SOP 21: Digitizing slides with flatbed scanner
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Preamble

The purpose of this SOP is to describe the process by which we scan microscope slides for the purpose of digitizing them. This protocol is adapted from the Illinois Natural History Survey’s method: https://www.idigbio.org/content/slide-scanning-protocol

Procedure

1. Prepare your imaging station
   a. Sign into the computer
   b. Turn scanner on
   c. You have magic erase foam, a roll of adhesive catalog numbers, and fine-tipped forceps
   d. Get your metadata label for the today
2. On the computer, open Preview (in applications in Finder)
   a. Select “File” => “Import from Epson Perfection V600” and a new window will pop up
   b. Check the settings, which should be as follows: Colors = Millions; Resolution = 600 dpi; Format = TIFF; Unsharp Mask = Medium
3. Retrieve slides from the collection room. It’s best to start with one tray at a time from the slide cabinet or a couple slide boxes from the shelf
4. Prepare slides for scanning:
   a. Use the foam eraser to clean areas on slide where you will attach PSUC_FEM catalog numbers. Clean all sides on tray before moving to next step.
   b. Move one slide at a time and place on Kimwipe (so the slide doesn’t touch grunge on the desk). With forceps, pull a PSUC_FEM catalog number label off of roll and place onto slide. Make sure the number is oriented horizontally if possible and is primarily on the glass
   c. After applying catalog numbers to 18 slides move them to scanner upside down. Important! Organize the slides so that the catalog numbers are sequential (Figure 1)

NB: When deciding which slides to scan together consider that downstream processes will be much easier if the slides are the same. For example, if all slides are of the same species and/or the same collecting event further digitization will be trivial. A hodgepodge of species and collecting events requires more human processing downstream.
7. Fix metadata label and Image registration items in place (upside down) with sticky note so they don’t shift between scans
8. In the Preview window, click on ‘Overview’ to see what will be scanned. Reduce the size of the selected rectangle to include only the Image metadata, Image registration, and imaged slides.
9. Click ‘Scan’ to scan the slides, and save the image in the folder on the Desktop and label the image with your last name and the date (e.g., “Smith4March2020”).
10. To remove slides, lift the scanner lid slowly, because sometimes the slides stick to the top of the scanner lid
11. Gently place scanned slides back onto their tray or inside their slide box or on tray

Notes and hints (again)
- Consider scanning slides that represent a single species. If we only have one slide for each species that needs to be scanned consider scanning a batch for each genus
- Consider scanning sides that are all from the same collecting event if possible
- The more consistent we can make data across slides in a scan the more completely digitized they will be when uploaded