

Simple Indoor Insect Photography –with a Point and Shoot Camera

By Jim Moore

Greetings to all whom may view this tutorial,

Below is information and photos on how I accomplish my bug photography with just a small point and shoot camera. I will also share how I 'usually' win the battles with uncooperative bugs; and other tips and tricks. (please note: all bug photos are linked to their species page at BugGuide.)

Best regards – Jim

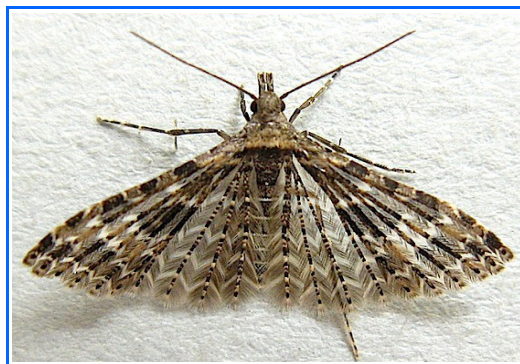
I have been collecting bugs off and on since around 1970, and photographing bugs since around 2007. Around then, I set my mind to photographing as many 'live' insects, etc. as I could find within the Mountain Meadows Basin where my hometown of Westwood is located, in Lassen County CA. I soon learned that photographing these small active 'bugs' in the wild was not all that easy with my small camera; and not possible at all for most. I researched online, on how to photograph insects in an indoor setting, and found some pretty fancy bug photography studio setups; usually involving big cameras, or special high-tech cameras, special tripods, special lighting; special 'containment' stuff, and different methods for live and/or pinned insects. More than I wanted to deal with. I resumed collecting again and begin to learn by trials and errors how to take nice photos. Over the years of learning I have found that the old saying, 'Desperation is the mother of invention' has been quite true in my bug photography experience. What follows is where I am at in my learning experience. I hope it will be of some help.

Goals:

My goals have changed over the years, and currently are to produce really nice photos of living local invertebrate wildlife that may be of benefit to others: whether they be local folks, or other likeminded persons, wherever they may live beyond these mountain-valley habitats. I am pleased to say this has happened over and over with my photos. Also, I am pursuing the discovery aspect of Invertebrate photography. What is this new bug that I have photographed? What role does it contribute to the local environment? Good photos help in answering these and other questions. In as much as possible I try to photograph dorsal, lateral, frontal-face, and ventral images of most specimens.

Patience, and Perseverance:

Photographing living bugs requires a lot of patience; as many bug photographers already very well know. One of the most difficult bugs I ever photographed took two weeks of in and out of the refrigerator every day before I got one nice photo! This is what I mean by patience and perseverance. This sort of patience-effort may vary with each person. For me, that perseverance and this one photo was well worth the efforts:



Montana Six-plume Moth - *Alucita montana*

A moth that has 6 individual 'feathers' per wing - instead of four 'solid' wings like most other moths!!

My Bug Photography Studio and Equipment:



The most important thing in this studio is of course the south facing Window. Photography is all about light, and where that light comes from. I prefer natural mid-day light without direct sunlight on the specimen itself. If a window such as this is not conveniently available, then a good lamp or two that imitates natural light might be sufficient.

The other primary source of light is the camera flash. I use the flash primarily for lateral and frontal/face photos. But also for dorsal, and ventral for some situations.

I have two Cannon PowerShot point and shoot cameras: a smaller pocket style field camera that I take with me when out in the woods, (used in the demo photos below); and another, just a bit larger and with a few extra features, which is my main camera for indoor bug photography..

I also use the cameras 'exposure' setting quite often, in order to allow less or more light, depending a variety of situations such as: the brightness of the outdoor light, when using the flash, color of specimens, angle of photo being taken – dorsal, lateral, frontal, etc..

I also use a hinged mirror in some situations for back lighting when photographing black or dark colored specimens like ground beetles, darkling beetles, dark colored spiders, etc.. This helps to better highlight surface details, and also eliminate conflicting dark flash shadows.

A closer Look at the tools that I use



1. **Magnifying glass:** to help me better see dust and and other small organic debris on the surface of the specimen; stuff that I will try to remove. Often I do not even notice such stuff until I zoom in on the first photo.
2. **A small artist paint brush:** used to remove such tiny debris from the specimen. Usually works quite well. On some extra dirty bugs, like beetles, and other hairless scaleless insects I will give them a quick wash under the faucet in a wire mesh; and a quick damping off with a tissue.
3. **Wood handled pointy probe:** I use this tool to reach down to move and adjust legs and antennae into more photogenic positions before taking photos. It works quite well with most bugs; but some do not like this probing at all, and run about within the chamber. But when they stop running about, they are often posed the way I was hoping for.
4. **Homemade metric paper ruler:** I photograph this with the first dorsal image taken of every specimen. I use a paper ruler so that the chamber is as flush as possible with the underlying surface, so as to eliminate small escape areas for tiny bugs. I also will measure forewing length on moths, and wingspans for insects that I keep and pin.

5. **Tweezers:** Not every 'new' bug is alive when I find them. Some are dead and dried out; while others are found wet and drowned in water of some sort, as with this in this beetle:



Ponderosa Pine Bark Borer - *Acanthocinus princeps*

I found this beetle deceased, tangled up in the pond-scum (Filamentous green algae), near the shoreline of Lake Almanor near Chester, CA. I pose-dried it before photographing it. I use the tweezers to handle such unpinned specimens.

6. **The coins:** I have found that it is difficult for my point and shoot camera to focus sharply on tiny insects, or on small specimens that do not have an overall flat dorsal surface; such as tent-shaped micro moths, very rounded tiny to small beetles, and other such small specimens. I choose a coin or stack of coins guesstimating the height of both to be near equal, place them in the chamber near to the specimen, usually behind the specimen. I then focus on the coin and then carefully move the whole chamber with focused camera directly over the small specimen and snap the photo. This has worked quite well with fair detail on many small specimens:



Midge - *Tanytarsini* 3mm;
Springtail - *Entomobrya unostrigata* 2mm
Yellow Salsify Aphid - *Brachycaudus tragopogonis* 2mm
Microon Weevil - *Microon canadense* 1.5mm

7. **8x11 Sheets of Paper:** One light gray, and one white. Mostly I use the gray sheets upon which to photograph specimens, via a suggestion from a [BugGuide contributor](#). I found out that bugs are often messy when it comes to fluids, etc. that they deposit on the sheets. I replace the sheets fairly often. Sometimes it is a rather interesting mess as shown below:



Short-Winged Blister Beetle - Meloe angusticollis

Sometimes I choose another color for a background to show something interesting that does not show up well on light gray or white:



Western Banded Glowworm Beetle - Zarhipis integripennis:

Placed on dark background to highlight the cilia on the branches of this beetle's plumose antennae; otherwise almost invisible to the eyesight.



Small Minnow Mayfly - Callibaetis ferrugineus:

Placed on red background to show better the white wing veins and cerci.

8. **A Large hardback Book:** mostly I use a large hardback book as a sturdy portable base on which to place the background sheet of paper, and the photo chamber. I can easily rotate either the paper on the book or the whole book so as to orient the specimens head towards the window once the specimen settles down. Or I can carry the whole setup to another window if incoming sunlight is causing a problem. If the bug just will not settle down for a 'still' photo then I move the whole setup out of the way for a while, and get another book, sheet, chamber, and specimen, to photograph; hoping the other will eventually stop and take a rest. This often happens; but if not, back into the fridge!

A closer Look at the Containment Chambers



These are the plastic containment chambers that I use to contain the bugs when photographing them. Most of them originally had some sort of food in them. I cut holes in them as shown. Camera sits with extended lens fitted down through the hole. The bigger (or taller) the bug is, the taller the chamber that I use. I will often use two different size of chambers, to see which provides the sharpest overall focus of the whole specimen. Used mostly for dorsal and ventral shots. I use the empty plastic cassette box to cover the top hole when the camera is removed, while flying insects are still in the chamber. (such as when camera batteries need to be changed, etc..)

Only one chamber, set over a nickle and a penny, has the hole cut in the side. I use this chamber to take lateral photos of certain more restless specimens that may fly away. Also wasps that I do not want to get loose in the house. When the specimen is inside I use the 'flat' piece of plastic to cover the hole until I am ready to insert the camera lens. I usually use the flash when taking these photos. The light of the flash penetrates fairly well through the plastic.

The small glass bowl is used occasionally to cover insects as an alternative time-out location. I slide the the underlying sheet with bowl and the specimen, over and onto another book, which I set aside somewhere until it settles down, which usually happens after awhile. But, If it doesn't stop moving, then I place it back into the fridge for a 'tomorrow' second attempt.

Dorsal images are taken of all specimens using the chambers. I often take several dorsal shots using different chambers, and rotating the setup 90 degrees to the left or to the right, thus changing the visual effect of the incoming light on the specimen. This is especially useful in highlighting features that might help in some identifications; as shown below:



Clown Beetle - *Aphelosternus interstitialis*

Same specimen

Left: head facing window;

Right: side facing window with backlighting mirror revealing much more detail on the elytra.

A Sample Photo Session-Shoot

Shown below is a series of photos illustrating a simple photo session. Since the snow outside is rather deep, I was not able to find a live specimen to use. Instead, I am using a previously unpinned 'pose-dried' wasp: *Polistes aurifer* - Golden Paper Wasp.



Ready for the first dorsal photo – with metric ruler



Ready to take the first snap-shot

Once taken, I remove the metric ruler, and then view the photo: checking focus quality; is there dust or debris that needs to be removed, etc.. Sometimes I will take a dorsal flash photo also. On my camera, the flash casts a shadow on the right side of the specimen; so I may rotate the camera so as to cast the shadow backwards over the abdomen.

I may also rotate the whole setup 90 degrees and take another photo, so as to change the angle of light on the specimen, as done with the clown beetle above.

Some specimens move a bit and stop, several times during the dorsal session; I just slide over the chamber with camera and re-center over the bug and take another shot. If the bug gets too close to the edge of the background sheet I just carefully slide the chamber to move it back to the center of the sheet.



Camera on Standby ...

... on another chamber, ready for another shot, while I take care of some other chore. If it is a flying insect I always cover the 'hole' with the cassette box as soon as the camera is removed.



Ready for a lateral photo!

I only use this occasionally since most chilled specimens are rather docile through the photo session. Usually it is the fast moving spiders, scorpions, and other such creatures that are placed under this chamber.



Chamber free lateral and frontal-face photos

Almost all my 'live' lateral and frontal-face photos are taken chamber free. But, only when I lift away the chamber briefly. Many chilled specimens remain inactive long enough to get all the angles I want. I usually use the flash for these angles. With my camera, I also usually photograph the left side of the specimen, so that the flash 'shadow' is cast to the rear of the bug. If there is damage on the left side (such as missing legs or an antennae, or damage wings, etc, I will photograph the right side of the specimen instead. Lateral photographs are sometimes the key view in acquiring a photo ID, and/or the most interesting view of a specimen:



Snow Sedge Caddis fly - *Psychoglypha bella*



Canary Ypsolopha Moth - *Ypsolopha canariella*



260 legged Millipede - *Californiulus dorsovittatus*



Beaded Lacewing - *Lomamyia occidentalis*

Frontal snap-shots of bugs include many of my most favorite bug photos. It might be said that someone hasn't really seen the real world of of wildlife until they have been shrunk down and looked face to face, and eye to eye, with a fair number of these amazing creatures. I am thankful for macro cameras and computer screens:



Western Band-winged Meadowhawk
Sympetrum semicinctum



Lixus Snout beetle
Lixus terminalis



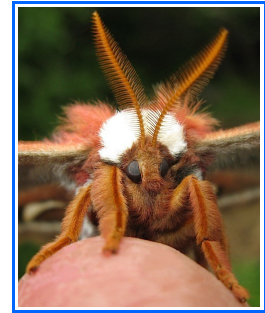
Bee Fly
Lordotus gibbus



Pacific Buffalo Treehopper
Tortistilus pacificus



Johnsons Jumping Spider
Phidippus johnsoni



Ceanothus Silkmoth
Hyalophora euryalu



Distinct Tolype Moth
Anthophora pacifica



Colorful Stink Bug
Antheminia remota



Monkey faced Bee
Tolype distincta

When taking lateral and frontal photos, I often take several photos of a specimen: one aiming near the top of the specimen, one centered in the middle, and one aimed down near the legs; also at different distances from the specimen, so as to find the sharpest focus on the whole specimen, but primarily the face. I have learned a bit what works best with different kinds of bugs. Also, sometimes I will set the camera on the cassette box for a more downward angled photos, especially for face photos.

Ventral photos also help with obtaining Identifications in many kinds of bugs; especially with butterflies that do not spread their wings during a photo session before being released. I use a containment chamber for some ventral shots, mostly for beetles and true-bugs. Many insects do not like being laid on their backs; thus the first photo I often take is the ventral one while the bug is still chilled. I sometimes put spiders in a clear sandwich size ziplock bag for ventral shots.



Jewel Beetle
Chrysobothris viridicyanea



Western Pine Elfin
Callophrys eryphon



Carpet Beetle
Dermestes talpinus



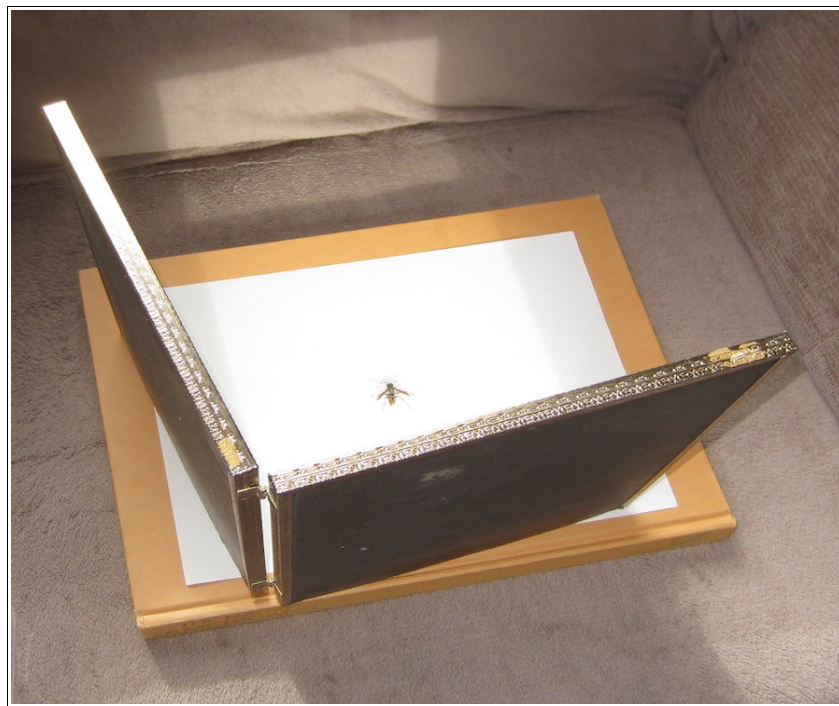
Small Milkweed Bug
Lygaeus kalmii



Scentless Plant Bug
Arhyssus lateralis



Red-legged Plant Bug
Teleorhinus cyaneus



Hinged-Mirror used For Back Lightening

To increase the light coming from behind the 'setup' I use this hinged mirror. Most useful in highlighting surface detail on black, or other dark colored bugs, especially beetles.

Time Out Chamber



This is where I place very active non winged specimens until they slow down and stop; usually when I still want to get a few more photos. Sometimes I have to just leave them there for several hours while I am off doing something else. Sooner or later they will stop moving.

Sample Final Photos



I usually use a photo editing program called "[Gimp](#)" to 'clean' up the background, and the specimen. Sometimes I will rotate the antennae downward to eliminate empty 'white space' above the specimen. Often I lighten up the whole photo if the original exposure seems to dark. Often a photo of the specimen will not be straight up vertically for dorsal shots; or level on the horizontal plane. In these situations I use the Gimp program to realign the specimen. Finally I crop the image as shown. Specimen is then either released if I know it to be a dupe species, or kept if it appears to be something new that I have not seen before. The specimens that I keep then have to be safely removed from the photo chamber and put back into their field collection bottles, just as I do when putting them back into the fridge for a later photo session effort.

The Most Difficult Insects to Photograph and how to get them photographed

On page one above, I shared how long it took me to get just one good photo of the Montana Six-plume Moth - *Alucita montana*. There are many insects that are just as difficult. These are the bugs that are always trying to escape, or the ones that prefer to rest on the wall of the containment chamber, or on the camera lens; any where but down on the background sheet where they need to be in order to be photographed. I tap or bang on the walls of the chamber knocking them back down to the sheet, often over and over; and sometimes they remain still on the sheet long enough to get at least a few nice photos. But most need to be re-chilled in the fridge to slow them down for another try later. Generally, I do not waste a lot of time on these over-active bugs, preferring to re-chill for a later try. Getting these very active, usually flying insects, back into their field bottles can also be quite a challenge. Patience is a key to both indoor and outdoor 'bug' photography!

Getting those very active bugs back in their field bottles

When I finish photographing an insect that can fly or jump, I immediately place the cassette box on the photo chamber to prevent escaping. Active flying insects are the most difficult insects, in the sense of not wanting them to escape into the house. Most other insects that do not fly are easy to get back into their field bottles, but some are not, such as fast running and jumping insects. If they are to be released I just pick up the whole book with setup, and release them outdoors some place in my gardens.

I have a few methods that I have successfully used for getting very active flying insects back into their field bottles: I carefully slide a six inch square of sturdy card paper under the bug chamber; and remove the larger book and background sheet out of the way. I then use one of the following methods:

The Bug Net Method: Used for really active flying insects; and the same method I use when in the field. I use my deepest bug net, about three feet deep down when holding it level. Then, while holding net handle in one hand, and moving the bottom of the net up high, I place the rim of the net over the smaller setup; and while maintaining 'rim' pressure on the couch I slide it one way or another to upset the chamber and release the insect. The bug almost always flies upward into the net, becoming caught. I now have it trapped like when I catch them in the wild; and as in the wild, I am now able to get the bug back into the field bottle.

The Window Method: Used for less active flying insects that will not settle down on the background sheet. I learned from past escapes that 'most' flying insects fly straight to the nearby window where they stay, and were easy to get back into the field bottle. So, I place the field bottle, its lid, and that 'flat' piece of plastic up on the couch near the window sill. I then carefully place the smaller bug chamber against the window, tilted so that the 6 inch square of sturdy card paper is flat against the window. I slide out the card paper, while gently keeping the bug chamber and cassette box (over the bug chamber hole) in place on the window. I reach down and get the field bottle. By now the bug has usually moved to the window; if not I tap the bug chamber until it settles on the window. I remove the chamber and gently place the field bottle over the bug. They may move to another spot on the window, and I just follow them until I have the bottle over them. I then slide the small flat piece of plastic between the window and the field bottle, and carefully remove it from window, and carefully replace lid to field bottle.

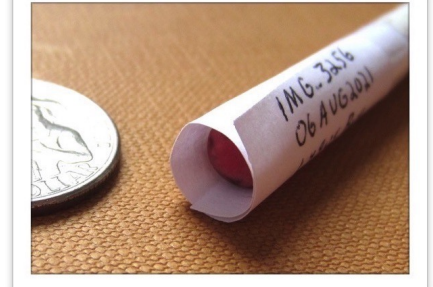
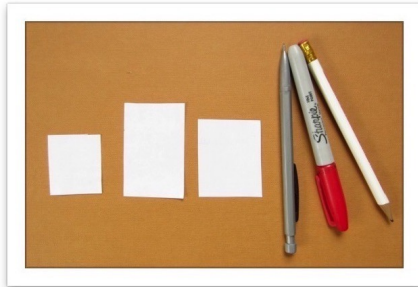
The Fridge Method: This smaller setup can also be placed in the fridge until the bug is re-chilled. I usually replace cassette box with some other small flat object or lid. Once re-chilled it should be inactive enough to get back into the field bottle.

These methods may need to be improvised within your own home situation. Over the years, I have only had ten or so insects escape into the house, mostly micro moths, and all harmless.

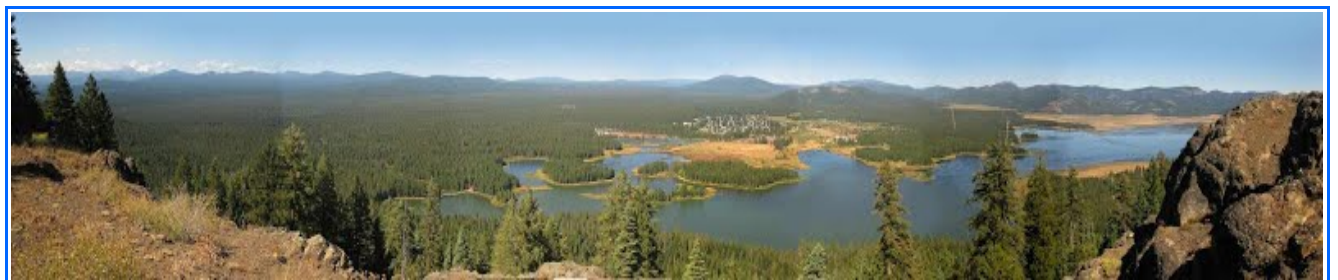
'Wrap Up' Procedures

Once done photographing, all the tools fit into a small tray, and along with the bug chambers stacked together neatly, are put away in a cabinet. The hinged mirror, and big book with the background sheets go back on the bookshelf.

I have a lot of small plastic field bottles of all sorts, but not enough to store away all the bugs I do decide to keep; which I hope to donate someday. So I have devised a way to free up field bottles, and to also reduce storage space of specimens. (I generally do not pin the bugs) This may or may not be of any benefit, but thought maybe to share it anyway.



I use small different sized hand labeled paper strips to create small paper vials. The size of the bug determines the size of paper strip and thickness of pen or pencil. I write info as shown; and sometimes including species name, and BugGuide id number on label. I roll a label tightly around a pencil as shown, with end of pencil recessed in a little more than the diameter of the vial. I hold it in place as I make 3 downward pinches into the vial. The vial will now hold its shape when pulled off the the pencil or pen. The bug can be added to the vial and the other end carefully pinched down. Big insects that I keep remain in some field bottles with a similar small ID note added into the bottle (note: the paper vial is held in place on the pencil with tape, only for this demo photo.)



A panoramic view taken from the northern edge of the High Sierras, looking northwards over the Mountain Meadows Basin showing Mountain Meadows Reservoir, the town of Westwood near the center, and the Cascade Mountain Range on the horizon. Lassen Volcanic National Park is situated on the left horizon line.

This is where I live, and where most of the bugs live, that I have photographed.