

# Insect Photography

*Robert K. D. Peterson*

The above photograph shows the author's insect macro photography setup. Note the two flashes positioned just in front of the macro lens. In this particular setup, there are two extension tubes and a teleconverter behind the lens (2008 JJ Schleier III)

There is little doubt that the readers of *American Entomologist* and the members of the Entomological Society of America are passionate about insects. Many of us express and share that passion by photographing insects and their arthropod relatives. Many who would like to photograph insects find the task daunting because of the necessary equipment. Fortunately, with the emergence of digital photography, insect photography is easier than ever.

In many respects, insect photography is both simple and complicated. If you have the proper equipment, the camera, lens, and flash settings are very straightforward. However, unlike relatively static subjects like flowers, insects move, making camera angle and focus difficult. If you imagine a moving insect on a leaf that is waving in the breeze, you can quickly grasp the complications inherent in insect photography.

Insect photography usually requires macro photography equipment. To shoot insects about

1.5 cm long or longer full-frame, all you need in addition to your favorite camera body is a capable macro lens and a flash positioned close to the front of the lens. To photograph smaller insects, you'll need a teleconverter, extension tubes, or both.

A flash is crucial for photographing all but the largest insects, such as large butterflies, moths, and dragonflies. The flash adequately lights the insect and allows for a small aperture setting, which is needed to increase the depth of field. A close-up flash, such as a ring flash, a flash mounted on a bracket, or even a regular flash handheld via a synchronization cord will work. What matters most is that the insect is adequately lit just in front of the lens. A through-the-lens (TTL) flash system helps, but you can get excellent results using manual settings.

As with all macro photography, the depth of field will be very shallow, so it is imperative that you use as small an aperture as possible. For most





Adult regal moth, *Citheronia regalis* (Lepidoptera: Saturniidae). Note the shallow depth of field in front of and behind the eyes. (1999 RKD Peterson)

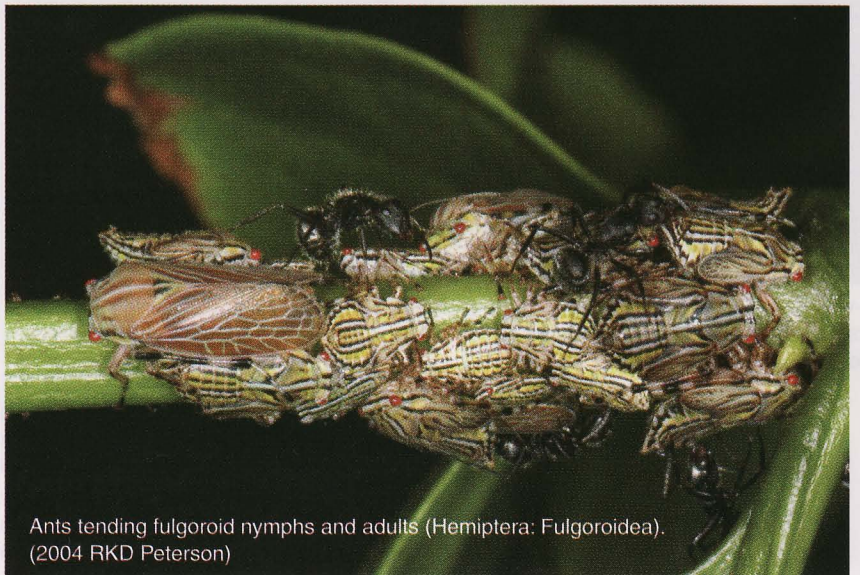
insects, that means an aperture of at least  $f/22$ . The ability to use such small apertures has become easier with the increased light sensitivity of sensors on digital cameras.

Forget about using autofocus or a tripod when taking photographs of insects. It just doesn't work because of the shallow depth of field and movement of your subject. Instead of constantly adjusting the manual focus on the barrel of your lens, preset the focus so that your subject is the size you want in your field of view. Then, slightly rock your upper body back and forth to focus on the insect's eyes, head, or dominant feature you want to emphasize. The magnification inherent in macro photography will over-emphasize movement and lack of focus. You'll often have to hold your breath when depressing the shutter to get a well-focused shot. You'll also need to securely steady the camera; when photographing insects, you will spend a lot of time on your rear, stomach, knees, and elbows to get to their level and to steady your shots. Be prepared to take and discard many shots to get one acceptable photograph (a definite advantage of digital photography).

You don't have to be an entomologist to take photos of insects, but it helps to understand a few things about their biology and behavior to get great shots. Because the activity and movement of an insect usually increase when the temperature increases, it follows that to get an insect to sit still for its portrait, it really helps if it is relatively cool. Other than taking photos only in the early morning hours before the insects have warmed up—ever wonder why there are so many photos of dew-clad dragonflies?—you can literally capture your subject, place it in a small cooler with ice or other cooling agent, and after a few minutes it will be sufficiently calm to position and photograph before it warms up. But, if your subject is too cold,



A sphingid caterpillar (Lepidoptera: Sphingidae). Note the camera orientation to the head. (2000 RKD Peterson)



Ants tending fulgoroid nymphs and adults (Hemiptera: Fulgoroidea). (2004 RKD Peterson)





European skipper butterfly, *Thymelicus lineola* (Lepidoptera: Hesperidae). (2006 RKD Peterson)



*Thanatophilus lapponicus* (Coleoptera: Silphidae). (2003 RKD Peterson)

Metallic wood-boring beetles mating, *Anthaxia* sp. (Coleoptera: Buprestidae). (2007 RKD Peterson)



Tenthredinid sawfly adult (Hymenoptera: Tenthredinidae). (2004 RKD Peterson)




its legs, antennae, and wings may not look natural. It is not always possible to capture and chill your subject, so you'll need to rely solely on your ability to sneak up on the insect (a low profile really helps) and quickly take your photographs.

Most of the best insect photographs clearly reveal the subject's head and eyes. Before looking through your lens, quickly orient yourself to the insect's head, then make sure it is positioned appropriately within the frame.

Dark insects can be difficult to photograph because their features often are not distinguished in the resulting image. I've found that dark insects photograph better against a background that is also dark. For example, a black beetle should be shot against a medium to dark brown background. This ensures a lower-contrast image and the details of the dark body will emerge. Highly iridescent or shiny insects are also difficult to photograph because the light from the flash often will be reflected, creating distracting and harsh contrasts on the image. This can be ameliorated by diffusing the flash with a plastic diffuser provided with the flash or with a homemade diffuser made of light, white paper or cloth.

As entomologists, our knowledge of insect behavior and life history is a distinct advantage when shooting insects. Although there are several challenges when photographing insects, the results can be deeply rewarding. Insect photography can enhance our research and teaching activities, or it can just be a fun hobby. And, as all readers of *American Entomologist* know, there is no shortage of subjects and you do not need to travel to far-off, exotic locales to photograph interesting-looking insects.

**Robert K. D. Peterson** is Associate Professor of Entomology at Montana State University and has been involved in insect macro photography since 1996. He now photographs insects with a Nikon D200, Nikkor 105-mm macro lens, and two Nikon SB-R200 wireless speedlight flashes. Until recently, he used a Nikon D100 with manual ring flash and a Nikon N90s with Fujichrome Provia film. His nature photography website is <http://entomology.montana.edu/People/RKDPeterson/macrothumbs.htm>. He is a co-contributing editor of *American Entomologist* ([bpeterson@montana.edu](mailto:bpeterson@montana.edu)). 



Short-winged toothpick grasshopper, *Pseudopomala brachyptera* (Orthoptera: Acrididae). (2004 RKD Peterson)



Giant stonefly adult (Plecoptera: Pteronarcyidae). The entire insect does not need to be in the frame to have an effective image. (2007 RKD Peterson)