

DARK FIELD CORRECTION: A SINGULAR FEATURE OF A MICROSCOPE CAMERA

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Introduction:

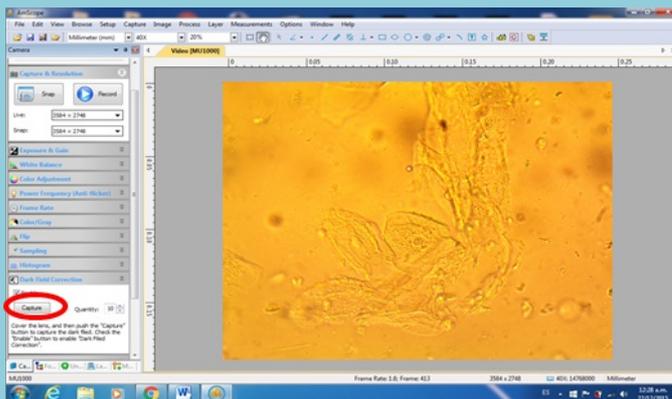
I have said in previous articles that I have been impressed by darkfield illumination, and for me darkfield illumination would be the rule regarding illumination methods.

When I purchased my microscope camera and installed the software I started to check the features it offered, and I noticed one that drew my attention, it was written DARK FIELD CORRECTION. I said to myself, "look DARKFIELD follows me everywhere, now I have it here in the software of the camera".

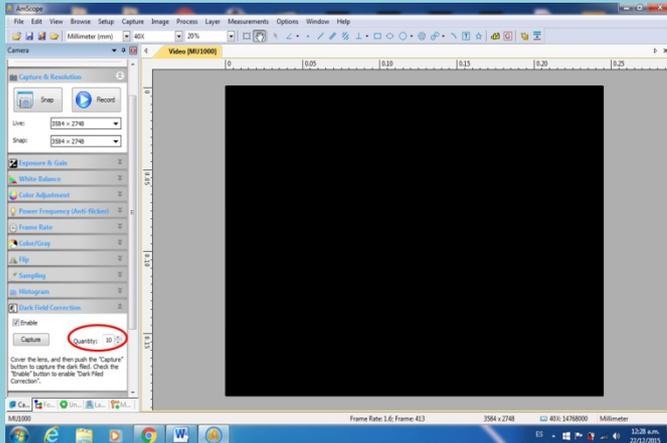
I tried it and explored the utility for this technique, which is a darkfield produced out of a bright field image without the need of a darkfield condenser.

Development:

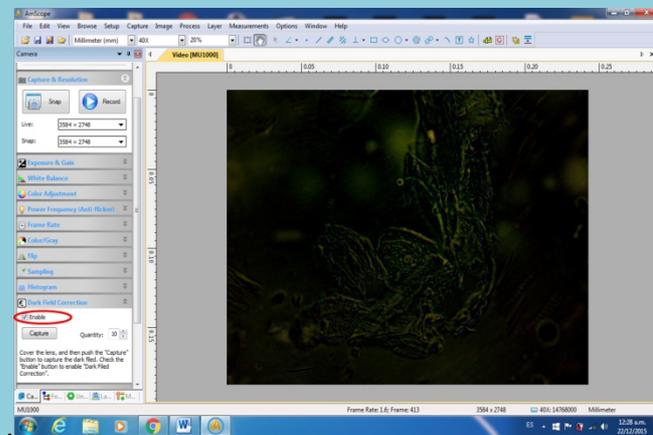
To achieve this singular feature of a microscope camera like mine, it is extremely simple. First I turn on the microscope and set the brightfield condenser. I place the sample upon the stage and adjust the focus to present in the camera a clear image. Then go to the toolbar of the software and select DARK FIELD CORRECTION in the menu. I press the capture button; to get the best image it is recommended to keep the white balance at the default values.



The darkfield correction by default is at setting ten but it is possible to increase or decrease it (I have always use the defaults of the darkfield correction tool). Then using for example the 4x objective with a sample upon the stage, on the screen of the software will present a dark screen.



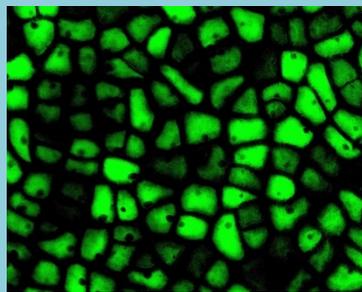
Then you move the objective of the microscope to the next one, for example 10x, and this way you obtain a captured image of your sample with the object glowing on a dark background, it is as if you shadow the sample.



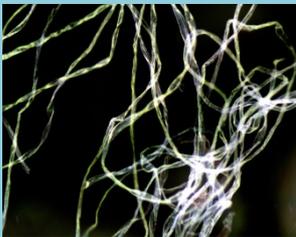
A detail that I would like to mention is that if you want to improve the contrast and the quality of the photo, you can process the image with the software that I have mentioned several times in my presentations. I refer to MICROSOFT PICTURE MANAGER 2010; with the auto correction function you can get a better illuminated image because as I have mentioned in previous articles too, it is like turning on the lights for the photo. Look at the following sample.



Results:



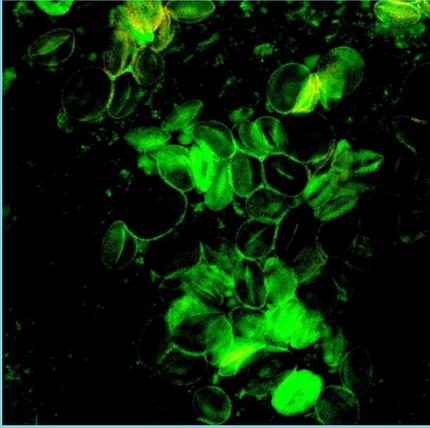
Cranberry 40x



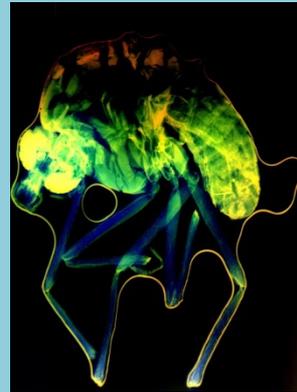
Cotton fiber 10x



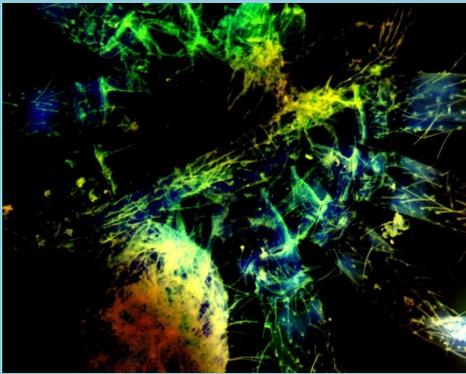
Mosquito's wing 4x



Lily pollen 10x



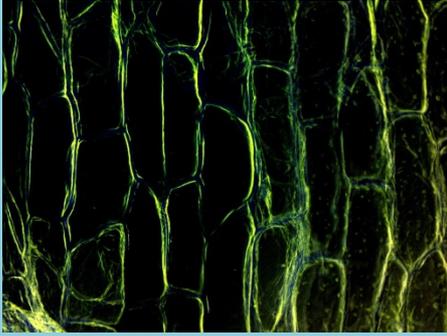
Mosquito 4x



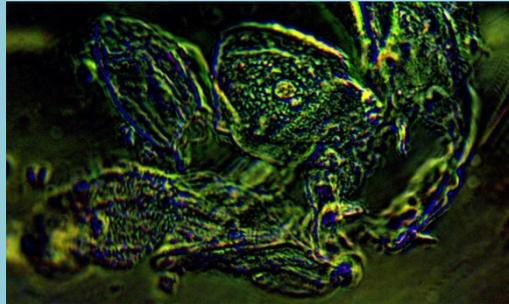
Spider 4x



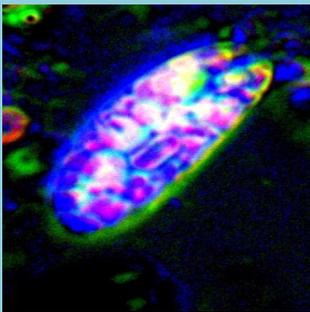
Diatom 40x



Onion 10x



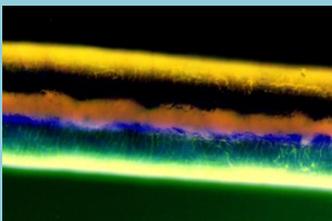
Mouth epithelial cells 40x



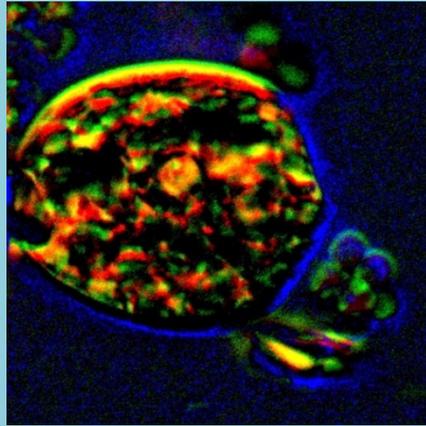
Euglena 40x



Daphnia 4x



White hair 40x



Phacus 40x

Conclusion:

For getting the best out of microscopy and enjoy it as we do, we should take advantage of all the resources we have at hand, this is one of them. I do not know whether all the cameras have the darkfield correction feature, but if you have one that has it and until this moment you had not paid attention to it, this is the right time to use and have fun out of it.

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

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