Ento-Sleuthing in South Cliff Gardens, Scarborough

Go on an insect adventure with this #GardentoGarden workshop for young people and families

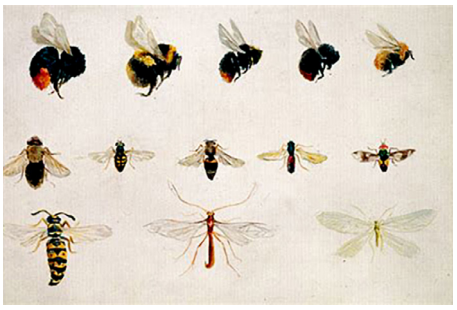
What Bees, Bugs, and Minibeasts can you see in South Cliff Gardens – And what are they up to?

What you see, especially in the natural world, is shaped by how you move, how you ask questions, how you record your findings, and the technology you use. Entomologists ('entomology' is the scientific study of insects) learn about their subjects by observing closely. This guide, created by the artist Feral Practice with the help of scientists from the University of York, helps you to become a 'sleuth' (another word for a detective) in your own backyard!

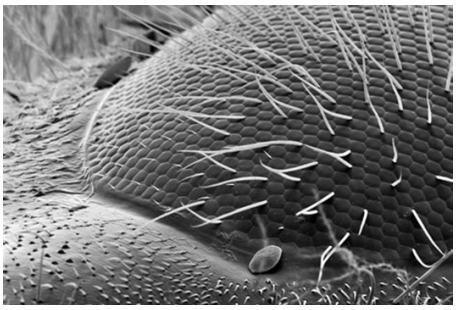
How did people study insects in Victorian times?

South Cliff Gardens was created in the 19th Century, which was a very busy time for studying nature. Scarborough was home to several eminent bug and plant hunters, whose collections are now housed in Scarborough Museum. Victorian 'Ento-Sleuths', would never be without their collecting jar, microscope and a notebook – just like the famous writer Beatrix Potter who made beautiful paintings of insects in her garden (see below).

Bees pinned and mounted in the Oxford University Museum collections



Insect illustrations by Beatrix Potter



Bee seen with an electron microscope

Why are bees so important?

#GardentoGarden has a particular focus on bees. Bees are important pollinators, meaning that plants rely on them to fertilize their flowers. As bees feed on the sweet nectar that flowers produce, they also get covered in pollen, and take it to the next plant. Humans rely heavily on bees to pollinate our flowers and food plants. As well as this, they make honey, and that is why they are widely farmed. However, human activity (pesticides, intensive farming, loss of wilder spaces etc) is having a major impact on their numbers and health in the UK and worldwide. Without bees, our food supplies would dwindle dramatically – so lets explore and celebrate them!

Victorian book illustration of bees - notice all the different colours of their tails, especially

There are over 200 species of bee living in the UK, and they are different shapes, sizes and colours, and they have different lifestyles. To find out more watch our short film introducing the project here

Another great place to have a buzz around is The Bumblebee Conservation Trust website. It has lots of info about bumblebees, and great pages to help you with identification.

Want to become an 'Ento-Sleuth' in your own backyard? Four key tips!

1 – Use a magnifier

The most important tools for any 'Ento-Sleuth' are sharp eyes and an enquiring mind, but new technology helps us look deeper. Scientists explore the bodies and behaviour of insects via electron scanning microscopes and powerful miniature microphones (follow this link to hear a recording by sound artist Rob Mackay).

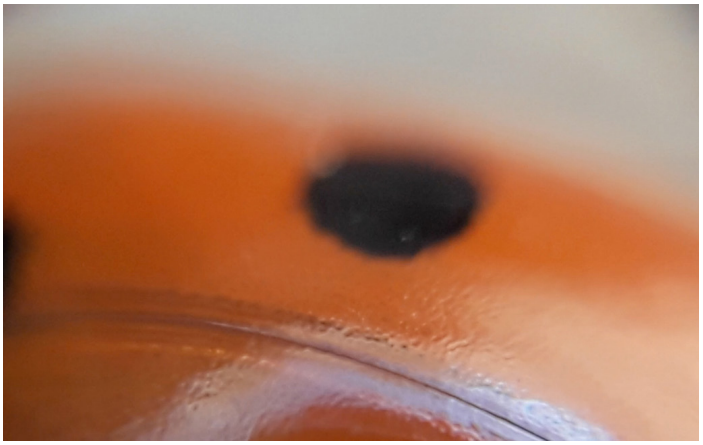
Not many of us have a proper microscopes, but the macro/zoom setting on a smartphone camera will give you a new perspective. Tip: it is much easier to get in close and focus on plants than flying bees, but you will also be able to get close to slower moving insects like caterpillars and beetles. You can use a Jewellers Loupe or 'hand lens' - a Microscope clip-on for your phone, or a Magnifying Glass.

Jewellers Loupe or 'hand lens'

Microscope clip-on for your phone

Traditional, still good, the Magnifying Glass

These two images were taken on a phone camera using the microscope clip-on. What are they?



2 – Apps

There's a useful identification guide at the end of this document, but you might also want to download a useful insect identification app. For example - Insect Identification for Iphone, Picture Insect for Android or What's that Bumblebee from the Bumblebee Conservation Trust. Please check with a family member if there are costs involved!

3 – Move (and see) differently

To see more, and learn more, when you are outside, try varying how you move around a space. For example lie down at the edge of a flowerbed and peer under the leaves, or dig down a bit into the soil.

4 – Flowers!

You can't really study bees without looking at flowers. Flowers are richly coloured, patterned and perfumed not for us humans, though we love them, but to beckon and tempt the bees. Different bees prefer different flowers. Wildflowers are particularly good for bees. As you look around your own garden or pot plants, and in South Cliff Gardens, notice which flowers bees like the best. Explore the flower borders, and also the wilder areas where nature has done the planting.

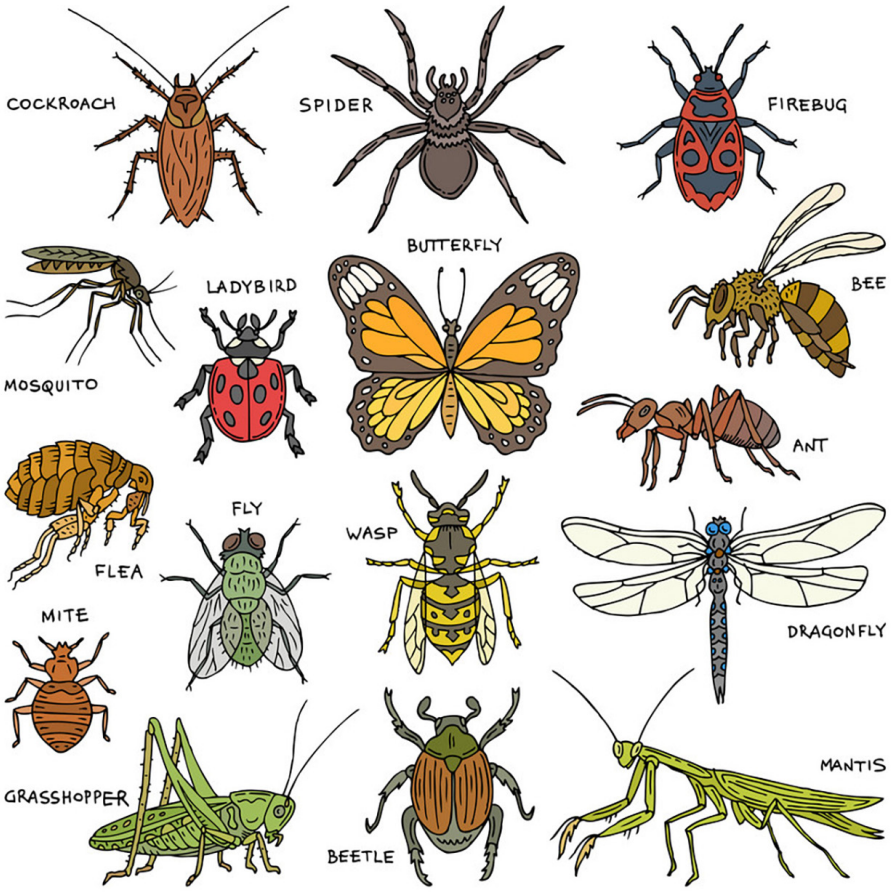
Now – get outside and get Ento-Sleuthing!

– Explore a variety of habitats in your backyard or in South Cliff Gardens (e.g. flower beds, woods, wild edges)

– Move differently! Search low to the ground, look up in the trees

– Find your bug of interest, then follow your suspect!

There are three crucial stages to Ento-Sleuthing:
1. IDENTIFY your suspects
2. RECORD their movements
3. DEDUCE (work out) their intentions



Remember to

– Take notes

– Make drawings or take photographs

– Experiment with magnification

– Try to work out your suspect's actions and motives

Sharing your adventures and our Garden to Garden competition!

Please do share any pictures, videos or sketches of your insect adventures on social media using the #GardentoGarden hashtag, mention @Invisible_Dust or simply email them to lucy@invisibledust.com. We'll make sure to retweet them on our socials and feature a selection on our website.

We'll be giving away a clip-on phone microscope to 5 lucky 'Ento-Sleuths' aged 8-18 whose pictures are selected by a panel of artists and wildlife experts! Deadline is midnight on the 1st September 2020 – full competition info here.

So buzz off, and get exploring!

Finally, we'd love to hear about your experiences exploring insects if you have two minutes to fill in this short evaluation form.

'Garden to Garden' is commissioned by Invisible Dust in partnership with the South Cliff Gardens National Lottery Heritage Fund Team, Scarborough Borough Council, with the support of the Wellcome Trust and Arts Council England. Research for 'Garden to Garden' is informed by scientists at Leverhulme Centre for Anthropocene Biodiversity at University of York, Yorkshire Naturalists Union, Scarborough Field Naturalists Society, and the Bumblebee Conservation Trust.

HERITAGE FUND COMMUNITY FUND Supported using public funding by ARTS COUNCIL ENGLAND Leverhulme Centre for ANTHROPOCENE BIODIVERSITY wellcome Invisible Dust

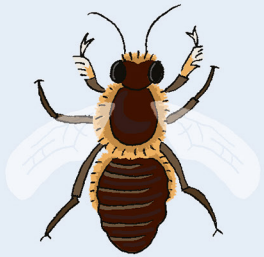
Bee identification

All bumblebees shown are worker bees

Wild About Gardens

14-17mm

☐ Buff-tailed bumblebee



12-18mm

☐ Willoughby's leafcutter bee

11mm

☐ Red mason bee

10-16mm

☐ Tree bumblebee

12-18mm

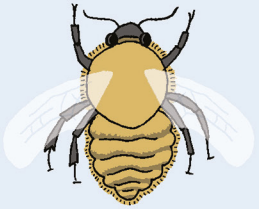
☐ White-tailed bumblebee

13-14mm

☐ Red-tailed bumblebee

10mm

☐ Tawny mining bee



13mm

☐ Common carder bee

13mm

☐ Wool carder bee

14-15mm

☐ Hairy footed flower bee

www.wildaboutgardens.org.uk

These are just a few of the 250+ species of bee in the UK!