Canon Lightbox System Manual

Created: November 2013 by Stephanie Ware

Revised December 2014 by Daniel Le

Components of Herbarium Digital Imaging Station at Field Museum

 Photo E Box Plus 1419 NYBG Modified

OR Technologies

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Chula Vista, CA 91914

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neuman@mkdigitaldirect.com [Ruben Neuman – President

Price: **$1795** as of 09/2014 Shipping to Chicago: **$145**

*When ordering specify clearly and emphatically that you do not want the middle feet on the bottom of the unit (they cause an imbalance when placed on the copy stand)

**This is a small company and the lead time can be up to and over a month!!!

*** The doors do no come with handles we have found the following to be a great solution:

Clear Acrylic Stick-On Mirrow Knob 1-3/4” square

Amazon: **$10.95** (two-pack)

The following equipment was purchased through B&H: www.bhphotovideo.com

Kaiser Copy Stand RS 1 with RA-1 Arm, 40" Counterbalanced Column and 18 x 20" Baseboard B&H # KACSRS1RA1 Mfr # 205510 **$595.00**

Canon Eos 6D Mark II digital camera body: B&H # CAE6D Mfr # 8035B002 **$1799.00** ***Mail-In Rebate: $300.00 Price after rebate: $1,499.00 Offer ends JAN 3 '15***

Canon EF 50mm f/2.5 Macro lens: B&H # CA5025MEF Mfr # 2537A003 **$299.00** ***Mail-In Rebate: $30.00 Price after rebate: $269.00 Offer ends JAN 3 '15***

Canon AC Adapter Kit ACK-E6: B&H # CAACKE6 Mfr # 3351B002 **$119.00**

Kaiser Extension Arm for Camera Mount: B&H # KAEA Mfr # 204455 **$158.50 *****Part difficult to obtain at the moment - backordered***

Vello Three-Axix Hot-Shoe Bubble Level: B&H # VEBLHS3 Mfr # BL-HS3 **$21.50**

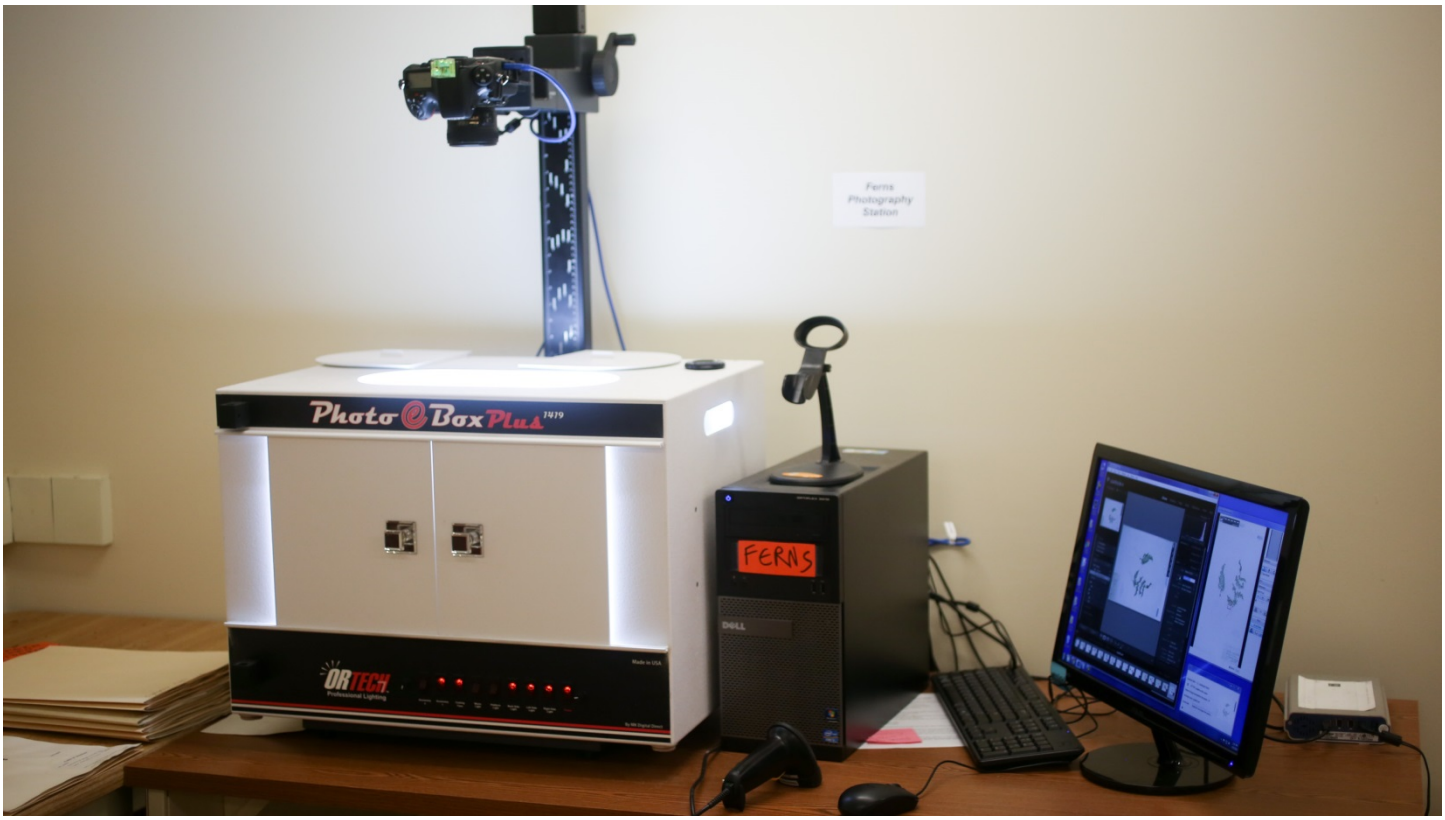
ACCESSORIES:

ColorGauge Nano Target: **$195.00**
www.digitaltransitions.com/product/targets/colorgauge-nano-target

Logo Ruler

For a more comprehensive list of equipment options iDigBio’s Joanna McCaffrey has compiled an extensive list of options at:
https://www.idigbio.org/sites/default/files/workshop-presentations/small-herbarium2013/iDigBioImagingEquipmentRecommendations1_0.pdf

Setting up Your Lightbox Imaging Station



The physical setup of the lightbox system is fairly straight forward. The lightbox sits directly on top of the stage of the camera copy stand. For this reason, when ordering your Lightbox, you must request it without feet. Otherwise the feet will cause the entire lightbox to wobble terribly on the copy stand stage.

The knobs included in the equipment list will need to be attached manually to your taste and preference.

The Lightbox will also include a 3rd panel in the middle of the 2 sliding doors that will not be necessary for imaging specimens.

On top of the copy stand, the camera is attached using the tripod thread located the base of the camera to the RA-1 Kaiser arm. This arm can be detached to accommodate the highly recommended Kaiser Extension Arm. Without the Extension Arm, a series of screw adapters will be required to extend the camera out far enough to view through the Lightbox opening.

Before attaching the camera to the copy stand, make sure you have the power adapter inserted into the battery compartment of the camera as well as the hot shoe level attached, and USB plugged into the camera. A battery can be used in place of the AC power adapter but will require frequent removal of the camera from the copy stand for battery charges.

Programs and Software

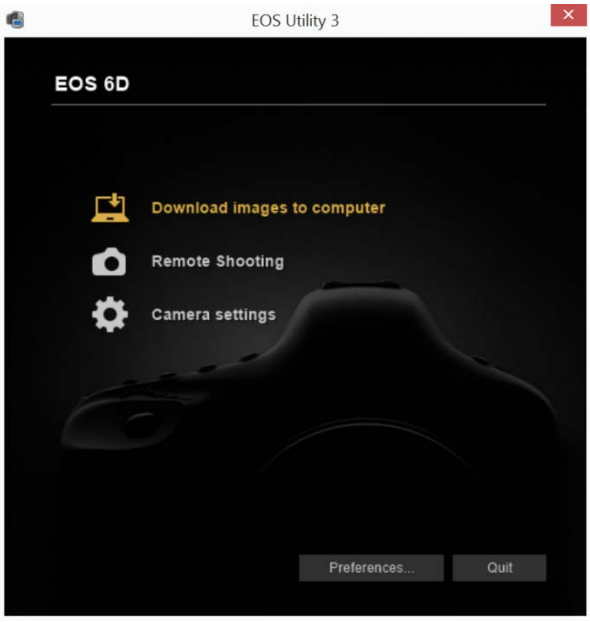
Your computer will require at the very least, two programs in order to operate efficiently: EOS Utilty (included with Canon Camera; in the event the disk is lost, can be downloaded from Canon's website free of charge but only with camera serial number) and Lightroom.

To install the programs, follow the installation instructions included with the program discs or the instructions given on the software's websites.

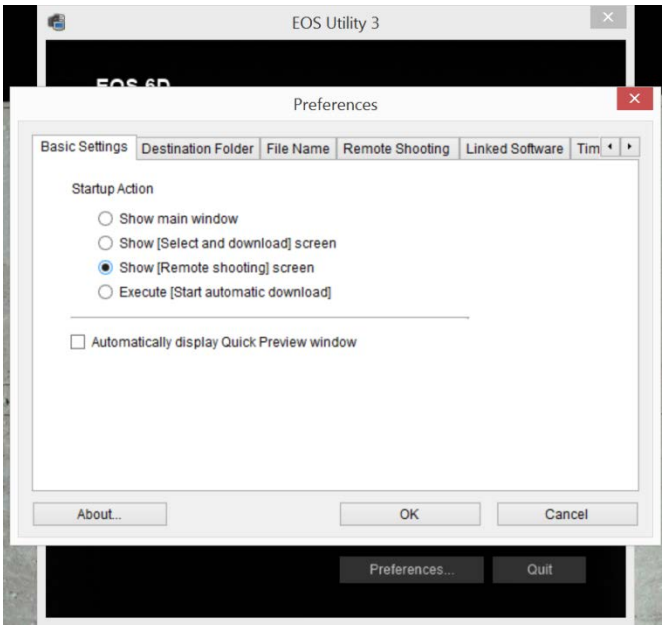
Once installed, there are few presets and defaults to set within the preferences of both EOS Utility and Lightroom to increase productivity within the imaging workflow.

Preset #1: In EOS Utility, Setting Remote Shooting to automatically open when the camera is turned on.

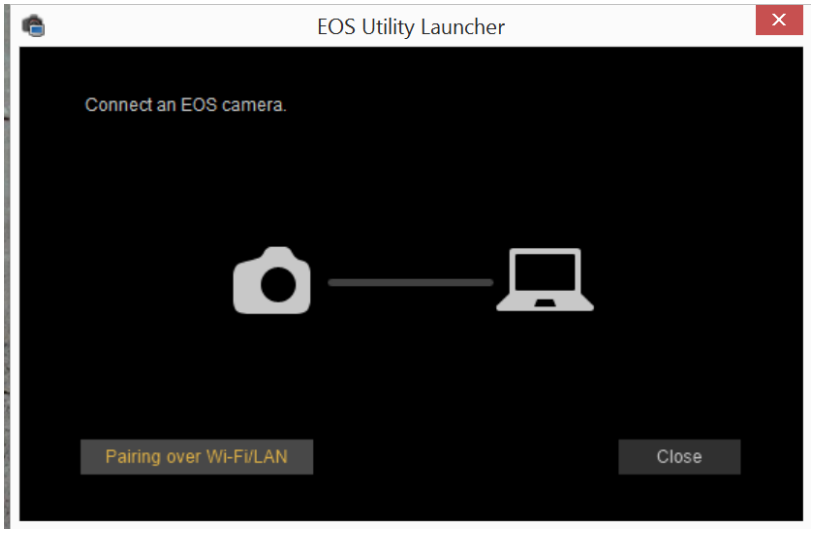
When you open EOS Utility for the first time, the program with open up as shown to the right:



Select Preferences at the bottom of this window



Select "Show [Remote shooting] screen"



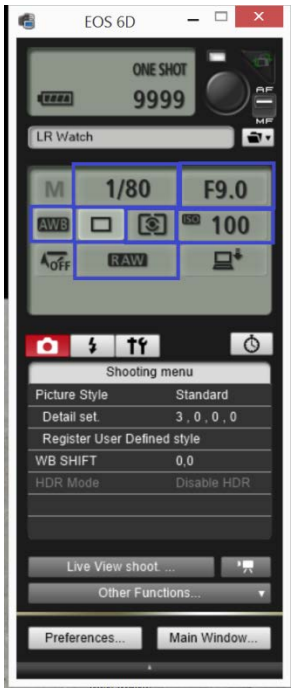
From now on, the window that will open for the program will be the Remote Shooting screen(as shown in the top left image).

To change these settings, you can access the preferences at the bottom of this window.

If you receive a window that appears like the top right image, your camera is either not connected, or not powered on. Check all camera cords, and the on switch.

For Herbarium sheets, the following settings are recommended for optimal imaging quality (outlined in blue).

To change these settings to match, click on the number or image in the window and a drop-down menu will allow you to choose the settings you want. These settings will remain unless manually changed in the program or on the camera body itself.



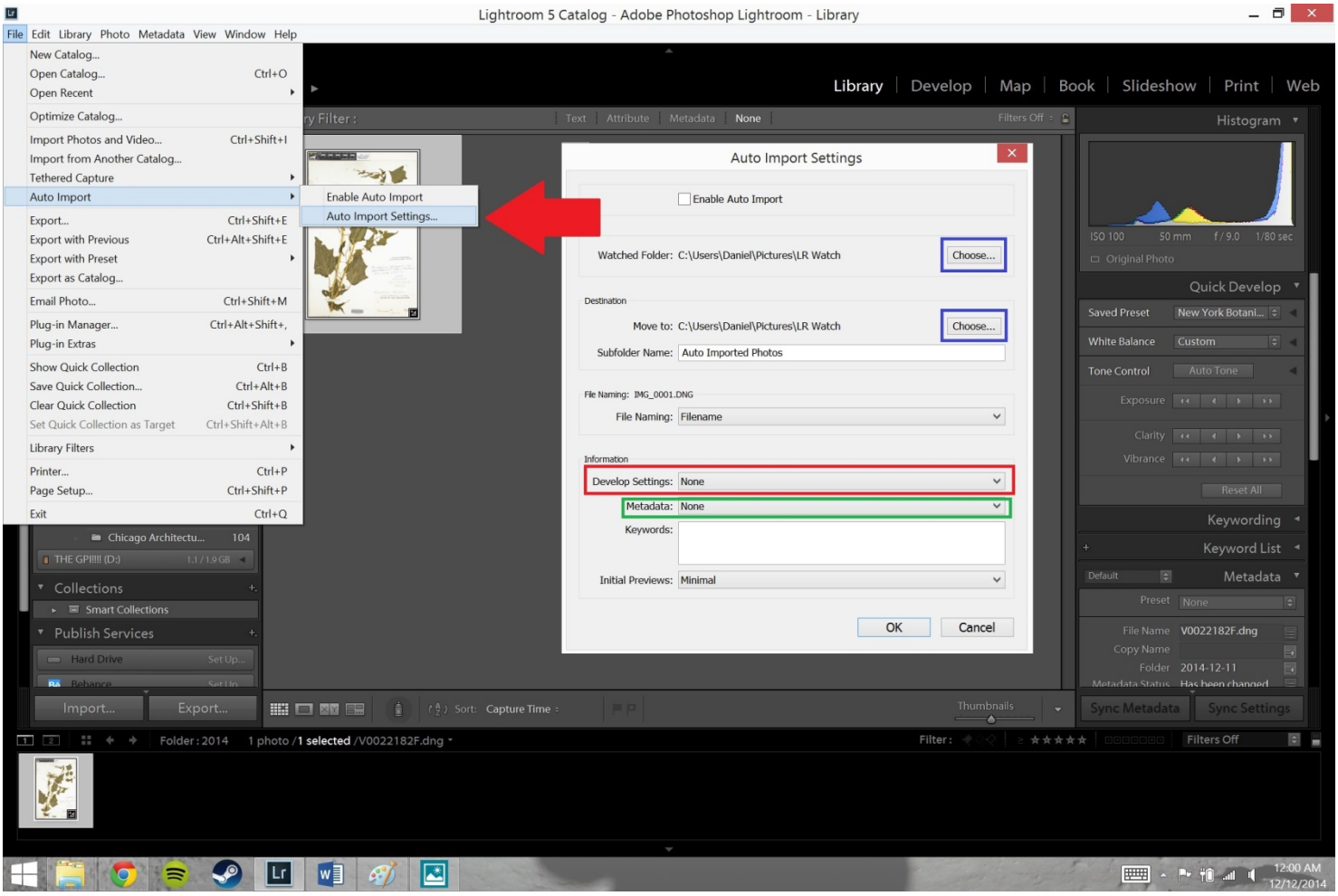
Preset #2: Setting the destination folder for images taken from Camera Remote Shooting.

Towards the top of the Remote Shooting window, click the icon with the folder to choose the destination folder on your computer. To the left of that icon, Remote Shooting notifies you of the current folder selected as the destination.

"LR Watch" is not a pre-created folder by the program. Choose or create a folder in an easy to find location on your computer as you will need to reference this folder in the next preset as well as for your on knowledge to manage the images taken out of the camera.

Preset #3: Linking your destination folder from Remote Shooting to Lightroom.

This setting will allow for you to see images go directly from your camera into Lightroom for easy viewing and photo management.



To access the Auto-Import Settings, click on the following locations:

-File

-Auto Import

-Auto Import Settings

Here you will select the folder that it is “watching”. This will be the folder that you set in the previous preset. Any images going into that folder will be immediately viewable in Lightroom and will be moved into another folder. You must set a “Watched” folder and “Destination” folder in order to enable Auto Importing. In this Settings window, you will also be able to set Develop Settings(recommended) and Metadata Settings(also recommended). These settings will be automatically applied to any images coming from the “Watched” folder into Lightroom.

Recommended Preset #1: Develop Settings

The Field Museum's Botany Collection adheres to the New York Botanical Garden's Develop settings. The following are taken from New York Botanical Garden's Michael Bevans' instruction manual on Herbarium Specimen Imaging.

Note: Start in the Develop Module

1. Scroll up to
2. Detail
3. Amount:50, Radius:1.0, Detail:33, Masking:0

Tone Curve

1. Scroll up to
2. Tone Curve
3. Point Curve: Linear

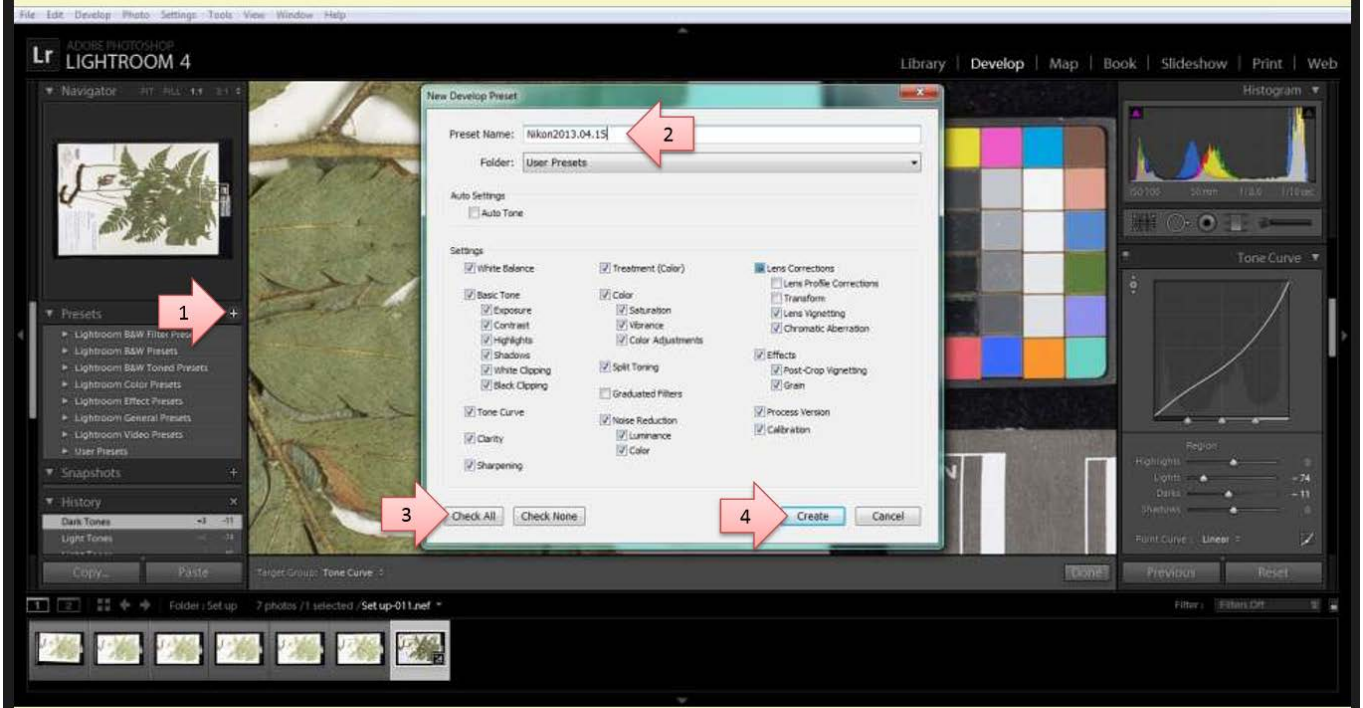
Tone Curve

1. Click to select Tone Curve Adjustment Tool
2. Click gray square shown with Tone Curve Adjustment Tool and drag down
3. Release when RGB=~50%

Tone Curve

1. Click gray square shown with Tone Curve Adjustment Tool and drag
2. Release when RGB=~29%
3. Done

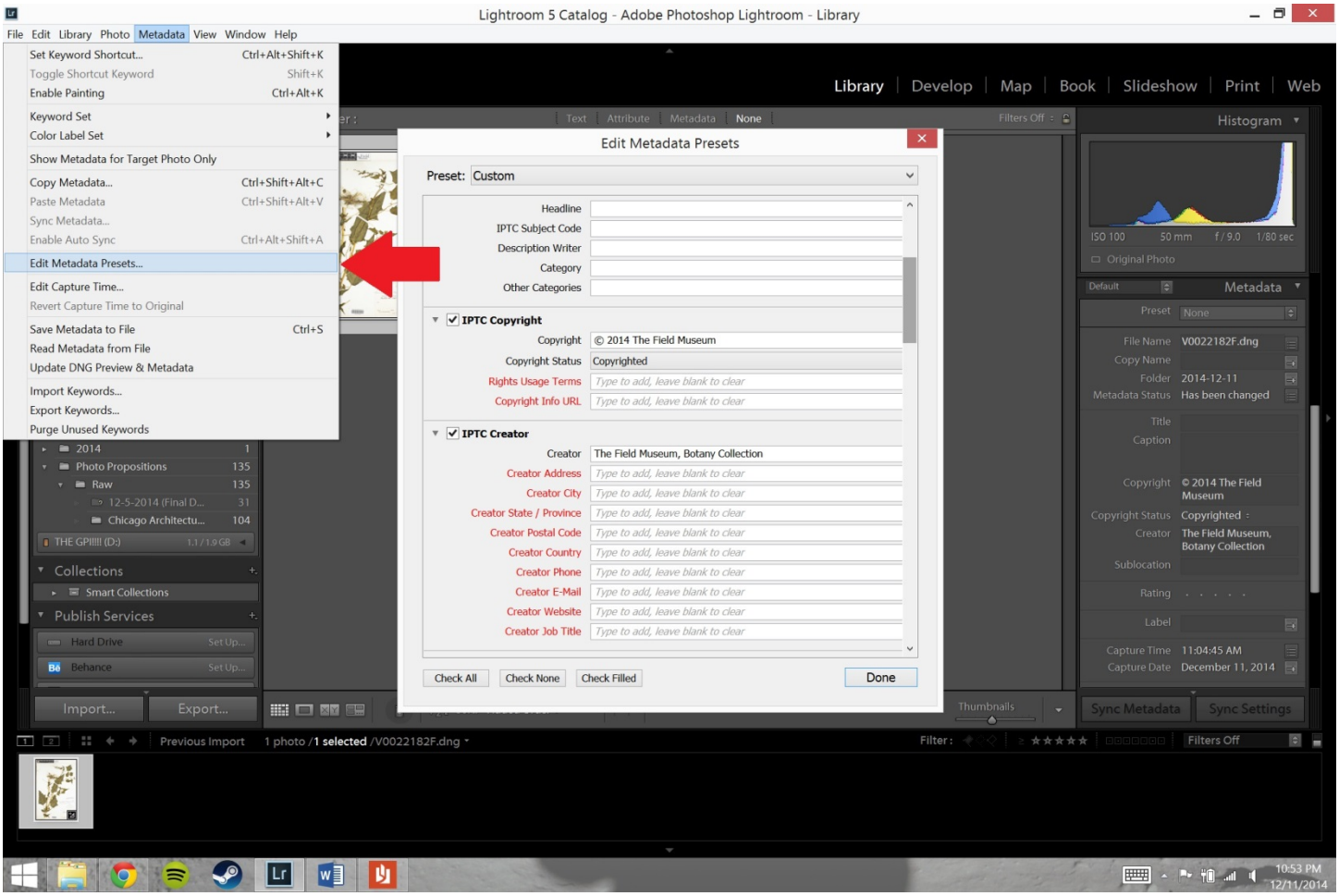
Save Preset



1. Preset: +
2. Name preset
3. Check all
4. Create

Recommended Preset #2: Metadata Settings

The Field Museum uses the Metadata Settings in order to apply copyright to our archival images. Your institution may want to as well.

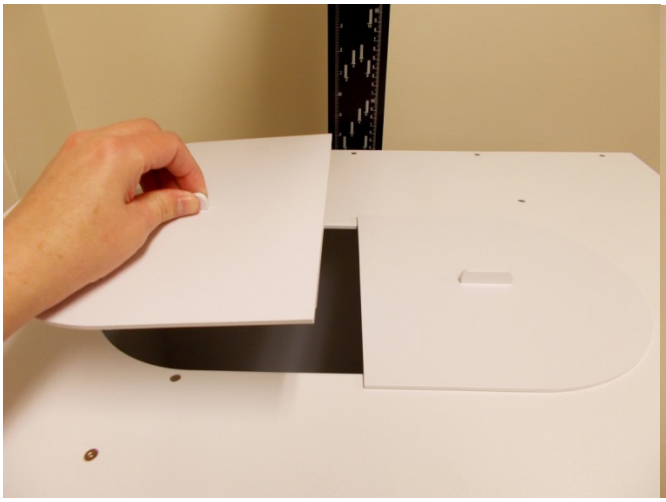


To type the Copyright symbol, “©”, press and hold the “alt” key on your keyboard while typing “0169”. This will differ on Macs.

Canon Lightbox User Manual

Step #1: Turn computer on, remove panels on top of the light box, and remove lens cap from camera. Upon turning on the computer, the barcode scanner will beep indicating that it is powered and working.

(Power button location will vary according to computer model)



Step #2: After computer has been turned on and logged into, turn the camera on (switch circled in red in the picture below).

Step #3: When you turn the camera on, the EOS 6D utility will automatically start up. Before you begin photography, check to make sure that all of the numbers match the numbers in the picture of the utility below (1/80, F9.0, ISO 100)

Step #4: Switch the power switch on the lightbox to the ON position (circled in red in the picture below).

You will notice a bunch of other switches and some knobs at the base of the lightbox. The following switches should be on (switched in the down position): Right side light, Left side light, Back side light, Cooling Fans and Accessory 1.

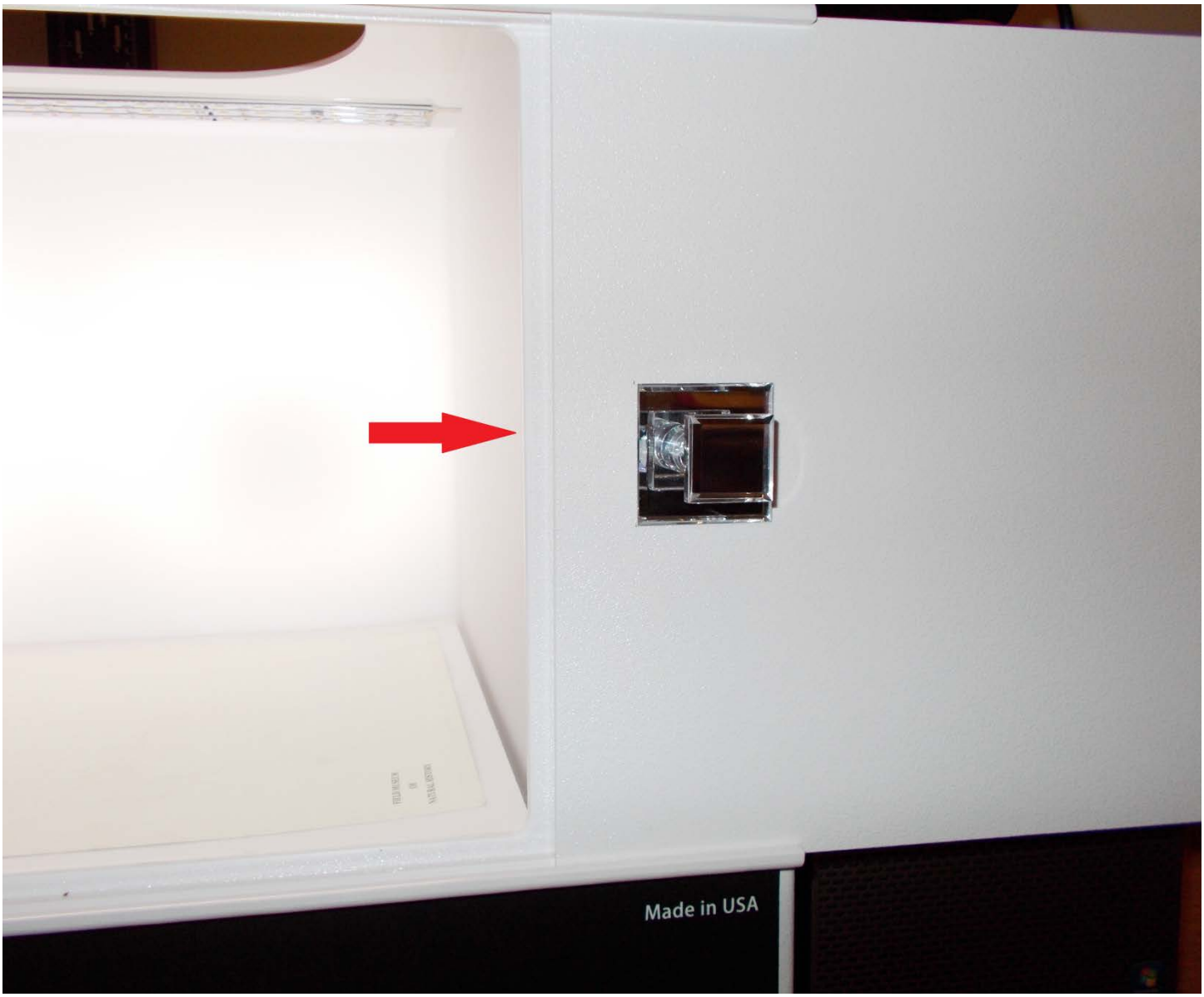
Do not adjust the knobs. For the most part, these switches will already be set to the correct positions when you come in, but it doesn't hurt to check.

Note: When you turn the lightbox on at the start of the day, let the lights warm up for about 1 minute before taking any photos.

Step #5: Open the program **Lightroom 4.4** (there is an icon on your desktop)

Step #6: Slide the doors to the lightbox open. Notice that there is a sheet template inside with a ruler taped to the top. You will use this template to properly align your sheet when you place it in the lightbox.

Step #7: Make sure that the doors are fully open so that you don’t bump your specimen sheet into them as you place it in the lightbox.



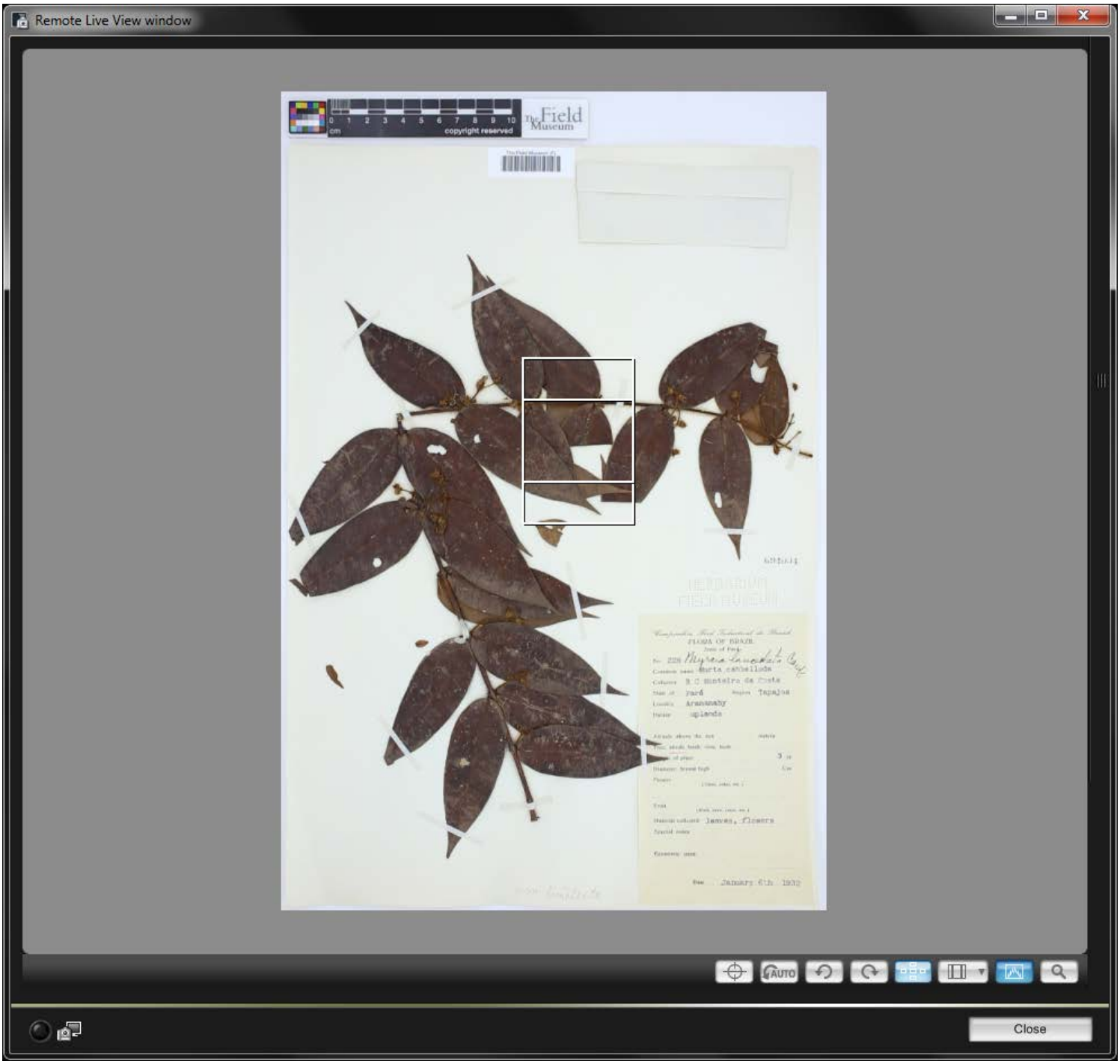
Step #8: Place your specimen sheet on the stage and align it with the template card at the top and side nearest you.

Step #9: Close the lightbox doors. Make sure that the doors are closed properly.

CLOSED PROPERLY

NOT CLOSED PROPERLY

Step #10: Open Live View Shoot in the EOS 6D utility (circled in red in the picture below). This will bring up a live view screen which will show you what the camera is currently “seeing” live.

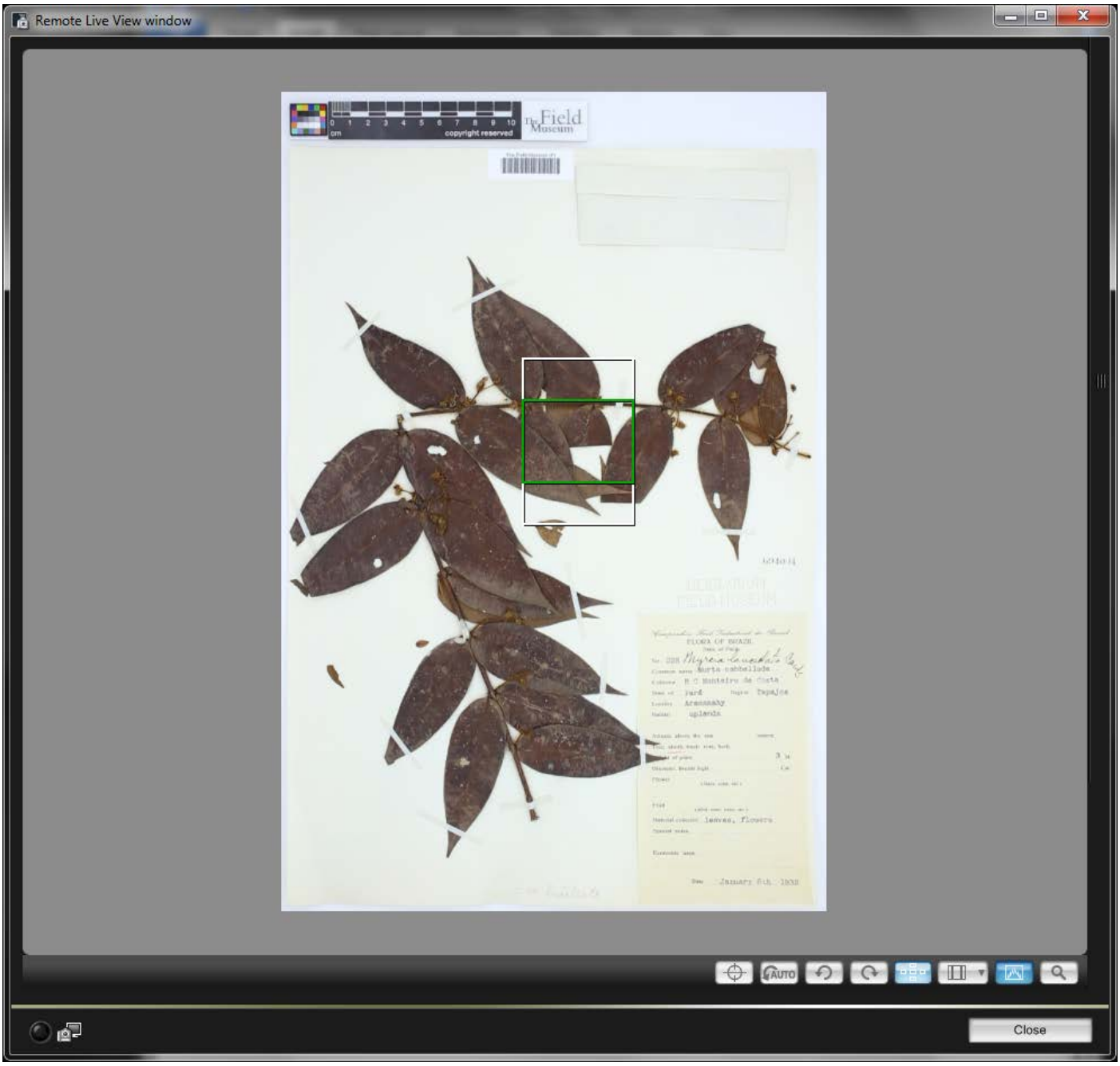


LIVE VIEW WINDOW IN ACTION

If you have the card aligned correctly, this is what you should see in your live view window. Note that the entire card is in frame. You can see a very thin border on the left, the right and the bottom of the card. At the top, you should see the ruler and the color chip. If your live view picture differs from this example, please let your supervisor know immediately. The pictures are worthless if any portion of the card is cut off.

Step #11: There is a rectangle in the center of your live view screen. This is the focus box. At the start of every photo session, you should make sure that the focus is set. You can move the focus box around the screen. Place it in an area that has dense material. Double click the middle box in the focus rectangle. The lens will focus at that point (you will hear and see it do so) and when focus is found, the middle square will turn green for a few seconds as below.

Note: Every 100 pictures or so, double click the green focus box just to make sure there hasn't been any focus drift.

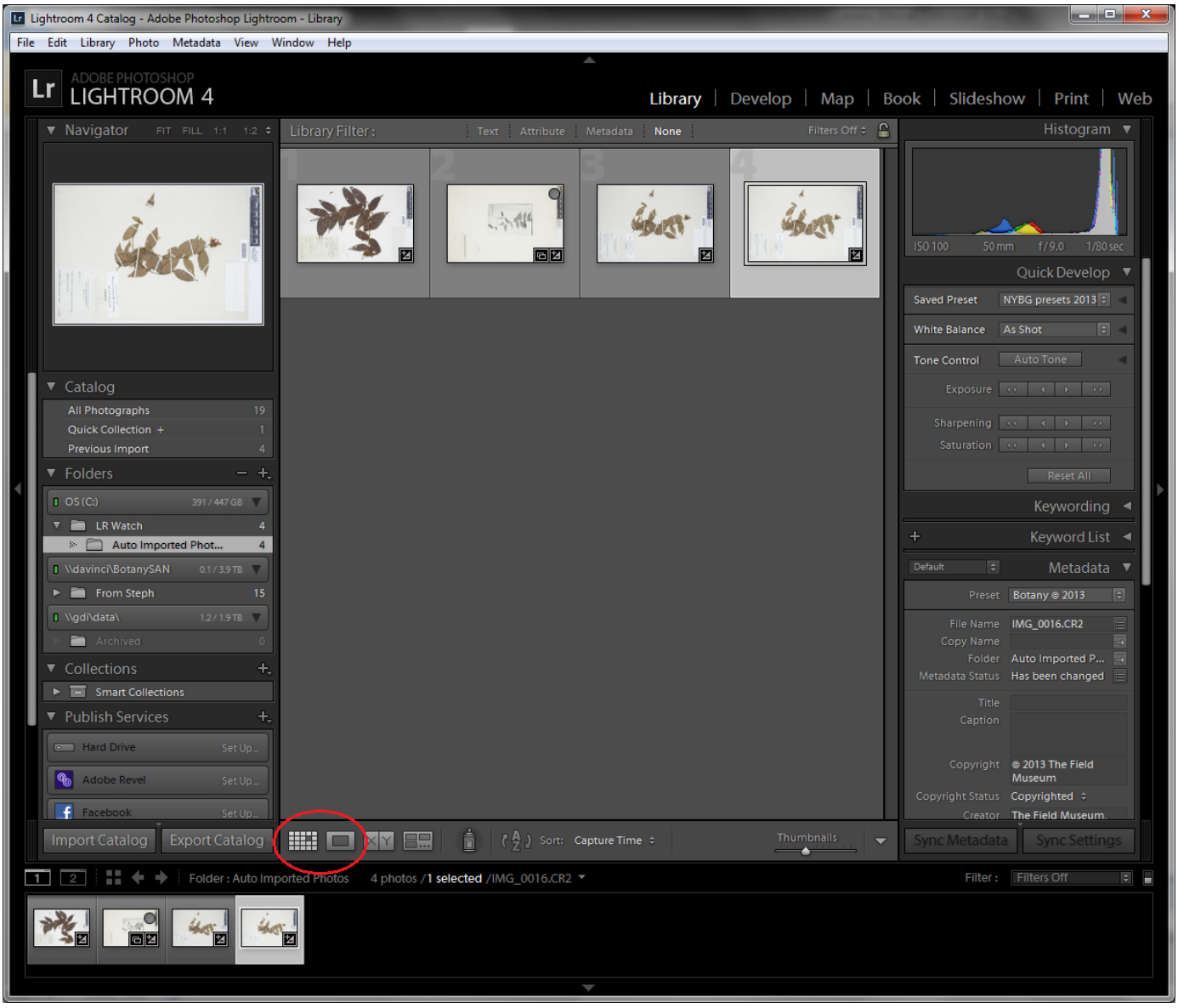


Step #12: It's finally time to take a picture! To trigger the shutter, click on the round button in the EOS 6d utility window (circled in red in the picture below). You should hear the shutter release as a picture is taken.

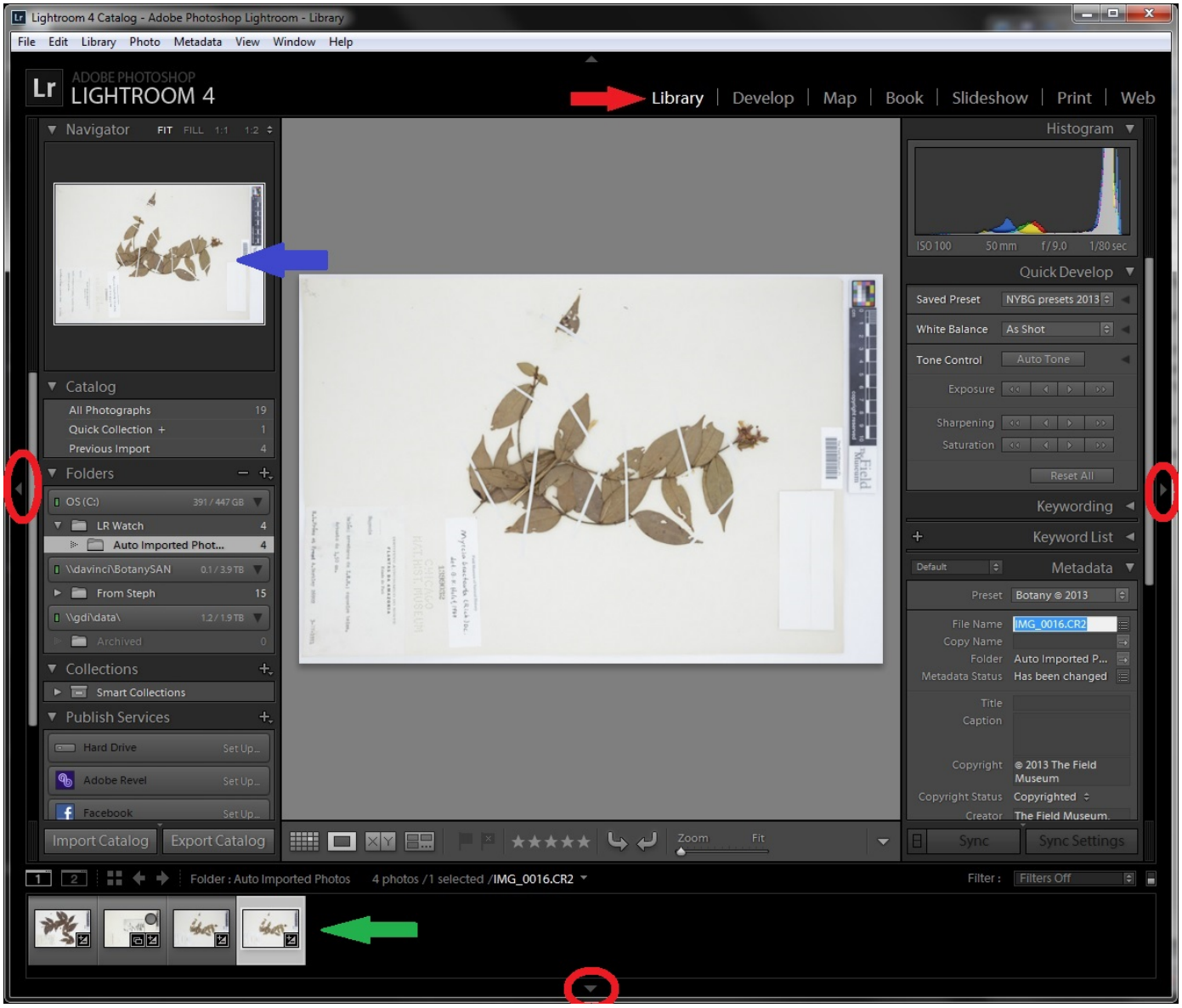
Step #13: The EOS 6D utility has been set up to store your photos in the LR Watch folder. You can see the icon for that folder on your desktop. Lightroom has been set up to automatically upload any photos in the LR Watch folder directly into Lightroom.

Go to your Lightroom window. The photograph you just took should be there after a few seconds. If it does not appear, alert your supervisor.

Under the picture viewing window in Lightroom, you'll see two boxes (circled in red in the picture below). These allow you to switch from Grid View to Single or Loupe View. You will use both views in your post processing.



<u>A little about Lightroom</u>: The red arrow in the picture below points to the tabs up at the top of Lightroom. All of these tabs have different menus that allow you to do different things with your photos. You will only be using two of those tabs – Library and Develop.



The menu to the right of your picture in the Library Tab is your Navigator menu. This is where you set up importing and exporting, but that will come later. You can also see there is a thumbnail of your picture with a little box in the center of it at the top of the Navigator menu (marked with a blue arrow in the picture above). You can click and hold on that box and use that to navigate around your picture if you want. You'll notice that the picture zooms up to full size when you do that. If you prefer, you can also zoom up by clicking on the center picture and then grab and drag the picture to move it around. This is completely up to you.

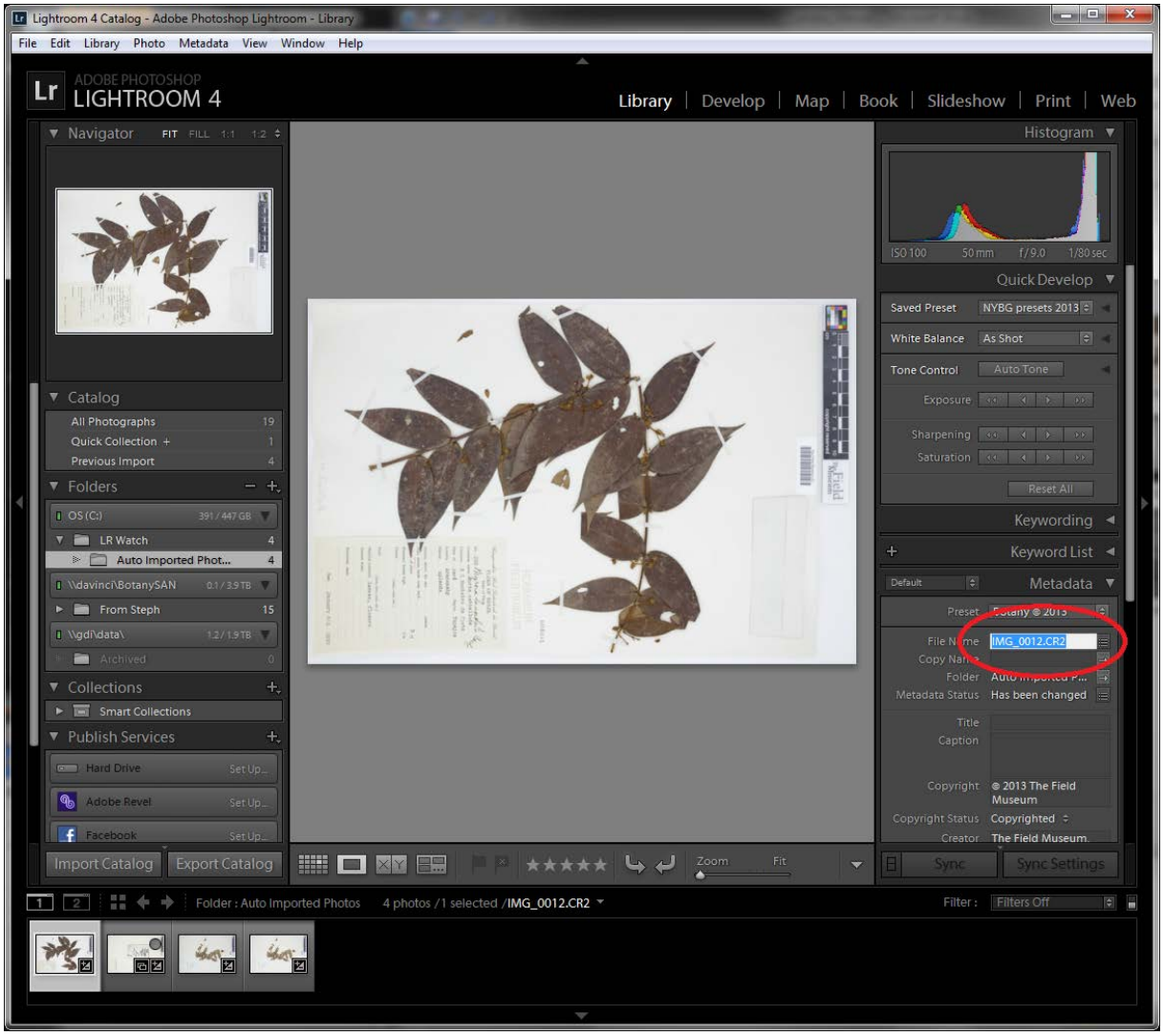
The menu to the left of your picture in the Library Tab contains a number of different menus. You will only be using the Metadata menu, which we will do in a moment.

In lightroom, if you want more room for your image, you can minimize any menu window by clicking on the little arrows at the edges of the menu windows (circled in red in the picture on the previous page). To maximize them, click the arrow again.

At the bottom of your Lightroom window, you'll see all of your pictures in a line (marked with a green arrow in the picture on the previous page). If you have selected a particular picture, it will be highlighted.

Step #14: Remove the herbarium sheet from the lightbox and place on the top of the stack of sheets that have been photographed as your supervisor taught you and return to Lightroom.

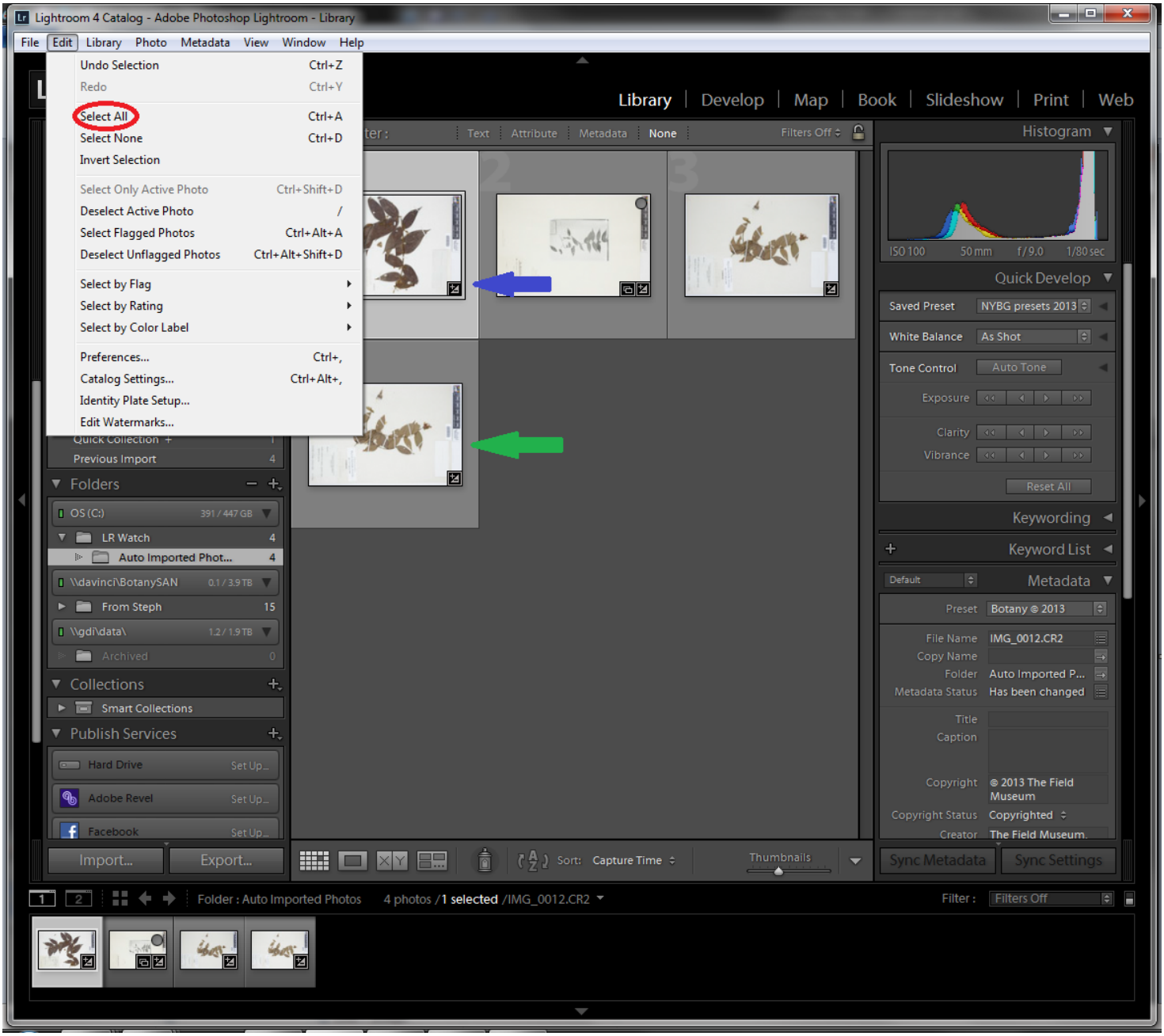
In your library tab, switch to the Loupe view as described above if you are not already in Loupe view. This will allow you to see a single image. In the metadata menu on the right, highlight the file name for your picture (circled in red in the picture below). Using the bar code scanner, scan the bar code at the top of the herbarium sheet. This will automatically change the file name of that picture to the bar code number. IMPORTANT: If you do not have the file name highlighted, scanning the barcode will have an undesirable effect on Lightroom. This is not a bug and will not cause harm to the image or computer. If this happens, you will notice that your Lightroom looks different. Simply notify your supervisor and they will return Lightroom to the desired state. This also happens if you accidentally scan the barcode twice.



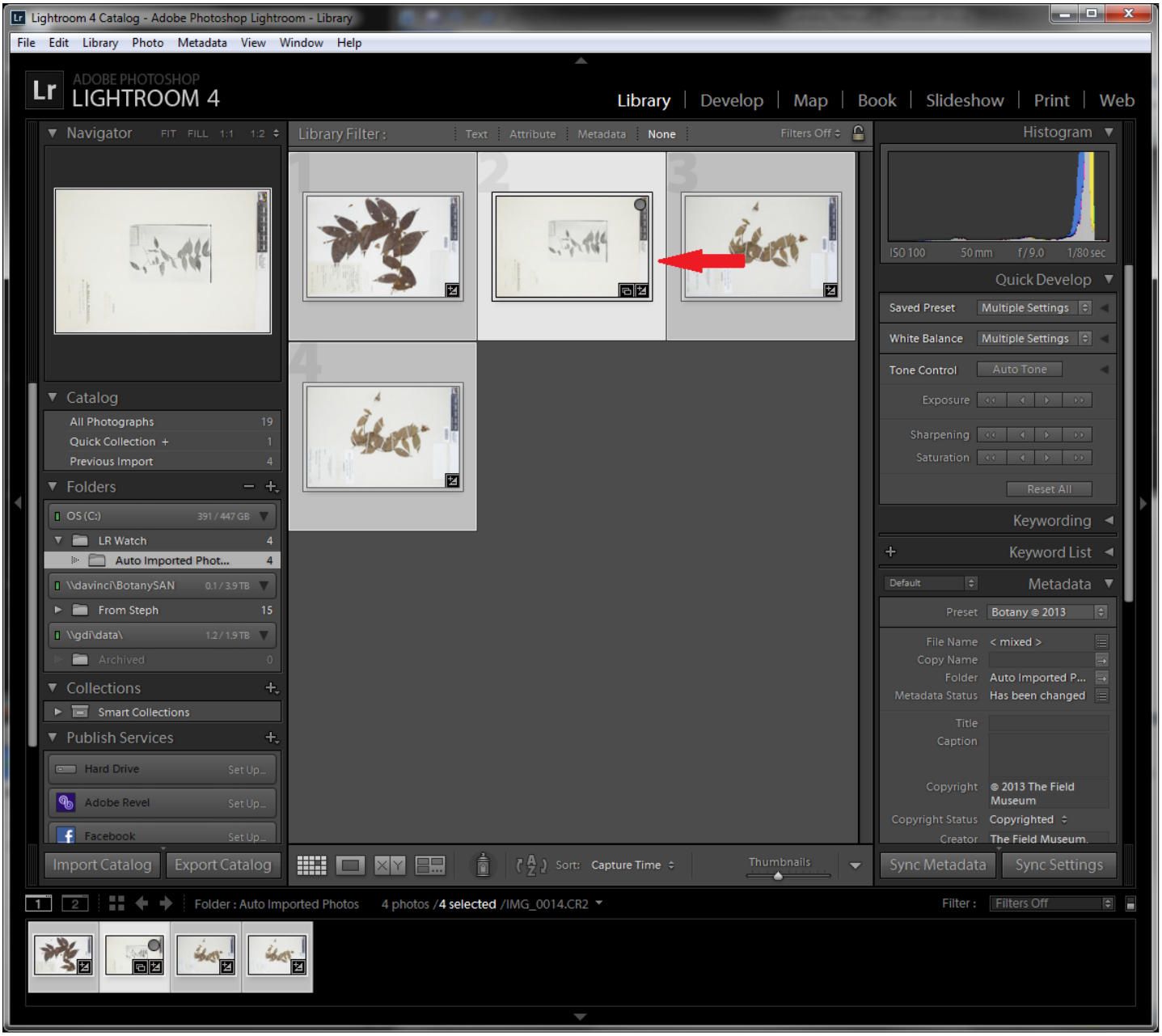
Step #15: Repeat steps 8 to 16 about 250 times. ☺

Step #16: After you have taken around 250 pictures, it is time to stop photographing and post-process a batch. We use Lightroom for post-processing.

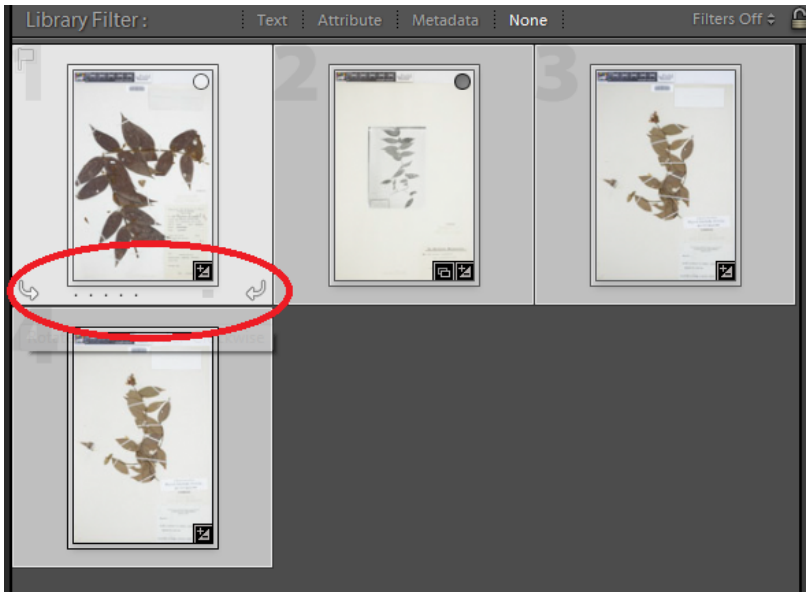
Step #17: Go to the Edit menu and click Select All (you can also use Ctrl-a). This will select all of your photos. The border around a selected picture will be a lighter gray (blue arrow in the picture below) than an unselected picture (green arrow in the picture below).

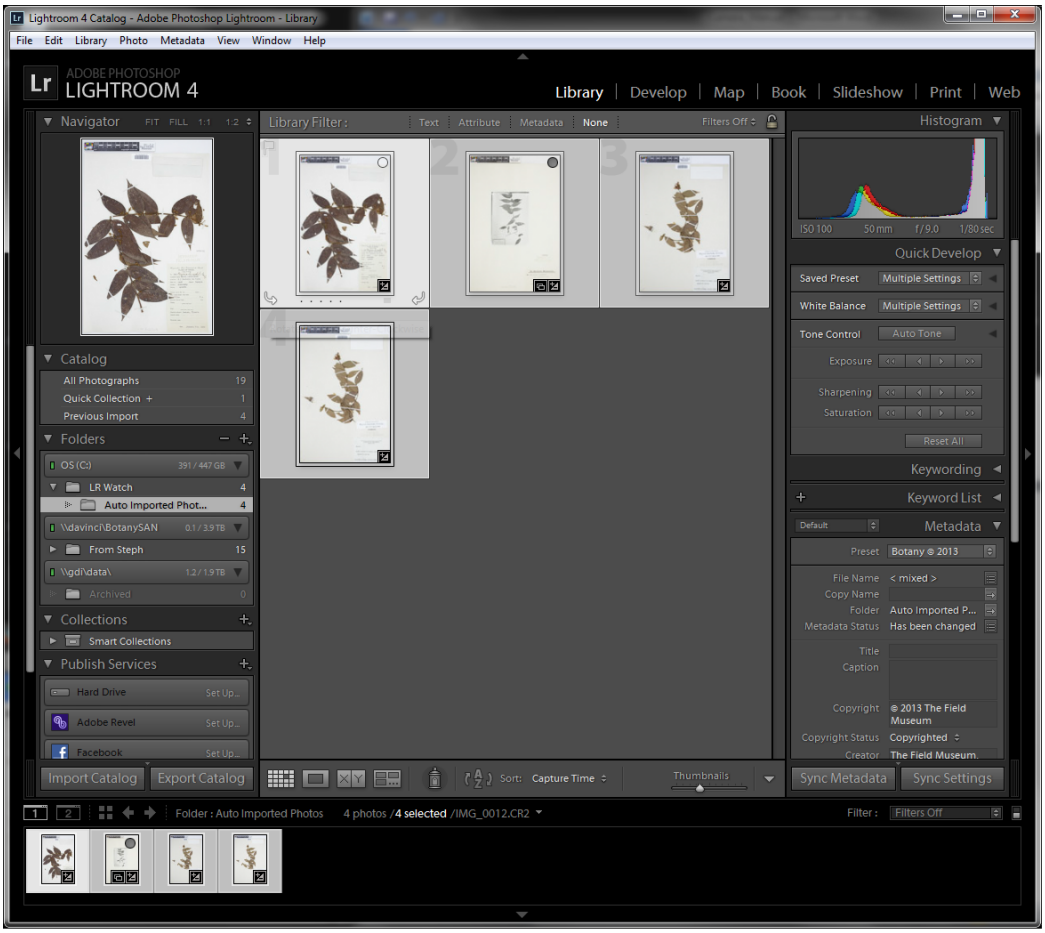


If you look at the difference between the screen shot on the previous page and the screenshot below, you will see how it looks when all of your pictures are selected (this page) versus when just one photo is selected (previous page). You'll notice that one of the selected pictures is even brighter than the other selected pictures (red arrow in the picture below). This indicates the photo that will be used as the primary template when you are doing a batch edit. More on that later. For now, you are looking at dark gray versus brighter gray.

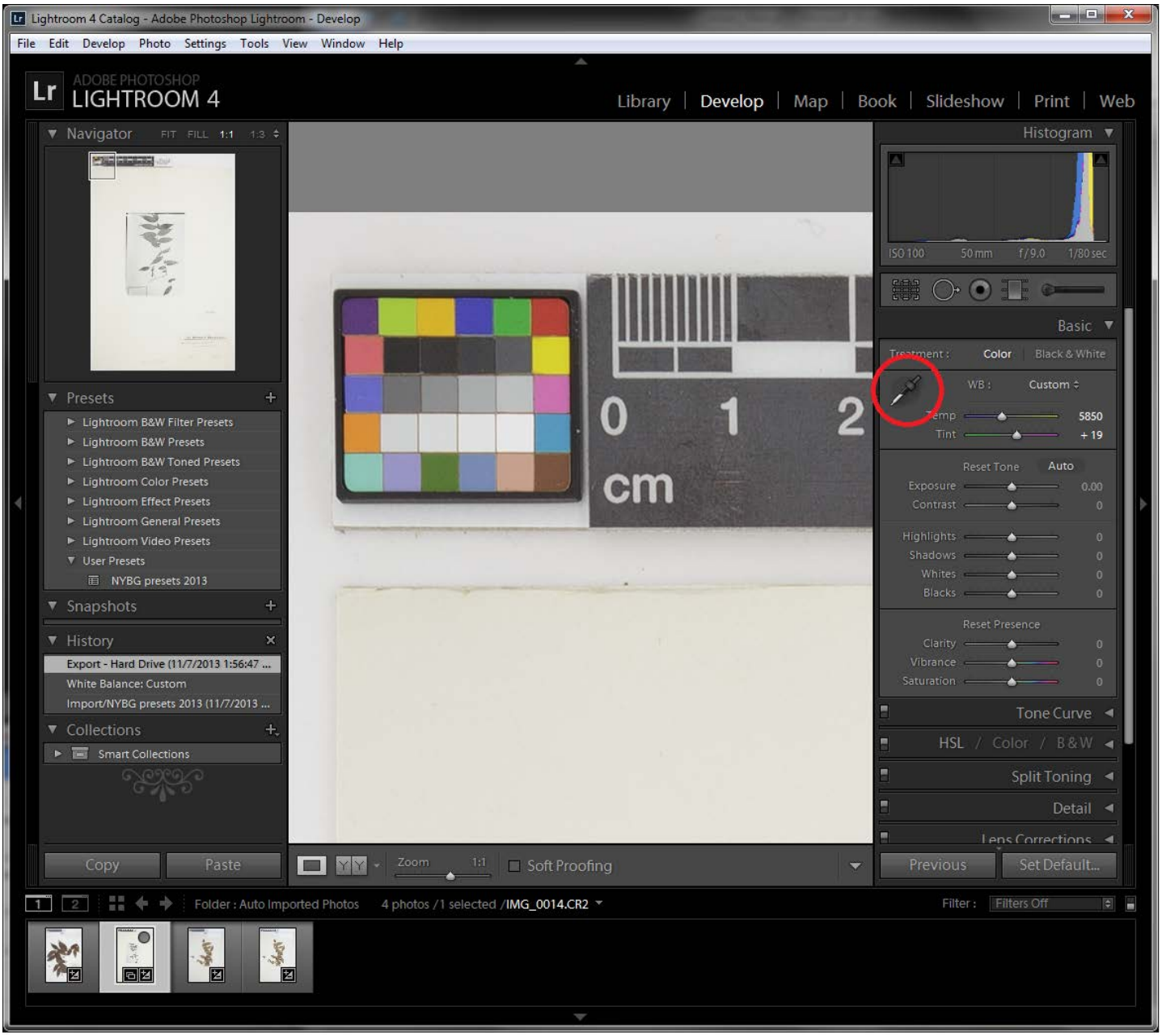


Step #18: After you have selected all of your pictures, hover your mouse over one picture (don't click). You will notice that arrow icons pop up at the bottom of the photo (circled in red in the picture below). Click on the bottom left arrow and all of your pictures should rotate as a batch. If only one rotates, you didn't select all. Rotate the one back, select all and try it again.



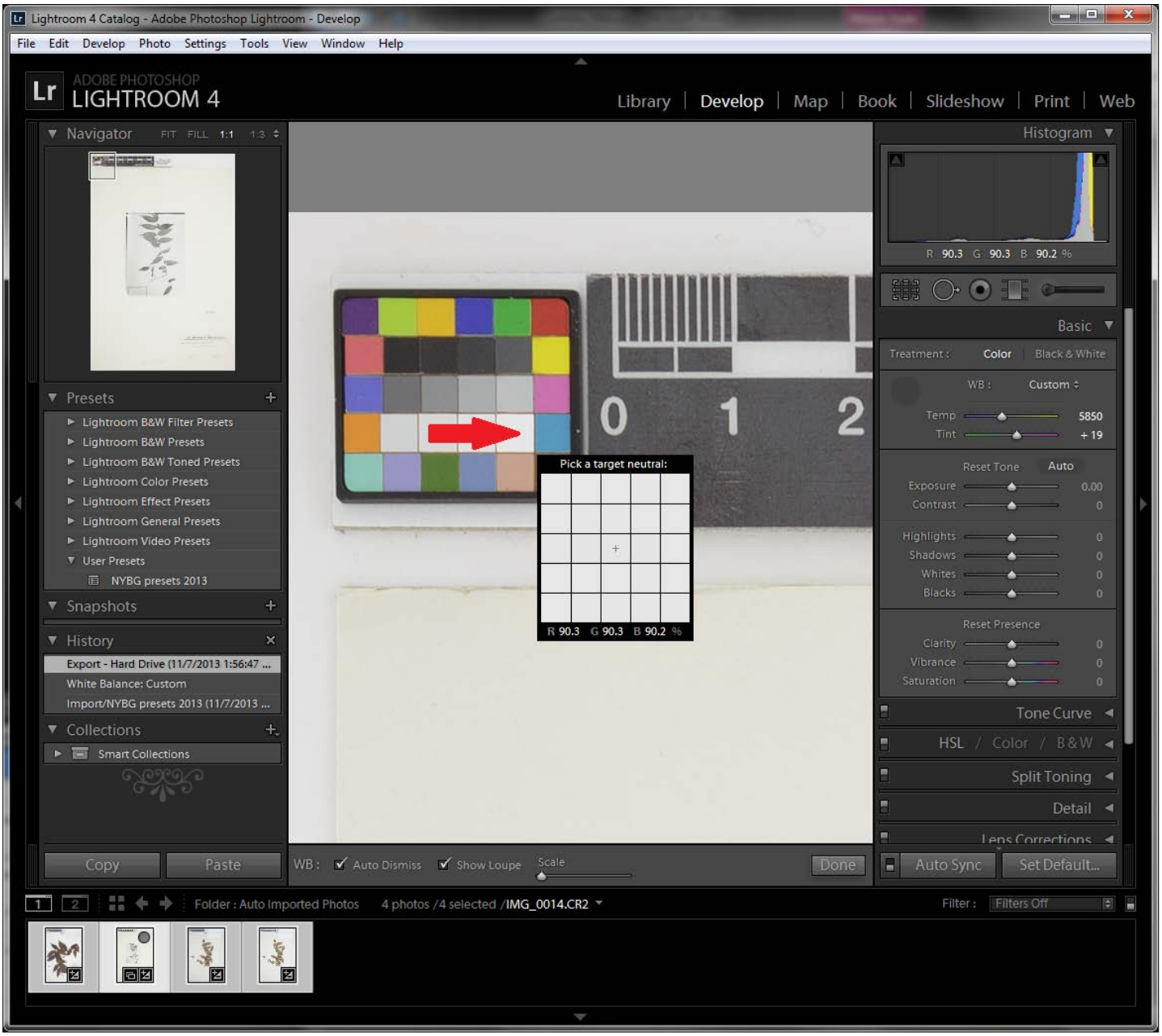


Step #19: Go to the Develop tab at the top. All we will do is white balance for this batch. You do not have grid view in this window. Select All again. Zoom up on the color checker

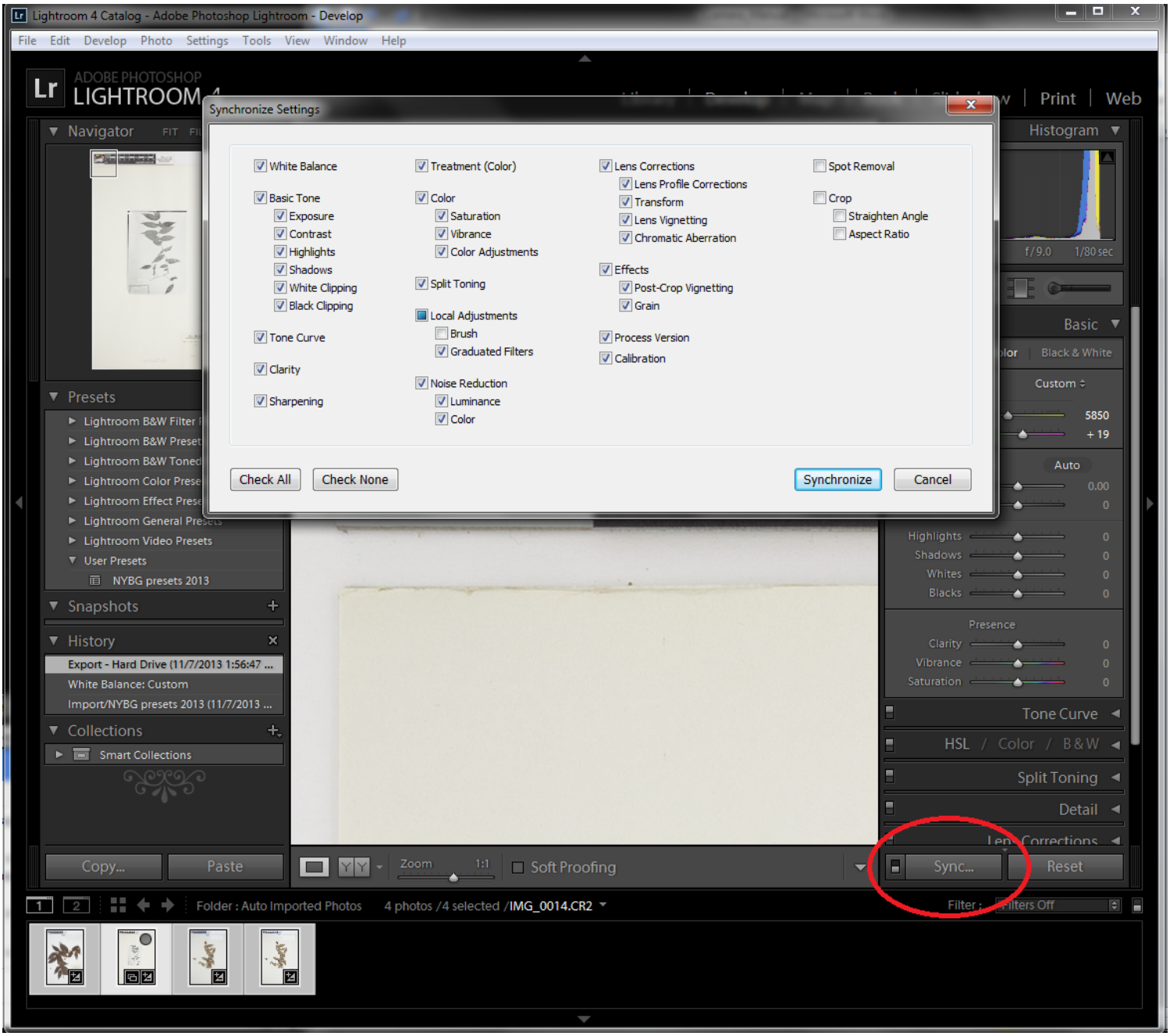


Step #20: On the left hand side menu, you will see a dropper. Click on the dropper to grab it (circled in red above).

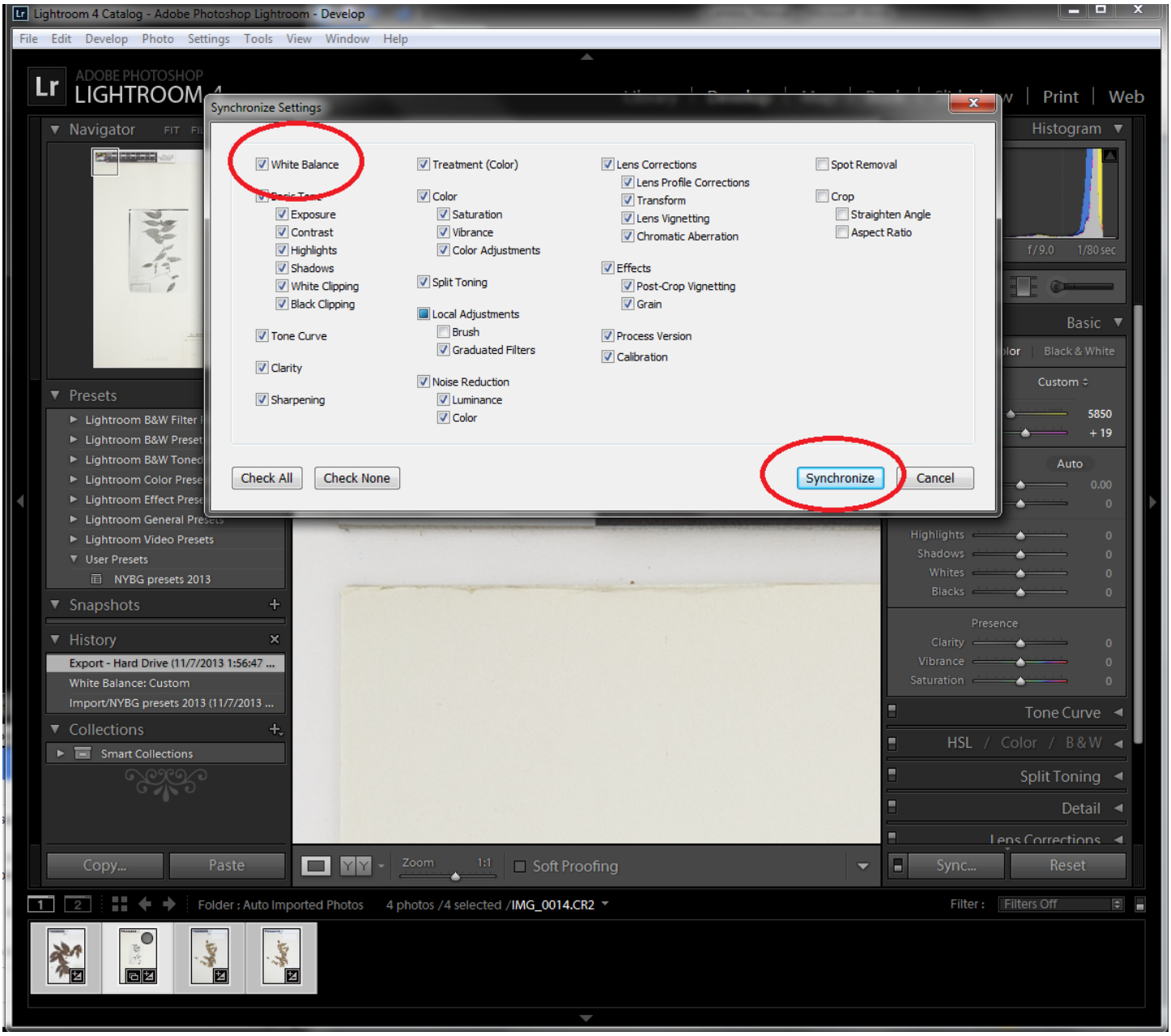
Step #21: The dropper doesn't show up in screen-capping, so imagine the red arrow in the picture below is your dropper. Hover the dropper over the indicated white square and click once. This will white balance your primary picture.



Step #22: Now you need to make absolutely sure that all of the photos in your batch are selected. Once you have everything selected, hit the Sync button (circled in red in the picture below). A box will pop up.

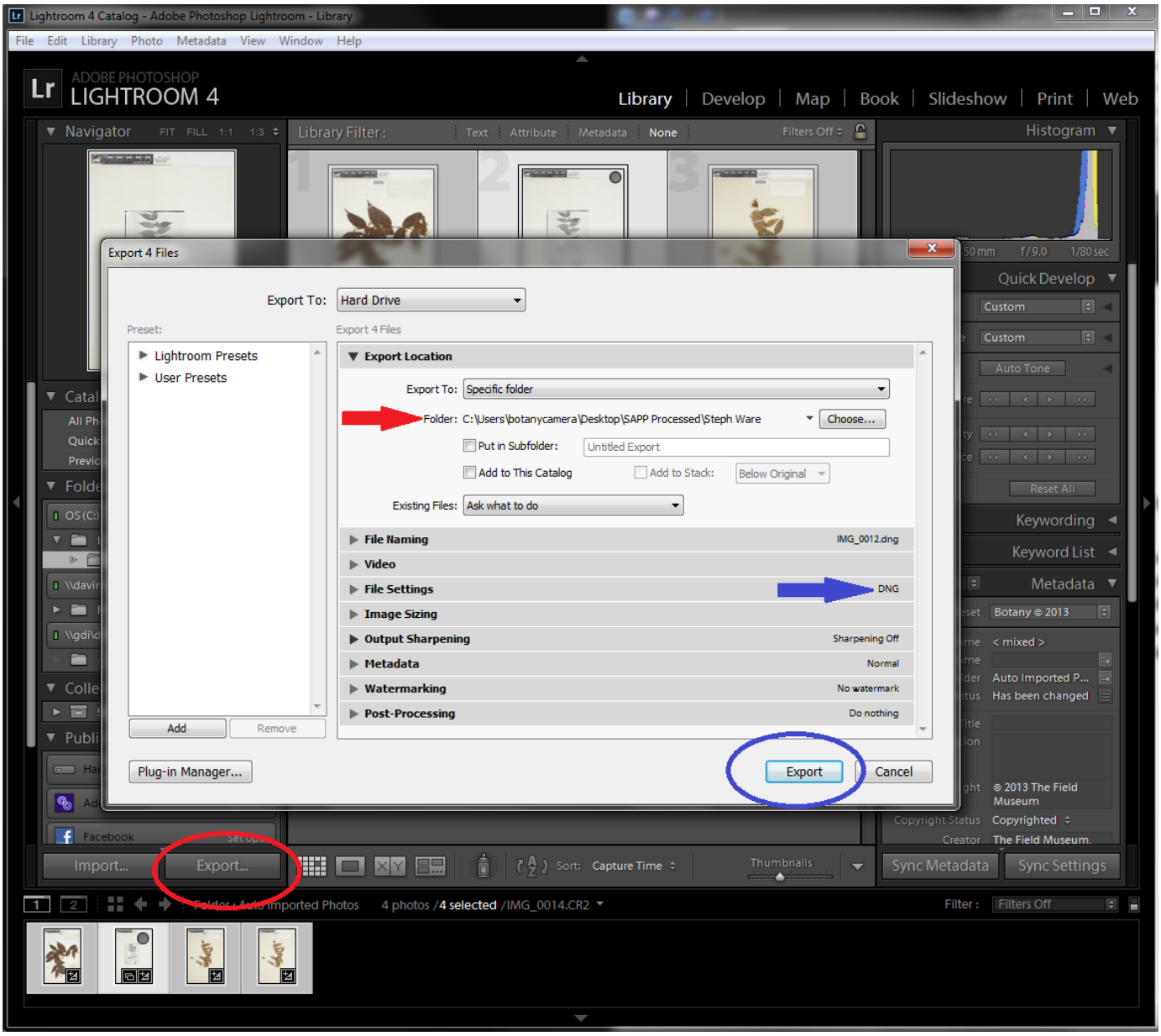


Step #23: Make sure the White Balance box is checked and then click the Synchronize button. This will white balance your whole batch based on your primary photo.



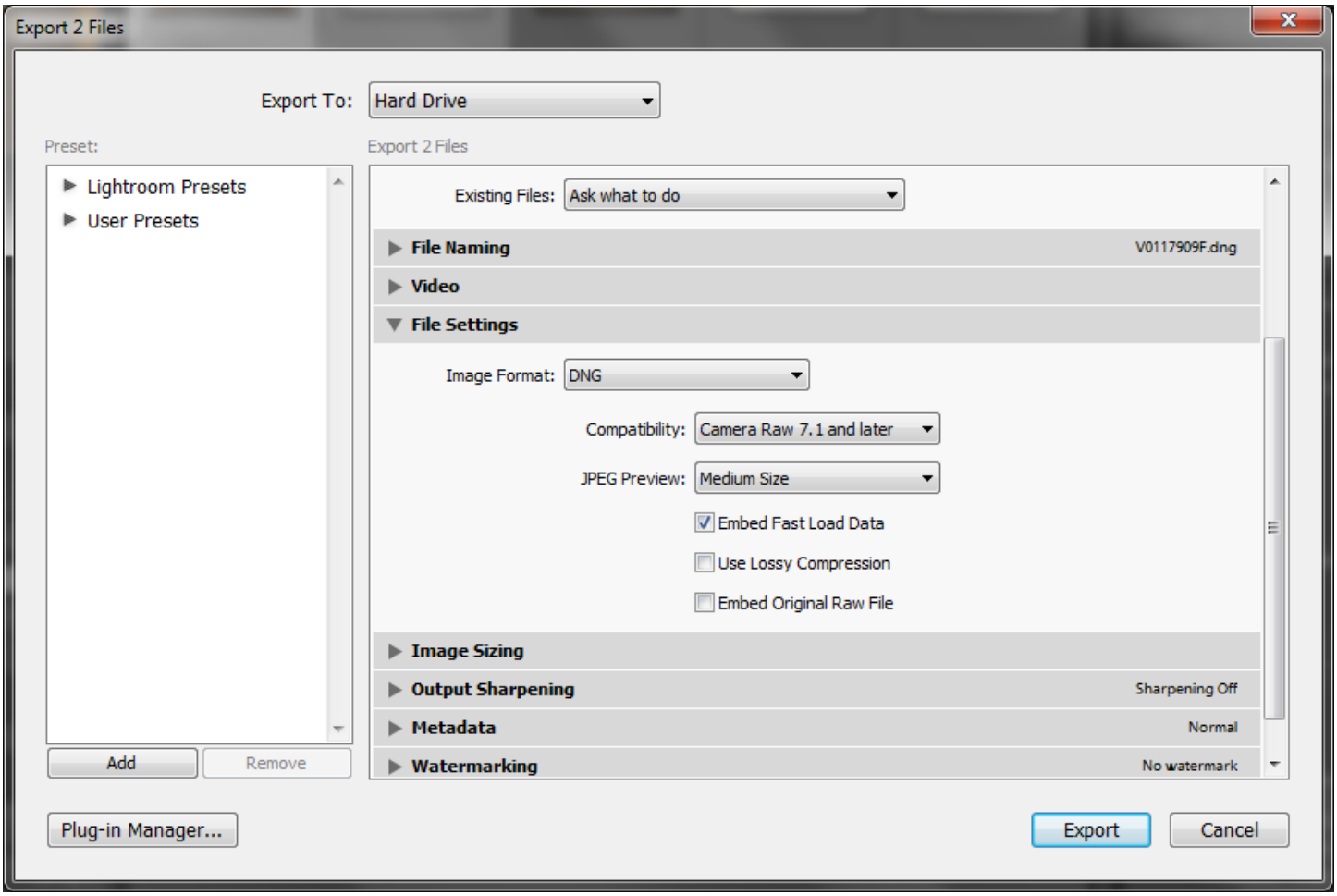
Step #24: Keep all of your photos selected and move back to the Library tab at the top of Lightroom. Click on the Export button (circled in red in the picture below). A box will pop up. You should export your pictures to the SAPP Processed folder on the desktop. You should have a subfolder in that folder under your own name (red arrow in the picture below). Make sure that your folder is the one selected. Also, make sure that your file setting is set to "DNG" (blue arrow in the picture below). See the next page for instructions to change the file settings if the file setting is not set to DNG.

After you've verified everything above, click the Export button (circled in blue in the picture below).

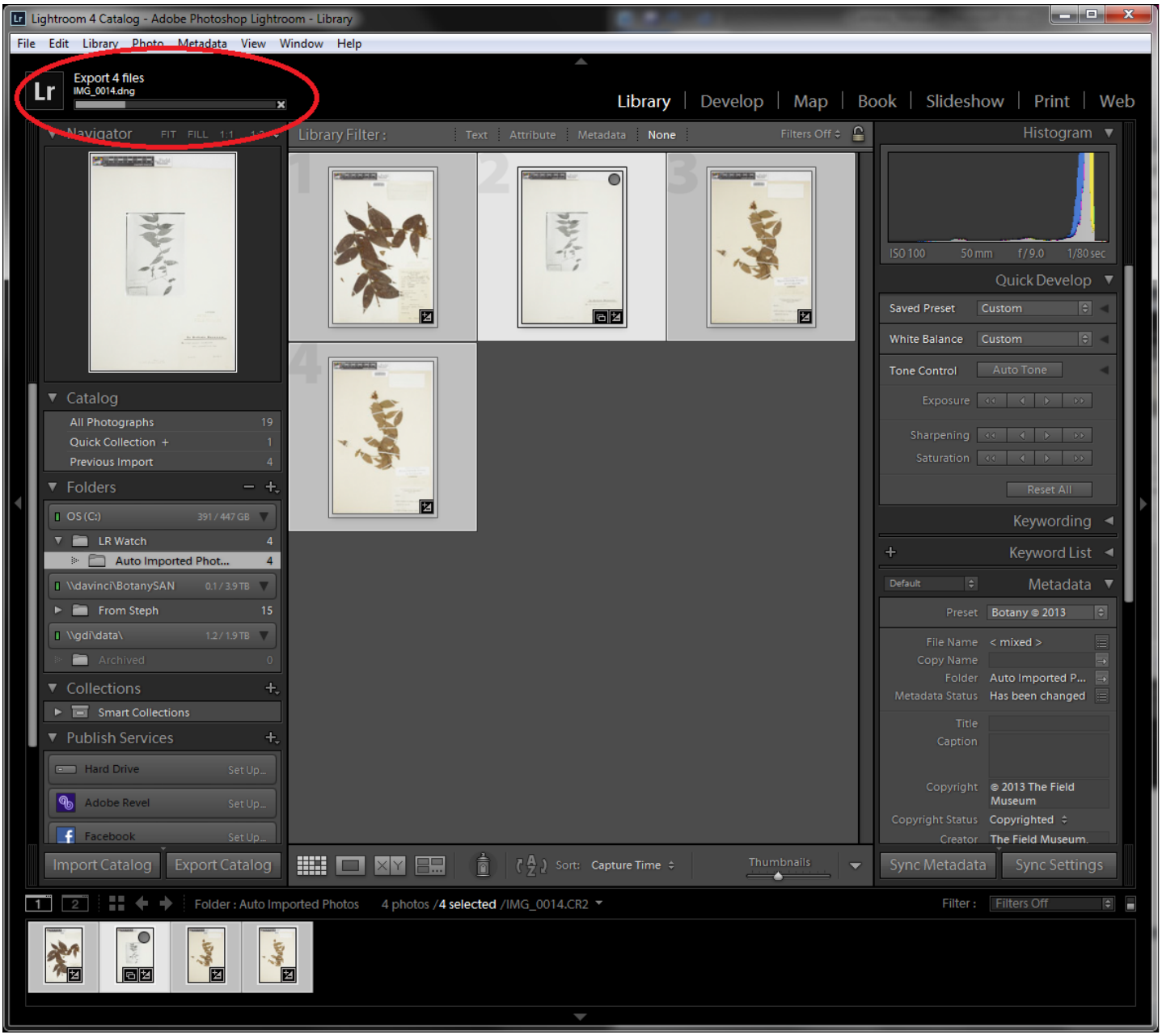


SIDEBAR: RESETTING FILE SETTINGS

You should not have to reset this, but just in case, here are the directions. If you expand the File Settings tab, you will be able to set your image format back to DNG. The correct file settings for this project are pictured below.



Back to the export. The export process might take a bit, so take a break. There is a progress bar in the upper left hand corner that will track the progress of your export (circled in red below).



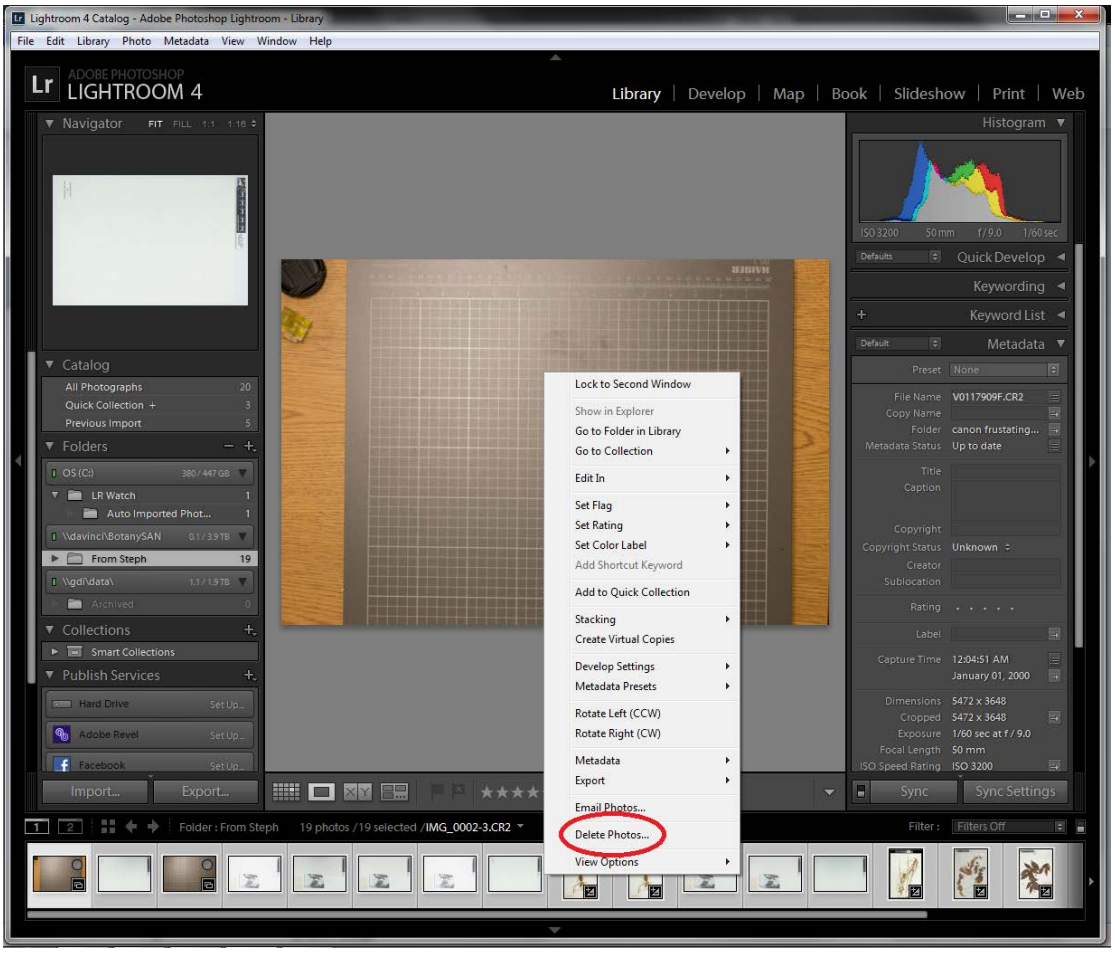
Step #25: Near the end of the day, copy all of your photos from the SAPP Processed folder to your own named folder in the GDI Server Botany folder on your desktop. Do not erase the photos in the SAPP Processed folder. Your supervisor will do that once he or she checks to make sure that the file transfer to the server did not corrupt any files.

LUNCH and/or BREAKS

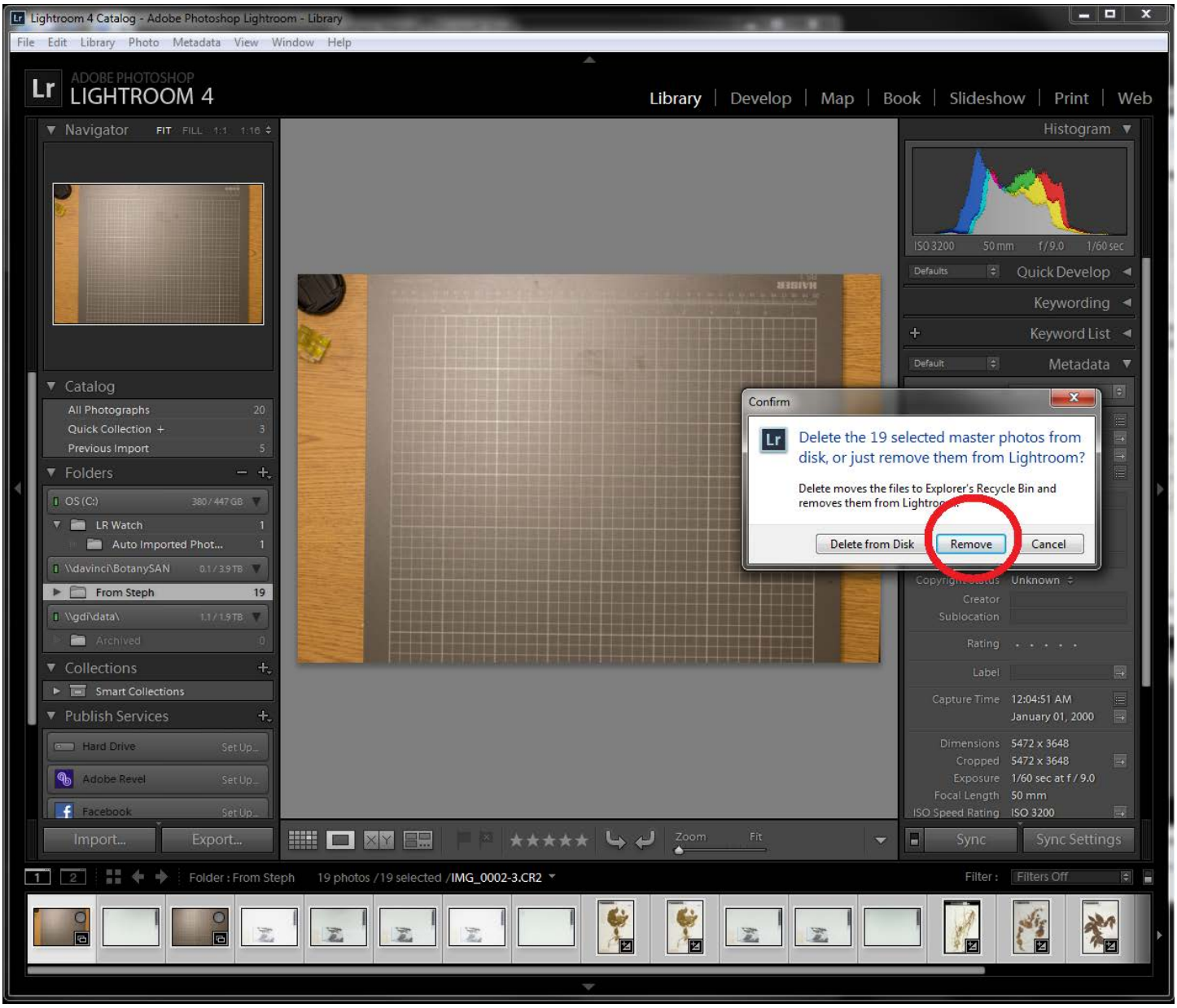
If you are planning to take a break for more than 10 minutes, shut off the lightbox lights, put the lens cap back on the camera and exit out of Live View in the camera control window.

CLEANING UP THE STATION AT THE END OF THE DAY

At the end of the day, make sure that Lightoom is cleared of all images. Select all of the images in Lightroom and right click on one of the images. Click on “Delete Photos” from the menu (circled in red in the picture below).



A box will pop up. Click on the “Remove” button (circled in red in the picture below)



Close all of your programs.

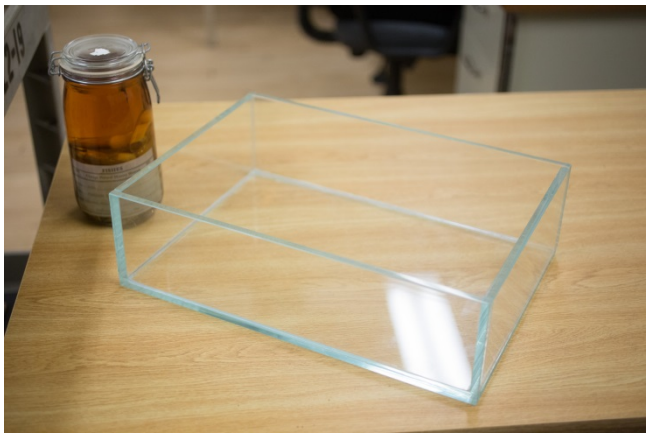
Turn off the lightbox. Replace the panels on the top of the lightbox and make sure the doors are closed.

Switch the camera off and put the lens cap on.

Make sure your area is tidy.

Variations for Imaging Fishes and Specimens in Alcohol

Additional Equipment and Materials



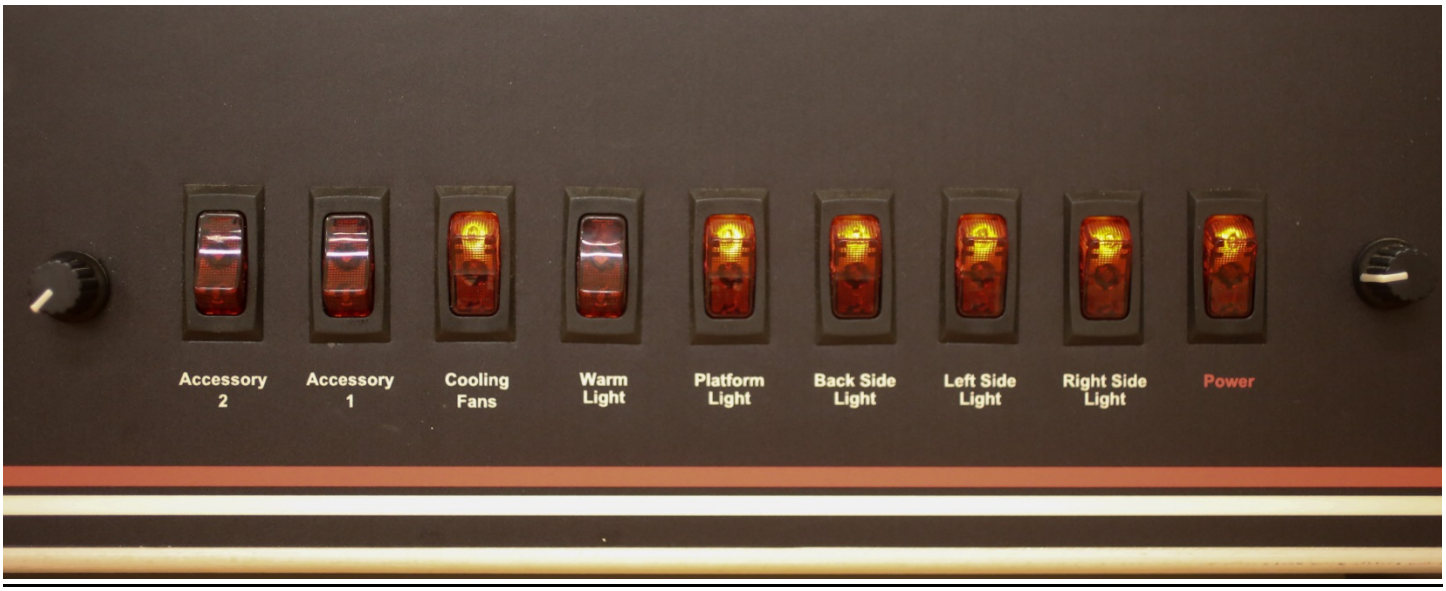
Custom Order Glass Trays from Glasscages.com
3/8 glass
2 - 12 x 17 base and 5 tall rimless Starphire (LIG) glass trays $ 294.00
2 - 6 x 12 base and 3" tall rimless Starphire (LIG) glass trays $ 272.00

12”x17” is the largest base dimension that will fit with comfortable working room and 5” deep is a comfortable depth for handling specimens in and out of the Light box. Possible to use deeper glass trays with Lightbox.

Custom Orders through Glass Cages must be emailed for a price quote. The prices listed above are the prices the Field Museum received. Other options of glass color and quality are available but price will vary.

Misc. Helpful Material from any Craft Store.
-Black cloth (to cover camera and lightbox from outside light)
-Flat Clear Glass Beads (to help prop lopsided fish specimens)
-Glass or plastic sheet (to cover Glass tray at the end of the day to keep from filling and emptying alcohol daily)

Variations to Imaging Settings



The Lightbox settings differ for fishes from herbarium sheets in that all the side and platform lights are on with the cooling fans.

The two Camera Remote Settings recommended as baseline settings guides are outlined in blue in the image on the right.

Because of the nature of photographing specimens in alcohol, the imaging of wet specimens will require a basic understanding to manual photography. Understanding shutter speed, aperture and ISO will greatly improve the quality of images on a specimen to specimen basis.

Tips and Suggestions for Imaging Fish

-If you are without a waterproof and sinkable scale bar, place the scale bar underneath the glass tray.

-Work by size. If you arrange specimens to be imaged by size, the camera won't have to be moved as frequently and adjusting the scale bar underneath won't be as frequent either.

-Because of the reflective glass tray material, it is advised to use a black cloth of some kind to keep all outside light from coming into the lightbox.

Side by side comparison between specimen imaged without covering(left) and with(right). Notice the slight orange streak in the scale bar/ label in the image on the left due to overhead warm fluorescent bulbs.

-The glass stones are barely noticeable props for imaging specimens. *Both images shown below are the same specimen.*

-For images that are too small to be imaged in detail in a tray, stack trays to bring the specimen closer to the camera.

-Do not use the LED lights(accessory 1) or Warm lights on specimens in alcohol.

-Dry specimens and cleared and stained specimens image extremely well in the Lightbox.