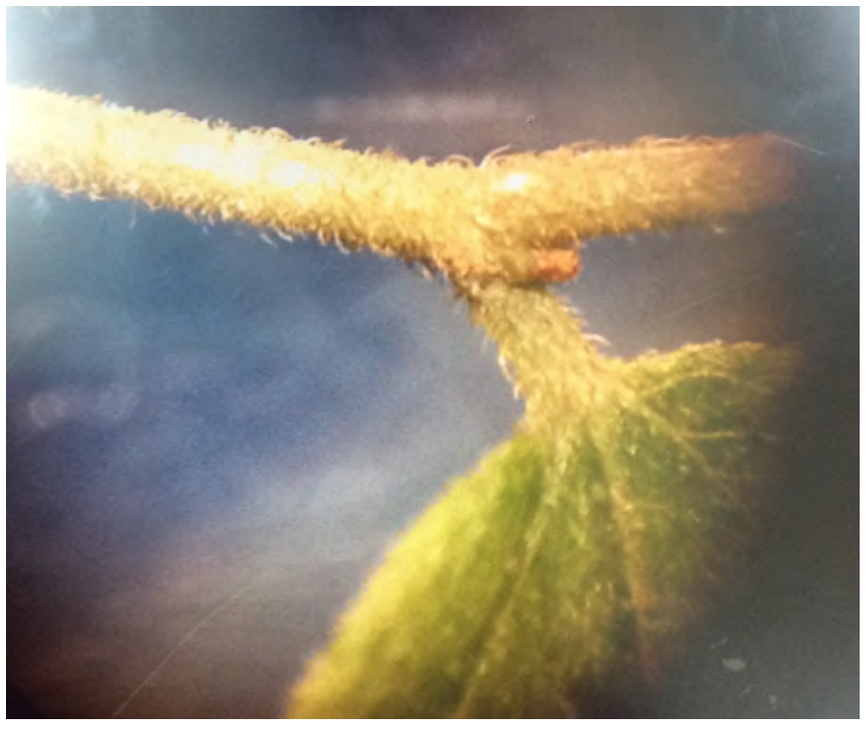
MICROSCOPE ECO EXPLORATION

Senior Secondary Biology Field Study course
Group 3

WHAT WE OBSERVE...



CHARACTERISTICS AND EFFECTS OF DIFFERENT IMAGING MODE

- Bright field

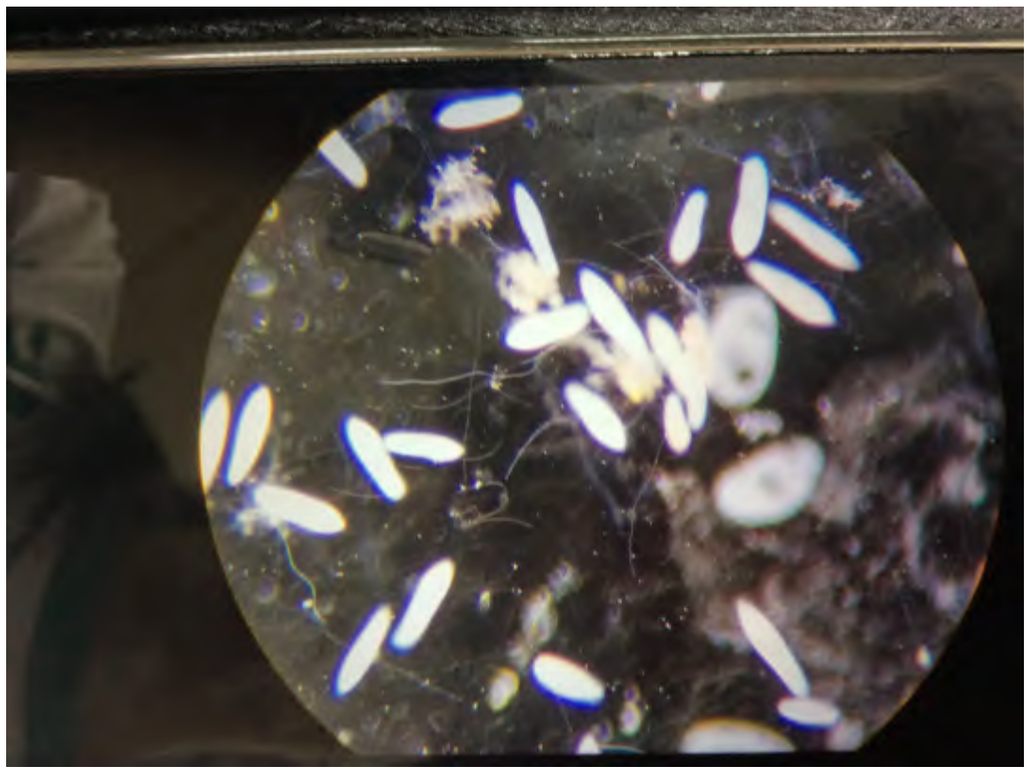
It is the simplest of all the optical microscopy illumination techniques, however it has a low contrast. It can show the intrinsic (original) colour of the sample, such as the green colour of the chloroplasts in plant cells can be shown.
Note: Samples that are naturally transparent cannot be seen well.

- Dark field

The field around the sample is generally dark, allowing the sample remains its brightness and image(the light reflects off the sides of the sample). It has a high contrast comparing to the light field.

- Phase contrast

The field around the sample is generally blue, allowing the sample remains its brightness and image. It has a high contrast comparing to the light field.



Dark field

COMPARE AND CONTRAST MICRO-ORGANISMS FOUND IN...

Similarities	Differences (Present of and associated with filamentous)	Differences (in polluted water)
Bacteria（細菌）	Spirograyra sp.（水綿）	Sphaerophyra soliformis（太陽球吸管蟲）
/	Scenedesmus sp.（柵藻）	Paramecium sp.（草履蟲）
/	Closterium sp.（新月藻）	Stylonychia sp.（棘尾蟲）

MICROSCOPE

Type of microscope	Image produced	Sample required	Disadvantages	Image magnified
Transmission electron microscope (TEM)	2-D image Black and white	Very thin specimen	Cannot examined living specimens	X10,000,000
Scanning electron microscope (SEM)	3-D image Back and white	No requirement	More training and experience to operate	X500,000
Light microscope	Colour image (Some cases)	Thin specimen	Can only distinguish between objects larger than 2um	X1000

THANK YOU