

MACRO AND CLOSE-UP PHOTOGRAPHY

By Gordon Barfield, with
assistance from Neil Smith and
Graeme Addie



What is macro photography?

- Macro photography is all about showcasing a subject larger than it is in real life — an extreme close-up of something small. e.g. A full-frame insect in a five-by-seven-inch photo and a four-inch product shot of a cornflake go well above life-size: both are examples of macro photography. (And while this premise would apply to photos taken through a microscope, that goes beyond the realm of macro into photomicrography or photos of the microscopic.)



What is close-up photography?

- A picture taken with the subject close to the camera. The classic close-up is about getting detail. That usually means getting right into the subject. The feeling of 'closeness' usually means the shot is taken from less than metre away. However, close-ups can be as close as a few centimetres. The idea of a close-up is to make the viewer 'feel' the subject is right up close. What is important in the close-up is the feeling of immediate proximity to the subject and the expression of detail in the subject. Thus, a closeup is to some extent a subjective or artistic interpretation rather than a stated distance and generally only shows part of the subject.



TAKING MACRO / CLOSE-UP PHOTOS

There are various methods

MACRO LENS



PRIME MACRO LENS ONLY:

The most compact package

- Need good light for really close encounters
- Normally “fast” lenses, ie low f-stop
- Focus distance between focal plane of the camera and subject down to 200mm or less. This can mean that the working distance from front of lens to the subject can be as little as 35mm. Shadows of the lens can be an issue.
- Generally, magnification is 1:1 at focusing distance
- Auto focus for live subjects but manual focus is the most accurate. Focus stacking is ideal for static subjects.
- Image stabilization can slow up shot selection but is probably essential for DSLR cameras where mirror action can cause vibration or using live view can overcome this problem.
- Tripods: Benefits are obvious for sharpness of focus, but tripods can inhibit close positioning and for moving (active) subjects they are entirely unsuitable.
- Active subjects therefore require faster shutter speeds to capture movement and minimise camera shake. Much faster shutter speeds are necessary to capture insects in flight
- Depth of Field: When talking macro (or micro according to Nikon), depth of field is measured in millimetres. Using a wide- open lens at say f2.8, it is likely that only a small portion of the subject will be in focus, and at the other extreme, say f16 there creates an issue with light and resultant ISO settings. I have found the best compromise is about f8.

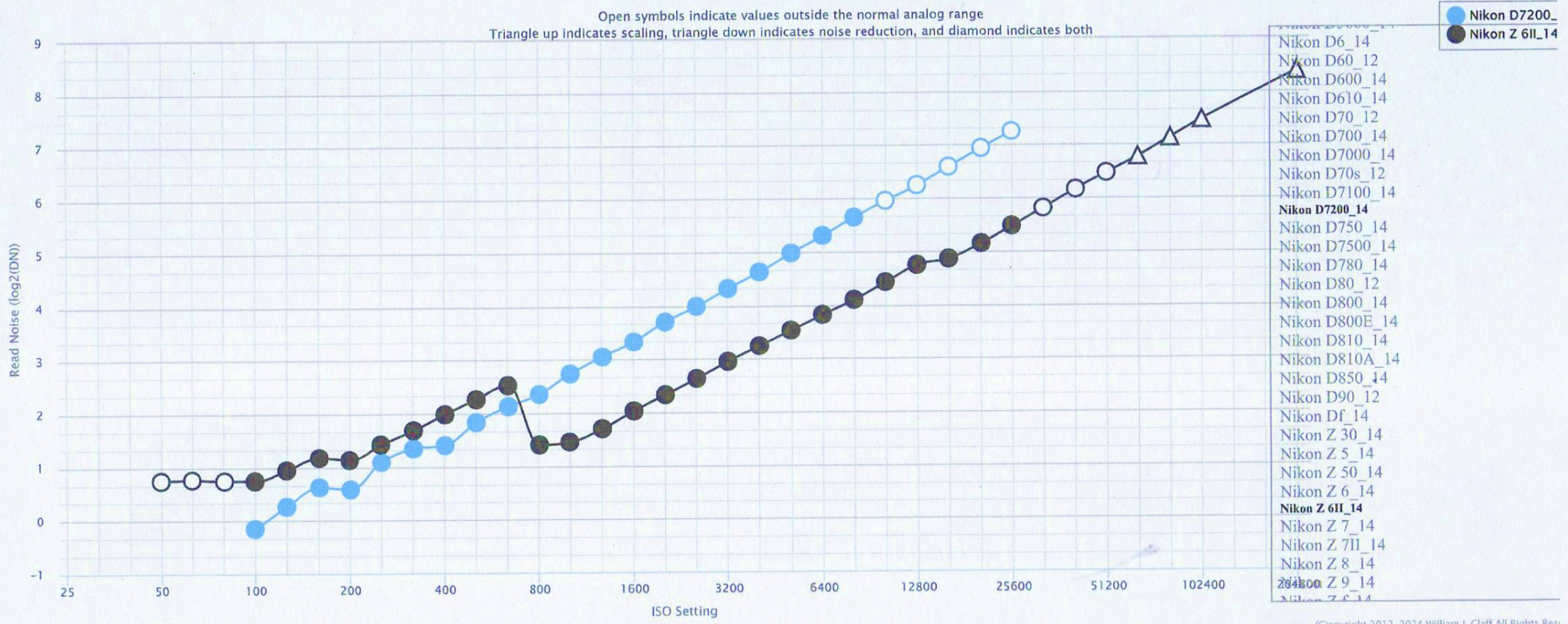
- ISO: Light variations due to the closeness of the subject and ambient conditions can alter the exposure too much whilst using a fixed ISO setting resulting in good noise levels but over or under exposures or slow shutter speeds (refer earlier comments on shake etc.). In my experience I have found auto ISO to be the preferable setting, but this is dependent on how tolerable your camera is to higher ISO outcomes. Mirrorless cameras tend to be better than DSLR's. Additionally, it is very likely that post processing will require cropping to maximise the image and in doing so can aggravate noise /pixelation. Denoise available now in Lightroom or Photoshop is a big help to reduce noise.

INTERESTING FACTS REGARDING ISO AND NOISE USING MIRRORLESS AND DSLR CAMERAS:

- DSLR cameras have a linear ISO to noise relationship, in other words the higher the ISO the more noise results. Not so with mirrorless cameras. The latest sensors and software enable a two- tier relationship. The following chart shows the difference in performance between the Nikon D7200 DSLR and the Nikon Z6 II mirrorless cameras.

Read Noise in DNs versus ISO Setting

Open symbols indicate values outside the normal analog range
 Triangle up indicates scaling, triangle down indicates noise reduction, and diamond indicates both





STANDARD LENS PLUS EXTENSION TUBES

A STANDARD LENS WITH EXTENSION TUBES:

- A simple and inexpensive alternative to a macro lens set-up.
- The extension tubes can be placed in any order between the camera body and the standard lens.
- Depending on what individual or combination length of tube used influences how close you can focus to the subject. For example a 12mm extension allows a focus distance of about 16 – 21 cms and a 36mm extension to about 7 cms.
- Most extension tubes couple to the camera exposure meter so exposure is automatically corrected.
- Using extension tubes does not permit focusing towards infinity, whereas a macro lens does.

**MACRO LENS, CAMERA
MOUNTED FLASH PLUS
REFLECTOR**



MACRO LENS PLUS FLASH (CAMERA MOUNTED)

Great for low light subjects

- Requires a reflector / deflector to direct light in front of the lens
- As the flash is coupled to the camera, shutter speeds are of the order of 200th or 250th of a second, far too slow for macro work. But it is the flash duration which freezes the subject like a very fast shutter speed.
- Users of this system claim a better image quality over non flash images
- ISO levels can be low to illuminate noise
- Flash intensity is recommended to be about 1/16th power

MACRO
LENS
PLUS
REMOTE
FLASH



MACRO LENS PLUS REMOTE FLASH

Ideal for photographing fungi where depth of flash penetration is required

- Advantage of this over a fixed flash is the ability to position the flash for maximum effect.
- Best application for static subjects in particularly low light (forest environments)

RING FLASH / LIGHT WITH MACRO LENS



MACRO LENS PLUS RING FLASH / LIGHT

Ideal for night photography

- From experience, I have found it best to use the ring light as it provides continuous light on the subject and leaves the ISO settings to the camera.
- Having a continuous light assists in focusing
- Beware reflective surfaces as circular reflections can occur.

SPIDER TAKEN AT NIGHT USING A RING LIGHT



SOME HINTS AND COMMON ERRORS (OR THINGS I HAVE LEARNED):

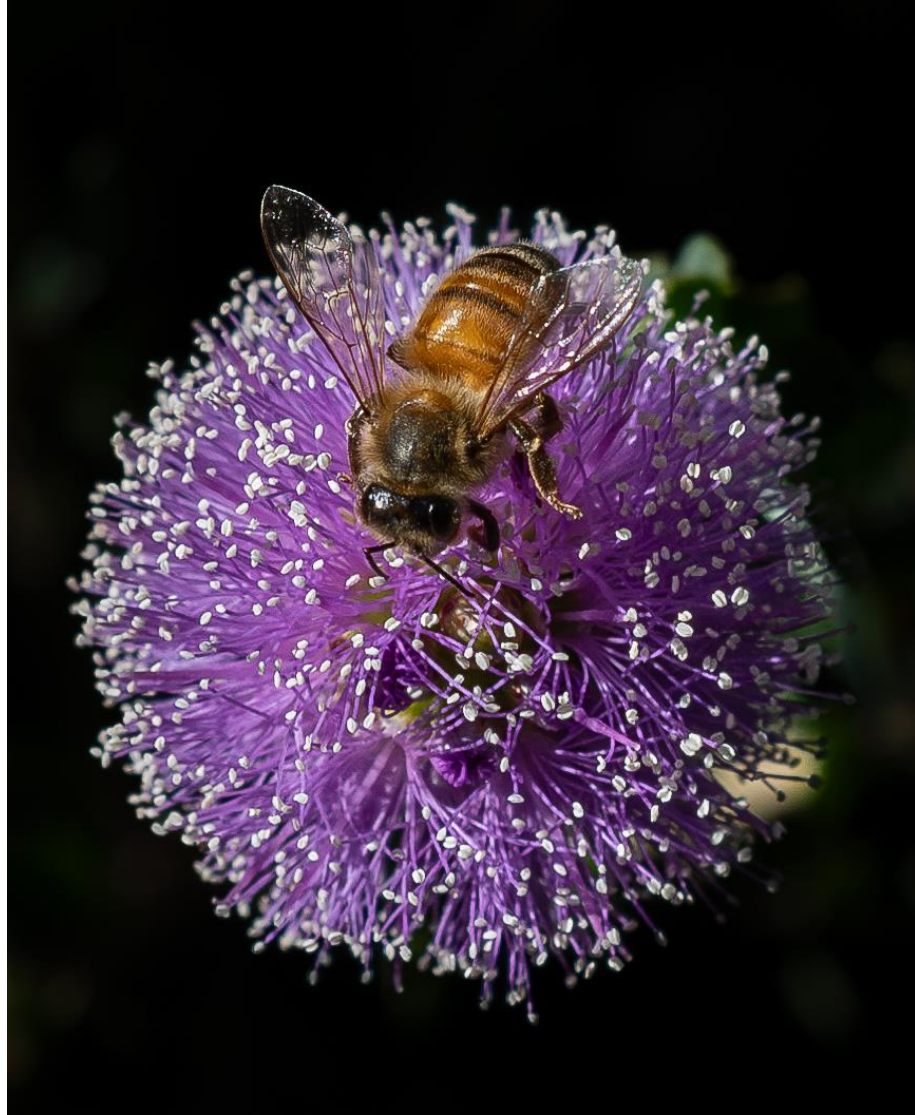
- As with bird photography, flying insect photography requires observation and patience. You need to watch how the insects feed and where and to then position yourself, remain still and allow the insects to carry on with their ways whilst slowly bringing the camera as close as possible.
- For creepy crawlies, you need to get in amongst the vegetation, lift up leaves or stones and discover.
- For long or wide subject whether active or static, beware getting parts of the subject out of focus by not being parallel to the subject
- Do not try taking photographs in windy conditions
- Try to get a more unusual angle or activity rather than a static position on a leaf or petal. Get low to the subject and get their eyes in the shot. Photos of insects taken from above can be boring.

BEWARE OF REFLECTIONS



Subject not
parallel to
camera

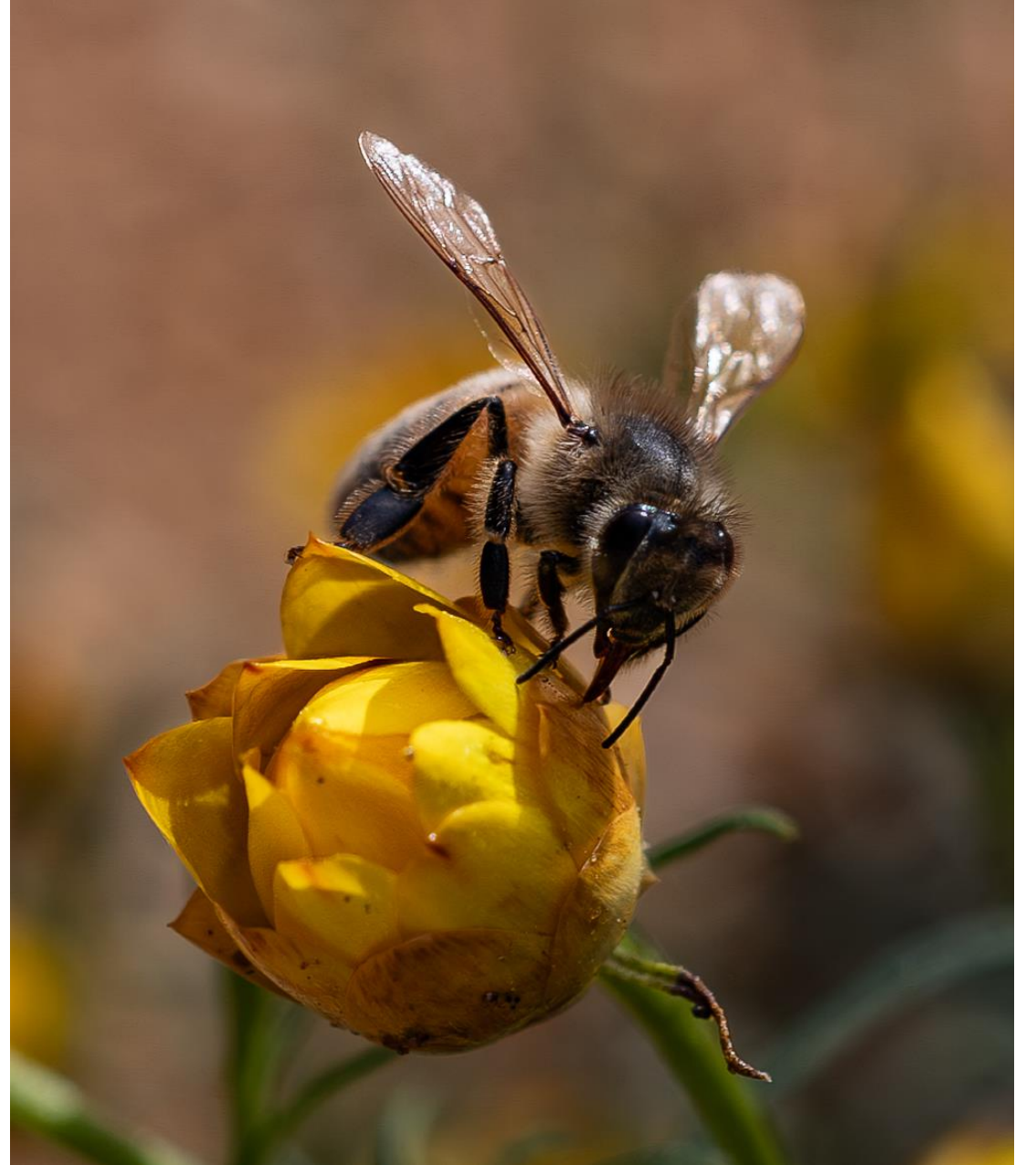




AN OK IMAGE



MUCH MORE INTERESTING IMAGE







**PLENTIFUL INSECTS ALWAYS
CREATE PHOTO OPPORTUNITIES**



**SET-UP
EXAMPLE FOR
FLORA IMAGES**





