Image-capture Protocol

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This protocol is a modified version of the one used by the Marshal University herbarium (MUHW). It is based on the use of a Canon EOS 5D Mark III digital camera body with a Canon 50mm f/2.5 EF compact macro lens. A Photo-eBox Bio light box is used with a Kaiser RS 1 copy stand.

1. Turn the camera ON.
   a. This should automatically open the EOS 5D Mark III (Canon camera) utility.
   b. Make sure the Image Orientation icon (small box with arrows around it) in the upper right-hand corner of EOS Utility has been clicked to set orientation upright. This should only need to be done once. It is important to complete this step to ensure that your images are oriented correctly.
2. Remove the lens cap from the camera. Put it someplace safe.
3. Turn on the Photo-eBox POWER switch
   a. The other switches are already set. Do not change them.
4. Determine which folder is next in line to be imaged. It should be the next folder down in the 'Pre-imaging' cabinet or cart. Remove ONE folder at a time only.
   a. This protocol assumes that the barcodes are already physically affixed to the specimens as part of pre-digitization curation. See the SERNEC Barcoding Protocol document for more information about that process.
   b. Keep in mind that it is best to image entire folders during a session and not leave a folder partially imaged.
5. Click on the folder icon in the EOS utility. This will open the preferences menu.
   a. Click on the 'Destination Folder'
   b. Click on the browse button
   c. Navigate to the correct folder (or make a new one if appropriate). It is recommend that images be organized in folders of approximately 200 images. This can be taxonomically (e.g., Family) or by date.
   d. Click 'New folder' to make a new folder for this session.
   e. Rename the new folder. Do not use spaces in your folder names.
6. Place the first specimen in the Photo-eBox
   a. Line up the specimen as precisely as possible with the guide sheet already present.
   b. Fragment packets (if present)
      i. If there are only plant fragments in a packet and the vast majority of the specimen is on the main sheet, leave fragment pack closed and image entire sheet.
      ii. If fragment packet contains the entire specimen and the label is in bottom right corner, then open packet, place weights on corners and take image.
      iii. If packet contains information on outside (label, additional specimen data), then take two images, one with the fragment pack closed so the label data/additional data is showing and then one image with the fragment pack open so the actual specimen can be seen. Note that you will have to adjust the file names accordingly since you don't want two different images with the same name.
   c. Close the eBox doors completely to block ambient light from the front.
7. Snap a photo using the remote shutter control or mouse as applicable
   a. This action should automatically open the folder you just made
      i. Double-check this to make sure you will be working in the intended folder!
8. After your first photo, you must check your 'color balance.' This should be done prior to every imaging session.

    a. Open a document called 'Imaging Manual' and navigate to page 19. Follow the instructions precisely until page 30. This document can be downloaded from tcn.amnh.org/documents/Imaging%20Manual.pdf?attredirects=0&d=1

    b. Color balancing should be completed at the beginning of every session.

    c. Color balancing should be checked using the color checker approximately every 25 images.

9. Once you are able to take a color-balanced image, take your first 'real' image.

    a. Be careful to note which thumbnail is your new image.

    b. Select that image by clicking once.

10. Name files in one of two ways:

    a. Open the Rename Tool:

        i. Go to Tools → Start renaming tool, or Alt+R

        ii. Click in the barcode field (top left of the window).

        iii. Scan the barcode of your herbarium sheet; it should automatically change to the barcode on your specimen. Double-check that this is the case. It is strongly recommended that you do not use spaces in your file names.

    b. Name files sequentially (this method is fastest, but only works if only one imaging station is used for the entire collection and specimens are *always* imaged in order according to barcode number (ABC_000001, ABC_000002, etc.)

        i. In EOS Utility, open the Preferences menu by clicking the folder icon.

        ii. Select the File Name tab.

        iii. In the drop-down, select Prefix+Number.

        iv. In Prefix, type your institution's herbarium code.

        v. Select the appropriate number of digits for your barcodes and the starting number. Verify the example shown matches what you expect your first file name to be.

        vi. Disclaimer: Turn off this functionality every time you are taking 'test images' as in steps 7 and 8, or reset to the correct number when you are ready to begin taking 'real' images again.

11. Skeletal data to be recorded for each image

    a. See the SERNEC skeletal data entry protocol document.

12. Stamp or mark specimen to indicate the specimen has been imaged

    a. Once you have confirmed that your image is in focus and that the file name was recorded successfully, then stamp or mark the specimen to indicate that is has been imaged

    b. Place the imaged specimen in a new pile and move on to the next sheet.

13. Repeat steps 5-12 until you complete your current folder.

14. File your completed folder in the designated post-imaging area.

15. At the end of your session:

    a. Close the software using the red 'x' at the top right of each software window

    b. Turn the camera off

    c. Replace the lens cap

    d. Turn the power button on the Photo-eBox off.

    e. Clean up.