

The Changing Look of Insect Photography

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Insect photography is one of the most universal techniques in entomology, but also one of the least appreciated. Most of us make frequent use of our own photographs when giving talks and preparing publications, and we all learn from other people's photos as well. You might think we would offer courses in insect photography, or perhaps have a journal or a society devoted to this topic, but we don't. We learn on our own, and some of us learn more than others.

Have you noticed the changing look of insect photography? When I was a kid, I spent many happy hours in the insect



section of the local library. The portraits I remember most fondly were those that showed the living insect in its environment, and as I recall most were British. You know the sort I mean—softly lit compositions that made you feel as if you had just stumbled across an interesting specimen while strolling along Darwin's sand walk. Thinking back, most of these photos included elements of nature, elements that were man-made, and of course the insect subject itself. I enjoy taking pictures of that sort today, especially of resting moths.

Close-up photography was apparently not easy in the 1950s and 60s. Most cameras used large film, which necessitated large lenses that were not easy to modify for close-up use. Instead, photographers took advantage of the detail that big negatives provide, and worked large-bodied insects into compositions that included more than the insect itself. Some photographers were achieving true macro photography, but early extreme close-ups had a flat, artificial look to them, and they are nowhere near as snappy as a good modern insect shot.

All this changed with the widespread availability of 35mm single-lens-reflex cameras, and off-the-shelf means for increasing the magnification of an existing lens—close-up attachment lenses, and extension tubes and bellows. People with more money shelled out for a devoted macro lens, which simply means a lens with “extension” built into it, focusing from infinity down to something at or close to life-size. From the 1970s to the advent of digital photography, this was the equipment of choice for insect photographers, and it too gave a characteristic “look.”

If you were taking insect photos during this time, you probably used Kodachrome film, and you loved Paul Simon's song by the same name. By today's standards, this film required a LOT of light, and the best way to

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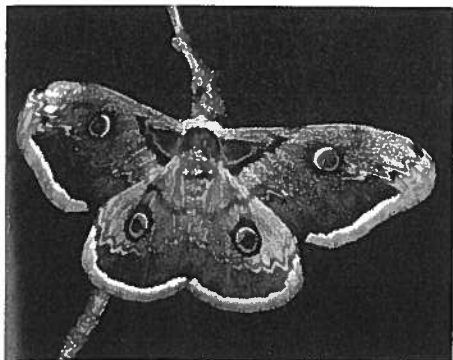
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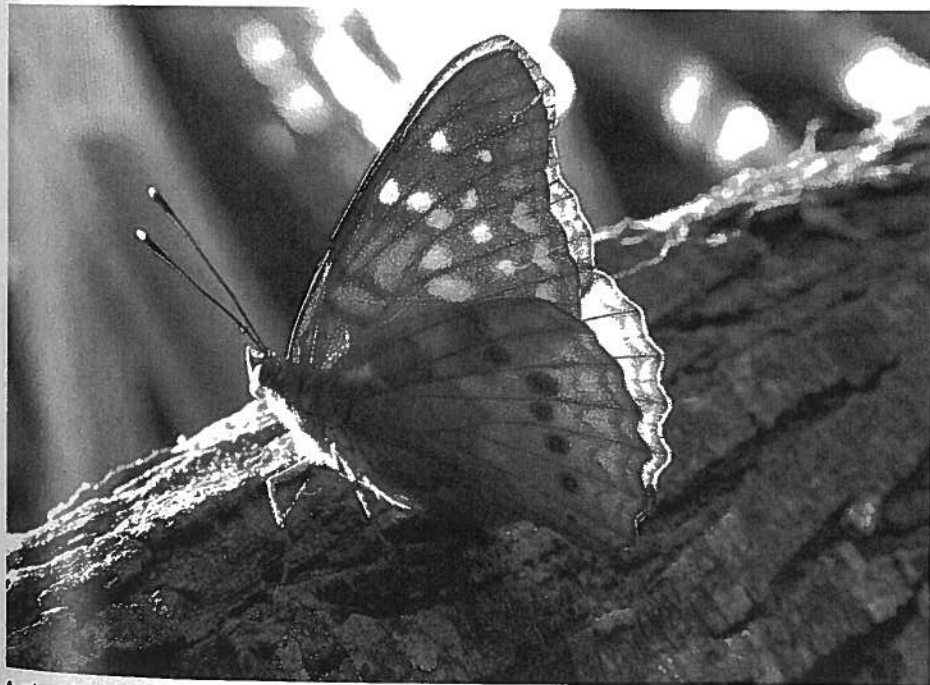


Man, nature, and insect (*Paonias myops*), softly lit.



Flash fall-off prevents you from knowing that there is a white wall behind this *Saturnia pyri*, not an inky sky.

compensate for this effect was to use a tiny lens aperture, (typically $f/22$ or smaller), and an electronic flash. Small apertures also give greater (although not great) depth of focus, and depth of focus decreases in a frustrating way with increasing magnification, no matter what equipment you are using. And unless your bug was sitting on the ground, or on a broad substrate, it was easy to wind up with a black background, since light from a flash falls off in proportion to the inverse square of the distance from the flash to subject. This, plus the fact that slide film is easy to underexpose, resulted in an era of scientific talks that featured endless photos of diurnal insects that looked like they had been photographed at night. Slide film is also easy to overexpose, and on occasion we suffered through that effect as well. This was the second look of insect photography as I remember it.



A nice digital wide-angle close-up of a backlit *Asterocampa clyton*.

Some folks, of course, understood all of these difficulties and found ways around them. I remember how impressed I was when I watched legendary insect photographer Mark Moffett photographing mantids in a motel room in Arizona. He had an array of electronic flashes arranged around the insect, and his photography rig was at least 25% homemade. I asked him how he came up with this system, and he told me a wonderful story. To learn photography, he went to the camera store to buy some instruction books. The best books he could find, however, were all about glamour photography. So he reasoned that insects deserve the same artistic care as models, and created a macro system that was really a miniaturized fashion photography studio.

So how have things changed lately? Well, it's tough to underestimate the impact of the digital revolution in photography. For one thing, modern cameras are much more light-sensitive than the films of my youth, and I can now shoot at 800 ASA or higher (which is now called ISO, for reasons that baffle us all) and get an image with wonderful detail. That means the background shows up, and my flash can now be used for filling in shadows, backlighting, or bringing out detail in areas of interesting texture. If anything, cameras are now too light-sensitive to allow us to easily control lighting. Lenses have also improved, to the point where a pin-sharp macro lens is within almost every entomologist's budget, and foolproof wireless flash photography is also easily to find. So for those of us who now use digital SLR cameras, the world has vastly improved.

The most amazing development, however, has been in point-and-shoot cameras—something I doubt many entomologists saw coming. I personally started out with a Nikon Coolpix 4500 that could focus to within one centimeter of the camera. This is marvelous, but to be honest, it isn't entirely new. It has more to do with small sensors than with digital technology, and I also have pleasant memories of using a wind-up 8 mm movie camera (in which the 8 mm-wide movie film was about the same size as a small digital sensor) that could focus to the surface of the lens. It was great until I let a chrysomelid beetle crawl across the lens, and found that I simply couldn't clean the tarsal oils off the lens' surface when I was done!

On most digital point-and-shoot cameras, close-up photography is possible only at the wide-angle end of the zoom range, which results in photos that capture a sense of the surrounding environment, harkening back to those lovely insect portraits I admired as a child. Telephoto macro is possible with some cameras (I love my new Pentax Optio W60, for example), allowing you to isolate and blur the background elements a bit more, and focus the viewer's attention on the bug.

Most importantly, though, we can now send digital images instantly over e-mail or onto the Web, at no added cost. The importance of this phenomenon to entomology cannot be overstated. Expert taxonomists can offer distant opinions on tricky specimens, extension entomologists can identify unknowns from afar, and all manner of visual communication is now at our fingertips. Sure, there are a lot of no-brainer photos posted to most listservs, but hey, would you rather deal with those identifications in person? And if you really want to know how little some people know about insects, search YouTube under the heading "weird alien bug." Disappointingly, most of them are neither weird nor alien by our standards, but you have to admit that it's nice that people are bemused by at least some of the entomofauna around them.

Who knows what will come next? Perhaps cell phone cameras will improve to the point where we can shoot publishable insect images with them. Or perhaps not. One thing, however, is certain—the laws of optical physics are not likely to bend to the needs of technology, and the best insect photographers will always be those who actually know how a camera works.

John Acorn lectures at the University of Alberta. He is an entomologist, broadcaster, and writer, and is the author of fifteen books, as well as the host of two television series.

