

# TINKERING WITH THE OLD WILD M12

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I am an endless and hopeless tinkerer. While growing up, my family was poor of money, but we lived in the country, so our wealth was elsewhere. Our large garden grew our vegetable. A single cow gave us more than enough milk and its offspring put plenty of beef in the freezer. Add chickens for the eggs and poultry, and rabbits for extra meat and modest additional revenue, and our bellies were full. For play, we had the barn and the neighbors' woodlots. And if we wanted toys, more often than not, we would make our own; I still bear a scar on my left thumb made by a saw which decided on its own to cut more than the piece of wood I was working on...

As a grown-up, the tinkering didn't stop. Many of the microscopes that I acquired over the years were "junk" purchased only for their parts. With the Web and eBay, I was able to find things near and far.

One of those parts I got my hands on was a pair of oculars for stereo microscopes. In all honesty, when I bought them (cheap), I did not look too closely at their size, and that was a mistake. As it turned out, they were wide fields, of decent quality, but made for stereo microscopes and too large for my regular microscopes. So for a while, they slept in a drawer, waiting for some idea to pop in my head.

I have many microscopes and a few cameras. In some cases, it's easy to switch the camera adapter from one microscope to the other, but at times, it can be bothersome; first you have to unscrew the adapter, then switch the ocular back and forth, and finally mount the camera on the new microscope. So having several adapters mounted at the same time means that all I have to do is switch the camera from one microscope to the other as needed. So I came up with the idea of making something with one of these oversized oculars.

Rummaging through the box of odds and ends, I eventually found a few pieces that could fit together. One was formerly the tube housing the light from a Zeiss microscope; it is just the right diameter to slip over the photographic tube of my Wild M12 trinocular. At the end of it, a piece that used to be part of a cheap telescope was just the right size to receive the ocular. On top of it was mounted a lens mount that could receive the camera body. Add some screws and a bit of epoxy glue, and you end up with a very serviceable camera adapter.





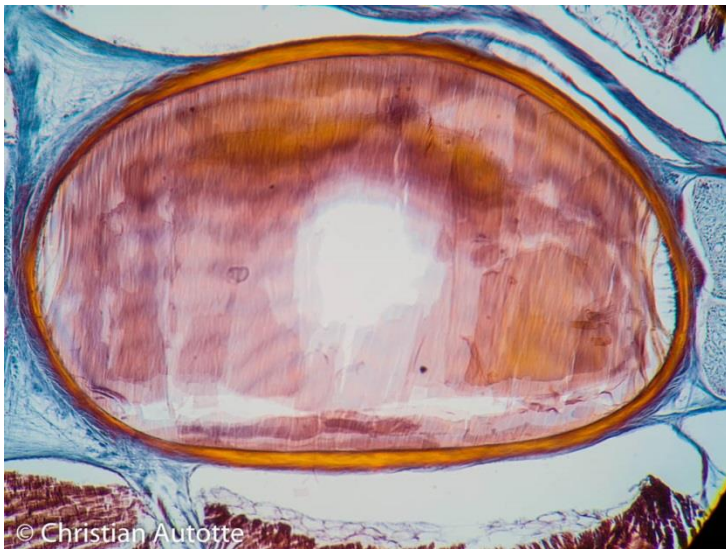
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The first trials were disappointing. The ocular to sensor distance was too short, resulting in a circular image on a black background. Fortunately, the solution to this problem is simple.



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All I add to do to get a proper picture was to add a short length of extension tube between the adapter and camera. That enlarge the picture to fill the frame, but with a side effect on the microscope magnification: it is slightly larger than with my regular camera adapter.

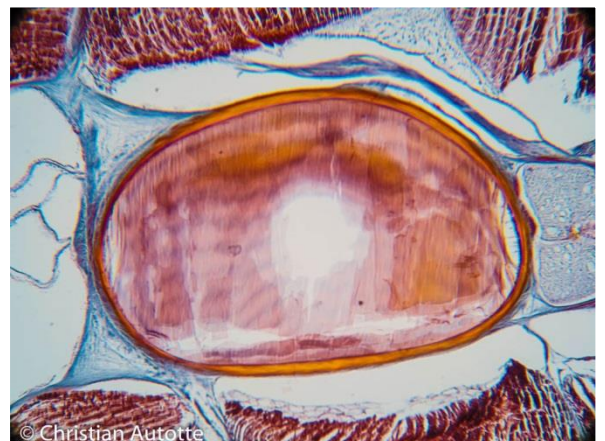


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Amphioxus, cross section, 120x

To figure out the difference of magnification between my regular adapter and the new one, I used a micrometric scale. I first started by counting the marks while using my regular adapter, then I did the same with the new one. I checked at 40, 100, and 200x to make sure of my calculations. The new adapter increases the magnification by a factor of 1.2. In other words, at 40x, the magnification is really 48x, at 100, it 120x, 200 becomes 240x, 400 is 480x.

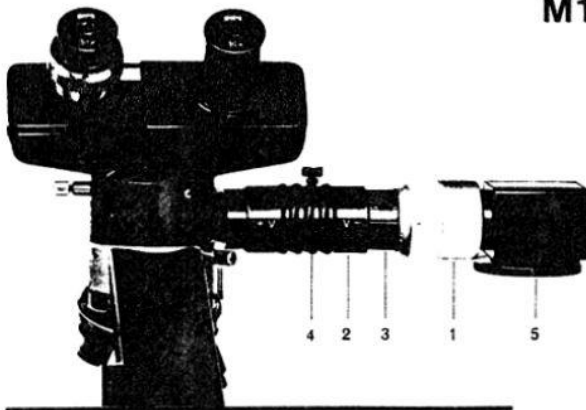
Knowing the exact magnification may not always be necessary for pretty pictures, but it may prove essential if I have to identify unknown organisms by estimating their size from a picture.



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While I was figuring out the problems linked to photography with my old Wild, I came upon a few items in various Wild manuals. I wrote previously about how I found my old Wild M12 and M40 (<http://www.microscopy-uk.org.uk/mag/artnov20/ca-Wild-M40.pdf>). The M40 came with a trinocular head that was easily switched between the two microscopes. Being familiar with other types of trinocular heads, I expected this one to be used mainly for photography, even though its shape is unusual. In most trinocular heads, the third tube points up vertically, but in the Wild the extra tube is horizontal. One of the items found in the manuals gave me the answer to that unusual arrangement. The tube was also used for drawing specimens in a *camera lucida* arrangement. For a while, it even made me doubt that the trinocular was ever used for photography at all...

### Wild Drawing tube for Wild Microscopes M11 / M12 / M20 / M21



**WILD**  
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The main advantage of this apparatus over any other system is that it enables the microscope technician to work comfortably and in his customary way with the binocular tube.

The drawing tube projects a real image of the drawing area in the intermediate picture plane. This picture is seen by the observer right side up and not mirror reversed. Thus, when observing through the binocular tube, one sees a complete picture of the specimen, drawing area and drawing pencil.

#### Catalogue references

Drawing tube for Wild Microscopes M 11 (binocular)  
M 12 / M 20 / M 21, inc. 8004, in case  
(1.25× magnifying factor)  
Intermediate attachment  
Opaque disc 33 ∅ mm for 8321

code 8321  
code 8323  
code 8004

However, another manual restored my confidence: that tube was indeed also used for photography. While my own head is slightly different, it is quite similar in design with the one seen here, at the bottom; the only difference is that mine doesn't have the option of choosing the amount of light available for observation, it is equipped with a simple prism that cannot be adjusted.



#### Phototubes

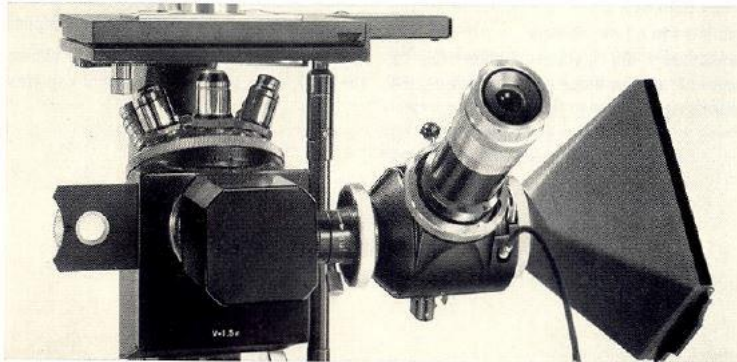
The monocular phototube (256 538) is intended for use with photomicrographic cameras or cine cameras in monocular assembly. The phototube, Hzu (256 546) is for trinocular assembly, and has three positions, in which respectively 100%, 25%, or 0% of the light is available for observation.

MKa1 (fig. 9) and MKa4 (Photoautomat). The photo tube is attached to the body of the microscope in the same way as the normal binocular and monocular tubes. The pin in the base of the tube should engage the slot in the body mount. Full working instructions are supplied with the cameras.

Fig. 8 Angled phototube for the M40



Fig. 9 Wild camera MKa1 attached to the M40



One has to remember that these old microscopes date from the 1960's, long before the digital cameras. Taking pictures back then was often done with sheet film. The MKa1 camera may even have been able to take Polaroid pictures.

Taking photography with antique microscopes is not always as straightforward as working with modern equipment, but the result can still be interesting. Not to mention the joy of playing with those pieces of scientific equipment from years gone by.

Now, all I have to do is get that white tube painted black so that it will match the rest of my microscope...

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