Tea Tree Gully Gem & Mineral Club Inc. (TTGGMC)
Clubrooms: Old Tea Tree Gully School, Dowding Terrace, Tea Tree Gully, SA 5091.
Postal Address: Po Box 40, St Agnes, SA 5097.
Sept. Edition 2015

President: Ian Everard. H: 8251 1380 M: 0417 859 443 Email: ieverard@bigpond.net.au
Secretary: Claudia Gill. M: 0419 841 473 Email: cjjrgill@adam.com.au
Treasurer: Russell Fischer. Email: rfischer@bigpond.net.au

"Rockzette"

Tea Tree Gully Gem & Mineral Club News

In this edition...

Diary Dates

2015

- See Mildura and Bendigo Gem and Mineral Club Show details on the last page.
- 10th October - 11th October, 2015. Saturday: 10.00am - 5.00pm. Sunday: 10.00am - 4.00pm. Adelaide Gem and Mineral Club Show, Payneham Library Complex, cnr Turner Street and O.G. Road, Felixstowe, SA.
- 7th November - 8th November, 2015. 10am - 4pm. Southern Rockhounds, Mineral and Craft Fair 2015, 17 Gerald Court, Christie Downs, SA.
- 23rd January - 24th January, 2016 (Australia Day Long Weekend) Saturday: 9.00am - 4.00pm and Sunday: 9.00am - 3.00pm. Riverland Gem and Mineral Club - Show and Sales, Berri Town hall, Berri, SA.

Stop Press

- Club Birthday Celebration deferred until the September meeting - please bring a plate of treats for a supper celebration at that meeting.
- Mineral Sale – 25th September to 11th October, 2015. - Gus Paskalis – See contact details and address on the last page – under, 'Meeting Reminders and Updates'.

President's Report

Hi All,

The building works should be finished within the next couple of weeks; then we can get back to normal. Yet, on the other hand, we still have got to get the inside looked at.

I would like to wish Ann Hill a speedy recovery – Ann get well soon.

Remember, for the September meeting - bring a plate of food to share – club birthday.

Cheers, Ian.

Club Activities

Competitions
Competitions have been suspended indefinitely and are currently replaced with members showcasing an interesting part of their collection.

Field Trips
No fieldtrips planned during Summer months.

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.

Silver Craft
Friday mornings - 9 am to 12 noon. Cost $20 for new short course attendees. All are welcome.

Tuesday Craft
Tuesday mornings - 11 am to 2.30 pm Faceting, etc. All are welcome. Contact Doug (08 7120 2221) if you would like to learn faceting.

Wanted - The faceting group occasionally has members wishing to buy a 2nd hand faceting machine & accessories. Could anyone with one not being used please contact: Doug Walker 0871202221 or Russell Fischer 0417083227

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 activities, including, but not limited to, meetings, field trips, all crafts and annual shows.
An indemnity is to be signed by all participants before each and every field trip activity they attend.

Meetings, Courses & Fees.

Meetings
Club meetings are held on the 1st Thursday of each month except January:
Committee meetings start at 7.00 pm. General meetings - arrive at 7.30 pm for 8.00 pm start.

Faceting (times to be advised)
*Course 10 weeks x 2 hours **Cost $20.00**.*
*Use of equipment **$1.00 per hour**.*

Lapidary (Tuesday mornings)
*Course 5 weeks x 2 hours **Cost $10.00**.*
*Use of equipment **$1.00 per hour**.*

Silver Craft (Friday mornings)
*Course 5 weeks x 2 hours **Cost $20.00**.*
*Use of equipment **$1.00 per hour**.*

While some consumable materials are supplied by the club, trainees must supply any additional requirements.

Trainees who use the club equipment (for example, magnifying head pieces, faceting equipment, tools, etc.) must return them to the workshop after usage. Trainees are also encouraged to purchase and use their own equipment.

In the interest of providing a safe working environment, it is necessary to ensure individuals 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 at all times.

Trainees must ensure:
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.

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.

A look at Kanmantoo Mine... Past and Present. (Thanks to Vince Peisley for the use of his article).

KANMANTOO COPPER MINES

by Vince Peisley

Len Dallow (left) discussing a specimen with the author

Looking south towards Lake Alexandria

Mine remnants and dumps with Cornish style chimney in the background

The open cut

The Kanmantoo Copper Mines are situated approximately fifty-five kilometres by road, east south east of Adelaide, and three kilometres south south west of the town of Kanmantoo which is situated on the main Adelaide to Melbourne highway. The new Adelaide-Murray Bridge freeway (not yet completed) passes from west to south a short distance away, with the Adelaide-Melbourne railway line about midway between the freeway and the mines.

The mines are on the eastern fringe of the Mount Lofty Ranges and are drained by a tributary of the Bremer River, which when it is flowing, flows into a broad north south trending valley that empties into Lake Alexandria to the south.

Introduction

Kanmantoo Mines Ltd was formed in 1970 with a nominal capital of ten million shares of one dollar each, with Broken Hill South Ltd holding the controlling interest of 51% of the shares. North Broken Hill Ltd hold 19½%, Electrolytic Zinc Co. of Aust. Ltd 19½%, and the Canadian firm Ravenrock Investments Ltd hold the remaining 10%.

Actual investigation of the mineralisation of the Kanmantoo area was commenced in 1961 with Mines Exploration Pty Ltd (the wholly owned exploration subsidiary of B.H. South Ltd), doing all the exploration work. In October, 1969 the shareholders announced their intentions to commence mining for copper at Kanmantoo using two methods, open pit, and underground workings. Removal of the overburden started in August, 1970 with an intended production of 770,000 tons of ore per year containing an estimated content of 1% copper.

History

Copper ores were first discovered in the Kanmantoo-Callington area about 1845. The Paringa Mining Co. was formed and commenced operations in December 1845,

Keen collectors searching the oxide dump

Oxide dump with crusher and plant in the background

Back of the main Kanmantoo mine, showing old dumps

General view showing the main dump

in an area of 8,000 acres at £1 per acre. This was part of a special survey area of 20,000 acres, and the South Australia Co. took up the lease on the remaining 12,000 acres, which included the area of Kanmantoo.

The first shipment of ore by the South Aust. Co. was in 1846. It consisted of approx. 300 tons, having an average yield of over fifty percent copper. In the same year the Paringa Co. shipped about 500 tons of ore of unknown quality.

The boom did not last long however, as by 1876 mining had all but ceased. From time to time in the years to follow further attempts were made to exploit the deposits, but none of these were successful, partially due to the amount of water in the mines.

An estimated 23,000 tons of about nine percent copper are thought to have been won from the Kanmantoo group of mines, having an approx. value at that time of £708,200. This represented one twentieth of the copper ore raised in South Australia between 1846 and 1875. These figures exclude the Bremer Mine near Callington, which was the largest individual mine in the area, having produced at least 35,000 tons of 8.8% copper.

Some of the mines worked and the minerals that were mined from them are:

Kanmantoo mine — Copper.
Aclare mine — Silver, Lead, Zinc, Copper, Nickel, Gold, Antimony, Iron, Sulphur. The Aclare mine was quite a rich mine, yielding up to 90 ozs. of silver and 50% lead to the ton of ore.
Bremer mine — Copper, Bismuth.
Paringa mine — Copper.
Preamimma mine — Copper, Arsenic.
Tresevean mine — Copper.
Wheal Fortune mine — Copper.
Wheal Friendship mine — Copper.
Wheal Harmony — Copper.
Wheal Mary mine — Copper.
Wheal Margaret (Scott's Creek) mine — Copper, Silver, Lead, Zinc.

In 1937 another attempt was made, with Government assistance, to open up the Kanmantoo mines, and a syndicate called the Kanmantoo Mining Co. was formed. Exploration was done by the Austral Development Co., who completed the exploratory work in 1938. No further work was undertaken until the present group took over in 1961.

Geology

The Kanmantoo copper deposit is situated in a belt of metamorphosed, argillaceous rocks that form a part of the Cambrian-Ordovician Kanmantoo Group. Sedimentary structures can still be seen in the sandstones where the folding has not been too severe. Where the folding and deformation has been severe the rocks have been changed into the metamorphic almandine-amphibolite facies.

The metamorphic rocks are derived from a group of sedimentary rocks consisting of fine to coarse sandstones, clays, shales, mudstones, calcareous mudstones and siltstones. These have undergone changes within the earth's crust by the agencies of heat, pressure and chemically active fluids to form biotite schists, chlorite schists, andalusite-biotite schists, almandine garnet-andalusite schists, muscovite-biotite-quartz schists, quartzite and quartz. Any of the schists can be found in combination, some containing the whole range of schist material. Some areas and zones contain an abundance of andalusite crystals, some of which have been found up to fifteen centimetres long and four centimetres across. In places the schist consists mainly of staurolite which is often badly weathered and often makes up about 70% of the schist rock.

In the actual mine area itself the folding is very tight and complex and has what appears to be a southerly pitch, with the beds dipping to the east. Therefore it appears that the folding has been overturned to the west. The tight folding causing a structural thickening corresponds with the strongest areas of mineralisation, and as the regional folding is much broader it has allowed sufficient concentrations of mineralisation to make economic extraction almost a viable propostion. Regionally the area surrounding the orebody forms part of the western limb of a southward plunging basin shaped, fold system, with a number of major folds slightly overturned to the west with southerly trends and plunges. However even though the recognisable folds have a southerly pitch, in the zone of mineralisation the overall pitch appears to be steeply north-east. This may suggest a mutually inclined axis where folding occurred during separate deformational events.

Mineralogy

There are quite a variety of minerals around the mine area, some very common, others scarce to very scarce. One of the most abundant is probably the almandine garnet schist, with garnet crystals ranging in size from less than a mm to nearly 10mm. The main copper minerals are chalcopyrite and chalcocite, a lot of the chalcopyrite and pyrites are encrusted with or extensively replaced by chalcocite and/or covellite, or as covellite chalcocite-digenite.

The different minerals that have been found in and around the mine area, in alphabetical order are as follows.

ALMANDINE garnet, is normally pale purple to deep red and are locally abundant. Though these are not very big a lot of them are perfect crystals.

ANDALUSITE occurs at Kanmantoo as reddish brown to brown transparent to opaque crystals, also as white to grey to greyish pink. The first are locally abundant the latter fairly rare, although at one stage during mining operations, a large deposit of several tons of the latter was found, but

was carted to the dumps and is now covered by thousands of tons of waste.

ATACAMITE occurs as small dark green crystals and crusts, and is fairly common on the oxide dump.

AZURITE, is locally common as powdery crusts and infillings in the schists and quartz. Crystals are not so common, though some good but rather small crystals (perfect micromounts) can be found on the oxide dump and around some of the old mine workings.

BIOTITE is a member of the mica group of minerals. It is reddish brown to black, transparent to almost opaque and is very common locally.

BISMUTH in native form is present in small amounts throughout the orebody and it is normally a silvery white color, tarnishing iridescent.

BORNITE is reported to have been found here, but I believe it is rather rare.

CALCITE is fairly common as small, often iron stained crystals.

CHALCOCITE is fairly common in both the sulphide zone and on the oxide dump.

CHALCOPYRITE is fairly common massive, and as small crystals, large crystals rare.

CHLORITE is a common constituent in the Kanmantoo schists, sometimes as light bright green crystal plates.

COBALTITE could be classed as one of the minor ore minerals of the Kanmantoo mines and is quite common, though fairly hard to identify, often being mistaken for one of the copper minerals, especially when it has a violet tinge.

CONNELLITE, is one of the doubtfuls. It has not been positively identified as yet, but I believe some of the specimens that were found at Kanmantoo are connellite and not vivianite, as these specimens will scratch the vivianite from here, and they have a hardness of 3, not 2–2½ like vivianite. Other evidence that points to them being connellite is the fact that they are found as radiated groups of acicular cyrstals, light blue to bluish green in color, with the very small groups of crystals having a felt like appearance. The larger crystals are striated in the direction of elongation, and have a pale bluish green streak, vivianite has a colorless to bluish white streak.

COPPER native. A fair amount of native copper has been found at the workings, and occasionally a piece can be picked up from the oxide dump. Native copper from Kanmantoo is usually coated with malachite, caused by oxidation. Possibly the largest single amount of native copper that has been found there was revealed when an old shaft was broken into during mining operations. Once the water had been pumped out and it was dry enough for entry, there was an estimated two to three tons of secondary native copper found on the floor of the old mine.

COVELLITE is a relatively common mineral, and is one that is often mistakenly identified as bornite.

CUBANITE is also one of the very minor ore minerals, but is inclined to be one of the rarer occurrences.

CUPRITE is not very common at Kanmantoo as crystals, but is usually granular or earthy.

DIGENITE is fairly common, but is usually found as a mixture with chalcocite.

GAHNITE crystals are often twinned, or repeated twinned bluish black to black, or greenish black translucent to opaque with a glassy almost metallic lustre.

GOETHITE is not as common here as might be expected, though from time to time some really beautiful botryoidal pieces come to light, usually as plates or seams with chalcopyrite.

GOLD is not considered as being common here, though some really attractive pieces have been found. As with bismuth and molybdenite, gold is not found in the disseminated mineralisation. The gold that has been recovered from the overseas smelters is said to have been enough to cover the cost of shipping the ore.

ILMENITE, is fairly common at Kanmantoo, and is found as small crystals, also massive and granular.

LIMONITE is a hydrated ferric iron oxide and is a very common mineral, especially on the oxide dump.

MACKINAWITE, is considered to be another of the minor ore minerals, but as it can easily be mistaken for several of the other copper minerals it is hard to say if it is common or rare.

MAGNETITE is part of the major primary ore body mineralogy that comprises of chalcopyrite with lesser amounts of magnetite and pyrrhotite.

MALACHITE is common as powdery coatings and infillings in quartz and schists. Malachite is not very common as banded material, nor as small acicular crystals, though occasionally some of this material turns up on the oxide dump.

MARCASITE is a fairly common mineral at Kanmantoo, but is one that tends to break down rather quickly.

MOLYBDENITE because of its softness it is not often found as crystals. Molybdenite appears to be a fairly common mineral in a lot of South Australian copper deposits.

MUSCOVITE is not as abundant as the biotite mica, but some beautiful and perfect small crystals can be found often perched precariously on top of quartz crystals.

PENTLANDITE is another of the bronze yellowish colored minerals, making pentlandite another of the hard minerals to identify because of the large range of other similarly colored minerals to be found at this location.

PYRITE as perfect though small crystals can be found at Kanmantoo. For the main part the pyrite is inclined to be massive, or as a pyrite-chalcopyrite mix.

PYRRHOTITE is usually found as a coarse grained massive bronze colored, often tarnished brown, mineral, crystals are rare.

QUARTZ crystals have been found, often coated with chalcopyrite or pyrite, making them beautiful specimens.

SILVER native. There are probably silver tellurides at Kanmantoo but as yet they have not been recognised. Some attractive native silver has been found, and it has been reported that quite often thin coatings of native silver have been discovered coating rocks and other minerals.

SPHALERITE, is another of the ore minerals that is considered to be fairly common, though not often found as crystals.

STAUROLITE is also one of the very common minerals, and can be found almost everywhere around the area, normally as light to dark brown crystals in biotite schist.

VIVIANITE can be considered as a fairly common mineral at the Kanmantoo mines. Vivianite has been found as crystals up to seven or eight centimetres long, they are blue to blue-green and keep their color very well. Vivianite was so common on one of the benches of the open cut that when the miners went past it they used to run their finger nails along the long crystals just to see them split and curl.

As can be seen from the list of materials that have been found at Kanmantoo, it has a wealth of minerals. Unfortunately due to the slump in copper prices the mine is no longer being worked, and until such time as the mine is in operation again, entry is not permitted, as there is only a staff of about four. Their job is to keep the place in good repair, ready to reopen as soon as the situation eases. This is expected to be in about another eighteen months to two years.

REFERENCES

Brown H. Y. L. *The Mines of Sth Aust.* Govt. Printer Adelaide 1908.

Dickenson S. B. *The Structural Control of Ore Deposition in Some Sth Aust. Copper Fields.* Govt. Printer Adelaide 1942.

Roberts W. L., Rapp G. R. Jr., Weber J. *Encyclopedia of Minerals* Van Nostrand Reinhold Co. New York 1974.

Kanmantoo Mines. *Operations at Kanmantoo Mines.* Kanmantoo Mines Ltd. 1976.

Combined SA Mineral Society / TTGGMC / MGMC Fieldtrip to Kanmantoo Mine 05-10-2005

Ian, Terry, Kym, and Rubein.

The mine pit - 05-10-2005.

Kym, ? , Vince, Rubein, Terry, and Ashleigh.

Vince, Ian, ? ,Don, Kym, Jeff, and Grant.

Rare opportunity of fossicking. at this location

A recent 'Google Map' overhead view showing the large, first pit, and the more recent smaller pits.

Google Map - Kanmantoo Mine

Kanmantoo Mine - Hillgrove Resources.
Kanmantoo Mine - SA Department of State Development.
Kanmantoo Mine - MinDat.

South Perth City from McCallum Park - 04/08/2015.

Perth City from Metro on Canning - 31/07/2015.

South West Perth from McCallum Park - 04/08/2015.

Janet and Mel Go South West

30th July to 4th August, 2015

We flew *Virgin* from Adelaide to Perth; stayed overnight at the *Metro on Canning, Perth*. The next day we drove via *Bunbury* to *Cowaramup* (locally called *Cowtown)* where we stayed in a 'loaned house'. The stay activity consisted of family celebrations (60th Birthday and 40th Wedding Anniversary), local indulgences in the Margaret River district (micro-breweries, wineries and restaurants), and a tour to the very south west (*Augusta* and *Cape Leeuwin Lighthouse*). The photo gallery is a collection of random photos taken as we moved around...

Taken on a morning walk at Cowaramup with my I-phone 5 - included to show that the bee's ~~knees~~ wings were well captured by the phone's camera.

The candy cow can...where else, but in the Cowaramup candy shop.

If the candy cow can... I can too! Indulge, that is.

Mel savouring Margaret River Shiraz - quite okay, but he prefers S.A.

Grain silos converted to high rise luxury units in Bunbury, W.A. It was regretted that most of the silos were demolished before pursuing this option.

Cape Leeuwin Lighthouse, W.A.

The Lloyd Ladies at Voyager Estate, Margaret River, W.A.

Beer, food, and wine - not a bad order.

Micro breweries are very popular in the Margaret River region.

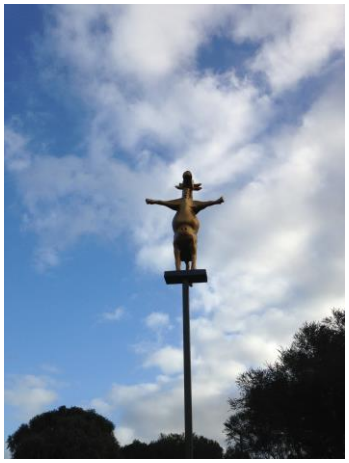
Cod Risotto - looks a bit inky black, but was quite delicious.

See "What's with the Cows?" at Cowaramup - next page...

Members Out and About - Janet and Mel at Cowaramup also known as "Cowtown", W.A.

What's with the Cows?

It all began with the Margaret River CowParade; an international public art event which has been held in more than 50 cities around the world, including Paris, Tokyo, London, and New York. Yet, when it was held in the Margaret River region in 2010, it was the first time that it was hosted outside, away from a major metropolitan city. The event involves over 100 life-size fibreglass cows being painted by local artists and then exhibited in various locations for all to enjoy. At the conclusion of the event, each cow is auctioned off to raise funds for charity.



"Free as a Cow" by Ron Roozen.

Ron Roozen's installation for the Margaret River CowParade public art event in 2010 can be seen in Pioneer Park, Cowaramup, W.A. The piece was named, "Free as a Cow"; a tongue in cheek acknowledgement of the local icon, "Free as a Bird" (affectionately referred to as, "Chick on a Stick") the once controversial sculpture which can be found on Caves Road (Laurance {wines}of Margaret River).

"Free as a Cow" stands proudly 20 feet in the air as a cow for the rest of the herd to look up to (if you've ever read Richard Bach's, "Jonathan Livingstone Seagull", you'll understand) and has also become colloquially known as, "Roast on a Post" or "Rump on a Stump".

Statue - "Free as a Bird" at Laurance (Wines) of Margaret River, WA.
(Note: a local bird standing on the statue's head has taken this quite literally.)

Two years on and the cows were nothing but a fond memory for most, and that's the way it would have stayed, had it not been for the sheer determination of two local and passionate cow lovers. Lorraine Teasdale had been incubating an idea for several years. She and Don Miller rallied around and won support of the Cowaramup Lions Club, numerous local businesses, and the majority of the community alike.

Cowaramup or "Cowtown" as it is affectionately known has a history steeped in the dairy and beef industries.

Today Cowaramup is still home to numerous dairy farms with approximately 10% of WA's milk produced in the area. Lorraine's concept was brilliantly simple, yet simply brilliant in both its brilliance and its simplicity. Surely a town called CowTown should have a cow... in town... or maybe two cows... or maybe even a whole herd?

Being that Cowaramup's milking herds are mostly Friesian, it was proposed that the cows be painted to represent a realistic Friesian herd, which strangely makes them unique in their originality. Cowtown is the only town in the world (to the author's knowledge) that has a permanent, life-like herd on display and in the main street no less.

A container load of cows was purchased and over the following months an army of volunteers laboured over preparing, priming, and painting of forty-two cows and calves. They were carefully coerced (cows can be stubborn you know) and cemented into place.

The cows were introduced to the public on July 15th 2012, coinciding with International Cow Appreciation Day. This day, happened to fall on the middle weekend of the July school holidays... an annual festival was born. If this sounds like Deja Moo to you, then you'd be correct. That's precisely what the festival has been christened: "***Deja Moo - an udderley legend-dairy country fair***"

Moooo... Cow... No bull! - Pioneer Park, Cowaramup, W.A.

Anybody feel like a bit of tennis court?

There's a lot more grass just up the road at the park.

Now, this is an unusual place to pose, but there is a reason... read on...

Where's Molly?

(Here's a little game for families passing through ***Cowaramup*** looking for an excuse to stretch the legs, and get some fresh air...)
Molly mooooo... where are yoooo? Clarabelle cow has lost her precious little calf, "Molly Moo-Cow". Oh dear! Wherever can she be? Each and every one of the cows and calves around town has a wee silhouette of a calf's head hidden somewhere amongst her spots. Can you help Clarabelle find her little Molly, and all the other calves too?
Great fun for all ages racing each other to be the first to find them all... and look very carefully because some have more than one. (Please take extra care when crossing roads as there may be lots of traffic and there are also some heavy trucks around.) The calves could be black, they could be white, they could be front, they could be side..., yet they're there to be sure, and sure to be there.

I've spotted the cow's calf!

Time to move on missy cow before it's too late.

https://en.wikipedia.org/wiki/WD-40

WD - 40

History

WD-40 was developed in 1953 by Norm Larsen, founder of the Rocket Chemical Company, in San Diego, California. WD-40, abbreviated from the phrase "Water Displacement, 40th formula", indicating it was the 40th formulae the chemists tried before finding success. The product was originally designed to repel water and prevent corrosion on the Atlas space rocket, and later was found to have numerous household uses.

Larsen was attempting to create a formula to prevent corrosion in nuclear missiles, by displacing the standing water that causes it. He claims he arrived at a successful formula on his 40th attempt. WD-40 is primarily composed of various hydrocarbons.

WD-40 was first used by Convair to protect the outer skin and, more importantly, the paper-thin balloon tanks of the Atlas missile from rust and corrosion. These stainless steel fuel tanks were so thin that, when empty, they had to be kept inflated with nitrogen gas to prevent their collapse.

WD-40 first became commercially available on store shelves in San Diego, California in 1958.

Function

The long-term active ingredient is a non-volatile, viscous oil which remains on the surface, providing lubrication and protection from moisture. This is diluted with a volatile hydrocarbon to give a low viscosity fluid which can be sprayed and thus penetrate crevices. The volatile hydrocarbon then evaporates, leaving the oil behind. A propellant (originally a low-molecular weight hydrocarbon, now carbon dioxide) provides gas pressure in the can to force the liquid through the spray nozzle, and then evaporates away.

These properties make the product useful in both home and commercial fields; removing dirt and residue, and extricating stuck screws and bolts are common usages, and it also loosens stubborn zippers. It is also useful in displacing moisture.

Due to its lightness (i.e., low viscosity), WD-40 is not always the preferred oil for certain applications. Applications that require higher viscosity oils may use motor oils, while those requiring a mid-range oil could use honing oil.

Formulation

WD-40's formula is a trade secret. The product was not patented in 1953 to avoid disclosing the details of its composition; the window of opportunity for patenting the product has long since closed. WD-40's main ingredients as supplied in aerosol cans, according to U.S. Material Safety Data Sheet information, are:

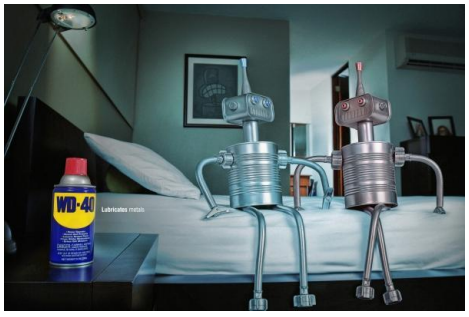
* 50% "aliphatic hydrocarbons". The manufacturer's website specifically claims that this fraction in the current formulation cannot be accurately referred to as Stoddard solvent, a similar mixture of hydrocarbons.

* <25% petroleum base oil, presumably a mineral oil or light lubricating oil.

* 12-18% low vapor pressure aliphatic hydrocarbon, to reduce the viscosity for use in aerosols. This fraction evaporates during application.

* 2-3% carbon dioxide, presumably as a propellant, is now used instead of liquefied petroleum gas to reduce WD-40's considerable flammability.

* < 10% inert ingredients.



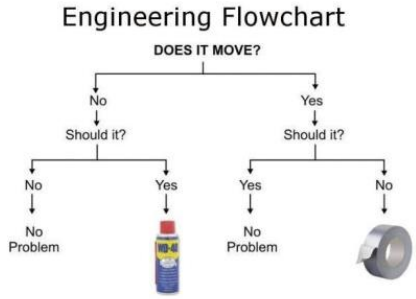
The German version of the mandatory EU safety sheet lists the following safety-relevant ingredients:

* 60–80% heavy naphtha (a petroleum product used e.g. in wick type cigarette lighters), hydrogen treated

* 1–5% carbon dioxide

It further lists flammability and effects to the human skin when repeatedly exposed to WD-40 as risks when using WD-40. Nitrile rubber gloves and safety glasses should be used. (Ordinary rubber is ruined by repeated exposure to petroleum products.) Water is unsuitable for extinguishing burning WD-40.

Wired published an article giving the result of gas chromatography and mass spectroscopy, claiming that its ingredients also make it resistant to freezing.



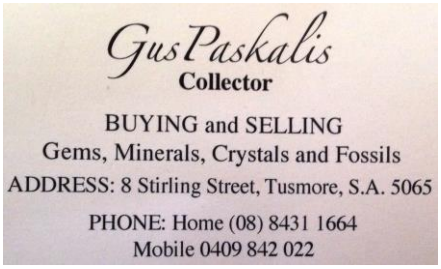
Members Notice Board

Meeting Reminders/Updates

5th & 6th Sept., 2015.
Mildura Gem and Mineral Club Show, Sunraysia Masonic Centre, Irymple, VIC.

12th & 13th Sept, 2015.
The Bendigo Gem & Mineral Club Expo, Nuvo Hall Baptist Church, Mc Ivor Hwy, Junortoun, Bendigo, VIC. Saturday: 10am-5pm. Sunday 10am-4pm.
https://www.facebook.com/BendigoGemClub

25th September to 11th October, 2015.
Mineral Sale - Gus Paskalis…



Wanted

Mineral photo opportunities.

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

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

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

Hope you can help me out on behalf of the club.
Mel Jones
08 8395 1792
mel.jones@ bigpond.com

Newsletter Content & Contributions

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

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

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

I look forward to your ongoing assistance and also seek your timely, frank feedback so that the newsletter continues to meet the club members' interest.
Mel Jones
08 8395 1792
mel.jones@ bigpond.com

Useful Internet Links

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

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

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

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

Adelaide Gem and Mineral Club: http://sacommunity.org/org/197578-Adelaide_Gem_%2526_Mineral_Club#.Uta7ufRDt8E http://www.adelaidegmc.websyte.com.au/

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

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

Flinders Gem, Geology and Mineral Club Inc:
http://www.lapidaryworld.com/flinders_geology_gem_and_mineral_club.html

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

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

Southern Rockhounds: Website - http://www.southernrockhounds.com.au/home
Facebook - https://www.facebook.com/SouthernRockhounds

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