Friends of
Earlham cemetery

The newsletter for Friends of Earlham Cemetery Issue 11

Contents

All our walks start by the cemetery office and gates at the Earlham Road entrance. Indoor meetings are held in the small room at the Belvedere Centre unless otherwise specified.

The following dates have been provisionally arranged:

Date and venue for our AGM: 8pm on Sunday 10th February 2019 in The Black Horse pub on Earlham Road. Jeremy will send out a final confirmation early in the New Year.

We're now into the period of wonderful autumn colours; the gold and yellows of the season are starting to show. Hopefully the cemetery wildlife and plant life will be recovering from the blistering sunshine that we had this summer. It's been a long time since we've experienced such a harsh heatwave in this country. Climate change is definitely here to stay, however, our natural environment can prove surprisingly resilient given time to adapt.

I was dreading the lack of butterflies and moths after such a hard winter and I wasn't expecting to see many in the cemetery this year. However, when walking around on sunny days we were surprised to see large numbers of speckled woods, meadow browns, ringlets and skippers.

With the help of our native wild flowers, pollinators were managing to find enough food to survive and hopefully breed. I believe the surrounding gardens of the cemetery also contribute if they are wildlife friendly. They add a second support system of nectar-rich plants which pollinators can rely on. The general public have become more aware of the effects of climate change as it affects them on a personal level. Gardening for wildlife can supply the equivalent of mini rainforests surrounding the cemetery. This can only be a positive and adds to a diverse range of plants to support local wildlife.

One of the surprises for us, this year, has been the number of hedgehog sightings in and around the cemetery. I'm not sure if this is an indicator that hedgehogs have been struggling more to find food and water due to the heat or that the cemetery plays an important green space to link surrounding gardens and territories.

I mention some of the ways you can observe and record wildlife in my technology article. Don't forget if you have any queries or questions concerning the cemetery you will always get a reply from Jeremy through our Facebook page.

Don't let the recent problems that have affected the cemetery put you off from going out and enjoying such a wonderful green space. If you see anything interesting or find anything you can't identify please pass the information on to either Jeremy or myself. You never know, you may find a first record for Norfolk.

Please send all submissions for inclusion in the next newsletter to sj.lockwood@ntlworld.com. Please supply photographs as 300dpi jpegs if possible.

Technology for Wildlife study - *Sandy Lockwood*

This article may seem a little bit off topic but bear with me and you will discover that it isn't. I was thinking about what subject I could write for this newsletter, when it occurred to me that what I've been trying out recently could be very relevant to the study of the wildlife and ecology in the cemetery.

Last year I was lucky enough to be able to treat myself to a Bushnell wildlife trail camera. It wasn't until this year, however, the hottest year for long time, that I was able to set it up in the garden. Our house backs onto the cemetery so any wildlife we find in the garden could possibly be using the cemetery as well.

I can understand the concerns people have about how quickly technology is advancing and how it's used. I'm old enough to remember when graphic computers cost the price of a small car and the main operating system used was a horrifying form of DOS. Servers were large machines hidden away in air conditioned buildings as you can gather I'm a bit of a geek. I embraced technology to help me do my job as a graphic designer many years ago as you had to move with the times or fail as a business.

However, technology can be over-used and recent studies show how it can break our connection with our natural surroundings. There are always reports of how people are glued to their phones and computers at home and never want to go out to experience our beautiful countryside. I don't believe technology is to blame for these problems, after all, technology is only a tool and it's what you do with it that makes the difference.

As technology and gadgets advance they also become more accessible and cheaper to the general public. Cameras, listening devices and trackers are the main forms of technology that are being used today to monitor, survey and help protect our wildlife. They offer the opportunity to look into the hidden world of our wild environment. Without these amazing devices it would be impossible to create such wonderful series's such as the Blue planet, Spring Watch and Autumn Watch. Macro photography of insects and plants has become extremely popular with the availability of new software and macro features are standard on virtually every camera you buy today. Technology can be used in a positive manner to help introduce and engage people to their natural surroundings. There are many people who don't live next to a nature reserve, have access to the open countryside or even a brownfield site.

No matter how you view them or how irritating you find them as people tell their friends they are "Going into Tescos". A large proportion of people now have a smart phone or a tablet. You may have heard the slogan "There's an app for that", I think it's become a bit of a standing joke now. But these apps do help to engage the public in discovering the wildlife in their local habitats. It's this technology which is helping our wildlife societies collect vast amounts of data each year which they wouldn't have been able to do before. Prime examples of these are the popular "Big Garden Bird Watch", "The Bee Count" and "Butterfly Count" which now happen every year.

All of these wildlife groups have created apps to facilitate the collection of data along with links to their websites giving lots of interesting information for both children and adults to explore. This is a positive bridge of the gap of children learning about species in their environment and becoming engaged in their conservation. All the data collected is invaluable to scientists and ecologists. It helps them to access government grants to support the conservation of species in and around Britain. It is also one of the main tools in helping to monitor species decline or spread as in the numerous introductory success stories.

This now gets me to my main point, (apologies for the rambling I did tell you I was a bit of a geek). A few years ago we were able to carry out surveys of the bat populations in the area as well as next to the cemetery, you may remember my article on bats a couple of newsletters ago.

Echo Meter Touch Bat Detector app by Wildlife Acoustics

Surveying is still being carried out across Norfolk. The Technology is very simple to use and is available to everybody who wants to get involved with surveying bats in their own location.Now there's an app for that! A bat app has been developed along with a recorder which connects to your phone or tablet. This allows you to take readings of bat calls, help you to analyse the recordings and work out what bats you have in your area. Your data can be collected and sent to your local bat society which they should find useful. It's a very small portable device so it's easy to carry and doesn't take up a lot of room in your bag.

Another species which is in serious decline in this country is the hedgehog. A number of years ago our neighbour told us that she had what she believed to be a hedgehog visiting her garden. Investigating further we did notice

hedgehog droppings around her garden to confirm this. Fast forward to this year and the setting up of my Bushnell wildlife camera. I wasn't sure what to expect but just wanted to see what could be visiting the garden from the cemetery. With the help of an excellent YouTube video by Simon King (wildlife man extrodinaire) we set up the camera for night time filming only and waited to see what it recorded. We were surprised and amazed at what it captured.

As 2018 has been the hottest year for some time our wildlife has been struggling with the lack of water and food due to extreme conditions. We've been putting out multiple bowls of water at the front and back of the house which have always been empty by morning. Even accounting for the numerous cats in the area the water was disappearing at a vast rate. We left the camera trap running for one week hoping it would capture what ever was visiting this part of the garden.

We already knew there was a possibility of one hedgehog visiting, however, what we weren't expecting was the camera to record three adult hedgehogs visiting on a regular basis. This may not seem unusual to some people, but hedgehogs are in severe decline due to habitat loss and the overuse and availability of

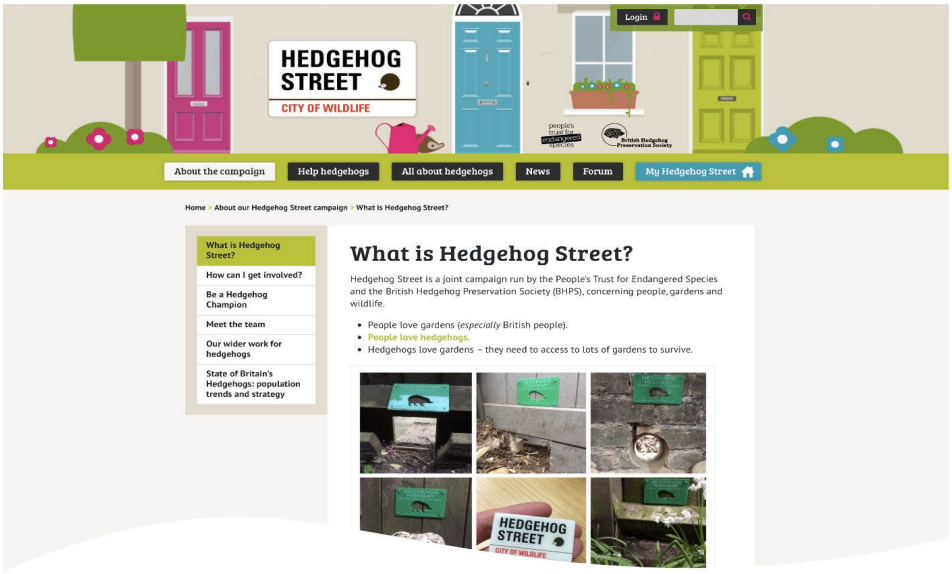
Night time images from our Bushnell wildlife camera © Sandy Lockwood

slug pellets in gardens. In the years we have lived here I have only ever seen one hedgehog in the cemetery. This year, which may have been due to the heat and lack of water, we've observed a number of hedgehogs foraging during daylight hours in the cemetery.

Hedgehogs will walk long distances to access food and water and gardens are their main habitat. Our wildlife camera has helped us to establish that we do have a good population visiting the gardens via the cemetery. We also know that two of the hedgehogs which are regular visitors may be hiding in the cemetery during the day. Consequently we were able to support the hedgehogs by putting out food as well as water in the evenings to help them get ready for winter hibernation. Due to what our camera captured we also passed on this evidence to the new survey being carried out by Essex University on the hedgehog populations in the UK.

This data will help to create new ways of improving habitats for hedgehogs and hopefully reduce further decline. All of this wouldn't be possible without the use of modern technology, the apps and the engagement of the general public. So while many think that technology will cause the destruction of our wildlife and countryside. In the right hands it may just be the thing that helps save it.

Sandra Lockwood



Hedgehog Street is part of a wider campaign to help hedgehogs, run by two UK-based charities, People's Trust for Endangered Species (PTES) and the British Hedgehog Preservation Society (BHPS).

Hay raking 2018 - *Jeremy Bartlett*

I have already written about the Habitat Management Plan for Earlham Cemetery (Newsletter No. 6). As part of the plan, selected areas of the cemetery are being treated as a hay meadow. When the hay is cut, volunteers from TCV (The Conservation Volunteers) rake it up and then Norse remove the piles of cuttings and take them off site.

In Newsletter No. 7 I described hay cutting in September 2016. The work continued in October 2017 and in September and early October this year.

Although TCV uses volunteers, they have fixed costs of around £300 per day, which pay for a paid task leader, minibus, tools and insurance, as well as overheads in running the organisation.

Norwich City Council pay for some of the raking each year but with continuing cutbacks to local government spending, we are helping out by applying for grants to pay TCV's costs.

This year we had eight days of raking in the cemetery. Norwich City Council paid for two days of raking and we paid for six.

Six days of raking has cost £1800. Last year we were awarded a £2000 Tesco Bags of Help grant and £1200 of this paid towards last year's raking. We carried over £800 to this year and I also submitted a grant application to Norfolk Community Foundation. We were awarded £1000 from the Dulverton Trust Fund to make up the rest of the £1800.

Earlier this year I submitted a grant application to the Co-op Community Fund and we are waiting to hear the outcome. Last year we also received £300 from the Aviva Community Fund, which we can carry forward to 2019, and I have entered our hay raking project into this year's Aviva Community Fund voting as well.

Applying for grants is very time consuming but thankfully Debbie Murray from TCV helped me to write the Tesco Bags of Help application and I have found that I can reuse a lot of the Tesco wording for subsequent applications.

Here are some photos from this year's raking. I hope you'll be able to help out next year: it's good fun, healthy exercise and good to meet the other volunteers.

Jeremy Bartlett.

Volunteers from TCV (The Conservation Volunteers) hay raking in Earlham cemetery 2018 © Jeremy Bartlett

Co-op Local Community Fund:

Please nominate us as your preferred cause!

We have applied for funding from the Co-op Local Community Fund to pay towards hay raking in Earlham Cemetery. We are one of their local community projects from November 2018 until November 2019.

If you are a Co-op member, you can nominate us as your preferred cause for receiving donations by signing into your Co-op membership account (https://www.coop.co.uk/membership) or by calling the membership helpline on 0800 023 4708. You can also use the link to become a member of the Co-op.

If you nominate us, we will receive 1% of what you spend every time you buy Co-op branded products and services.

Since its launch in 2017, Co-op members have raised £39 million pounds for over 12,000 local causes.

NB: This is the national Co-op, not the East of England one. The local stores are as follows (and include the big Co-op at Earlham House Shops)

Jeremy Bartlett.

Store Name	Store Address	Store Postcode	Business Unit
Norwich - Earlham Road	Norwich	NR2 3PD	Food
Gordon Rooney (Norwich)	Norwich	NR2 3TR	Funeralcare
Peter Taylor (Norwich)	Norwich	NR2 2PE	Funeralcare

A Cuckoo in the Nest - *Vanna Bartlett*

Seven species of social bumblebee are regularly recorded in Earlham Cemetery. These are *Bombus hortorum, B. hypnorum, B. lapidarius, B. lucorum, B. pascuorum, B. pratorum* and *B. terrestris*. Mated queens hibernate overwinter, emerging in spring to establish a nest, usually just below ground (often in an old mouse nest) or under thick vegetation at ground level. *B. hypnorum* is the exception, nesting in tree cavities, often old bird nest sites. The queen forages for pollen and nectar to feed the first of her offspring who become the worker bees that take over the task. Later on, new queens and males are produced who will mate and then start a new colony the following year. Only the new queens survive the winter as a rule. (In the south, especially during very mild weather, some colonies of B. terrestris continue through the winter).

Not all bumblebees go to the bother of starting a nest and producing worker bees though. These are the cuckoo bumblebees, four of which have been recently recorded in the cemetery. As their name suggests, the females of these bees will search out the nest of a social bumblebee in which to lay her eggs. On entering the nest, the cuckoo will attack the resident queen, generally killing her, and lay her eggs in the existing nest cells. Her larvae are then fed by the workers of the old queen. The resulting bees are either female or male, no worker bees are produced. The success of the cuckoos is reliant on the number of worker bees already established in the nest – too few and not many new bees will be reared, too many and the cuckoo may be repelled or even killed. The female cuckoo bees will have over-wintered like the host queens but they emerge a few weeks later when the queens have had a chance to get their nest established.

Each species of cuckoo bee has a specific species of host which it resembles. The main difference between social queens and female cuckoos is that the latter doesn't have a pollen basket (corbicula) on her hind leg as she doesn't need to collect pollen to feed workers. Cuckoos also tend to have darkened wings and their body is less hairy so that the shiny black cuticle shows through. This tough integument as it is called helps protect the female when she enters the nest and attacks the queen.

Cuckoo bumblebees will forage on the same flowers as their hosts. Lesser knapweed flowers are particularly good (both *B. campestris* and *B. rupestris* were found on knapweed) and bramble flowers are also highly favoured. In early spring, dandelions are an extremely important nectar source.

The four species of cuckoo bumblebee found in Earlham Cemetery are as follows:

B vestalis © Vanna bartlett

B vestalis. By far the commonest species in the cemetery (and in general). Males can be very plentiful – on bramble and also knapweed flowers. They are cuckoos of *B. terrestris* which is a very common species both in the cemetery and in Norfolk.

B terrestris © Vanna bartlett

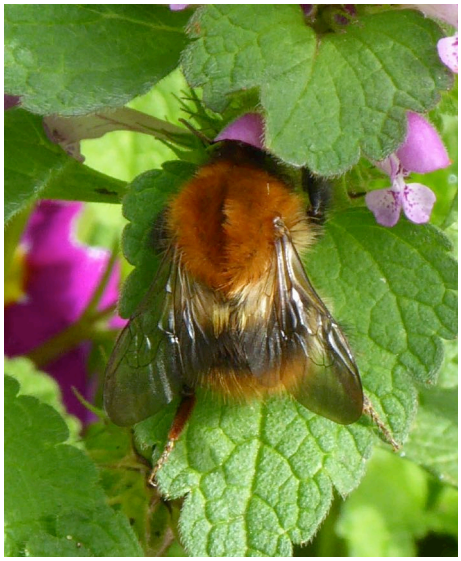
B sylvestris © Vanna Bartlett

B sylvestris. Two females recorded in spring 2018. It is a cuckoo of *B. pratorum* which is fairly plentiful in the cemetery so it ought to be recorded more often.

B pratorum © Vanna Bartlett

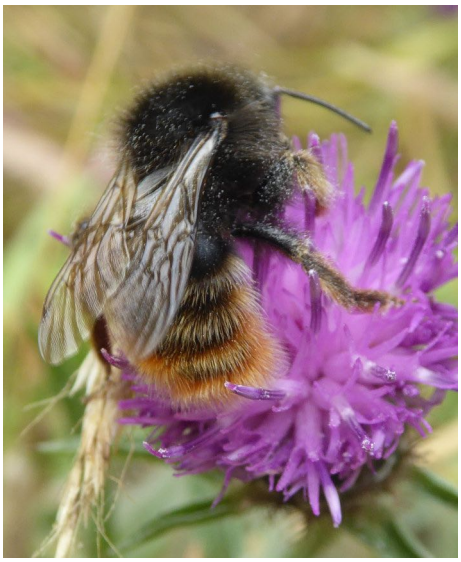
B campestris © Vanna Bartlett

B campestris. This is the cuckoo of *B. pascuorum*, one of the commonest bumblebees but it is surprisingly nowhere near as common as perhaps expected. One record of a male in July 2017.



B. pascuorum © Vanna Bartlett

B rupestris. A male recorded in July 2018. Cuckoo on *B. lapidarius* whose queens are regularly seen in spring with workers and males on lesser knapweed flowers later on.



B. rupestris © Vanna Bartlett

B. lapidarius © Vanna Bartlett

Other than *B. vestalis*, cuckoo bumblebees are not very plentiful in the cemetery but this doesn't necessarily reflect a lack of host species. Across Norfolk most of the species are fairly scarce except *B. vestalis* and B. sylvestris. Females tend to hibernate fairly soon after mating so males are more often encountered.

As already mentioned, bumblebees generally nest in old mouse nests or under thick vegetation. Although bumblebees are frequently seen foraging in the cemetery it is not known how many nest. Large parts of the cemetery consist of very short mown grass which isn't suitable for nest sites. The coarser areas that are mown less frequently and the patches of bramble dotted around afford cover for mice and are much more likely to have nests. An old nest was found in 2016 by Jeremy Bartlett on a hay raking task in an area that had been left to grow long before the hay cut. It was on the ground, covered by thickly matted vegetation.

Vanna Bartlett.

As is now the custom, James Emerson and I ran two fungi walks during autumn 2017. The October one was a little damp while November's was a drier but chillier affair. For each we had about 10 hardy souls who braved the weather to come and find the cemetery's fruiting fungi. The season had started out on a promising note as summer wasn't drought ridden and we saw the first flush of fungi in late August into September. However by the time October came around, we had had little rain for weeks. In order to get good fruiting, fungi need moisture, so the lack of rain did impact on what we saw. The day before the walk I did a recce around the site so I knew where we could find some nice species.

October Foray

We set off shortly after 2pm in the drizzle and headed off towards the western side of the main cemetery. As this area is mostly grassland we expected to find fungi who like this type of environment. There are obviously trees there too under which we can find species that are restricted to growing close to them all adding to the mix.

One of the first grassland species spotted was one of our earthtongues. These are odd looking fungi that appear to be a black 'tongue' sticking up out of the ground. This particular one was *Geoglossum glutinosum* or the glutinous earthtongue. This is easily recognised from the sticky nature of the fungal surface. In older specimens the stickiness is restricted to the stipe (the stalk).

As we continued on our wander we picked up other species such as the deceiver (*Laccaria laccata*), glistening inkcap (*Coprinellus micaceus*), flowery blewit (*Lepista irina*), and the gardeners worst nightmare, honey fungus (*Armillaria mellea*) which was round the base of tree stump. I spotted an unusual furry fungus which at the time I thought must be infected with another species. This was sent off to Tony Leech (Norfolk Fungi Recorder) who came back saying it was *Cystoderma moelleri*. This is only the second time this species has been recorded in Norfolk and it was also new to our site listing too.

We moved on and I encouraged the group over to some trees where we saw a group of 12 striated earthstars (*Geastrum striatum*) poking up through the grass. It was a very good year for this species and we have had a mass emergence of striated earthstars across the site. In the past these fungi have been a rare find being restricted to a few favourite sites but this year they seemed to be popping up all over the place! The most seen in one spot was 12 and these were still in evidence on both our fungi walks.

Inkstain bolete showing dark blue colouration on cutting © Ian Senior

Nearby we found the mild milkcap (*Lactarius subdulcis*). These milkcap fungi ooze, often white, milk from their gills or stipes when they are broken open. This was a nice new find for our listing. We also spotted one of our highly poisonous fungi growing under beech, the death cap (*Amanita phalloides*). If eaten this will lead to a very painful, slow death - so leave well alone!

One of the great things about walking around with a group of people is the number of eyes spotting things that the individual might miss. This was the case when Vanna noticed some clouded funnels (*Clitocybe nebularis*) growing in one of the flower beds, went over and scraped away the fallen leaves. In so doing she uncovered a brilliant fungal rarity, the piggyback rosegill (*Volvariella surrecta*). This is a parasite of and grows on developing clouded funnel fungi. This was the first time that we have seen this species in the cemetery, although we often get clouded funnels growing throughout. I later discovered two other clouded funnel rings with this same species parasitizing them in other parts of the site. One to look out for again in the coming years.

Piggyback Rosegill © Ian Senior

Another rarity reappeared for a 3rd year, *Sowerbyella radiculata*. This is a yellow cup fungus that was first discovered a few years ago when we had the Norfolk Fungi Group visiting the cemetery. This time there was a nice group of approximately 12 cups growing on the soil. It doesn't like appearing in the same place twice making it difficult to track. Where and when will it appear next!

We moved on to our next fungus stop which was for the inkstain bolete (*Boletus pulverulentus*). Boletes are a bit different to normal mushrooms as they have pores and not gills on the underside of the cap. These do the same function, though, of aiding the release of spores into the air. If you take hold of this bolete you are likely to damage the fungus and where this happens it may change colour. However, cutting it open really displays its colour changing abilities as its cut flesh quickly changes from a light creamy yellow colour to dark blue in a matter of a few seconds. It's a most spectacular change and a great one to show on a foray! This is only the second time this bolete has been seen in the cemetery since records began in 2013.

By now it was getting gloomy but I wanted to get the group over to see a good display of grassland fungi: waxcaps, spindles and more earthtongues. Once in the right spot the area didn't disappoint. There were 5 species of waxcaps, one yellow spindle and one earthtongue species. The most spectacular of which was the massive meadow waxcap where the cap was the size of my palm! We were also treated to parrot, golden, snowy, and butter waxcaps all growing in the grass. Sadly within a few days this site was mown by Norse as part of their regular mowing regime. This might seem harsh but regular mowing means that these grassland fungi thrive. They will return for another show next year!

Yellow spindles © Ian Senior

Vernacular name	Scientific name	Notes
Inkstain Bolete	*Boletus pulverulentus*	
Brown Birch Bolete	*Leccinum scabrum*	
Ugly Milkcap	*Lactarius turpis*	
Mild Milkcap	*Lactarius subdulcis*	Orange, under beech, lots of milk, white not drying yellow
Yellow Stainer	*Agaricus xanthodermus*	
Shaggy Parasol	*Chlorophyllum rhacodes*	
	Cystoderma moelleri	Det: Tony Leech. 2nd Norfolk record.
Fly Agaric	*Amanita muscaria*	
Death Cap	*Amanita phalloides*	
Honey Fungus	*Armillaria mellea*	
The Deceiver	*Laccaria laccata*	
White Fibrecap	*Inocybe geophylla*	
Smoky Domecap	*Lyophyllum gangraenosum*	Det: Tony Leech
Drab Bonnet	*Mycena aetites*	
Ivory Bonnet	*Mycena flavoalba*	
	Mycena Metata	Det: Tony Leech
Piggyback Rosegill	*Volvariella surrecta*	On old Clouded Funnels
Clouded Funnel	*Clitocybe nebularis*	
Glistening Inkcap	*Coprinellus micaceus*	
Firerug Inkcap	*Coprinellus domesticus*	
Sulphur Tuft	*Hypholoma fasciculare*	
Flowery Blewit	*Lepista irina*	

Vernacular name	Scientific name	Notes
Parrot Waxcap	*Gliophorus psittacinus*	
Golden Waxcap	*Hygrocybe chlorophana*	
Meadow Waxcap	*Cuphophyllus pratensis*	
Snowy Waxcap	*Cuphophyllus virgineus*	
Butter Waxcap	*Hygrocybe ceracea*	
Golden Spindles	*Clavulinopsis fusiformis*	
Meadow Coral	*Clavulinopsis corniculata*	
	Ramaria flaccida	Under pine
Collared Mosscap	*Rickenella swartzii*	
Dog Stinkhorn	*Mutinus caninus*	
	Sowerbyella radiculata	
Striated Earthstar	*Geastrum striatum*	
Glutinous Earthtongue	*Geoglossum glutinosum*	
Boletus Mould	*Hypomyces chrysospermus*	

Table 1: October Fungal Foray finds (36 species seen)

November Foray

The second of our fungi walks took place in mid-November. Unfortunately while the weather had become wetter it still hadn't helped the fungi to fruit. Coupled with this was the unfortunate arrival of the dreaded mowers! They are a real nuisance as they destroy the grassland fungi we'd want to see. Luckily the mowers had been operational in the west cemetery several weeks earlier than in the east which meant that there had been enough time for the fungi to grow back on the west side. So the plan for this November foray was to meander through the eastern side grassland and head over to what should be the more productive west. Again I had done a recce to see what was about and where, so we could focus on the more interesting spots rather than randomly searching.

As we had new people on this second foray we made a beeline for some of the hotspots we knew of from the October foray to show the earthstars and purple jellydisc (*Ascocoryne sarcoides*) along with flowery blewit (*Lepista irina*) and glistening inkcaps (*Coprinellus micaceus*). We had a brief look at the waxcap area that had been mowed and did spot one or two species trying to return but it was a far cry from what we had seen in October. So we next headed to the west, risking life and limb crossing the main road between the two halves.

Once in the west cemetery we immediately started looking at the grassland and found an array of interesting species. There were quite a number of 'pinkgills' or *Entoloma* species. These pinkgills, like waxcaps, are indicative of quality old grassland which is a rarity in lowland UK so finding them in good numbers shows how good the cemetery grassland is. Further on we came across a number of large mushrooms that had a beautiful purple striped stipe to them. These were field blewits (*Lepista saeva*) which are comparatively rare in Norfolk. There was a large ring of these mushrooms in one area that were going over. Close by we also saw tawny funnel (*Lepista flaccida*), butter caps (*Rhodocollybia butyracea*) and shaggy parasol (*Chlorophyllum rhacodes*). A new species of mildew (*Erysiphe galii*) was also spotted growing on goosegrass on one of the graves.

Field blewit © Ian Senior

There is one small area of grassland that has a single species of waxcap growing in it, but interestingly two varieties of it are there. The species is the snowy waxcap (*Cuphophyllus virgineus*), probably our most common waxcap across the cemetery and the two varieties seen were var. *ochraceopallida* and *var. virginea.* The former having a darker coffee coloured cap compared to the latter. In this same area the meadow coral (*Clavulinopsis corniculata*) was found in good numbers too.

By now it was getting gloomy but this was suddenly brightened by us spotting a hedgehog snuffling around the grassland looking for early evening worms to eat. It did seem rather late in the year for it to still be out and about but looked healthy and after watching it for a short while we moved on to our last fungus of the day. I had spotted a new species a couple of days before the foray which checked out to being Coprinellus impatiens which is a rare inkcap species in Norfolk. It took me a few minutes to re-find it in the gloom but once I had we found a reasonable number of fruit bodies. After seeing this last fungus we rushed back to the main entrance so as not to get locked in!

Striated earthstar © Ian senior

Hedgehog © Ian senior

All in all, both forays were very successful as each gave new records for the fungi list (two of which are rare for Norfolk!), and we rediscovered others seen in the past.

Vernacular	Scientific	Notes
Purple Jellydisc	*Ascocoryne sarcoides*	
Common Funnel	*Clitocybe gibba*	
Fragrant Funnel	*Clitocybe fragrans*	
Pimple Pinkgill	*Entoloma hebes*	
Striated Earthstar	*Geastrum striatum*	
Glutinous Earthtongue	*Geoglossum glutinosum*	
Plain Earthtongue	*Geoglossum umbratile*	Specimen checked James Emerson
Clustered Toughshank	*Gymnopus confluens*	Specimen checked James Emerson
Snowy Waxcap	*Hygrocybe virginea*	
Sulphur Tuft	*Hypholoma fasciculare*	
The Deceiver	*Laccaria laccata*	
Wood Blewit	*Lepista nuda*	
Field Blewit	*Lepista saeva*	
Flowery Blewit	*Lepista irina*	

Vernacular	Scientific	Notes
Tawny Funnel	*Lepista flaccida*	
Ivory Bonnet	*Mycena flavoalba*	
Cucumber Cap	*Macrocystidia cucumis*	Specimen checked James Emerson
Deer Shield	*Pluteus cervinus*	
Butter Cap	*Rhodocollybia butyracea*	
Glistening Inkcap	*Coprinellus micaceus*	
Fungus on pine needles	*Lophiodermum pinastri*	
Scaly Wood Mushroom	*Agaricus langei*	*Det* from specimen Steve Judd.
Shaggy Parasol	*Chlorophyllum rhacodes*	
Wrinkled Club	*Clavulina rugosa*	
Meadow Coral	*Clavulinopsis corniculata*	
Snowy Waxcap	*Cuphophyllus virgineus*	
Snowy Waxcap (*ochraceopallida*)	*Cuphophyllus virgineus var. ochraceopallida*	
Meadow Waxcap	*Cuphophyllus pratensis*	
Bicoloured Deceiver	*Laccaria bicolor*	
	Coprinus impatiens	
	Parasola auricoma	Specimen checked James Emerson
Collared Mosscap	*Rickenella swartzii*	
Cushion Bracket	*Phellinus pomaceus*	
Brittlestem sp.	P*sathyrella sp*, probably *P. conopilus*	
Peppery Roundhead	*Stropharia pseudocyanea*	
Grey Knight	*Tricholoma terreum*	
Mildew on Red Dead Nettle	*Erysiphe galeopsidis*	
Mildew on Goosegrass	*Erysiphe galii*	

Table 2: November Fungal Foray finds (38 species seen, plus one hedgehog)

Thanks to James Emerson for his lists from the forays and for his help in identifying some of the days finds.

Ian Senior

Ivy Bees - *Jeremy Bartlett*

The ivy bee, *Colletes hederae*, is one of the delights of late summer and autumn. It is a very pretty bee, especially when freshly emerged, with an orange-buff thorax and an abdomen with cream stripes with an orange tinge. Females are about the size of a honeybee, while males are a bit smaller. The bee is found in much of Europe but it is a relative newcomer to the British Isles, where it appeared on the south coast of England in 2001. It soon spread northwards and was first seen in Norfolk in 2013.

Female ivy bees (*Colletes hederae*) on ivy flowers in Earlham Cemetery.

By 2016 ivy bees had spread north as far as Lancashire and North Yorkshire and were consolidating their range further south. That year Vanna and I visited a nesting colony at Queen's Hills on the outskirts of Costessey, consisting of thousands of nests. We also found several new locations in North Norfolk in September 2016, while staying at Wells-next-the-Sea. The easiest way to find the species is to look for the bees on ivy flowers. Ivy is the main source of pollen, but the bees will collect nectar from a wider range of flowers.

The ivy bee is a solitary bee and although it will often nest in large aggregations, each nest is a separate entity. Males emerge from late August and fly above nest sites, waiting for females to emerge from the ground. As soon

Nest holes (with freshly dug sand). Earlham Cemetery, October 2018.

as females emerge from their nest holes they are surrounded by hopeful males, forming a 'mating ball'. The successful male will mate with the female and she will either use the sperm to fertilise eggs, resulting in female offspring, or lay unfertilised eggs which will develop into males. After mating, males die off, having served their purpose. The female then excavates her nest hole and starts to lay her eggs in the nest, deep underground. She flies to ivy flowers and collects pollen and nectar, which she brings back to the nest as a food supply. Female ivy bees will continue to collect ivy pollen until early or mid October and then they too will die. In the nest tunnels ivy bee eggs develop into larvae and then pupae underground, before a new generation of bees emerges the following late summer and autumn.

Earlham cemetery has lots of ivy but although we looked in 2016, 2017 and early September 2018 we didn't find any ivy bees on it. However, on Saturday 22nd September 2018 Vanna noticed some fresh nest holes in the bank to the east of the entrance drive from Earlham Road. At this time of year they had to belong to ivy bees or a species of solitary wasp – other species of bee would have finished nesting this late in the season.

It was too wet on our monthly walk on Sunday 23rd September for any ivy bees to be flying but Vanna returned to the cemetery the following day, Monday 24th September, and saw eight female ivy bees feeding on ivy flowers. There were at least twelve holes in the bank and four females flying in laden with pollen. By 29th September there were at least thirty nest holes in the bank but Vanna saw just two females at the bank. Activity continued into October and Vanna saw seven females on ivy flowers and one female at a nest hole on 8th October.

Female ivy bee (*Colletes hederae*) on ivy flowers in Earlham Cemetery.

At the time of writing (early November) all ivy bee activity has ceased for the year, but next year the colony should hopefully expand further up the bank and perhaps spread elsewhere in the cemetery. Ivy bees are delightful to watch and completely harmless. Males can't sting and although the females have a sting it is apparently less intense than that of a honeybee. The bees are very docile and you would really have to provoke one to be stung. They are a delightful addition to Earlham Cemetery's wildlife list.

Jeremy Bartlett.

Shieldbugs and Leatherbugs in Earlham Cemetery - Jeremy Bartlett

We spend a lot of our walks looking at insect life in the cemetery. Butterflies, bees and dragonflies often feature in these walks, as do bugs.

Many people use the term “bug” rather indiscriminately, as a term for any insect or microbe. But in the world of entomology (the study of insects), the term refers to just one order of insects, the Hemiptera. To avoid ambiguity, these insects are often referred to as “True bugs”.

True Bugs (Hemiptera)

Insects are a natural grouping within the animal kingdom, known as a Class. The next subdivision of class is Order, and insects (Class Insecta) is split into a number of Orders. The best known of these Orders to the non-scientist are probably Coleoptera (beetles), Hymenoptera (bees, wasps, ants, sawflies), Diptera (flies), Orthoptera (grasshoppers and crickets) and Odonata (dragonflies).

Order Hemiptera (True bugs) is possibly less well known, but it includes insects such as aphids (such as greenfly and blackfly), Planthoppers, pond skaters, water boatmen, cicadas, shieldbugs and leatherbugs.

Many insects undergo metamorphosis as they develop, starting life as an egg. This hatches into a larva, which feeds and grows and moults several times until it transforms into a pupa. In the pupa, the contents of the caterpillar break down into a liquid soup before rearranging themselves into the adult insect, known as an imago. For a butterfly the larva is commonly known as a caterpillar, and this is basically an eating machine. The pupa is known as the chrysalis and the imago is the adult butterfly, which exists to find a mate and reproduce, the female laying eggs to continue the cycle.

Some other orders of insects, including the Hemiptera, don’t go through full metamorphosis. Eggs hatch into nymphs and the nymphs moult several times as they grow, finally becoming adults. Each stage of nymph (known as instars) resembles an adult more than the previous one. Only the adult insect has functional wings and sexual organs.

True bugs all have piercing mouthparts and these allow them to suck up liquid food, usually the sap of plants. There are also predatory bugs, which stab their prey and suck out their juices, such as the body fluids of caterpillars or even mammalian blood.

Most herbivorous True bugs don’t cause any significant damage but some aphids can damage crops and transmit plant viruses. If you’ve ever grown broad beans, you’ll be familiar with the damage that the black bean aphid (*Aphis fabae*) can do.

Most true bugs are also harmless to humans, but a few suck human blood, such as bed bugs and Kissing bugs. The latter are found in tropical South and Central America and can transmit Chagas disease. The good news is that none of the true bugs found in Earlham Cemetery will attack humans, so your blood is safe!

There are nearly 2000 species of true bugs in the UK. One of the best resources for identifying them is the British Bugs website (http://www.britishbugs.org.uk/).

Shieldbugs and Leatherbugs

The shieldbugs take their name from their distinctive outline which resembles a heraldic shield. They have leathery forewings with a membranous tip and transparent hindwings that are folded out of sight when the insect is at rest.

They are members of four families:

- The Acanthosomatidae (keeled shieldbugs) - four Norfolk species (all four in Earlham Cemetery);
- The Pentatomidae (typical shieldbugs) - thirteen species in Norfolk (five found in Earlham Cemetery);
- The Scutelleridae (tortoise shieldbugs) - two species in Norfolk (none found in Earlham Cemetery – yet);
- The Cydnidae (burrowing shieldbugs) – at least four species in Norfolk (none found in Earlham Cemetery – yet).

Leatherbugs resemble slim shieldbugs and are members of the family Coreidae. There are nine species in Norfolk (three have been found in Earlham Cemetery).

Norfolk and Norwich Naturalists’ Society have produced a guide to most of Norfolk’s Shieldbugs and Leatherbugs: http://norfolknaturalists.org.uk/wp/wp-content/uploads/2016/12/Shieldbugs.pdf.

Shieldbugs and Leatherbugs in Earlham Cemetery

Thanks to Stuart Paston (SP) and Vanna Bartlett (VB), we now have a list of the Shieldbugs and leatherbugs that have been found in Earlham Cemetery: http://www.friendsofearlhamcemetery.co.uk/Shieldbugs_of_Earlham_Cemetery.pdf.

All the photographs are by Vanna Bartlett. All were taken in Earlham Cemetery, except for crucifer shieldbug.

Family Acanthosomatidae

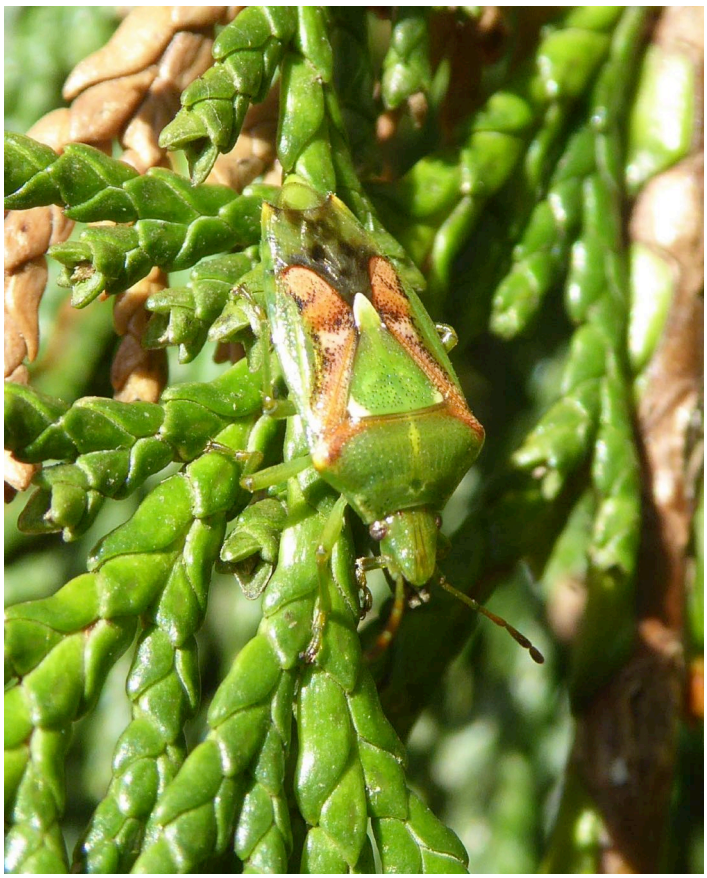
Hawthorn Shieldbug, *Acanthosoma haemorrhoidale*

Despite its common name this widespread species can be found on a variety of other trees and shrubs, including hazel and whitebeam.

Hawthorn shieldbug

Juniper Shieldbug, *Cyphostethus tristriatus*

Found mainly on Lawson's cypress in Earlham Cemetery. First seen by VB on the monthly cemetery walk on 23 September 2018 (2 adults) and on 24 September 2018 (4 adults, 2 nymphs).



Juniper shieldbug

Birch Shieldbug, *Elasmostethus interstinctus*

Widespread in the wooded part of the cemetery not only on birch but other trees and shrubs.

Birch shieldbug

Parent Shieldbug, *Elasmucha grisea*

Like the birch shieldbug, found in the wooded part of the cemetery where birch and other trees and shrubs occur.

The female looks after her eggs and stays with the young larvae, which feed on birch and alder.

Parent bug adult

Parent bug nymphs

Family Pentatomidae

Green Shieldbug, *Palomena prasina*

A widespread species occurring commonly wherever trees and shrubs are present in the cemetery, often on bramble.

Green shieldbug

Hairy Shieldbug, *Dolycoris baccarum*

This species occupies a wide range of habitats and feeds on leaves, flowers, seeds and possibly fruits of shrubs, herbs and grasses. Found on seed head of ragwort TG213087 in August 2014 (SP) and on red deadnettles in spring 2017 (VB). Formerly known as the sloe bug.

Red-legged Shieldbug, *Pentatoma rufipes*

This species is associated with various trees and shrubs and the adults sometimes predate lepidoptera larvae. Widespread in the wooded areas of the cemetery. Records include one on sycamore TG211089 in August 2014 (SP).

Red-legged shieldbug

Crucifer Shieldbug, *Eurydema oleracea*

Also known as the brassica shieldbug, this species can occupy a wide range of habitats that support members of brassicaceae on which it feeds. It occurs in red, yellow, cream, white and orange colour forms.

The white form was found in ground layer in wooded area TG214089 on 7 August 2014 (SP).

Crucifer shieldbug (yellow form) at Weeting Heath

Turtle Shieldbug, *Podops inuncta*

Also known as knobbed shieldbug. Widespread and fairly common across southern and central England in dry and damp habitats, it is strongly ground-dwelling and rarely found unless searched for. One found on 18 August 2018 (VB).

Turtle or knobbed shieldbug

Family Coreidae

Dock Leatherbug, *Coreus marginatus*

Also known as the dock bug. Of common occurrence in the cemetery, this species can be found in abundance about bramble where it feeds on the unripe fruits in late summer.

Dock leatherbug nymph (left) and adult

Box Leatherbug, *Gonocerus acuteangulatus*

Also known as the box bug. This species used to be very rare and confined to Box Hill in Surrey, where it fed on box trees. It has recently expanded its geographical range and its range of food plants. It feeds on the berries, leaves and stems of a range of trees and shrubs. An adult was beaten from elm TG213088 in August 2014 (SP).

Box Leatherbug

Rhombic Leatherbug, *Syromastus rhombeus*

A species of dry grassland. One was seen on a lower branch of pendunculate oak on 13 September 2018 (VB).

Rhombic leatherbug

The Future?

As for all our lists of wildlife in Earlham Cemetery, we expect to find additional species in coming years.

New species are likely to include a couple of ground-dwelling shieldbugs from the family Cydnidae. The forget-me-not shieldbug (Sehirus luctuosus) feeds on forget-me-not and green alkanet and the pied shieldbug *(Tritomegas bicolor)* feeds on white deadnettle and black horehound, all of which grow in the Cemetery. We have seen forget-me-not shieldbug in a garden on Earham Road and pied shieldbug on our allotment off The Avenues, so both occur nearby but they are quite small and must be searched for at the base of plants.

Jeremy Bartlett.