

THE 12 IN ONE MICROSCOPE.

BY: ALEJANDRO ARIEL GARCIA ARRIAAGA
COACALCO CE BERRIOZABAL ESTADO DE MEXICO MÉXICO

INTRODUCTION:

I used for the first time my microscope on June 16 2014; I remember that day exactly because it was a special moment to have installed my microscope. The first thing that I observed was some fungus from a piece of rotten fruit that I had that day.

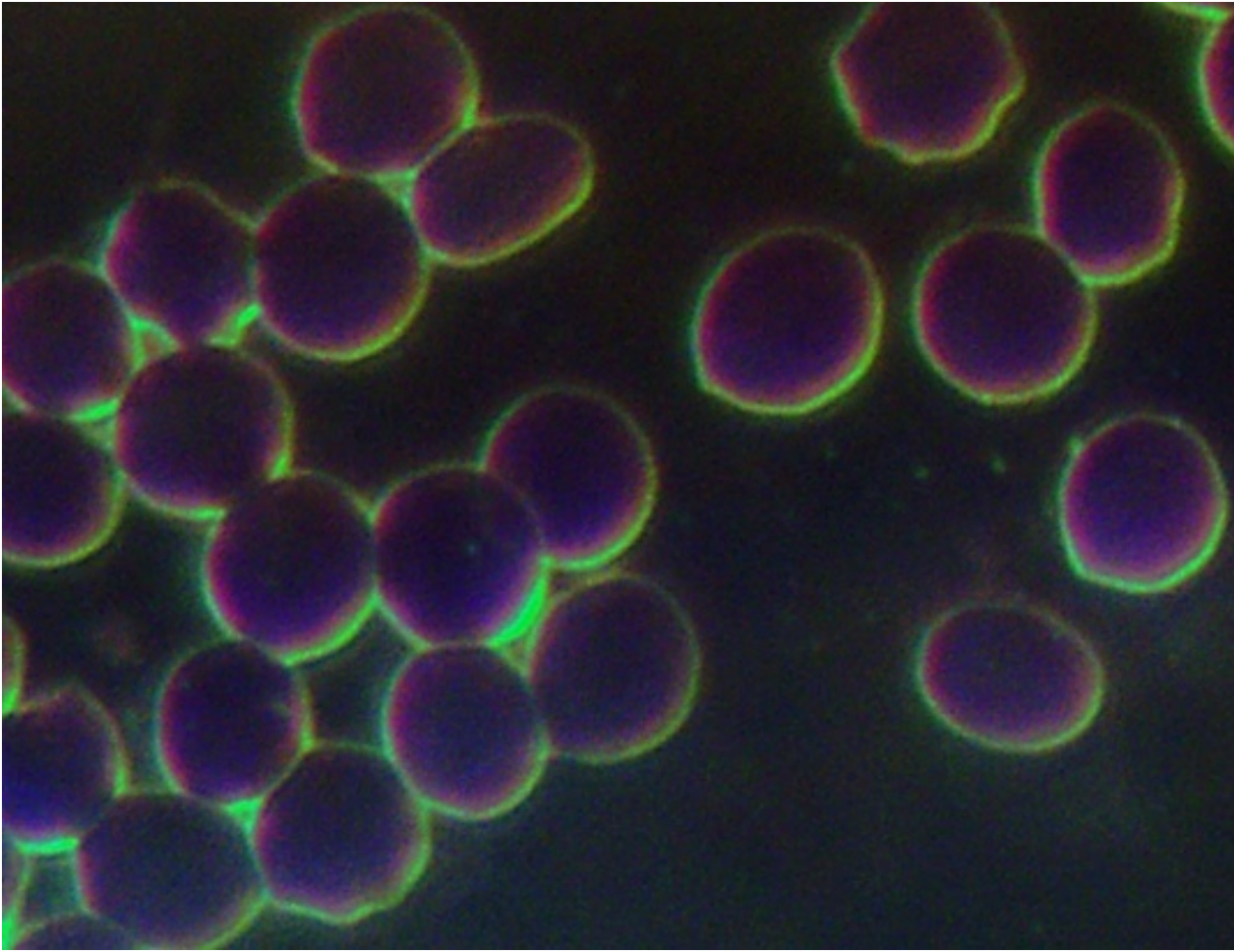
The microscope came equipped with a darkfield and brightfield condensers. I got more knowledge of the use of the microscope and then I started to learn more methods of illuminating a sample and so with my “simple compound microscope” I converted it into a series of new ones, see below.

DEVELOPMENT AND RESULTS:

As I mention above, brightfield and darkfield were by default on the microscope.

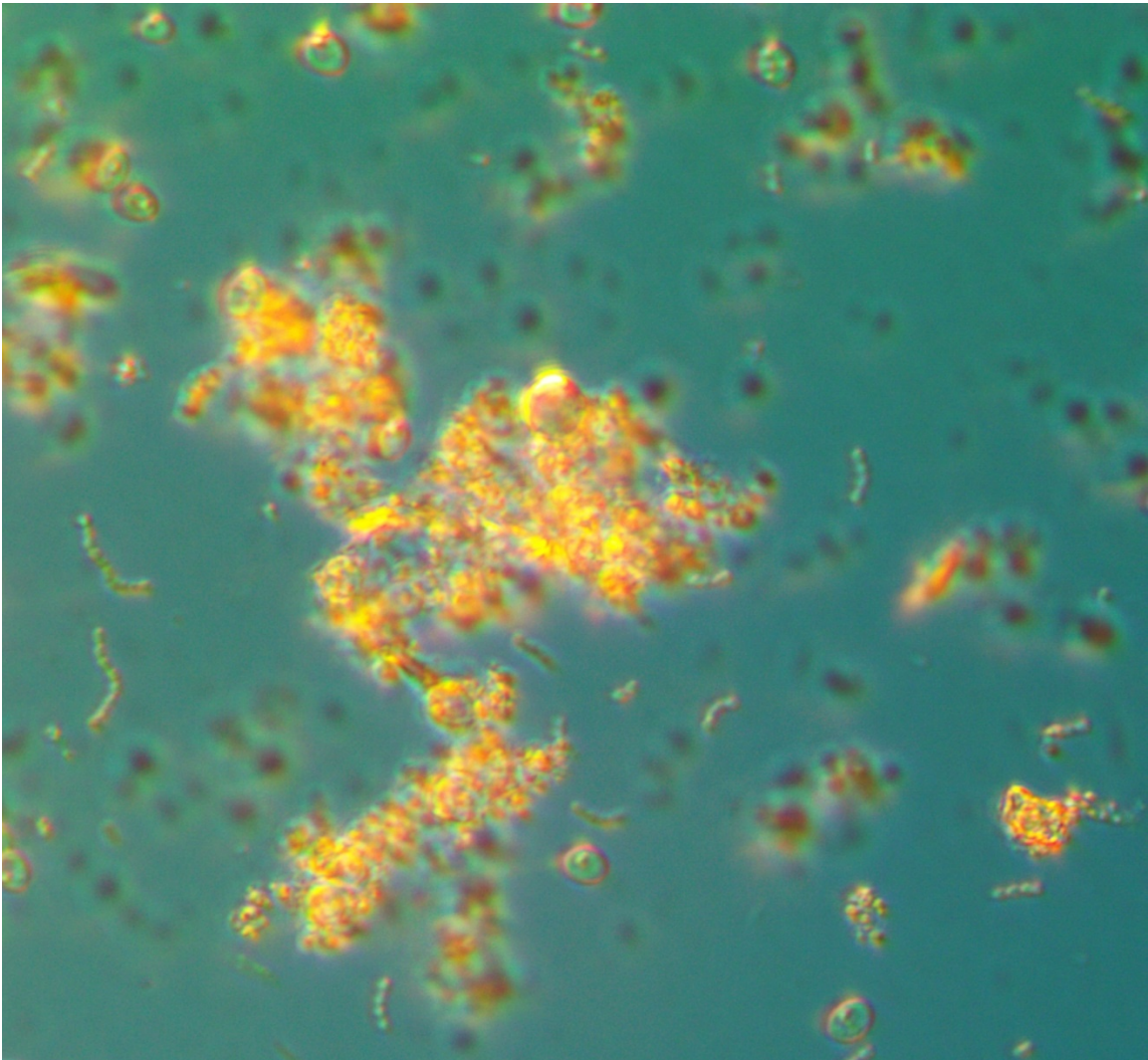


Habrotrocha 10x



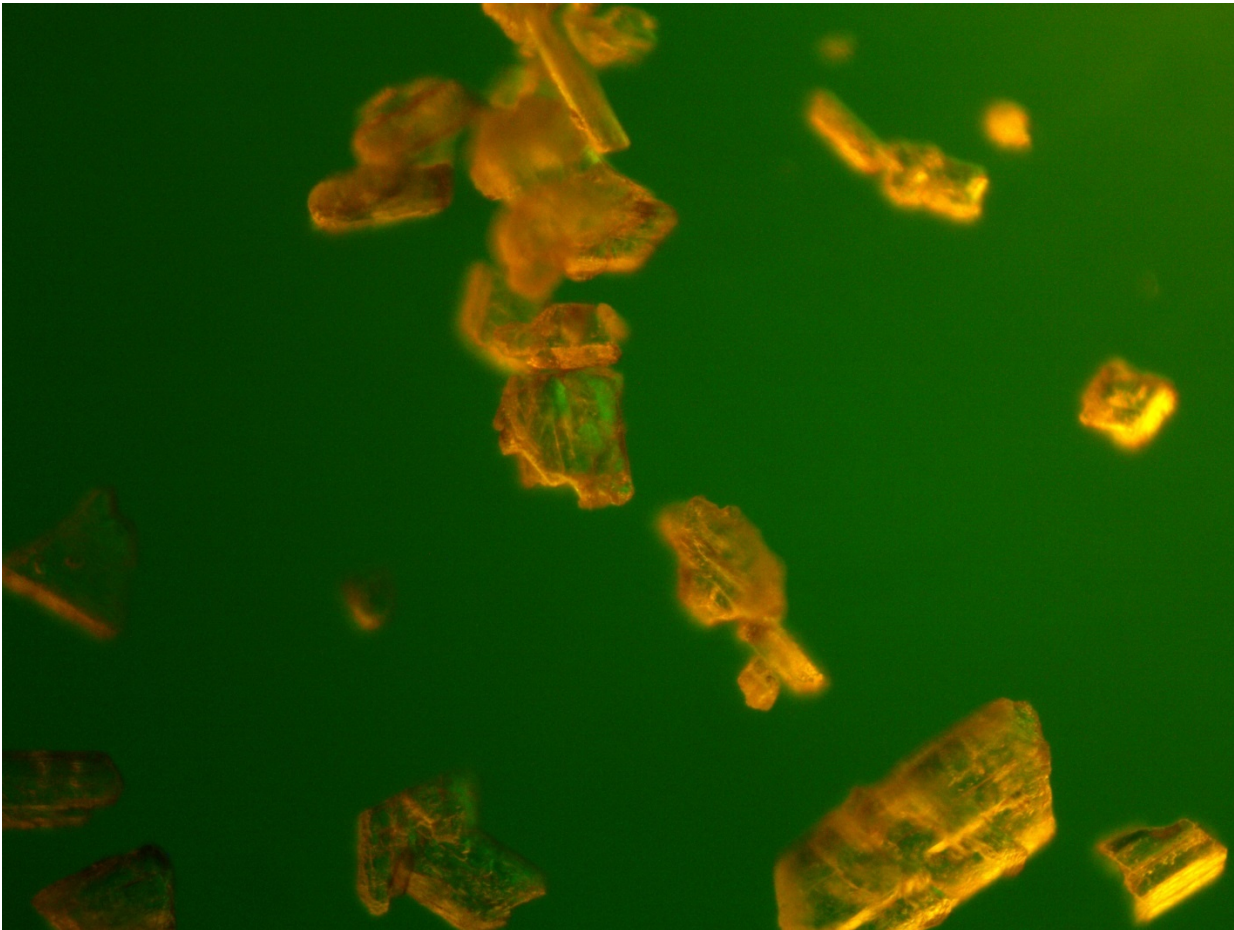
Erythrocytes 40x

The first conversion was into DIY-DIC inspired by Wim van Egmond's article using these type of filters.



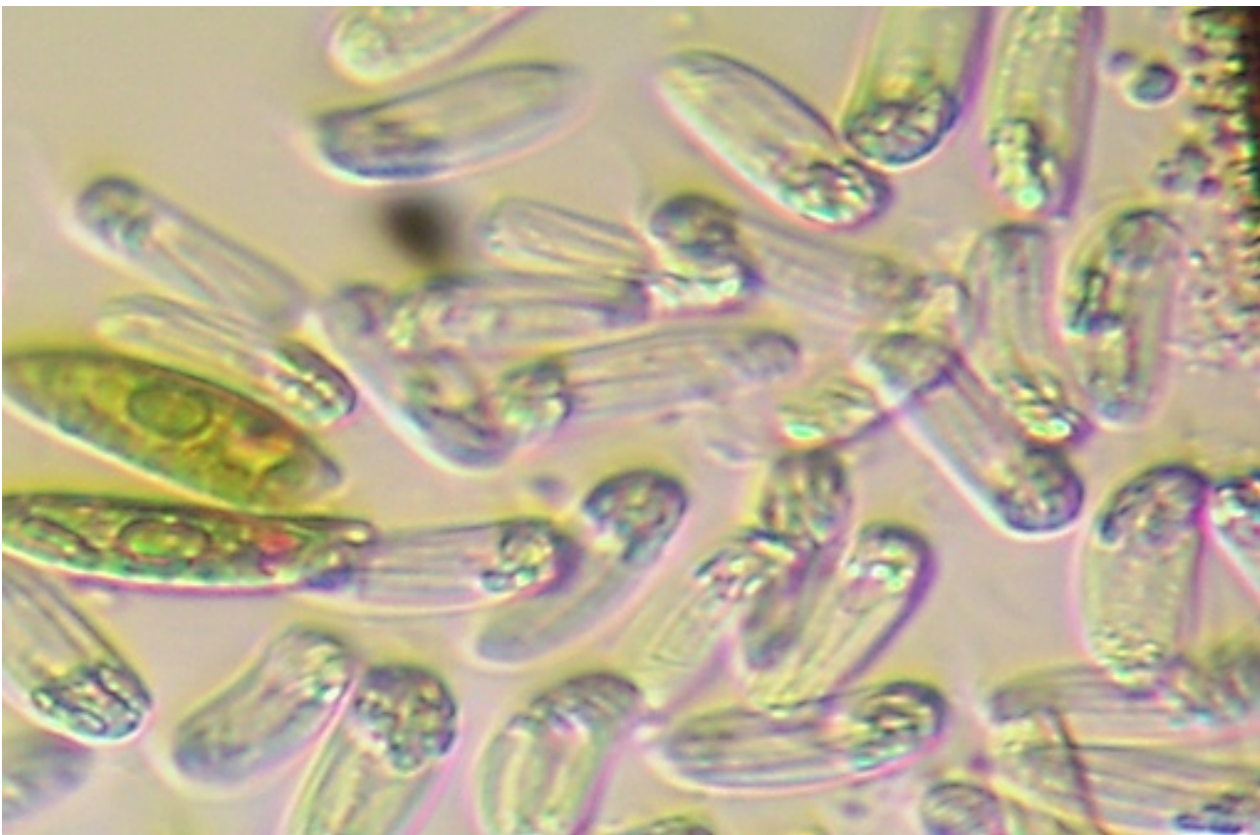
Above- Streptococcus of yogurt 40x

The second conversion was into a DIY RHEINBERG ILLUMINATION.



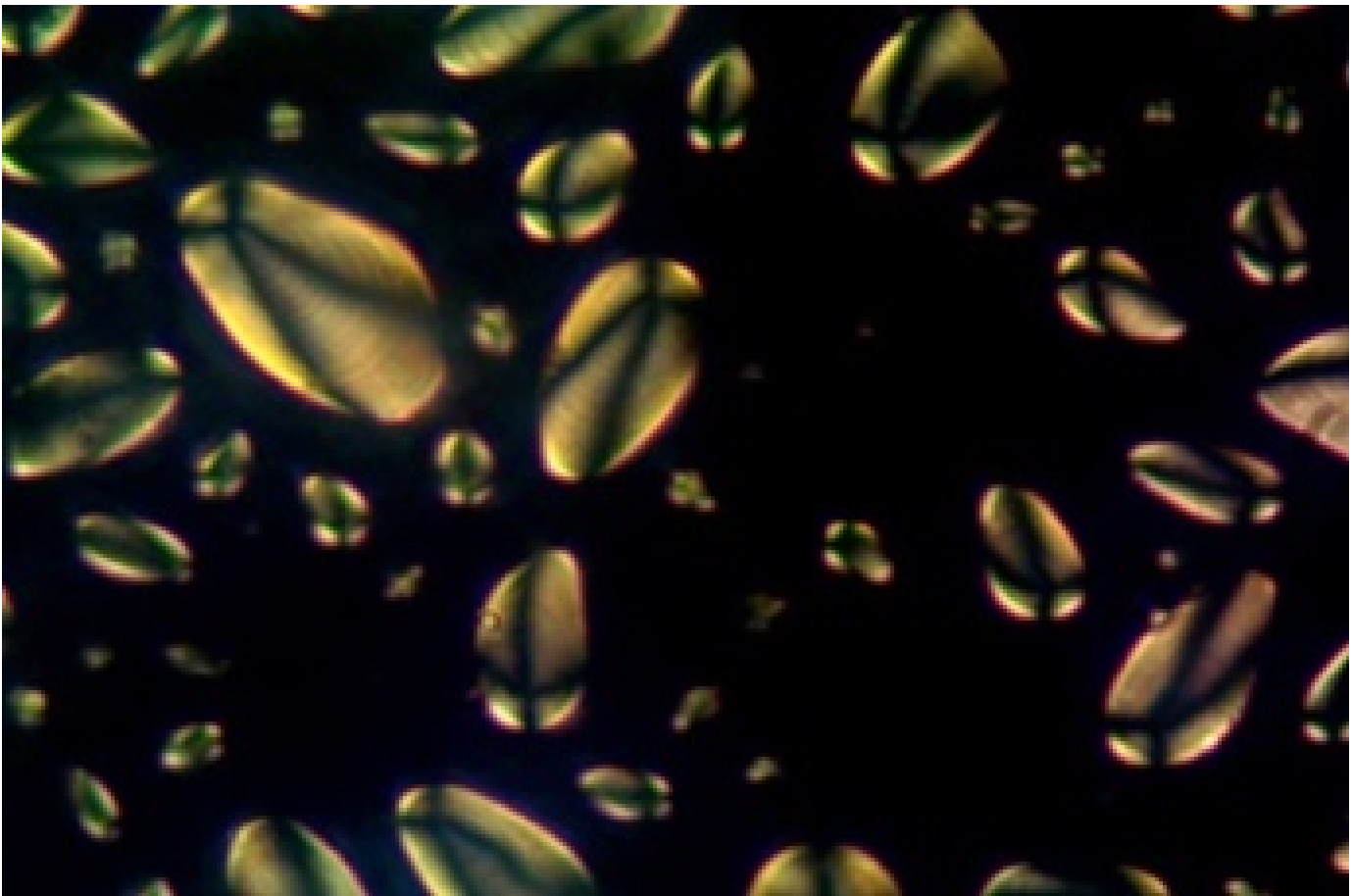
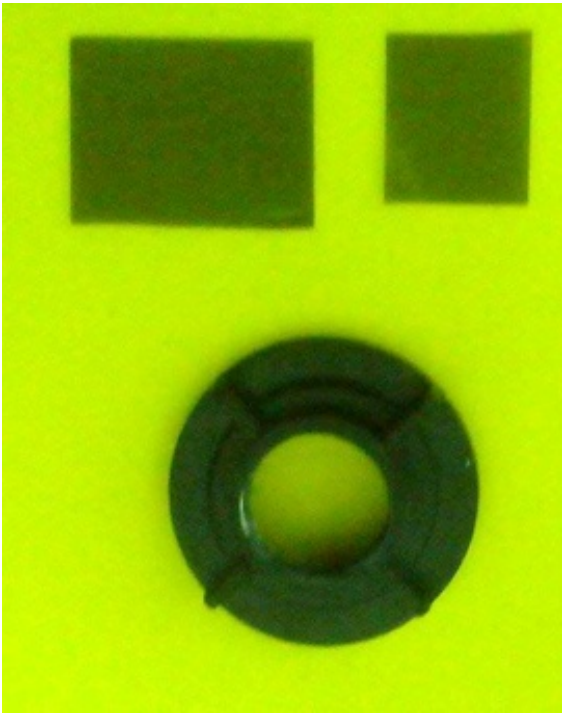
Sodium bicarbonate 10x

The third conversion was to oblique lighting.



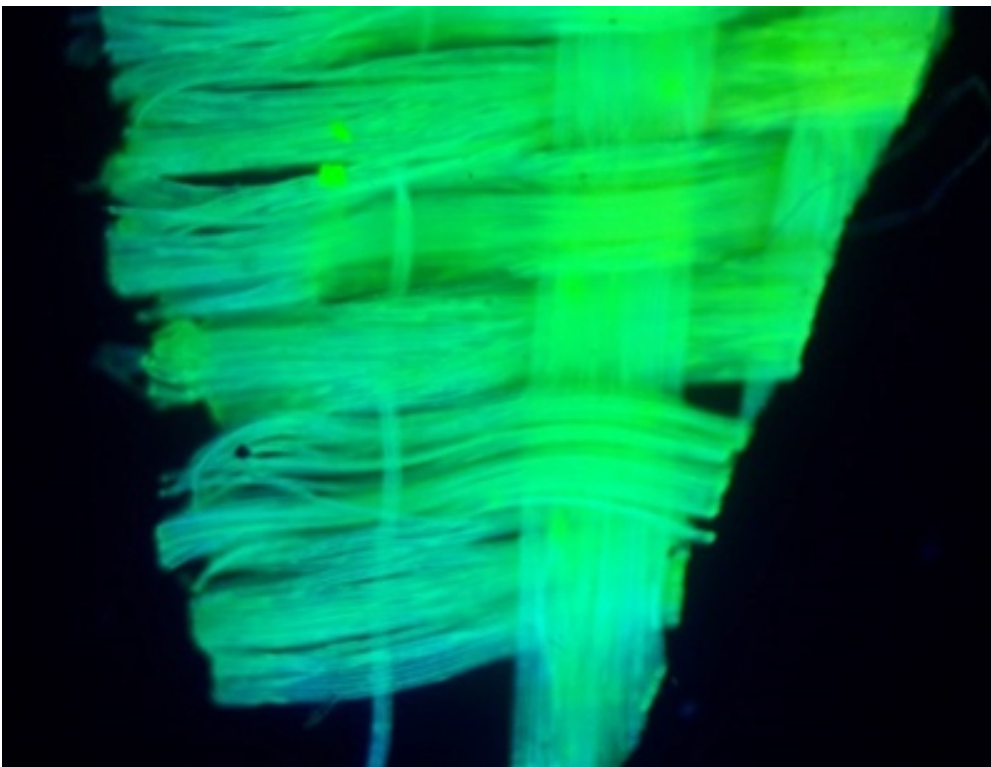
Above - *Euglena* 40x

The fourth conversion was into polarized lighting.



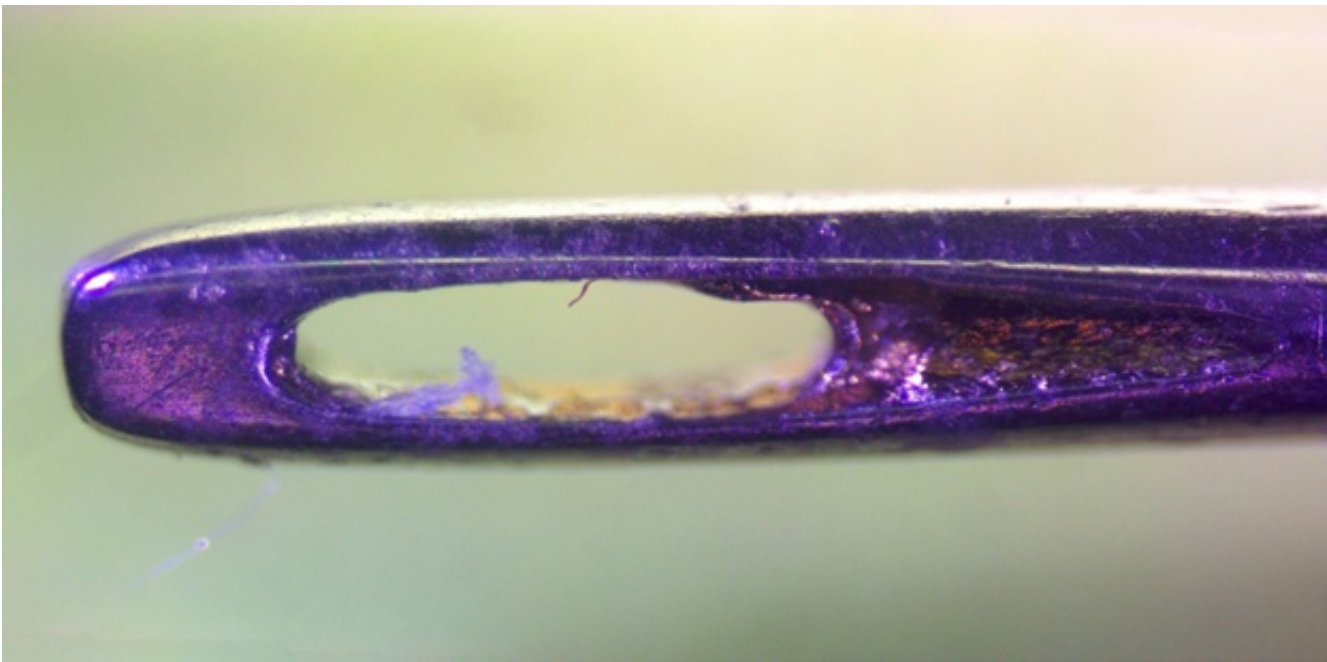
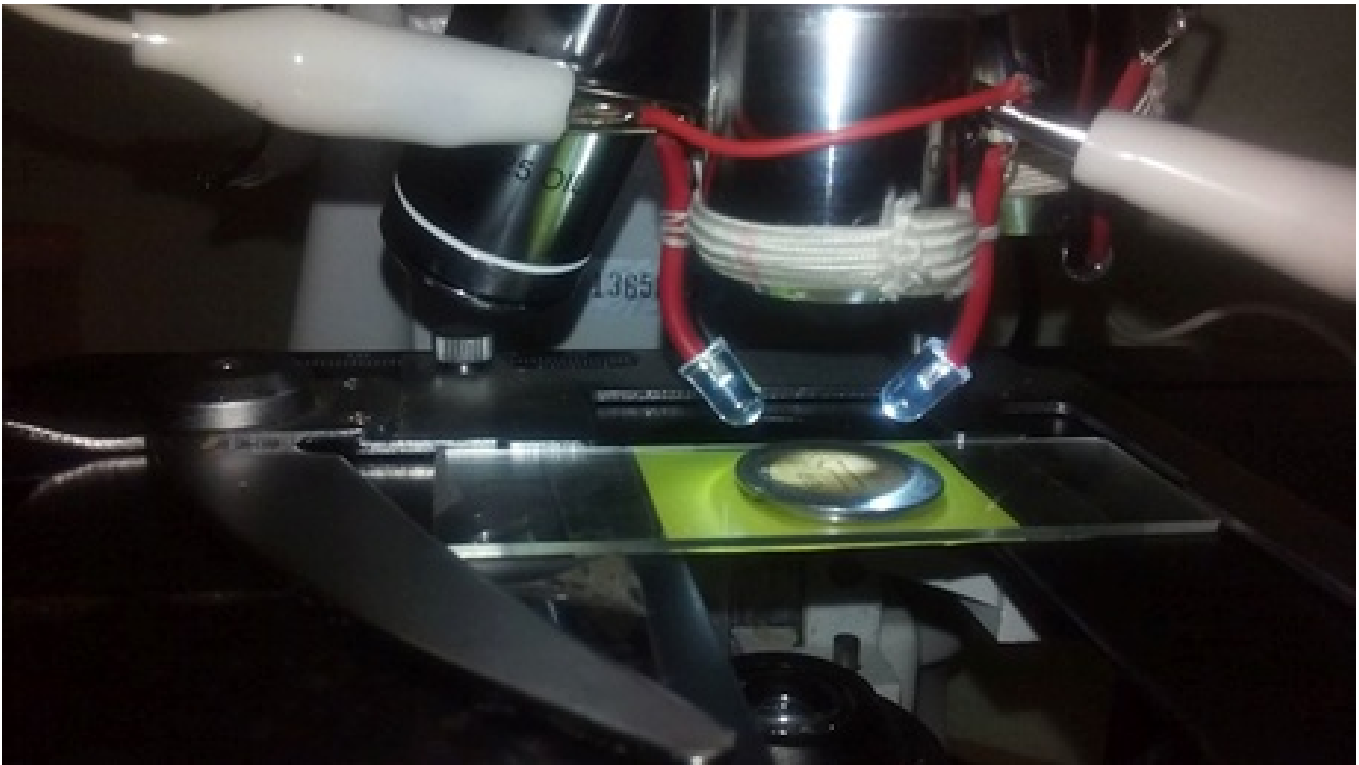
Potato starch 40x

The fifth conversion was for fluorescence studies with a black light lamp.

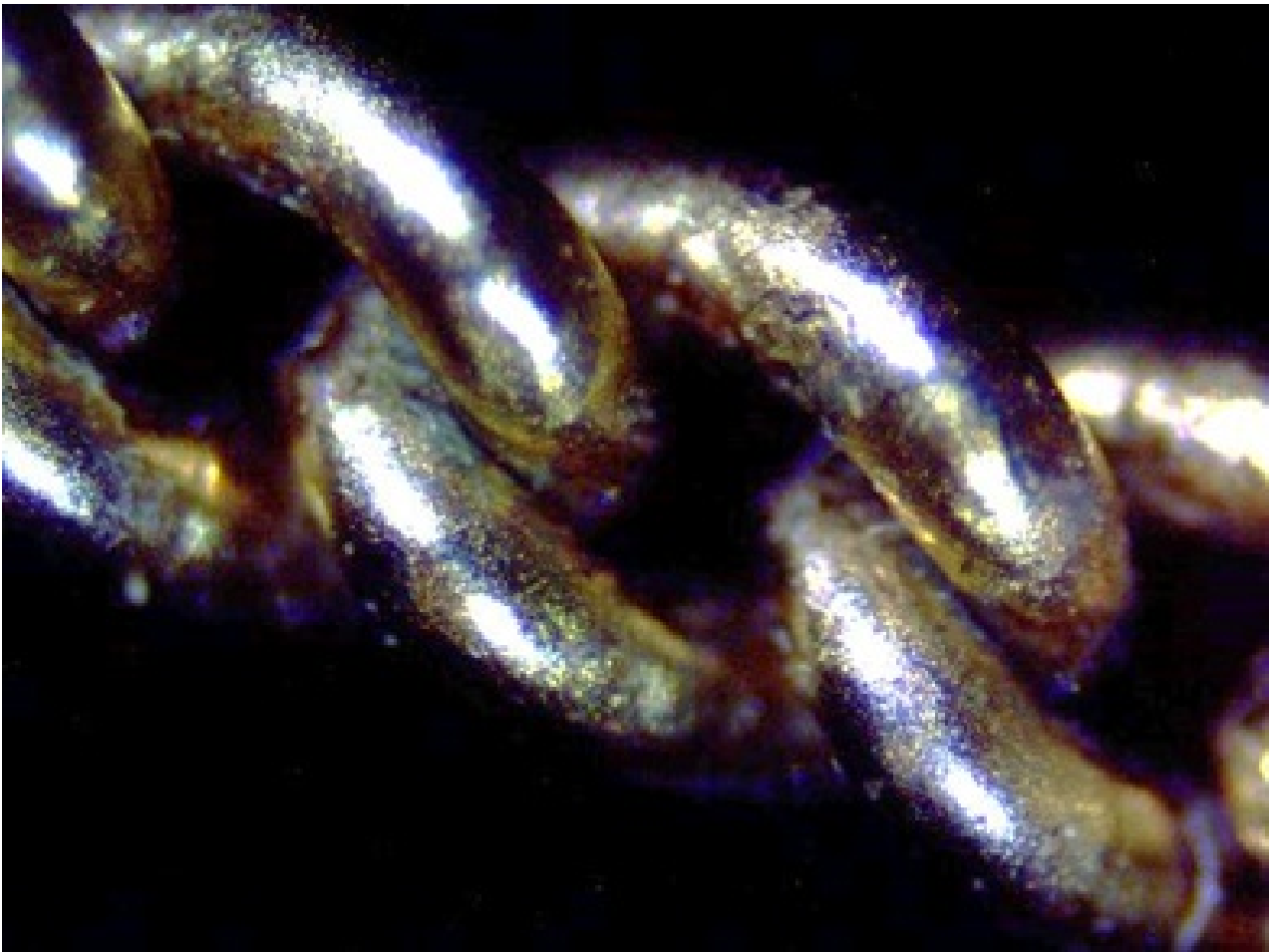


Part of a plastic flower 4x

The sixth conversion was epi-illumination with a pair of LEDs to do both brightfield and darkfield epi-illumination.

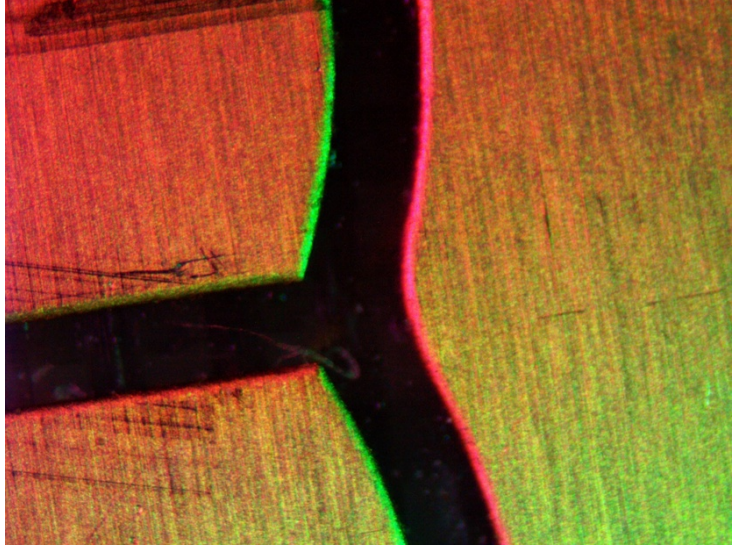


The eye of a needle 4x



A bit of a necklace chain 4x

The seventh conversion was epi-Rheinberg with a pair of LEDs and bits of colored plastic.



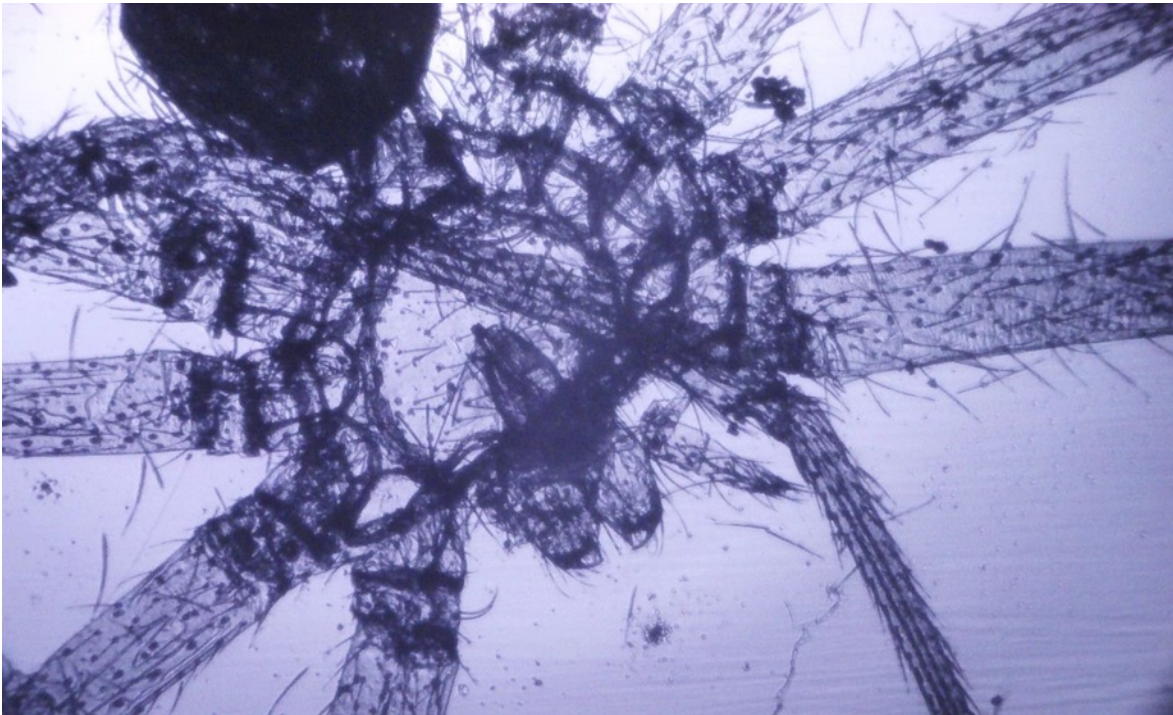
The eight conversion was with the help of a NEAR INFRARED capable camera and I converted it into a metallurgical microscope.





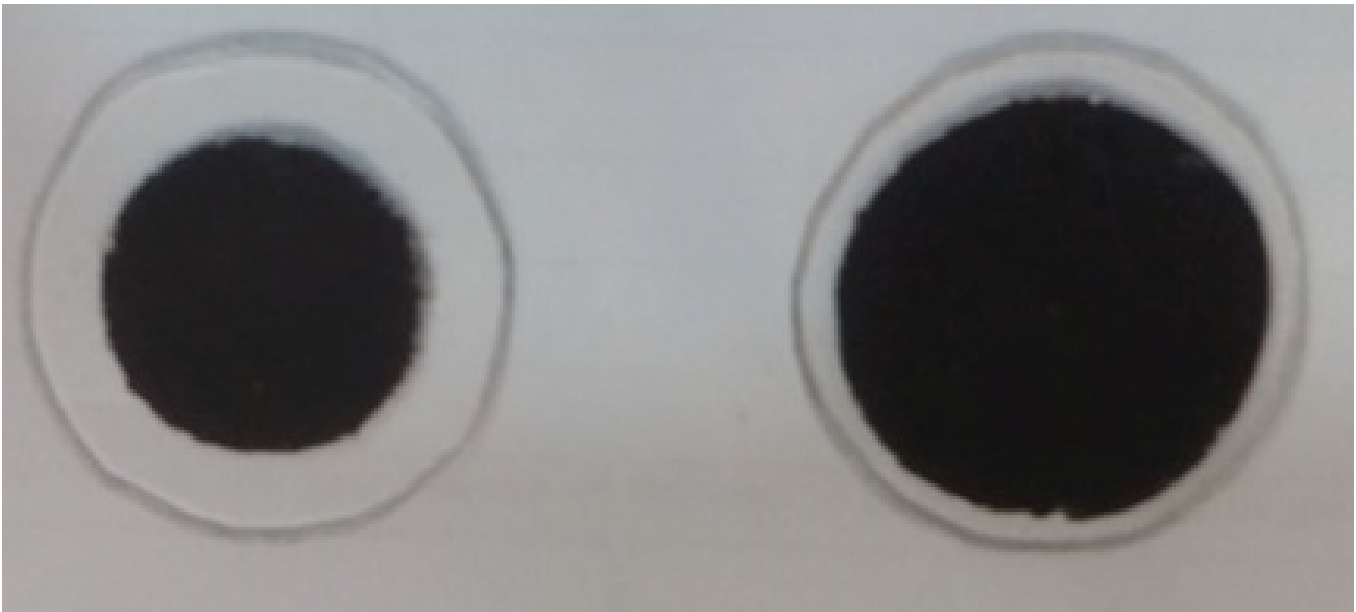
The year of coining of a Mexican coin 4x

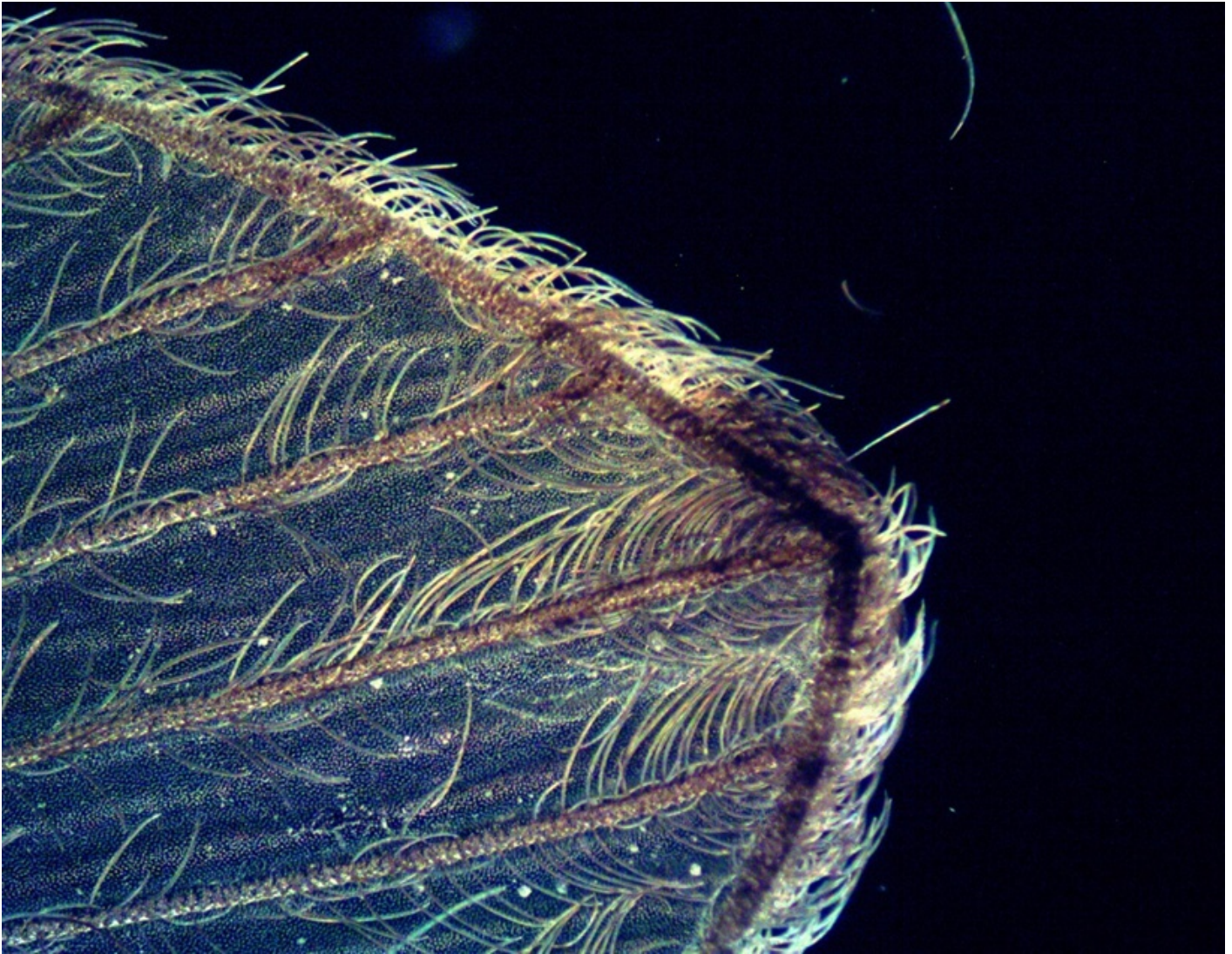
The ninth conversion was with the help of a NEAR INFRARED (NIR) LED into a transmitted NIR microscope.



A spider 4x

The tenth conversion was to reconvert it into DARKFIELD by two DIY darkfield filters.





A bit of a *Psicoda* wing 10x

CONCLUSION:

The purpose of this article is to encourage the beginner microscopist to improve and take advantage of his or her microscope and to make the most of its potential. Not limiting the observations just to the microscope's default features since any microscope can be expanded a lot as is shown above.

Email author: doctor2408 AT yahoo DOT com DOT mx

(Above in anti-spam format. Copy string to email software, remove spaces and manually insert the capitalised characters.)

Published in the April 2017 issue of *Micscape* magazine.

www.micscape.org