

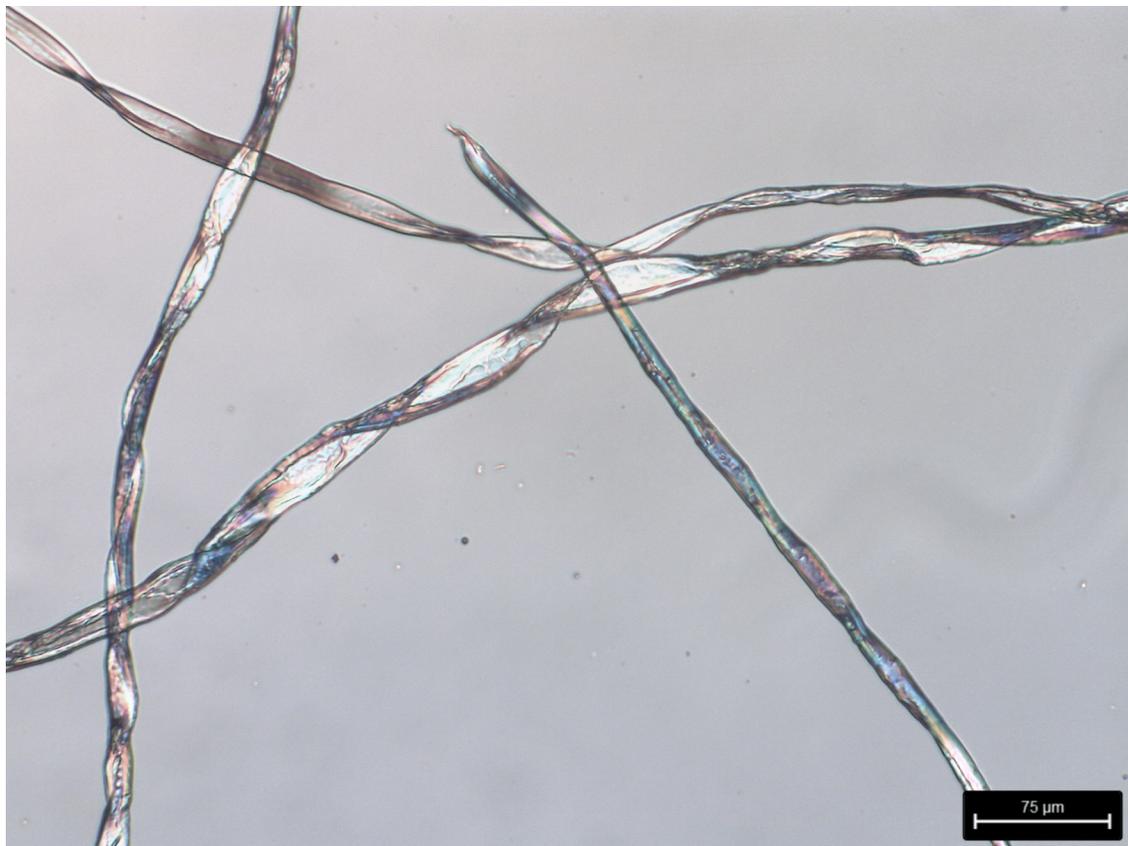
Section 13—Photomicrography

Digital Imaging Workflow for Treatment Documentation

Conservation Division, Preservation Directorate, Library of Congress

PHOTOMICROGRAPHY

Photomicrographs are produced using the compound microscope.



Photomicrograph

Section 13—Photomicrography

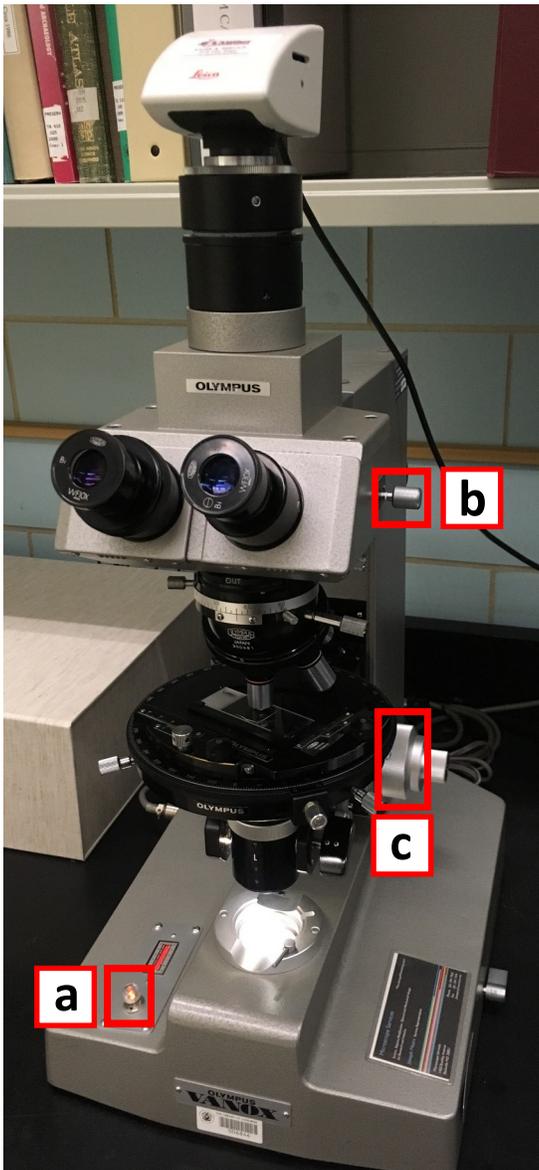


Figure 13.01



Figure 13.02

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Capture

Capture takes place in the Microscope Room. Bring your own flash drive.

Set Up

Microscope

1. Remove the microscope cover.
2. Press the button on the bottom left of the microscope to turn on the light (fig. 13.01a).
3. Position your slide on the stage under the microscope lens.
4. Change the objective to the magnification desired (10x, 20x, 40x, or 100x).
5. Push the light path selector (fig. 13.01b) in towards the microscope. When the selector is pushed in (to the white line), the light goes to the microscope eyepieces only; when pulled halfway out (to the green line), the light is split between the eyepieces and camera; when fully extended out (to the red line), the light path goes to the camera only.
6. Adjust the focus on the slide through the eyepieces using the coarse focus knob (fig. 13.01c) on the sides of the microscope. This focus will be further adjusted later.
7. Refer to the black binder labeled “VANOX Universal Research Microscope” for any further assistance needed for microscope use.

Camera

1. Turn on the LEICA camera mounted on top of the microscope by flipping the right switch on the back of the camera to *ON* (fig. 13.02a). **The camera must be turned on before opening the software.** Make sure the left switch on the back of the camera is in the *HD* position (fig. 13.02b).

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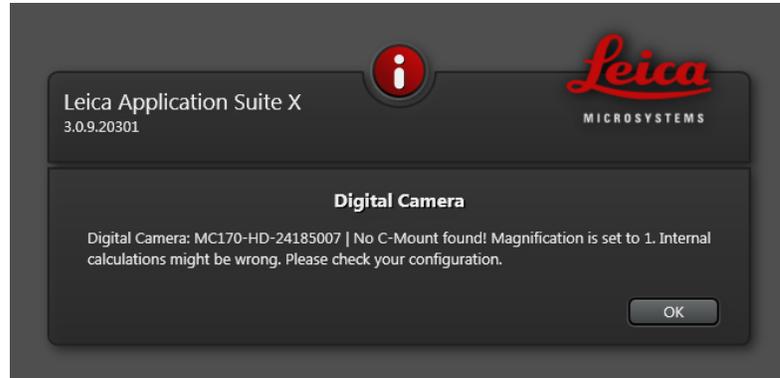


Figure 13.03

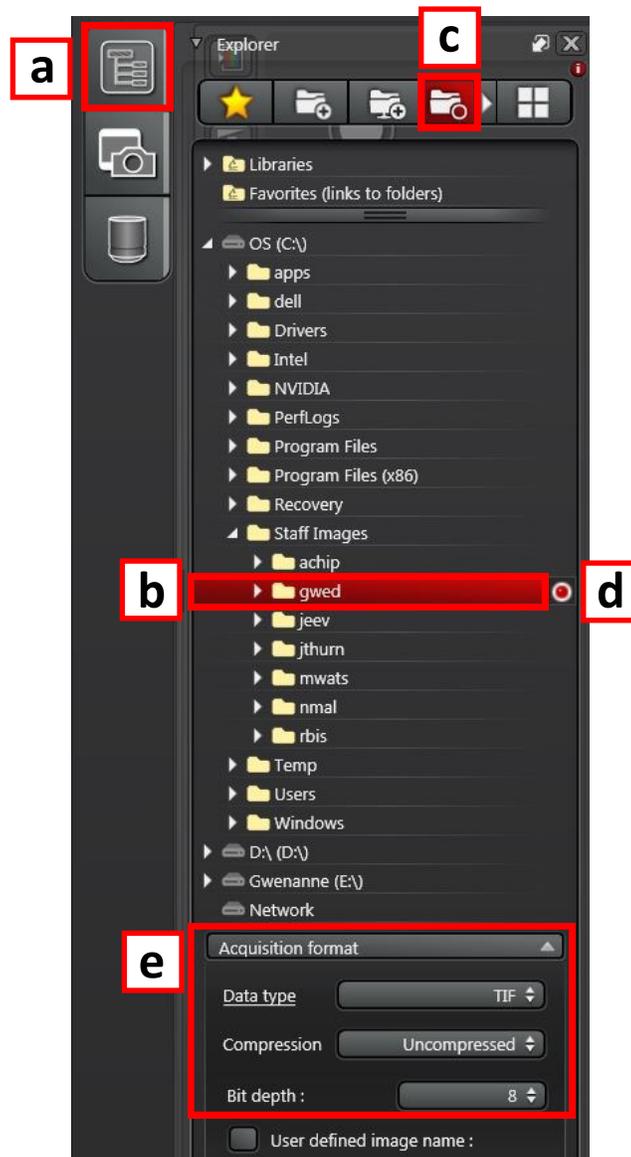


Figure 13.04

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Set Up, continued

Computer

1. Turn on the microscope computer and monitor. Turn on the mouse by pressing the power button on the bottom of the mouse.
2. Open the *PresUser* profile.
3. On the desktop, double click **LAS X**.
4. A message will appear asking you to choose configuration settings. Click *OK* or wait 10 seconds until the countdown clock reaches zero and the message disappears.
5. Click *OK* to accept the error message “No C-Mount found” (fig. 13.03).
6. Click the *Explorer* tab in the left panel (fig. 13.04a).
7. If you do not already have a folder in OS (C:\) > Staff Images, create a folder by right clicking *Staff Images* and selecting *Create a new subfolder*. Left click *New Folder* to rename the folder with your LOC user ID. You must create the folder in **LAS X**, not in Windows.
8. Highlight your folder under *Staff Images* (fig. 13.04b), then click the folder icon in the top panel with the red dot (fig. 13.04c) to select your folder as the acquisition location. A red dot will appear to the right of your folder (fig 13.04d).
9. Select the following under the *Acquisition format* drop down tab (13.04e):
 - Data Type: TIFF
 - Compression: Uncompressed
 - Bit depth: 8

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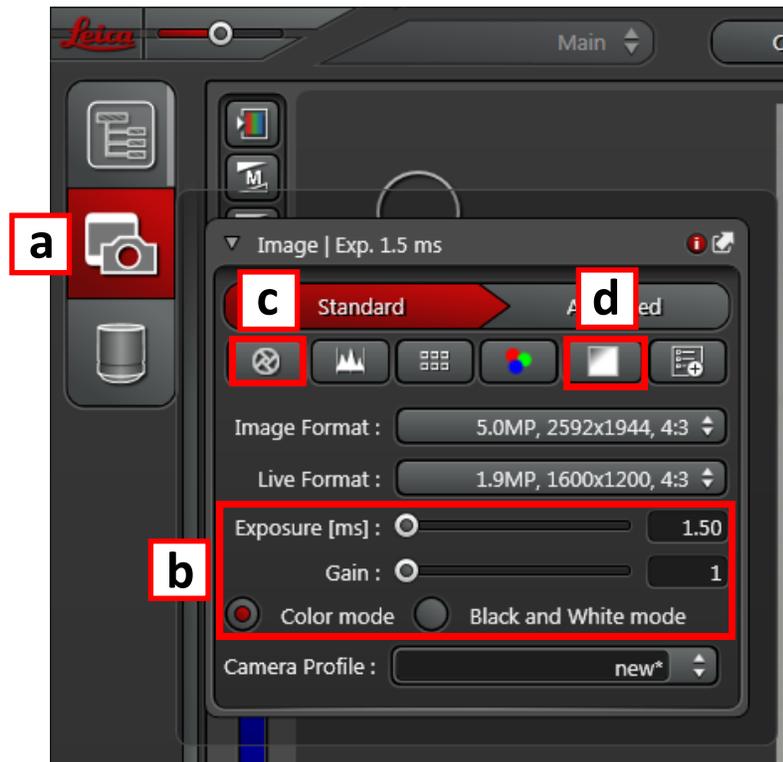


Figure 13.05



Figure 13.06

Section 13—Photomicrography

Set Up, continued

Microscope and Computer

1. Pull the light path selector on the side of the microscope fully out. The live image of your sample should now appear in **LAS X**.
2. Refine the image focus on the computer monitor by adjusting the fine focus knob on the side of the microscope.

Computer

1. In the live image, in an area of the background containing no sample, right click and drag the mouse to create a small rectangle. Select *White Balance*.
2. Click the *Image* tab in the left panel (fig. 13.05a) and set the following (fig. 13.05b):
 - Exposure [ms]: minimum value
 - Gain: 1
 - Color mode
3. In the *Image* tab, click the *Auto Exposure* icon (fig. 13.05c).
4. In the *Image* tab, click the *Linked Shading* icon (fig. 13.05d).
5. In the box that pops up, select *Activate Linked Shading Correction for acquired images* and *Activate Linked Shading Correction for live image* (fig. 13.06). Close the box. The *Linked Shading* icon in the *Image* tab should now appear green.

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Figure 13.07

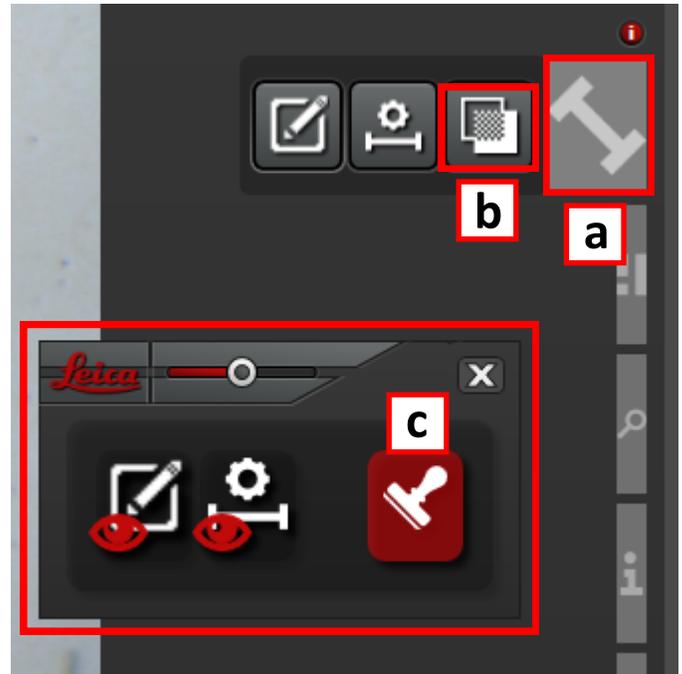


Figure 13.08



Figure 13.09

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Image Capture

1. In **LAS X**, click the *Magnification* tab (fig. 13.07a). Select the magnification level that corresponds to the objective in use on the microscope. Click *OK*. **Adjust this any time the objective is changed on the microscope to ensure accuracy of the scale bar added later.**
2. Click *OK* when asked to “Please turn turret manually to selected objective.”
3. Hover over the *Scale bar* icon at the top of the tool bar on the right panel (fig. 13.08a). Click on the *Overlay* icon (fig. 13.08b).
4. Confirm that the *Stamping* icon is red (fig. 13.08c). If it is not red, click the icon to ensure the scale bar will be added to the image. **Addition of a scale bar in the image is required.**
5. To capture the image, click the camera icon with the blue stamp in the bottom left (fig. 13.09). Confirm the magnification setting and press *OK*.

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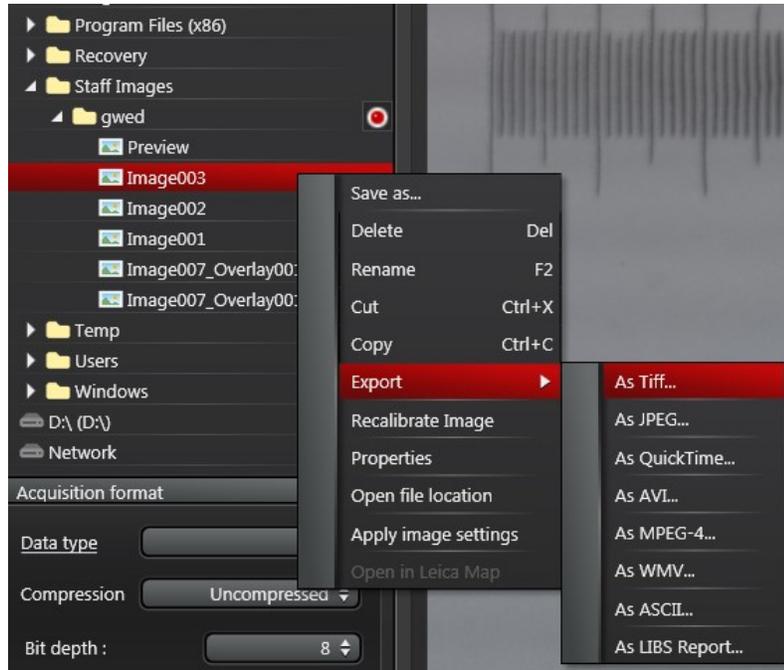


Figure 13.10

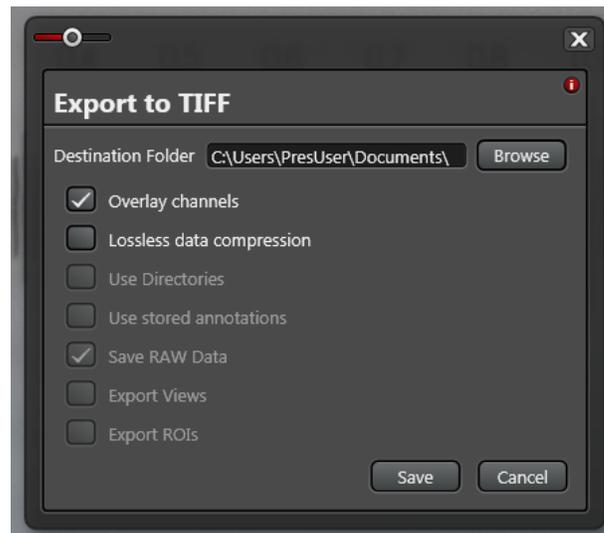


Figure 13.11



Figure 13.12

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Save Image

1. In **LAS X**, click the *Explorer* tab and navigate to your folder in *Staff Images* (fig. 13.10) .
2. Right click on the image and select *Export > As TIFF*.
3. Click *Browse* to select the destination folder. Note: The computer is not connected to the network. You will need to bring a flash drive to save your images. Select your flash drive as the destination.
4. Select *Overlay channels* and deselect *Lossless data compression* (fig. 13.11).
5. Click *Save*.
6. To capture another image, click the *Play* icon in the bottom left (13.12a) to return the screen to live (13.12b).

Finish

1. Close **LAS X** software, eject your flash drive, shut down the computer, and turn off the monitor and mouse.
2. Turn off the microscope camera.
3. Turn off the microscope light, take your slide off the microscope stage, and replace the microscope cover.

Metadata

Transfer the image(s) from your flash drive to the project folder on a networked computer. Add metadata as you would for transmitted illumination (Section 3). Rename as instructed in Section 4. No further image processing is necessary.