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Photographing Insects in the Field: Know Your Equipment

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At about 1.25 inches, or 32 millimeters, long, this *Phrictus quinqueparitus*, a Fulgorid planthopper, is one of the largest hoppers—and a glorious one at that. Photo taken in Costa Rica. f/11, 1/100th, flash. Photo by Jeremy Squire.

By Lou Staunton and Jeremy Squire

Editor's Note: This post is Part 2 of a two-part series. [Read Part 1](#)

(<https://entomologytoday.org/2020/04/02/photographing-insects-field-basic-tips-success-macrophotography/>).

In our last post, we gave some [general tips on obtaining better macro shots in the field](#) (<https://entomologytoday.org/2020/04/02/photographing-insects-field-basic-tips-success-macrophotography/>). In this post, we'll look at some technical considerations and equipment that make it easier to produce quality macro photos of insects.

RAW Versus JPG

We recommend that you capture all images in RAW format, or, at a minimum RAW plus JPG. JPGs give you instant gratification and a good rendering of your photo. But, if you ever want to enhance your insect photos by removing shadows, lowering highlights, or further processing a photo in Lightroom or similar software, you will get much better results with a RAW version of your photo. *Photography Life* offers an [excellent explanation on RAW and JPG](#) (<https://photographylife.com/raw-vs-jpeg>).

Camera and Macro Lens

“Macro” simply means that, if the lens is as close to the subject as is possible while keeping the subject in focus (usually a few inches), the image will be projected onto the sensor at life size (or larger). “Life size” is also referred to as 1:1.

Based on our experience and what we see in other photographer's bags, the three lenses favored by insect photographers who use full-frame cameras are the Nikkor 105-millimeter (mm) for Nikon mounts and the Canon EF 100 mm and MP-E 65 mm for Canon. These are all excellent (and expensive) lenses capable of producing publication-grade images. For micro four-thirds bodies, many favor the featherweight, reasonably priced, and extremely sharp Zuiko 60 mm macro, which is what we use.

Two of our favorite sites for lens reviews are [Digital Photography Review](#) (<https://www.dpreview.com/reviews?category=lenses>) and Thom Hogan's [website](#), [Sans Mirror](#) (<http://www.sansmirror.com/lenses/>). These cover the features of the many lenses that are available for different camera formats.

Before investing in an expensive lens, consider renting one. Lens rental companies ship in a returnable box, and you can rent for just a couple of days. The cost can be surprisingly low: [LensRental.com](#) (<https://www.lensrentals.com>) is a well regarded company that we've used recently.

Nikon, Canon, Olympus, and other major-brand “prime” lens (meaning they do not zoom) are relatively simple, and there is little that can go wrong with them. We have purchased used ones with success.



Camera Bodies

In general, almost any digital camera made in the last 10 years that accepts interchangeable lenses is capable of producing suitable images for reproduction when equipped with a good macro lens. Many “bridge” cameras without interchangeable lenses, but with a macro mode, are also quite capable. Check reviews specifically for macro information.

After using full-frame cameras for many years, we realized the micro four-thirds (M43) cameras are more suited to our style of insect work because they’re more compact and weigh substantially less than full-frame cameras. This allows us to shoot with one hand, freeing the other hand to steady the subject or hold branches out of the way.

Macro Ring Lights

Macro ring lights produce a low level of light and are used to illuminate a subject in the same way as flash. They are inexpensive and usually powered by two or four AA batteries; they use LEDs and may be somewhat useful for daytime macro. We’ve used them but don’t recommend them—we find that an inexpensive, single, camera-mounted flash unit emits far more light and produces better results.

Twin Flash Heads

One benefit to a twin flash head is that you can regulate the light levels independently and throw more or less light on one side of your subject. A properly diffused twin flash in experienced hands can produce a beautifully lit insect photo. However, in field photography, they have a major drawback: The twin arms and flash heads are bulky enough that it’s easy to unintentionally bump a branch or clump of leaves and spook your subject or send it skittering to the ground. We, therefore, recommend against them for field work unless you’re prepared to move with great care and patience when approaching your subject.



Single, Camera-Mounted Flash

This is our preferred method for shooting in the field. The flash sits back from the lens, but still projects enough light to saturate the area in front of the lens with light. This configuration allows us to get close to subjects with the least risk of bumping foliage or scaring bugs. It also allows us to better diffuse our flash, which is a greater challenge with ring lights or two flash heads.

Diffusing Your Flash

Insects are challenging to photograph because their exoskeletons and wings can be highly reflective. From the camera's viewpoint, highly reflective areas on the subject can throw bright light from the flash right back at the sensor, resulting in overexposed or "blown out" areas (meaning there is no detail or color, and they appear white in the image), or, more commonly, a "harsh" look that lacks clarity of detail. And, of course, you want clarity of detail for your entomological photos.

A diffuser solves this problem and improves images captured with a flash unit. We feel a diffuser is an essential tool.

In fact, all photos that accompany this article were shot using a diffused flash as the light source.

Unfortunately, it is beyond the scope of this article to give instructions on building a diffuser, but Jeremy offers [instructions for a quick and easy DIY flash diffuser](https://www.jeremysquire.com/DIY-Macro-photography-flash-diffuser) (<https://www.jeremysquire.com/DIY-Macro-photography-flash-diffuser>) on his website. With a bit of experimentation, you can completely eliminate hot spots and blown out areas.

We hope this has been a useful post and that you can use some of these ideas and tips!

Lou Staunton and Jeremy Squire are based in Virginia and specialize in macrophotography of insects and small creatures in the field. All photos included with this article were shot with an Olympus OM-D E-M1ii and an M.Zuiko 60 mm lens. See Lou's insect photography at www.eyetoeyewithnature.com (<http://www.eyetoeyewithnature.com/>) and Jeremy's at

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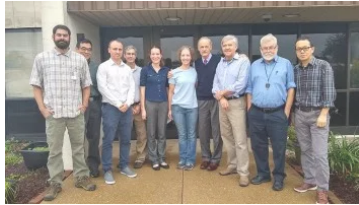
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