

DSLR microscope adapter

My name is Robert McCallum, writing from Ontario, Canada. I have been a huge fan of Micscape UK for several years now. Each month I check out the new issue and often refer to the article resource section. Micscape UK has provided me with expert knowledge to consider when seeking information regarding a specific microscope, technique, or specimen to observe. This resource cultivates interest and expands possibility and knowledge. In my case, microscopy is a hobby that was initiated when I was a youngster after receiving a microscope as a Christmas present many years ago.

Now it is time for me to contribute. I wish to share a technique that I have found useful in seeking to explore affordable digital imaging on a trinocular microscope.

Many amateur microscopists will already own a DSLR camera. A camera to microscope adapter is readily available for less than \$20.00. The adapter simply installs in place of the camera lens. The adapter consists of a mount to attach to your camera and a mount to be placed on your microscope trinocular head. The microscope attachment diameter is 23.2 mm, like the standard ocular lens or eyepiece. The microscope to camera adapter that I am utilizing contains no optical components.



It is possible to install the adapter directly in the trinocular port and obtain an image from only the objective lens. This method produces a less than ideal image quality for a variety of reasons. To achieve a higher quality image, I have utilized a Leitz trinocular port to 23.2 mm adapter, a 10X ocular lens and a modified pvc plumbing fixture with one end providing a snug fit around the ocular lens housing and the other end with a 23.2 mm diameter to receive the camera to microscope adapter.

This adapter has proved to be stable enough to support my smaller Canon EOS SL1 DSLR camera. I have been using this arrangement for a few years now without an adverse incident. This arrangement has worked well for me. I will disclose that that I am using a large and stable microscope stand and a small Canon EOS SL1 DSLR camera. Other combinations of equipment may not be as stable and may pose a risk to your camera.

A nice feature of this camera is that you can connect to your computer via usb and use Canon EOS utility software to display the camera image on the computer display. This invaluable aid, allows you to compose and focus your image from the computer display.

This digital imaging solution allows one to use only standard microscope lenses, without the introduction of any additional lenses. Some may wish to use a lower power ocular lens to increase the field of view captured by the camera. Consumer grade camera APSC sensors have the effect of a 1.5 X image magnification. The consequence of this is that you will capture only the central portion of the image as seen by your eyes through the ocular lens. Conversely, the benefit would be that you avoid the out of focus outer margins of the image when using a non-plan objective lens.

In summary, if you own or have access to a DSLR camera and a trinocular microscope, an investment of less than \$30 will allow you to capture acceptable quality digital micrographic images.

The following images have all been captured with the technique described above.





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