

Langerhans Lab Protocols

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Live Fish Photography Protocol

Set up:

- Stand the white board used for preserved specimen photography against the camera stand post, then place the black microscope circle in front of it.
- Place the glass box not in use against the black circle, to raise the glass box in use up to the height of the camera lens.
- Place the camera on the camera stand table, with the lens exactly perpendicular to the white board. Position camera so that fish area fills view. Make sure auto focus is on. Make camera settings are:
- Point four fiber lights at fish box. Turn brightness low to position, then increase intensity for photographs.
- Choose folder in which to save images via camera setting. Create a new folder for each fish.



Live fish photography set up in lab:



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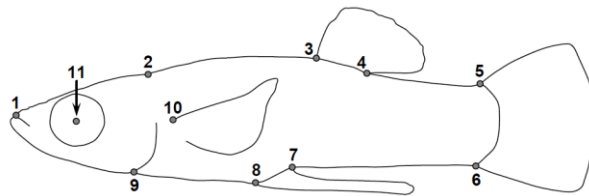
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Prepare specimen:

- Use smaller glass box for most specimens; use larger box only if fish won't fit in smaller box.
- Fill box with aquarium water, then add fish. Holding fish in net, put fish's nose into water, and it should slide in. Then pour off about half the water, to prevent the fish from jumping out.
- Wipe water droplets from outsides of glass box.
- When using the smaller box, set it in front of the camera with the white scale teeth towards the back, so that if the fish gets into the small gap between the teeth and the glass, it's fins are visible to the camera, and not behind the white teeth. (You can see which glass wall the teeth are against by looking down into the box.)

Take photos:

- Focus camera manually (Auto Focus gives less sharp focus on fish).
- Ideal view is flat lateral horizontal view, with no twisting of fish body. All morphometric points of preserved specimens should be visible:



- Use a wooden pick (behind fish) to position the fish, if it doesn't get into position itself. If the fish keeps its body curved, gently slide the wooden pick between the fish and the back glass and press the fish against the front glass.
- Take multiple photos if necessary. Click away, then delete poor quality images later.
- Between fish, change photo destination folder, creating a new one for each new fish.

Notes:

- Scale: outer edge of white plastic egg crate teeth in bottom of glass boxes = 12 mm. If scale of white backdrop board is visible, do not use it; that scale is incorrect due to its distance from fish. There is a reference photo with ruler and each fish box on computer G.
- If the fish image is too bright and details aren't clear, decrease from F11 to F10, or decrease light intensity on light boxes.
- Saving images:
 - Desktop/G. hubbsi Live Common Garden/24 week photos/Brood+letter/folder for each individual (i.e., Fish 1, Fish 2, etc.)
 - For one individual: delete bad photos; save all good photos; choose the best image and rename it "fish 1 [brood letter] best" (e.g., fish 1 A best.jpg for brood A) and save that best photo in the Brood+letter folder.