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.
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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

May Edition 2018

"Rockzette"

Tea Tree Gully Gem & Mineral Club News

President's Report

Hi All,

Good news – the Newland Electorate Office (now occupied by the Honourable Richard Harvey MP – State Member for Newland) will continue to print the club's monthly newsletter.

Cheers, Ian.

Diary Dates / Notices

2018 Club Shows

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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Happy Birthday

Members celebrating May birthdays:

05th – Irene Kramer.
13th – Mel Jones.
19th – Margrit Rothe.

***

General Interest

Pages 2 to 4:
Augie's May 2018 Agates and Mineral Selections…

General Interest

Pages 5 & 6:
Ian's Quartz Collection Selections for May 2018…

Pages 7 to 9:
'10 Crystals with Weird Properties That Look Like Magic'…

Page 12:
The Paringa Bridge Story…

Pages 13 & 14:
The Happy Wanderer's New Zealand Tour…

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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:

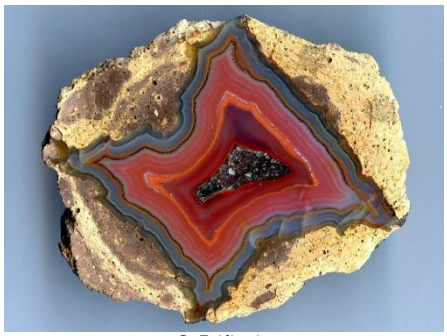
$25.00 Family	$20.00 Family Pensioner
$15.00 Single	$12.50 Single Pensioner
$10.00 Joining Fee	

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.

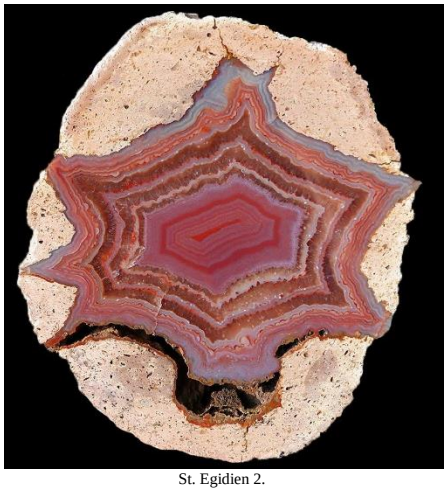
Augie's May 2018 Agate Selection – Germany (Pt. 3)

This month we check out some of the spectacular Agates from the Saxony, St. Egidien and Waldhambach regions of Germany.

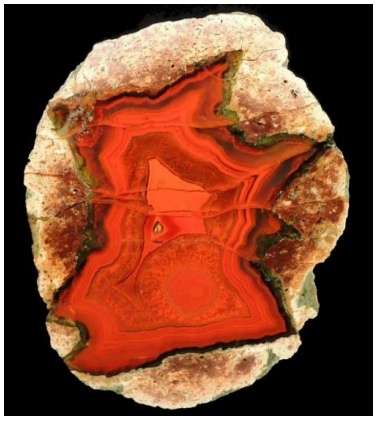
Saxony.



St. Egidien 1.

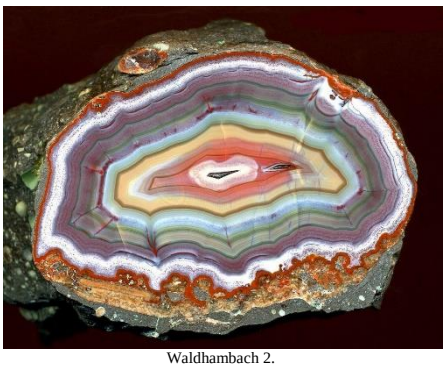


St. Egidien 2.



St. Egidien 3.

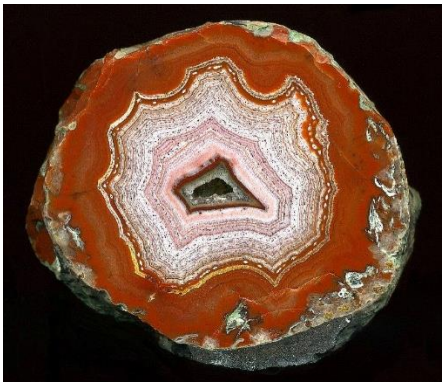
Waldhambach 1.



Waldhambach 2.

Waldhambach 3.

Waldhambach 4



Waldhambach 5.

Waldhambach 6.

Waldhambach 7

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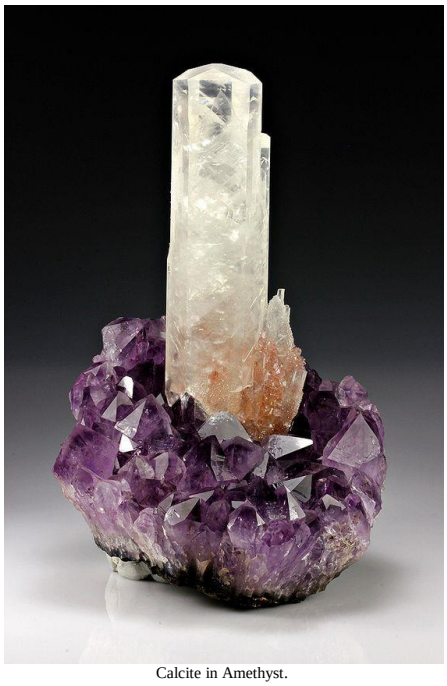
Augie's May 2018 Mineral Selections.

Calcite - Bou Azzer District, Tazenakht, Ouarzazate Province, Souss-Massa-Draa Region, MOROCCO.

Calcite & Quartz.

Augie's May 2018 Mineral Selections.
Continued…

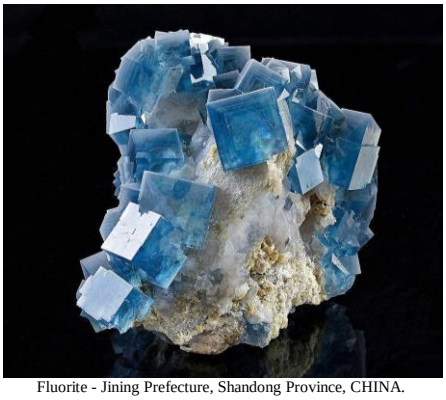


Calcite in Amethyst.

Calcite.

Dioptase - Mindouli District, DR CONGO.

Elbaite (Watermelon) Tourmaline - Santa Rosa Mine, Itambacuri, Minas Gerais, BRAZIL.



Fluorite - Jining Prefecture, Shandong Province, CHINA.

Fluorite on Ferberite - PORTUGAL.

Gold - BRAZIL (42 x 28 mm).

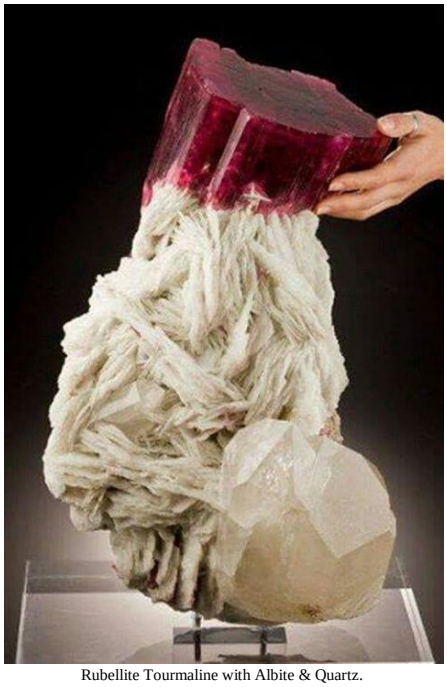
Pyrite - Ground Hog Mine, Gilman, Eagle County, Colorado, USA.

Pyrite & Quartz - Spruce Claim, Goldmyer Hot Springs, King Co., Washington, USA.

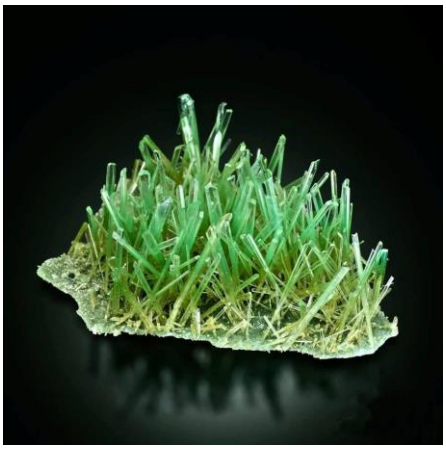
Augie's May 2018 Mineral Selection
Continued…


Pyrite, Quartz & Calcite - Aranzazu mine, Zacatecas, MEXICO.


Rhodochrosite - Wolf Mine, Betzdorf, Siegerland, GERMANY.


Rubellite Tourmaline with Albite & Quartz.

Tourmaline var. Elbaite on Quartz - Tourmaline Queen Mine, San Diego Co., California, USA.


Gypsum (Selenite) - Lubin copper mine, Lower Silesia, POLAND.

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Contributed by Augie…

Revisiting Rainbow Lattice Sunstone from the Harts Range, Australia

Jia Liu, Andy H. Shen, Zhiqing Zhang, Chengsi Wang and tian Shao

Rainbow Lattice Sunstone from the Harts Range, Northern Territory, Australia shows a rare combination of phenomena including aventurescence, adularescence and a distinctive lattice pattern caused by oriented inclusions. Electron microprobe and X-ray diffraction (XRD) analysis, combined with laser Raman spectroscopy, indicate the host mineral is orthoclase (OrAb) as previously reported in the literature. The inclusions causing the aventurescence were identified as hematite, while lattice patterns were found to consist of orangey brown platelets of hematite and black platelets of magnetite (rather than ilmenite as previously reported).

Scanning electron microscopy energy dispersive spectroscopy (SEM-EDS) analysis of the magnetite showed that it is composed of very thin platelets containing only Fe and O, without any Ti. The presence of magnetite is consistent with the inclusions' attraction to a magnet, as well as testing with a vibrating sample magnetometer, which provided a ferromagnetic response.

Reprinted from *The Journal of Gemmology*, 36(1), 2018, pp. 44-52.

https://gem-a.com/news-publications/publications/journal-of-gemmology


Figure 1.


Figure 2.

Rainbow lattice sunstone displays conspicuous colourful patterns that are produced by light reflecting at a specific angle from inclusions. ***Figure 1****: The gold ring contains a 6.17 ct sunstone and* ***Figure 2****: the polished fragment weighs 15.00 ct. Courtesy of Rainbow Lattice: photo by Jeff Scovil.*

***

Contributed by Ian Everard…

Ian’s Quartz Collection Selections for May 2018.

1905 Quartz var. Amethyst, Rio Grande du Sol, BRAZIL.

2371 Quartz Japan Law Twins, Gunyahang Mine, NEPAL.

0792 Quartz var. Amethyst Sceptre, Cerro de la Concordia, Vera Cruz, MEXICO.

1791 Quartz var. Amethyst, Guerero, MEXICO.

0017 Quartz var. Amethyst, SOUTH AFRICA

Contributed by Ian Everard…

Ian’s Quartz Collection Selections for May 2018.

Continued…

0034 Quartz var. Amethyst, Camfield Station, Northern Territory, AUSTRALIA.

2373 Quartz Scepters with Fluorite, Nikolaevskiy Mine, Dal'negorsk, Kavalerovo Mining Region, RUSSIAN FEDERATION.

2372 Quartz Psuedomorph of Scalenohedral Calcite, Crystal Cave, Ouray County, Colorado, USA.

2166 Quartz var. Amethyst, Anahi Mine, Santa Cruz, BOLIVIA.

0182 Quartz var. Amethyst, Dalnegorsk, RUSSIA.

Source – Geology Page, Facebook…

http://www.geologypage.com/2018/02/10-crystals-weird

10 Crystals with Weird Properties That Look Like Magic

1. Fluorite

Forget rubies, garnets, and sapphires … fluorite may be the world's most colourful mineral, because of the enormous range of brilliant and even iridescent colours it displays. The funny thing is, pure fluorite crystals are transparent.

A crystal's colour is dictated by the way light interacts with the chemicals in it, and by how these are bonded in an orderly structure, or lattice. Any impurities that work their way into fluorite's lattice can alter its apparent colour. For example, manganese ions turn it orange. Structural defects within the lattice, known as colour centres, have a similar effect.

Fluorite's hallmark deep purple hue is the result of a small number of fluoride ions being permanently forced out of their lattice position by irradiation or heating. When they move an electron is left behind in each hole. When light hits the crystal, it is absorbed and re-emitted by these electrons, producing the colour we see.

Some fluorite specimens even have bands of different colours.

Fluorite forms in hydrothermal veins in the Earth's crust and in cavities in sedimentary rocks. Over the centuries, these fissures are constantly opening and closing, sometimes cutting off the fluids needed for fluorite to form. It's the subtle changes in the chemistry of these fluids that causes colour zoning in the crystals as they grow.

2. Selenite

Buried beneath the Sierra de Naica mountain in Chihuahua, Northern Mexico, the Cueva de los Cristales (Cave of Crystals) is home to the largest crystals on planet Earth. Gargantuan, milky white beams of selenite, some as long as 11m and more than 1m wide, criss-cross the underground chamber. "There is no other place on the planet where the mineral world reveals itself in such beauty," says Juan Manuel García-Ruiz of the University of Granada in Spain, a geologist who studies crystals.

The crystals were discovered in 2000 by two brothers excavating tunnels in the Naica mine, in search of fresh reserves of zinc, silver, and lead.

The cavity, which measures about 10m x 30m, had previously been flooded with heated water. Only when the miners started pumping it out were the monumental structures revealed.

In 2007, García-Ruiz and his team figured out how the crystals were able to grow so big.

Around 26 million years ago, volcanic activity beneath the mine filled the cave with hot water rich in the mineral anhydrite. Anhydrite is stable above 58˚C, but as the underlying magma cooled it dissolved into the surrounding water.

Very slowly, over hundreds of thousands of years, its chemical components reassembled as gypsum, which can take the form of crystals. Large elongate crystals of gypsum are known as selenite.

Within the Cueva de los Cristales, the temperature has consistently hovered around the magic 58 ˚C mark ever since.

Another crystal cave, discovered closer to the surface in Naica, also contains selenites. They are still spectacular at about 1m in length, but not as large as those of the Cueva de los Cristales, because this cave cooled faster.

Iceland spar is a special form of calcite.
(Credit: Natural History Museum, London/SPL).

3. Iceland Spar

The Icelandic sagas of the 10th century record the details of Viking voyages. They describe a mysterious *'sunstone'*, which Scandinavian seafarers used to locate the Sun in the sky and navigate on cloudy days.

The identity of the stone stumped scholars for centuries, but in 2011 a convincing candidate was put forward: Iceland spar.

This clear variety of calcite is common in Nordic regions. It bends light by two different amounts, producing a double image (see the picture).

This property is called birefringence. It's caused by discrepancies in the binding forces that hold the atoms of the crystal together. The forces are stronger in some directions than others.

When light passes through calcite crystals, it is split into two rays. The asymmetry in the crystal's structure causes the paths of these two beams to be bent by different amounts, resulting in a double image.

How did that help the Vikings? Researchers studied a piece of Iceland Spar discovered aboard an Elizabethan ship that sunk in 1592. They found that moving the stone in and out of a person's field of vision causes them to see a distinctive double dot pattern that lines up with the direction of the hidden Sun.

Quartz is one of the most common crystals on Earth.
(Credit: Sinclair Stammers/SPL).

4. Quartz

Quartz also does interesting things because of its structural asymmetries.

If you squeeze a crystal of quartz, it generates a tiny electric current. The pressure on the crystal's surface forces ions within it to move out of position, upsetting the overall charge balance and turning the crystal into a tiny battery, with oppositely-charged faces.

The phenomenon is known as the piezoelectric effect, and it also works in reverse. Pass an electric current through a quartz crystal, and it will squeeze itself.

Quartz watches use tiny slivers of cut quartz as oscillators to keep precise time. Electricity from the watch battery causes the crystal to oscillate thousands of times per second, and circuits in the watch convert these oscillations to a once-per- second digital beat.

Quartz was also central to our developing understanding of crystals. In 1669, Danish scientist Nicolas Steno noticed that quartz crystals, irrespective of where found on Earth they were found, always showed the same angles between similar crystal faces.

By the turn of the 19th Century, French crystallographer René Just Haűy had extended this idea. He realised that the same rules underlie the shapes and angles of all crystals.

We understand that the shapes of crystals are an expression, on a grand scale, of the orderly lattices in which their constituent atoms are arranged.

Source – Geology Page, Facebook…
Continued…

Galena is both a source of lead, and the makings of a radio. (Credit: Martin Land/SPL)

5. Galena

Galena is the most common lead-rich mineral, and an important ore of both lead and silver. But, that's just its day job.

Galena is a semi-conductor, meaning that it will conduct electricity under certain circumstances. In metals, free electrons flow as electricity when a voltage is applied. In galena – a non-metal – small crystal impurities or imbalances in its chemical proportions create a situation where, if electrons can be excited enough, they can be ripped from their atoms and made to flow.

In a crystal set, a fine metal wire known as a "cat's whisker" rests delicately on the surface of a galena crystal. This combination allows current to pass easily in one direction, but not the other. This converts the oscillating radio waves picked up by an antenna into an electric signal that can be transformed into sound by speakers.

Not every position on the crystal will perform, so fiddling with the "cat's whisker" to find a sweet spot takes patience and skill.

Diamond is the hardest known natural material on earth.

6. Extra-terrestrial carbon crystals

Diamond is the hardest known natural material on Earth. It is the industry standard for grinding, cutting, drilling, and polishing jobs.

However, two new kinds of ultra-hard carbon crystals, found embedded in a Finnish meteorite in 2010, put the precious diamond stone to shame.

The Haverö meteorite crashed to Earth in 1971. When researchers used diamond paste to polish a slice, they noticed something extraordinary: small pockets of material emerging in relief from the surface. When they analysed the stubborn crystals, they discovered two completely new forms of carbon.

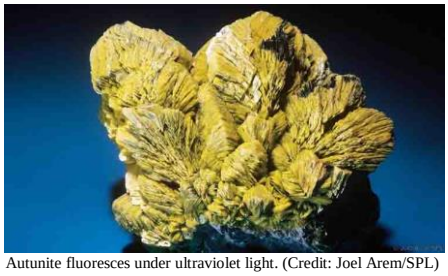
Diamond is so hard because the carbon atoms inside it are arranged in a tetrahedron-shaped lattice that is immensely strong. In Haverö, the researchers found crystalline carbon arranged in a rhombohedral lattice. This type of diamond was predicted to exist decades ago but had never been seen in nature.

The second substance turned out to be a totally new kind of crystalline carbon, which the researchers call "an intermediate between graphite and diamond".

Graphite, like diamond, is made up entirely of carbon atoms. However, its atoms are arranged in honeycomb-like sheets. The sheets are only weakly attracted to each other, making it soft and slippery.

When the meteorite entered Earth's atmosphere, the researchers think pressure shocks and intense heat fused sheets of graphite together, much like the way labs make artificial diamonds.

Unfortunately, the crystals are so small that no-one has been able to test the limits of their hardness, nor compare them with the artificial, ultra-hard diamonds, lonsdaleite and boron nitride.



Autunite fluoresces under ultraviolet light. (Credit: Joel Arem/SPL)

7. Autunite

Autunite is a mineral that the big kid in everyone can get excited about. Its tablet-shaped crystals look like lurid yellow-green scales; its uranium content makes it radioactive; and – the icing on the cake – it fluoresces.

When ultraviolet light shines on an autunite crystals, it imparts energy electrons within the crystal's uranium atoms. Each excited electron jumps momentarily away from the nucleus of its atom, then falls back.

When the electrons jump back, they release bursts of visible light. The collective effect makes autunite appear to glow green.

Fluorescent minerals stop glowing when the ultraviolet light source is removed. Other minerals are phosphorescent: the electrons remain in an excited state for longer, so phosphorescent minerals continue to glow for a while even after the light is turned off.

Give a sugar crystal a hard whack and it glows blue. (Credit: Ted Kinsman/SPL)

8. Sugar

Want to see a crystal glow, but don't have access to a mineral library? No problem.

Get yourself some sugar cubes or polo mints, go to a pitch-black room, and use the bottom of a glass to smash them to pieces. You should see a fleeting faint blue glow emanate from the sugary treats. This is called triboluminescence.

Literally meaning "rub light", it was first noted by 17th Century polymath, Francis Bacon. Later, Robert Boyle observed that: "hard sugar nimbly scraped with a knife would afford a sparkling light".

Centuries later, quite how sugar can be triboluminescent is still quite a mystery.

Current theories postulate that when sugar crystals are scraped, fractured or crushed, their structural asymmetry encourages tiny piezoelectric fields to form. This separates positive and negative charges within the crystal, and when these changes recombine, a spark flies. Then, nitrogen molecules trapped within the crystals absorb this energy and luminesce, much as they do during a lightning storm.

If that's true, triboluminescence is almost literally a storm in a teacup.

The spines of this sea mouse (Aphrodita sp.) are photonic. (Credit: James King-Holmes/SPL)

9. Biophotonic crystal

Photonic crystals are tiny repeating structures, each about a billionth of a metre across. They can control and manipulate how light flows.

Depending on the angles of its faces, a photonic crystal will only allow certain wavelengths of light through and blocks all the others. This determines its colour.

9. Biophotonic crystal *Continued…*

The blocked wavelengths are called "photonic band gaps". Wavelengths near these band gaps tend to scatter and interfere with one another. This is what creates the vivid colours and striking iridescence of some insects, particularly butterflies and beetles, whose colours appear to change depending on the angle they're viewed from.

Humans can make simple photonic crystals from synthetic polymers. We use them to create things like reflective coatings for sunglasses.

If we could only duplicate the most complex photonic structures – like those seen in beetles, butterflies, bees, and spiders – we could use them to improve everything from fibre-optic technologies to solar cells.

So far, engineers have struggled to build precisely-organised three-dimensional structures on usable scales. However, new research into the way Biophotonic crystals take shape in insects offers some promising pointers.

Snow-like ice crystals in the caves of Mount Erebus.
(Credit: Chadden Hunter/NPL)

10. Volcanic ice crystals

Mount Erebus in Antarctica is the most southernmost active volcano in the world. Dotted around its summit is a network of ice caves, which harbour fragile ice formations that occur nowhere else on the planet.

The labyrinth of passages is carved into the snowpack by hot gases from the volcano, which seep out through the cracks and fissures in the underlying rock. Within the caves, the warm, steamy air from the volcano hits the frigid walls, whereupon the moisture freezes into intricate, feathery shapes, guided by the air currents.

The resulting crystals look like clusters of snowflakes.

Craig Cary of the University of Waikato in New Zealand has spent time in the caves and was struck by the delicacy of the ice formations. "They hang down maybe half a metre from the ice ceiling, and it only takes the wind generated by a slowly passing body underneath to cause them to fall," he says.

The crystals are an example of hoarfrost, which is formed when moisture condenses and freezes directly onto objects.

When ice grows slowly, as it does in liquid water, it forms solid hexagonal crystals. But if the water vapour is particularly thick, and there is space to grow, the ice will instead grow into the hexagonally symmetrical branching forms seen at Erebus.

NOTE: The above post is reprinted from materials provided by BBC Earth. The original article was written by Ceri Perkins.

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Extracted on Facebook from: **Geology**

Enormous Crystal Geode Discovered in Spain

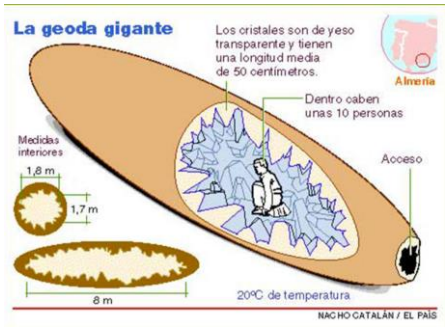
A gigantic cave of crystals has been discovered in an old silver/lead mine in Spain.

The geode occupies a space of 10.7 m^3 (8m long by 1.8m wide by 1.7m average height) and is located at a depth of 50m in the Pilar de Jaravia lead mine, in the Sierra del Aguilón, in the municipality of Pulpi, coinciding with the sea level, 3km from the coast.

The geode, which is eight metres (26ft) long and crammed full of gypsum prisms, has been under police guard to prevent souvenir hunters from raiding the extraordinary natural phenomenon.

The geologist who announced the find, Javier Garcia-Guinea, wants to turn the site into a tourist attraction. He said that up to 10 people could sit inside the geode – an object normally small enough to hold in your hands.

"Bending your body between the huge crystals is an incredible sensation," he said. "When I was young I dreamt of flying, but never to go into a geode internally covered with transparent crystals."



Rumours of the existence of a giant gypsum geode had been circulating among mineral collectors since December. But it was only in May that Javier Garcia-Guinea, from the Spanish Council for Scientific Research (CSR) in Madrid, finally managed to track down the cave.

"The crystals are absolutely transparent and perfect," he said. The geologist has searched the international literature and can find no other object to compare in size.

The crystals of gypsum – hydrous calcium sulphate – are about half a metre in length.

The giant geode may have formed at the same time as a geological event called the Messinian salinity crisis.

At this time about six million years ago the Mediterranean Sea evaporated, depositing thick layers of salts. The same, salt saturated fluids could have filled up the Spanish geode which lies near the cast. The drying out of the Mediterranean was probably caused by a restriction in the straits of Gibraltar, the sea's only connection with the rest of the Earth's oceans.

All photos courtesy of Javier Truebamsf.

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

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37. Hato Cave, Curacao.

See Hato Cave website:
http://curacaohatocaves.com/

Watch Video: Hato Cave, Curacao...

The Hato Caves is located on the north side of the island and only two minutes from the International Airport of Curacao.

The Hato Caves being more then 200.000 years old is the biggest and most prominent cave on the island. Since 1991 the Hato Caves were opened officially to the public after undergoing an intensive upgrading by the Government to make it accessible by foot. Nowadays the Hato Caves can be considered the most beautiful and public friendly cave of the island.

Curacao is formed in layers going up in height called terraces. While most caves are to be found in the second terrace, the Hato Caves are uniquely found in the third terrace of the island.

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38. Ajanta Caves, India.

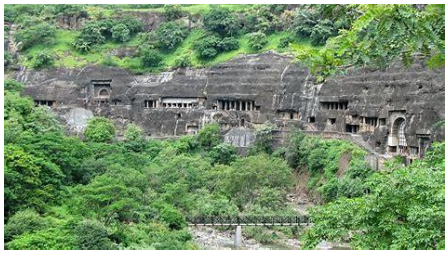
Watch Video: Ajanta Caves, India...

Details from Wikipedia…

Panoramic view of Ajanta Caves from the nearby hill.

The **Ajanta Caves** are 29 (approximately) rock-cut Buddhist cave monuments which date from the 2nd century BCE to about 480 CE in Aurangabad district of Maharashtra state of India. The caves include paintings and rock-cut sculptures described as among the finest surviving examples of ancient Indian art, particularly expressive paintings that present emotion through gesture, pose and form.

According to UNESCO, these are masterpieces of Buddhist religious art that influenced the Indian art that followed. The caves were built in two phases, the first phase starting around the 2nd century BCE, while the second phase was built around 400–650 CE, according to older accounts, or in a brief period of 460–480 CE according to later scholarship. The site is a protected monument in the care of the Archaeological Survey of India, and since 1983, the Ajanta Caves have been a UNESCO World Heritage Site.



The Ajanta Caves constitute ancient monasteries and worship-halls of different Buddhist traditions carved into a 250-feet wall of rock. The caves also present paintings depicting the past lives and rebirths of the Buddha, pictorial tales from Aryasura's *Jatakamala*, and rock-cut sculptures of Buddhist deities. Textual records suggest that these caves served as a monsoon retreat for monks, as well as a resting-site for merchants and pilgrims in ancient India. While vivid colours and mural wall-painting were abundant in Indian history as evidenced by historical records, Caves 16, 17, 1 and 2 of Ajanta form the largest corpus of surviving ancient Indian wall-painting.

The Ajanta Caves are mentioned in the memoirs of several medieval-era Chinese Buddhist travellers to India and by a Mughal-era official of Akbar era in the early 17th century. They were covered by jungle until accidentally "discovered" and brought to Western attention in 1819 by a colonial British officer on a tiger-hunting party. The Ajanta Caves are located on the side of a rocky cliff that is on the north side of a U-shaped gorge on the small river Waghur, in the Deccan plateau. Further round the gorge are several waterfalls, which, when the river is high, are audible from outside the caves.

With the Ellora Caves, Ajanta is the major tourist attraction of Maharashtra. They are about 59 kilometres (37 miles) from the city of Jalgaon, Maharashtra, India, 60 kilometres (37 miles) from Pachora, 104 kilometres (65 miles) from the city of Aurangabad, and 350 kilometres (220 miles) east-northeast from Mumbai. They are 100 kilometres (62 miles) from the Ellora Caves, which contain Hindu, Jain and Buddhist caves, the last dating from a period similar to Ajanta. The Ajanta style is also found in the Ellora Caves and other sites such as the Elephanta Caves and the cave temples of Karnataka.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39. St Beatus Cave, Switzerland.

Website: http://www.beatushoehlen.swiss/en/

The **St. Beatus Caves** are an extensive cave network located in **Switzerland** right above Lake Thun. a Legend has it that Saint Beatus killed a dragon who was living in the caves (around the 9th century), there are very impressing waterfalls next to the old Monastery

Watch Video:
St Beatus Cave, Switzerland (1)...

St Beatus Cave, Switzerland (2)...

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Rocks

Extract from National Geographic…
https://www.nationalgeographic.com/science/earth/inside-the-earth/rocks/

ETNA'S FIREWORKS - Italy's Mount Etna provides a vivid image of one of the birthplaces of igneous rock during a night eruption. Igneous rock forms when magma cools and solidifies. (Lava is magma that has reached the Earth's surface.) Etna also shows off the etymology of igneous, from the Latin word for fire. PHOTOGRAPH BY CARSTEN PETER

Rocks - They form within the Earth and make up a large part of our planet.

Rocks are so common that most of us take them for granted—cursing when we hit them with the garden hoe or taking advantage of them to drive in tent pegs on summer camping trips.

What Is a Rock?

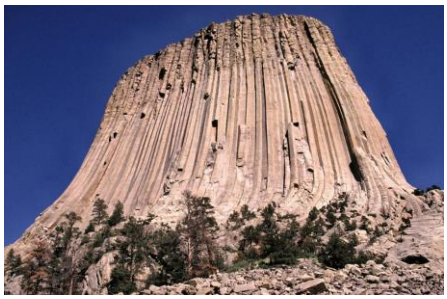
To geologists, a rock is a natural substance composed of solid crystals of different minerals that have been fused together into a solid lump. The minerals may or may not have been formed at the same time. What matters is that natural processes glued them all together.

Types of Rocks

There are three basic types of rock: igneous, sedimentary, and metamorphic.

Igneous Rocks

Extremely common in the Earth's crust, igneous rocks are volcanic and form from molten material. They include not only lava spewed from volcanoes, but also rocks like granite, which are formed by magma that solidifies far underground.



DEVILS TOWER, WYOMING - Known as an igneous intrusion, the 1,267-foot-tall (386-meter-tall) Devils Tower in Wyoming formed when molten rock intruded into the existing rocks. At first the formation wasn't visible, but as wind and water began to erode the sedimentary rock surrounding the tower faster than the harder igneous rock, Devils Tower was born. PHOTOGRAPH BY JOHN G. WILBANKS

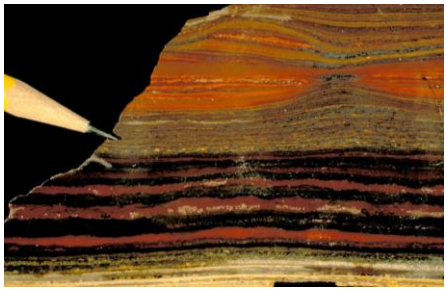
Typically, granite makes up large parts of all the continents. The seafloor is formed of a dark lava called basalt, the most common volcanic rock. Basalt is also found in volcanic lava flows, such as those in Hawaii, Iceland, and large parts of the U.S. Northwest.

Granite rocks can be very old. Some granite, in Australia, is believed to be more than four billion years old, although when rocks get that old, they've been altered enough by geological forces that it's hard to classify them.

Sedimentary Rocks

Sedimentary rocks are formed from eroded fragments of other rocks or even from the remains of plants or animals. The fragments accumulate in low-lying areas—lakes, oceans, and deserts—and then are compressed back into rock by the weight of overlying materials. Sandstone is formed from sand, mudstone from mud, and limestone from seashells, diatoms, or bonelike minerals precipitating out of calcium-rich water.

Fossils are most frequently found in sedimentary rock, which comes in layers, called strata.

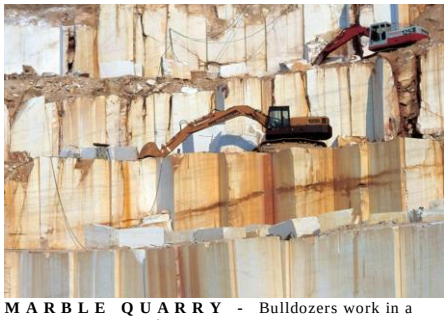


WITTENOOM IRON FORMATION - A small section of the Wittenoom Iron Formation in Western Australia highlights how sedimentary rocks are laid down in layers. The sediments in this photo curve near the ends of chert pods. Chert—a silica-based rock—occurs in limetone. Paleontologists know chert as a good place to look for fossils. PHOTOGRAPH BY SOCIETY FOR SEDIMENTARY GEOLOGY

Metamorphic Rocks

Metamorphic rocks are sedimentary or igneous rocks that have been transformed by pressure, heat, or the intrusion of fluids. The heat may come from nearby magma or hot water intruding via hot springs. It can also come from subduction, when tectonic forces draw rocks deep beneath the Earth's surface.

Marble is metamorphosed limestone, quartzite is metamorphosed sandstone, and gneiss, another common metamorphic rock, sometimes begins as granite.



MARBLE QUARRY - Bulldozers work in a marble quarry in Thásos, Greece. The Earth's heat and pressure alter limestone into marble, which can range in color from black to white. The ancient Greeks recognized marble's durability, using it to build the Parthenon in Athens. Marble, a metamorphic rock, forms when limestone re-crystallizes. PHOTOGRAPH BY CUBOIMAGES SRL/ALAMY

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The Paringa (SA) Bridge Story

By Jackson Wickham – January 30th, 2017

At 1am on the morning of Monday, January 31st, 1927 at Adelaide Railway Station a Steam Locomotive, Mikado no. 702, started off from one of the platforms with a train full of dignitaries, bound for Renmark. This was the first train ever to be destined for the small river port near the South Australian Border. For previously the railhead was at Paringa, an even smaller, but older, settlement on the southern side of the river near Renmark. The river had been the only stumbling block to making Renmark a big port was that there was no means of crossing the river…until now.

The last attempt at a rail line was to come right down Renmark Avenue to Holden's Corner where it would've met the river where the Lion is on the Renmark Riverfront. Creating a shorter distance between the Paddle Steamers and the Trains than that of Morgan and Echuca with their big multi-story wharves. Renmark could've become a main port along the river. On October 12th, 1920 the P.S. Industry arrived at Renmark, mooring just down from the Town Wharf with the Governor Weigall. At the great ceremony on what is now the grounds near the Lion in the Taylor Memorial Gardens the 'first sod of the Renmark-Paringa Railway' was turned. Most of the town turned out to watch the ceremony. –however, the line to the riverfront was never completed due to the envisaged 'loudness of the engines all day and night.'

As the train charged on through the early hours of the morning. The Townspeople of Paringa and Renmark were hanging signs around the town and decorating the Renmark Railway Station and the New Bridge at Paringa.

6 Miles (9.6km) out of Paringa there was a siding known as Wonuarra Siding. There, the Train met a group of people, headed by Mr. J. Heilmann, who decorated the Locomotive in Pepper Tree, Corn and Eucalyptus Branches, along with a big sign across the front of the Boiler reading: "Renmark's First Train".

On-board the train were the Attorney-General; Mr. W. J. Denny, The General Superintendent of Railways; Mr. J. E. Walton, Senators; Sir Henry Barwell along with Messer's Chapman, Hoare, Foster, Langdon, Parsons. M.H.R.'s; Hon. J. Cowan, T. McCallum and M.L.C. Butler, McIntosh, McMillan and M.P; G. J. Smith.

The ride from Adelaide was described as "Fairly warm – but not intolerable."

As the Train arrived at Paringa it was greeted by hundreds of people waiting for their arrival. As well as the hundreds of people, over 20 cars were also present. All waiting for their chance to cross the new bridge over the river. However. – one thing still had to be attended to. – The train slowly ground to a halt near the Southern side of the new Bridge. – alongside of what is today the Renmark/Paringa Community Museum.

The dignitaries exited the train to meet at the edge of the Bridge. Where speeches were made and finally the Attorney-General; Mr. W. J. Denny drove in the last Railway spike to complete the line to Renmark.

He was then presented with a Souvenir in the shape of a nickel spike by the chairman of the Renmark Railway Committee. He then replied by saying he was very pleased that there was no mishap while he drove the final spike in and that he thought of returning to Town (Adelaide) and asking Mr. Webb (SA Railways Commissioner) for a job driving spikes on the Renmark to Barmera Line!!!

The train then moved on to Renmark, across the new Bridge, followed by the first car, owned and driven by the Paringa Council's Chairman, who was then followed by the District Clerk.

Upon arrival to Renmark, 1.8 Miles (3km) along the line from the Bridge. The train was greeted by the entire population of the township. As all the children were given a day off to see the first train come into town. Lining the Station grounds were the many flags of the nationalities that made up Renmark.

The dignitaries were then treated to lunch and a performance at the Renmark Hotel before heading home on the train, departing Renmark at 10:30pm.

The New Bridge, named the Paringa Bridge, is 568ft. (173.1 meters) long, consisting of six conjoined spans, five fixed and one movable. The lift span was built on the southern side of the Bridge as this is the deepest water in that stretch; being on the outside of the bend. The Lift span is 78ft. (23.7 metres) long and has a 44ft. (13.4 metres) rise. The bridge can lift to full height in 1½ minutes The Bridge was originally designed for Rail traffic only. However, the slowness of the old ferry and especially when the ferry capsized with a load of Horses, killing one man, it was decided to incorporate two cantilever roadways on either side of the Bridge structure stretching 12ft (3.6 metres) each way. The rails were 60 Lbs. (27.2kg per yd. (90cm)) that sat on Jarrah Sleepers.

The Paringa Ferry was transferred to Lyrup after the Bridge's completion.

The total cost of the Bridge was £109, 400 ($181,464) - £23,300 ($38,648) of which was contributed by the Roads & Bridges Dept.

The First Paddle Steamer to pass through the Paringa Bridge was the P.S. Gem on Tuesday, October 12th, 1926. Although the Bridge was not completed at that time.

The PS Marion built in 1897 passed under the Bridge on her way downstream in the late 1920's early 1930's.
Note: the people against the railing and on top of the lift span!

Of interest, The Mikado No. 702 is still around, having survived being scrapped, she is now on display in the National Railway Museum at Port Dock Station in Adelaide.

Happy 90th Birthday to the Paringa Bridge from the crew and I at the P.S. Industry!

Jackson Wickham Renmark Paringa Council Destination Riverland

Renmark Renmark/Paringa Community MuseumRenmark Tourism

River Murray SA ABC Riverland

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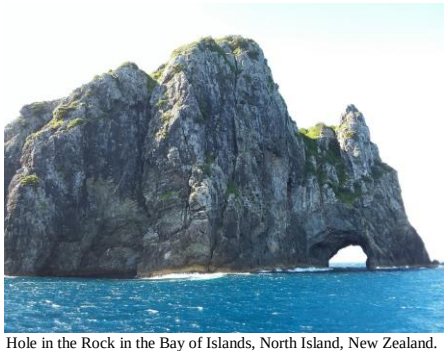
The Happy Wanderers – Touring the North Island, New Zealand.

Only a few days on the trip but have seen already a lot. Good crowd, only 20, and a huge bus. Accommodation great, food fantastic, so all good. Will definitively need to go on diet when we get back. Weather so far couldn't have been better.

Cheers Gerry and Ellen.
07-04-2018

Bay of Islands, North Island, New Zealand.



Hole in the Rock in the Bay of Islands, North Island, New Zealand.

Hey, ewe to young ewes, why are ewe looking at me like that?

GVR Steam Train Experience.

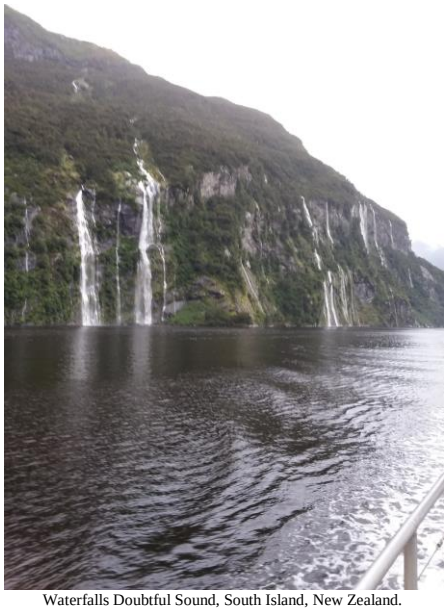
Skyline Gondola and Restaurant, Queenstown, South Island, NZ

The Happy Wanderers – Touring the South Island, New Zealand.

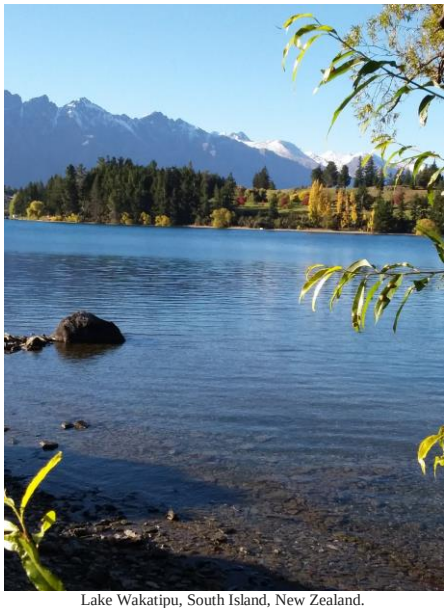
What a great couple of days. Queenstown, and an overnight boat trip to Doubtful Sound. Rained the whole night and the waterfalls the next morning were awesome.

Cheers Gerry and Ellen.
07-04-2018

Part of a long white cloud.



Waterfalls Doubtful Sound, South Island, New Zealand.



Lake Wakatipu, South Island, New Zealand.

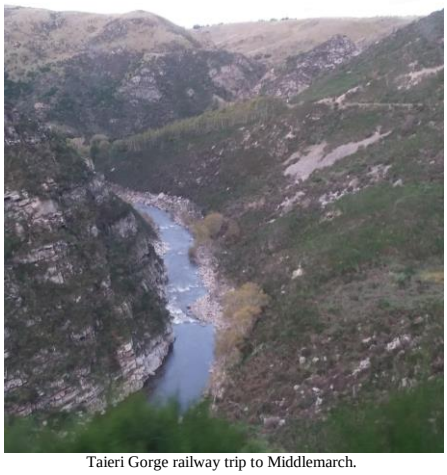
Panorama of Queenstown, Lake Wakatipu, and historic TSS Earnslaw from the top of the gondola, South Island, New Zealand.

The Happy Wanderers – Touring the South Island, New Zealand. *Continued…*

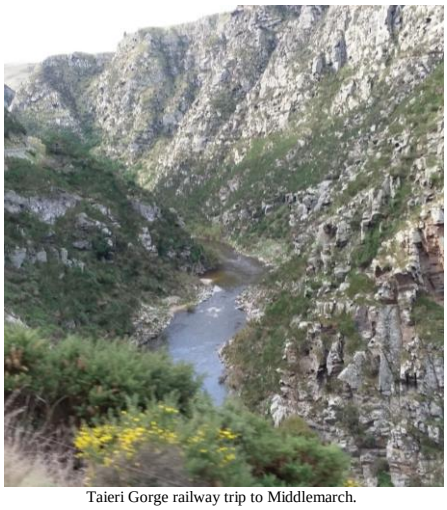
Contributed by 'The Happy Wanderers', Gerry and Ellen…

Back in Christchurch again for our flight home to Adelaide. So, here are a couple of more pictures from our last few days here in lovely New Zealand.
Cheers Gerry and Ellen, 'The happy wanderers'. 19-04-2018

Dunedin Railways, New Zealand – Taieri Gorge railway trip to Middlemarch.



Taieri Gorge railway trip to Middlemarch.

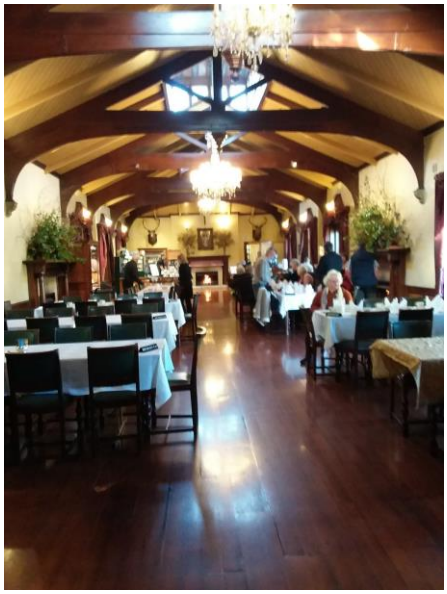


Taieri Gorge railway trip to Middlemarch.

Taieri Gorge railway trip to Middlemarch.

World's steepest residential street – Baldwin Street, Dunedin, NZ.

Larnach Castle and Gardens, NZ.



Ballroom, Larnach Castle and Gardens, NZ.

Walkway, Larnach Castle and Gardens, NZ.

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Contributed by Wendy Purdie…

Touching Story

As she sat by him, he whispered, eyes full of tears, "You know what?

You have been with me all through the bad times.

When I got fired, you were there to support me.

When my business failed, you were there.

When I got shot, you were by my side.

When we lost the house, you stayed right here.

When my health started failing, you were still by my side...

You know what Martha?"

"What dear?", she gently asked, smiling as her heart began to fill with warmth.

"I'm beginning to think you're bad luck!"

***

Contributed by Michael Mabbitt…

Tray for Seniors

Don't laugh. You're just upset that you didn't think of this great invention. And, you know that you are going to forward this on...

Gonna order two…

***

Forty-Five-Year-Old Ass

A lady comes home from her doctor's appointment grinning from ear to ear.

Her husband asks, "Why are you so happy?"

The wife says, "The doctor told me that for a forty-five-year-old woman, I have the breasts of an eighteen-year-old."

"Oh yeah?" quipped her husband, "What did he say about your forty-five-year-old ass?"

She said, "Your name never came up in the conversation."

***

Contributed by Doug Walker…

Some great advice by Phyllis Diller...

“Whatever you may look like, marry a man your own age. As your beauty fades, so will his eyesight.”

“The reason women don't play football is because 11 of them would never wear the same outfit in public.”

“Best way to get rid of kitchen odours: Eat out.”

“A bachelor is a guy who never made the same mistake once.”

“I want my children to have all the things I couldn't afford. Then I want to move in with them.”

“Most children threaten at times to run away from home. This is the only thing that keeps some parents going.”

“Any time three New Yorkers get into a cab without an argument, a bank has just been robbed.”

“We spend the first twelve months of our children's lives teaching them to walk and talk and the next twelve years telling them to sit down and shut up.”

“Burt Reynolds once asked me out. I was in his room.”

“What I don't like about office Christmas parties is looking for a job the next day.”

“The only time I ever enjoyed ironing was the day I accidentally got gin in the steam iron.”

“His finest hour lasted a minute and a half.”

“Old age is when the liver spots show through your gloves.”

“My photographs don't do me justice - they just look like me.”

“I admit, I have a tremendous sex drive. My boyfriend lives forty miles away.”

“I asked the waiter, 'Is this milk fresh?' He said, 'Lady, three hours ago it was grass.”

“Tranquilizers work only if you follow the advice on the bottle - keep away from children.”

“The reason the golf pro tells you to keep your head down is, so you can't see him laughing.”

“You know you're old if they have discontinued your blood type.”

“Housework can't kill you, but why take a chance?”

“Cleaning your house while your kids are still growing up is like shovelling the sidewalk before it stops snowing.”

***

Contributed by Wendy Purdie…

The old man unwraps the plain hamburger and carefully cuts it in half. He places one half in front of his wife. He then carefully counts out the fries, dividing them into two piles and neatly placing one pile in front of his wife.

He takes a sip of the drink; his wife takes a sip and then sets the cup down between them. As he begins to eat his few bites of hamburger, the people around them keep looking over and whispering That poor old couple - all they can afford is one meal for the two of them.

As the man begins to eat his fries a young man comes to the table. He politely offers to buy another meal for the old couple.

The old man replies that they`re just fine - they`re just used to sharing everything.

The surrounding people noticed the little old lady hadn`t eaten a bite. She sits there watching her husband eat and occasionally taking turns sipping the drink.

Again, the young man comes over and begs them to let him buy another meal for them.

This time the old woman says No, thank you, we are used to sharing everything.

As the old man finishes and was wipes his face neatly with the napkin, the young man again comes over to the little old lady who had yet to eat a single bite of food and asks May I ask what is it you are waiting for?

The old woman answers... “THE TEETH!”.

***

Contributed by Doug Walker…

The Things Children Say

Nudity
I was driving with my three young children one warm summer evening when a woman in the convertible ahead of us stood up and waved. She was stark naked! As I was reeling from the shock, I heard my five-year-old shout from the back seat, 'Mom, that lady isn't wearing a seat belt!'

Opinions
On the first day of school, a first-grader handed his teacher a note from his mother. The note read, 'The opinions expressed by this child are not necessarily those of his parents.'

Ketchup
A woman was trying hard to get the ketchup out of the jar. During her struggle the phone rang so she asked her four-year-old daughter to answer the phone. It was the minister calling. 'Mommy can't come to the phone to talk to you right now. She's hitting the bottle.'

More Nudity
A little boy got lost at the YMCA and found himself in the women's locker room. When he was spotted, the room burst into shrieks, with ladies grabbing towels and running for cover. The little boy watched in amazement and then asked, 'What's the matter, haven't you ever seen a little boy before?'

Police # 1
While taking a routine vandalism report at an elementary school, I was interrupted by a little girl about six years old. Looking up and down at my uniform, she asked, 'Are you a police officer?' 'Yes,' I answered and continued writing the report. 'My mother said if I ever needed help I should ask the police. Is that right?' 'Yes, that's right,' I told her. 'Well, then,' she said as she extended her foot toward me, 'would you please tie my shoe?'

Police #2
It was the end of the day when I parked my police van in front of the station. As I gathered my equipment, my K-9 partner, Jake, was barking, and I saw a little boy staring in at me. 'Is that a dog you got back there?' he asked. 'It sure is,' I replied. Puzzled, the boy looked at me and then towards the back of the van. Finally, he said, 'What did he do?'

Elderly
While working for an organization that delivers lunches to elderly shut-ins, I used to take my four-year-old daughter on my afternoon rounds. She was unfailingly intrigued by the various appliances of old age, particularly the canes, walkers, and wheelchairs.

One day I found her staring at a pair of false teeth soaking in a glass. As I braced myself for the inevitable barrage of questions, she merely turned and whispered, 'The tooth fairy will never believe this!'

Dress-Up
A little girl was watching her parents dress for a party. When she saw her dad donning his tuxedo, she warned, 'Daddy, you shouldn't wear that suit.' 'And why not, darling?' 'You know that it always gives you a headache the next morning.'

School
A little girl had just finished her first week of school. 'I'm just wasting my time,' she said to her mother. 'I can't read, I can't write, and they won't let me talk!'

Bible
A little boy opened the big family Bible. He was fascinated as he fingered through the old pages. Suddenly, something fell out of the Bible. He picked up the object and looked at it. What he saw was an old leaf that had been pressed in between the pages. 'Mama, look what I found,' the boy called out. 'What have you got there, dear?' With astonishment in the young boy's voice, he answered, 'I think it's Adam's underwear!'

***

Contributed by Doug Walker…

Whiskey, Water & Worms

Little Johnny's Chemistry teacher wanted to teach his class a lesson about the evils of liquor, so he set up an experiment that involved a glass of water, a glass of whiskey, and two worms.

"Now, class. Observe what happens to the two worms," said the professor putting the first worm in the glass of water.

The worm in the water moved about, twisting and seemingly unharmed.

He then dropped the second worm in the whiskey glass. It writhed in pain for a moment, then quickly sank to the bottom and died.

"Now kids, what lesson can we derive from this experiment?" he asked.

Little Johnny raised his hand and wisely responded, "Drink whiskey and you won't get worms?"

***

A teacher asked her students to use the word "beans" in a sentence. "My father grows beans," said one girl. "My mother cooks beans," said a boy. A third student spoke up, "We are all human beans."

***

Here Are Three Questions

1. The Bat and Ball Problem
A bat and a ball together cost $1.10. The bat costs $1 more than the ball. How much does the ball cost?

2. The Widget-Making Machine Problem
If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets?

3. The Lily Pad Patch Problem
There is a patch of lily pads in a lake. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half the lake?

Answers in the June 2018 Edition of the TTGGMC Newsletter.

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Contributed by Doug Hughes…

Just had a bloke at the door asking if I wanted to buy raffle tickets for orphans. I told him to bugger off - with my luck I'd probably win one.

The thing I love most about hot weather is the short skirts and low-cut tops. Although they do make me look a bit gay.

Following the tragic death of the Human Cannonball at the Kent Show, a spokesman said, "We'll struggle to get another man of the same calibre."

Just been to the gym. They've got a new machine in. Only used it for half an hour then I started to feel sick. It's great though. It does everything - Kit Kats, Mars bars, Snickers, Crisps, the lot."

Question - are there too many immigrants in Britain? 17% said "Yes"; 11% said "No"; 72% said "I am not understanding the question please."

Prince Harry says he doesn't want the usual fruit cake at his wedding. Prince Philip says he doesn't give a toss, he's still going.

Paddy bursts into the Benefits office. "I've been ringing 0800-1730 for 2 days. Why don't you answer the phone?" Girl replies, "Those are our opening times."

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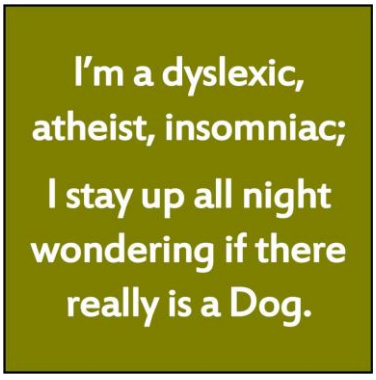

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Thankyou Message

A big thankyou to Augie for my Birthday cake.

Also, I wish to say thankyou to all the club members for my welcome to the club.

Mary Warner.

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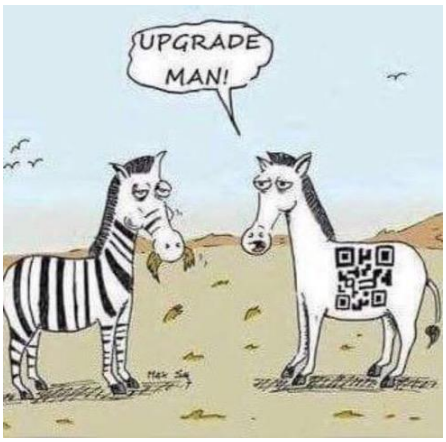
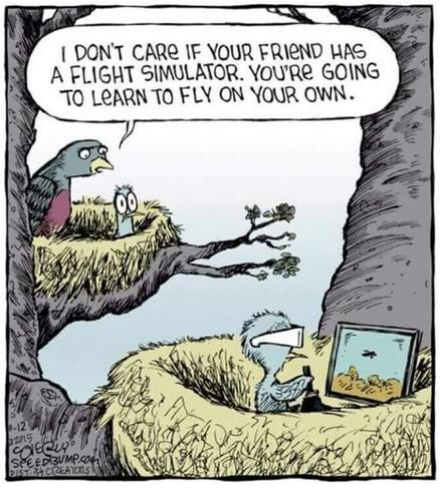
Contributed by Doug Walker…

Contributed by Doug Walker…





Contributed by Doug Walker…

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Useful Internet Links

2018 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...
Metal Detectors - Miners Den Adelaide: Click here...
Metal Detectors - Adelaide Agent for Garrett Australia: Click here...
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