

## Tea Tree Gully Gem & Mineral Club Inc. (TTGGMC) Clubrooms: Old Tea Tree Gully School, Dowding Terrace, Tea Tree Gully, SA 5091. Postal Address: Po Box 40, St Agnes, SA 5097.

Sept Edition 2014

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# "Rockzette"

#### **Tea Tree Gully Gem & Mineral Club News** In this edition... **President's Report** Meetings, Courses & Fees. • Diary Dates Hi All, Meetings Club meetings are held on the 1<sup>st</sup> Thursday of • Stop Press We are still open for suggestions for this year's each month except January: • President's Report. Xmas lunch/party - as in, what do we have to Committee meetings start at 7.00 pm. General eat? For example, how about a bar-b-cue? • Club Activities. meetings - arrive at 7.30 pm for 8.00 pm start. • Meetings, Courses & Fees. I went to the Enfield Show on Saturday 30th August and was quite impressed with the hall • Mineral Matters - Iron Ore (South Australian Faceting (times to be advised) Course 10 weeks x 2 hours Cost \$20.00. layout; gave me a few ideas for our 2015 show. focus) Use of equipment \$1.00 per hour. General Interest Regards, • Members Notice Board. Ian. **Lapidary** (Tuesday - Wednesday mornings) • Useful Internet Links Course 5 weeks x 2 hours Cost \$10.00. **Club Activities** Use of equipment \$1.00 per hour. **Competitions Diary Dates** Silver Craft (Friday - Wednesday mornings) Competitions have been suspended indefinitely 2014 Course 5 weeks x 2 hours Cost \$20.00. and are currently replaced with members • October 3<sup>rd</sup>, 4<sup>th</sup> & 5<sup>th</sup> 2014. The Broken Hill Use of equipment \$1.00 per hour. showcasing an interesting part of their Mineral Club "Rock-on Gem and Mineral While some consumable materials are supplied collection. Show", Penrose Park, Silverton, NSW. Field T<u>rips</u> by the club, trainees must supply any additional • October 11th & 12th 2014. Adelaide Gem and requirements. October 3<sup>rd</sup> to 5<sup>th</sup> 2014: The Broken Hill Mineral Club Exhibition. Mineral Club "Rock-on Gem and Mineral Trainees who use the club equipment (for Show", Penrose Park, Silverton, NSW. • November 1<sup>st</sup> & 2<sup>nd</sup> 2014. Southern Rockexample, magnifying head pieces, faceting October 6<sup>th</sup> to 13<sup>th</sup> 2014: Bush camping and hounds Gem and Craft Fair, at the "Log equipment, tools, etc.) must return them to the fossicking for gypsum specimens, Woolcunda Cabin" 17 Gerald Ct., Christie Down, SA. workshop after usage. Trainees are also Station, NSW. encouraged to purchase and use their own 2015 Library equipment. • March 21<sup>st</sup> & 22<sup>nd</sup>, 2015 Librarian - Augie Gray In the interest of providing a safe working Canberra Lapidary Club, Canberra Rock There is a 2 month limit on borrowed items. Swap, Exhibition Park, ACT. environment, it is necessary to ensure When borrowing from the lending library, fill individuals using the workshops follow the • April 3<sup>rd</sup> to 6<sup>th</sup>, 2015 out the card at the back of the item, then place rules set out in Policy No. 1 - 20/11/2006. National Gemboree, Horsham, VIC. the card in the box on the shelf. It is necessary that *Health and Safety* • May 1<sup>st</sup> to 3<sup>rd</sup>, 2015 When returning items, fill in the return date on regulations are adhered to at all times. Murraylands Gem and Mineral Club the card, then place the card at the back of the Rockarama 'Crystal and Craft Fair" item. Trainees must ensure: incorporating SA Metal Detecting Silver Craft that all work stations are left in a clean and Championships. Friday mornings - 9 am to 12 noon. Cost \$20 tidy state: for new short course attendees. All are that all rubbish is removed and placed in the • June 20<sup>th</sup> to 21<sup>st</sup>. 2015 Tea Tree Gully Gem and Mineral Club welcome. appropriate bin; and where applicable, machines are cleaned Exhibition (Biennial). **Tuesday Craft** and oiled. Tuesday mornings - 11 am to 2.30 pm **Stop Press** Faceting, etc. All are welcome. Contact Doug The Tea Tree Gully Gem & Mineral Club Inc. (08 7120 2221) if you would like to learn • The October meeting has been deferred until will not be held responsible or liable for any faceting. Thursday October 16th, 2014. person injured while using the club Wanted - The faceting group occasionally has machinery or equipment. • Box Appeal (small, tissue, shoe, etc.) members wishing to buy a 2<sup>nd</sup> hand faceting required for next year's Exhibition. Club Subscriptions machine & accessories. Could anyone with one \$25.00 Family. • See 'Members Notice Board' for additional not being used please contact: Doug Walker 0871202221 or Russell Fischer 0417083227 'Meeting Reminders/Updates' (Last Page). \$20.00 Family/Pensioner. \$15.00 Single. The Tea Tree Gully Gem & Mineral Club Inc. is not and cannot be held \$12.50 Single/Pensioner. responsible or liable for any personal injuries, loss or damage to property at any club activities, including, but not limited to, meetings, field trips, all crafts and \$10.00 Joining Fee. annual shows. An indemnity is to be signed by all participants before each and every field trip activity they attend. Tea Tree Gully Gem & Mineral Club Incorporated, Old Tea Tree Gully School, Dowding Terrace, Tea Tree Gully, South Australia, 5091. Page 1

## Mineral Matters - Iron Ore (South Australian focus)

#### Iron ore and its uses

Elemental Iron (Fe) is ranked fourth in abundance in the earth's crust and is the major constituent of the Earth's core. It rarely occurs in nature as the native metal.

The pure metal is silvery white, very ductile, strongly magnetic and melts at 1528° C.

Iron accounts for approximately 95% of all metals used by modern industrial society.

Metallic iron is most commonly produced from the smelting of iron ore to produce pig iron.

Steel is a processed form of pig iron with impurities such as silicon, phosphorus and sulphur removed and with a reduction in the carbon content. Globally, steel's versatility is unsurpassed. Wrought iron (low carbon) and cast iron (pig iron) also have important markets. One of the most ubiquitous products in Australia is corrugated iron, a structural sheet steel shaped into parallel furrows and ridges. It was invented by Henry Robinson Palmer in 1828 in London and quickly became popular for roofing and farm buildings.

Iron metal may be produced from the smelting of certain iron compounds. Their concentration in economic proportions is referred to as 'iron ore'.

Other well known uses of iron compounds are:

- iron sulphate used as fungicide, the oxalate of iron in photographic development, limonite, goethite, hematite as pigments and abrasives, magnetite in the production of industrial electrodes and also for washing coal
- iron chloride and nitrate used as mordents and industrial reagents in the production of several types of inks
- iron carbonyl as a catalyser of many chemical reactions
- micaceous hematite as a protective paint on steel superstructures.

#### Mineral Name - Formula - % Iron when pure

*Chamosite* - (Mg,Fe,Al)6(Si,Al)414(OH)8 - 29.61% *Goethite/Limonite* - HFeO2 - 63%

Hematite - Fe2O3 - 69.9%

Magnetite - Fe3O4 - 74.2%

*Pyrite* - FeS - 46.6%

Siderite - FeCO3 - 48.2%

Information extracted from *Government of* South Australia - DMITRE Minerals -Geological Survey - Mineral Commodities -Iron Ore:

http://www.pir.sa.gov.au/minerals/geological\_s urvey\_of\_sa/commodities/iron\_ore

#### **Resources and Energy Group**

Click here to access, 'South Australian geoscientific and mining information for the minerals industry, teachers and students, community groups and the general public'.

Click here to access, 'Geological Survey of SA - Iron Ore".

#### South Australian Iron Ore

Iron (Fe) is a metallic element which constitutes about 5% of the Earth's crust and is the fourth most abundant element in the crust. Iron ores are rocks from which metallic iron can be economically extracted. the principal iron ores are hematite (Fe2O3) and magnetite (Fe3O4). Hematite ores dominate the world production of iron ores and are sourced mainly in Australia and Brazil. However, magnetite is continuing to increase its presence in world production.

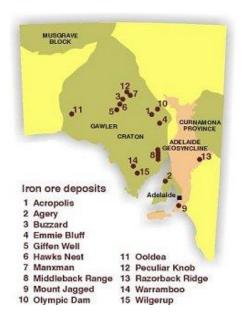
During 2011, China was the world's largest producer of iron ore with 43%, or 1200 million tonnes (Mt) followed by Australia with 17% or 488 Mt and Brazil with around 14% or 390 Mt of world production (Geoscience Australia (GA), 2013).

Almost all iron ore mined (~98%) is used in the production of steel. Steel is regarded as the economic mainstay of industrialised nations. Steel's versatility is unsurpassed; it is the cheapest metal to produce and has a ready supply of raw materials.

South Australia is arguably the birthplace of the Australian iron ore and steel industry, and continues to play an important role as an iron ore and steel producer. The state is emerging as Australia's second largest producer of iron ore, accounting for more than 5% of the nation's total Economically Demonstrated Resources (EDR), (GA, 2013).

Currently the state has two iron ore producers - Arrium Ltd, producing hematite and magnetite ore from several iron ore deposits in the Middleback Ranges and northern Gawler Craton; and IMX Production has been overwhelmingly from the high-grade residual deposits in the Middleback Ranges of northern Eyre Peninsula.

Extracted from *South Australia Earth Resources Information Sheet - M20 March 2013:* <u>Click here to access 'Iron ore deposits in South</u> <u>Australia'.</u>



# Further information including video presentations etc...

An interesting history of iron ore processing in South Australia can be found at the *Flinders Ranges Research* website: <u>Click here to access</u>, 'Flinders Ranges Research website.'

Arrium Limited - "Transformation – scale and diversity" - Andrew Roberts Managing Director & CEO - Macquarie Australia Conference 8 May 2014 <u>Arrium Limited Presentation - "Transformation –</u>

## scale and diversity" - Andrew Roberts

Watch these videos Click here to access, 'Arrium Mining's promotion video.' and

Arrium Mining - Iron Princess 1st blast published on YouTube August 3rd 2014.



Arrium Map of Operations - Middleback Ranges



Arrium Map of Operations - Southern Iron



Arrium Ltd. Photo - Blasting at Iron Baron.



Arrium Ltd. Aerial Photo - Iron Baron.

Click here to access, 'VHS Video of an ore train I took in 1987 - travels from Whyalla to Iron Monarch and return.'

Click here to access, Video I took more recently of a train, carrying ore mined at Peculiar Knob - travels from Port Augusta to Whyalla. *Mel Jones* 

# Mineral Matters - Iron Ore (South Australian focus)

#### Iron Monarch, A Look At Its Mineral Past.

By Glyn Francis, May 1987 (Mineralogical News. Vol 7 No.4)

The Iron Knob mining area (Iron Knob and Iron Monarch) has been well known for its iron ore since the late 1880's, the high grade Hematite first being used as a flux in the Pt.Pirie lead smelters and from 1915 in the production of steel. The Iron Knob quarry, the smaller of the two, although of very high grade has been a poor producer of mineral specimens. Iron Monarch, on the other hand has been fairly well known for its capacity to produce both cabinet and micro specimens, even though in later years the cabinet specimens have become rare.

The capping on the eastern top of the Monarch, originally RL346 metres (above sea level), was of high manganese ore, probably running 30 to 40% Mn, and this extended down the eastern slope to what is now known as the Eastern Ore body. No doubt that the early miners of the Monarch saw some magnificent mineral specimens from this area. One of the old shovel drivers tells the story of when mining this area on 100-foot faces, of opening up a cavern large enough to walk in. The driver and his mate admired the long glistening straws that hung down from the ceiling, thought how beautiful, and then got back into the shovel and continued mining. No specimens were saved, so whether they were crystals or stalactites we will never know. A lower level of this manganese mined in the mid 60's produced some of the largest crystals I have seen from this mine. (Yes, I missed out!). In the mid 60's to late 70's Pyrolusite, Pyrolusite after Manganite and possibly Manganite were common from a number of areas in the mine, one temporary dump that was mined from the Western slope of the hill at about the RL200 metre level produced a very vughy hematite/manganese rock with the cavities lined with Pyrolusite crystals. Some 20 to 30 thousand tonnes of this material remained for several months before it was crushed and shipped out. Another area was on the floor of the RL170 level, plates of good size Pyrolusite after Manganite crystals formed a coating on a fault several metres long. We collected until dark and intended to come back the next day. However a shift boss saw what we had and decided to get some for himself, he used a ripper dozer to open up the floor. Needless to say, that was the end of them.

In the late 60's the development of the North Wall was in full swing. The Jaspilite (banded iron formation) was producing a lot of Quartz and Quartz with Hematite cabinet specimens; almost all of the benches and dumps had specimen material available. The most spectacular find of these minerals was on the western end of the RL250 level. A large breccia zone was encountered where the quartz had coated the Jaspilite fragments and over these had formed masses of large bladed Hematite crystals. Mining took several shifts to dig through this area and it all went over one dump. I became aware of this on the last shift and managed to get some specimens from the dump while the crew was having lunch. By the end of the shift, it was all gone and the dump covered with jaspilite. (The dump has expanded some 100 metres over this area now)

These were the days when we only bothered to collect cabinet specimens, after all, what use were specimens that you needed a hand lens to see the crystals on. The day of the micromounter was a long way off.

In the early 70's, phosphorous had become a major problem in the ore. A study was undertaken to identify the distribution, the minerals and their origin. This expanded the horizon for collectors, for minerals like Wardite, Strengite, Variscite and Woodhouseite were identified, and the Apatite as Fluorapatite and Dahllite. Of these the red Variscite was the most interesting, even though it took some convincing of its validity (red variscite? variscite is green!). This mineral was found in two areas, one just south of the younger dyke, the other north east of it. The largest find consisted of a fault a metre or two wide running the full 10-metre face height, which was filled with a very vughy manganese. All the vughs were lined with Variscite ranging from a pale pink to a blood red. Most of the Variscite that is in collections today came from this find. The bench below this had the same material but the Variscite was covered in a white mineral that spoiled it, very little was collected.

Extract taken from SA Mineral Society's Website in compliance with their copyright statement: "Articles in this publication may be reproduced wholly or in part, provided the source of information and author are acknowledged. Except where copyright is stated."



Variscite - Iron Monarch Compiled by Mel Jones



Hematite and Quartz - Iron Monarch.



Hematite and Quartz - Iron Baron.



Hematite and Quartz - Iron Baron.



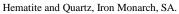
Hematite - Iron Monarch.



Hematite - Iron Monarch

# Mineral Matters - Iron - Associated Minerals (South Australian focus)







Pyrolusite, Iron Knob, SA.



Goethite, Arkaroola, Flinders Ranges, SA.



Limonite after Pyrite, Dome Rock, SA.



Turquoise, Iron Monarch, SA



Hematite and Quartz, Iron Monarch, SA.



Pyrite and Quartz, Moonta.







Cyrilovite and Strengite, Iron Monarch, SA.

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If the Silver Surfer and Iron Man team up, they'd be alloys.



Limonite after Pyrite, Chambers Gorge, SA.

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Silver walks up to Gold in a bar and says, "AU, get outta here!"



Limonite after Pyrite, Worlds End Creek, SA.



Hematite and Quartz, Iron Monarch, SA.

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**Q**: What do chemists call a benzene ring with iron atoms replacing the carbon atoms? A: A ferrous wheel.

#### *via Email 2014-08-06* Gerry and Ellen's Holiday in South America.

Here we are, with the first report from our trip of a lifetime to South America. The flight from Australia to Lima was as expected very long and very tiring. But we survived it and spent our first few days getting over our jet-lag in Lima. We have a very nice tour director, named Manny and he comes from Cuzco. The first outing we had was to the Pachacamac Ruins and we must admit, it was the first time we realized how many Inca sites there are in Peru, and how many they are still discovering.

From Lima, we flew to Cuzco and then travelled to the Sacred Valley where we stayed in a lovely hotel in Urubumba. This was to get us used to the high altitude. We all were affected by it, some more than others, mostly just a bit short of breath or light dizziness. One of the highlights there for us was a visit to a local village school and also a visit to a Peruvian Paso Horse Ranch. Both were just great.

Then, after a rail journey from Urubumba to Machu Pichu, we finally got to see the "lost city of the Incas". And what a breathtaking site it is! Of course, we were not the only ones. I guess, we would have to share this wonder of the world with many more. They say, they have about 3000 visitors on any given day. But honestly, the whole area is so huge, it really doesn't matter. We had a very informative guide and also lots of free time to explore and in the afternoon, went right to the top guard house, to get the best views.

The next day, we made our way by bus back to Cuzco. Then another day visiting ruins at Sacsayhuaman and going on a walking tour of the beautiful city of Cuzco, which is a great mixture of Incan and Spanish architecture. Also, we had a lovely outing to the local produce market. As usual when you go to those markets, you see the most unusual foods to buy and eat.

Now tomorrow, on "Gerry's Birthday", we take a ten hour train ride on the Andean Explorer, from Cuzco to Lake Titicaca, to the highest navigable lake in the world and the largest lake of South America. It is supposed to be a fantastic journey and one of the highlights of the tour. So, it should be a very special birthday present.

I have enclosed just a couple of snap-shots so you can see, we are really here.

Hope you are all well and we look forward to hear from you.

Cheers,

Gerry & Ellen, The Happy Wanderers.









via Email 2014-08-16 Gerry and Ellen's Holiday in South America.

As promised, the train trip on the Andean Explorer was all it had promised to be and more. Especially as it was Gerry's birthday and boy, did he get spoiled? Not only did they give him a lovely little cake from the hotel before we were leaving in the morning, they also serenaded him with a Peruvian band and presented him with a large birthday cake and a small present. Gerry definitely was in fine form, even performing for a whole crowd of people (as seen in the picture!).

Finally reaching Lake Titicaca, we all got a bit out of breath with the high altitude, 3810m above sea-level. The next day, we visited the floating islands of the Uros people. *Continued column three...*  What a fascinating place that was. A total of over 4600 people live on the self-made floating reeds islands. They were lovely people who of course now live mostly off the tourism industry, with showing them around their living quarters and selling hand-made souvenirs.

Next great adventure was the visit to the totally awesome Iguazu Falls. Pictures can't do it justice. There are 275 waterfalls at a length of 3 km, and we started off on the first day walking at the Brazilian side. It virtually takes your breath away, you see waterfall after waterfall and the volume is just crazy. We even took a crazy boat ride right up to the Musketeers' falls and got soaking wet. It was just fantastic!! The next day, we again walked the falls but this time on the Argentinean side up to the famous Devil's Throat viewpoint. Forgot to mention, the day on the Brazilian site of the fall, we also visited a bird sanctuary in the rainforest park. We saw rare birds flying in huge aviaries and you could walk in some of them, mingling with beautiful colourful maccaws. They also had a great variety of toucans.

Then, we spent three days in Buenos Aires, actually the coldest place on our trip. It felt like Adelaide in winter. Not surprising really, as they have the same seasons then us. Apart from being just another big city, it had two very special things; one was the colourful district of La Boca, with lots of street murals and caricature statues. And the other speciality is of course their love of the Tango. In the evening, we went to a very lively show with lots of Tango and some other great performances. We thoroughly enjoyed ourselves.

Our last three days we spent in Rio. The weather was warmer here but unfortunately, we had some rain and very cloudy weather. So, Christ of Redeemer had his head in the clouds and he couldn't redeem us! The same day we went up the Sugarloaf Mountain and the view from up there wasn't any better. But the last day here, we went on a harbour cruise and the weather and view had improved considerably, so everybody was happy again!

We couldn't really complain, because that was the only rain we had for our whole trip. Except that Gerry was so much looking forward to the lovely ladies in their bikinis on Copacabana Beach where we were staying, and there was no sight of them at all. So he had brought the binoculars for nothing! Anyway, it's now time to say good-bye to South America and we can honestly say, it was a great trip and we saw some fantastic places and met some lovely people.

Now, for the long, long journey home! Leaving Rio on Saturday morning, arriving home in Adelaide on Monday morning!!

Cheers,

Gerry & Ellen, The Happy Wanderers.

See supporting photos on the next page...

via Email 2014-08-16 Gerry and Ellen's Holiday in South America.

Continued from previous page...















Cheers, Gerry & Ellen, The Happy Wanderers. \*\*\*

via email 2014-08-07

#### **Still Not Downunder!**

Still not down under cont.... Denise and Granton Edwards.

Here we are again, sorry to say, but we are enjoying ourselves still up here in the northern part of the world.

Have still been enjoying wonderful weather, everyone says that this is such an unusual summer; we must have brought it with us. But, the British are struggling with the heat.

We have become adept at catching the underground and finding our way round, but have left there now and headed to York to look over this fantastic medieval town with it's majestic Minster and gothic buildings, including 'The Shambles' where they just kept building up and out because they were taxed on ground floor space.

After York we headed north through the Yorkshire Dales which were picturesque. It was then over to the Lakes District and here again had magnificent scenery.

We are now in Edinburgh and have had the wonderful experience of the Tattoo. We were herded like sheep through the narrow roadway up to the castle then up to our seats in row 'u' which gave us an elevated view of the performance. Let me say here that it was not at all like we expected it to look like We thought the arena was larger and not tarmac; really feel for the dancers on the uneven ground. What an experience to be there (on a rain free night) and soak up the atmosphere!

The next morning we woke to a typical Scottish Mist as we ventured back up to the castle for a grand tour. Never disappointed, even in drab conditions everything was fascinating to see. We spent so much time there taking in all we could. Wandered then down the King's mile, as much as we could bear because it was so crowded with the fringe going on.

By the late afternoon the rain eased off making for a more pleasant walk around. In the evening we took in a Scottish show and meal and even tried haggis which was not as bad as we thought it would be. In fact Granton had seconds! Speaking of Granton, after seeing the bus heading for Granton (a district north of Edinburgh) yesterday, we followed up a little more to find the background to the name - it means Grants Clan Town. Not that Granton has any connection with the Grant Clan just that his parents saw and liked the name.

Oh boy! We just love the area and the surrounds, but would not come back at this time of the year again as we are over the crowds and Fringe.

We head further north tomorrow, via a zigzag, so the weather will start to cool a bit.

Until next time, cheerio from us Granton & Denise . - 07-08-2014







Photo gallery continued next page.

#### Continued from previous page...



Until next time, cheerio from us Granton & Denise . - 07-08-2014 \*\*\*

#### via email 2014-08-14

#### **Still Not Downunder!**

Hello all, yes we are still up in the northern part of the world and thoroughly enjoying every minute, every corner we turn is another picture.

After our couple of nights in Wick and the Orkney Islands, we headed 'over the sea to Skye' for a night, but unfortunately it was too bleak to see any great scenery. Nevertheless, we visited some great historical places.

The next day was still bleak with the remains of Hurricane Bertha from America; dumping what was left in the clouds over us. Boy! Did we come down to earth with a thud as the accommodation took a dive! We stayed in extremely basic, light fitting wobbling, ceiling bouncing, creaking rooms. It was so bad, we did not even bother to shower as there was not a lot of room in our 'bathroom'.

Back on the mainland, we headed to Loch Lomond for a leisurely cruise on the loch and beautiful country driving through Glencoe Valley.

We arrived in Glasgow late afternoon in wet weather again so could not have a look around. The trouble with doing a tour like this is that the host service thinks that they have to fill your day completely, which leaves very little time for us to explore.

The next morning was a little slower in pace as we caught the ferry across to Ireland, which took an hour and a half in calm waters (thankfully). On the other side we made a stop at 'The Giant Causeway'; basalt columns over a large scale - such a geological masterpiece to behold. (Preferably, we believe the legendary tale of the giants fight). It was then off to Londonderry (Derry) for the night with a walking tour the next morning of the walled city with canons still on top to protect the city; in Gothic times. Here, we heard of the bloody fighting between the two Irish communities and the aftermath. Even though all is now back on track, the evidence is still there.

Tonight's stay is in probably the most luxurious hotel thus far although last night would have been hard to beat; as in a typical Irish Pub atmosphere.

Anyway, here for a night, this is halfway through our tour. Now, we are hoping to escape the rain as we head down the west coast, (lost all sense of direction so hope we are right) to the capital of rhyme; Limerick.

Cheers to all and keep warm as we will try and keep dry.

Granton and Denise. - 14-08-2014











Granton and Denise. - 14-08-2014 \*\*\*

via email 2014-08-21

#### **Still Not Downunder!**

Here we are again -

Well must say Ireland is a lovely place, very green (40 shades of green) and of course wet, but we have been lucky enough to not get too much rain. Have learnt some Irish words along the way and love their accent although they say we are the ones with the accent (ha! ha!).

Driving through the Irish countryside was just as we imagined it to be with their 100-200 year old dry stone walls and white sheep on green grass. One of our stopovers was in Cong where they filmed 'The Quiet Man' with John Wayne and Maurine O'Hara and also a fabulous Abbey ruins. Onward to Galway (no not the port variety) the landscape changed to rocky outcrops and no trees due to the stone age people destroying them all and now the area is full of peat which they harvest for heating. In this area is a massive marble quarry with 4 different colours and this marble was used in St Nicholas Cathedral where the altar was raised up on green marble. Very impressed with this cathedral as it had 4 different wings to it with one central pipe organ which we were lucky enough to see and hear being played.

Moving now to the west coast of Ireland where we saw King John's castle (Robin Hood days). We also crossed over the Shannon River; the longest river in Ireland.

One amusing part was when we drove through Killorgin where they have their own king and a statue to welcome us; this according to legend was a goat, King Puck.

The Irish seem to want to cling onto anything they can to claim fame and Waterville was no exception. Charlie Chaplin used to holiday there so up goes another statue to celebrate. *Continued next page...* 

#### Still Not Downunder 2014-08-21 Continued from previous page...

Driving through the valleys and mountains there was lots of evidence of the stone age people with ruins easily identifiable, thankfully the Romans did not venture this far so did not destroy them.

It was not long before we found our way to Blarney where we lined up for 2 hours to climb 5 stories of the medieval/ancient castle just to kiss a silly stone in an awkward position (only the Irish could think of that). Before making our way to Dublin we had to stop in at Waterford where we toured over the processing of the crystal, all very interesting, but not that indifferent to gemstone crafting just on a larger scale.

Spent a couple of nights in Dublin where we had a bit of our own private time after visiting Trinity College where on display were rare books and the 9th century book of Kells, this was truly a magnificent library.

Back now onto main land Great Britain where we travelled through Wales past the longest named town in the world to spend the night in Chester.

Looking forward to a rest so until next time cheers.

Love Denise & Granton.







#### **General Interest**







#### via email 2014-08-28 Still Not Downunder!

Hi to all - Yes, we finished our 22 day tour which was fantastic, but not before time cos right from day one there was coughing, etcetera, going on and the coach was very often cold. We have now come down with it.

The last few days were spent in Cornwall and south England. We took a cruise out from Plymouth which is steeped in history. Stood on the steps where the Mayflower set off from. Our last day was a visit to the Stonehenge; interesting to say the least, but not as large a circle as photos seem to show.

We had 2 nights in London after the tour and the rain set in so just did a bus trip around the city.

We are now in Paris and first impressions were not good, however, one day looking at the sights put us at ease a little when realisation set in that we were actually there.

Continued next column...

The last thing for the day was a cruise on the river finishing off with watching the Eiffel

Tower lights turning on and the resulting twinkling, beautiful sight. We walked 13kms all up. Easy day today to ward off this cold.







Continued next page ...

Still Not Downunder 2014-08-28 Continued from previous page...







Catch you all next time. Granton & Denise Edwards

#### via 2<sup>nd</sup> email 2014-08-28 **Still Not Downunder!** Response to a request for train pictures for Mel.

Hi Mel, if you can make these out they are French fast trains including the blue one which is the Eurostar. Not easy getting photos. Still on the move email soon.

Granton & Denise Edwards

#### **General Interest**



Contribution by Mel Jones Photographing Minerals

I'm currently taking photos of Ian's Broken Hill mineral specimens before the opportunity may be lost, for example, if he happens to sell them on.

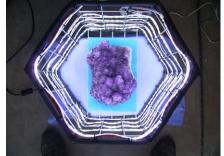
The purpose behind this exercise is to have pictures of mineral specimens available to include in future newsletters should an article benefit from their inclusion.

In due course, I would like the opportunity to photograph other members' mineral specimens for the same purpose. I hope this opportunity happens.

Now, to the real purpose of this contribution -I'm trying to improve the quality of the mineral photos without resorting to expensive equipment (which I don't have anyway).

The first picture in column three is a home...

made contraption using 12volt LEDs, which is my 3rd model (1<sup>st</sup> model was LEDs inside a large coffee tin and the 2nd model was LEDs cable tied to a wire garden surround used for growing cucumbers.). This model uses a weld mesh and polypipe frame - its first try is below.



The Broken Hill Calcites (below) were taken from overhead in an outdoor setting using the second LED garden cage model to light the lower side and sunlight reflected off a house wall along with an LED bar on top of the frame to offset the shadow I was casting over the specimens, because I was squatting over the specimens with my back to the sun. They are the best I have taken so far, but still have some shadowing which I would like to eliminate (perhaps with 2 overhead LED bars). It's a bit trial and error, but these pictures are much an improvement on my earlier attempts. I'm hoping someone might have some ideas to share regarding this project. In particular, how best to photograph quartz crystals.







See Augie's contribution, two pages on, for some beautifully photographed quartz.

#### Part 2 of Rasp Contribution by Doug Walker... The Big Australian

(Broken Hill Proprietary Company - BHP) Charles RASP 1846 - 1907 - prospector -Founder of Broken Hill (An enigma?) **Part 2 - 'The Person'** 



George McCulloch (seated) and Charles Rasp (standing), the discoverer of the Broken Hill lead and silver deposit, photographed at Medindie 1890.

Previously stated in Part 1, Charles arrived in Melbourne in 1869. In a later application for naturalization Charles Rasp claimed to have been born at Cannstatt (near Stuttgart) on the 7th October 1846. There is no record in the register of births either at Stuttgart or at Cannstatt of a Charles Rasp, or Carl/Karl Rasp or Raspe around 1845 - 1846. The historian R Maja Sainisch has noted that no one named Charles Rasp ever arrived in Sydney, Adelaide or Melbourne, and suggested that the man known in Australia from at least May 1871 onwards as Charles Rasp may have arrived at the port of Melbourne on the Peggy on the 8th February 1871 under the name 'Van Hengel'. Mr. Van Hengel is the only unassisted foreign subject listed as arriving in Australia between Christmas night 1870 and June 1871 (the period in which the man known as Charles Rasp is supposed to have arrived in Australia).

The real name of the man known as Charles Rasp was Hieronymus (Jerome) Salvator Lopez von Pereira. His grandfather was a member of the Portuguese aristocracy and a high ranking politician. Jerome was born in a castle in Saxony on 23rd November 1847. His parents died early. At the age of 12, Jerome was sent to live with relatives in Paris, France which became his second homeland. He received a good education and spoke four languages besides his native German: French, English, Portuguese, and Russian.

In 1865 Jerome met and fell in love with the Countess Frieda Odkolek.

Continued next column...

#### Continued from column one...

The Countess's father did not approve of Jerome and his background did not allow his daughter to marry Jerome, which apparently broke his heart.

In 1870 at the age of 23 Jerome was an officer in the Royal Saxon Army laying siege to Paris during the Franco-Prussian War. Accompanying Jerome's Regiment as a war correspondent was an Englishman, Archibald Forbes. Jerome heard about Australia from Forbes who had spent time there in the 1860s. A close friend of Jerome, Dr. jur. Emanuel Raspe was killed in action on 2nd December 1870. This event plus Jerome's anguish about the war between his two homelands drove him to disappear from the battle and head for Australia via a ship out of Holland. He later adopted his dead friend's name, Raspe.

With his future secure as a result of his prospecting discoveries and the establishment of the Broken Hill Proprietary Company, (Jerome) Charles Rasp, moved to Adelaide to start a comfortable life among the large community of German-Australians here. In 1886 he became a Justice of the Peace in Adelaide and was director of several companies.

On the 22<sup>nd</sup> July 1886 Charles Rasp married Agnes Maria Louise Klevesahl who had arrived on the *Wodan* from Hamburg, a blacksmith's daughter from the Prussian Village of Woldenberg. On board she had met a Herrn Kindermann, who had offered a job as a waitress in his Cafe Kindermann in Rundle Street, Adelaide, where she and Charles met. They were married at Bethlehem Lutheran Church, Flinders Street, Adelaide. On their honeymoon, they went to Broken Hill.



The Rasp residence, 'Willyama', at 12 The Avenue, Medindie, Adelaide.

An unknown migrant boundary rider and waitress, to the wealthy silver king and founder of Broken Hill - 'A Truly Great Australian.'

Charles Rasp did not reveal his true identity to anyone.

Reference: Minerals of Broken Hill. (WD Birch, Ed.) Broken Hill Historical Society.

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#### Raspite

*<u>Raspite</u>* is a mineral, a lead tungstate; with the formula PbWO4. It forms yellow to yellowish brown monoclinic crystals. It is the low temperature monoclinic dimorph of the tetragonal stolzite.

It was discovered in 1897 at Broken Hill, New South Wales, Australia, and was named after Charles Rasp (1846-1907), a German-Australian prospector, discoverer of the Broken Hill ore deposit.

Extract from Wikipedia, The Free Encyclopedia.



Raspite (Orange) and Stolzite (Yellow), Broken Hill.





Raspite (Orange) and Stolzite (Yellow), Broken Hill.

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(Rasp's wife -Agnes or Anya Maria Louise Klevesahl, another story)

#### Contributed by Augie Gray...

From email 2014-08-20 - New Amethyst from Entia Valley, NT.

How incredibly cool is this???



While we are still on the Amethyst theme, I have a couple more yet to share, including this truly fantastic specimen dug by Paul Hayes from the recent 2014 dig in Harts Range, NT.

The luster on these is incredible and beautiful colour gradiation from light smoky to gemmy, dark almost bluish amethyst.

Elestial Amethyst/Smoky Quartz Entia Valley Harts Range, NT, Australia 14cm x 8cm

#### From email 2014-08-23 - Nice Amethyst

From Patrick Gundersen - a stunning large crystal from the Ashburton River district of NW Western Australia. This is still in the process of cleaning, some white secondary silica coating on the termination, will post pics when I find a way to remove it. The size 21cm x 13cm.

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#### Contributed by Augie Gray...

*From email 2014-08-23 - One more Amethyst* Another from Patrick Gundersen -

Thought I would sneak a few last Amethyst photos in before the new theme kicks off tomorrow (Clear Quartz). This will be the last photo from the "Lucky Stars" pocket for a while, another very special piece dug by <u>Deah</u> <u>Smith</u>

This very large (17cm!) is a single crystal of milky quartz coated on three faces with lustrous by-pyramidal smoky/amethyst crystals, many with clay filled internal windows and distinct amethyst colour banding.

Elestial Smoky/Amethyst Entia Valley Harts Range, NT, Australia 17cm x 12cm



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Contributed by Suzanne Beaucaris... From email 2014-08-25 - A Trip to Kangaroo Island - South side visited only.



Kelly Hill Caves (picture 1 of 2)



Kelly Hill Caves (picture 2 of 2)



Admirals Arch.



Remarkable Rocks (picture 1 of 2).



Remarkable Rocks (picture 2 of 2).



Eleanor River Area - Aboriginal Midden is between 15 - 30 thousand years old.

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#### Contributed by Doug Walker...

"Life without God is like an unsharpened pencil - it has no point."

A little boy was attending his first wedding. After the service, his cousin asked him, "How many women can a man marry?" "Sixteen," the boy responded. His cousin was amazed that he had an answer so quickly. "How do you know that?" "Easy," the little boy said. "All you have to do is add it up, like the pastor said, 4 better, 4 worse, 4 richer, 4 poorer."

After a church service on Sunday morning, a young boy suddenly announced to his mother, "Mom, I've decided to become a minister when I grow up." "That's okay with us, but what made you decide that?" "Well," said the little boy, "I have to go to church on Sunday anyway, and I figure it will be more fun to stand up and yell, than to sit and listen."

A boy was watching his father, a pastor, write a sermon. "How do you know what to say?" he asked. "Why, God tells me." "Oh, then why do you keep crossing things out?"

A little girl became restless as the preacher's sermon dragged on and on. Finally, she leaned over to her mother and whispered, "Mommy, if we give him the money now, will he let us go?"

Ms. Terri asked her Sunday School class to draw pictures of their favourite Bible stories. She was puzzled by Kyle's picture, which showed four people on an airplane. She asked him which story it was meant to represent. "The Flight to Egypt," was his reply. Pointing at each figure, Ms. Terri said, "That must be Mary, Joseph, and Baby Jesus. But who's the fourth person?" "Oh, that's Pontius - the pilot!"

The Sunday School Teacher asks, "Now, Johnny, tell me frankly do you say prayers before eating?" "No ma'am," little Johnny replies, "I don't have to. My mom is a good cook."

A little girl was sitting on her grandfather's lap as he read her a bedtime story. From time to time, she would take her eyes off the book and reach up to touch his wrinkled cheek. She was alternately stroking her own cheek, then his again. Finally she spoke up, "Grandpa, did God make you?" "Yes, sweetheart," he answered, "God made me a long time ago." "Oh," she paused, "Grandpa, did God make me too?" "Yes, indeed, honey," he said, "God made you just a little while ago." Feeling their respective faces again, she observed, "God's getting better at it, isn't he?"

A 6-year-old was overheard reciting the Lord's Prayer at a church service, "And forgive us our trash passes, as we forgive those who passed trash against us."

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Work Hard, Do Your Best, Keep Your Word, Never Get Too Big For Your Britches, Trust In God and Never Forget a Friend

#### 000

#### Contributed by Augie Gray...

#### \$100 Bill

It's a slow day in the small town of Pumphandle and the streets are deserted. Times are tough, everybody is in debt, and everybody is living on credit. A tourist visiting the area drives through town, stops at the hotel, and lays a \$100 bill on the desk, saying he wants to inspect the rooms upstairs to pick one for the night.

As soon as he walks upstairs, the motel owner grabs the bill and runs next door to pay his debt to the butcher. (Stay with this.... and pay attention).

The butcher takes the \$100 and runs down the street to retire his debt to the pig farmer.

The pig farmer takes the \$100 and heads off to pay his bill to his supplier, the Co-op.

The guy at the Co-op takes the \$100 and runs to pay his debt to the local prostitute, who has also been facing hard times and has had to offer her "services" on credit.

The hooker rushes to the hotel and pays off her room bill with the hotel owner.

The hotel proprietor then places the \$100 back on the counter so the traveler will not suspect anything.

At that moment the traveler comes down the stairs, states that the rooms are not satisfactory, picks up the \$100 bill and leaves.

No one produced anything. No one earned anything.

However, the whole town now thinks that they are out of debt and there is a false atmosphere of optimism and glee.

And that, my friends, is how a "government stimulus package" works!

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*Lexophile* is a word used to describe those who have a love for words, especially in word games, puzzles, anagrams, palindromes, etc.

When you've seen one shopping center, you've seen m-all.

Police were called to a day care center where a three-year-old was resisting a rest.

Did you hear about the fellow whose whole left side was cut off? He's all right now.

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The San Francisco Cable cars are the only

Each king in a deck of playing cards represents a great king from history: Spades - King David Hearts - Charlemagne Clubs -Alexander, the Great Diamonds - Julius Caesar.

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**Interesting trivia** 

In the 1400's a law was set forth in England

that a man was allowed to beat his wife with a

stick no thicker than his thumb. Hence we have

Many years ago in Scotland, a new game was

Only...Ladies Forbidden"...and thus the word

The first couple to be shown in bed together on

Men can read smaller print than women can;

The USA State with the highest percentage of

The percentage of Africa that is wilderness:

28% (now get this...). The percentage of North

The cost of raising a medium-size dog to the

The average number of people airborne over

Intelligent people have more zinc and copper in

The first novel ever written on a typewriter:

GOLF entered into the English language.

prime time TV were Fred and Wilma

Every day more money is printed for

Monopoly than the U.S. Treasury.

Coca-Cola was originally green.

It is impossible to lick your elbow.

people who walk to work: Alaska.

America that is wilderness: 38%.

the U.S. in any given hour: 61,000.

age of eleven: \$6,400.

their hair.

Tom Sawyer.

women can hear better.

invented. It was ruled "Gentlemen

Contributed by Doug Walker...

"the rule of thumb"

Flintstone.

 $111,111,111 \times 111,111,111 = \\12,345,678,987,654,321$ 

mobile National Monuments.

If a statue in the park of a person on a horse has both front legs in the air, the person died in battle. If the horse has one front leg in the air the person died as a result of wounds received in battle. If the horse has all four legs on the ground, the person died of natural causes.

Q. Most boat owners name their boats. What is the most popular boat name requested? A. Obsession

Q. If you were to spell out numbers, how far would you have to go until you would find the letter "A"? A. One thousand.

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More Lexophile statements ...

A bicycle can't stand alone; it is two tired.

When a clock is hungry it goes back four seconds.

The guy who fell onto an upholstery machine is now fully recovered.

He had a photographic memory which was never developed.

When she saw her first strands of grey hair she thought she'd dye.

Acupuncture is a jab well done. That's the point of it.

Those who get too big for their pants will be exposed in the end.

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Contributed by Doug Walker ...

#### 'Sayings'

Sometimes, when I look at my children, I say to myself, 'Lillian, you should have remained a virgin.' - *Lillian Carter (mother of Jimmy Carter)*.

I had a rose named after me and I was very flattered, but I was not pleased to read the description in the catalogue: - 'No good in a bed, but fine against a wall.' - *Eleanor Roosevelt*.

Last week, I stated this woman was the ugliest woman I had ever seen. I have since been visited by her sister and now wish to withdraw that statement. - *Mark Twain*.

The secret of a good sermon is to have a good beginning and a good ending; and to have the two as close together as possible. - *George Burns*.

Santa Claus has the right idea. Visit people only once a year. - *Victor Borge*.

Be careful about reading health books. You may die of a misprint. - *Mark Twain*.

By all means, marry. If you get a good wife, you'll become happy; if you get a bad one, you'll become a philosopher. - *Socrates.* 

I was married by a judge. I should have asked for a jury. - *Groucho Marx*.

My wife has a slight impediment in her speech. Every now and then she stops to breathe. -*Jimmy Durante.* 

I have never hated a man enough to give his diamonds back. - *Zsa Zsa Gabor*.

Only Irish coffee provides in a single glass all four essential food groups: alcohol, caffeine, sugar and fat. - *Alex Levine*.

My luck is so bad that if I bought a cemetery, people would stop dying. - *Rodney Dangerfield.* 

Money can't buy you happiness. But, it does bring you a more pleasant form of misery. -*Spike Milligan*.

Until I was thirteen, I thought my name was 'SHUT UP!' - Joe Namath.

Continued next column...

#### Continued from column one...

I don't feel old. I don't feel anything until noon. Then it's time for my nap. - *Bob Hope*.

I never drink water because of the disgusting things that fish do in it.- *W. C. Fields*.

We could certainly slow the aging process down if it had to work its way through Congress. - *Will Rogers*.

Don't worry about avoiding temptation. As you grow older, it will avoid you. - *Winston Churchill*.

Maybe it's true that life begins at fifty - But everything else starts to wear out, fall out, or spread out. - *Phyllis Diller*.

By the time a man is wise enough to watch his step, he's too old to go anywhere. - *Billy Crystal*.

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Contributed by Doug Walker...

#### **Prize Winning Idiots of 2013**

#### Number One.

"I am a medical student currently doing a rotation in toxicology at the poison control centre in Brisbane. Today, this woman called in very upset because she caught her little daughter eating ants. I quickly reassured her that the ants are not harmful and there would be no need to bring her daughter into the hospital. She calmed down and, at the end of the conversation, happened to mention that she had given her daughter some ant poison to eat in order to kill the ants. I told her that she better bring her daughter into the emergency room right away".

#### Number Two.

Some Boeing employees on the airfield in Sydney decided to steal a life raft from one of the 747s. They were successful in getting it out of the plane and home. Shortly after they took it for a float on the river, they noticed a Westpac Rescue Helicopter coming towards them. It turned out that the chopper was homing in on the emergency locator beacon that activated when the raft was inflated. They are no longer employed at Boeing.

#### Number Three.

"My daughter went to a local McDonalds and ordered a burger. She asked the person behind the counter for 'minimal lettuce. He said he was sorry, but they only had iceberg."

#### Number Four

A guy wanted some beer pretty badly. He decided that he'd just throw a brick through a liquor store window, grab some booze, and run. So he lifted the brick and heaved it over his head at the window. The brick bounced back knocking him unconscious. It seems the liquor store window was made of Flexi-Glass. The whole event was caught on videotape.

Continued next column...

Continued from column two... Number Five.

A man, wanting to rob a Bank of Queensland, walked into the Branch and wrote 'Put all ya muny in this beeg.' While standing in line, waiting to give his note to the teller, he began to worry that someone had seen him write the note and might call the police before he reached the teller's window. So he left the Bank and crossed the street to the NAB Bank. After waiting a few minutes in line, he handed his note to the teller. She read it and, surmising from his spelling errors that he wasn't the brightest light in the Harbour, told him that she could not accept his stickup note because it was written on a Bank of Queensland deposit slip and that he would either have to fill out a NAB deposit slip or go back to Bank of Queensland. Looking somewhat defeated, the man said, 'OK' and left. He was arrested a few minutes later, as he was waiting in line back at the Bank of Queensland.

#### Number Six.

A guy walked into a little corner store in Cairns with a shotgun and demanded all of the cash from the cash drawer. After the cashier put the cash in a bag, the robber saw a bottle of Scotch that he wanted behind the counter on the shelf. He told the cashier to put it in the bag as well, but the cashier refused and said, 'Because I don't believe you are over 21.' The robber said he was, but the clerk still refused to give it to him because she didn't believe him. At this point, the robber took his driver's licence out of his wallet and gave it to the clerk. The clerk looked it over and agreed that the man was in fact over 21 and she put the Scotch in the bag. The robber then ran from the store with his loot. The cashier promptly called the police and gave the name and address of the robber that she got off the licence. They arrested the robber two hours later.

#### Number Seven.

A pair of robbers entered a record shop nervously waving revolvers. The first one shouted, 'Nobody moves!' When his partner moved, the startled first bandit shot him.

#### Number Eight.

When my husband and I arrived at a car dealer to pick up our car, we were told the keys had been locked in it. We went to the service department and found a mechanic working feverishly to unlock the driver's side door. As I watched from the passenger side, I instinctively tried the door handle and discovered that it was unlocked. 'Hey,' I announced to the technician, 'it's open!' His reply, 'I know - I've already done that side'. This happened at the FORD dealership in Dubbo.

#### Number Nine.

"I was at the airport, checking in at the gate when an airport employee asked, "Has anyone put anything in your baggage without your knowledge?" To which I replied, "If it was without my knowledge, how would I know?" He smiled knowingly and nodded. "That's why we ask."

#### **Members Notice Board**

#### Meeting Reminders/Updates

- A Tucson video will be presented at the general meeting on Thursday, September 4<sup>th</sup>, 2014.
- Member subs/fees are due to be paid at the general meeting on Thursday, September 4<sup>th</sup>, 2014.
- The October meetings (committee and general) have been deferred until Thursday, October 16th, 2014.
- Richard Hill will be the speaker at the general meeting on Thursday, October 16<sup>th</sup>, 2014.
- The club's AGM will precede the general meeting on Thursday, November 6<sup>th</sup>, 2014.
- The club's Christmas Lunch will be held at the club rooms on Sunday, December 7<sup>th</sup>, 2014; arrive at 12.30pm for a 1.00pm start.
- The Tea Tree Gully Gem and Mineral Club Exhibition will be a biennial affair, held on the opposite year to the Enfield show, that is, the next TTGGMC Exhibition will be held on Saturday 20th and Sunday 21st of June, 2015.

### **Wanted**

#### Mineral photo opportunities.

I'm looking for opportunities to photograph mineral specimens (South Australian in particular) for future newsletter "Mineral Matters" articles.

Do you have mineral specimens that you can make available to be photographed? I'm prepared to take these photos at your nominated location or at the club rooms, whichever suits you.

Specimens do not have to be first prize winners - what matters, is that they are clearly identifiable and present as a reasonable example from a known location.

Hope you can help me out on behalf of the club.

Mel Jones 08 8395 1792 mel.jones@ bigpond.com

#### **Newsletter Content & Contributions**

Contributions for the newsletter need to be passed on to me no later than one week before each club meeting.

As the current caretaker for the club newsletter, I will be emailing members a link to the copy on the Monday prior to the meeting.

Please consider contributing some of your photos and stories for all to enjoy. These do not have to be mineral related.

I look forward to your ongoing assistance and also seek your timely, frank feedback so that the newsletter continues to meet the club members' interest. Mel Jones

08 8395 1792

mel.jones@ bigpond.com

#### **Useful Internet Links**

2014 Australian (& some NZ!) Gem & Mineral Calendar: http://www.mineral.org.au/shows/shows.html

Australian Federation of Lapidary and Allied Crafts Association (AFLACA): http://aflaca.org.au//

AFLACA-GMCASA: http://aflaca.org.au/members/gem-and-mineral-clubs-association-of-south-australia-gmcasa/

Gem and Mineral Clubs Association of South Australia (GMCASA): http://www.gmcasa.org.au/

Adelaide Gem and Mineral Club: <u>http://sacommunity.org/org/197578-</u> Adelaide\_Gem\_%2526\_Mineral\_Club#.Uta7ufRDt8E\_http://www.adelaidegmc.websyte.com.au/

Broken Hill Mineral Club, The: http://brokenhillmineralclub.wikispaces.com/

Enfield Gem and Mineral Club Inc: www.egmc.infopage.com.au http://southaustralia.localitylist.com.au/yellowresult.php/goal/Detail/ckey/26988

Flinders Gem, Geology and Mineral Club Inc: http://www.lapidaryworld.com/flinders geology gem and mineral club.html

Mineralogical Society of SA Inc: http://www.sa-minsoc.websyte.com.au/

Murraylands Gem and Mineral Club Inc: http://www.murraylandsgmc.org.au/

Southern Rockhounds: http://www.southern-rockhounds.websyte.com.au/

Yorke Peninsula Gem and Mineral Club Inc: http://www.coppercoast.sa.gov.au/page.aspx?u=754&c=16913