

SOP 20: Ethanol-preserved specimen imaging

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initiated: 11 October 2018
updated: 27 January 2020; 20 March 2020

Preamble

This document describes our approach to capturing ethanol-preserved specimen data and, if necessary, replacement of specimens into archival storage. There are instructions for how to capture images, upload them to TaxonWorks, and how to upgrade vials

1 Setting up your workspace for image capture

Turn on the Interfit lights and let them warm up for 10 min. Now make sure you have all the required materials and equipment:

1. PSUC_FEM identifier labels
2. *current* metadata (minimally the name of the photographer/digitizer, date of imaging, and that these are specimens from the Frost Entomological Museum (PSUC))
3. Waste ethanol container
4. Ethanol ~80% concentration in squirt bottle
5. Gloves
6. Soft forceps
7. Archival vials (large and small, depending on specimens) and storage boxes
8. Camera with SD cards
9. Photo grid with color palette and ruler (see Figure 1)
10. Glass disposal container, for any old jars and vials

2 Imaging workflow

2.1 Archival vial and specimen tray setup

Select a number of new archival vials equal to the number of older vials that are planned to be replaced and fill the new vials about $\frac{3}{4}$ of the way with Ethanol. Take a clean specimen tray and fill with $\frac{1}{3}$ of the way with Ethanol.

2.2 Photography setup

Stage the camera pointed down at the photo grid (seen below). Place diffused light as needed around the photo staging area.



Figure 1. Photo jig with correct label, specimen tray, and color palette placement

Before a photo is taken, the jig should be set up as follows:

- Top left:** Locality label (should be placed on the left)
- Top center:** Determination label (placed along left margin)
- Top right:** Color standard (oriented in bottom left corner, with specimens spread out)
- Bottom left:** Specimen tray (oriented in upper right corner)
- Center:** PSUC_FEM catalog number (oriented in upper left corner)
- Center right:** ruler (along left margin)
- Bottom right:** Digitization metadata label (oriented in upper left corner)

2.3 Specimen preparation

Take the specimens out of the old vial/container and place them into the ethanol-filled Petri dish, arranged close to upper right corner of the dish but spread out. Place the tray in the correct location on the jig. Take the labels out and place them in the correct locations on the photo jig.

If ethanol looks cloudy or colored (tan, brown, purple, ... not clear) dump out the old ethanol into an ethanol waste container. **Be sure not to lose specimens in this process!**

If the vial is degraded or non-archival place it into the glass disposal container, and place the old, non-archival cap in the trash. **Before disposing these items, check to see if they have and identification information written on them. If they do, transcribe this information onto**

lab tape and stick the tape to the new container. These will be replaced with Brady labels at a future date.

2.4 Taking the photo

Turn on the camera and make sure it's focused. See Figure 2 for relevant controls. Make sure the jig is properly framed. Take the photograph by pressing the remote button (Figure 2, right).



Figure 2. Camera controls.

2.5 Specimen replacement

Remove the specimen jig from the photo grid and place all specimens back into their vial (or a new archival vial). Put the locality label, determination label, and PSUC_FEM catalog number into the new vial.

IMPORTANT: Do not leave any of the labels on the photo grid or further pictures will be unusable!

Fill the remainder of the vial with ethanol and close with an archival cap. There should be no air bubbles. Place the full, new vial into the proper storage box.

Dump the Petri dish ethanol into the ethanol waste container, and grab a new Petri dish.

3 Image file management

3.1 Image transfer and management

After taking several hundred images or when you reach a good stopping point it's time to transfer the images from the camera to a computer:

1. Remove SD card from the camera (you might need to remove the camera from the copy stand for this) and insert into a computer
2. Create a new folder on the computer and name it after the taxon you images, something like "Opiliones1" or "Araneae5"
3. Drag all relevant photos from the SD card into the new folder
4. From that folder select all images and open in a program like Preview. Look through them and delete any that are badly out of focus or which are duplicates or otherwise inappropriate
5. Open a text editor, like TextWrangler, and create a new file that has a single space in the body. Save this file as "AAA_ReadMe.txt" in the folder with the images.

3.1 Image upload

Once the images are ready and in place with the readme file you are ready to upload it to our Dropbox repository for our colleagues at TaxonWorks to queue for the database. Find the FrostDigitization directory and drag your folder into it. You're done!