

Taking pictures of the same subject using various microscopes

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I took pictures on different microscopes to see what the difference would be, when taking images, of the same subject with the same camera. The results were somewhat interesting. The images were taken with an iOptron 5.1 MP camera (model iE5100 with 1/2.5" Aptina CMOS sensor). I bought it from a telescope supply store. The software, which comes with it, is Toupview and is actually written for microscope use. For microscopes, this camera is the best I have, and I have quite a few now.

I used a self-made C-mount adapter over the microscope's eyepiece, so only the microscope's optics are in the image creation path. I Photoshopped the images to gray scale and image sizing. This helps when comparing the quality of the image. The subject I used is not a difficult item for any microscope.

I adjusted the microscopes for best resolution and contrast. I realize that this test is very subjective. Anybody else, using the same equipment, might come up with different results.

The microscopes and the setups



Meade plastic, very light. Broken focus mechanism on first use. Was hard to repair. It has non-standard smaller objectives, 4X, 10X and 40X. It is still much better than the high power junk you see in toy and some science stores.



Full size Tasco (not one of their toy microscopes).



\$1300 Accuscope. Very nice for visual observations.



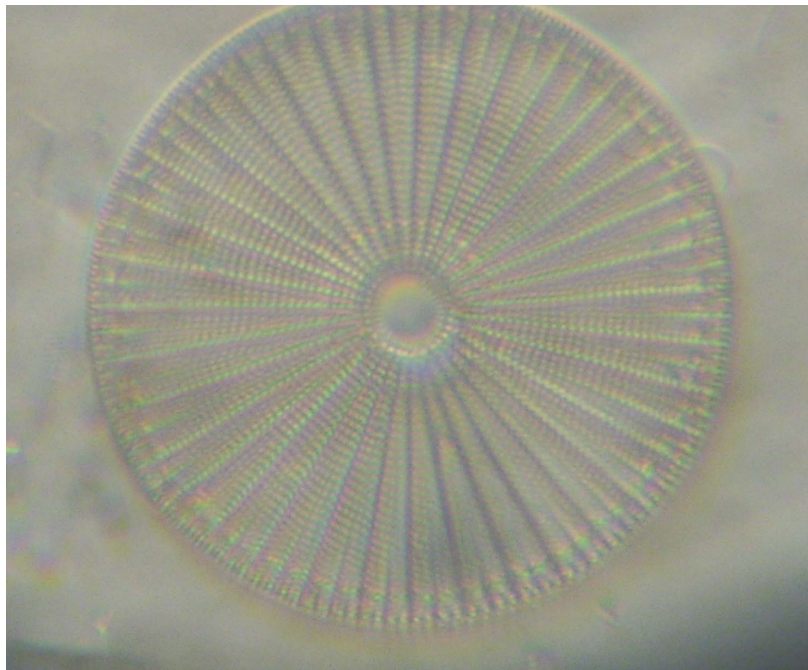
Lomo, Lomo illuminator, aplanatic condenser and apo objectives.



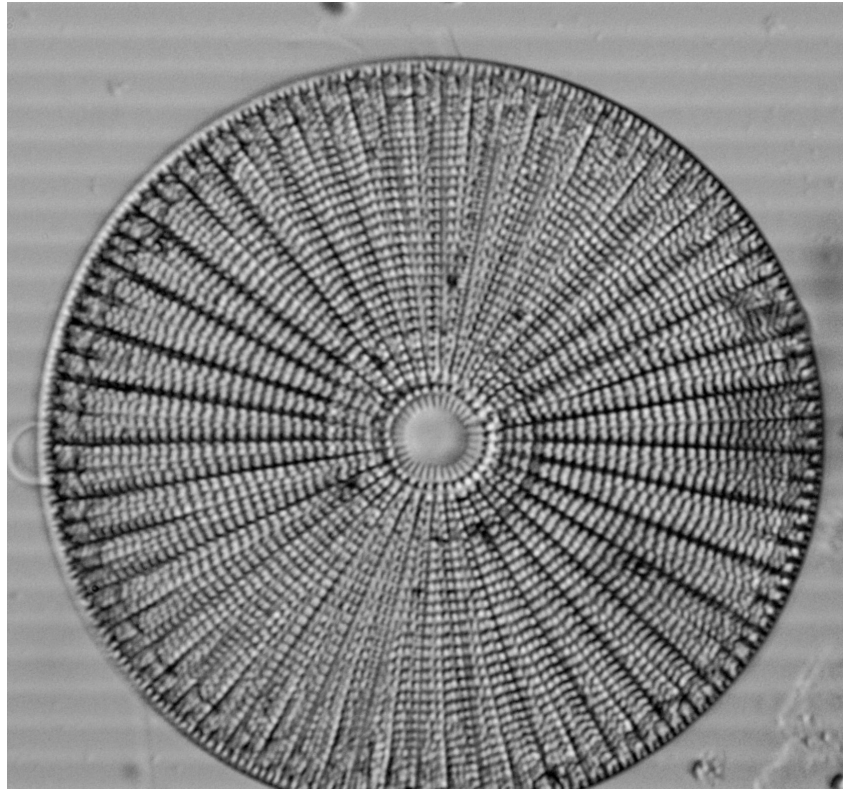
And last, but not least, an over 100 year old drum microscope.

On this one I had to use a point and shoot camera. The C-mount would not fit.

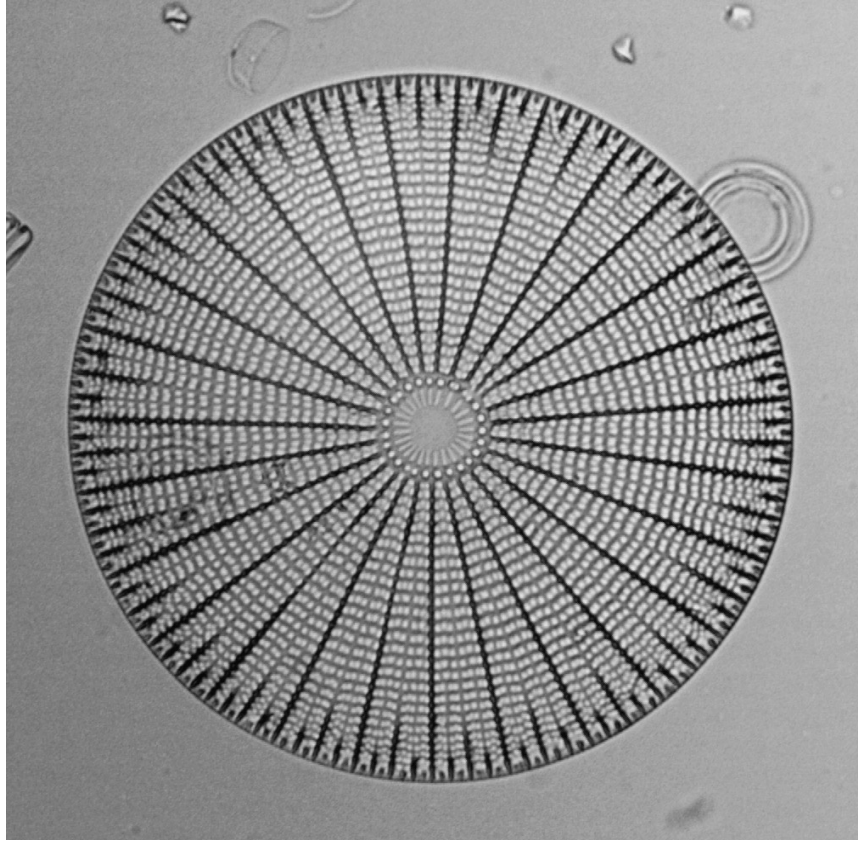
Image comparisons



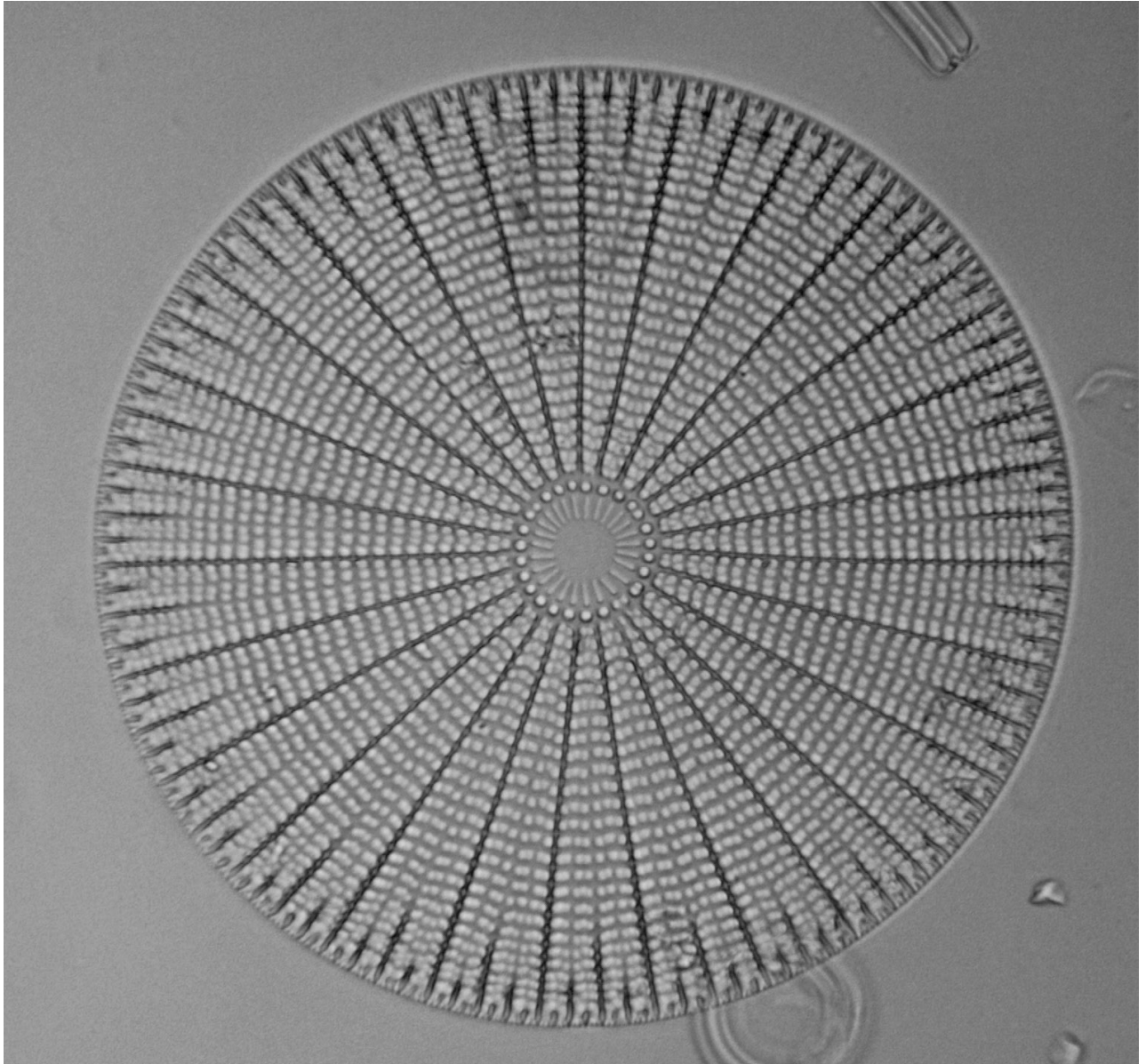
Picture taken through the drum microscope. Hand held Kodak point and shoot camera. Power unknown. Surprisingly good for this kind of instrument.



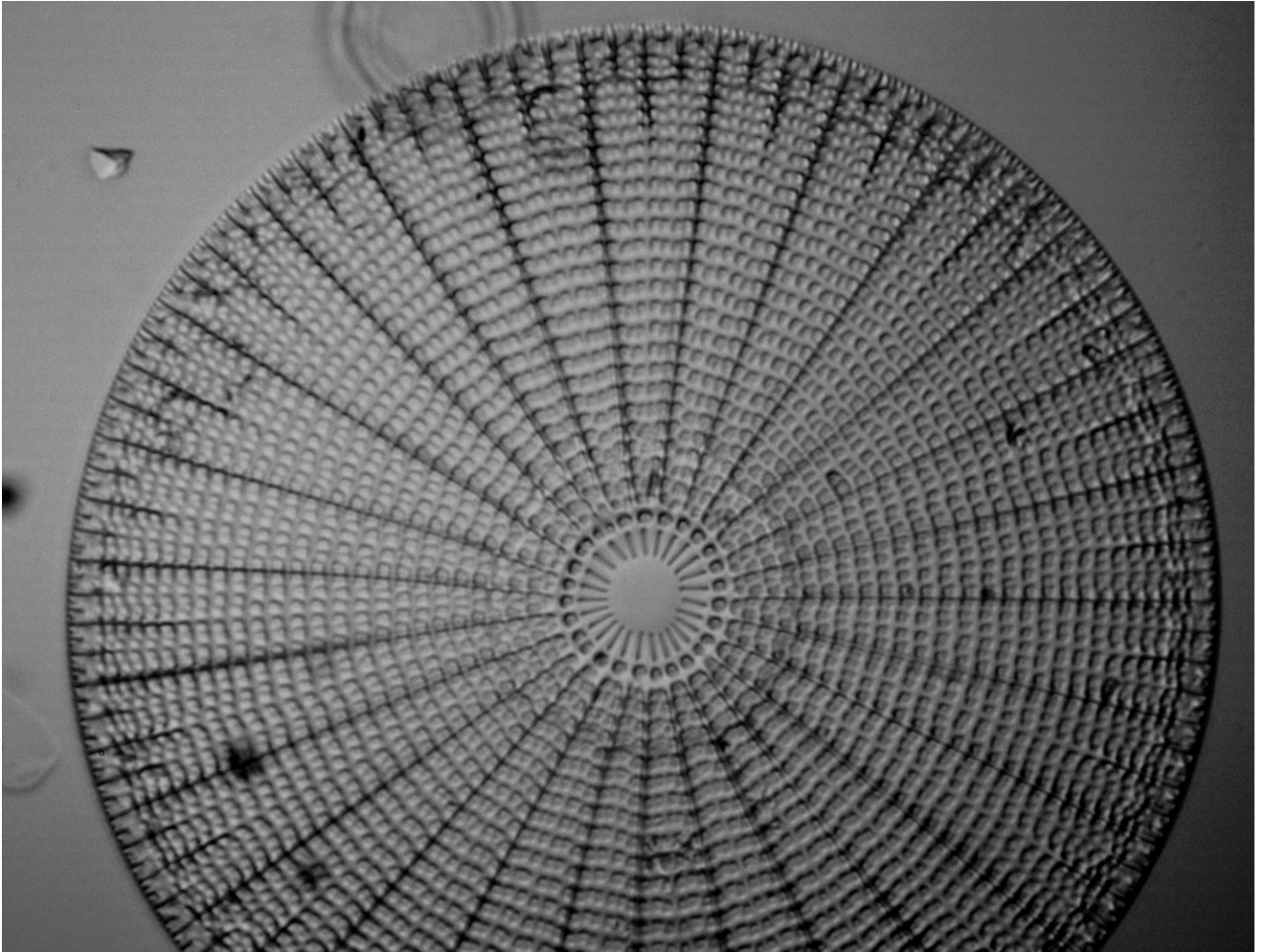
Meade microscope. 10X objective and eyepiece. Light source: Fluorescent bulb.



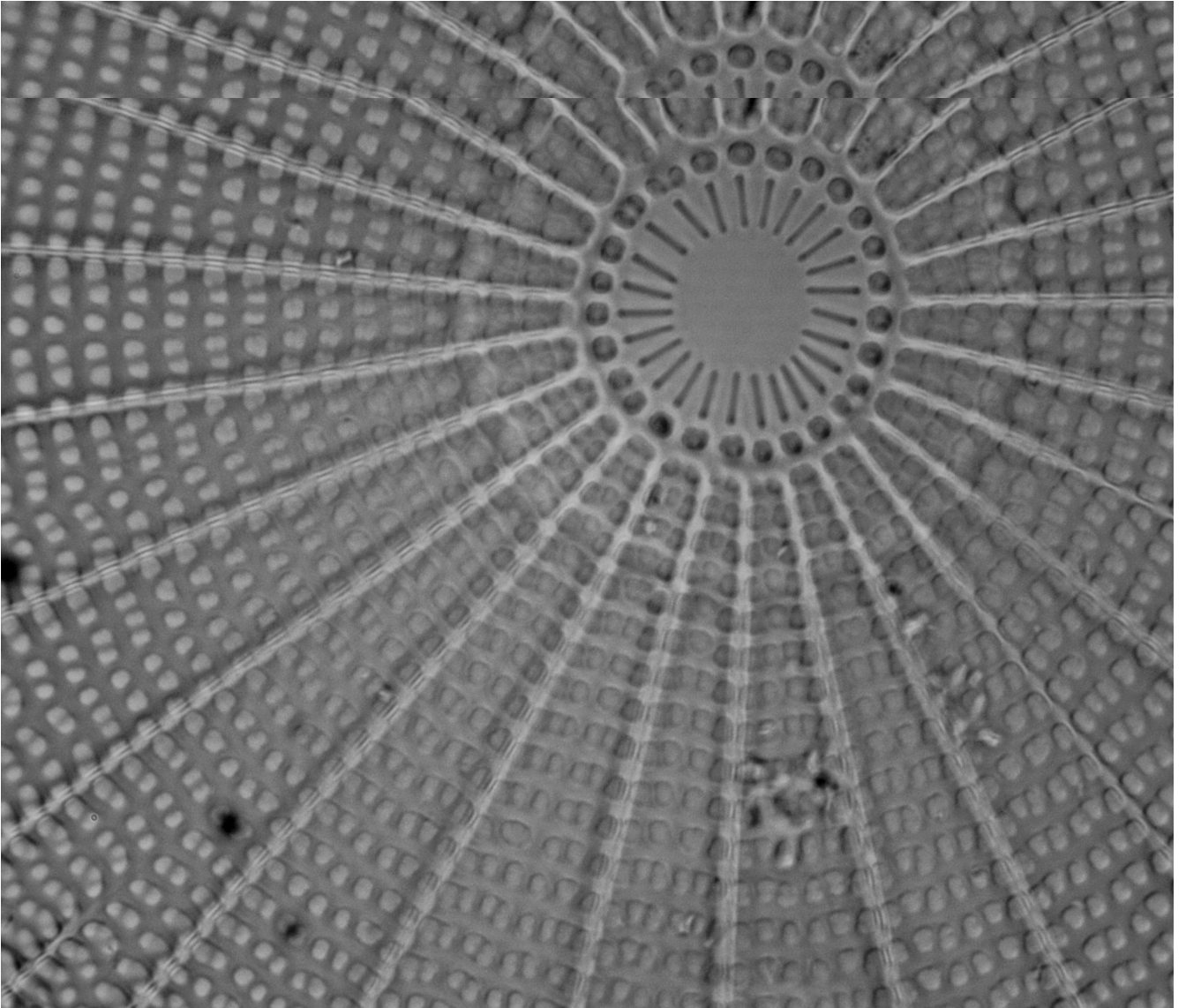
Tasco, 10X objective and eyepiece. Abbe condenser. Fluorescent bulb.
Not bad for a microscope I paid only \$20 for on eBay.



Accuscope 20X objective, 5X eyepiece.



Lomo 10X apo 10X eyepiece. Lomo Köhler illuminator. Aplanatic condenser.



Lomo 20X apo objective. 10X compensating eyepiece. Köhler ill. and aplanatic condenser.

I let the pictures speak for themselves. Interestingly, visually, there is not that much difference.

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