasurer reported that the Society was definitely in a very sound financial position as it had been for a long while.

Acceptance of the Annual Financial Report was proposed by Hayley Bambridge and seconded by John Chapman with all in favour and no dissensions.

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The President then asked Gary Sutherland to assume the task of Returning Officer for the election of the 2020/2021 Society Committee. A list of the nominees for election to the Committee was projected on the virtual screen for all members to view.

## **ELECTION OF THE SOCIETY COMMITTEE FOR 2020/2021**

Before he moved to attend to the election Gary Sutherland advised that he wished to offer a vote of thanks to the outgoing Committee for managing to keep the Society running over the previous few months in spite of the COVID restrictions and for all the wonderful activities that had been organised over the previous twelve months.

The Returning Officer then noted that there were very few changes to the previous Committee with most members being re-nominated but with one addition. He then read out the list of positions noting that there was only one nominee for each position which allowed him to declare the nominees elected unopposed. The nominees and positions were : -

PRESIDENT:	Dieter Mylius
VICE-PRESIDENT:	John Chapman
SECRETARY:	George Laking
TREASURER:	Graham Ogle
COMMITTEE MEMBERS:	Peter Beddow
	David Colchester
	Geoff Parsons
	Edward Zbik
	Hayley Bambridge

Gary Sutherland welcomed all the incoming Committee members and wished them and the Society all the best for the forthcoming twelve months and hoped that all members would get back to 'live' meetings and be able to see one another in the New Year.

The re-elected President thanked Gary Sutherland for his help and asked if there were any queries from members about the A.G.M. or matters that they would like brought up, either for this evening or on notice for the future. With no matters being raised the President declared the 2020 Annual General Meeting closed.

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In continuing the evening program and as has become customary the President described the background to the **Mayne-Walker Memorial Lecture** which is given each year after the A.G.M. and which the Society regards as the premier keynote presentation for the year.

The Mayne-Walker title is derived from the names of three Society benefactors, Betty Mayne and brother and sister Harold and Edna Walker. Betty Mayne was a Society member in the 1980s becoming Secretary and then President to eventually preside over the 1991 Mineralogical Seminar held that year in Sydney. Sadly she passed away abruptly only a short time after the Seminar was held. She had built up an impressive collection over the years of pursuing her interest in minerals and gemstones and her will stipulated that the collection should be sold with half the proceeds to be bequeathed to the Society. It was later decided after a debate at a Society meeting that the capital would be kept intact and that the interest would be used for projects promoting mineralogy and of which the benefactor would have approved.

The Betty Mayne Memorial Lectures were established after a recommendation by the late Professor Laurie Lawrence and have been held every year since.

Some twenty years after Betty Mayne had passed away the Society lost two other members, Harold and Edna Walker, and the title of the Memorial Lectures was extended to include their names. They were also very loyal members managing to attend virtually all Society meetings including field trips and other events in spite of not being able to drive and in poor health. They passed away in 2012 and 2013 respectively and Edna's will bequeathed a substantial portion of her estate to the Society. Accordingly it was fitting that the Society honour those members from years past by combining their names in the title of the Memorial Lectures.

This year the Society was very fortunate to have Joanna Parr to deliver a Memorial lecture and the President asked John Chapman to introduce the speaker.

Dr Joanna Parr is a prominent person in geology and mineral research currently holding a senior executive position in the CSIRO and is also President of the Geological Society of Australia. She has a strong association with Broken Hill having done post-PhD doctoral studies on the Pinnacles mine and has conducted a substantial amount of work on the formation and time-scale of the mineralisation at Broken

Hill and similar-type deposits. She later moved on to become a senior researcher on sea-floor mineralisation systems which was to be the subject of her lecture for the evening.

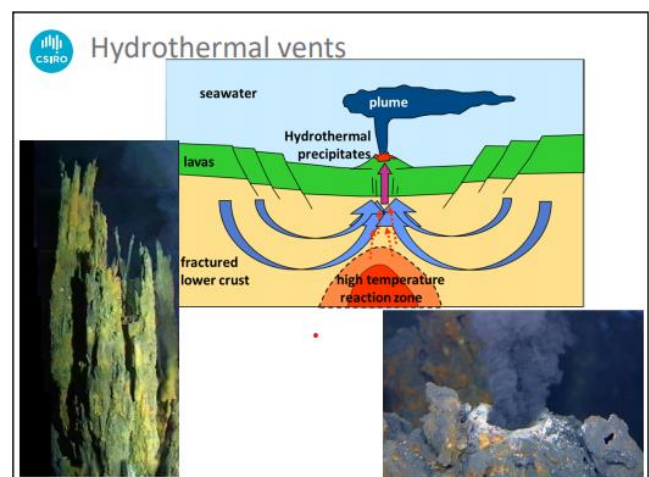
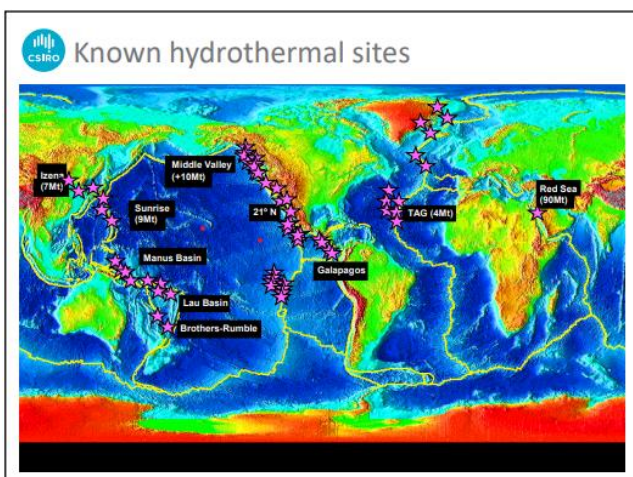
**‘Seafloor Hydrothermal Mineralisation.  
The Where, Why, What and How of Mineral Formation  
at Seafloor Hydrothermal Vents’  
Dr Joanna Parr**

Dr Parr initially briefly filled in a little more of her back ground. She had obtained her BSc at the University of Leeds in the U.K. and then her PhD at the University of Wales. Her thesis was on the geology of a mineralised region of Proterozoic rocks in Sweden and she had noted that the formation was similar to that at Broken Hill. At that time her supervisor suggested to her that she should also go and examine the Broken Hill formation and whilst the idea may have seemed extreme to her then she decided to come to Australia expecting to spend two years, ..... but was still here!

In her lecture Dr Parr intended to provide a broad discussion on sea-floor hydrothermal mineralisation, where it is, what it is and how it is formed. The discussion would be based on many years of research from across the world. Some of the most interesting discoveries on the seafloor have come from the mid-Atlantic Ridge and also from the edges of the Pacific plate. Of particular interest to Australian researchers has been the south-west Pacific and Dr Parr made acknowledgments to other co-workers in her field, Ray Binns, Siyu Hu, Tim McConachy and Chris Yeats.

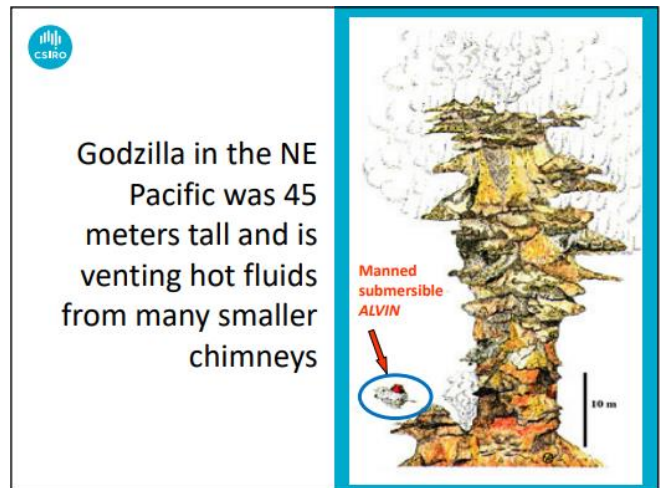
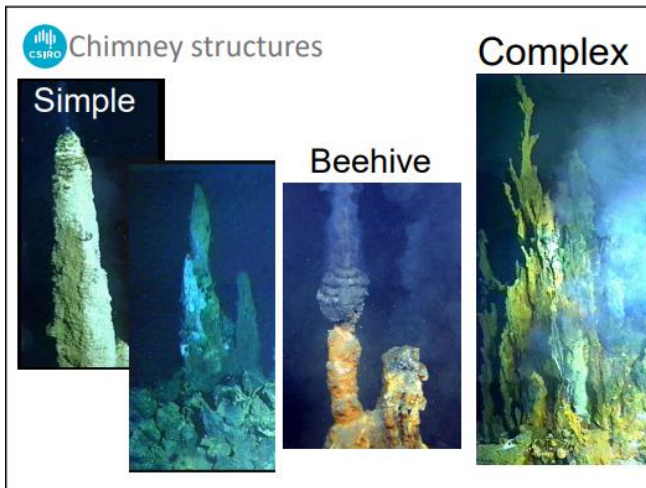
The speaker proceeded to show a large series of slides, of diagrams, maps and drawings of hydrothermal sites, images of deep-sea hydrothermal vents, of the mineral accumulations around the vents and some of the sea-life which associates with them. Vents are found above fracture systems, notably along tectonic plate margins and mid-ocean ridges. A map of the World showing major hydrothermal sites and fields was displayed noting that many had been given names. Some sites and the accumulation of minerals around them have been looked at seriously with the view to whether they can be mined. The TAG (Trans-Atlantic Geotraverse) sea-mound in the mid-Atlantic has about four million tonnes of mainly zinc ore and the Middle Valley mound in the north Pacific has about ten million tonnes.

Not labelled on the map being shown was the Solwara deposit in the Manus Basin field on which Dr Parr had been working. The deposit of about one million tonnes was very rich in copper and gold. A drawing of a typical hydrothermal vent/system was displayed, the speaker noting that hydrothermal fluids can be from 200 to 400 degrees Celsius but in emerging from the vent to mix with sea-water at 2 degrees Celsius will deposit dissolved minerals, mainly sulphides and some oxides of iron, manganese, copper and zinc forming ‘chimneys’ or ‘black smokers’.

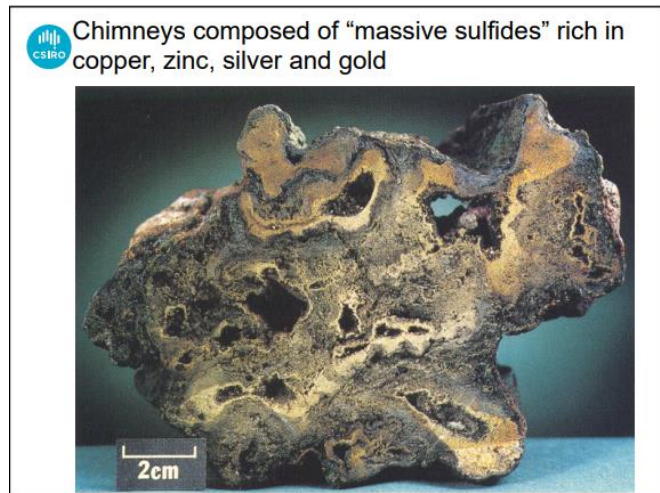
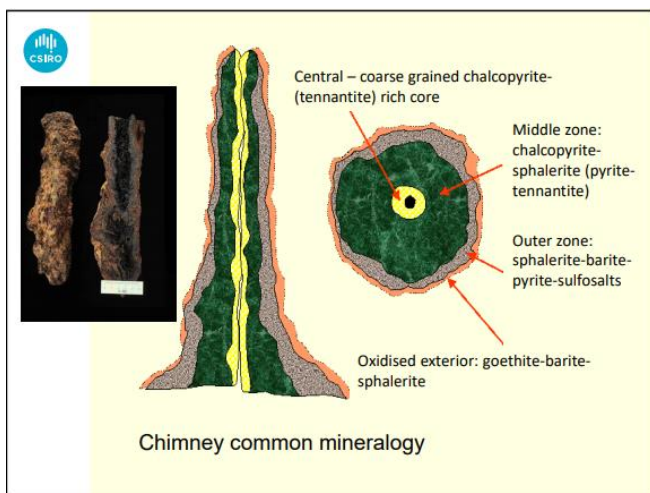




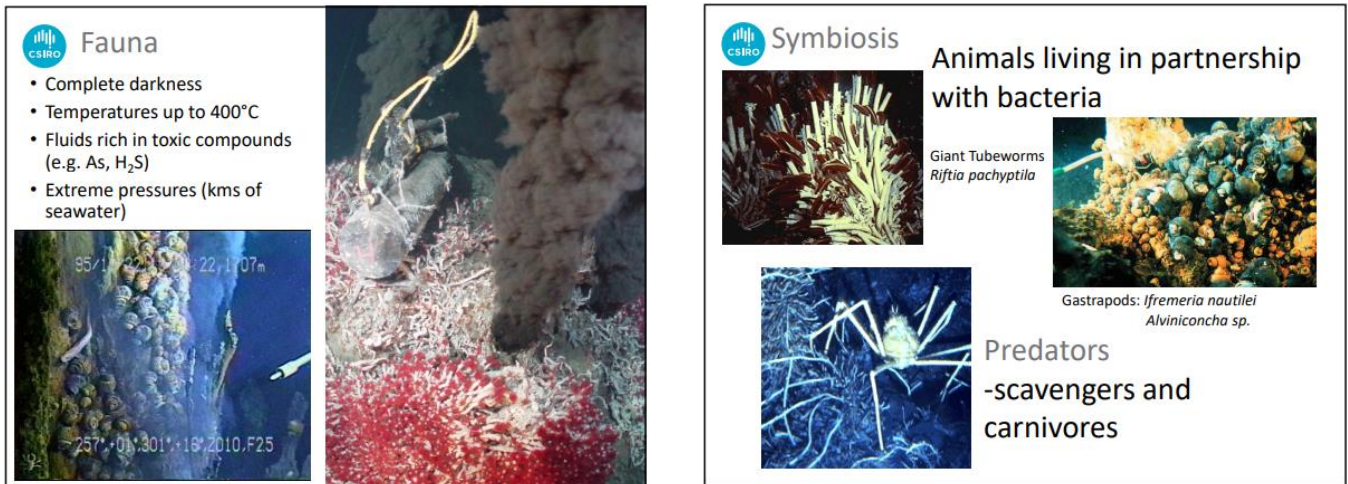
Smoker ‘chimneys’ come in many shapes and sizes and images of a few examples were shown. One of the speaker’s ‘favourites’ was a chimney named ‘Godzilla’ in the north-east Pacific which was 45 meters tall. It fell over in 1996 but a drawing was displayed which showed it as originally standing up and also showed a three-person manned submersible ‘Alvin’ alongside it for size comparison. Godzilla was the largest chimney then discovered but larger ones have since been discovered on the mid-Atlantic Ridge, possibly up to 60 meters tall composed mainly of limestone, calcium carbonate.



A long and cross-section drawing of a typical simple chimney was displayed with an image of the original and a description of the minerals comprising the various layers. The outer orange-coloured layer would be iron oxide, predominately goethite with some barite and sphalerite. The inner layers were comprised of varying amounts of sphalerite, barite, pyrite, sulfosalts and chalcopyrite. The chimney would not only grow upwards and outwards but also inwards and eventually the inner passage would probably get blocked off and the chimney stop smoking. The hydrothermal fluids that had been building it would then vent from somewhere else nearby.



A variety of fauna are found living in association with hydrothermal vents. They live in complete darkness and have to try and live within the ‘goldilocks’ zone of seawater mixed with some of the hydrothermal fluid giving a comfortable temperature. They also live in fluids which are rich in poisonous substances such as arsenic and hydrogen sulphide and at extreme pressures under kilometers of sea water. In catching any creatures from such a depth and bringing them to the surface they tend to explode. Deep-sea creatures are very adapted to their environment and may vary in assemblages from different parts of the Pacific. The fauna found around vents in the south-west Pacific in the Manus Basin comprises an assemblage of snails and fish whereas in the eastern Pacific tubeworms tend to dominate.



The base of the food-chain around the vents is a mat of bacteria which were using chemosynthesis to harness hydrogen sulphide to create energy and food from the chemical-rich fluids. Some of the larger deep-sea fauna relied on a symbiotic relationship with bacteria. The eastern Pacific tubeworms had bacteria in their guts which provided food for the worms from chemosynthesis.

One subject of study concerning hydrothermal vents and the chemistry surrounding and generated by them is to have considered whether the extreme and toxic environments may have contributed to or been involved in the origin of life on Earth. Accordingly workers have examined smoker chimneys to find signs of biomineralisation and the speaker referred to an image of filamentous microfossils in a 3.2 billion years-old volcanogenic massive sulfide deposit from Russia. Other images showed high resolution SEM images of worm-like structures and 'nanotubes' in chimney samples. Analysis has shown that filamentous structures located by SEM on samples have lead-arsenic sulphosalts in the middle and an organic coating. The results of this area of study has given workers an insight into how early life may have started to colonise in extreme environments.

After the conclusion of her lecture Dr Parr answered a large number of questions including whether the Broken Hill deposit had originated from a hydrothermal process. The speaker advised that this was not impossible although the number of geologists who had worked at Broken Hill had as many theories about the origin. The deposit was similar to hydrothermal formations but on a much bigger scale. It had needed mineral-containing fluids to have been trapped and prevented from dissipating over a long period of time. From her own work in the area Dr Parr had established that the Pinnacles deposit was formed at the same time as Broken Hill but at a greater depth in the stratigraphy.

Another question was about whether any deep-sea fauna brought to the surface had been analysed for their heavy-metal content. Dr Parr advised that in fact some studies had been conducted by Japanese workers who were looking into whether deep-sea fauna located in the vicinity of hydrothermal vents would be safe to eat!, ... -- but had found that the creatures contained a lethal cocktail of toxic elements, cadmium, arsenic and selenium etc. Definitely not safe.

In answer to how readily deep-sea deposits could be mined the speaker said that this was being considered by the Nautilus Minerals Company and the most likely method would be to put digging machinery down to the deposit to crush the material and produce a slurry to be pumped to a barge on the surface. The slurry would be dewatered with the waste being returned to the sea-floor directly to avoid contamination of the water column and the concentrate taken to a land processing facility.

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