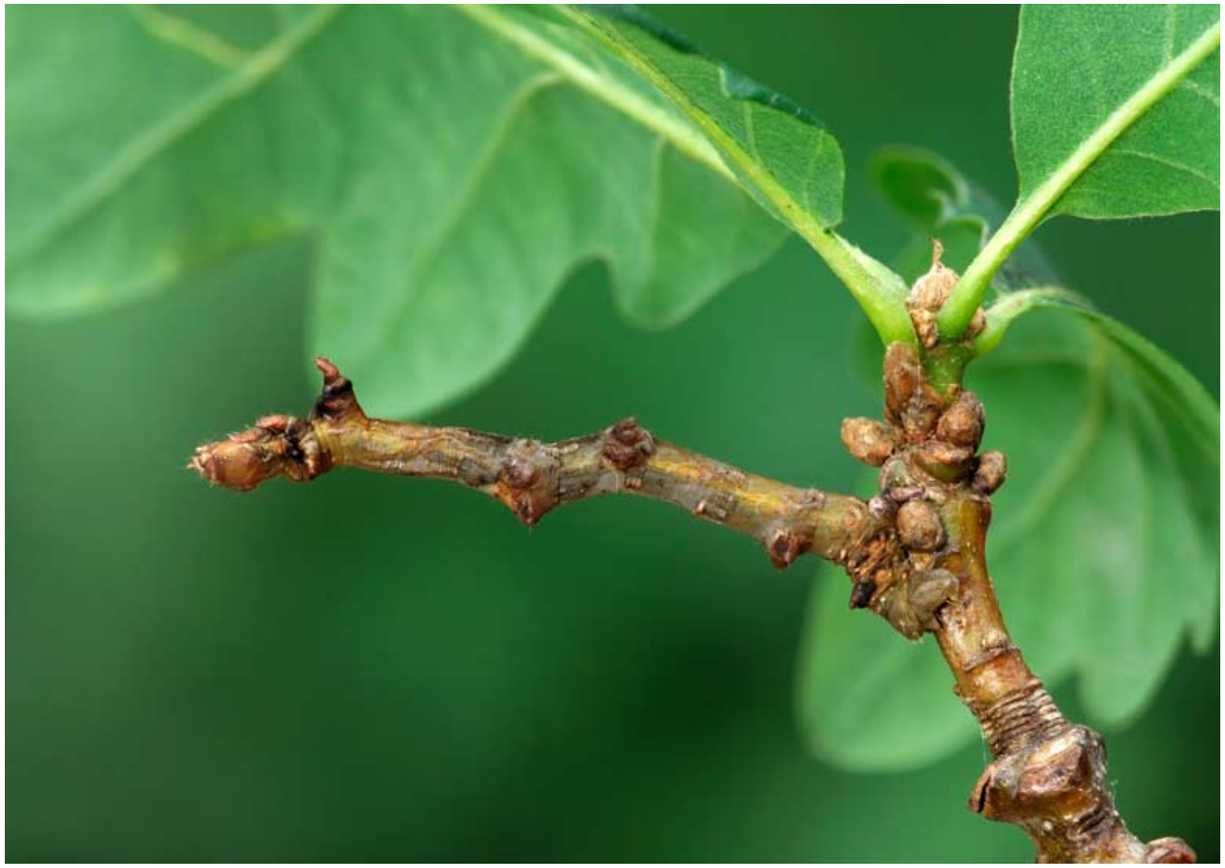
Life in the foliage

Late summer is prime time for seeking out caterpillars in your back garden. They may not be the most popular subject for macro photography, says **Robert Thompson**, but at least they won't fly away from your camera!

Hercules moth (*Coscinocera Hercules larva*)
This species is a resident of Australia and New Guinea and one of the largest caterpillars in the world. They can reach a length of over 12cm. The spines are harmless and don't contain any venom
Nikon D3X with 200mm Micro Nikkor lens, ISO 100, f/16, flash, tripod



September thorn (*Ennomos erosaria*)
This is a relatively common species found throughout most of the British Isles. The larvae feed on a wide variety of trees. This caterpillar resembles a broken twig and is remarkably cryptic when seen at rest. The fine line, which looks like a scratch, is actually its lifeline, which it uses to climb back up to the branch if it is suddenly dislodged

Nikon D3X, 200mm Micro Nikkor lens, ISO 100, f/16, fill-in flash, tripod

The last weeks of summer are now upon us, insect diversity and numbers are beginning to thin out – some looking a little worse for wear, but there is still lots of interesting subject material about. I normally run a macro workshop around this time for late summer dragonflies, early fungi and whatever else comes into my photographic radar.

August is an exceptionally good month for caterpillars. I always make a point during the workshop of searching the nearby foliage of small trees and shrubs if conditions are less favourable for other subjects. Many butterflies and moths will have laid their eggs during spring and early summer. The larvae will now be close to full size, which makes them easier to spot on the leaves and branches of trees and shrubs. Most of these species will overwinter in the pupa stage and emerge next year as adults. Caterpillars (or larvae as they are frequently called) are not hugely popular subjects among the macro fraternity. The lack of knowledge and understanding of their complex lifecycles is perhaps the most obvious reason. Nevertheless, they should not be overlooked; many are colourful and often bizarre in terms of their shape and structure. They are by nature more elusive, and they have to be, since they do not have the capability to escape a predator as an adult butterfly or moth might do. They have to rely completely on concealment, subterfuge and mimicry if they are to survive and make it through the pupa stage and finally to adulthood. Some of the largest and most colourful caterpillars belong to the silk moth family (Saturniidae), many of which are found in tropical regions around the world.

Survival strategies

Most photographers come across caterpillars by chance, usually when the larvae are crawling across paths and pavements looking for a suitable place in which to pupate. However, the vast majority remain concealed among the foliage during the day and largely go unnoticed. They have many enemies to contend with during this stage in their development. Top of the list are small birds, particularly during the nesting season when they collect large numbers to satisfy the

Elephant hawk-moth (*Deilephila elpenor*)
One of the most attractive hawk-moth caterpillars, it feeds on rosebay willow herb and is often seen feeding on the flowers during the daytime. The caterpillars also feed on fuchsia and are sometimes found in gardens. When alarmed, the larva retracts its head into its anterior abdominal segments, giving the appearance of an elephant's trunk (hence the name), or a snake with four large eyespots

Kodak Pro SLRn, 200mm Micro Nikkor lens, ISO 160, f/16, fill-in flash, tripod

continual hunger of their developing offspring. Other predators include spiders, beetles, wasps, and a plethora of parasitic insects. Larvae are also a favourite with small mammals, while reptiles and amphibians also take them when the opportunity presents itself. Even fungi in the form of moulds are serious enemies, especially the genus Cordyceps, which attack hibernating caterpillars living in the soil.

With so many predators it's a wonder that any survive at all, but they do. Many have developed strategies and defence mechanisms, which reduce their risk of detection. Camouflage is perhaps the most obvious of these, and a large number of caterpillars adopt the colour and structure of the foliage and twigs they rest on, remaining perfectly still, or hiding during the day and feeding under the cover of darkness. Some species resemble bird droppings, or contain highly toxic chemicals such as cyanide, which they advertise in their brightly coloured patterns and markings and serves as a warning to predators. Many of the Eggar moths have large caterpillars with long, dense hairs, which can react with skin if touched. The smaller geometrid caterpillars, if disturbed, frequently feign death and drop into the ground vegetation making them difficult to find.

Fieldcraft

Caterpillars can be found in a wide range of habitats, even your own back garden. There are many different techniques for finding them. Some require specialist knowledge, but others can easily be located with a bit of careful searching and a basic understanding of their biology and habits. Most species are associated with a particular food plant while others are more universal in their taste, feeding on a range of different plants. Certain trees and shrubs such as, birch, oak and various species of sallow and willow tend to be more productive.

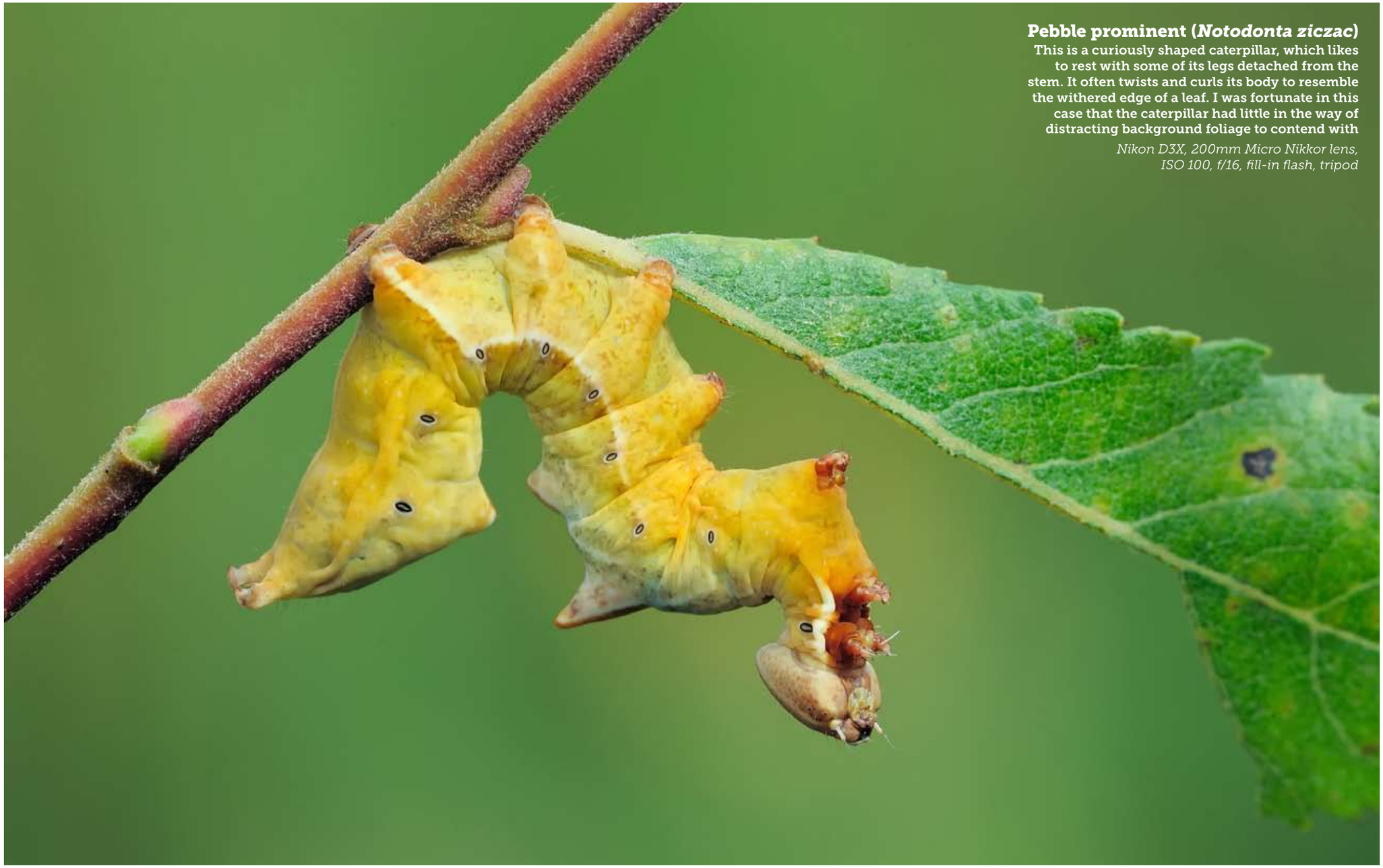
Searching small, often isolated willows and birch trees tend to be more successful; you can easily examine the whole plant more readily. Once you have discovered one caterpillar chances are there are others nearby as well. Checking carefully along the thin branches and the undersides of the leaves is the easiest way to locate larvae without disturbing them from their resting positions.

"Caterpillars are colourful and often bizarre in terms of their shape and structure"

Some brightly coloured species rest openly on the upper surface of leaves and are easily seen. Examine the undersides of the leaves on the lower branches of the tree and look for evidence of their presence. The telltale signs are partially eaten leaves, or in some cases the whole branch is striped of its foliage. This is often the case with large hawk-moth caterpillars, which consume much larger amounts of foliage when reaching full size. Many species are also active after dark, the light from a torch will often reveal them feeding at the top of the food plant

Dubious method

Entomologists often use what is termed a 'beating tray' to search for caterpillars. The tray is slipped underneath the branch, which is then tapped firmly with a thick, short stick; any larvae present generally fall onto the pale stretched fabric. The problem with this method is that you have lost the natural resting posture of your quarry, and you are then faced with the challenge of trying to encourage your subject back on to a branch which can be extremely frustrating experience. Once disturbed, many caterpillars start to wander, seeking shelter low down among the branches, which makes it nearly impossible to achieve any sort of acceptable image.



Pebble prominent (*Notodonta ziczac*)
This is a curiously shaped caterpillar, which likes to rest with some of its legs detached from the stem. It often twists and curls its body to resemble the withered edge of a leaf. I was fortunate in this case that the caterpillar had little in the way of distracting background foliage to contend with
Nikon D3X, 200mm Micro Nikkor lens, ISO 100, f/16, fill-in flash, tripod

Case study: Eyed hawk-moth

Eyed hawk-moth (*Smerinthus ocellatus*)
This image shows the small isolated sallow and the position of the caterpillar

The sequence of images here illustrates an almost fully-grown caterpillar of the Eyed hawk-moth (Smerinthus ocellatus), which was found on a previous late summer workshop. You can clearly see how well the caterpillar blends naturally with its surroundings and the distinctive horn-like projection at the end of its abdomen – a feature that is characteristic in virtually all hawk-moth caterpillars. The larva is low down in the sallow bush lying horizontally along a small branch. I was careful not to disturb it or the surrounding branches in case it got spooked and decided to wander off. The caterpillar's position was not ideal due to the distracting foliage in the immediate background, but to try and coax it to move would only lead to frustration on the photographer's part as they generally crawl down to hide among the ground vegetation.

"Caterpillars remain motionless for long periods providing you do not touch them, which gives you time to study the framing and compositional choices"

Diffusing the background

The best option here was to tie back some of the offending branches; this produced a much cleaner, diffused look to the background. I framed up the shot first of all and then used cable ties to pull the offending branches to the side just enough to clear the field of view. This is easily checked in the LCD screen. I also removed a large sallow leaf in the foreground, which would be intrusive and impossible to keep in focus. If you don't have cable ties you can use small crocodile clips, but you need to reduce the teeth a bit so they don't penetrate the small branches too much. Both approaches work equally well except that cable ties are better when the branches are stronger.

Caterpillars remain motionless for long periods providing you do not touch them, which gives you time to study the framing and compositional choices. A tripod is indispensable for this type of work; it allows you to compose the image precisely. In this case, I wanted to use an aperture that would just give me enough depth of field to retain sharpness on the caterpillar and not progress too much beyond the subject since the primary aim was to allow as much of the background to remain diffused as possible. This meant positioning the camera parallel to the body of the subject.

Using a longer focal length macro lens in the region of 200mm gives an increased working distance between the lens and subject, thereby minimising your chances of hitting the surrounding foliage. If you don't posses one, use a short telephoto with extension tubes, which works equally well. You can always check your results before you return the branches to their normal positions. This is a very useful technique and can be applied to other situations when photographing subjects that rest on leaves and branches.

Robert Thompson is an accomplished freelance natural history photographer, writer and naturalist, living in Ireland. He is an acclaimed macro specialist and author of a number of books on natural history and photography. His work is widely published in the UK, Ireland and internationally.
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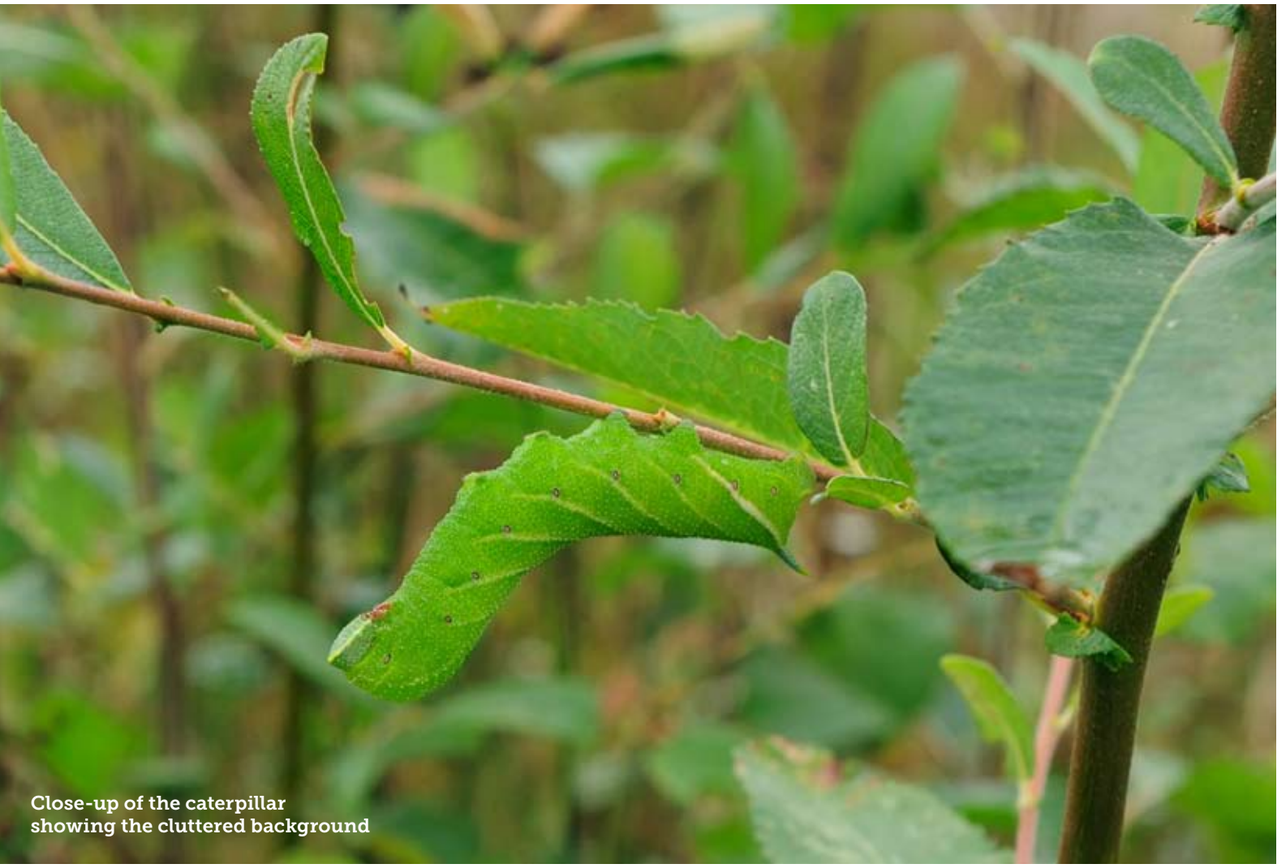
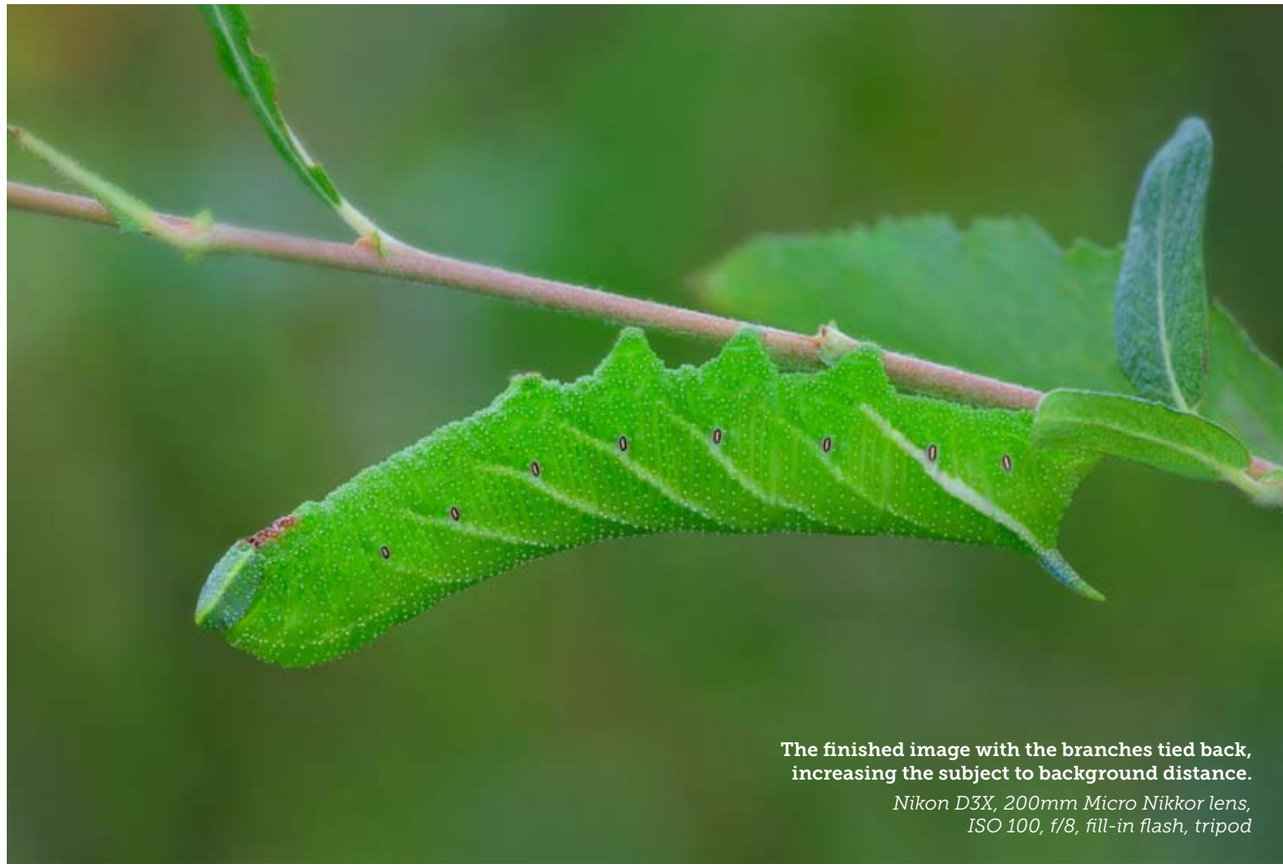


Close-up of the caterpillar showing the cluttered background



The finished image with the branches tied back, increasing the subject to background distance.
Nikon D3X, 200mm Micro Nikkor lens, ISO 100, f/8, fill-in flash, tripod