

A Camera and a Microscope - A Journey

by
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When my camera model came out in 2010 it was highly commended, so much so that one could be forgiven for thinking that it would never go out of style - yet sadly and indeed inevitably that was just what happened.

The perennial New Kid On the Block syndrome saw to that.

For those of us constrained by both a lack of funds and a built in thriftiness, refusing to condemn yesterday's *365-day wonder* to the dustbin of marketing induced obsolescence is amply justified by their continued productivity.

I speak of my 2010 Olympus E-P2, bought used in 2014 for \$120 body only.



It is easy in this day and age when seemingly anything and everything is presented as a must have improvement, to dismiss not only what was considered good but even what was said to excel just a short time ago.

To counter this it is advisable to tune out the marketing hype by reminding yourself what capabilities attracted you to your camera in the first place. The fact is that your camera is no worse than it was - just that the new ones are, in some areas, better. In other areas however, either the jury is still out or the added capability is irrelevant, after all, do you really need another art filter?

This is the crux of the matter - For if you are clear as to what you want to achieve, then it is easier to focus on what the specific improvements are, if and how they change or influence our use of the camera and the affect that has on the images that we create with it.

Not everyone's camera plays a role in microscopy and outside of it; both goals are not always compatible, although one can obviously get a lot more out of a camera if its cost and design allow it to be put to this dual use.

Up until now my camera has played a very limited role away from the microscope - indoor use mostly - partly due to how fiddly it was to attach and detach (despite having to do this to change the battery) and partly due to what has been its most glaring fault - the lack of a viewfinder.

This has now been resolved with the acquisition of a VF-2, a rather nice electronic viewfinder, along with ... yes wait for it ... another E-P2 body.

While it is true that just about anything can be justified, in this case I can truthfully say that it came attached to the Olympus VF-2. Although not quite two for the price of one, the fact that my present E-P2 has reached 74000 shutter activations and its future replacement has only 2000, did play a part.

For those interested, the price of an E-P2 body has dropped to around \$80 if you are in a rush - and a fair bit less if you exercise a little patience.

What led me to the Olympus E-P2 when the little point and shoot I was using died was my having several Olympus OM Zuiko lenses left over from my film camera days. The ability to use those lenses again - despite the fact that they are manual lenses, was what swayed me - that and the cost.

With a Zuiko OM 50mm f/1.4 safely connected to the E-P2 via a generic OM-M4/3 adapter, I resumed photographing through the microscope using afocal imaging. I employed a normal Zeiss KPL eyepiece placed on the phototube, with the camera suspended over it fixed to an OM focusing rail, which in turn was attached to a tripod - an untidy yet effective arrangement.

However, after a time, in order to avoid a bit of stubborn flaring, I tried out direct projection imaging by using a '*lifted*' normal Zeiss KPL eyepiece; an excellent method that projects a real image on to the camera sensor directly.

Despite that, I ended up moving back to afocal once again - as dust proved to be a problem with direct projection imaging in the prevailing conditions - only this time, curiously, it was afocal using a rather unusual projective lens.

The Zeiss Projektiv $f = 63\text{mm}$ with a Zuiko OM 135mm $f/3.5$ lens which I am using at the moment works very well. One of the big advantages is that the Projektiv projects an infinity image, which simplifies setting up the camera, as there is no longer a need for that very precise and yet inevitably variable camera height adjustment during every session‡, in order to focus the image on the sensor. One need only fine-tune the Projektiv focus once.

‡To detach and reattach the camera is something I still regularly have to do, as I have not managed to get around the fact that the attachment point on the tripod that I use to circumvent the effects of some very pronounced vibration, courtesy of the E-P2, covers the battery compartment opening. I have considered corrective surgery via the use of a hacksaw - only that does seem both a little drastic and somewhat permanent.



The Zeiss Projektiv $f = 63\text{mm}$ (front), a Zeiss 10x KPL eyepiece (back) and several pieces of close fitting electrical PVC pipe cut to 2.5mm, 5mm, 10mm 15mm and 20mm used to *lift* the eyepiece by lengthening its shoulder. Varying the height over and above the initial *lift* that enables it to project a real image alters the magnification ratio.

The E-P2 then, despite kicking like a mule, works well on my microscope. With a now somewhat antiquated 12.2 MP Four Thirds 'Live MOS' and a 17.3 x 13.0 mm sensor, it can capture either RAW, JPEG or RAW + JPEG at 4032 x 3024 pixels and video at 1280 x 720 (HD)

Though ISO above 400 is somewhat grainy, with a well illuminated microscope - and I am fortunate in that my Zeiss Standard WL is configured to take the 12v 60w tungsten illuminator, a 10w Cree XM-L conversion of it and a 100w Halogen illuminator (or it will when I finally sort out the 100w lamphouse's missing focusing lens) - one need not raise the ISO that high.

Given that the E-P2 works very well in both afocal with OM lenses and the appropriate eyepiece/projektiv or lensless in direct projection, and that any shortfall in image quality is most likely therefore down to yours truly, I am quite happy to extend its use in both my microscope photography and my outdoor photography for the next couple of years or so for what has turned out to be so far - a successful extension of its working life.

Having said all that, I do find myself directing covetous glances towards the new Pen F and consequently wondering how long it will take for the price to drop sufficiently to allow me to consider such a purchase reasonable.



shh don't tell my E-P2

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