

## DIY-FLUORESCENCE PART 2

ALEJANDRO ARIEL GARCIA ARRIAGA COACALCO DE BERRIOZABAL, ESTADO DE MEXICO, MEXICO

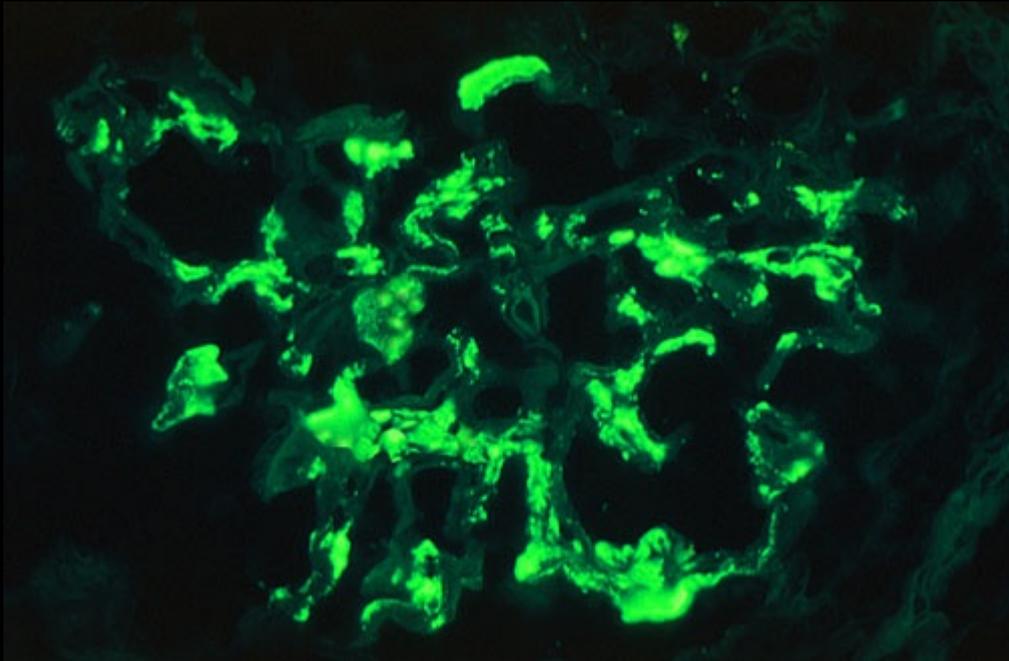
### INTRODUCTION:

In the previous article [DIY FLUORESCENCE EFFECT PART 1](#) published in April this year I showed how in a very easy way we can make a photo look as if the object were emitting light against a dark field. As I explained before, it takes our mind to the effect of fluorescence that regularly uses ultraviolet light or other excitation

wavelengths; substances when exposed to this kind of light and emit a lower wavelength.

This is a surprising form of illumination and the real fluorescence microscope is useful to identify certain substances that emit under this type of illumination.

As an example I would cite the antibodies that damage the mesangium of renal glomeruli that are present in the sickness called IgA nephropathy - these form structures that can be appreciated under a fluorescent microscope.



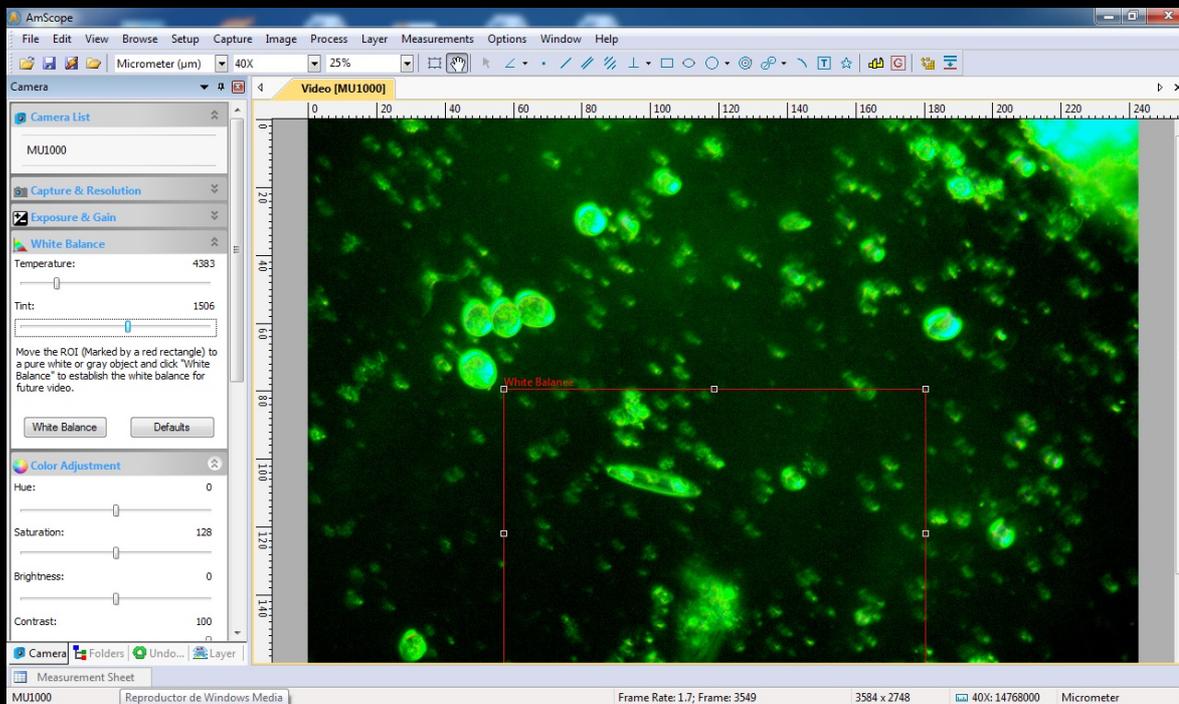
*Taken from the page <http://library.med.utah.edu/WebPath/RENAHTML/RENAL096.html> just for educational purposes to illustrate the illumination achieved with a fluorescent microscope.*

Today I am going to present the second part of my series DIY FLUORESCENCE EFFECT for enthusiast microscopists who would like to make their pictures by optical methods look as if they were seen with a microscope with fluorescence or ultraviolet features.

To achieve this it is necessary to use the darkfield condenser because a dark background is needed. In addition, by using two simple techniques that I am going to show you, it is possible to transform your pictures into a fluorescence look in a matter of seconds and believe me they look beautiful.

### DEVELOPMENT:

The first technique that I used is directly with the camera upon the microscope when taking the photo.

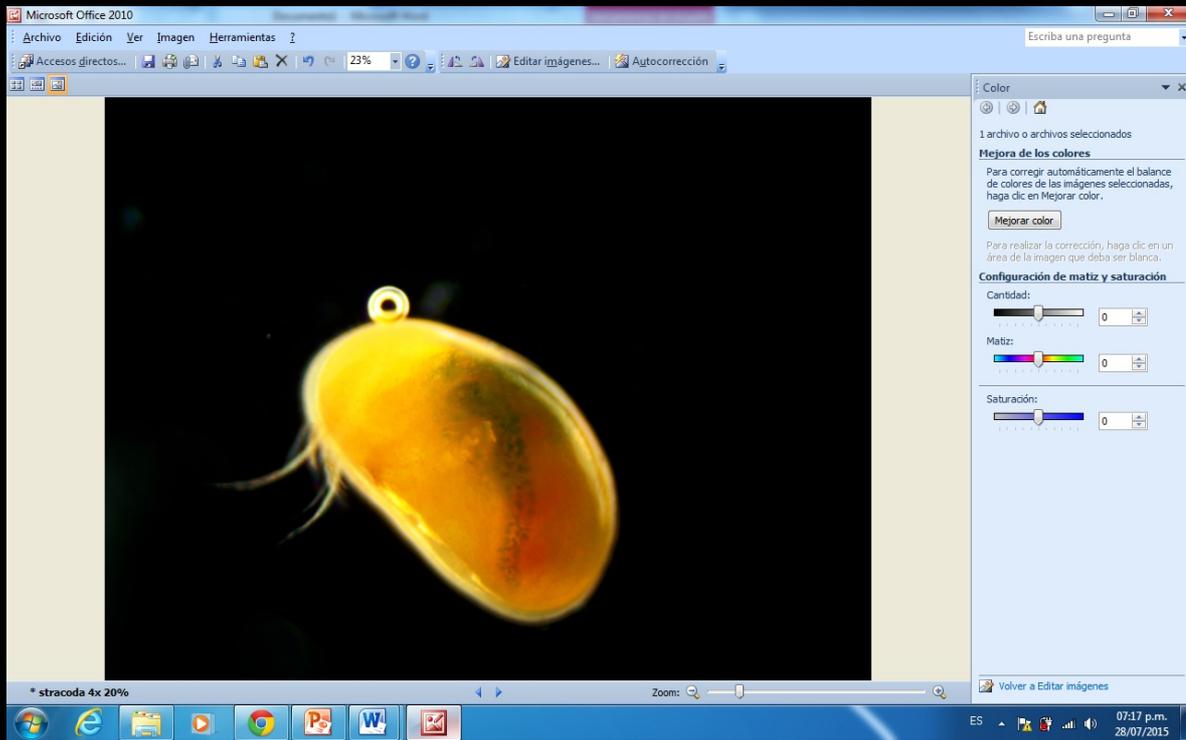
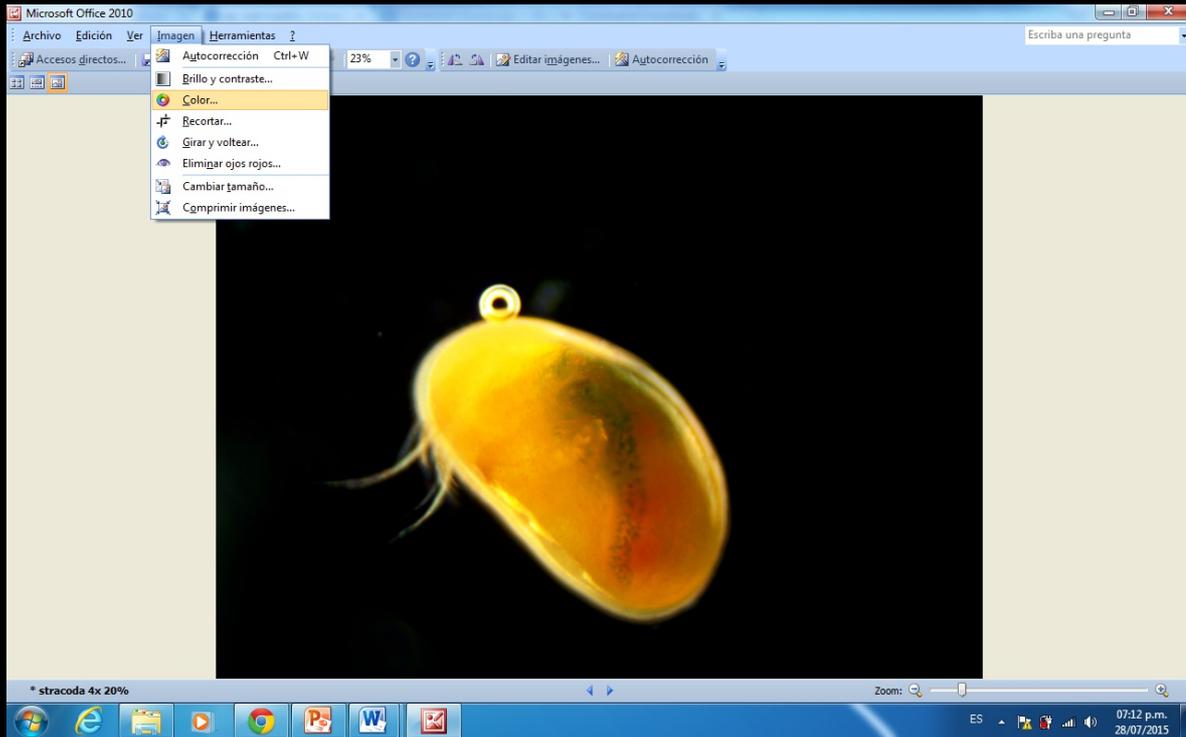


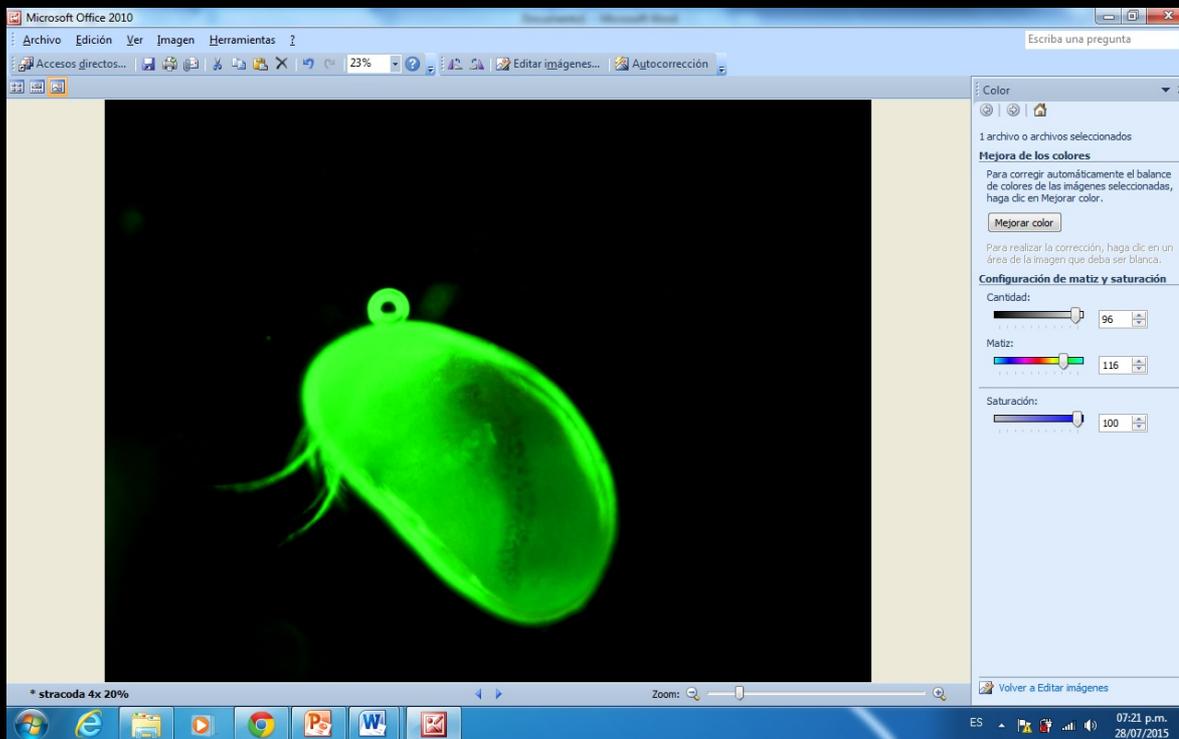
As I remarked above, it is necessary to work with the darkfield condenser so that you will already have the dark background. Then with the help of the TINT in the WHITE BALANCE menu, when this is adjusted it is possible to get a change in the color of the object within the sample, this way making it resemble a fluorescence microscope image. You have to adjust it to the green tones as in the example above where you can see the diatom and the green algae glowing as if they were illuminated with fluorescent stains - it is easy isn't it?

The other way is to use any program available that you have to improve photos. In my case, as I have mentioned in previous articles a program that I have loved the most, since it has been useful for making my microscopy photos better with simple changes, I refer to MICROSOFT PICTURE MANAGER 2010 that is the version that I have and that makes this very simple to do.

The only thing needed is a darkfield picture and by changing the parameters of color. That's all it is done!.

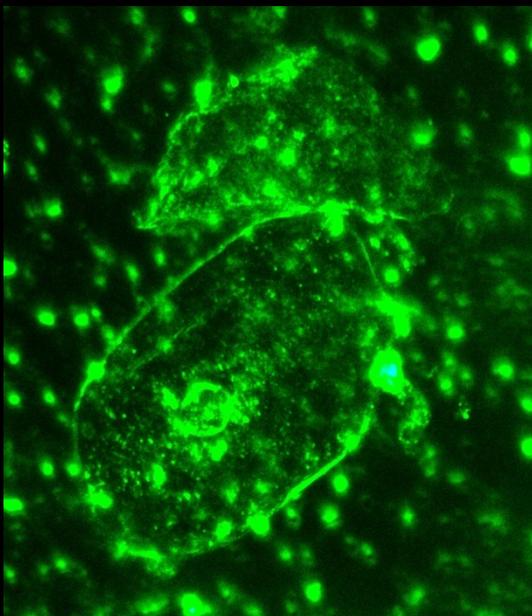
Look at it:



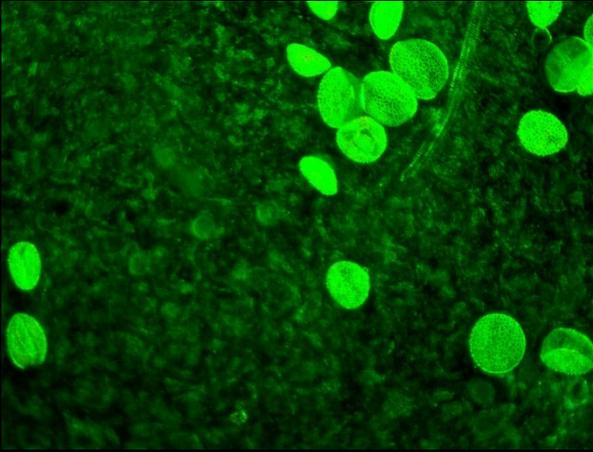


As you can see, it looks as if it has been exposed to a fluorescence microscope - obviously you can change the color because with this program you can play with color - it is also very easy isn't it?

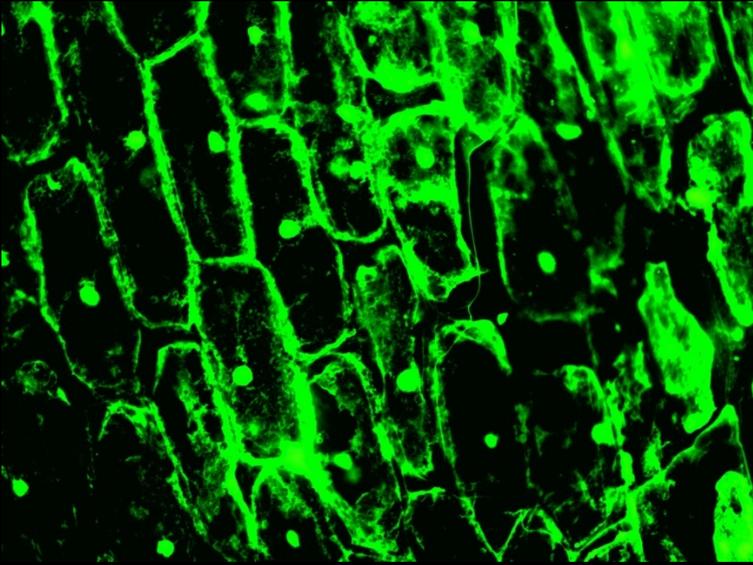
#### RESULTS:



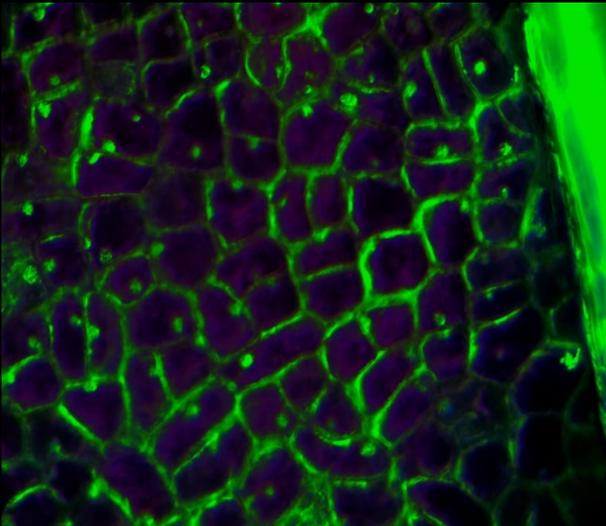
Mouth epithelial cells 40x



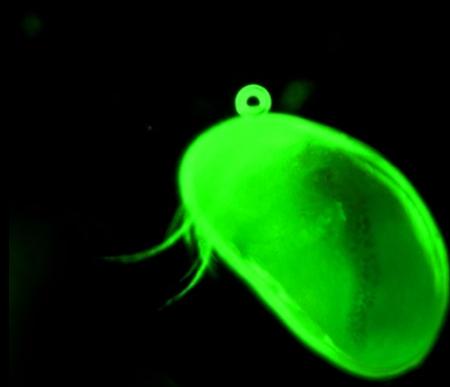
Pollen of a yellow lily upon a petal 10x 20%zoom



Onion epithelial cells 40x stained with gentian violet



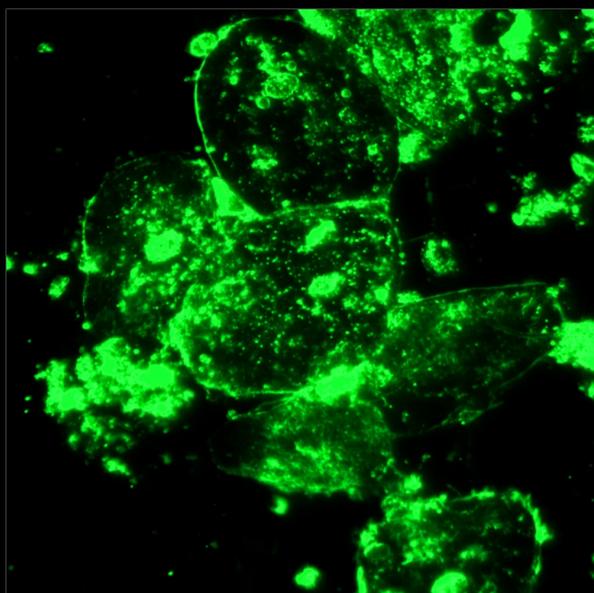
Dry bilberry cells 40x



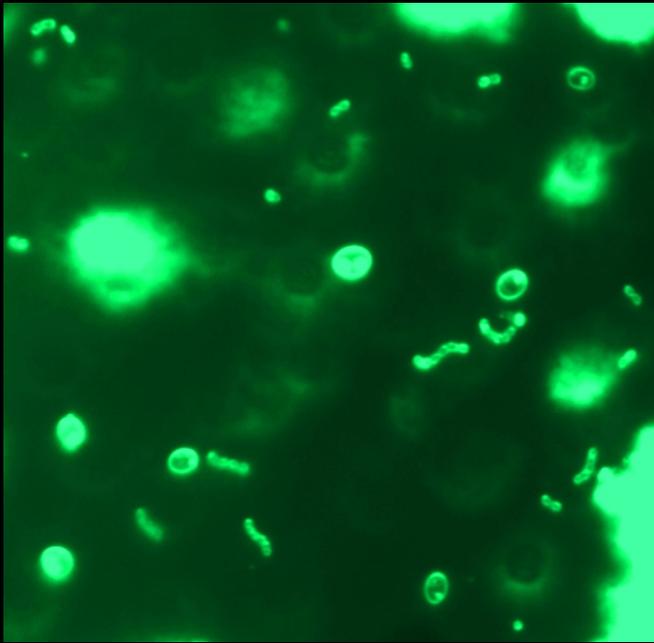
Ostracod 4x



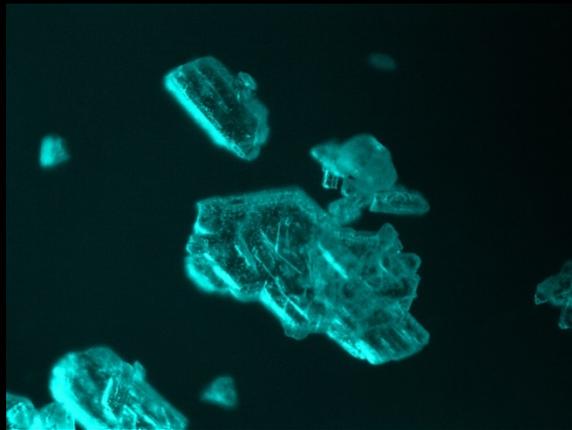
Spider 4x



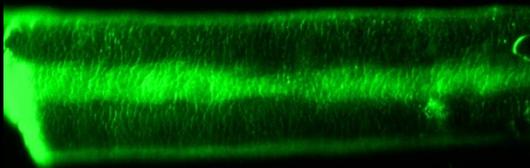
Mouth epithelial cells 40x



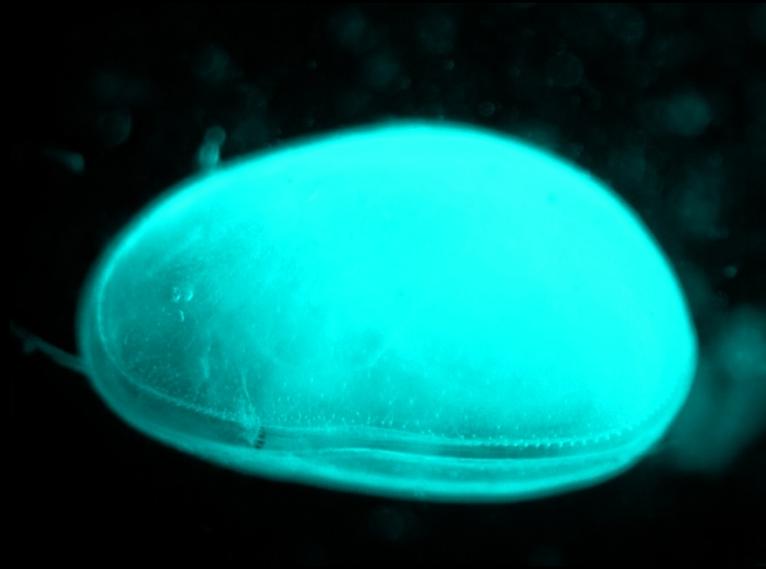
Yogurt streptococcus 40x



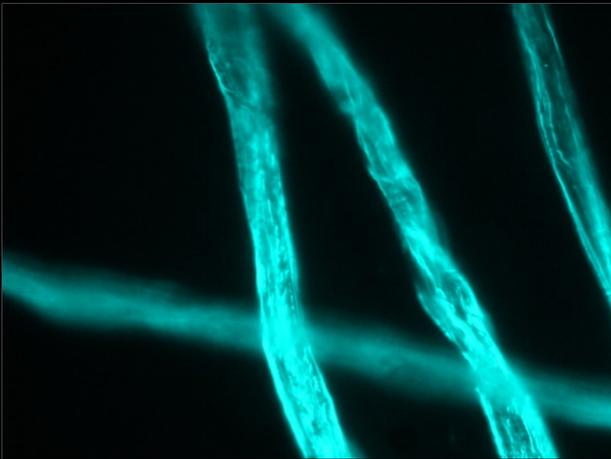
Sodium bicarbonate crystals 10x



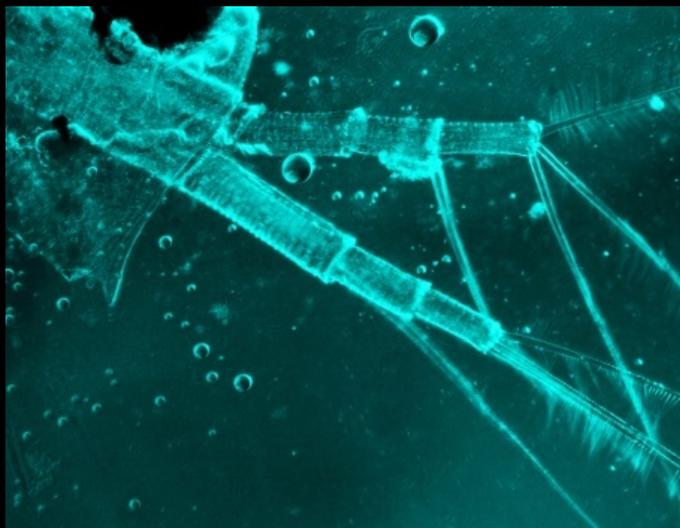
Gray hair 10x



An ostracod shell 4x

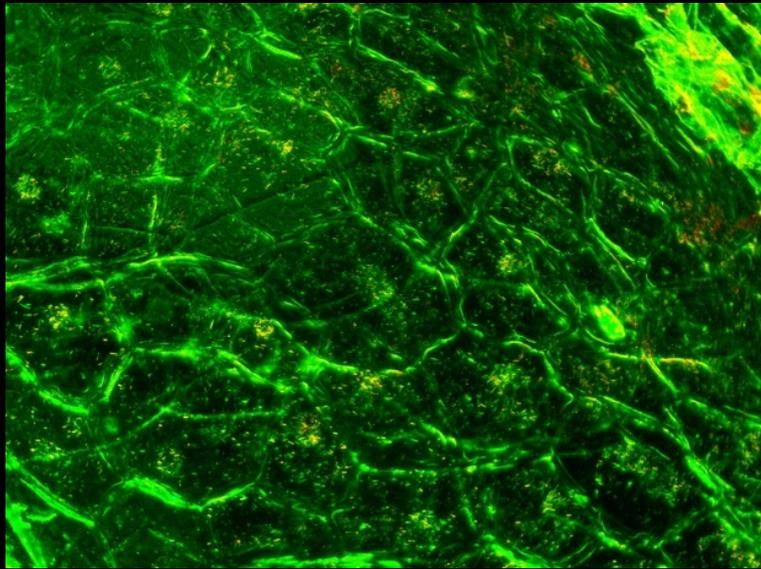


Cotton fibers 10x



Daphnia' s legs 10x

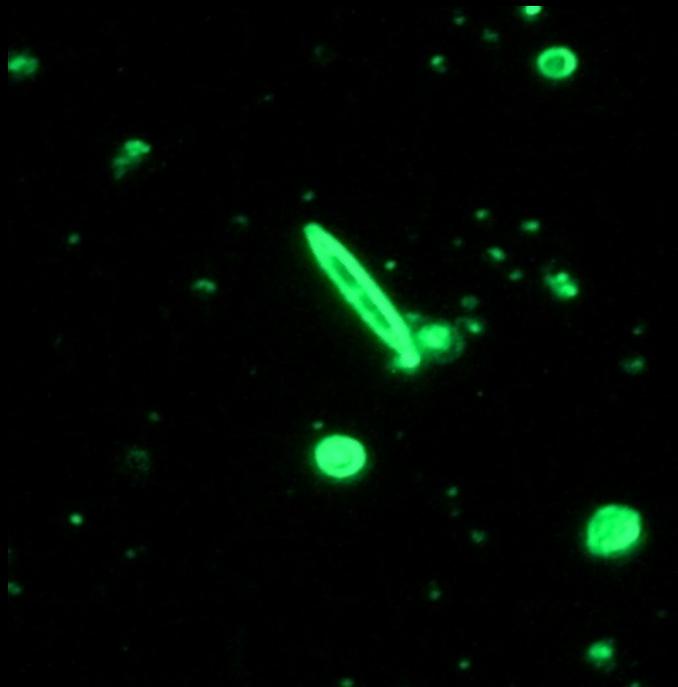
Daphnia 4x



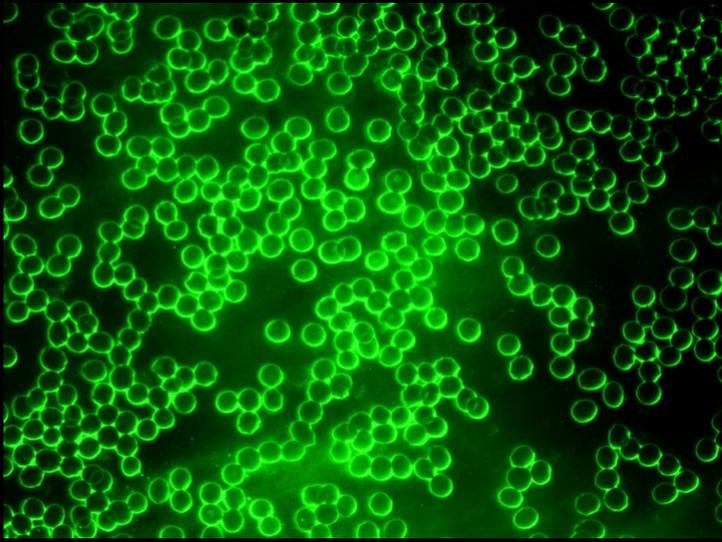
Tomato epithelial cells 10x



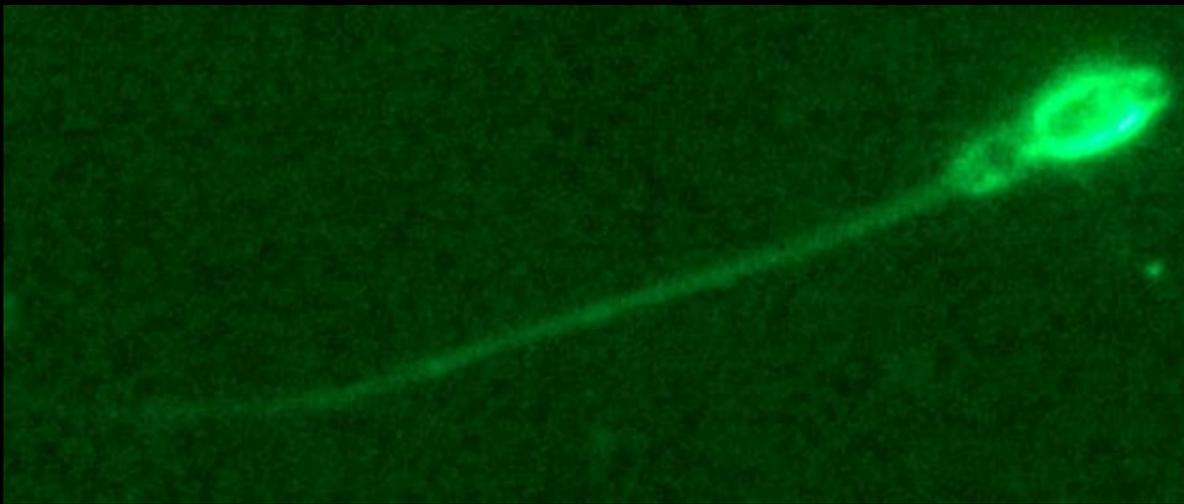
Diatom 40x



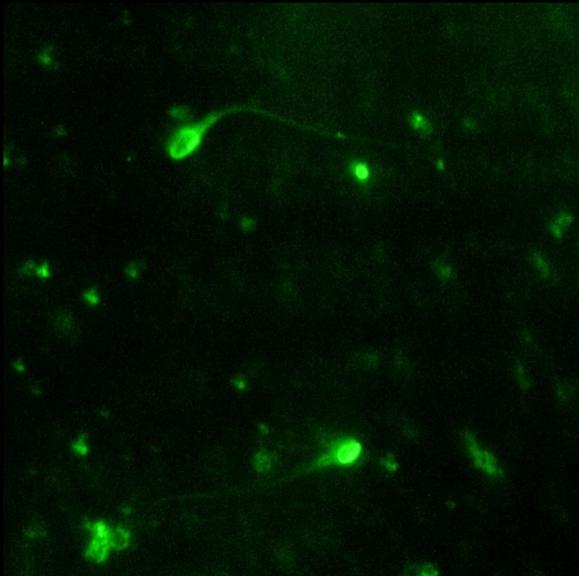
Diatom 10x



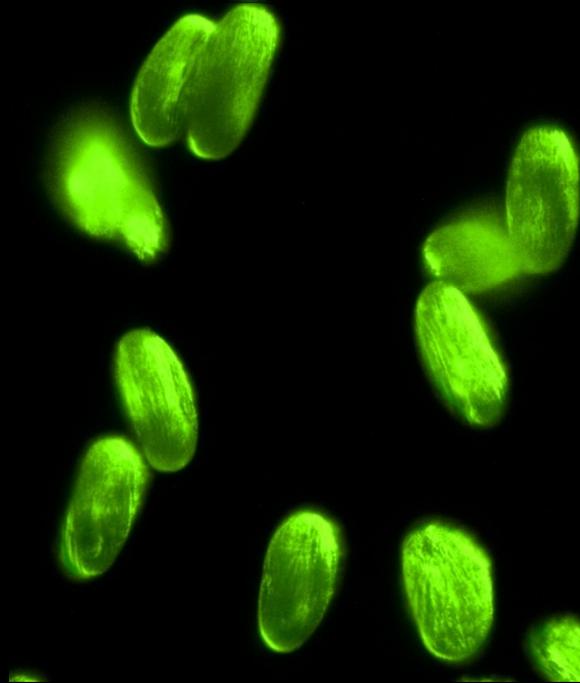
Erythrocytes 40x



Sperm 40x



Sperm 10x



Pollen of *Spathiphyllum wallisii* 40x

#### CONCLUSION:

One of the best things that we enthusiast microscopists do is illuminating in beautiful colors our pictures, I got the DIY inspiration from the amazing articles published in the library of Micscape, the first idea came from <http://www.microscopy-uk.org.uk/index.html> an article by Wim van Egmond, from The Netherlands. I love to do things on a DIY basis because that make us take advantage of the resources that are at hand such as the software we count on.

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 September 2015 issue of Micscape Magazine [www.micscape.org](http://www.micscape.org)