



How to photograph spring insects

From orange-tip butterflies to red-eyed damselflies, the next few months will see a huge variety of photogenic invertebrates emerge. Andrew McCarthy introduces us to the techniques that will help you produce amazing insect images

There are few greater pleasures as a nature photographer than seeing insects such as butterflies and damselflies emerge and take flight after a long winter. But while insects can make great photographic subjects, they can also be really frustrating to work with – they can be hard to find, tend to move quickly in warm weather and have the annoying habit of often sitting deep in vegetation, which can make it difficult to make strong images. Add in the technical challenges of working at close range and it is no surprise that beginners can become disheartened. There are, however, some simple tips and techniques that can significantly increase your chances of finding subjects, as well as improving the quality and consistency of your photography.

BASIC EQUIPMENT

The budding insect photographer doesn't need much specialist kit. DSLRs and mirrorless cameras are ideal, with the latter enabling easier focusing on tiny subjects using focus peaking. A macro lens of around 100mm plus a close-focus telephoto for larger subjects enable the photographer to stand further back to minimise disturbance. A sturdy tripod is helpful if the subject is static, together with a small reflector to bounce light into darker areas of the scene. A variety of proprietary and home-made devices to stabilise static subjects are indispensable, as is a remote release, which helps minimise camera shake.

Left A downy emerald dragonfly emerging from its larval case. Olympus OM-D E-M1X with 40-150mm f/2.8 lens at 87mm, ISO 400, 1/250sec at f/5



WHICH SPECIES SHOULD YOU START WITH?

As soon as the weather begins to improve from mid-March onwards, it is worth searching in damp pastures and along woodland edges for commoner insects such as orange-tips and brimstones – these colourful butterflies make excellent early season subjects. Around ponds, large red damselflies begin to emerge in March, while April sees species such as variable, common blue and red-eyed

damselflies emerging. As May approaches, butterflies such as speckled wood are on the wing, and dragonflies such as broad-bodied and four-spotted chasers start to emerge. In May, look for early emerging moths such as elephant and poplar hawk. These spectacular species make great subjects during the cool of early morning if you have access to a light trap for night-time trapping.

Above Low-angle view of a pearl-bordered fritillary nectaring on a bluebell flower. I deliberately used a shallow depth of field to throw the background and part of the plant out of focus to concentrate the eye on the action. Olympus OM-D E-M1 MkII with 40-150mm f/2.8 lens at 105mm, ISO 1600, 1/500sec at f/5.6

WHERE TO LOOK

One of the problems confronting the would-be insect hunter is where to start looking. While it is tempting to travel far and wide in your searches, staying local gives you more time to practise, as well as helping minimise your carbon footprint (an important consideration these days). Start by getting to know your local nature reserves (your local Wildlife Trust website is a good place to start) and, if you have space, create insect habitat in your garden – for example, by planting a wildflower patch for pollinators or creating a wildlife pond. Many of the images in this article were taken in my garden, in habitat that was created specifically to enhance insect diversity and provide photo opportunities.

Right One of my favourite spring butterflies – the brimstone. Olympus OM-D E-M1X with 40-150mm f/2.8 lens at 105mm, ISO 640, 1/4000sec at f/5



FIELD SKILLS

Successfully finding insects while they are at rest (when they are much easier to photograph) takes time and practice. Scanning vegetation during the cool of the early morning when the wind is light can be very effective. However, it can be surprisingly difficult to see a resting insect from all viewpoints so move carefully and systematically through dense vegetation,

checking carefully from different angles as you go. Look for insects that are nicely positioned, ideally with a clear space behind, so you can throw the background out of focus without having to garden the vegetation. Remember, it is very easy to inadvertently trample insects when they are resting or emerging, so don't do this in your enthusiasm to find a subject to photograph.



Above A beautifully camouflaged angle shades moth, taken with a manual 30-image stack, each at the same exposure. Canon EOS 5D MkIII with 180mm macro lens, ISO 400, 1/320sec at f/5.6

TECHNICAL CONSIDERATIONS

Once you have found a resting insect, ideally in pristine condition, think about the best way to photograph it and from which direction you need to approach. Insects can be surprisingly easy to disturb, especially when it is warm, so stay low and move into place very carefully.

Once settled in, I generally begin with a record shot of the subject in situ, with the light source roughly behind me. I refine composition as I go and only look for more creative shots once I have a few decent images in the can. I try to align the camera sensor as closely as possible to the plane of the subject – side on to a resting butterfly – and I almost always shoot the initial shots with a reasonable depth of field (f/8 to f/11 on a full-frame camera and f/5.6 to f/7.1 on my Olympus OM-1).

I refine as I go by making small adjustments to the camera position – ideally, I want the subject sharp from front to back, but with the background nicely out of focus. I avoid smaller apertures, in part because this can result in background detail creeping in (which looks unpleasant), but also because very small apertures can result in a soft image due to lens diffraction.

If you need to remove vegetation to create a clutter-free background, use pieces of clothing or spare kit to gently move grasses and plants out of the field of view rather than cutting – vegetation can then be repositioned afterwards. Don't leave an insect exposed to predators just for the sake of a photograph.

Think carefully at this stage about focusing and remember that working close-up means that even at small apertures, you will have a tiny depth of field. Check your depth of field preview regularly and review shots (zoomed in to check critical focus) as you go – re-shoot if needed and aim for perfection.

Mirrorless cameras have focusing aids that can really help with this kind of photography. I usually roughly focus my Olympus OM-1 using a single AF point and then manually override it with a simple twist of the lens barrel to put the camera into focus-peaking mode, which allows me to see exactly what is in and out of focus at any aperture and in any camera position. I then make minor adjustments and check focus again to refine the composition before finally pressing the shutter button.

Consider weather conditions and stay alert to changing light. I don't generally use flash (except occasionally as backlighting or for fill) and my optimal weather for insect portrait photography would be relatively cool and still conditions, with a bright overcast sky to give wrap-around light. However, conditions like

this rarely occur – at least not when I have time to get out in the field! I sometimes use a small folding reflector or silver foil to bounce light back into the subject and reveal shadow detail – my aim being to produce natural-looking images.

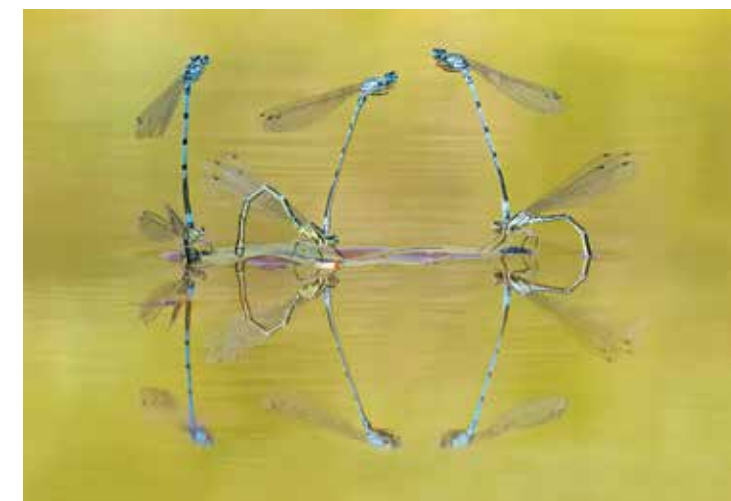
The extra light from a reflector also helps maintain a faster shutter speed, and this in turn makes it easier to freeze wind-related movement. Wind is the insect photographer's enemy, so I try and set up with a shutter speed of at least 1/250sec as a starting point. If the wind does pick up, I try to time shutter activation to coincide with a lull and I'll often stabilise perched subjects by attaching a couple of proprietary or home-made clamps to the perch (attached to a second small tripod or a ground spike). Be extremely gentle when attaching clamps – you don't want to disturb your subject or, worse still, cause it to fall off its perch.

I use the viewfinder when composing, rather than the rear screen – having a dark border around the scene helps me find critical focus and enables me to better compose an image. Once I have a composition and focus I am happy with, I check again for wind movement and will only press the remote release once the subject is still.

Right (top) A pair of roosting dew-covered azure damselflies. Canon EOS 5D MkIII and 150mm macro lens, ISO 1600, 1/60sec at f/10

Below (left) A stunning elephant hawkmoth found in a light trap and shot using the in-camera stacking function. Olympus OM-D E-M1X with 60mm macro lens, ISO 400, 1/60sec at f/5

Below (right) Three mating pairs of azure damselflies in the garden pond – it took a couple of days to get this shot right. Olympus OM-D E-M1 with 150-400mm lens and internal 1.25x teleconverter at 1000mm, ISO 1600, 1/1600sec at f/9





Above A downy emerald dragonfly emerging from its larval case, taken using the camera's internal stacking function. Because of the unusual viewing angle, it needed around 30 frames to get the full insect in focus from wing tip to larval case. *Olympus OM-D E-M1 MkIII with 40-150mm f/2.8 lens at 75mm, ISO 400, 1/250sec at f/4*



A FEW WORDS ABOUT ISO

I generally prefer to shoot insect portraits at a low ISO to minimise noise (I start with ISO 400-640 on my Olympus OM-1), as high levels can result in loss of detail. As always, the balance between aperture, ISO and shutter speed is a compromise – you need a reasonably fast shutter speed to stop wind movement and a large enough aperture to get the subject in focus – therefore in dull conditions, ISO may need to be increased to quite a high level to make a shot possible. However, all is not lost if you do have to push ISO up – there are some great noise-reduction software packages available these days and providing you have confidence in your post-processing skills, higher ISO levels should still enable you to produce images with plenty of detail.

FOCUS STACKING

In recent years I have found myself using focus stacking more often, as it helps overcome one of the inherent problems with insect photography – the tiny depth of field that results from using a wide aperture to control background. Stacking enables a greater effective depth of field while using a wider than normal aperture (for example, I often shoot stacks at f/3.5). Many modern cameras are capable of focus stacking and, of course, it is possible to stack by hand, either by using a focusing rail or by incrementally (and carefully) turning the lens barrel between each shot.

My current camera of choice, the Olympus OM-1, has a built-in system to produce a final stacked Jpeg file from an automated stack. However, I prefer to shoot Raw from a tripod, as this gives me greater control. I assemble the final stack in post-processing using stacking software.

HANDHOLDING

In warm conditions, insects are easily disturbed, and some species, such as dragonflies, can be on the wing for extended periods, which makes tripod photography difficult (although a monopod can be useful). While flight photography is outside the scope of this article, it is still possible to take portraits by hand when insects perch up. First, closely observe the subject before carefully approaching it – butterflies, for example, often feed from a single patch of flowers, which means you can start to predict where they might land and therefore pre-focus.

Left A pair of mating flesh flies. To achieve the required depth of field and also throw the background completely out of focus, I took this with a stack of 10 images. *Olympus OM-D E-M1 MkIII with 40-150mm f/2.8 lens at 105mm, ISO 400, 1/400sec at f/7.1*



Above A head-on shot of a rare pearl-bordered fritillary showing its remarkable markings. *Canon EOS 5D MkIII with 150mm macro lens, ISO 800, 1/500sec at f/5.6*

I use a longer focal-length lens – anywhere from 400mm to 1000mm (35mm equivalent) – to enable me to maintain plenty of distance from my subject. Where possible, I manually override the initial (continuous) AF setting and use focus peaking to check which parts of the insect are in focus before shooting a burst of three or four frames. This helps overcome any slight movement of the camera (or me) and it means that at least one frame should be in critical focus. Having a camera system with good image stabilisation makes a big difference to the number of keepers, but even without this, you can still get good results with a fast enough shutter speed and practice.

GETTING CREATIVE

Once I have a good initial set of images, I may (depending on the subject) begin to experiment with more creative compositions from different shooting angles. I often experiment with backlighting to reveal wing translucence and venation and will use a very shallow depth of field, including shooting through vegetation close to the lens to help create a soft out of focus effect to subtly frame the subject. During early morning I'll shoot silhouettes against the rising sun or seek out dew-covered specimens – the sparkle of light through water droplets can really lift an otherwise ordinary composition.

TOP TIPS FOR SHOOTING INSECTS IN SPRING

- 1** Shoot in the cool of early morning when insects will be slower and easier to photograph – and lighting is often more dramatic.
- 2** Be careful when searching, as it is easy to trample resting or emerging insects. Similarly, be careful when setting up – instead of cutting vegetation back, which can expose the subject to predators such as birds, it is far better to use clothing or unused kit to gently move stems or leaves out of the way. These can then be repositioned once you have finished.
- 3** Stabilising your subject will make a great difference to the quality of your shots, but it takes practice to stabilise a subject without disturbing it, so be gentle. I use a cheap travel tripod rather than ground stakes, which can be difficult to set up if the ground is hard.
- 4** Keep stabiliser clamps separate from the camera tripod, otherwise you risk transmitting movement to your subject when you focus (which can cause the subject to move) or when you take the shot (which can result in a soft image).
- 5** Position your camera carefully and gently move vegetation behind your subject out of the way if needed, to create a distraction-free background. Some out-of-focus colour can really add to the impact – for example, from flowers in a meadow. Once you have several safe shots in the bag, try shooting handheld with a faster shutter speed and a shallower depth of field.
- 6** Experiment with different ISO settings to see what your camera is capable of and what you are happy with. I generally don't use auto ISO for insect work, as I haven't found a camera yet that performs equally well at high ISOs as it does at low ISOs. Plus, I prefer to be in complete control.
- 7** Most people focus stack using a tripod rather than handholding. Find the front and end points of the stack and allow a little overlap. Shoot blank frames at the beginning and ends of each stack by putting your hand over the lens and taking a single image. Shoot several stacks to ensure you get at least one perfect. Try to visualise the final composition before you press the shutter button.
- 8** Insects are declining alarmingly worldwide so do your bit by digging a wildlife pond or creating a wildflower meadow by leaving uncut areas for overwintering insects and by minimising your mowing regime to allow low-growing plants such as clovers to flower, as these can be great for pollinators.
- 9** Moth traps are a great way of getting up close to some spectacular insects and can be a wonderful way of learning about your quarry. Be very careful when handling captured moths and put them back in nearby vegetation once you have finished photographing them – birds very quickly learn that an unwary moth trapper can inadvertently provide them with breakfast.