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.
President: Ian Everard. 0417 859 443 Email: ieverard@bigpond.net.au
Secretary: Claudia Gill. 0419 841 473 Email: cjjrgill@adam.com.au
Treasurer: Russell Fischer. Email: rfischer@bigpond.net.au
Membership Officer: Augie Gray: 0433 571 887 Email: teatreegullygmc@gmail.com
Newsletter/Web Site: Mel Jones. 0428 395 179 Email: teatreegullygmc@gmail.com
Web Address: https://teatreegullygemandmineralclub.com

February Edition 2018

"Rockzette"
Tea Tree Gully Gem & Mineral Club News

President's Report

Hi All, I hope you are all keeping cool. See you all at the next meeting. Cheers, Ian.

Diary Dates / Notices

2018 Club Shows

Sat 17th - Sun 18th March 2018 Canberra Rock Swap – ACT. 830am to 5pm (Sat) 8:30am to 4:00pm (Sun) Wagtail Way, EPIC - Exhibition Park. Fossickers & dealers. Crystals, minerals, rough & cut gemstones, opals, fossils, lapidary supplies, jewellery. Sieve for sapphires. Food available - No entry cost. For further information please contact the Club's Show Convenor, **Norm Menadue** on (02) 6258 6631

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Fri 30th March - Mon 2nd April 2018 (Easter) 54th National Gem and Mineral Show GEMBOREE - Willunga SA. The 54th National Gem & Mineral Show, GEMBOREE 2018. Full Details at http://aflaca.org.au/gemboree/

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Fri 4th May – Sun 6th May 2018 Palmer Rockarama 'Crystal and Craft Fair, including SA Metal Detecting Championships on Sun 6th all at Collier Park, Palmer, SA. See Details at: https://murraylandsgemandmineralclub.com

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Faceting & Cabbing
Tuesday 16th January 2018

Present: Betty, Jean, Doug, Augie, Ken, Ian Wendy and her grandniece . Present, but missed in the photo: 'Blue', Russel, Rodrick, and Mel.

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Diary Dates / Notices

Happy Birthday

Members celebrating February birthdays:
9th – Bev Freeman.
10th – Ellen Dillon.
15th – Ken Jewell.
28th – Kevin Selfe.

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See Augie's contributed article about **Amber Simulants – 'Faturan' on page 5**. Photo contributed by Augie. Photo credit - Darko Karasarlidis Todorovski. This is part of his collection - a very valuable Faturan bead infused with 24k gold dust.

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See Ian's Monthly Quartz Collection Selections with specimens from Russia - starting on page 6.

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Expressions of Interest for Two New Short Courses
See last page (i.e. Page 19)

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Club Activities / Fees

Meetings
Club meetings are held on the 1st Thursday of each month except January.
Committee meetings start at 7 pm.
General meetings - arrive at 7.30 pm for 8 pm start.

Library
Librarian - Augie Gray
There is a 2-month limit on borrowed items.
When borrowing from the lending library, fill out the card at the back of the item, then place the card in the box on the shelf.
When returning items, fill in the return date on the card, then place the card at the back of the item.

Tuesday Faceting/Cabbing
Tuesdays - 10 am to 2 pm.
All are welcome. Supervised by Doug Walker (7120 2221).

Wednesday Silversmithing
Wednesdays - 7 pm to 9 pm.
All are welcome. Supervised by Augie Gray (8265 4815 / 0433 571 887).

Thursday Cabbing
Thursdays - 10 am to 2 pm.
All are welcome. Supervised by Augie Gray (8265 4815 / 0433 571 887).

Friday Silversmithing
Fridays - 9 am to 12 noon.
All are welcome. Supervised by John Hill (8251 1118).

Faceting/Cabbing/Silversmithing Fees:
A standard fee of $3.00 per session applies – to be paid to the session supervisor.

In the interest of providing a safe working environment, it is necessary to ensure everyone using the workshops follow the rules set out in *Policy No. 1 - 20/11/2006*.

It is necessary that *Health and Safety* regulations are adhered to always.

Everyone using the workshop must ensure:

- that all club equipment (e.g. magnifying head pieces, faceting equipment, tools, etc.) used during the session, is cleaned, and returned to the workshop after usage.
- that all work stations are left in a clean and tidy state;
- that all rubbish is removed and placed in the appropriate bin;
- and where applicable, machines are cleaned and oiled or dried.

NOTE: The Tea Tree Gully Gem & Mineral Club Inc. will not be held responsible or liable for any person injured while using the club machinery or equipment.

Club Subscriptions:

$25.00 Family	$20.00 Family Pensioner
$15.00 Single	$12.50 Single Pensioner
$10.00 Joining Fee	

The Tea Tree Gully Gem & Mineral Club Inc. is not and cannot be held responsible or liable for any personal injuries, loss or damage to property at any club activity, including, but not limited to, meetings, field trips, all crafts and club shows.
An indemnity is to be signed by all participants before each and every field trip activity they attend.

Augie's February 2018 Agate Selection.
Agate of The Month – Fairburn

A unique and rare variety of Fortification Agate from Fairburn, Custer Co., South Dakota, USA.

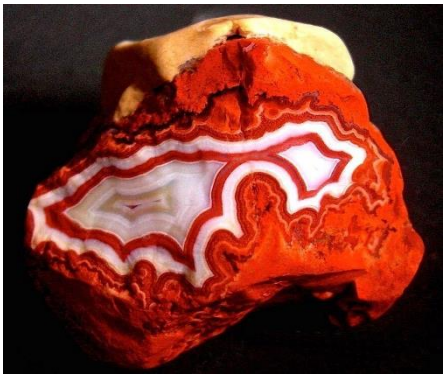
Fairburn Agate is the state gemstone for South Dakota.

The Fairburn Agate beds are located about 12 miles NE of the town of Fairburn in Custer County. The campground and agate beds are in the Buffalo Gap National Grassland.

Fairburn agates were first discovered in the early 1900's near the town of Fairburn and soon found their way into local area rancher's collections.

The primary area where Fairburn agates are found is in a wide band just outside of the Black Hills to the east and south, extending from a point east of Rapid City, through the Badlands National Monument, and along the White River and Cheyenne River breaks into the NW tip of Nebraska.

The Fairburn Agates are most identified by their colourful and sharp holly leaf banding. These fortification agates come in a variety of mixed colours such as red, blue, purple, brown, white, black, yellow, pink, and orange.

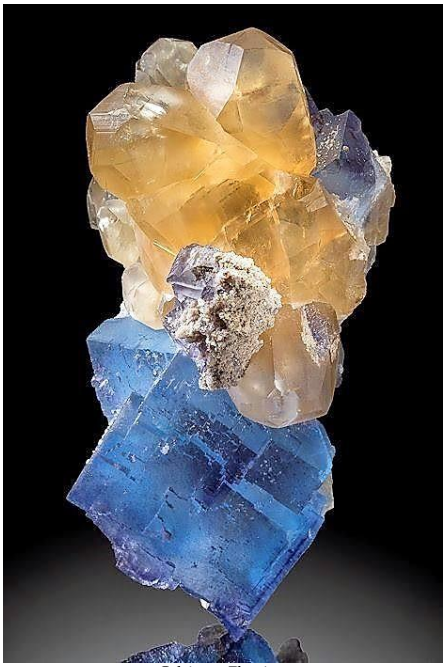


Augie's February 2018 Agate Selection
Continued…

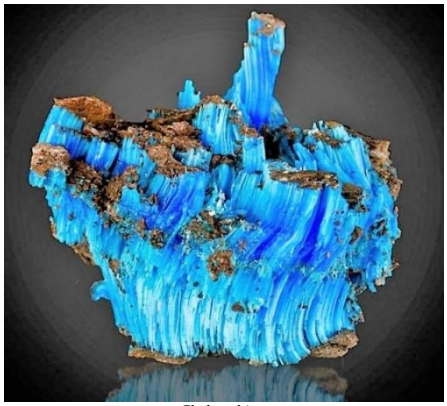
Augie's February 2018 Mineral Selections.

Azurite flower.

Azurite sun - Malbunka Copper Mine, Areyonga, N.T.



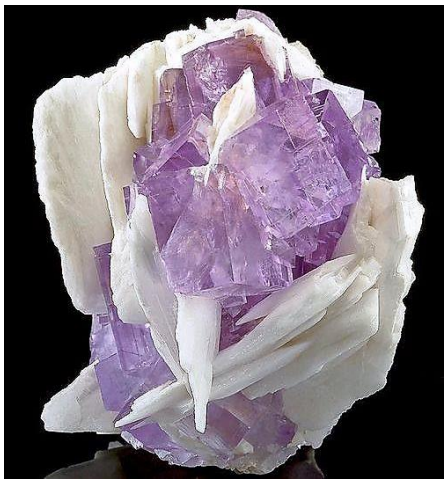
Calcite on Fluorite.



Chalcanthite.

Cinnabar on Quartz - Tongren Mine, China.

Fire Agate - Deer Creek, Arizona.



Fluorite on Barite - Asturias, Spain.

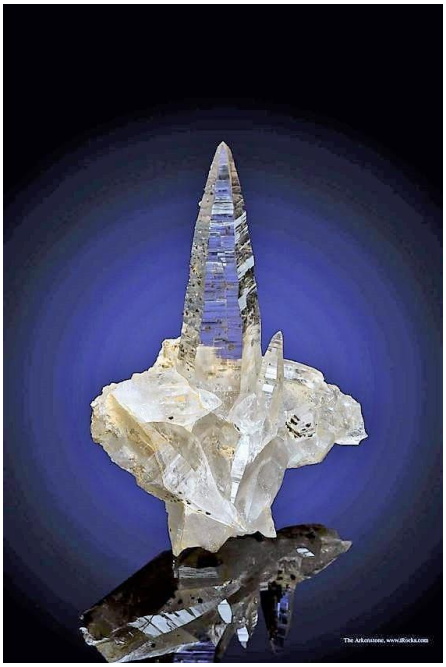
Augie's February 2018 Mineral Selection
Continued…

Malachite.

Rainbow Haematite – Brazil.

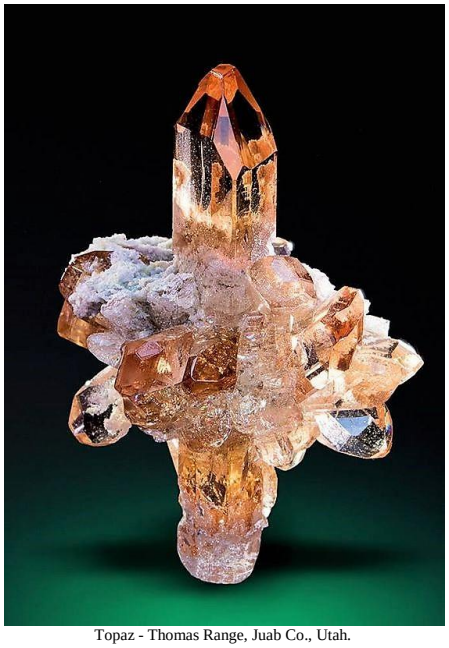
Vanadinite - Mibladen, Morocco.

Tabular Green Uvite on Quartz - Brumado, Bahia, Brazil.

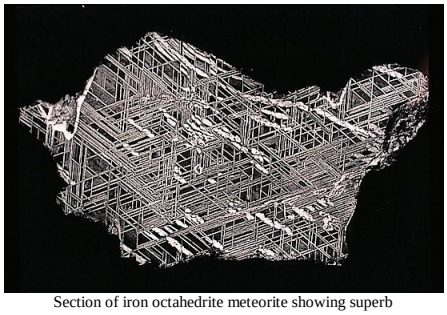


Tessin Habit Quartz - Bedretto Valley, Leventina, Ticino (Tessin), Switzerland.

Tourmaline on Quartz.



Topaz - Thomas Range, Juab Co., Utah.



Section of iron octahedrite meteorite showing superb Widmanstatten pattern.

Smithsonite – Tsumeb.

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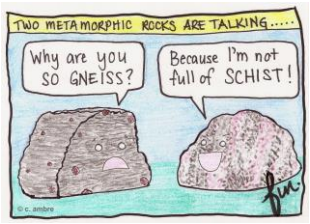

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Contributed by Augie…

Amber Simulants – ‘Faturan’

The strange case of a gem simulant that is often worth many times more than the stone it is simulating, in this case Baltic Amber.

There are many types of “fake” Amber. Most are cheap simulants, but this one is rapidly becoming rarer and more highly prized among collectors, with a resultant explosion in price - strings of “Faturan” beads today being sold from several hundred to over twelve thousand dollars.

The ‘traditional’ definition of ***FATURAN*** (sometimes referred to as Amber Faturan) is as follows: "*a mixture of natural amber, resins and incense. The technique of sticking together the shavings of amber together with a mixture of secret natural resins and incense to turn it into a solid material”.*

In fact, the material designated as **FATURAN** is one that derives from **BAKELITE,** which itself was developed in 1907-1909 by the Belgian chemist Dr. Leo Baekeland. Bakelite is basically a thermos-setting phenol formaldehyde synthetic resin.

The first Bakelite arrived at the East Mediterranean - mostly Turkey - in the form of drawers and furniture knobs and handles around 1909-1911. This is the time when the first prayer bead strands - tesbih - made of what we now call Faturan started to appear on the market.

The bead carvers, mainly in Istanbul, were quick to understand that Bakelite was a material with a lot of potential - it could be easily and well carved, had a great appearance and clicking sound, could imitate and replace amber, was very solid and could sustain a lot of heat. So, they started making their own Bakelite, mixing it with natural, vegetal, or synthetic dyes, amber powder, all kind of fillers, additives, etc. Each master carver also had his own secret "recipe", sometimes heating, or frying in various oils and liquids, making the material undergo various physical or chemical processes to obtain the most beautiful aspect. This is the material that we call “genuine” Faturan today.

The original and “genuine” Faturan beads were mainly, red, orange, or yellow in all shades.

The last “genuine” Faturan beads were made in the 1940s mainly because of the 2nd World War when the supply of raw material became very scarce. Normally the last “genuine” Faturan beads date to the late 1940s - eventually very early 1950s - when the supply of raw material that was still left from the pre-war stocks was terminated. After the 2nd World War the production stopped due to the general severe restrictions that prevailed all over the world.

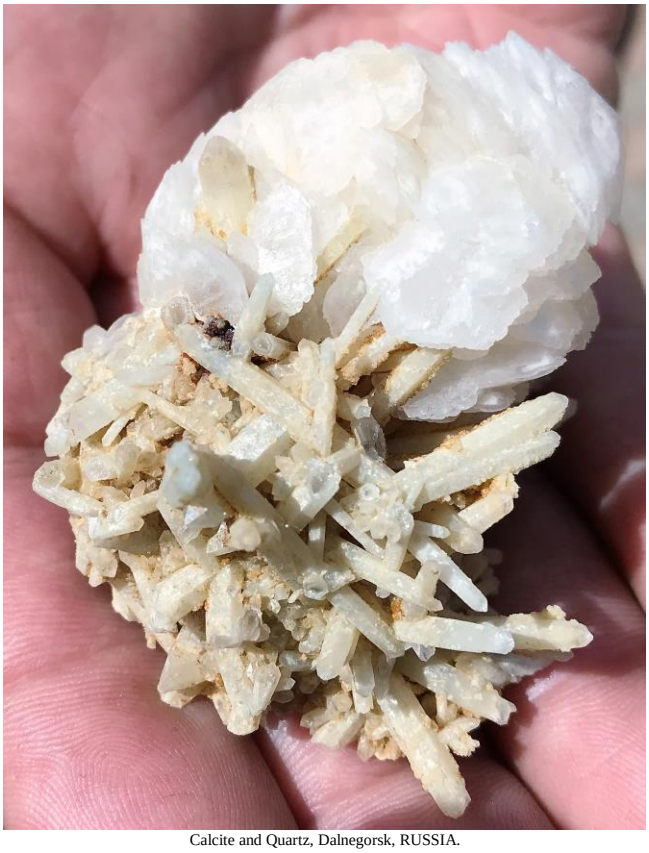
The demand for “genuine” Faturan - often confused with natural Amber - has always been great among prayer beads, tesbih and komboloi collectors. This demand has tremendously increased during the last 10 years so that a large quantity of "fake" Faturan has come onto the market. By "fake", it is meant newly manufactured phenolic resins - of all kinds - purposely or ignorantly presented as “genuine” Faturan.

The result of this situation is that, today, there is a great deal of confusion in the usage of the word ***"FATURAN***" as well as about its true origin and real definition, to the extent that practically any kind of phenolic resin - even newly produced - is unjustly called Faturan.

Contributed by Ian Everard…

Ian’s February Quartz Collection Selections

Pyrite and Quartz, Dalnegorsk, RUSSIA.



Calcite and Quartz, Dalnegorsk, RUSSIA.

Sphalerite and Quartz, Dalnegorsk, RUSSIA.

Pyrite and Quartz, Dalnegorsk, RUSSIA.

Calcite and Quartz, Dalnegorsk, RUSSIA.

Ian’s February Quartz Collection Selections – *Continued…*

Red Quartz, Dalnegorsk, RUSSIA.

Quartz, Dalnegorsk, RUSSIA.

Spessartine and Quartz, Blue River, RUSSIA.

Fluorite and Quartz, Dalnegorsk, RUSSIA.

Calcite, Pyrite and Quartz, Dalnegorsk, RUSSIA.

Calcite, Pyrite and Quartz, Dalnegorsk, RUSSIA.

Ian's February Quartz Collection Selections – *Continued…*

Fluorite and Quartz, Dalnegorsk, RUSSIA.

Calcite and Quartz, Dalnegorsk, RUSSIA.

Calcite and Quartz, Dalnegorsk, RUSSIA.

Ilvaite and Quartz, Dalnegorsk, RUSSIA.

Pyrite, Sphalerite, and Smoky Quartz, Dalnegorsk, RUSSIA.

Sphalerite, and Smoky Quartz, Dalnegorsk, RUSSIA.

Quartz, Dalnegorsk, RUSSIA.

Ian's February Quartz Collection Selections – *Continued…*

Calcite and Quartz, Dalnegorsk, RUSSIA.

Quartz, Dalnegorsk, RUSSIA.

Fluorite and Quartz, Dalnegorsk, RUSSIA.

Calcite, Pyrite, and Quartz, Dalnegorsk, RUSSIA.

Spessartine and Quartz, Dalnegorsk, RUSSIA.

Calcite and Amethyst Quartz, Dalnegorsk, RUSSIA.

Ian's February Quartz Collection Selections – *Continued…*

Fluorite and Quartz, Dalnegorsk, RUSSIA.

Calcite, Pyrite, and Quartz, Dalnegorsk, RUSSIA.

Ilvaite and Quartz, Dalnegorsk, Russia.

Ilvaite and Quartz, Dalnegorsk, Russia.

Calcite on Quartz, Dalnegorsk, Russia.

Calcite and Quartz, Dalnegorsk, Russia.

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Ian's March Quartz Collection Selections will feature specimens from Peru.

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52 Breathtaking Caves from Around the World - Three More in More Detail

No. 28:

Lechuguilla Cave, New Mexico, USA.

Lechuguilla Cave is, as of June 2013, with 138.3 miles (222.6 km), the seventh-longest explored cave in the world and the second deepest (1,604 feet or 489 meters) in the continental United States after the Tears of the Turtle Cave in the Bob Marshall Wilderness of Montana but it is most famous for its unusual geology, rare formations, and pristine condition.

The cave is named for the canyon through which it is entered, which is named for *Agave lechuguilla*, a species of plant found there. Lechuguilla is in Carlsbad Caverns National Park, New Mexico. Access to the cave is limited to approved scientific researchers, survey and exploration teams, and National Park Service management-related trips.

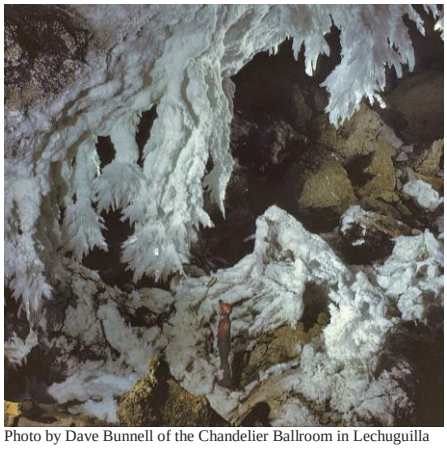

Photo by Dave Bunnell of the Chandelier Ballroom in Lechuguilla Cave. These are the largest known gypsum stalactites in the world. Each is tipped with a spray of gypsum crystals.

Videos on YouTube:

Lechuguilla Cave - Far West Expedition 2017

Lechuguilla Cave - 2016 Far West Expedition

Lechuguilla Cave in Carlsbad Caverns National Park New Mexico (1995) Part 1

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No. 29:

Ice Caves, Mount Erebus, Antarctica.

Mount Erebus, Antarctica.

An ice fumarole tower near Mount Erebus, Antarctica.

Inside the Mount Erebus ice caves, Antarctica.

From Wikipedia…

https://en.wikipedia.org/wiki/Mount_Erebus

Ice Fumaroles and Caves

Mt. Erebus is notable for its numerous ice fumaroles – ice towers that form around gases that escape from vents in the surface. The ice caves associated with the fumaroles are dark, in polar alpine environments starved in organics and with oxygenated hydrothermal circulation in highly reducing host rock. The life is sparse, mainly bacteria and fungi. This makes it of special interest for studying oligotrophs – organisms that can survive on minimal amounts of resources. It is thought that ice caves may exist on Mars – ice preserved under the surface in cave systems protected from the surface conditions.

The caves on Erebus are of special interest for astrobiology as most surface caves are influenced by human activities, or by organics from the surface brought in by animals (e.g. bats) or ground water. The caves at Erebus are high altitude, yet accessible for study. There is almost no chance of photosynthetic based organics, or of animals in a food chain based on photosynthetic life, and no overlying soil to wash down into them.

They are dynamic systems that collapse and rebuild, but persist over decades. The air inside the caves has 80% to 100% humidity, and up to 3% carbon dioxide (CO_2), and some carbon monoxide (CO) and hydrogen (H_2), but almost no methane (CH_4) or hydrogen sulphide (H_2S). Many of them are completely dark, so can't support photosynthesis. Organics can only come from the atmosphere, or from ice algae that grow on the surface in summer, which may eventually find their way into the caves through burial and melting. As a result, most micro-organisms there are chemolithoautotrophic i.e. microbes that get all their energy from chemical reactions with the rocks, and that don't depend on any other lifeforms to survive. The organisms survive using CO_2 fixation and it's hypothesized that some use CO oxidization for the metabolism. The main types of microbe found there are Chloroflexi and Acidobacteria.

Inside the ice caves the volcano's warm, wet air freezes into frost crystals that grow into different shapes, depending on how the air currents flow. Photograph by Carsten Peter.

Photo Gallery

http://www.antarcticaonline.com/photos/photoant_icecaves.htm

http://www.bbc.com/travel/story/20130211-antarcticas-volcanic-ice-caves

Videos on YouTube:

Erebus Ice Caves - 1992

NZ Scientists walk through Helo Cave, Mt Erebus, Antarctica.

Continued next page…

No. 30:
Onondaga Cave, Missouri, USA.

Details and photos: Click Here...

Videos… Video 01 Click here...

Video 02 Click here...

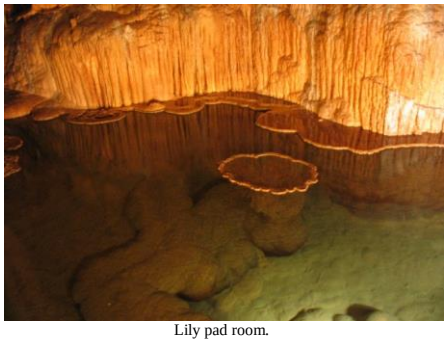
Impressive Cave

It's like descending into another world. Onondaga Cave at the state park of the same name is truly a wonder. In fact, it has been registered as a National Natural Landmark. Onondaga Cave State Park is located on the Meramec River approximately 5 miles southeast of the village of Leasburg.

Mostateparks.com. The cave and surrounding area have a long and interesting history. The land was originally settled in 1850 by George and Statirah Cresswell, who built a mill on the Meramec River near Saranac Springs. Unfortunately, a large flood destroyed Cresswell's mill in 1881. The property was purchased by William H.R. Davis. He built a new mill on the property further away from the river at what is now known as Onondaga Spring.

Bats

Mostateparks.com. The cave was discovered in 1886 behind the spring that powered the new mill by a man named Charles Christopher. After exploring the cave's tunnels for an entire day with friends, Christopher acquired the land over the cave. He developed what was known as the "Mammoth Cave of Missouri," and began a property dispute with Davis that ended up lasting over fifty years.



Lily pad room.

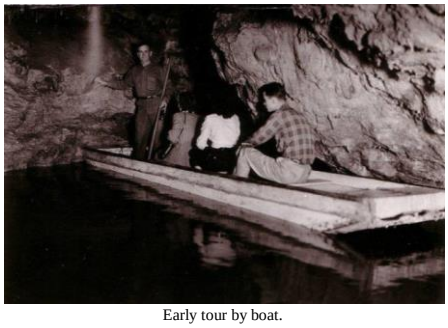
By Don Kasak from St. Louis, MO, US - Lily Pad RoomUploaded by Kbh3rd, CC BY 2.0, https://commons.wikimedia.org/w/index.php?curid=7227455. After the death of Davis in 1899, his property was sold. Three years later, Christopher and his partners also sold their portion of the land.

A St. Louis group owned by a man named George Bothe, Sr. now owned the property and formed a company with the intention of mining the cave for black onyx. After test mining, it was determined that this objective would not be financially fruitful. As a result, the cave was opened as a tourist attraction and named Onondaga after an Iroquois tribe, meaning "people of the mountain." The goal was for it to be a destination sightseeing spot during the Louisiana Purchase Exposition (World's Fair) planned in St. Louis for 1904.

visitmo.com The property changed hands for the next several years, with property disputes that included the widow of William H.R. Davis. These disagreements continued well into the 1930s, even dividing the cave in half at one point, with one half being opened as "Missouri Caverns."

Early tour group bus.

Mostateparks.com In 1938, a new entrance to Onondaga Cave was dug out, making it more accessible. The entrance, which to this day is the one used, allowed the rerouting of visitor tours. However, soon both Missouri Caverns and the nearby Cathedral Cave were closed due to decreased interest in tourism during World War II.



Early tour by boat.

Mostateparks.com The land disputes and owner changes continued until 1945, when it was acquired by Barnard Hospital. For the first time since its discovery, Onondaga now had only one owner. Charles Rice, a director of the hospital, took control of the now-joint caverns as well as Cathedral Cave.

Flickr/ Dave Thomas Finally, free of the financial and legal problems that had long plagued the caves, he began to develop them under the management of a man named Al Bryan. The entire cave became electrically lighted, and old paths were replaced with new trails, stairs and bridges.

Mostateparks.com Lester B. Dill and Lyman Riley gained ownership of the property in 1953. The once popular boat trips were stopped due to safety concerns, but the docks inside of the cavern were kept. These docks can still be seen today, along with a replica of the boats once used for entering the cave.

Flickr/ Matt Lehrer Dill had long been in the business of caverns and had operated both the Fisher and Mushroom caves at Meramec State Park. He had also developed the Saltpeter Cave into what is now the Meramec Caverns. Riley had worked at both Meramec Caverns and Onondaga Cave.

Flickr/ Dave Thomas Thus began a time of prosperity for the caverns. Celebrities visited, stories and advertising campaigns were written, and Riley and Dill made appearances on television. Riley even became an ordained minister and held church services and performed wedding ceremonies in the cave.

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Contributed by Mel Jones…

Tales from a former SAR Train Driver.

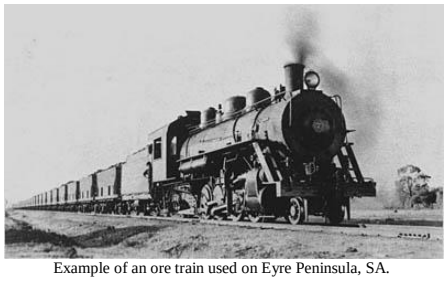
'Big Ben Morgan's Boast'.

written by Norm Hann 1980s/90s.

Big Ben Morgan, full of self-importance, was blowing his bags. "You bludgers won't catch us now!", he bragged, as the group of blokes appraised the brand-new Fairmont Casey with its twin cylinder, two stroke motor, encased in its brightly painted yellow body. This unit was a far cry from the slow old, 'Casey Jones', that the gang had used up to now. Ben persisted by adding, "You blokes won't blow the wind up our backsides with this one!", and he looked with pride at his brand new, yellow painted machine.

A Fairmont ST-2 section car used by SAR on the Eyre Peninsula.

The driver of the ore train, Kevin O'Leary agreed with him, "A potential flyer", he said, "this high compression job sure looks like she should go!"


Example of an ore train used on Eyre Peninsula, SA.

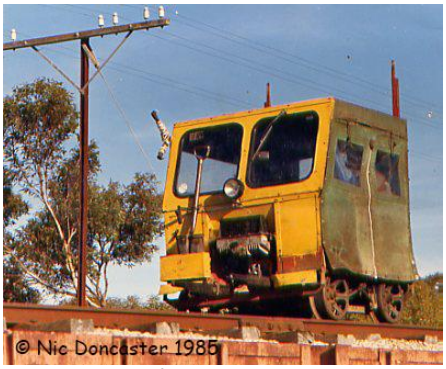
So, to prove a point, Big Ben and his boys left on the new Fairmont, just in front of the ore train. Kevin and Mudrock, took the ore train out immediately behind them, and watched with amazement as the new Fairmont Casey sped away from them. The Fairmont and its crew rapidly diminished in size as it sped away from the pursuing ore train, down the long straight grade. "We'll never catch them today.", was Kev's remark.

For years, Big Ben (the gang foreman) and his boys, had left at least a half hour before the ore train. Because, this section of the track ran dead straight and downhill for about eight miles, before leading into a tight curve around an embankment, the ore train inevitably caught up. Catch up usually occurred just before the curve, with the ore train driver repeatedly blowing long, impatient blasts on the loco whistle as the train closed in on the slow Casey. Not to be pushed, Big Ben would look back over his shoulder and crouch down to cut windage to encourage the last ounce of speed from his bouncing old Casey.

Down the eight-mile grade zipped the new Fairmont. Down thundered the ore train. Kevin spoke again to Mudrock, "Cripes! Old Ben's really getting in to it. He's clean

out of sight." It was then that Kevin saw Old Ben, his gang, and the Fairmont scattered all down the embankment. The Fairmont hadn't taken the curve. She'd shot straight on over the embankment taking the luckless gang with her.

Once Kevin eventually brought his train to a halt, he wasted no time getting back to the battered gang of men. He was greeted with their moans and groans, bruises, and lost skin; a sorry looking lot. "Couldn't catch you? Hey!", laughed Kevin, "Like bloody hell we didn't." And, the whole mob laughed.



Another example of a Fairmont Casey used on SAR lines.

Some time later this same Fairmont Casey came to its inglorious end. A real duststorm had blown up; the worst in years. Telephone communications had been cut. Kevin had the electric staff allowing his train over the next section. They proceeded to the next station, through the gail force wind despite their visibility being reduced to a minimum. It was then that Kevin thought he saw a pinpoint of light approaching so he drew it to Mudrock's attention. They both watched and sure enough it was a light and it was getting bigger; it was approaching. It was definitely getting closer. Kevin became extra concerned and checked his staff again. It was the correct one for this section. There should not have been any train opposing him.

After hurriedly lighting the old red light, Kevin sent Mudrock up the line, ahead of the stationary train madly waving the red lamp. The oncoming light was getting bigger and brighter as it was closing the gap at one hell of a bat. Mudrock stepped aside as he saw the yellow Fairmont speeding past towards his train. He yelled, "Lookout!" Next moment, there was a hell of a smash as the Fairmont rammed into the front of the stationary locomotive.

Kevin and Mudrock searched for the body of the Fairmont Casey's driver in vain; they were certain someone should be in the vacinity of the wreck. Search as they might, there definitely was no body; the Fairmont had arrived without an operator. The two confused men then dragged the wreck clear of the locomotive and line, and moved the train on to the next station.

On arrival at the next station, they were met by a very worried Big Ben. He asked Kevin, "Have you seen my Fairmont Casey?" Kevin replied, "Yairs we have, and do you know, that high compression-motor powered vehicle is now highly compressed all over. It ran into us at the last station; frightened the 'shite' out of us, it did!"

The gale force winds had blown the Fairmont Casey over the brow of the hill, while Big Ben had been working on some phone lines.

Ben queried, "How the hell can I answer a docket like that?"

***

Editor's Note: ***While looking for photos to support Norm Hann's tale for this month, I came across a website featuring some historical details about the 'Fairmont' section cars, albeit relating to NSW railways use, not SAR. Nevertheless, the vehicles would be the same apart from the states having different line gauges.*** **Mel.**

Extract was taken from the Glenreagh Mountain Railway Inc, website:
http://www.gmr.org.au/trikes_48.html

A History of Track Vehicles in NSW

Written by Mr. Greg Lee. It first appeared on the GMR website in around 2003.

The M19, MT14 and ST2 Fairmonts

In earlier sections it was explained how track maintenance gangs in NSW used Sheffield trolleys, flat top trolleys and manual tricycles to travel over their lengths, before they were provided with powered machines. As previously explained, the first powered machines were motor tricycles, introduced in about 1910 followed by quadricycles, introduced in the 1920s and Towing Inspection Cars (TICS) introduced in the 1930s.

The carrying capacity of these machines was two men. Since they were provided for the transport of fettling gangs consisting of four to five men, several machines were provided to each gang, or in the case of TICS, a trailer was towed behind the TIC.

In the 1940s the NSWGR administration apparently decided vehicles of greater seating capacity were necessary. These vehicles took

Continued next page…

Contributed by Mel Jones…

Appendage to 'Tales from a former SAR Train Driver. **'Big Ben Morgan's Boast'.** *written by Norm Hann 1980s/90s.'*

Continued from previous page…

The M19, MT14 and ST2 Fairmonts

the form of Fairmont section cars, obtained from Fairmont Railway Motors Inc. of Fairmont, Minnesota, USA.

Three different models were eventually put into service on NSWGR.

They were the M19, having a 5-8 horsepower engine., and seating 4 people, the MT14, also having a., 5-8 horsepower engine, and seating 6 people, and the ST2s having an engine of 813 horsepower and seating 8 people. The relative performance specifications of the three models are listed in Table 1.

These Fairmonts were powered by two stroke water cooled engines. These engines were unusual in that they could be run in either direction. To reverse a Fairmont, it was necessary to stop the engine, and restart It in the opposite direction. Ignition (except In the MTI4s) was provided by a trembler coil or "buzz box" similar to those used on Model "T' Ford motor cars. This had the advantage of providing a very strong spark, but the disadvantage of being powered by dry cell batteries for which there was no charging arrangement. This meant that Ignition was prone to failure due to flat batteries. Timing was provided by an adjustable timer attached to the crankcase with contact points actuated by a cam on the crankshaft. The timing range was approximately 90 degrees from retarded to advanced. This large arc of movement of the timer sometimes resulted in failure of ignition due to wires breaking off.

Preserved 'Fairmont' section cars on a rally.

The MT14 and ST2 Fairmonts had two speed gear boxes attached to the rear axle, being belt driven from the engine by a 4 Inch flat belt. The M19 was ungeared, having a 3-inch flat belt drive a pulley attached directly to the rear axle.

The drive belt also acted as the clutch, being able to be tensioned and untensioned to engage and disengage the drive.

Fairmont controls consisted of a brake lever, a clutch lever, a throttle lever, a timing lever and a mixture screw.

In this respect they were similar in design to 1920s motor cars and could be considered somewhat primitive for 1940s machines.

Fairmont engines were crank started, and had twin exposed flywheels. The fuel used was two stroke mixtures of one-part SAE 30 engine oil to eleven parts petrol. They were heavy on fuel with the 8-13 horsepower engines giving about ten miles to the gallon, and 5-8 horsepower engines giving about 20 miles to the gallon. They are therefore expensive to operate by today's standards.

Fairmont engines had no balancing weights on the crankshafts, and no elastic engine mounts, which resulted in engine vibration which sometimes produced frame cracks at engine mounting points. However. In operations the cars were surprisingly vibration free.

Fairmont M19 Inspection Car.

All Fairmonts had tapered roller bearing axle boxes. On the Ml9s and the MT14s suspension was provided by coil spring mounting of the axle boxes to the frame, which gave the cars a smooth, comfortable ride. The ST2s did not have suspension and were rough and Jarring to ride on.

Fairmonts had extremely robust 16-inch pressed steel wheels which were more than adequate for their purpose. Braking was provided by a cast Iron brake shoe on the tread of each wheel, which provided Fairmonts with excellent stopping power.

Fairmonts were not fitted with mufflers, and the ST2s were very noisy in operation.

The M19

The M19 had a frame constructed from aluminium alloy angle sections, bolted together. which resulted in a very light weight car of 270 kg.

M19 Fairmonts were allocated to some fettling gangs. They were also provided to trike mechanics who used them to systematically patrol their areas for maintaining trikes and other fettlers' machinery.

Ml9 Fairmonts were also provided to Way and Works Branch Maintenance Engineers and Signal Branch District Engineers, who used them to inspect their respective domains. For this reason, the M19s could be considered the elite of the Fairmonts. M19 Fairmonts had a drive ratio of 2.3 1. 1 They were capable of a top speed of about 53 kph on the level. They had a peak power to weight ratio of 22W/kg which Is very high, but being high geared they had little pulling power, and so were not fitted with tow bars.

They are not suitable for low speed operation, on steep grades, and so have limited use on the Glenreagh Dorrigo line. In Table 1 appear extracts from the Fairmont Ml9 promotional Bulletin published in 1946.

A former Queensland Railways Fairmont ST-2 section car converted from 42" to 24"-line gauge and is owned by the Cobdogla Steam Friends, Cobdogla, South Australia.

The MT14

The MT14 had a frame constructed from light steel channel and angle sections, bolted together. They were a medium weight car of 394kg. They were allocated to some fettling and other gangs.

MT14s had a drive ratio of 3.89:1 in low gear, and 2.25:1 in high gear. Being low geared they had excellent pulling power in low gear, limited only by the relatively low power of the engines. They were fitted with tow bars, and had a peak power to weight ratio of 15W/kg. They differed from the M19s and ST2s in that they had magneto ignition, with fixed timing, and so did not have a timing lever. This had the advantage of not requiring batteries, but the disadvantages of having fixed timing, and providing a relatively weak low speed spark. The fixed timing meant that low speed torque was lower than otherwise, and the relatively weak low speed spark meant that MT14s could be hard to start, particularly in damp weather. They were capable of a top speed of 54 kph on the level.

They are ideally suited to towing moderately loaded trailers on the Glenreagh Dorrigo line.

The ST2

The ST2 had a frame constructed from heavy steel channel and angle sections, bolted together. They were a heavy weight car of 517kg. They were allocated to bridge and extra gangs, and a few fettling gangs.

ST2s had a drive ratio of 2.31:1 in low gear, and 1.33:1 in high gear. They are much higher geared than MT14s. This gives them a very high-top speed of about 80kph on the level. Unfortunately, this means that high gear is virtually useless for pulling purposes, and even low gear is geared too high for hauling heavy loads on steep grades. To make matters worse, ST2s suffer from lack of traction under load, due to their high peak power to weight ratio of 19W/kg.

ST2s were fitted with tow bars and the 8-13 horsepower engine would "pull a mountain out" if the power could be effectively harnessed.

Continued next page…

Contributed by Mel Jones…

Appendage to 'Tales from a former SAR Train Driver. **'Big Ben Morgan's Boast'.** *written by Norm Hann 1980s/90s.'*

Continued from previous page…

The M19, MT14 and ST2 Fairmonts

During 1985-88 GMR volunteers experimented with ways of improving the performance of a ST2 on the Glenreagh Dorrigo line. The drive ratios were decreased by fitting a smaller pulley to the engine, and a larger pulley to the gearbox, and traction was improved by fitting rubber treaded rear tyres. With these modifications the ST2 was able to pull a vastly increased load on the 1 in 30s of the Glenreagh Dorrigo line. During trials there was power and traction to spare and so the load was gradually increased until finally the drive belt started slipping.

ST2s were geared too high for optimum use on steeply graded lines, and even on straight flat lines their power and speed were excessive. Without modifying their drive arrangements, the only way to get satisfactory traction from them on steep grades was to load them with suitable weights to decrease their power to weight ratio. This is not to say ST2s are of no use on the Glenreagh Dorrigo line. They have done a mighty job there in the past, and a hard working ST2 is an awesome sight and sound to witness. However successfully operating them requires considerable experience, and skill.

On the next two pages appear extracts from the M14 instruction Bulletin 555, and from the Fairmont M14 promotional Bulletin published in 1946.

The MT14 Fairmonts ~ in NSW were like the M14 car shown in the latter Bulletin. However, M14s had direct ungeared final drive, like the M19s, whereas MTI4s had a two-speed gearbox. (The "T' is thought to stand for "transmission").

	Fairmont Model		
	M19	MT14	ST2
Weight (kg)	270	390	530
Power (Horsepower)	5 to 8	5 to 8	8 to 13
Maximum RPM	1600	1600	1400
Drive Ratio, Low Gear	N/A	3.89	2.31
Drive Ratio, High Gear	2.31	2.25	1.33
Maximum Speed, Low Gear (kph)	N/A	31	46
Maximum Speed, High Gear (kph)	53	54	80
Starting Power (kW)	3.7	3.7	6.0
Peak Power (kW)	6.0	6.0	9.7
Starting Power to Weight Ratio (W/kg)	14	10	11
Peak Power to Weight Ratio (W/kg)	22	15	18

Table 1.

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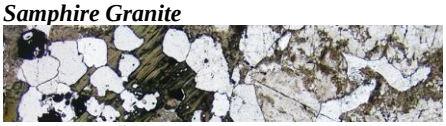
Latest advances in South Australian geoscience and resource sector news

Features

Samphire Granite



Characterisation of the Samphire granite, Hiltaba Suite, north-eastern Eyre Peninsula

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Leigh Creek mine remediation

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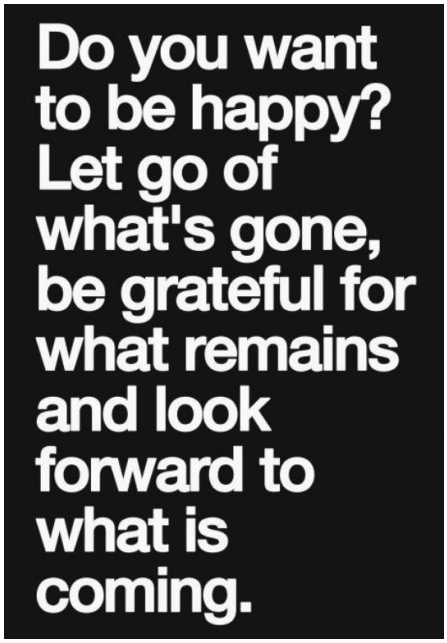

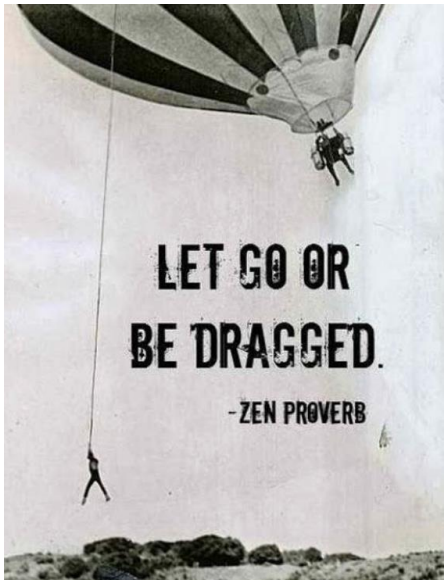

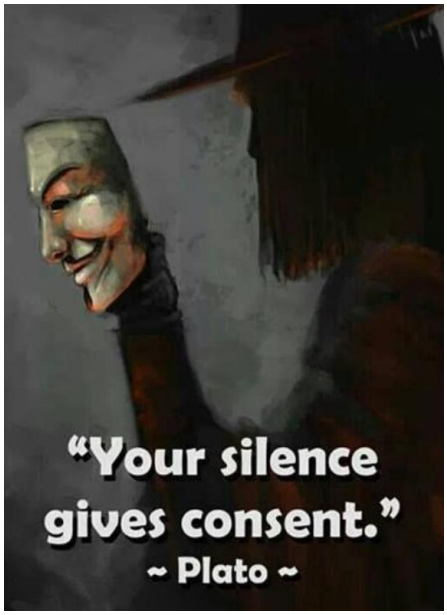

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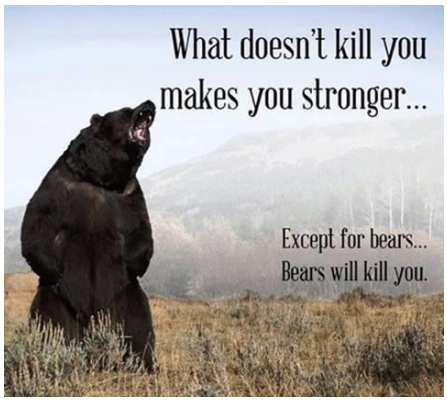
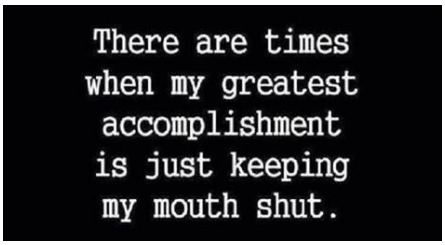
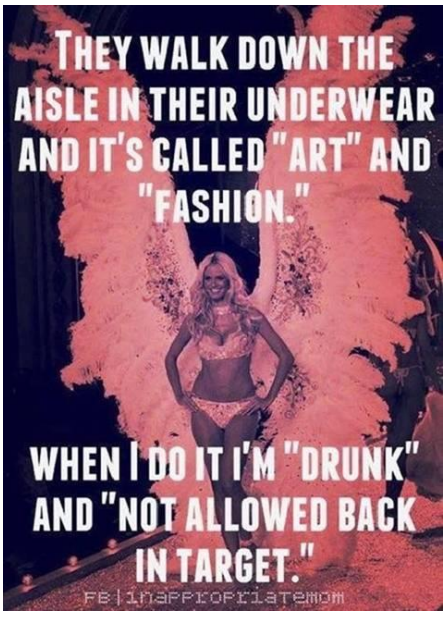
Contributed by Doug Walker…

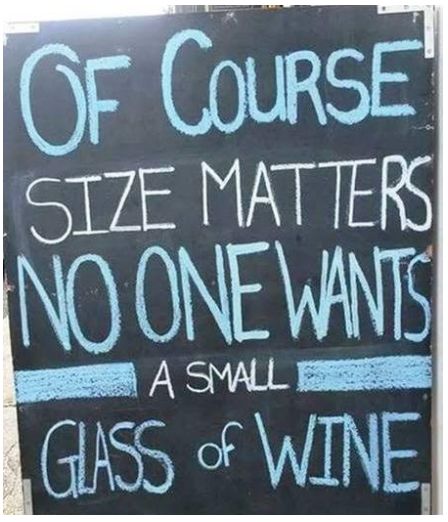
Subject: Let's Take a Break from Political Cartoons!



If there were cellphones at the Red Sea

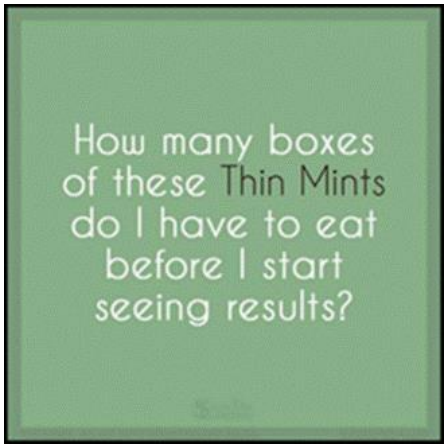


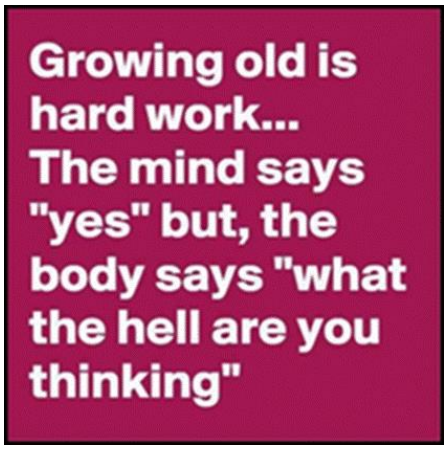


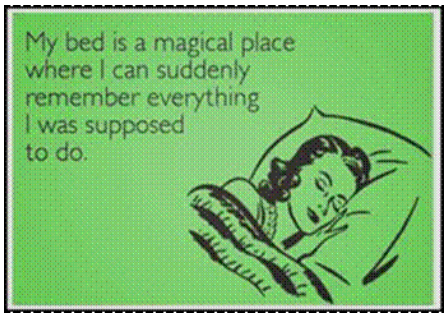


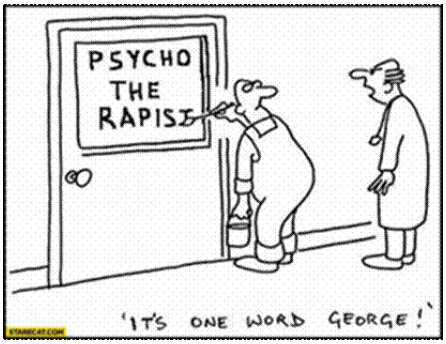
Contributed by Doug Walker…

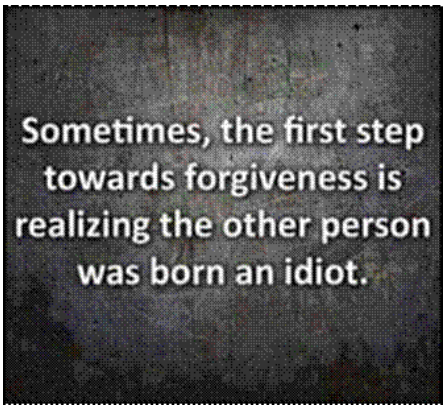
Profound Thoughts to Unravel Your Day





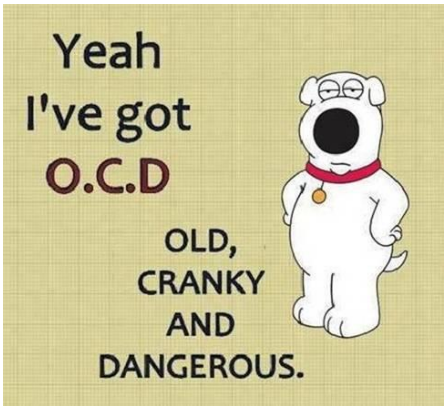


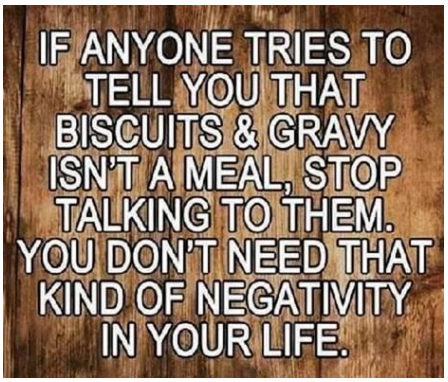




Inventive Aussie Intervention

NOTE: This safety device should stop any cyclist on the road that gets too close to a passing car with this fitted.





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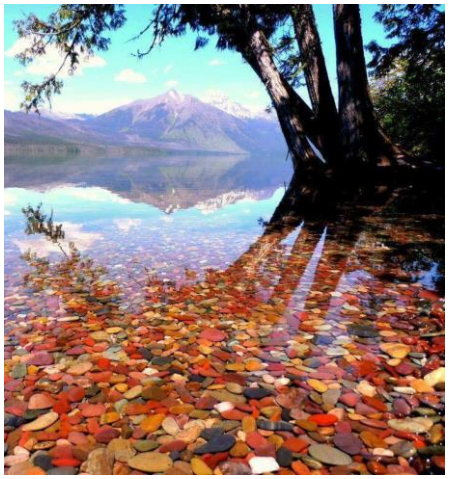
Contributed by Mike Mabbitt…

Irish Again

Contributed by Doug Walker…

Some More Great Pictures



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Members' Noticeboard

Expressions of Interest for Two New Short Courses

Several members have indicated that they would be interested in learning Wire Wrapping.

Blue Higgins, whose work was featured in the December newsletter, is happy to run a short course of 4 or 5 lessons if more people are interested. If you are, please ***contact Augie on 8265 4815 or 0433 571 887***.

We are also looking at arranging a class in Gem Tree making if anyone is interested. Betty Anderson is an excellent tutor. As above, contact Augie if interested.

***

Billboards contributed by Augie…

Useful Internet Links

2016 Australian Gem & Mineral Calendar: Click here...
Adelaide Gem and Mineral Club: Click here...
AFLACA-GMCASA: Click here...
Australian Federation of Lapidary and Allied Crafts Association (AFLACA): Click here...
Australian Lapidary Club Directory: Click here...
Australian Lapidary Forum: Click here...
Broken Hill Mineral Club: Website no longer accessible.
Enfield Gem and Mineral Club Inc: Click here...
Flinders Gem, Geology, and Mineral Club Inc: Click here...
Gem and Mineral Clubs Association of South Australia: Click here...
Lapidary World: Click here...
Metal Detectors - Garrett Australia: Click here...
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