

East Lothian Council Countryside Rangers

July 2020



MUD in your EYE



Wildlife

The tidal world of rockpools

Pages 12 to 15

Quiz



Heavens above



Wild geraniums





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Welcome to the 46th Edition of
'Mud in Your Eye'

We'd love to hear from you!
Email: ranger@eastlothian.gov.uk
or follow us...

 @ELCrangers

 East Lothian Countryside
Ranger Service

Published by East Lothian Council's
Countryside Rangers

Editorial – Covid 19 lockdown

As I write this, we have just entered Phase 1 of an easing of the Covid 19 lockdown. The advice is still to stay at home, take your exercise locally and don't attempt to drive long distances to countryside sites. As a result, this publication will again be in electronic form only, as many of our usual outlets remain closed. We do hope, however, that the articles we produce continue to entertain as well as inform.

In this issue we have asked members of our Countryside Team to tell us about nature related books that have inspired them, either growing up or during their careers. You can comment on their choices, or let us know of any inspirational reads that mean something to you, on our facebook page. We have articles on geraniums, butterflies, nettles and rockpool life. There is also another short quiz for you to have a go at during your morning coffee.



Mud in your eye Quiz

The answers to the following quiz questions can be found in the articles in this edition of Mud In Your Eye. Just a ploy to get you to read them all!

1. What is the food plant of the caterpillar of the small tortoiseshell butterfly?
2. How many eyes does a caterpillar have?
3. Which will give you the strongest sting, the stinging nettle or the small nettle?
4. Why is the bloody cranesbill so called?
5. Which character from 'A Midsummer's Night Dream' is said to give his name to the geranium Herb Robert?
6. How do brittle stars move around?
7. What were the balls of whelk eggs sometimes used as?
8. From which comet do the meteors in the Perseid meteor shower come from?



But if time is short...

Answers can be found on page 19

The Very Hungry Caterpillar

I am sure you are all familiar with the book, and indeed caterpillars can be very hungry. To be fair though, salami and watermelon don't tend to be on the menu!



Peacock butterfly.

Abbie Marland.

A caterpillar has just one job, and that is to eat! During the larval stage, the caterpillar must consume enough to sustain itself through its pupal stage and into adulthood. Without proper nutrition, it may not have the energy to complete its metamorphosis. Caterpillars can eat an enormous amount during a life cycle stage that typically lasts several weeks. Some consume 27,000 times their body weight during their lifetime! Applied to a larger animal, this is an almost unfathomable amount of food to consume. A 200 lbs. (90 kilogram) person, for instance, would have to eat hundreds of thousands of Big Macs (to pick a somewhat universal reference point) a day to keep up with the way many caterpillars eat! Because of their exponential growth, and their pliable skin, they will moult several times as they gain size and mass. The stage between moults is called an instar and most caterpillars go through 5 or 6 instars before pupating. Caterpillar's poo far more frequently than most other creatures because of their constant eating, which is



Small tortoiseshell.

Abbie Marland.

why caterpillars more or less leave a trail of frass (often in pellet form) wherever they go. To make sure the caterpillars have the right food source from the moment they emerge, the adult butterfly has to make sure it lays the eggs on the correct food plant for its larvae, and this can vary with each species, though some like the same plants. Orange tips and green-veined whites both lay their eggs on Garlic Mustard, Cuckooflower and Hedge Mustard but the larvae are not in competition for food. When the caterpillars emerge, their first meal is usually their eggshell, providing it with a nutritious start. Once that's consumed they soon move on to the plant they have emerged on. The green-veined white butterflies eat the leaves of the plant whilst the orange tip larvae eat the seed pods – plenty for everyone! Orange tip eggs are a greenish-white when first laid, but gradually turn orange and are one of the easiest eggs of all species to find, tucked away on a flower stalk of the food plant.

The Very Hungry Caterpillar – Continued

Peacock butterflies and Small tortoiseshells lay their eggs on stinging nettles. Peacocks lay up to 500 eggs that are green with white stripes, on the underside of the leaves growing in full sun. The eggs hatch after about 10 days and the larvae spin a communal 'tent' or web of silk near the top of the nettle plant, which provides some protection from predators. The larvae feed inside the tent until the food supply is exhausted, and then move to a different part of the plant, where another tent is spun. As the larvae grow, they emerge to feed collectively and then separately.

Adult male Small Tortoiseshells are usually seen defending patches of nettles from intruders while waiting for a female to pass by with which to mate. Later, females are easily observed laying eggs on the underside of a fresh nettle leaf, often more than one female will oviposit on the same leaf, sometimes simultaneously. Females

typically select young plants growing near the edge of a nettle bed, and always growing in warm, sunny and sheltered conditions. The eggs are bright green, and laid in batches containing up to 100 eggs, which take some time to lay – typically between 20 and 90 minutes. The eggs hatch after about 12 days, and immediately after hatching, the larvae devour their empty egg shells, and then spin a communal silk web around the terminal leaves of the nettles. They shelter within the web at night, or in adverse weather conditions, and feed avidly whenever the sun shines. If disturbed the larvae react in unison, wriggling and jerking as a defence against parasitoid wasps or flies. The caterpillars are black in colour with a dull yellow line running vertically. There are also yellow marks on both sides of each segment along with a small tuft of spine-like hairy growths.



Orange tip egg on garlic mustard. Abbie Marland.

Orange tip male.

The Very Hungry Caterpillar – Continued



Green-veined whites mating.

Garlic mustard foodplant of orange tip larvae and green-veined whites.

The time it takes for a caterpillar to pupate varies widely according to species. Many caterpillars are fully grown and ready to pupate within a few weeks of hatching from an egg, such as the Painted Lady butterfly that only takes four weeks. Others will overwinter in readiness to complete their growth and pupate the following spring, such as the Fox Moth, which remains as a caterpillar for 11 months of the year from June to April.

This is nothing when compared to the caterpillar of the Goat Moth, however, which will remain in the larval stage, inside a tree trunk, for up to five years! Whatever adult butterfly or moth species you encounter when out in the countryside take time to observe and enjoy it. Don't forget the amazing transformations it has been through and the same process that is about to start with its offspring!

Amazing caterpillar facts!

- A caterpillar has as many as 4,000 muscles in its body, the head alone consists of 248 individual muscles!
- Caterpillars have 12 eyes.
- Caterpillars can produce silk for varying reasons. Some use it to disperse, others to create 'tents' to live in and to suspend a chrysalis or construct a cocoon.
- Caterpillars have 6 legs like the adult butterfly or moth. There are way more than 6 legs on most caterpillars you've seen, but most of those legs are false legs called prolegs, which help the caterpillar hold onto plant surfaces and allow it to climb.
- Caterpillars get creative when it comes to self-defence, employing a variety of strategies to avoid being a snack for a bird. Some look like bird droppings, some mimic twigs, some have large eye spots, some advertise their toxicity
- Some caterpillars grow to be 1,000 times larger than their original size.

Know your Nettles

OK so nettles might be a plant with a slight PR issue. Quite frankly, however, they deserve more respect! Not only is this plant a staple food source for some of our best loved wildlife, this much maligned 'weed' has for millennia been one of our most significant go-to plants, being a prominent feature of many a herbal or evening meal.



Stinging nettle – Urtica dioica

*Small nettle, Urtica urens,
with nettle weevils*



Also, you may wince at the thought, but nettle fibres have been woven into clothing for millennia and are to this day used as a substitute for cotton.

Sitting within a very small family (Urticaceae) containing only four regularly encountered plants within the wild in the UK, *Urtica dioica*, aka the stinging nettle, and *Urtica urens*, the small nettle (which also stings) are the only two that can be easily confused. The other two members of the Urticaceae look quite different and are rare in Scotland, and given that one of them is named Mind your own business we'll leave them alone.

Separating stinging nettle and small nettle is straight forward when you get your 'eye in' (not literally!). The latter is less hairy and is known as the small nettle for good

reason, with more compact stature and smaller, darker leaves arranged in a distinct stepping form. It is also known as the burning nettle and is reputed to pack more punch into its diminutive form.

Plants commonly mistaken to be a close relative of nettles are dead –nettles. They are not closely related, however, despite having similarly shaped leaves. Dead nettles belong to the mint (Lamiaceae) family and have distinctive red, white and pink 'hoodie' shaped flowers arranged in a whorl around the stem. Stinging nettles have tiny greyish-yellow flowers in drooping clusters hanging down from the stem.

There is of course one sure fire way of separating dead and stinging nettles, but unsurprisingly, I'm not going to recommend that!

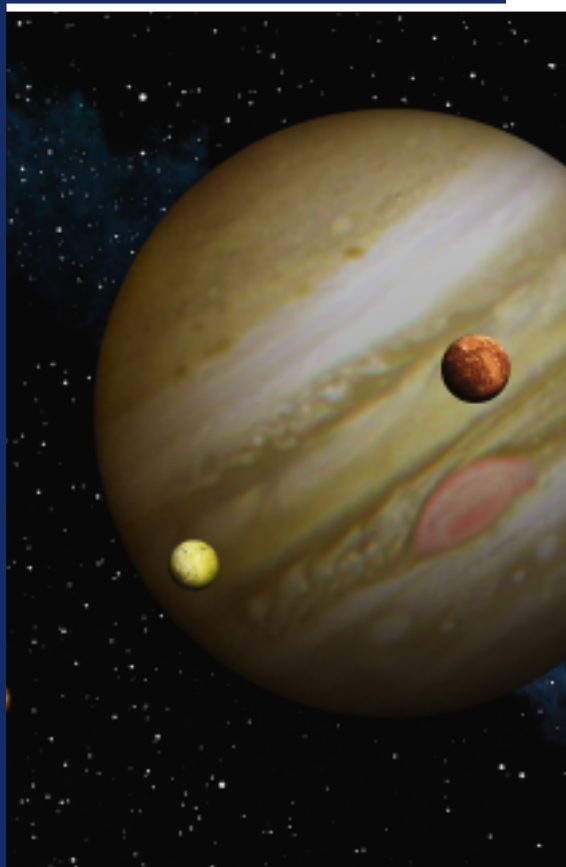
Heaven's Above – Jupiter and Saturn

This July marks an interesting month for the planets, in that all of them will be visible in the night sky at some point. Admittedly, you will need a decent telescope to see some of the furthest ones, but now is a good time to look for Jupiter and Saturn.

On July 14th, Jupiter will be at 'opposition', which means it will be fully illuminated by the sun. It will also be at its closest approach to Earth. This far north, it will be very low in the southern sky, but worth looking out for if you have an unobstructed view, as it will be at its brightest. A decent pair of binoculars or a telescope should allow you to see the four biggest moons, which will look like bright dots either side of the planet.

At the same time as Jupiter being at opposition, so will Saturn. It will also be low in the southern sky just east of Jupiter, and again, fully illuminated by the sun. The rings will be tilted towards us, so should be visible through a telescope.

If planets are not your thing, then watch out for the Perseid meteor shower in August. It peaks on August 12th, but can be seen in the days leading up to and after this date. Up to 80 meteors per hour may be seen, but you will need to be up in the early hours to appreciate this. The meteors are from the comet 'Swift-Tuttle' and consist of small particles that burn up in the atmosphere.



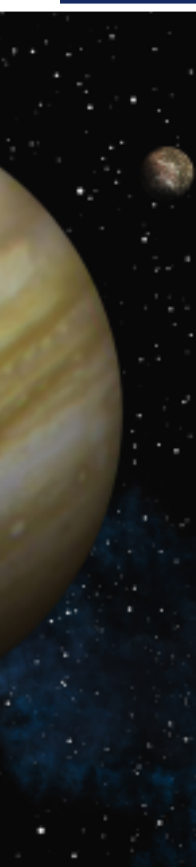
Jupiter

Jupiter and Saturn – Continued

They appear to originate from the constellation Perseus, hence the name. Swift-Tuttle orbits the sun once every 133 years. A near miss with earth is predicted, but not for over 1000 years!

If you are new to astronomy, and want to find out more, try
www.skyatnightmagazine.com/astronomy-for-beginners

It's a great introduction to the field and has lots of guides and tips for night sky watching.



Saturn

Geraniums

Anyone who's visited a garden centre will be familiar with the geranium family, although many of the plants sold under the name are technically pelargoniums. However, if you take a step outside the garden (tricky at the moment, I know), you'll find lots of lovely native geraniums.



Meadow cranesbill flower.

Collectively these plants are known as cranesbills, or storksills. This reflects the shape of the seed pod, which is long and tapering – rather like the bill of a crane, or indeed a stork. All have flowers with five petals, most of them being some shade of pink or purple. Some have notched petals, slightly divided into two sections at the end, and this can be an important tool in identifying the exact species.

The cranesbills are the true geraniums, i.e. they belong to the genus *Geranium*. A number of these can be found around the county. Some are relatively common, but no less beautiful for that.

Meadow cranesbill, *Geranium pratense*, grows in grasslands and hedgerows. Like most geraniums it has palmate leaves – this means the leaf is vaguely hand-shaped, with finger-like lobes. In this case the lobes number between seven and nine,



Herb Robert.

and are deeply divided. It's the flowers of the meadow cranesbill which are a particular favourite of many, including myself. These are a violet-blue colour and, if you get a close look at the petals, you'll find each is marked with pink veins. These flowers seem to stand out at dusk, their blue colour becoming somehow brighter than their surroundings. I'm not sure why this should be the case; perhaps it's something to do with levels of ultra-violet light as it gets darker.

I don't know, I'm a countryside ranger, not a physicist.

A close relative is *Geranium sanguineum*, the bloody cranesbill. It's much less common than meadow cranesbill, but where you do find it there can be loads of the stuff.

Geraniums – Continued



Common storksbill.

It's a specialist of dry grasslands, preferring slightly alkaline soils. In an East Lothian context, this means you'll find it in coastal, sandy grasslands. On the face of it the name bloody cranesbill would seem to derive from the bright magenta flowers, but it's actually from the red colouration of the stems. It's a short, clump forming plant, but despite this, it can really stand out as a mat of colour, even amongst taller vegetation. A third commonly found member of this genus is herb-robert, *G. robertianum*. This is a smaller, more delicate plant than the first two, with pink or occasionally white flowers. It has a very distinctive (and unpleasant) smell, which is said to resemble that of mice. Its name may derive from an association with the house goblin Robin Goodfellow, although an alternative is that it was named after St. Robert, a French monk of the early 11th century. He was said to have cured assorted afflictions using this plant, and it is still used by herbalists. It can also be found in homeopathic remedies; or "water" to use the correct scientific terminology. Herb-Robert's foul smell has also led to it being known as "stinking bob".

A slightly more distant relative is common storksbill, *Erodium cicutarium*. It's superficially similar to herb-robert, having small purple-pink flowers, although these may carry a small black spot near the base of the two upper petals. This is never seen on herb-robert. A better way of telling common storksbill from the geraniums is by looking at the leaves. Rather than the palmate leaves of the geraniums *Erodium* has feathery leaves. It's a fairly common plant, often found in grasslands and along path edges in coastal areas.

Like herb-robert, it can sometimes be a bit smelly, but it lacks the pungency of its relative. Its genus name is derived from the Greek *erodios*, meaning heron. Again, this is in reference to the seed pods resembling the long, thin bill of a bird. These pods explode when ripe, helping to disperse the seeds far and wide.

Geraniums are not just beautiful additions to the countryside, they're also an important part of ecosystems. They provide nectar for bees and butterflies, and also provide food for various caterpillars, including brown argus butterflies and plume moths.



Bloody cranesbill.

Rockpool Rambles



Rockpooling is one of life's simple pleasures (well, in my opinion). In East Lothian we are very lucky to have so much accessible coastline to be able to get out and guddle about in. In these crazy times taking some time out and spending time in nature is really valuable, so here is a guide to a few of the beasties that call the rockpools home, and a bit of advice on how to have as little impact as possible on this fabulous habitat while you explore.

Let's start with the advice!

- Before you go check the tides. The best time to go is as the tide is going out. <https://www.tidetimes.org.uk/>
- Always keep an eye on the incoming tide so you don't get cut off
- Pick a rockpool – the further down the shore the more beasties you can find
- Remember seaweed is slippery!
- Spend some time looking quietly at it to see what you can see
- Move seaweed and stone to see what is underneath

Please always

- Replace stones /rocks as you found them
- Handle any beasties with care – try and look at them in situ
- If something is stuck to the rocks please do not try to remove it, as this can cause damage to the animal and result in its death
- Replace all beasties to the area of shore you found them
- Take lots of pictures, leave everything as you found it, have fun!



Brittle Star

They move around using their tube feet which are the hundreds of little moving feet you can see on the underside of each leg. They are scavengers and detritivores. They use their tube feet to move particles down their arms into their mouth which is in their central disc. Their arms are very brittle and can be dropped to evade capture – they can grow them back!

Rockpool Rambles – Continued



Common starfish

Usually have five arms but may have less as they can shed them to evade attack and grow them back – handy! They use tube feet to move around and eat by turning their stomach inside out!



Periwinkle (left)

Sea snail that grazes the rockpools. Has a trap door it can close in its opening to keep it wet inside when the tide goes out. If you watch them in the rockpool you can see two little tentacles sticking out from the shell.

Dog Whelk (right)

Carnivorous snail. They have an adapted tongue that can drill through other shells, then squirt in digestive juices and suck up the “delicious” soup.



Barnacles

Permanently stuck to the rock with a strong glue they produce. They are filter feeders. They have a net of tentacles they wave about when the tide is in to collect food as it floats by. The “net” comes out of an opening in the centre of the barnacle.

Rockpool Rambles – Continued



Limpet

Grazes on algae when the tide is in and then always returns to its home or “scar” on the rock, which is made to fit its shell exactly, to keep it nice and wet when the tide goes out.



Razor shell

A mollusc that is found buried in the sand. They are called razor shells as they are very sharp and look like old fashioned cut throat razors!



Shore crab

Or green crab. They have an external skeleton so have to crawl out of their old one to grow. When they do this “moulting” they are soft and hide under rocks. Their shell will harden in a few hours. Despite the name, they can be green, brown and even tinged with orange..

Rockpool Rambles – Continued



Edible crab

Pink/brown in colour with black tips to the claws. The top of the body or “carapace” looks like a pie crust – that’s how I remember it’s edible!

The males have a triangular shape on their stomachs and the females a wider semi-circular shape where she keep her eggs.



Whelk eggs

Hundred’s of little eggs all stuck together from Whelks. Some coastal communities used to use them as sponges for washing!



Beadlet or strawberry anemone

Around the top of this beastie you can see small blue beads where the tentacles meet the body. When the tide is out and they are exposed to the air they look like strawberries (hence both their common names). They feed by firing little harpoons out to catch small animals floating in the plankton, they then reel them back in. If you touch the tentacles very gently they will feel sticky as they try to catch you with their harpoons that are too small to catch a human!

Inspirational Books

We asked the Countryside Team about nature related books that have inspired them when growing up, or even just been really useful to them in their careers. Here's what they said.



When I was studying for my MSc, I volunteered for Angus Egan who owns Earth Calling www.earthcalling.org/ helping him with his after-school wildlife clubs at Ravelston Wood.

When I finished volunteering he bought me **Collins Complete British Wildlife** guide as a thank you, with an inspirational message inside. Six months later I got my first seasonal ranger post at Gullane and the book became a valuable tool to help me on my way and help my ID skills. I still have the book and often refer to it, as do my children!

Laura Douglas



Flight Five, Africa. A Ladybird book of Travel Adventure - Maybe not 100% PC these days, but this book made me dream of travel to faraway places and gave me a longing to see the wild animals! I think it planted the seed of becoming a Ranger, too, but Longniddry Bents, where I began my countryside career as a seasonal ranger, was a little different from Kruger National Park!

Nick Morgan



One Christmas when I was 10 years old, I received a copy of **Watership Down** by Richard Adams; not a science or nature book at all, but one that had me enthralled, as much by the evocative descriptions of the landscape as by the storyline itself. It certainly made me look at rabbits in a different way! I've read it many times since. One day I'll visit that area of the South Downs to see it for myself.

My first proper bird book was The Birds of Britain and Europe, published by Collins, given to me as a reward for a very good school report! I used to take it on every trip and summer holiday. I still have it over 40 years later. I've always loved looking at the distribution maps, although they are a little out of date now.

Roger Powell

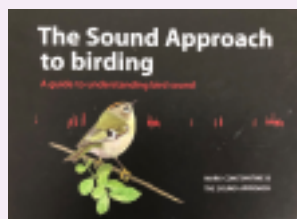
Inspirational Books – Continued



For my 5th birthday, my parents bought me a book and this book is partly responsible for steering me down a path to a job as a Countryside Ranger. It was no book of romantic prose but, as I read it again now, still stirs in me an emotional connection with the natural world. And Robert Dougall's **Ladybird Book of British Birds** must have struck quite a chord as none of the rest of my family had a particular interest in wildlife. Perhaps it became my thing? It opened my eyes to bird migration, adaptations, nest building and much more. There were kinds of birds in there which remained, inspiringly, exotic to me for many years. In fact the photograph of the wryneck on a tree trunk still doesn't look real! On the face of it, a fieldguide sounds like

such a dry text but it can be, and was for me, just as stimulating and emotive as any work of fiction. So long as it's got nice pictures!

John Harrison



Sitting alongside my prized cd/book combo of the **Collins Guide to Bird Songs and Calls**, (Geoff Samples soporific voice will be narrating bird calls in my mind for ever more I think), is the fabulous **Sound Approach to Birding**. The Sound Approach's use of sonograms helps you visualise differences between vocalisations, giving you extra tools to identifying bird songs, whilst transporting you to far off lands from the comfort of your living room.

Dave Wild



Through the Woods by H.E. Bates - I've always loved Bates' evocative descriptions of the countryside and his books continue to inspire me to stop and look closer at what's around me. It absolutely sparked an interest in nature, and particularly getting to know your local area – not necessarily the largest, most diverse area but what was your local patch. I'm particularly fond of this book now as an adult as it's set in Kent and reminds me of my somewhat feral childhood in the county roaming the countryside and, in particular, exploring the woods round the corner from my house.

Wilding by Isabella Tree - I recently read this and couldn't put it down! It's an inspirational account of one farm's change of direction and the consequent increase in biodiversity, including the return of rare species such as nightingales and purple emperor butterflies. Provides food for thought at the power of nature and the value of landscape-scale ecology.

Catherine Cummings



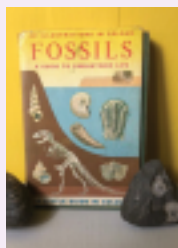
Inspirational Books



Wind in the Willows – All the delightful descriptions of the characters made me intrigued with wildlife. The frogs and toads brought home were often not that welcomed by my mum!

Enid Blyton's Book of the Year 1944 – It was my Grans book and is falling apart, but it is an illustrated guide with stories and poems to the year. Growing up in South Africa, it totally intrigued me to learn about the seasons; and as a small girl it blew my mind that the seasons in the northern hemisphere were opposite to ours! Cold at Christmas. How do you play with your present?!

Jock of the Bush Veld by James Percy Fitzpatrick – True story about Fitzpatrick's travels around the Transvaal in South Africa in the 1880's with his dog Jock who had one ear up and one ear down! Again the inspiring descriptions fed my interest in wildlife, travel and indeed dogs.
Tara Sykes



Fossils, a Guide to Prehistoric Life (Hamlyn) - It's the 1969 reprint, has a few pages missing and was almost certainly stolen from my big brother. It's also a bit dated, as ideas about dinosaurs have certainly moved on since. However, the drawings of trilobite-filled oceans and Carboniferous coal swamps grabbed my imagination, and definitely played a big part in my later love of all things geological.

Richard English



Culpeper's Complete Herbal and English Physician - Culpeper, the man that first ranged the woods and climbed mountains in search of medicinal and salutary herbs....." Dr Johnson- I have used this as a reference book over the years for snippets of information for guided walks. However, as a child who had both sets of Grandparents who had allotments I was always interested in what you could eat safely in the outdoors!



The Broons - not science related at all! As a child I was always entertained by the Broons family outings into the countryside and to their But N Ben. While they got into trouble, and invariably got caught out, when doing the wrong thing in the countryside; the message of learning the consequences of not investigating something but also adapting to new situations, I found useful when venturing out into the countryside.

Jenny Hargreaves

You can comment on their choices, or let us know of any inspirational reads that mean something to you on our facebook page. www.facebook.com/ELCrangers/

Fire safety

As the days get longer and the nights get warmer, the Scottish Fire and Rescue Service wants you to have an enjoyable and safer summer.

Whether barbecuing with friends or enjoying a picnic with the family, you can take some simple steps to protect yourself from danger. Warmer weather and the increased numbers of people visiting the countryside creates a greater risk of fire. When you're out and about:



- Make sure you extinguish and dispose of any smoking materials properly. Never throw a lit cigar or cigarette away in a rural environment as they have the potential to cause serious fires, or even wildfires, during the drier summer months
- Dispose of glass or bottles in a bin and not out in the open. Glass can be magnified by the sun's rays and has the potential to cause a wildfire or serious grassland fire
- Before lighting any outdoor fires, check for any restrictions or permissions required by the landowner. **DO NOT** light a fire in a wood, or in or near grasslands
- Ensure recreational fires are made in a fire safe pit or container and that they are properly extinguished before you leave
- If a fire occurs in the countryside, no matter how small, call 999 and ask for the Fire Service straight away. Even small fires have the potential to turn into a wildfire
- Many outdoor fires are started deliberately or are due to careless, reckless or irresponsible behaviour. If you suspect someone of acting irresponsibly, contact Police Scotland on the non-emergency number **101** or Crimestoppers on **0800 555 111**.

Mud in your eye Quiz - answers

1. Stinging nettle
2. 12
3. Small nettle
4. It has red coloured stems
5. Puck also known as Robin Goodfellow
6. Using hundreds of tiny tube feet
7. Sponges for washing with
8. Comet Swift-Tuttle