



Gylden Magick

Find us on Facebook:

<https://www.facebook.com/groups/gyldenpaganfellowship/>

June 2023

PRACTICAL MAGICK & UNIVERSAL ENERGY FOR EVERYDAY LIFE

Editor's notes

by Gylden Fellowship

Welcome to **GYLDEN MAGICK** – the spiritual magazine from [Gylden Fellowship](#) that spans both traditional and newer pagan beliefs and practice.

Dear readers of **GYLDEN MAGICK**,

It's June (the Strawberry Moon) – and this issue of **GYLDEN MAGICK** has a definite emphasis on magick. The picture shows the **Bealtaine fire festival 2023 at The Hill of Uisneach** in Co. Westmeath.

The Hill has been described as the heart of Ireland – it is the legendary resting place of the goddess Eriu, who gave her name to Ireland. It has great stone called the **Ail na Mirean**, or Stone of Divisions

Legend has it that the festival of Bealtaine was particularly associated with the Hill of Uisneach and like most ancient Irish festivals, it was celebrated with fire. Archaeology has uncovered layers of charcoal and other burned material on the hill, consistent with the lighting of huge fires.

The Book of Invasions, Lebor Gebála Éreinn in Old Irish, tells us that the first Bealtaine fire

ever lit in Ireland was kindled by the Nemedian Druid Mide, at Uisneach.

Alban Hefin altar colours are dark green, bright yellow and gold. I say Alban Hefin, but most pagans would describe this date as the **Summer Solstice** or as **Litha**. We'll feature an in-depth look at this festival on our website, a little nearer to 21 June, but we've put in a few blessings here too. Other notable dates for diaries in June are **Mother Shipton's Day** on 2 June, **World Environment Day** on 5 June and 4 June for the **next full moon**.

What else is included in this issue? There's plant sentience, sacred art for Epona, folklore, quite a few environmental pieces and **Mark Sharpen** is looking into some new medical discoveries. **Charlie Foreverdark** is sharing her expertise on how crystals form, more from Erica's village and medieval architecture.

Thank you for all your feedback and blessings.

Gylden Fellowship admins

For more info, why not join [Gylden River LRC](#) or [Gylden Fellowship](#) groups on Facebook today and see our archives or new briefings?

Contents: June 2023

Alban Hefin/ Litha blessings by Gylden Fellowship	Pages 3-5
Sacred art: The Feast of Epona collated by Gylden Fellowship	Pages 6-8
Cosmic energies: New medicine by Mark Sharpen	Page 9
Environment: rewilding wildcats in Scotland by NatureScot	Page 10
Environment: World Environment Day by UNEP	Pages 11-12
Folklore: The False Ghost by the Storyteller	Page 13
Crystal clear: how crystals form by Charlie Foreverdark	Pages 14-17
Environment: urban nature by The Mammal Society	Pages 18-19
Shrooms by Erica Zann	Page 20
Environment: high hedges by the Caltrop Consultancy	Page 21
Apotropaic update by Gylden Fellowship	Pages 22-23
Mushroom songs by Mark Sharpen	Page 24
Gylden contact info	Page 25



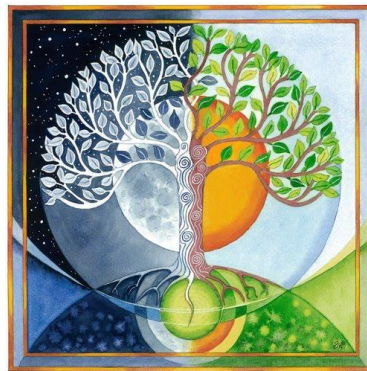
Alban Hefin/ Litha: Blessings and notes

By Gylden Fellowship

Litha prayer at sunset

The longest day is over,
As the sun sinks slowly away.
At dawn, we greeted and honoured you,
Celebrating your light over the land.
You make crops grow and bloom,
And your heat warms the earth -
You are the bringer of life for us all.
Now the darkness starts once again,
A minute more of night each day,
Until we celebrate your rebirth at Yule.
Radiant Aine*, we ask for your blessings
At your festival of Midsummer –
Help us to experience true joy and divinity.
May the goddess of love and light,
Bring us the sun's power during every day and,
Throughout the remainder of our lives.
So mote it be.

* Aine = Aw-neh



The name for the summer solstice in Druidry is **Alban Hefin**, which means The Light of the Shore. A seashore is a good example of a place, where the three realms of earth, sea and sky are all one. This is the time of the longest day, the maximum amount of daylight - from **21 June 2023**, the hours of light decline until the winter solstice/ Alban Arthan on 21 December.

Midsummer's Day, the middle of summer, falls on **24 June**, after the summer solstice. Why are Midsummer's Day and the summer solstice not on the same day? Well, the longest day in the northern hemisphere is usually 20-21 June, whilst Midsummer's Day is traditionally on 24 June. This discrepancy was caused by the changes between the Julian and the Gregorian Calendars. Before the change of calendars, Midsummer's Day fell on 5 July.

In astronomical terms, the summer solstice is the moment in time when the Earth's tilt towards the Sun is at its maximum and the Sun reaches its highest position in the sky. For many, the idea of solstice evokes the image of Stonehenge and people greeting the sunset on 20 June and the following sunrise. This year, it will be celebrated with a mix of actual rituals and live-streamed events.

Solstice means the standing of the sun and we can connect to the great turning point in the earth's annual cycle to stop, be still and reflect on our progress since Alban Arthan (Yule). It is a time to count our blessings, celebrate our achievements and pass on the spirit of goodwill to all we encounter. From now until the winter solstice, everything will be drawing in and we can use this time to develop ourselves during the time of darkness. The day after the summer solstice was often a time for carnivals, fairs and processions.

No doubt, there will be pagan worshippers at solstice dawn in small groups, in open spaces around the UK at high points or forest groves. And there are many solstice traditions to be observed, wherever you are on the day – the list below gives some examples.

- If your small group has a fire-pit, dance around it while holding flowers.
- Write down or make something to be released – throw it in the flames.
- Pick some healing herbs, e.g., sage, vervain, yarrow or lavender.
- Watch out for the fae at stone circles, faery rings in woods or faery trees.
- Place flowers and ribbons at wells or springs for the water spirits.
- Wear garlands of flowers to celebrate the sunshine.
- Wear jewellery of yellow or orange stones - carnelian, sunstone, citrine, etc.



*Glory of the Day-Star, hail!
Lifter of the Light, Burnisher of the Sky.
Gifts of love to earth are bringing,
Summer's shimmer, dew's delight.
Dancing be the heart within us,
Open be our souls to bliss,
Courage vanquish every shadow,
Greet Midsummer with a kiss.*

(Greeting to the Summer Solstice from *Celtic Devotional – Daily Prayers and Blessings*, © Caitlín Matthews 2010)

From now until Yule, everything will be drawing in and we can use this time to develop ourselves during the time of darkness. Past summer solstices meant that people stayed up all night to greet the dawn and many stone circles in the northern hemisphere have been aligned to the solstice sunrise. Actually, if I cast my mind back to Litha 2015, this is how I described the event in another online site.

"OK, I know that it's common for many pagans in my part of the UK (South) to rush off to Avebury Stone Circle or Stonehenge to celebrate Litha, but I'd like to share an alternative. I go to a local moot, which has no more than 5-6 people at best and none of us wanted to join the cast of thousands in Wiltshire.

So, we did what many small settlements might have done thousands of years ago: we used a local field, miles from anywhere (with the owner's permission) and used a portable fire pit to set up an all-night blaze. We had drums, guitars, food, mead and beer and held a short Litha ritual + prayers to the Goddess + all-night vigil, before greeting the dawn. Everyone joined in, there was much fellowship and I felt that this was the right way: a solitary or small-group act of worship, rather than the media circus that surrounds mass solstice celebrations. After all, if you visit Stonehenge now, you'll be able to buy more fuel or a cup of tea at the Solstice service station nearby."

Now is the time to express our own growth through art, dance, stories, poetry and songs, remembering ancestral wisdom and preparing for future changes. This is also a time for grounding yourself and placing your spirit in alignment with the energy of Gaia. Be open to inner wishes, beliefs and feelings and follow your heart.

Here are some ideas for celebrating Litha, whilst at home or in a family.

- Going out for as a family group (or with a friend) for a walk and a picnic.
- Accentuating kindness: make someone happy and try to be kind to strangers.
- Doing some performance activities, e.g. singing or storytelling, within social distancing rules.
- Drying herbs and storing them in jars...I've been using up my stocks to make massage oils and herbal teabags.
- Making a local map of trees in your area.
- Writing down lists of wildflowers you've seen on your walks.
- Listing the animals and birds that visit your garden, e.g. owls, bats, hedgehogs, etc.
- Taking a day out to do a solitary vision quest – take water to drink, fruits or basic foods to eat and seek solitude to evaluate your pathway.
- Making some incense for Litha – here's just one example:

2 parts sandalwood
 1 part mugwort
 1 part chamomile
 1 part gardenia flowers
 a few drops rose, lavender or yarrow essential oil.

Gylden
Magick
June
2023

Sacred art for the Feast of Epona

Collated by Gylden Fellowship







Cosmic energies: new medicine

By Mark Sharpen

Seems a while since I wrote about medical stuff, such as biological alchemy. So, the theme for this month's text is a quick review of brand-new discoveries in the field of medicine. Let's start with loss of limbs, which is projected to affect over 3.6 million individuals per year by 2050. For a long time, scientists believed the single biggest key to **limb regeneration** is the presence of nerves. However, work done by Dr. Muneoka and his team members (Tulane School of Medicine) demonstrated the importance of mechanical load to digit regeneration in mammals and that the absence of a nerve does not inhibit regeneration. The advancement of limb regeneration was also achieved by researchers at Tufts University who have used acute multidrug delivery, via a wearable bioreactor, to successfully enable long-term limb regeneration in frogs. This early success could potentially lead to larger, more complex tissue re-engineering advances for humans, eventually being of benefit to military veterans, diabetics and others impacted by amputation and trauma.

Another area is the application of mRNA in COVID-19 vaccines, which attracted lots of attention, but the real revolution of **RNA technology** is just beginning. RNA is ribonucleic acid that exists in all living cells that has structural similarities to DNA. Recently, a new multivalent nucleoside-modified mRNA (messenger RNA) flu vaccine was developed. This vaccine has the potential to build immune protection against any of the 20 known subtypes of influenza virus and protect against future outbreaks. Many rare genetic diseases are the next target for mRNA therapies, as they are often missing a vital protein and could be cured by replacing a healthy protein through mRNA therapy. In addition to mRNA therapies, the clinical pipeline has many RNA therapeutic candidates for multiple forms of cancers and blood and lung diseases. RNA is highly targeted, versatile, and easily customised, which makes it applicable to a wide range of diseases.

And finally, we move to **synthetic biology**, which has the potential to redefine synthetic pathways by using engineered biological systems (i.e. microorganisms, for which a large part of the genome or the entire genome has been designed or engineered) to manufacture a range of biomolecules and materials, such as therapeutics, flavours, fabrics, food and fuels. For example, insulin could be produced without pig pancreas, leather without cows and spider silk without spiders. The potential in life sciences alone is unbelievable, but when applied to manufacturing industries, synthetic biology could minimise future supply chain challenges, increase efficiency, and create new opportunities for biopolymers or alternative materials with more sustainable approaches. At present, teams use AI-based metabolic modelling, CRISPR tools, and synthetic genetic circuits to control metabolism, manipulate gene expression and build pathways for bioproduction.

Environment: Rewilding Scottish wildcats

By NatureScot

The Scottish wildcat (*Felis silvestris*) is one of our most elusive carnivores and the only native member of the cat family still found in the wild in Britain. It is a European protected species and would have once been found throughout mainland Britain. Persecuted for centuries, its range steadily declined until, by the First World War, it was only found in NW Scotland. After this time, its range began to recover and currently consists of areas in mainland Scotland.

Estimates of wildcat numbers in Scotland vary greatly and our knowledge about current populations is patchy, because wildcats are elusive and it's not always easy to distinguish between wildcats and hybrid species. Camera surveys conducted from 2010-2013 across the wildcat's range in Scotland estimated that there are only 115 to 314 individuals. Scottish wildcats prefer to live on the woodland edge, in the margins of mountains and moorlands, with rough grazing. They generally avoid high mountain areas, exposed coasts and intensively farmed lowlands.



The main threat to Scottish wildcats is genetic extinction due to hybridisation with feral cats, domestic cats and existing hybrids. They are also at risk from:

- incidental harm from predator control activities
- feline disease
- road collisions
- fragmentation or disturbance to habitats through development or changes in land management

NatureScot works with a wide range of partners to expand the programme of action for wildcats. Together we launched the Scottish Wildcat Conservation Action Plan in 2013-2019. Scottish Wildcat Action (SWA) was the first national conservation project set up to meet the action plan's aims. Led by NatureScot, the project was supported by the Heritage Lottery Fund and informed by a scoping report into priority areas for wildcat conservation. Building on the success of SWA, *Saving Wildcats* was established to further the conservation and recovery of the species

Environment: World Environment Day

By UNEP

World Environment Day is on 5 June 2023 and is a reminder that people's actions on plastic pollution matters. The steps governments and businesses are taking to tackle plastic pollution are the consequence of this action. It's time to accelerate this action and transition to a circular economy...it's time to #BeatPlasticPollution.

New Delhi, 20 April 2023 - The United Nations Environment Programme (UNEP) launched the next phase of **Tide Turners**, the world's largest youth-led movement against the plastic crisis, with the United-Kingdom announcing £1.6 million of funding for the next three years.

In an event held in New Delhi with the participation of a global audience of young people, the achievements of the young environmental champions part of the Tide Turners programme were celebrated, and the path was set for the next three years of mobilisation to combat plastic pollution around the world.

Globally, an estimated **19-23 million tonnes** of plastic waste is dumped in lakes, rivers and seas each year. From the peak of Everest to the bottom of the oceans, plastic pollution is rampant, harming human health, the economy, our environment and threatening the achievement of sustainable development.

Young people – entrepreneurs, community leaders and change-makers – are taking centre stage in global efforts to address the plastic pollution crisis. Through the **Tide Turners Plastic Challenge**, UNEP works with partners including the **World Organisation of the Scouts Movement (WOSM)**, the **World Association of Girl Guides and Girl Scouts (WAGGGS)**, **WWF India** and the **Centre for Environment Education (CEE) India** to build the capacities of young people to act against plastic pollution and create a global movement.

Featuring well-known speakers such as Dia Mirza, **UNEP's Goodwill Ambassador**, and Afroz Shah, **UNEP Champion of the Earth**, The event on 23 April 2023 brought together institutional partners and young leaders, along with a global audience.

Violet Adhiambo, a member of the Girls Guides of Kenya, said: *"I trained girls in schools on how to recycle plastics and turn into treasures. They are making decorations out of plastics, and we also have an initiative selling plastic waste for money to get uniforms. There are so many of us out there – if we all pick up plastics, we can make our environment clean."*

Sneha Shahi, who was a student at the Maharaja Sayajirao University of Baroda, cleaned up a river on her college campus, removing over 700 kg of plastic waste. She explained: *"We are collecting plastics on the beach but ultimately, the challenge we face is that there is no way to segregate or recycle waste in my community. The closest recycling plant is 200 kms away and it's been very costly for us."*

"The power of young people, including scouts and the girl guides, to drive environmental action, is phenomenal. The Tide Turners programme has reached more than 588,000 young

people globally in 40 countries and UNEP is keen to strengthen our partnership with young environmental leaders”, said Bruno Pozzi, Deputy Director, UNEP Ecosystems Division.

The fifth phase of the Tide Turners will focus on scaling-up advocacy training for young people as a way to open up the relationship between youth and policymakers. “It’s so easy to get overwhelmed by the global problems around plastic pollution but I do hope that what Tide Turners does is showing that things can move and things are moving. The commitments heard today from our young leaders are very inspiring. I’m proud the UK has announced a further three years funding today,” said Sally Taylor, Minister Counsellor for Climate and Development at the British High Commission in New Delhi.

The new phase starts ahead of **negotiations** to develop an international legally binding instrument on plastic pollution, which will resume in Paris from 29 May to 2 June 2023. Joyce Te’o, current President of the 350 University of South Pacific, a student-led environmental club, called on policymakers to listen and support young people on environmental action: “We need your attention and for you to watch while we do.”

India is the country where Tide Turners had the most impact, reaching more than 450,000 youth, but the programme was also particularly active in Kenya, with great success stories including Tide Turner Champion Alicia Moraa, a Girl Guide who has trained over 5000 youth on Tide Turners Challenge and has organised sensitisation events in her community, carried out street clean ups and has developed solutions on better ways to dispose of waste in Kisii County.

The Tide Turners Plastic Challenge has supported youth to reflect on their plastic consumption and change their behaviour, and to lead change in their communities and at the policy level. The Tide Turners Plastic Challenge has been developed with a series of levels and activities. This is meant to push young people to become aware of the issues threatening the planet, as well as to engage them in a fun and challenging undertaking which can lead to a sense of personal fulfilment in taking responsibility for the planet’s well-being. This badge also encourages the development of leadership skills and meaningful, impactful change-making.

The programme takes the participants on a learning journey consisting of four distinct levels: entry, leader, champion, and advocacy. The young people who make it to the champion level will have gained a thorough understanding of marine plastic pollution and how to address it and are well equipped to become leaders in their communities on an issue that is one of the biggest environmental challenges we are facing.

World Environment Day is the United Nations’ principal vehicle for encouraging worldwide awareness and action for the environment. Held annually since 1973, the Day has also become a vital platform for promoting progress on the environmental dimensions of the Sustainable Development Goals. With the United Nations Environment Programme (UNEP) at the helm, over 150 countries participate each year. Major corporations, non-governmental organizations, communities, governments, and celebrities from across the world adopt the World Environment Day brand to champion environmental causes.

Folklore: The False Ghost

By the Storyteller

This tale comes from the early 1860s, along the Durham coast near Hartlepool – a little place called Crimdon Dene. At that time, many people took part in smuggling to earn money and the excise men (revenooers) had a constant fight to stop illegal contraband being landed on remote beaches. The most notorious smuggler was called **Matthew Horsley** and he ran a gang of smugglers.

On this moonlit night, there was an excise man patrolling the Crimdon Dene coast – let's call him, Murray – when he saw two men on the beach, signalling to a boat off shore and one of those men was Matthew Horsley! Murray was alone and he was scared of confronting a whole gang of smugglers by himself. Then he had an idea – can you guess what he did?

Murray called at a nearby farm on his way down to the beach and was able to borrow a large white cloth. He draped it around himself, waded into the sea near to some rocks and found that he was only about 50 yards away from where the smugglers were unloading boxes from a boat. One of them saw a strange white figure among the rocks and called to the gang – Murray knew that he would have to act – so he let out a penetrating wail, crying out “Matthew Horsley, Matthew Horsley” and waving his arms under the cloth.

All the smugglers took to their heels, especially Matthew Horsley, who ran as if all the demons of hell were after him. Murray pushed the cloth back and opened a box, which was full of contraband tobacco and he waited for the next revenooer to come on shift. The relief excise man was much surprised to be greeted by Murray, still partly covered in a white cloth, surrounded by boxes of impounded tobacco and no sign of any smugglers.



Crimdon Dene Beach

Crystal clear: how crystals form

By Charlie Foreverdark

Crystallisation is the process by which solid substances combine with specifically organised atoms or molecules to exhibit a repeated pattern of structure. That in itself sounds almost straightforward, but when you take into account the natural set of circumstances that have to occur in order for the formation to take place – well, it's a whole different kind of complicated. Since I have been learning more and more about the science and the geology of crystals, it occurs to me that there are some absolutely wondrous natural crystallisation processes that I have taken for granted and I hope to be able to pique your interest with this text.

Although my obsession with crystals is a relatively recent development, it's fair to say that, without ever realising it, I was always very drawn to places that featured a particular type of crystallised matter. As a child, I spent many a birthday making the pilgrimage to the limestone hollows of Wookey Hole and Cheddar Caves in Somerset's Mendip Hills to see the astonishing underground formations. Caves really are the most exciting of all geological formations, in my opinion, so our journey begins in the skeleton of the Earth; in underground caverns, where we find strange natural formations known as **speleothems**. It might surprise you to know that these alien-looking cave features are crystalline in nature and formed entirely by the gradual deposition of minerals. The word, *speleothem*, is derived from the Greek words, *spelaiion* (cave) and *thema* (deposit).

The impressive structures are most commonly composed of calcium carbonate and can take a variety of forms, depending upon the depositional history and surrounding environment. The particular speleothems with which people are most familiar are the amazing stalactites and stalagmites (from the Greek words, *stalaktos* (dripping) and *stalagmias* (trickling), which impress and inspire thousands of visitors here in our UK caves and other cavernous locations worldwide. Technically, stalagmites and stalactites are aggregates of crystals, most often the calcium carbonate minerals calcite and aragonite, but they often contain inclusions of mud, peat, pitch, sand, sinter and a musky substance known as amberat – which is the crystallized urine of pack rats!

Stalactites grow down from the cave ceiling, while stalagmites grow up from the cave floor. There are several ways to remember which is which, but I consider the simplest method to be remembering that stalactites have a "T" for top and stalagmites have a "G" for ground. They form over thousands of years from the calcite minerals deposited by the groundwater that trickles through the limestone. The calcite is precipitated onto the cave walls, ceilings and floors, and with each drop of water more minerals crystallise and eventually a stalactite is formed. When the water drops to the floor of the cave, it deposits more of the dissolved calcite there, forming a stalagmite. In time, stalactites and stalagmites may even come to connect into an impressive column sometimes referred to as a **stalagnate**; these are truly magnificent to behold – so if you've never been to visit our caves, I really cannot recommend it highly enough.



When sliced and polished, stalactites in particular will clearly reveal a display of radial crystals forming from a central axis. Sometimes, calcite stalactites or stalagmites are overgrown by crystals of aragonite, giving them glittering druzi appearance. The presence of iron oxide or copper can cast a red or pink hue, whereas inclusions of manganese oxide can create darker browns and blacks within the individual specimens.

Many external factors can impact upon the shape of individual speleothems, from the water seepage rate to the chemical composition of the rock and water. When you factor in additional variables, it is easy to see how speleothems can vary so in size, shape and appearance. Examples include the following

- the water flow direction
- cave temperature and humidity
- air currents
- aboveground climate
- plant cover - weaker water flows travelling over shorter distances will typically form narrower stalagmites, while heavier flow and a greater fall distance tend to form broader structures and also draperies of thin wavy sheet calcite or globular flowstone.

Obviously, there are a plethora of other crystalline substances found within caves, but some common ones in the Mendip Hill Caves include dogtooth spar (large calcite crystals), frostwork (acicular -needle-like- growths of calcite and/or aragonite) and anthodites (flower-like clusters of aragonite crystals. A visit can be a magical day for all the family. There is so much to marvel at, and so much to learn. An open topped bus ride up through Cheddar gorge has never failed to inspire awe and a real sense of perspective. Supposedly, the jutting rocks and dramatic cliff faces played a part in JRR Tolkien's inspiration for Middle Earth.

Deep breaths everyone as our next stop on the field trip is underwater. More specifically, just a few metres under the surface of the Dead Sea. Not an ocean at all, but a salt- lake bordering Jordan to the east and Israel to the west. It is here that the gradual crystallisation of a 19th century mourning dress (entitled Salt Bride) was created and photographed at different stages by Israeli artist Sigalit Landau, with the end result being an entirely solid crystal form. The haunting piece was inspired by a novel by Jewish author S. Ansky called "The Dybbuk", which tells the story of a young bride possessed by an evil spirit. In this spectacular art, crystals of salt adhered to the fabric and the sea's own alchemy transformed the plain garment from a symbol associated with death and sorrow into a glittering white wedding dress.

The lifeless Dead Sea set the anticipated yet uncontrollable organic process of crystallisation into motion. Because of the high salinity content of the lake, the crystals began to accumulate naturally once the dress was submerged, taking just three months to completely crystallise and solidify. Landau's life-size underwater photographs charted a time-lapse of the incredible metamorphosis, as crystals saltier than tears formed across the surface of the fabric.

As it happens, it's not just in far-away places that this kind of mineral crystallisation can occur. Here in the UK, we have our own crystal creation location known as The Petrifying Well of Knaresborough, where famous Tudor witch and oracle Mother Shipton made her morbid forecasts and predictions. Alongside several published editions of her prophecies, Mother Shipton's name and effigy still grace several UK pubs to this day. The name, Mother Shipton, was even given to a day-flying moth, whose wings appear to bear the image of a crooked hag's face and there is an old caricature of her that is believed to be one of the first ever adaptations of the traditional British pantomime dame! More details on Mother Shipton can be found on the [**GYLDEN FELLOWSHIP WEBSITE**](#).

However, this particular enchantment for which Mother Shipton took posthumous credit can be simply and scientifically explained. Once thought to be the work of witchcraft, it is now known that the "magic of the well" which can turn soft, pliable and malleable items to stone within just 3-5 months is actually due to an unusually high mineral content and the natural process of evaporation. The petrifying effect occurs because of the abnormally high amount of dissolved sulphate and carbonate in the local water, thanks to its passage through the Yorkshire hills. How does it happen? Well, when minerals dissolve into water, they lose their crystalline form. When the water contains as much dissolved mineral as possible, the solution is said to be saturated.

The saturation point is different at different temperatures; the higher the temperature, the more mineral content can be held in the solution. When the water is warmer, excess minerals remain in the solution. but as it begins to cool, the solution becomes supersaturated with minerals. Supersaturation is an unstable state, and so the mineral molecules will begin to crystallise back into a solid form. This begins at a crystallisation nucleation site—such as the drip point of a trickle of water, or something soft such as fabric. In addition, crystals can reform from the mineral content that is left behind when water evaporates.

You can actually grow your own crystals with these methods from the comfort of your own home. One simple way is by mixing table salt or sugar into warm water until no more will dissolve. Let the solution cool to room temperature then suspend a thread into the saturated liquid. Wait anywhere from a few minutes to a day and you'll observe actual crystal growth. Crystal growing kits are widely available on the market, which use pretty coloured salts like copper sulphate to make the results more striking. These can be really interesting and a lot of fun for children to experiment with.

In geology, petrification (from the Greek *pétra*, meaning stone) is the process by which organic material becomes a fossil. Petrified wood is a common example of this phenomenon. All organisms (from tiny micro-bacteria, right up to vegetation and animals) have the potential to become petrified.

Petrifaction can take place through a number of different processes which essentially create replicas of the original specimens. Although the constituent molecules of the original material are replaced by the permineralization process, the new molecules are exact structural replicas down to a microscopic level. **Permineralization** is a process in which, over thousands of years, mineral deposits form internal casts of deceased organisms. Carried by water, the minerals fill the spaces within the organic tissue. There are specific subgroups of permineralization such as "silicification" (in which organic matter becomes saturated with silica from volcanic material), and "pyritization" (a process which involves the deposition of iron and sulphur within the cavities of an organism.) Both of these can be observed in fossilised wood and fossilised creatures such as ammonites.

But why does this process of permineralization occur, instead of the organic matter simply decaying away? When living things die and begin the process of decay, they usually do so within an environment rich in oxygen. Such environments are packed full of helpful microorganisms, insects and fungi that all play a part in the natural breaking down of the organic matter.

However, when dead organic matter ends up in an environment devoid of oxygen; (for instance if it was covered by thick ash from a volcano), it will be deprived of the essential components which are conducive to the process of decay. This leads to the organism then remaining intact and untouched for a long period of time, allowing the slow degradation process that enables petrification to occur. Mineral-rich ground waters begin to impregnate the small cellular spaces within the outer structure of the organic material. These minerals will eventually settle and crystallise leaving a stone-like fossil replica of the original living organism. Interestingly, although most petrified matter is rock-like in weight and density, about 1-15% of the overall material will still be organic.

Wood is one of the most common types of organic matter to become petrified. In fact, there are entire ancient petrified forests in around 20 different countries worldwide, and in 11 of the 50 American states. The structure of these petrified fossils depends upon the minerals that were present in the ground water. The most common are silica based as silicate minerals make up about 90 percent of the Earth's crust and are therefore amongst the most prevalent. Some common silica minerals involved in petrification include calcite, quartz, siderite, pyrite and apatite.

The petrification of wood takes millions of years. One particular location in Arizona is believed to contain the fossilised remains of trees that grew over 225 million years ago. The largest forest of petrified wood is the Puyango Forest in Ecuador which encompasses approximately 2658 hectares, and the largest individual example of a petrified tree ever recorded is currently on display at the Geronimo Trading Post in Arizona. The tree is now in several sections but weighs around 80 tonnes in total.

Petrified wood can be just about any colour depending upon the specific minerals involved. Copper and manganese yield blues, purples and greens. Yellow and red hues come from iron. Petrified wood is a surprisingly hard material, scoring between 7 and 8 on Moh's Hardness scale. The Native Americans were even able to utilise petrified wood in the construction of their homes.

Environment: urban nature

By the Mammal Society





Shrooms

By Erica Zann

Hi, welcome to more witterings from an elderly resident of a small English village. All the finery from the Coronation festivities have come down now, only to be replaced by all the bunting for the Haslemere Arts Festival. Every year, there's a mix of concerts, talks and events. I went to a jazz piano concert at the local church last week and there's a dog show on the green this afternoon. It's all local - it's common to meet local friends and neighbours at different events.

I was wondering about a theme for this month and **chose the letter, B**. B is for **Butser** and many of my friends had a great time at the Beltaine celebration, including the famous wicker man burning. Honestly, Butser always puts on a good show at Beltaine, although I've also been to Imbolg and Samhain events there, without the cast of thousands!

It was pouring with rain earlier in the week and I'm glad I did the bulk of my weekly grocery shopping this morning. The only thing outstanding is to visit the **butcher** tomorrow. Our village butcher is very traditional. There's a counter for selecting one's meat, eggs, sauces and pies. All are chopped, sliced and wrapped up for you to take to another counter where the cashier sits. It means the food is separated from the money. I love the fact that I can choose a cut of meat or some chops – not like the plastic versions from the local supermarket.

Actually, the fact that it's been a bit showery means that I can play **bingo** with my friends this afternoon. We play in the residents' lounge once a week – it's very civilised with a raffle, coffee and cakes after the bingo. Some of you might think that this is another B for Boring! Ah well, the haste of younger folk can miss lots of stuff. The keys to life are to slow down, listen to others, find out news and shared memories. Some of my friends are aged 90+, but memories are so important to them and I learn things too. Listening can be a form of healing if it's done with kindness and empathy and that's part of a druid's box of medicines.

Another B relates to local **buses**, which are more places to talk to local people, either in the buses or at the bus stops. What I do notice is that many buses are being cancelled, which is less good for the elderly folk in our village. Sometimes, when it's rainy or cold, I do wish that I could unpack my trusty broomstick!

I've been asked whether this series is relevant to modern pagans and the answer is that **GYLDEN MAGICK** appeals to all ages and types of pagans. I believe that we ignore the past at our peril. We can learn so much from not repeating the errors of the past. My path is very much that of a healing witch and druid in the village.

Anyway, wishing you all many **blessings** for a happy Summer Solstice.

Environment: High hedges

By the Caltrop Consultancy

Editor's note: following on from last month's piece on flooding, it should be noted that the government has decided to shelve its policy of PFR (protective floodwater resilience).

Using natural defences against intruders is not a new tactic. Many plants act as deterrents to criminals, e.g. brambles, holly, berberis and blackthorn, if these plants are set thickly enough and backed up by perimeter alarms to detect criminals. One legal problem is the high hedge constraints in the **Anti-Social Behaviour Act 2003**.

Much of this law relates to boundaries between dwellings, but it is possible that a resident could complain about the perimeter hedges of an adjoining commercial site. A complaint is made by the owner or occupier of a domestic property and the allegation is that his or her reasonable enjoyment of that property is being adversely affected by the height of a high hedge situated on land owned or occupied by another person. Under s.67 of the **Anti-Social Behaviour Act 2003**, a domestic property is either a dwelling or a garden/yard that is used and enjoyed wholly or mainly in conjunction with the dwelling.

What is a high hedge? Section 66 of the **Anti-Social Behaviour Act 2003** defines a high hedge as a barrier to light or access, which is formed wholly or predominantly by a line of two or more evergreens and which rises to a height of more than 2m above ground level. Local authorities are empowered to deal with such complaints. If the offence is proven, the hedge owner can be ordered to take remedial action and to prevent recurrence. Failure to do so could result in the local authority taking the required action and recovering the costs from the hedge owner. Section 68 sets out the procedure for dealing with complaints of this nature and permits local authorities to set the fees: here is a summary of the process.

- The plaintiff must take initial steps towards the resolution of a complaint with the hedge owner: this first stage is a key condition of the local authority process.
- If no prior discussions have occurred between the two parties, the authority could reject the complaint.
- If the initial discussions have not produced a result, the authority could still reject the complaint on the grounds that it was vexatious or frivolous.
- If this happens, the complainant must be informed of the authority's decisions and the reasons for that decision.
- If the local authority accepts that the complaint is reasonable, both parties must be informed and the authority must issue a remedial notice.
- The remedial notice must set out the actions necessary to remedy the adverse effect and prevent recurrence, the date on which the notice takes effect and the consequences of a failure to comply with the contents of the notice before the operative date.
- The operative date must be at least 28 days after the issue of the notice. The notice is binding on the present hedge owner and his or her successors. An appeals procedure is in place with any appeal having to be made to the Secretary of State.
- If the hedge owner is a company, action can be taken against an officer of that company as well as against the company itself.

Note: Local authority employees can legally enter neighbouring land to carry out the functions of the 2003 Act, but they must give at least 24 hours' notice to the owner of the land on which the hedge is situated.

Apotropaic marks update

By Gylden Fellowship

In October 2016, Historic England started a campaign to ask members of the public to report apotropaic marks on buildings. The word 'apotropaic' comes from the Greek word for averting evil. The marks were usually scribed onto stone or woodwork near a building's entrance points, particularly doorways, windows and fireplaces, to protect inhabitants and visitors from witches and evil spirits.

Most such marks are found in or on medieval buildings, such as houses or churches from 1550-1750. Among the more famous examples are near the cellar door of the house where William Shakespeare was born in Stratford-upon-Avon, in the Tower of London, on the Tithe Barn in Bradford-on-Avon and in the caves of Witches' Chimney at Wookey Hole in Somerset.

Typical marks might include a daisy wheel, which looks like a flower with a compass or pentangles or Solomon's knots. They were cut, scratched or carved into medieval homes and churches in the hope of making the world a safer place and were a common part of daily life. At that time, many people were taught to believe in the evil aspect of witches and spirits and magical symbols were thought to keep them at bay. The picture below shows a daisy wheel mark.



The most common type of apotropaic mark is the daisy wheel (see above, which is the one in the Tithe Barn) or the hexafoil, namely a six-petal flower drawn with a pair of compasses. Daisy wheels comprise a single, endless line which supposedly confused and entrapped evil spirits. Pentangles (five-pointed stars) were used as ritual symbols and the letters AM for Ave Maria or just M for Mary are also common apotropaic marks. Such letters, scratched

into the fabric of medieval walls, engraved onto wooden beams or barn doors and etched onto plasterwork were thought to beseech the supreme protective power of the Virgin Mary.

They can also be found in old churches and many other public and private buildings across the country. County graffiti surveys across England have carried out some fascinating research but Historic England has asked the general public to identify more anti-witches' marks and it received over 600 responses.

The pioneer in this field of research was Ralph Merrifield who published various works on the subject during the 1980s. [Timothy Easton](#) has also written extensively on the subject. The most useful literature on the whole subject of the approach to the physical manifestations of ritual engagement with buildings is contained in the collection of essays by many of the current leading researchers, edited by Ronald Hutton. It contains an extensive bibliography with references to much of the periodical literature. There is also a growing number of excellent and accessible information online about surveys being undertaken in churches, which originated with the [Norfolk Medieval Graffiti Survey](#).

The biggest concentration of protective marks ever found in British caves was discovered in February 2019 at Creswell Crags in the East Midlands. The caves are home to the only Ice Age Rock art in Britain. The apotropaic marks or witches' marks, are scribed in the walls and ceilings of the caves to ward off evil spirits. Creswell Crags is a limestone gorge on the Nottinghamshire/ Derbyshire border with history dating back 60,000 years.



A common place to find the marks is historic churches and houses, as they are scribed to protect the inhabitants from evil spirits. The witch mark designs vary. The most popular design seen is the double 'VV' engravings, which may make reference to Mary, Virgin of Virgins and PM is Pace Maria.

Other designs are believed to be devices for capturing 'evil'. These include diagonal lines, boxes and mazes and could be a response to a period of unexpected sickness, death or poor crops. The site is protected as a scheduled monument and Historic England is advising on its future management, as well as the significance and interpretation of the witches' marks. Creswell Crags are also working with academics to better understand the discovery.

Mushroom songs

By Mark Sharpen

It doesn't seem that long since I wrote about tomato screams and this piece is more of the same, based upon recent discoveries and a showcase at the 2023 Chelsea Flower Show. Mushrooms cannot directly speak or create music that we can hear, but their electrical impulses produce vibrations that can be turned into music in a process called **Biodata Sonification**. By plugging the fungi into a synthesiser, the mushrooms make noises which are comparable to trance music due to its pitch, pace and distinct hypnotic sound. The bioelectrical impulses are converted into sounds, which are then composed into songs or ambient music.

I did have my doubts at first, but the waveforms do produce a peaceful trance-like sound, reminiscent of Mike Oldfield or early Tangerine Dream. Examples can be found on YouTube at <http://plantwave.com> or <https://youtu.be/wotNEp4m5PY>.

While the composers normally use PlantWave to listen to plants, in this video, they visit Kealia Forest Reserve (in the north-eastern portion of the island of Kaua'i in the state of Hawai'i), to listen to mushrooms. The mushrooms on this tree are connected to a PlantWave, which translates data from biological systems into notes. The notes are streamed to a phone with the PlantWave app, containing instruments. Unlike previous videos with plants, the mushrooms seem to create more of a steady drone, indicating much less activity or shifts in conductivity.

The instruments being played by the plant in this video are part of a Soundset called Celestial Being. This is a versatile and expressive set of instruments including electrical piano, bass, chimes and flute. Musical output can range from Eastern pastoral themes to ambient free jazz.

Tarun Nayar grew up learning Indian classical music, which heavily inspired his own discovery of mushroom music, "I learned that Indian classical music is heavily influenced by vibrations," he said in an interview. He notes his training in the genre helps him make sense of what, "the plants are trying to say". He continues, "I use various techniques to harness the bioelectricity of the plants and Earth's natural resonance that is beyond the audible spectrum of the human ear. The plants are not creating any music themselves. I use the movement of water inside these plants as electrical resistance. So, when I plug circuit cables to them, even small changes in the said resistance due to the plant's natural bioelectric charge manifest as notes of music."

For past issues of Gylden Magick magazine, please contact us:

Our Twitter and email addresses: @GyldenFellowship

Our website: www.gyldenfellowship.co.uk

On Facebook: <https://www.facebook.com/groups/gyldenpaganfellowship/>

