

Using Cheap Filters to Soften Lighting

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Taking good quality digital images of many types of objects, including insects and plant samples, can be difficult when these objects have highly reflective surfaces. Shiny surfaces cause bright hot spots which can block out details of the object as well as play havoc with camera settings. Shadows can obstruct important features when using a direct lighting source.

We purchased a portable lighting tent for the diagnostic laboratory in 2008 after noticing other diagnosticians getting such even lighting, without any obstructive shadows, in their images of plant samples. After having personally experienced the high quality of images taken within the portable lighting tent, I went about trying to get the same effect for samples under the dissecting scope. Never wanting to reinvent the wheel, an internet search brought me to a work by Dr. Alexander Riedel (Museum of Natural History, Karlsruhe, Germany). The work showed filters made from a Styrofoam cup and vellum.

I used a Styrofoam cup and some tracing paper—cut the bottom out of a Styrofoam cup and placed the cup upside down over the object of which to take images. I did not cut small holes in the side of the cup, one for each fiber optic light arm, because the desired effect was achieved without the holes. As far as the tracing paper is concerned, you can construct a cylinder but I found a curved piece of the paper worked just as well. With bulkier samples you could make tracing paper cylinders (a lip balm stick or AA battery work well as patterns) adhered to the end of each fiber optic arm but I found the results were not nearly as desirable as with the cup or curved sheet of tracing paper.

These images were taken with Nikon Coolpix 8800 digital camera set on aperture-priority auto mode. The light was provided by a fiber optic source with two arms set to the same output for each photo.

Try this the next time you cannot get rid of those blinding, shiny spots or obstructive shadows.

References

1. Riedel, A. 2005: Digital imaging of beetles (Coleoptera) and other three-dimensional insects.
2. Longino, J. T. (2002): www.notesfromunderground.org/archive/vol912/methods/pictures.html

TIP OF THE MONTH FROM THE ARCHIVES

