

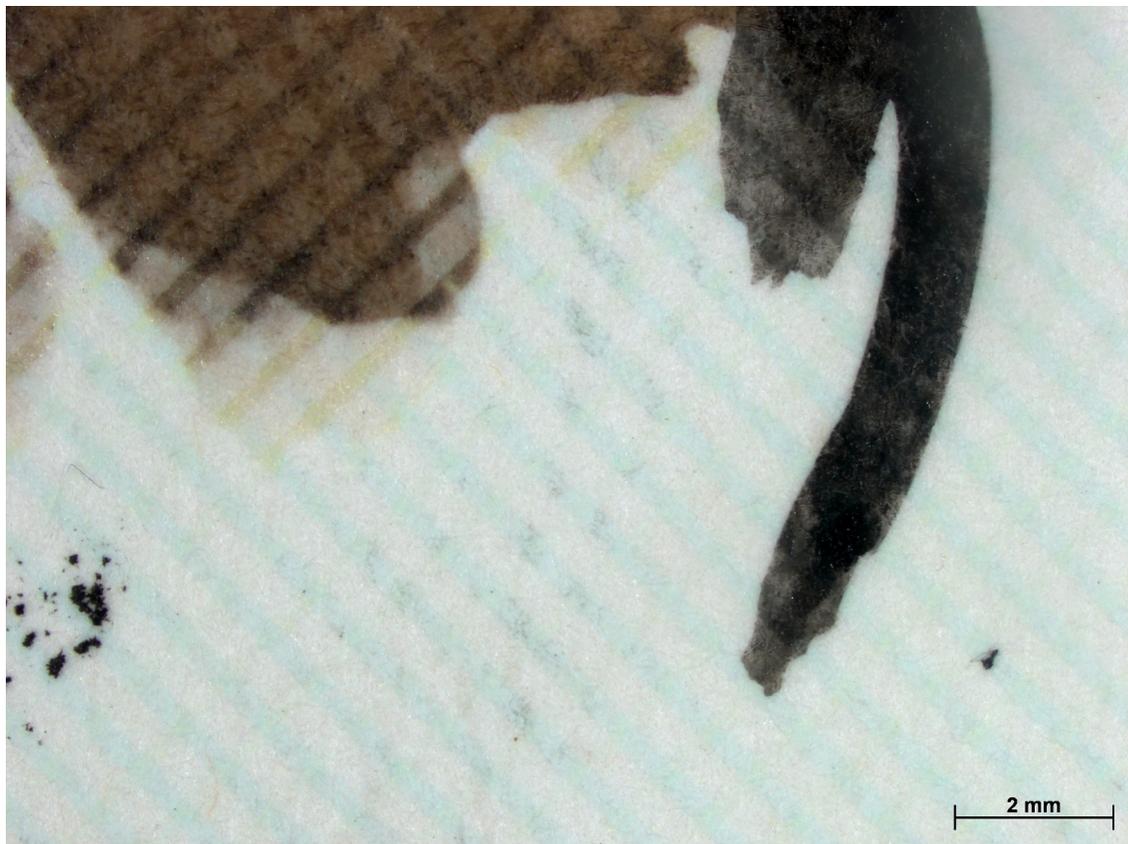
## Section 12—Photomacrography

### Digital Imaging Workflow for Treatment Documentation

Conservation Division, Preservation Directorate, Library of Congress

#### PHOTOMACROGRAPHY

Photomacrographs are produced using the stereomicroscope.



**Photomacrograph**

## Section 12—Photomacrography

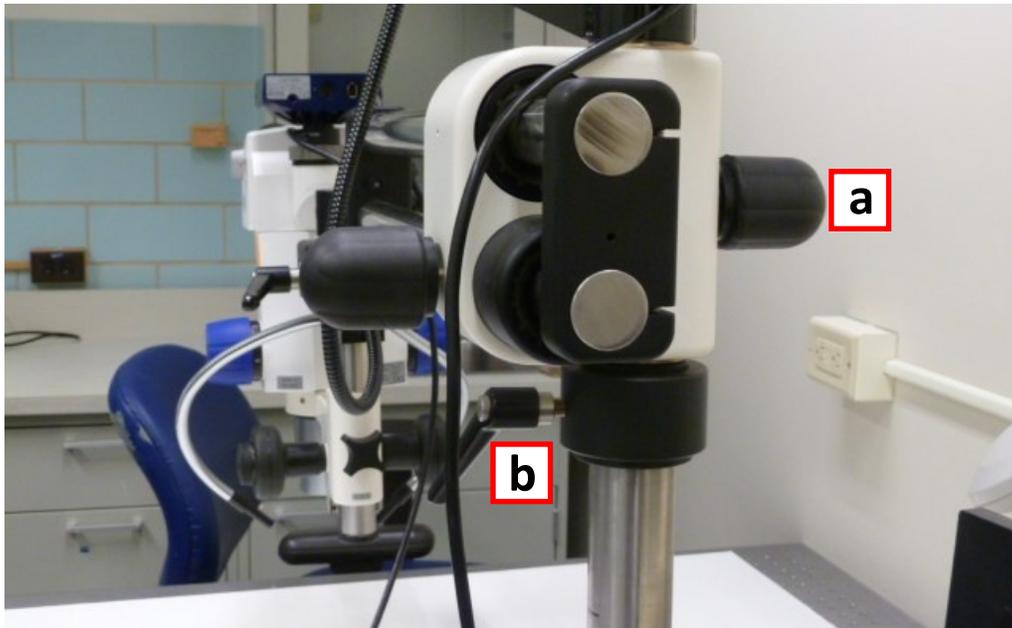


Figure 12.01

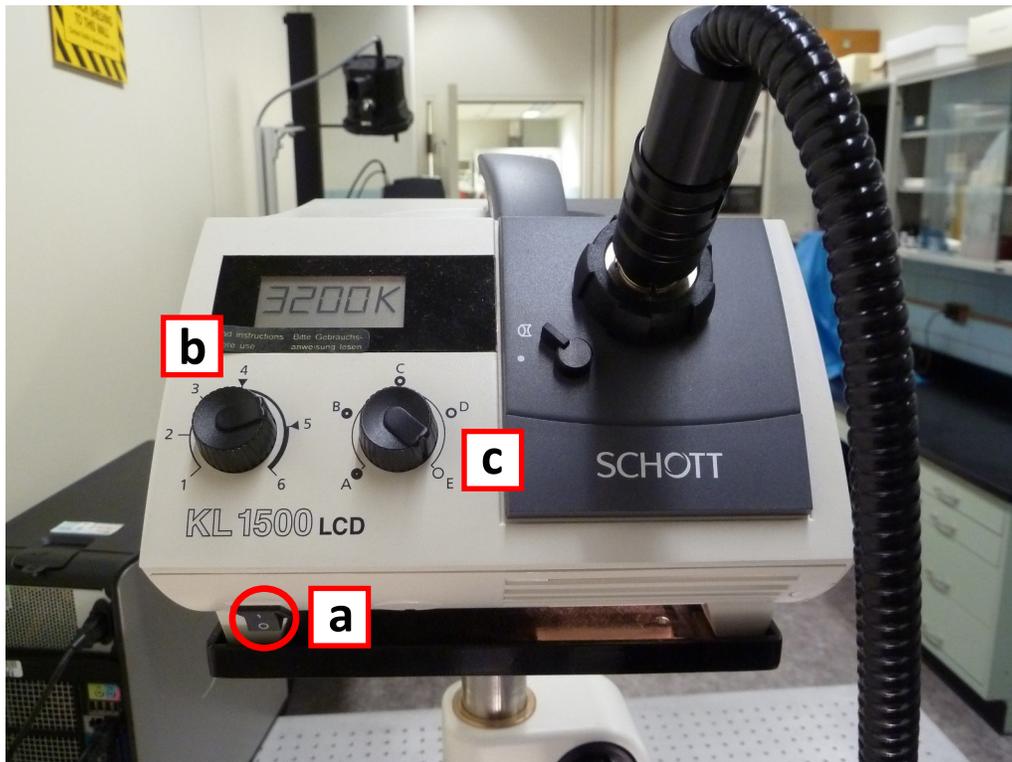


Figure 12.02

## Section 12—Photomacrography

### Capture

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

### Set Up

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#### Microscope

Adjust the height of the microscope as needed for the object to be examined/photographed. To raise or lower the boom, very carefully release both the pivot lock (fig. 12.01a) and the safety collar (fig. 12.01b). Make note of the height to replicate for during and after treatment capture.

#### Lighting

1. Turn on the Schott KL 1500 light source (fig. 12.02a).
2. Turn the left knob until the display reads 3200° K (fig. 12.02b).
3. Turn the right knob to adjust light intensity (fig. 12.02c). In general, light intensity should be set as high as possible while not losing important details in the image as seen through the monitor. Make note of the intensity setting to replicate for during and after treatment capture.

## Section 12—Photomacrography

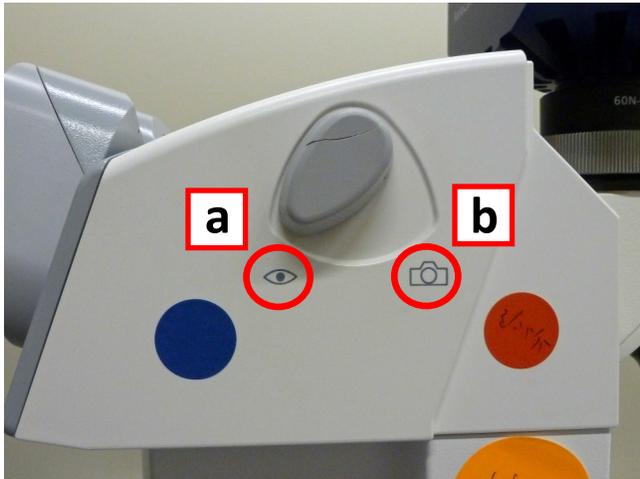


Figure 12.03



Figure 12.04

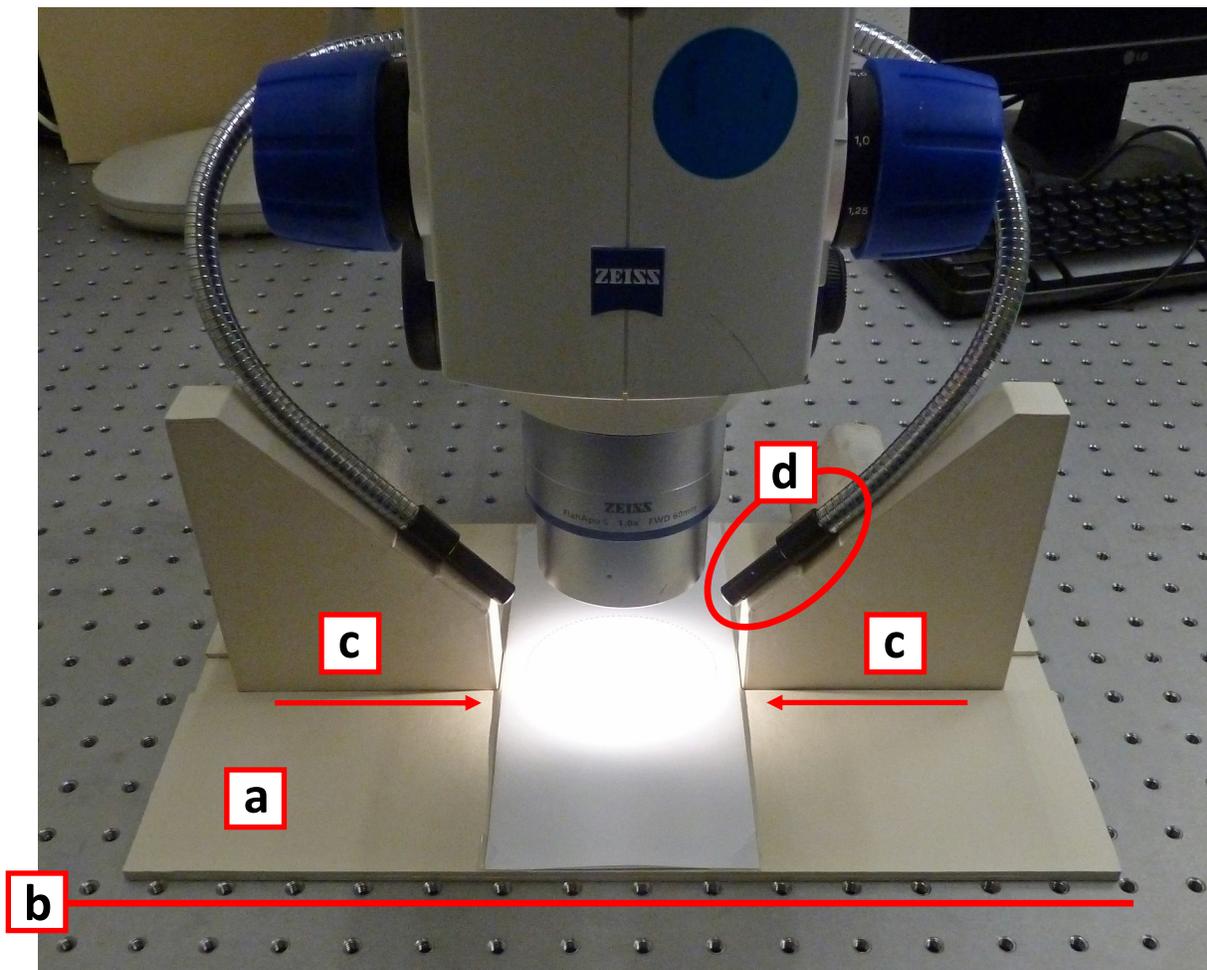


Figure 12.05

## Section 12—Photomacrography

### Set Up, continued

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#### Lighting

4. Turn the light pathway lever so that it points to the graphic of an eye (fig. 12.03a).
5. Set the microscope magnification dial to *1,0* (fig. 12.04).
6. Retrieve the lighting template stored in the wall cabinet behind the microscope.
7. Position the base of the lighting template under the microscope lens (fig. 12.05a).
8. Center the circle and crosshairs on the template in the field of view. Make sure the template is positioned squarely by using the holes in the tabletop as a guide (fig. 12.05b). Put weights on the upper corners to keep the template from shifting.
9. Slide the light positioning guides (fig. 12.05c) into the slots on the template, moving them all the way in toward the center.
10. Adjust the arms of the lights to rest on the guides (fig. 12.05d), which are constructed to fit the profile of the lights. This centers the lights, fixes the distance between the lights and object, and fixes the angle of the lights at about 45°.
11. Once the lights are positioned, return the template to the wall cabinet.
12. Turn the light pathway lever so that it points to the graphic of a camera (fig. 12.03b).

# Section 12—Photomacrography



Figure 12.06

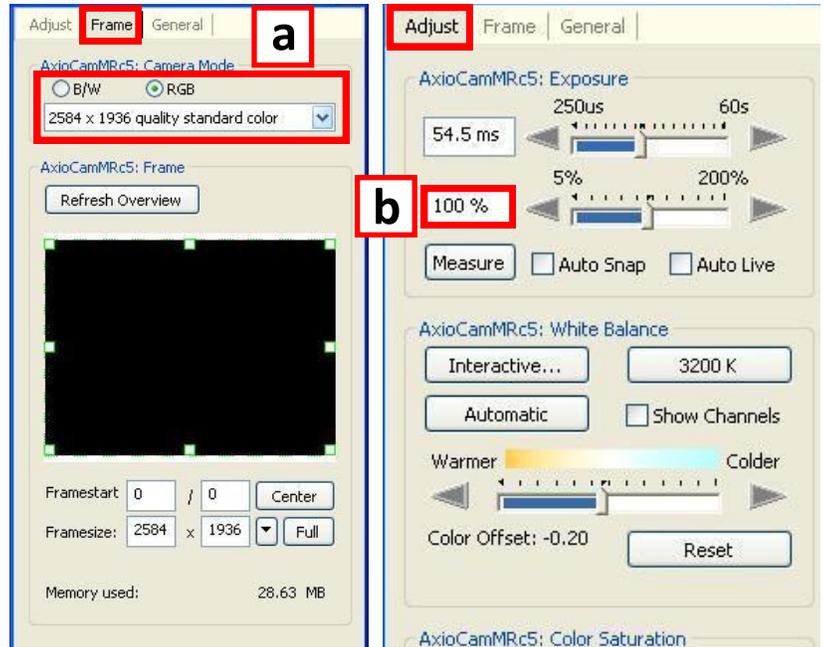


Figure 12.07

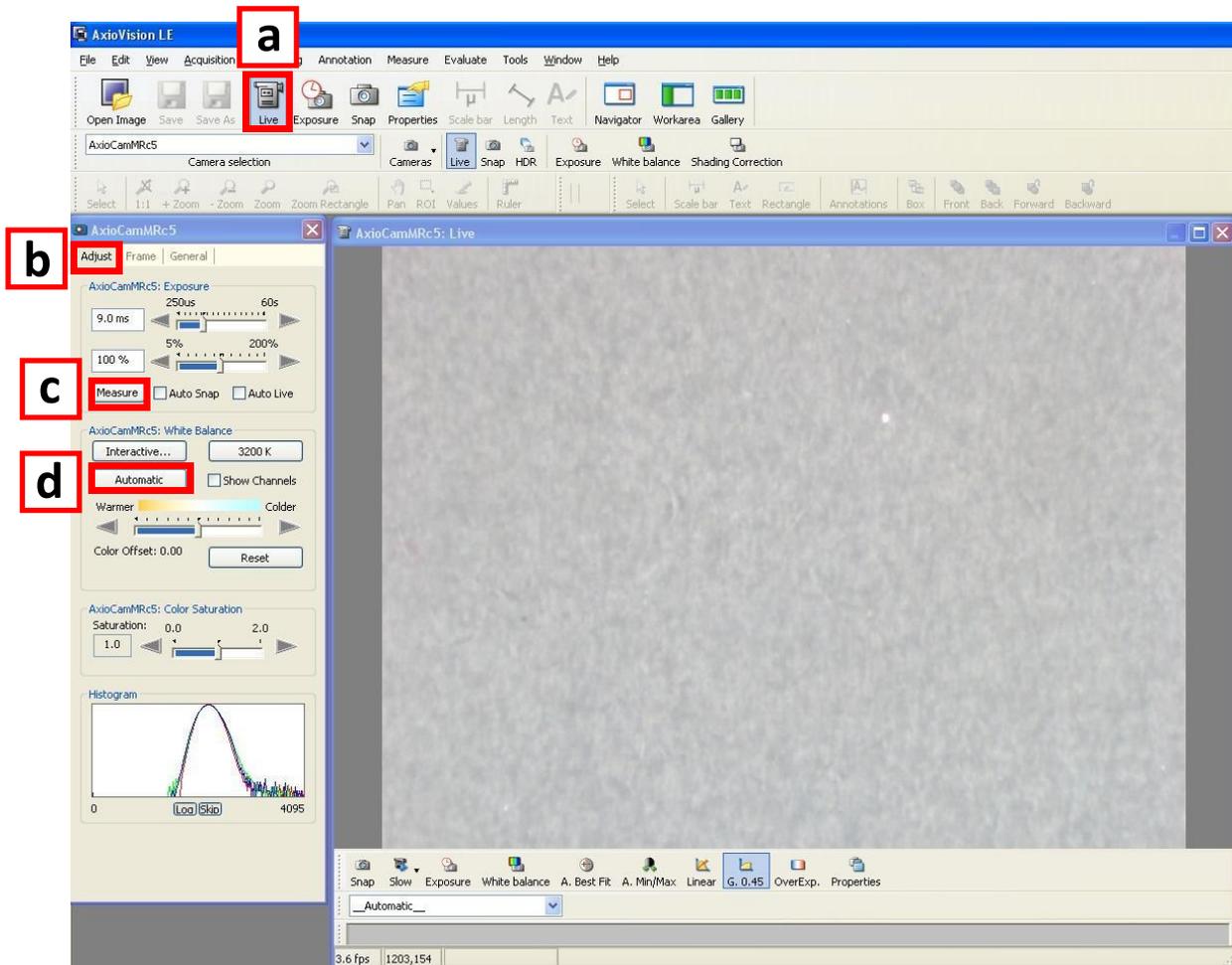


Figure 12.08

## Section 12—Photomacrography

### Set Up, continued

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#### Computer

1. Turn on the microscope computer monitor.
2. Open *Desktop* > **AxioVision Rel. 4.8**.
3. Click *Cameras* → *AxioCamMRC5* (fig. 12.06a).
4. In the *Properties* box:
  - Under the *Frame* tab: Select *RGB* and *2584 x 1936 quality standard color* (fig. 12.07a).
  - Under the *Adjust* tab: Set exposure to 100% (fig. 12.07b).

#### White Balance

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1. Retrieve the digital gray card stored in the wall cabinet behind the microscope. Center the gray card under the microscope lens.
2. Turn off the overhead light.
3. In **AxioVision**, click *Live* (fig 12.08a).
4. In the *Properties* box, under the *Adjust* tab (fig. 12.08b):
  - Click *Measure* (fig. 12.08c) to ensure correct exposure when white balancing.
  - Click *Automatic* (fig. 12.08d) to white balance.
5. Return the gray card to the wall cabinet.

## Section 12—Photomacrography

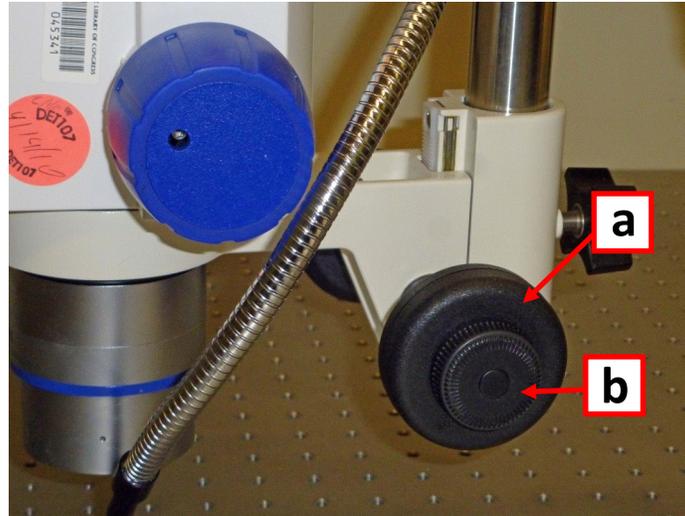


Figure 12.09

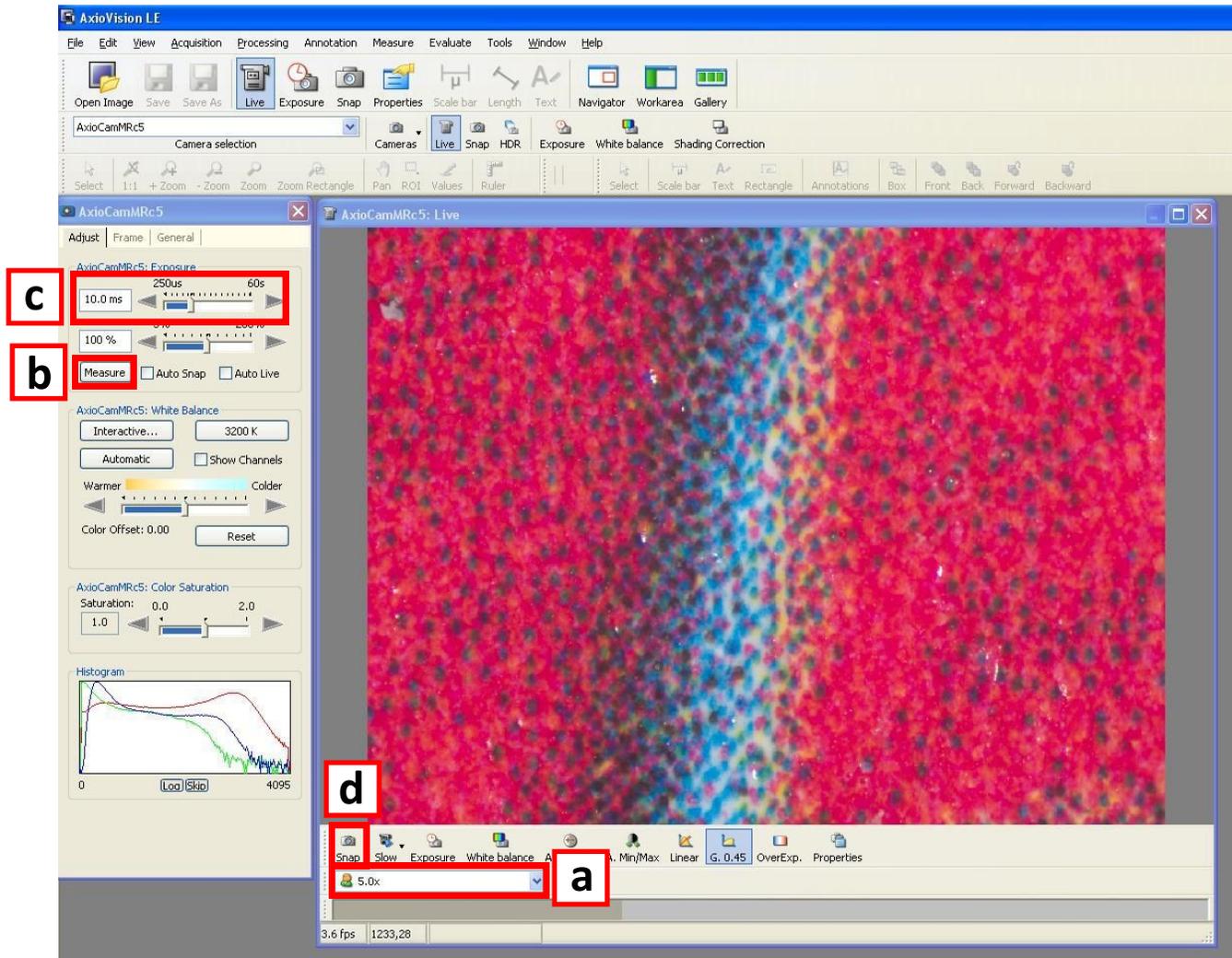


Figure 12.10

## Section 12—Photomacrography

### Image Capture

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1. Position your object under the microscope lens.
2. Select the desired magnification using the microscope magnification dial (fig. 12.04).
3. Focus the image that is displayed on the monitor using the coarse focus knobs (fig. 12.09a) and the fine focus knob (fig. 12.10b) on the microscope. Do not adjust focus by looking through the eyepieces.
4. In **AxioVision**, match the magnification level to what is set on the microscope (fig. 12.10a).  
**Adjust this anytime the magnification level is changed on the microscope to ensure accuracy of the scale bar added later.**
5. Click *Measure* (fig. 12.10b) to auto adjust exposure. If necessary, manually adjust exposure by changing the exposure time (fig. 12.10c).
6. Click *Snap* (fig. 12.10d).

# Section 12—Photomacrography

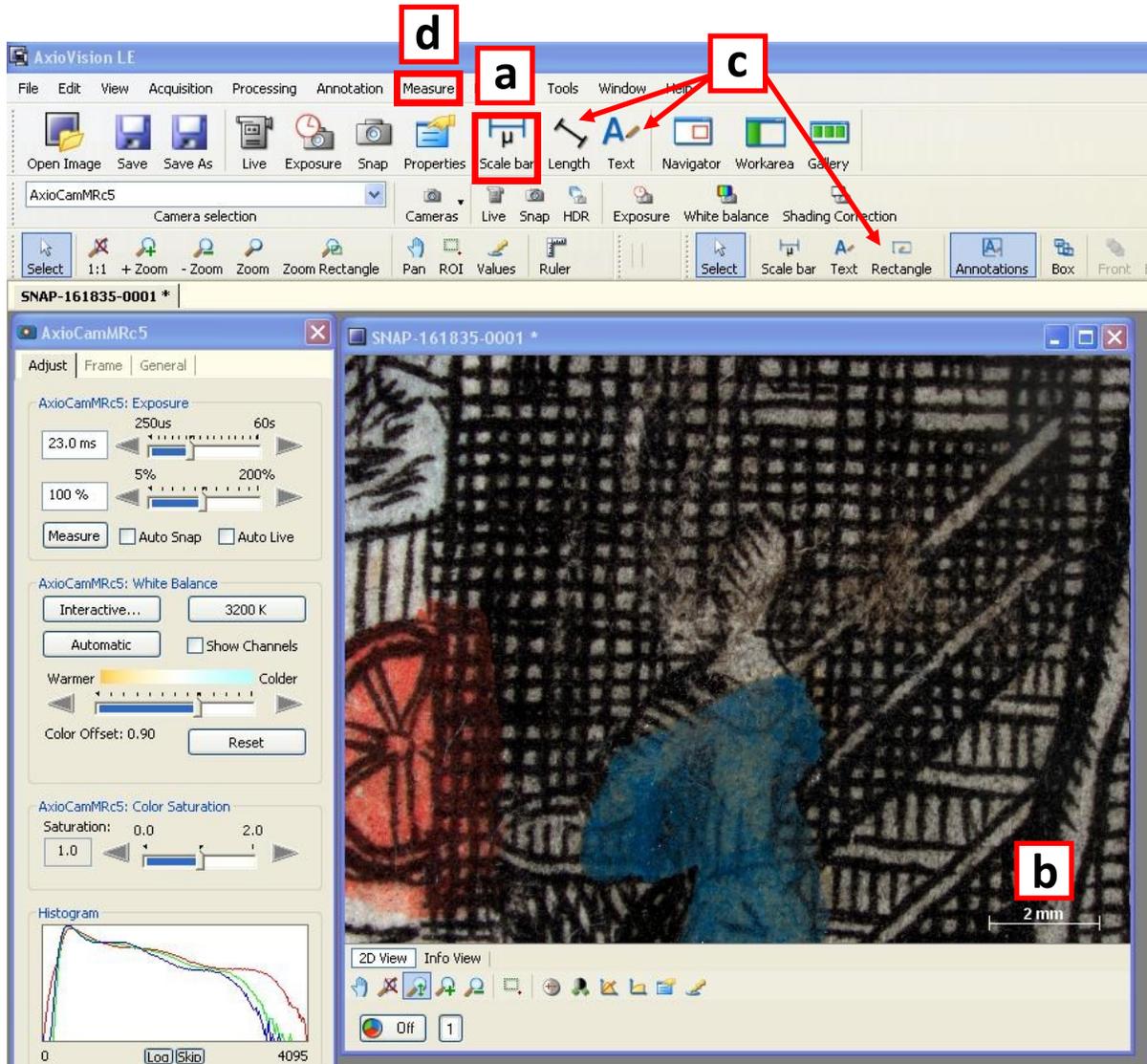


Figure 12.11

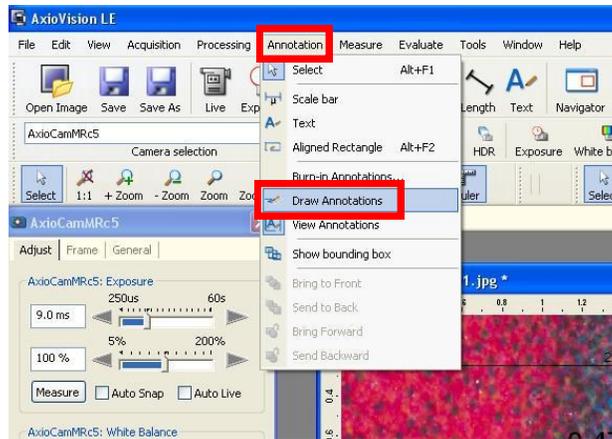


Figure 12.12

## Section 12—Photomacrography

### Annotate Image

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1. In **AxioVision**, the captured image will appear in a new window.
2. Click *Scale bar* (fig. 12.11a) and draw a scale in the image (fig. 12.11b). **Addition of a scale bar in the image is required.**
3. Optional annotations include: *Length*, *Text*, and *Rectangle* (fig. 12.11c), as well as *Outline* and *Angle* found under *Measure* (fig. 12.11d).
4. To edit annotations, click *Annotation* → *Draw Annotations* (fig. 12.12). A new window with the captured image and all annotations added will open. Edit font style, size, and color; line style, weight, and color; fill color, etc.

## Section 12—Photomacrography



Figure 12.13



Figure 12.14

## Section 12—Photomacrography

### Save Image

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1. In **AxioVision**, click *Save* (fig. 12.13).
2. Navigate through to *Desktop > Staff Images > [your folder]*. Create a new folder in *Staff Images* if you do not already have one.
3. Follow the standard file naming protocol (pg. 4.13).
4. Choose *Tagged Image File (\*.tif)* file format (fig. 12.14a).
5. Check *Burn-in annotations* to save annotations on image (fig. 12.14b).
6. Click *Save*.
7. Copy and paste the image(s) onto your flash drive, as the computer is not connected to the network.

### Finish

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1. Close **AxioVision**, eject your flash drive, and turn off the computer monitor.
2. Turn off the microscope light 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 normal illumination (Section 3). Rename as instructed in Section 4. No further image processing is necessary.