Operation of microscope

ZEISS Axiophot

Useally,zoom lens use 1x.
Optical path switching knob is push in.

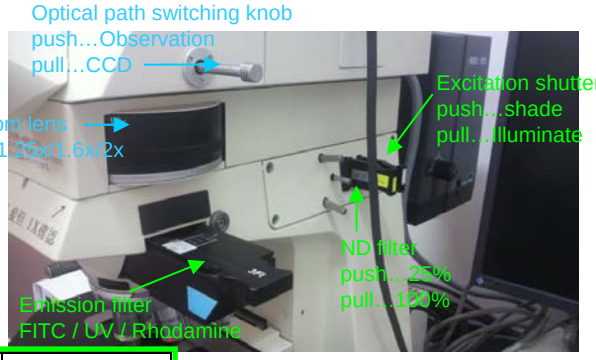
Orange…Items related to bright field
Green…Items related to fluorescence
Blue…Items related to both

<Bright field or phase difference>

1. Turn on the transmit light power switch.
   Maximize light intensity. Adjust the brightness with a ND filter.
   If fluorescence is used, push in a excitation shutter.
2. Set the position of the emission filter to UV.
3. Change the objective lens.
   Choose a green letter lens when using phase difference.
4. In case of bright field, the position of the condencer is H.
   In case of phase difference,
   change the condencer to the specified position.
   Remove the top lens below 10x.(Move the lever under the stage)
5. Set the sample with the cover glass on top. Adjust the focus.

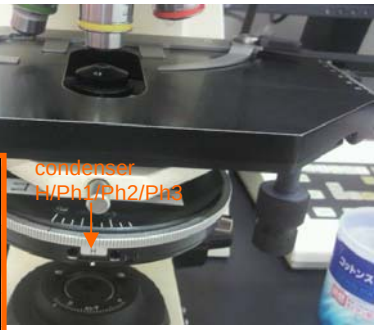
<Fluorescence>

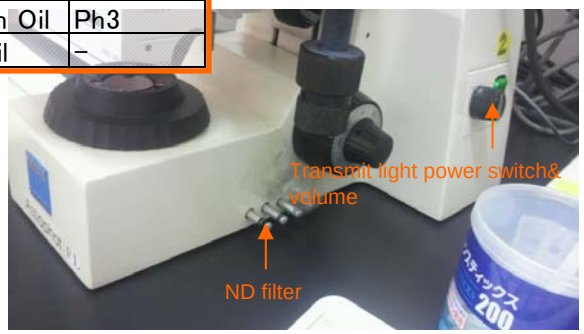
1. Turn on the mercury lamp power switch.
   If you are using transmit light,
   turn off the transmit light power switch.
2. Pull out the excitation shutter.
3. Set the emission filter to the position
   of the dye you are using.
   Adjust the excitation intensity with a ND filter.
4. Change the objective lens.
   If you only use fluorescence,
   you should choose a black letter lens.
5. Set the sample with the cover glass on top.
   Adjust the focus.



name	dye	excitation	Dichroic	emission
FITC	FITC	BP450-490	FT510	BP515-565
UV	hoechst	BP353-377	FT395	LP397
Rhodamine	rhodamine	BP510-560	FT580	LP590

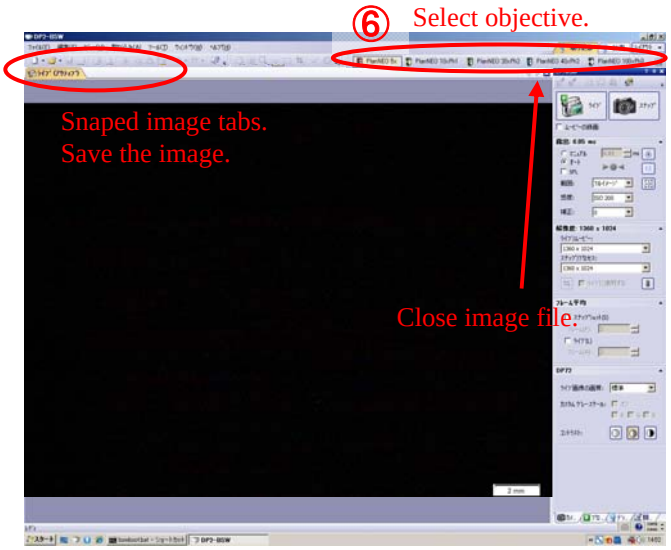
objective	condencer
x5	–
x10 Ph	Ph1
x20 Ph	Ph2
x40 Ph	Ph2
x100 Ph Oil	Ph3
x100 Oil	–





Method of camera shooting (DP2-BSW)

Optical path switching knob is pull out.



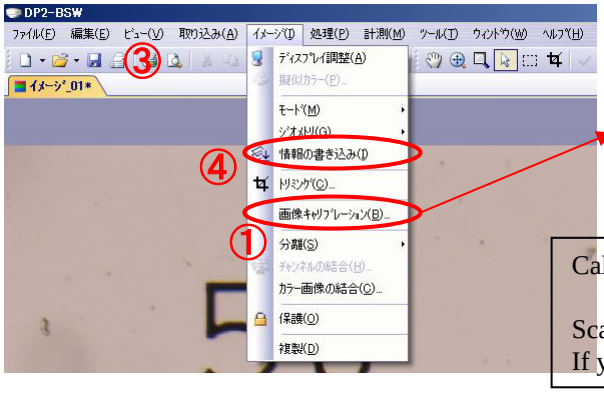
Trimming function
Trimming is enabled
when a frame is displayed in the preview.

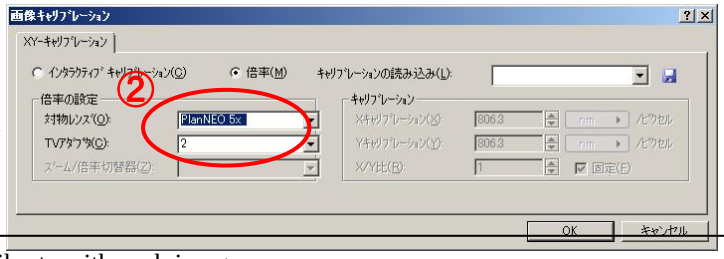
Camera shooting method

1. Launch DP2-BSW software on the desktop.
2. Change the optical path into the camera shooting. Illuminate the sample.
3. Click the live(ﾗｲﾌﾞ) button. Preview starts on another tab. [①]
4. Set the exposure(露出) setting to auto(ｵｰﾄ). (In case of fluorescent shooting, check on SFL.) [②]
5. Adjust the focus while watching the screen.
   (Use the trimming function when making fine adjustments. Release after use.) [③]
6. Set the exposure setting to manual(ﾏﾆｭｱﾙ).
   Click + or - button,and fine adjustment of the exposure. [② ④]
7. If necessary, execute white/black balance. [⑤]
   (After clicking the icon, drag the background part in the image.)
8. Select the objective lens you are using. [⑥]
9. Press the snap(ｽﾅｯﾌﾟ) button to take pictures. (A new image tab is created.)[⑦]
10. Save the image with a name. (select file(ﾌｧｲﾙ) - save as(名前を付けて保存))
    TIFF format is recommended.

Caution !! If you want to put a scale, do the method of inserting the scale bar on the next page.

How to use DP2-BSW software





Calibrate with each image.

Scale bar is not written until execute “Writing information(情報の書き込み)".
If you execute "Write information", you can not erase it.

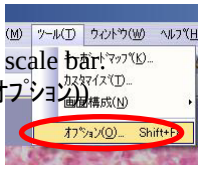
How to calibrate (Execute when objective lens is not selected)

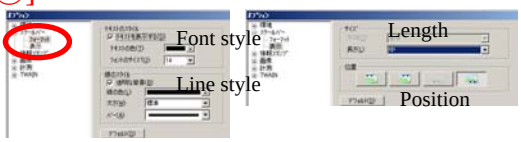
1. Display the image you want to insert the scale bar.
2. Select Image(ｲﾒｰｼﾞ) - Calibrate image(画像ｷｬﾘﾌﾞﾚｰｼｮﾝ). [①]
3. Select the objective and zoom lens from the list and press OK. [②]

How to insert a scale bar

1. Select View(ﾋﾞｭｰ) – Scale bar(ｽｹｰﾙﾊﾞｰ). Scale bar is displayed. [③]
2. Select Image(ｲﾒｰｼﾞ) - Writing information(情報の書き込み). [④]
   A confirmation will be displayed, so answer “yes(はい)".
3. Save the image with a name.

You can customize the scale bar.
(Tool(ﾂｰﾙ) – Option(ｵﾌﾟｼｮﾝ))





Measurement

※Execute image calibration first.

1. Select Measurement(計測) – Measurement tools window(計測ﾂｰﾙｳｨﾝﾄﾞｳ). Tool window is displayed. [⑤]
2. Click the shape icon you want to use. Click inside the image to write the object. Information on the object is displayed. [⑥]
   To change the color, right-click the object name in the list. Select “change color(色の変更)”. [⑦]
   To delete the object, right-click the object name in the list. Select “delete measurement object(計測ｵﾌﾞｼﾞｪｸﾄの削除)”.
3. To write an object to an image, select Image(ｲﾒｰｼﾞ) - Write information(情報の書き込み). Save the image with a name. [④]
4. If you need a list of measurements, click the export icon. Select Excel format or Text format. [⑧]
   Save the list.

<This is bright-field only>

Shading correction (Removal of luminance unevenness)

※Make the exposure of background image and sample image the same value.

1. Execute white balance with nothing put. Take a picture. (This is background image) [Camera shooting method ⑤ ⑥]
2. Take a sample picture. (If you need an image before correction, save it.)
3. The sample image and the background image must be in the image tab.(The screen display must be a sample image.) [⑨]
4. Select Processing(処理) - Image adjustment(画像調整) - Shading correction(ｼｪｰﾃﾞｨﾝｸﾞ補正). [⑩]
5. Select the background image in the “Select a correction image(補正画像の選択)” item and click OK. [⑪]
   Correction is done.(Brightness will become brighter.)