

The simple Dissection Microscope: a quick and easy substitute

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Whilst reading Rev. C.A. Hall's 1912 book "How to use the microscope: a guide for the novice"* I noticed instructions on how to make a simple "dissection microscope" essentially a hand lens held above the object to be dissected, the book has notes on commercially available dissection scopes as well as the costs (for 1912 Britain) and a few pointers as to how "the ingenious worker" may improve upon the design.

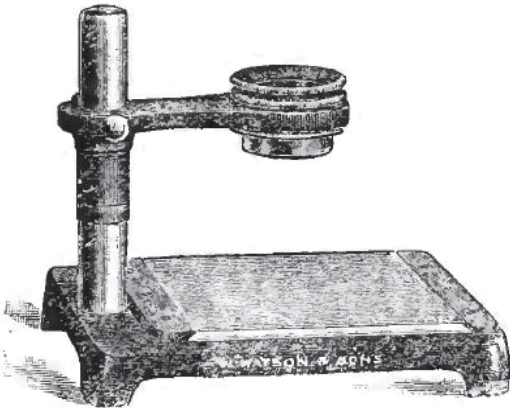


FIG. 4.—CHEAPER FORM OF DISSECTING MICROSCOPE.

As I often find bench space is at a premium during slide preparation, I decided to build my own. I'm sure some people out there are thinking "why not use a stereo 'scope?", there were a few reasons. Firstly, I'm quite messy when making slides and my stereo 'scope is my pride and joy. Secondly as bench space is at a premium, a full sized stereo zoom and all the slide making gubbins are often too much for the limited space. And finally I really just fancied giving it a go! My first plan was to pretty much stick to the old design: a base with an upright (similar to a modern stereo 'scope stand), with my adaptation being a clothes peg to move up and down to focus, which is attached to a hand lens. The problem was the working distance of my hand lens was too small, there was no way a specimen and my tools would fit at the same time.

After going back to the drawing board (and getting over the romance of turn of the century science that made me want to build in the first place!) I came up with the following idea using stuff I had around the house.



The base of the "scope" was to become a large folding magnifier (linen tester figure 2) which I originally got to use for insect identification prior to buying a stereo 'scope, its fixed focal length was useless when looking at pinned insects unless it was precariously raised, it also had less magnification than I needed (somewhere between x3 and x5), however, for dissecting the insects I work with, that is approximately the magnification I needed. I decided to test its use for preparing whole mounts of maggots. The first problem was getting enough light to see what I was dissecting, this was easily remedied using a clip on L.E.D. torch (figure 3). The next problem was although a watch glass fit within the frame of the base, a slide was too long and had to rest on

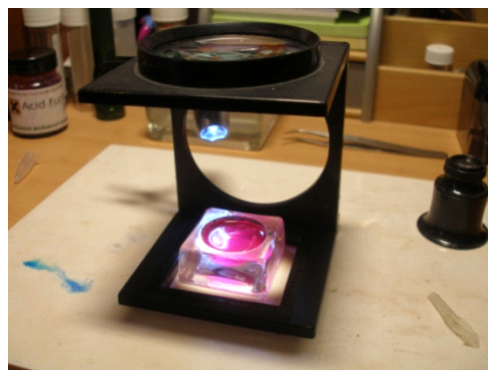
the base frame which was rather unbalanced. This was fixed by creating a slide frame from tile spacers (figures 4 and 5)



In all, the “dissection scope” is rather useful for manipulation of specimens under low magnification and takes up less bench space than a full sized stereo, the clip on LED torch provides, cold incident light which is useful for dissections carried out in alcohol, and reduces fatigue. A few further things I hope to try are using a 35mm slide viewer to create pseudo sub stage illumination, and to see if it will fit a watch glass within the frame, this will then allow the watch glass to be filled with paraffin, and used as a micro-dissection pan.



*Hall's book is available for download from archive.org as is Gray's “Basic Microtechnique” and “The Microtome's Formulary and Guide”.



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