

Things to do with a Junk microscope...

A quick search on the internet to find some use of an old broken microscope turned up a few boring suggestions: door stop or book ends, or dust gathering memento sitting idly on a shelf. Not my style...

For I am a tinkerer, a gadget-man, forever looking through the junk pile for some useful tidbit. I view old broken microscopes as potential gold mines for odd parts that could be used for a lot of different things. Here are a few examples:

The first and most obvious is to get some spare parts to fix, or even built, other microscopes. For instance, one of my recent acquisitions was a Zeiss Standard base. A search on EBay got me a spare lens turret and a trinocular head. On the other hand, an original Zeiss lamp also found on Ebay did not quite fit, not to mention that it was a little weak for my taste. So the tinkerer in me came to the rescue and I fixed a new and more powerful lamp under the base. It's a thin LED light that gives off 520 lumens and practically no heat. As for the original lamp, I did keep it; you never know when it may come in handy...

Another example: my Kyowa (a Japanese brand) first received a set of new lenses and condensers to turn it into a phase contrast microscope. Then I decided that a trinocular was more practical than a single optical tube. A search through the junk pile of a friend who buys, sells, and repairs microscopes turned up an old American Optical for \$25. Even though their colors did not match the trinocular head did fit; unfortunately, that is not always the case, so *Caveat emptor...*



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MY MIX-AND-MATCH ZEISS STANDARD...



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THE KYOWA WITH AN AMERICAN OPTICAL TRINOCULAR HEAD



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AN IMPROVED LAMP THAT WORKS PERFECTLY!

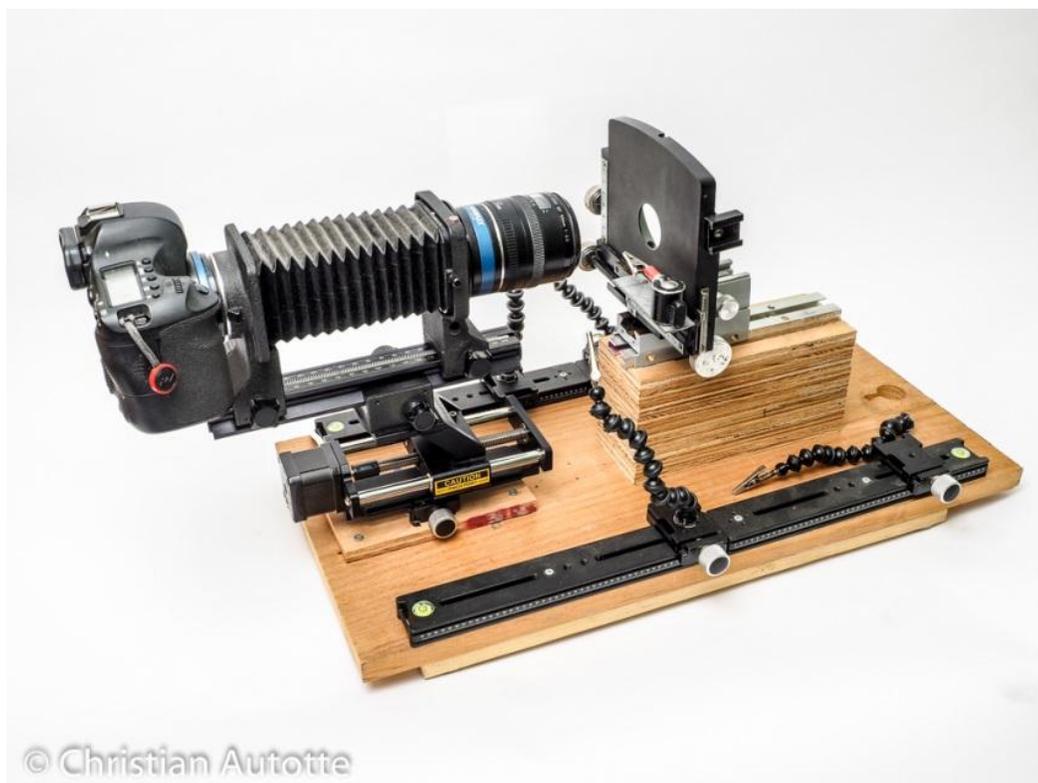
I recently bought several old microscopes for about \$50 each. One of them was bought mostly for its rotating stage and its excellent condenser (to replace one that was too damaged to repair). I ended up with a base with no stage, no eyepiece or tube and no objectives... So I elected to cut its arm at about the stage height. The missing stage was replaced by an improvised one made with a plate of Plexiglas. It is now used as a precise focusing system, either with a standard focusing rail or with a motorised rail (Stackshot); at times, I may even use it with a camera mounted directly on an L bracket that is screwed on what is left of the microscope arm. Once the coarse focusing has been achieved the fine focus allows me to take a series of shots that can be stacked using Photoshop, Zerene Stacker, or Combine ZP. As a final refinement, a pair of holes was drilled and tapped in the arm to receive articulated arms which can receive my twin flashes.

Remember the American Optical who gave me a trinocular head? Its stage was taken off and is now used to hold subjects being photographed on a stacking rig. Such a rig is useful when doing extreme macro photographs that will be stacked; any lateral movements would result in a distorted and unusable series of pictures. The rig guarantees that the camera moves in a straight line relative to the subject.



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NOT QUITE A MICROSCOPE ANYMORE, BUT IT CAN BE USED FOR EXTREME MACROPHOTOGRAPHY AS FOCUSING RIG

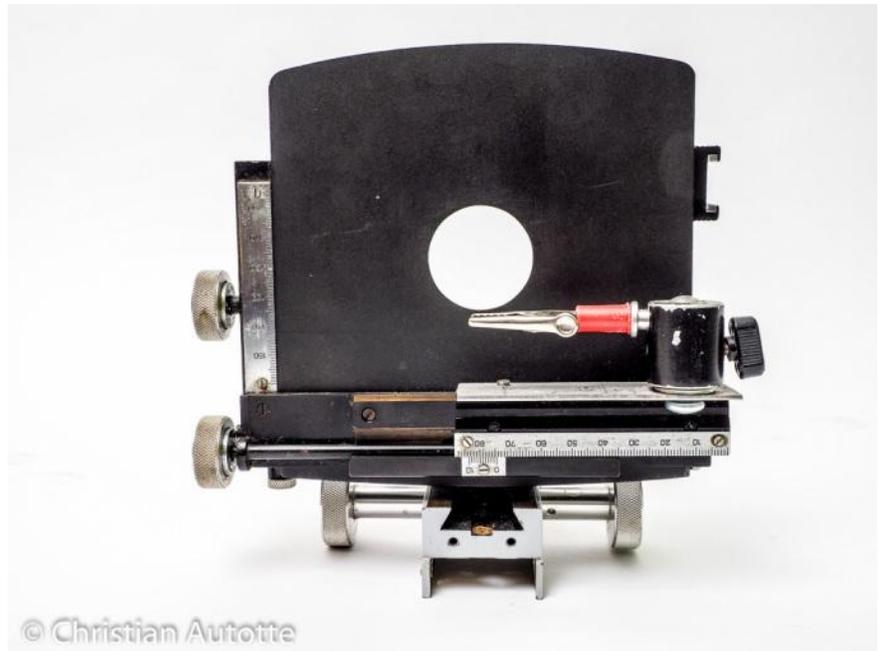


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The clips that used to hold the microscope slides were removed and replaced by a thin metal plate. A small ball head was then screwed on one side of this plate, and a small crocodile clamp glued on its ¼ inch screw. The subject to be photographed is usually mounted on a pin, which is then held by the clamp. The stage control can now move the subject up and down, as well as sideways, to place it in position.

Next month, I will show you another modified microscope to which I have added a custom made motorized focusing rail.

Meanwhile, I encourage other Micscape readers to share their own ideas of what to do with bits and pieces of old microscopes.



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