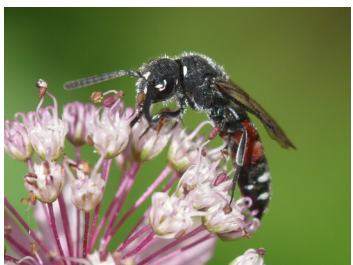


# Do you have **the bug** ?



A fascination and enthusiasm for the mini-marvels of this world...



issue  
**One**  
2021

**Drones  
Mimics  
Miners  
Nomads  
Robbers**



[www.stroud-nature.org](http://www.stroud-nature.org)

# ...for stories from the insect nation.

# Do you have the bug?

**Do you like insects**  
**Do you study them for a living**  
**Is it an amateur interest**  
**Do you find them fascinating**  
**Are you just curious**

[www.stroud-nature.org](http://www.stroud-nature.org)



**This is the first issue of a new digital magazine, for those who have the bug and those who are just beginning to catch the bug.**

**We want as wide an audience as possible to enjoy its pages. We want people to share it with others.**

**We welcome your feedback.**

The magazine is UK focused. It has been inspired by observations and studies of insects in and around the town of Stroud in the Gloucestershire Cotswolds. This does not restrict us in what we want to include in the future. In fact we hope to include an international section in later issues.

There will be four issues of the magazine each year. While some aspects of the magazine will be seasonal, so that we can highlight the things you might see around you, we will also widen the stories to bring you other tales from the insect nation. Quite simply because there are some wonderful and extraordinary things happening there and without the insect nation, so much of what we know would not exist, so critical are insects and invertebrates in general to the successful functioning of ecosystems throughout the world.

We welcome contributions from others. Stories, images, photographic or illustrative. We ask that any copy is engaging and inclusive. All contributions will be credited.



The magazine has been put together by Stroud Nature, a member of the Stroud Great Green Partnership. Almost all of the images, illustrative and photographic, originate from the partnership.

The partnership has evolved out of the Stroud Nature Forum established to develop and plan the annual Stroud Festival of Nature. This forum of local and regional wildlife and environmental organisations are now utilising their considerable knowledge and skills to contribute to this and other SGGP resources, providing information and images.

Illustration is a key component of the magazine and is all original, much produced specifically for the magazine.

**The magazine is interactive. See the next contents page for details. Please enjoy exploring its pages and let us know what you think. Contact details are at the end of the issue. Thankyou.**

**Do you have the bug.**  
**Visit [www.stroud-nature.org](http://www.stroud-nature.org)**



Great Green Bush Cricket



# Contents

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# It's interactive

You can go straight to a page by clicking on the page number in the contents list.

Clicking on buttons and images will take you to other information, facts and images, including full page blow-ups of some of the illustrations used in the magazine.

Try the link below to check out a rather stunning hoverfly that frequents woodlands and sometimes gardens in the UK.



This is one of four illustrations available to purchase as a high quality A3 colour print. Details at the end of the magazine.

# Hovering on the edge of Spring

## Drone-Fly

The first day of Spring in 2020 was Thursday 19 March. So it was still officially Winter when this Drone Fly was first spotted in a Stroud garden on 6 March.

Always one of the first insects on the wing in spring, the adults will emerge from hibernation to enjoy the late winter sun.

Once it has mated, It lays its eggs in stagnant water and its larvae, known as rat-tailed maggots, develop in the water.

Latin name:  
*Eristalis tenax*

06.03.20

## Honeybee mimic

Its name comes from its close resemblance to the drone of the honey bee and it often goes unnoticed because of this.



Drone Fly

Honeybee



TOP  
POLLINATOR

07.04.20

## Helicopter, jump-jet or drone



Had unmanned flying robot drones been around when this insect was first seen, it might still have been given the same name.

The Drone Fly is masterful when hovering, keeping the same position in the air, often at human eye level. Make any movement and it darts off at speed, often returning to the same position, which is often in a shaft of sunlight. The warmth helps to power the fly's flight muscles.

All the hoverflies are important pollinators of our flowers. They will feed on a variety of plants, but umbellifers are particular favourites. There are many species and between them they pollinate a wide range of plants.



While bees get the headlines, hoverflies often go unnoticed in our gardens and urban green spaces. But once you notice them, you begin to appreciate just how many species there are.

## **Insect Nation Case File 001 In praise of hoverflies**



Many are mimics of bees and wasps. None of them sting. They are all really important pollinators. Yes, a few are pests to our plants and vegetables when they are in the larval stage, but don't hold that against them. Instead, take some time to check them out and begin to appreciate their diversity and their different life cycles and habits. There will be more on hoverflies in later issues.



# Hovering on the edge of Spring

## Bee-fly

With its round, furry body, the Bee Fly is, often mistaken for a Bumblebee at first glance. Then you notice that:

It hovers like a Hummingbird  
Has a long, straight proboscis  
Has long, skinny legs  
Emits a high pitched whine in flight.

Once noted, never forgotten.

Latin name:  
*Bombylius major*

06.04.20



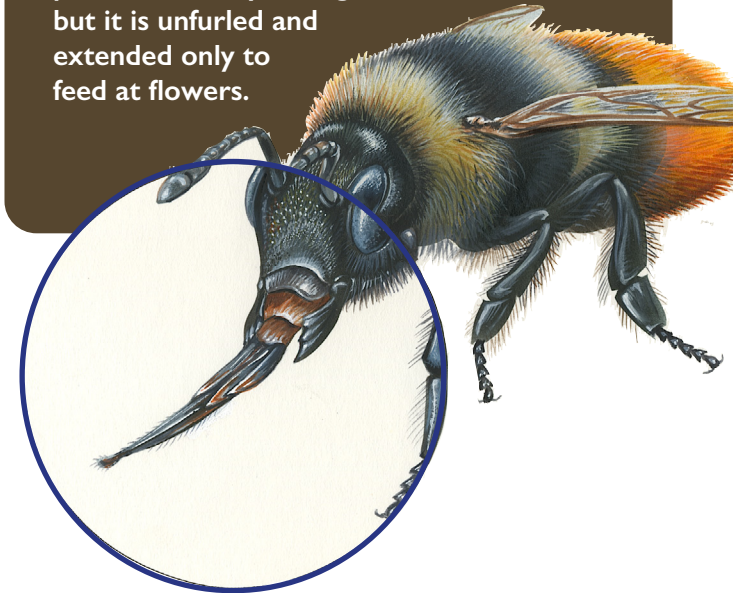
## Bumblebee mimic

06.04.20



Many insect species mimic others. The resemblance may fool you and I at first, but look closer and you will see the differences. The long proboscis of the Bee-fly is never withdrawn and appears almost rigid.

The Bumblebee does have a longer proboscis than you might think, but it is unfurled and extended only to feed at flowers.





# Have you seen this butterfly?

## Orange-tip

One of the earliest butterflies on the wing in Spring. Its colours bringing a sense of brighter days and sunshine to come. This is the male. There is often great interest in the date that the first orange tips are seen in the UK each year.

Latin name:  
*Anthocharis cardamines*



The female lacks any orange on her upperwings and appears white.

Her underwing has a gorgeous yellow-green and black veining and mottled pattern.



The Orange-tip is regularly seen in gardens. It is also fond of river courses, streams and damp meadows.

The eggs are laid on a variety of plants, Cuckoo flower (Lady's Smock), being a favourite as well as Garlic and Hedge Mustard and Winter-cress. In gardens it favours plants such as Honesty and Dame's-violet.







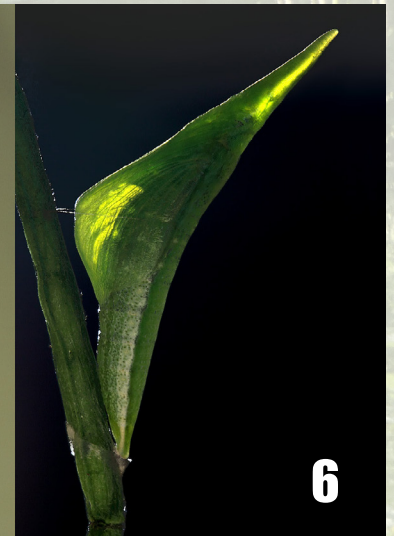
1. Egg
2. Larva hatching
3. First instar larva
4. First instar moulting
5. Mature larva
6. Fresh pupa
7. Adult male

The hatching larva will eat its own egg case for its protein.

The larva will go through 4 moults before the final transformation to pupa.

As the adult develops inside the pupa, its colours begin to show through.

## Insect Nation Case File 002 Orange Tip life cycle



Photographs 1 - 6 courtesy of  
James Weightman,  
Gloucestershire Branch  
Butterfly Conservation (click right)





# Mining their own business

## Mining bee

Bumblebees and honeybees have been hogging the headlines of late. The plight of our bees as critical pollinators of so many flowers and fruits should now be well known.

But as they buzz about our gardens and parks, another less obvious group of bees go about their own business.

Smaller, lacking the buzz, they are an important and rather appealing group of bees - they are the miners.

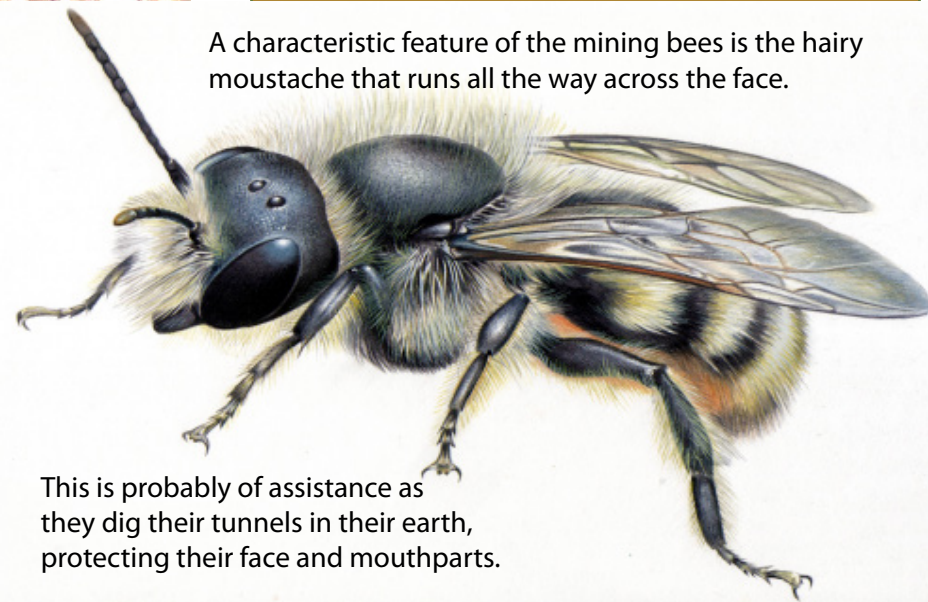
They can be seen from Late March, early April onwards dependent on weather.

Latin name:  
*Andrena cineraria*

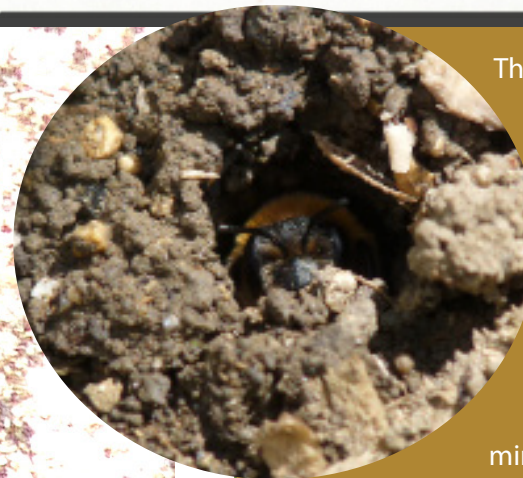
14.04.19

Several species of mining bee are happy to make their homes in gardens.

A characteristic feature of the mining bees is the hairy moustache that runs all the way across the face.



This is probably of assistance as they dig their tunnels in their earth, protecting their face and mouthparts.



This mining bee was spotted peering out from the exit of its tunnel, making sure that it was safe to leave without giving away the location of its nest.

There are a number of other insects, like cuckoo bees, that will lay their eggs in the nests of mining bees.

Once the eggs have hatched, the larvae of the cuckoo bee feed on the eggs of the mining bee and is then fed by the parent mining bee.

We talk about nomad bees, a kind of cuckoo bee, later in the magazine



# Spring along the watercourse

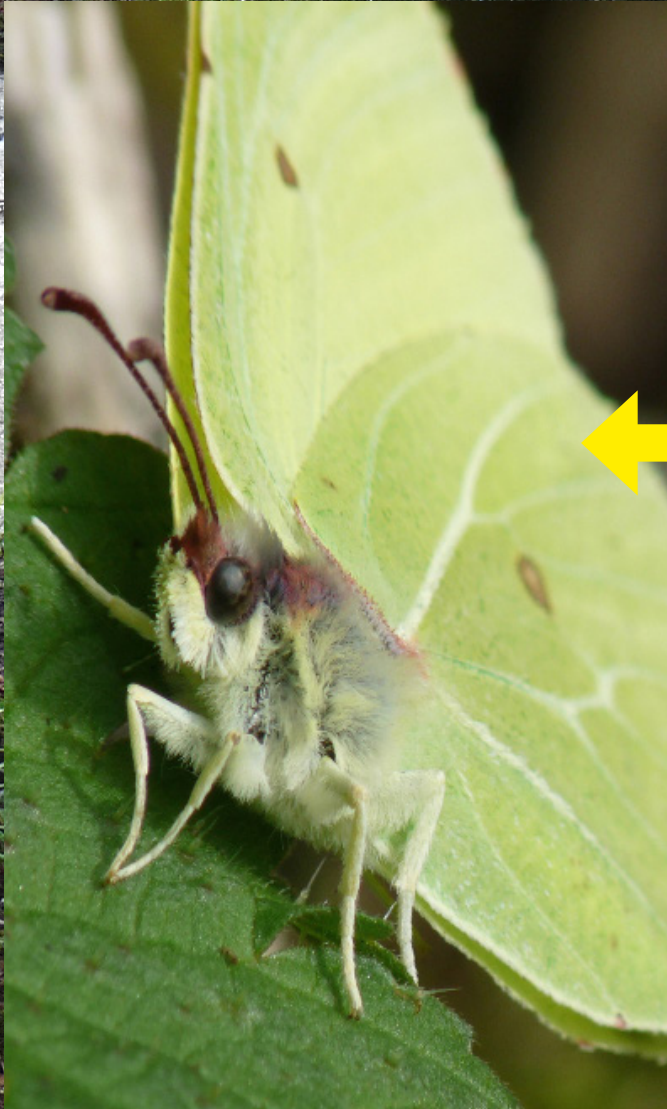
Here are some insects you might spot along the banks of streams and rivers and canals during March and April.



**Alder Fly**



**Bee-fly**



**Brimstone**

**Large Red Damselfly**





# INSECT NATION



Mason and potter  
Assassin and robber  
Admiral and footman  
Skipper and boatman  
Soldier and sailor  
Digger and miner  
Nomad and rover  
Horse and soldier  
Cutter and forester  
Hebrew and quaker  
Damsel and dragon

Emperor and Cardinal

Mountain and chalk-hill  
Meadow and wood  
Marsh and heath

Copper and brass  
Malachite and marble  
Ermine and lace

Each has a place  
In the insect nation



# INSECT NATION

## Nomad Bees

The definition of the word 'Nomad' refers to *'a member of a group of people who move from one place to another rather than living in one place all of the time.'*

There is group of bees called nomad bees. They are a kind of cuckoo bee. They do not build a home of their own. Like the Cuckoo, which lays its eggs in the nests of smaller birds, the nomad bees lay their eggs in the nests of other bees. Their larvae are first to emerge from their egg and feed on the eggs of the host.

A number of species visit gardens. They are pollinators of our flowers, but keep an eye on the ground, where they creep around looking for the nests of a host bee



## The Nomad

Nomad bees can easily be mistaken for wasps. They possess no sting and are pollen feeders. This was one of two individuals of this species who were daily visitors to a group of Astrantia flowers during the summer of 2020.





# **Insect Nation Case File 003**

## **Nomad Bee**

**1) 07.04.20  
15.19 hours**

**Hole in soil  
beside path**

**2) 07.04.20  
15.20 hours**

**Nomad bee  
entering hole?**

**3) 07.04.20  
15.22 hours**

**Nomad bee  
emerges**

**4) 07.04.20  
15.31 hours**

**Bee (Bombus sp)  
emerges**



# INSECT NATION

## Robber-flies

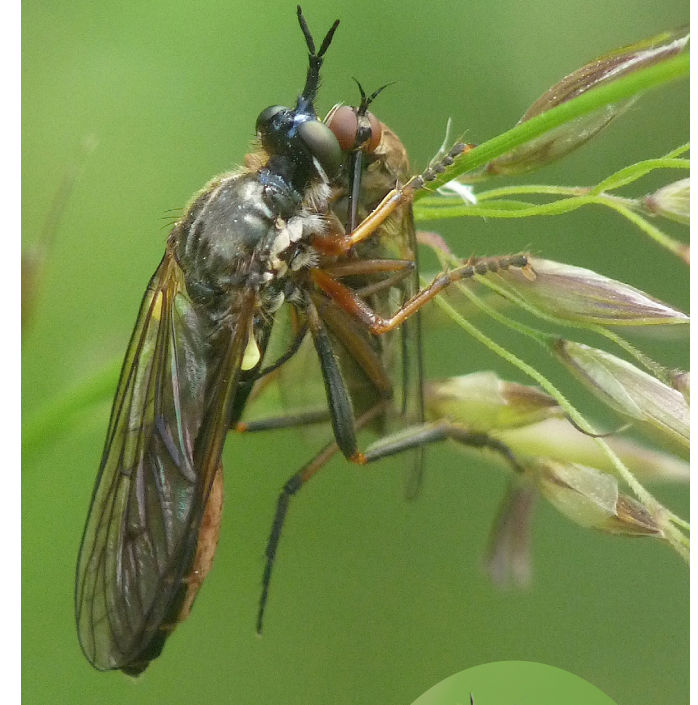


These are the highwaymen, the bandits of the insect world. You can easily miss them, passing very close to where they sit motionless on the stems of plants. They will choose the higher stems among the scrub and grasslands they inhabit. Here they keep a watchful eye and senses peeled for passing prey, sometimes swivelling their heads as is to increase their scope of vision.

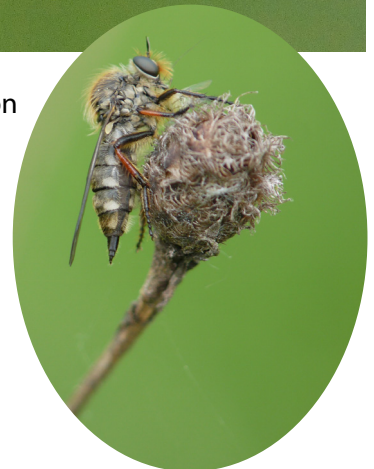
Prey seen, they launch themselves from their perch, in a swift strike, grabbing the prey in their long, powerful and spiky legs and immediately puncturing the body of the luckless insect, to begin sucking out their inner juices. They will often return to the same perch.

## The Robber

Here a Robber-fly has caught an Empid fly, itself a predator of smaller insects. There are just under 30 species of Robber-Fly in the UK. Many are small and not very easy to tell apart.



The flies are often seen on the very tips of stems, often on the seed heads. The perfect vantage point, but also helps to disguise their presence.





# **Insect Nation Case File 004**

## **Robber-fly**

**Bristles protect the face of the fly from struggling prey**

**Large eyes give great vision**

**Neck can swivel to give fly wider vision**

**Sturdy muscular body enables fly to hold prey, sometimes bigger than itself**

**Wings are designed for short, rapid flight**

**The proboscis has a sheath that protects the sharper, piercing mouthparts**

**All the legs are long, strong and heavily spiked. These wrap around and grip the prey, holding it beneath the body in flight and pinning it down once back at the feeding perch.**





# INSECT NATION

## The Forester

### Forester moths

There are three species of forester moths likely to be seen in the UK:  
Common Forester  
Cistus Forester  
Scarce Forester.

They are almost identical to each other. Unless you are in North Wales, you are unlikely to see the Cistus Forester. The Scarce Forester is restricted to a few sites in Southern England.

So if you see a moth like this it is likely a Common Forester. Only it is not that common and is a priority species in the UK Biodiversity Action Plan.

Despite their names, they are not species of woodland, but of grassland. In the Common Forester this might be limestone grassland, damp grassland, chalk downland, sand dunes and woodland rides and glades.

*Latin name of Common Forester:  
Adscita statices*

Antennae are distinctive, being 'toothed', particularly more so in male

The Forester is so named after the Lincoln Green coloured clothing worn traditionally by foresters in the UK.



1



Male and female mating.  
Male is the lower one.  
Here they are seen on a Salad Burnet,  
that is going to seed. This is a herb of  
grasslands and meadows, in particular  
limestone grasslands.

The female lays her eggs on Common  
Sorrel (2)

2



Two more day-flying  
species of moth that  
share the same habitat.  
Six-spot Burnet (above)

*Adela reaumurelia* (right)

Very young larvae are leaf  
miners, feeding between the  
surface of Common Sorrel  
and Sheep's Sorrel leaves.

3



# Insect Nation Case File 005 Forester moth life cycle

**Day-flying species**

**Flies on sunny days in June and July**

**Often found in small colonies**

**The larvae pupate in  
cocoons among ground  
vegetation**

5



**As larvae develop they feed on the  
whole leaves of the same plants.**

4





# INSECT NATION

## The Soldier

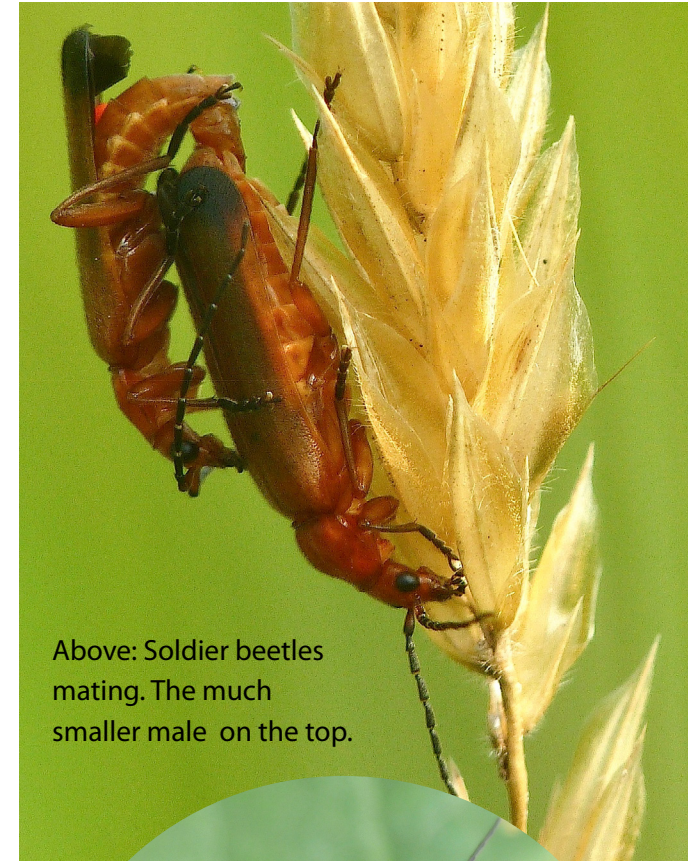
### Soldier Beetle



### *Ragonycha fulva*

Soldier Beetles are so named because the bright colours of some species resemble the colours of military uniforms.

*Ragonycha fulva* (shown here) is a very common species in all kinds of habitats. It is often called 'the bloodsucker' due to its colour. It is harmless to us, although it is predatory on other insects, particularly aphids, hunting them on grassland flowers, where it also feeds on pollen.



Above: Soldier beetles mating. The much smaller male on the top.

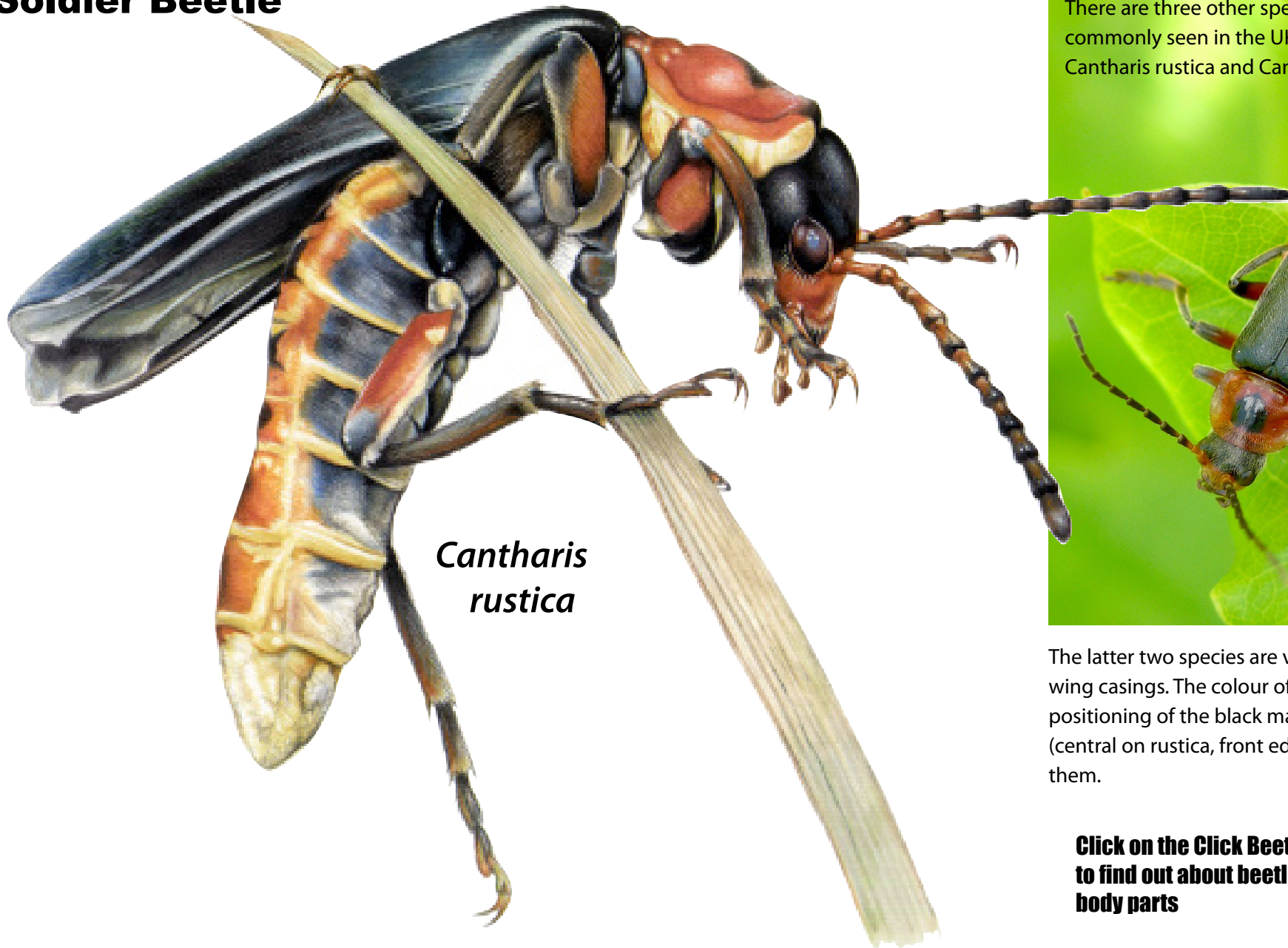




# INSECT NATION

## The Soldier

### Soldier Beetle



*Cantharis  
rustica*

There are three other species of Soldier Beetle commonly seen in the UK, *Cantharis livida*, *Cantharis rustica* and *Cantharis Fusca*.



The latter two species are very similar with black wing casings. The colour of the upper legs and the positioning of the black mark on the pronotum (central on *rustica*, front edge on *fusca*) distinguish them.

**Click on the Click Beetle  
to find out about beetle  
body parts**





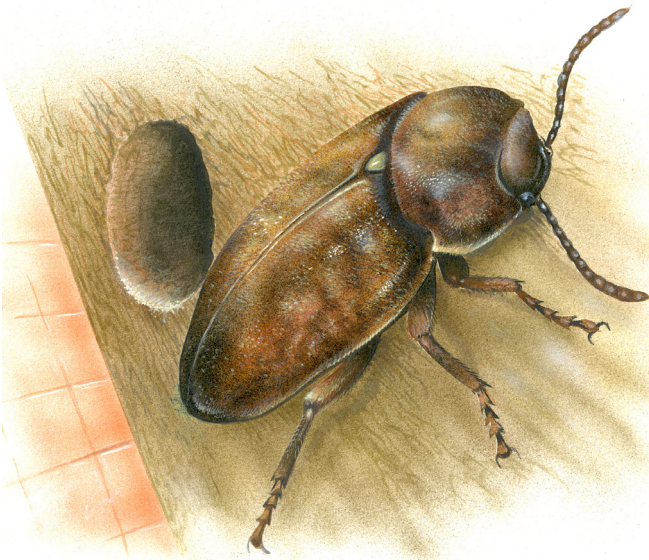
# WORLD NEWS FROM THE INSECT NATION

## CHEMICAL ATTACK!!



The Bombardier Beetle can shoot out an acid like chemical from the end of its abdomen at animals, just as they are about to attack it. It gets into the eyes and face of the attacker who learns that maybe it's best to leave the beetle alone next time.

## WOODWORM IS REALLY A BEETLE!



Have you any older furniture in the house, any timber beams in the ceiling?

Old timbers are often affected with 'woodworm'. Tiny, round holes in the surface of the wood.

They are not made by worms. They are made by the Furniture Beetle. The larvae of the beetle tunnel through the wood and they pupate into adults near the surface.

The adults beetles make the holes as they leave.

## DUNGBALL LATEST African Cup of Insect Nations



### MATCH STATS:

#### FOR

Exceptional determination: 3  
Teamwork: 2  
Superb dribbling: 2

**Total: 7**

#### AGAINST

Nearly trampled on by elephant: 2  
Fouls by other beetles trying to steal ball: 2  
Stuck in elephant footprint: 1

**Total: 6**

## NUMBER OF FLYING INSECTS TAKES A DIVE

"Thirty years ago, my car windscreen used to get covered in dead insects. Not any more".

"Have not seen a Spotted Flycatcher for many years. I used to see them all the time, launching themselves from their perch to take insects on the wing".

"The skies here used to be full of the sound of Swifts. House Martins too. They used to dive and grab the insects that flitted about over the millpond. Both have gone".



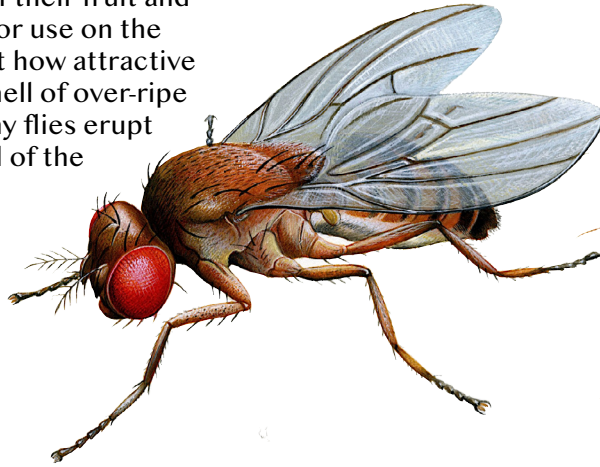
# WORLD NEWS FROM THE INSECT NATION

## THE SWEET SMELL OF SUCCESS “It’s just not cricket”!

If you are someone who puts all of their fruit and vegetable remains into a bucket for use on the compost, you may have found just how attractive this is to flies. Attracted by the smell of over-ripe and rotting fruit and veg, these tiny flies erupt in a small cloud as you take the lid of the container.

Sometimes they mingle around the over-ripe apple or pear in the fruit bowl in the kitchen.

These are fruit flies. members of the *Drosophila* family. They breed and multiply extremely quickly.

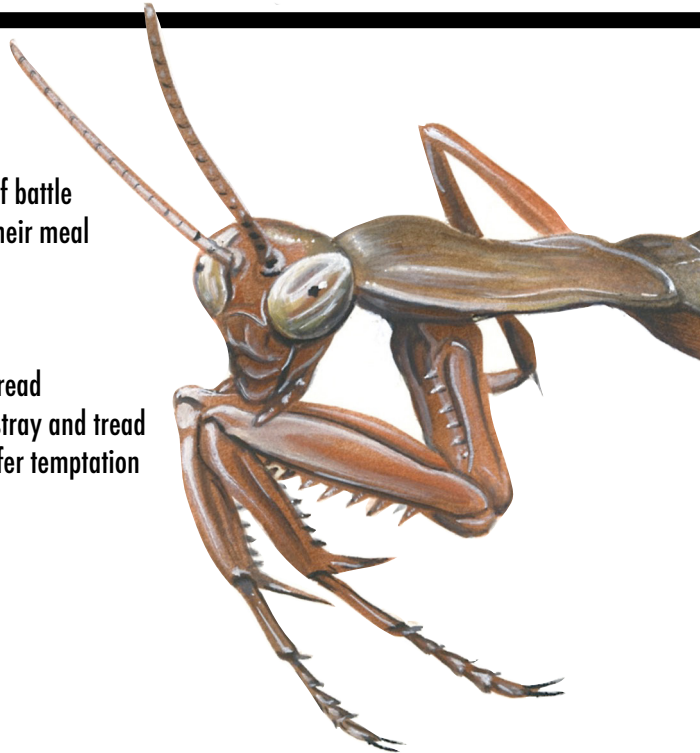


## MANTIS

The soldier prays on the eve of battle  
The family say grace before their meal  
So to the Mantis  
In anticipation of her kill

“Give her this day her daily bread  
Those luckless creatures that stray and tread  
That trespass too close and offer temptation  
She will deliver without evil  
For her’s is the power  
But there is no glory”

Just another insect story



**But I dig it!**

**It’s a Mole Cricket**

It has all the things a normal Cricket has, but they are all a different! The strong, muscular hind legs that help other cricket’s jump, are shorter, much shorter. Its front legs however are much larger and shaped for shovelling soil and burrowing, for as its name suggests, the Mole Cricket spends a lot of its time underground. Its head and thorax are also shaped to help it move through soil.

It has wings and does fly on warm evenings throughout Europe. Like all crickets, it sings. In the evening when it sits at the entrance to its burrow and churs quietly for long periods

**We are looking for insect reporters. Not insects that are reporters, but people who report about insects.**

Have you any fascinating facts about insects you would like to share with us. Maybe some unusual looking insects, insects with unusual names or strange ways. Maybe something really topical about insects and the environment.

Send us some copy and an image (can be photographic, can be illustrated). Everyone, any age is welcome to contribute and we will credit you in the magazine.



# Robber-fly prints

**A3 limited edition prints on 175gsm matt-art paper of these two stunning pencil studies of robber flies by one of the country's top wildlife illustrators, Steve Roberts. £50.00 each plus post and packing.**



Purchase at [www.stroud-nature.org](http://www.stroud-nature.org)





# Do you have the **BUG** ?

## We want to hear from you.

More than that, we want you to help us take this magazine forward with your observations, your insights, your images.

We believe in sharing our own passions and interests with others, in order to inform and inspire.

We know that many of you are out there capturing unique images and happenings in the insect world. We see them on social media pages every day.

But if you would like to send a few to us here at the Stroud Great Green Partnership, we will try to include them in our publication. You will be credited.

A brief background to the images would be useful - date, time, place, what you saw, what you felt.

If you have photographed something and are unsure as to what it is, send it and we will see if we or our associates can identify it for you.

We are particularly interested in species seen in gardens, but also those seen in more urban habitats - parks, green corridors, allotments, canals, etc.

They do not have to be pin sharp, high resolution, macro images.

Email to: [admin@stroudnature.org](mailto:admin@stroudnature.org)



**Silver -washed Fritillary**  
**Bentley Wood Wiltshire**  
**2 July 2010**



**Scorpion Fly**  
**Colwall, Malverns**  
**8 June 2016**



**Common Blue Damselfly**  
**Stroud Garden**  
**1 June 2020**



**Glow Worm**  
**North Somerset Coast**  
**26 May 2014**



**Stonefly**  
**Parc Slip, South Wales**  
**8 August 2012**



**Banded Demoiselle**  
**Cotswold Canals**  
**22 June 2019**



# Do you have the **BUG** ?

## For you, your family and your school

If you clicked on some of the interactive buttons and images on the previous pages you will already have seen the images on the right. These species plates will be a feature of all the magazines we publish. There will be four more in the second issue of the magazine.

Print them off and over time, you will have a stunning collection of insect images to add to your wall, at home or at school.

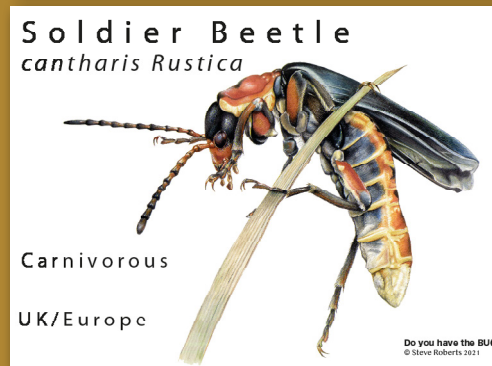
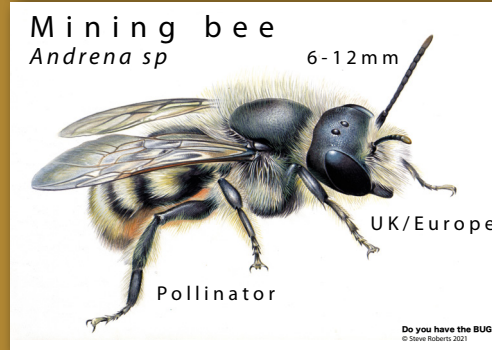
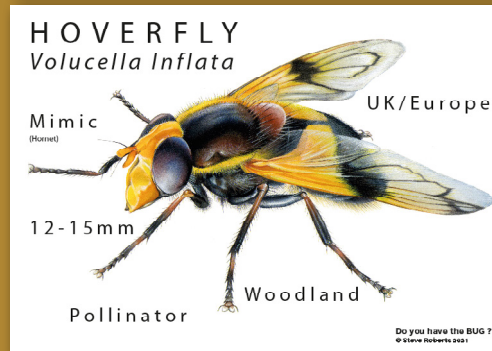
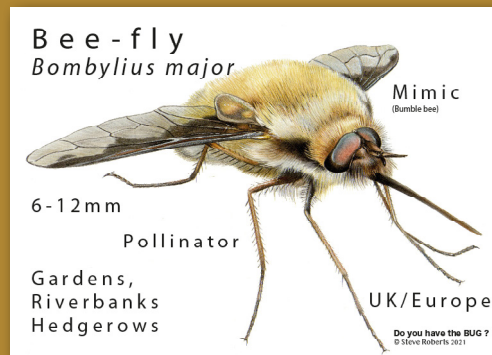
You can click on the images here to take you to the page.

Or you can purchase all 4 images printed in detail on A3 quality photo paper. The cost of all four is £20.00 including post and packing for deliveries in the UK. For deliveries outside the UK the cost is £30.00.

Visit [www.stroud-nature.org](http://www.stroud-nature.org) to purchase

All of these illustrations have been especially produced for this publication by wildlife artist and director of Stroud Nature, Steve Roberts.

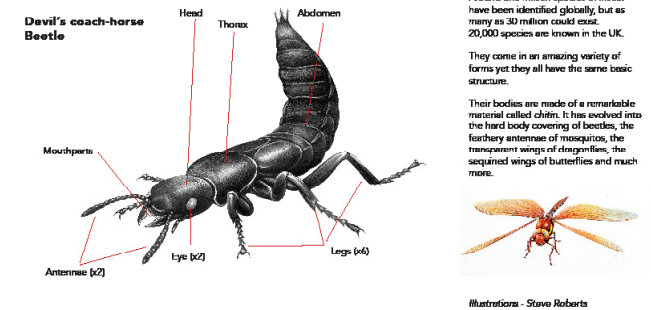
Steve hopes to include a feature on his insect illustration in a later issue.



## A fun drawing insect activity that teaches at the same time.



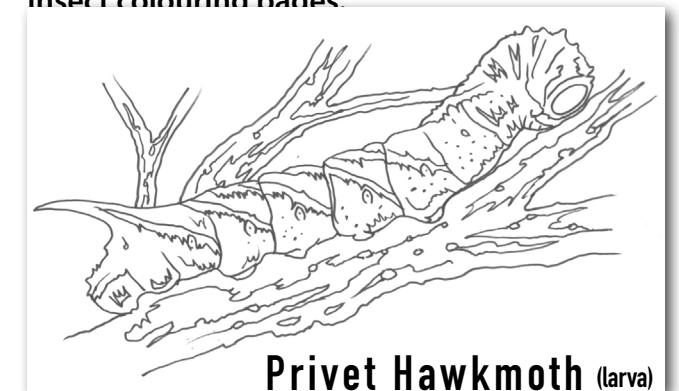
A drawing activity for one, two or three people, creating your own imaginary insects. As you take part, you can learn about the bodies and lives of real insects.



Click on the image above

## Colouring

Click on the image below to find a number of insect colouring pages.





# Do you have the **BUG** ?

## Background information and contacts

Follow the links on the page to find out about Stroud Nature CIC, publishers of this magazine, about the Stroud Festival of Nature and about the Stroud Great Green Partnership.

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w <https://stroudnature.org/>

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tw <https://twitter.com/stroudnature>

Visit our sister web site [www.stroud-nature.org](http://www.stroud-nature.org) to download our latest online resource:

**Guardians of the Garden Interactive** gives and your family everything you need to become a Garden Guardian.



**Coming soon.** Another online interactive resource for the family, with a leaning to the younger members:

**'Guardians of the Garden - Adventures in Green Space'** is a series of missions for you to undertake and complete.

Great for younger children at home and at school.



And of course issue no 3 of this magazine. Sneak preview of the front cover below. But it might change!

