What are my options?
Squeeze Tank

• Glass/plexiglass tank held together with silicone with separate moveable glass plate used to “squeeze” specimen in place.
• Filled with distilled water or 70% ethanol
• Stationed between light units placed to the sides and slightly above the squeezebox
• Camera mounted on a tripod in front of tank
Photo e-Box (Light Box)

• Box lined with continuous fluorescent lighting and 1-foot LED Light Strip
• Diffused light eliminating shadows, reflections, and hotspots
• Camera mounted above the box on a copy stand or in front of the box on a tripod.
Copy Stand

• Camera connected to a lift that can manually be raised or lowered
• Stationed between light units (flash or continuous) which are placed to its side
• Option of having direct or diffused lighting
Which imaging system is best for your needs?
What are you trying to image?

How is the specimen preserved?

• Wet (ethanol, glycerin)
• Dry (skins, skeletons, fossils, eggs, nests etc.)
Ethanol preserved specimens

Image in solution (H2O or ethanol)

- Prevents glare
- Prevents specimen from drying out!

Out of water

In water
Squeeze tank

• Will accommodate 80-90% of specimens in the wet collections.

• Dorsal, lateral, and ventral views easily obtainable

• Change out solution (preference distilled H2O)
Setup

• Customize tank size (Glass / plexiglass/ silicon)
  - Front-glass (minimal scratching)
  - All other sides plexiglass
  - Dimensions 38 x 30 x 12 cm

• Computer setup to tether image files
  - Optional (will be more time efficient)

• Lighting
  - Flash
  - Direct/continuous
  - Diffused

• Average 12 minutes per specimen
Demonstration tomorrow (6th)
10:30-12:00
Lightbox?
• Useful for wide/deep-bodied specimens (turtles, coiled snakes, etc.)
• Place Squeeze tank in Light box?
Large specimens
Live photos

**FIGURE 4.** Fresh specimen of *Chelidoperca stella*, PMBC 27838, paratype, 61.8 mm SL, off Phuket, Thailand, Andaman Sea.

Matsunuma & Motomura (2016)
Glycerin preserved specimens
Copy stand or light box

• Image specimen in glycerin (same RI)

• Need strong light underneath the specimen

• Copy stand use a white piece of paper below the specimen with strong light.

• Advantage of Copy stand, is lens can get a lot closer to specimen.
Non-fluid preserved specimens

Lightbox and/or Copystand
• Both work great for vertebrates.

• Lightbox has better workflow for pressed plants
Lighting

Light box
- Continuous
- No shadows
- Diffused/Soft light

Copy Stand
- Continuous, flash
- Shadows
- Contrast
<table>
<thead>
<tr>
<th>Lighting</th>
<th>Light box</th>
<th>Copy Stand</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Continuous</td>
<td>• Continuous</td>
<td>•Continuous, flash, <strong>Diffused</strong></td>
</tr>
<tr>
<td>• No shadows</td>
<td>• No shadows</td>
<td>• Shadows, <strong>No shadows</strong></td>
</tr>
<tr>
<td>• Diffused/Soft light</td>
<td>• Diffused/Soft light</td>
<td>• Contrast, <strong>Soft light</strong></td>
</tr>
</tbody>
</table>
How to soften light
More options the better

• Sometimes you need shadows

• Skeletal material – Fossils
Time

Light Box
• Faster workflow - light settings doesn’t need to be adjusted (on switch)
*Depends on specimen color

• Average 7 minutes per specimens

Copy Stand
• Initial lighting setup

• Lighting manipulation, during process

• Average 10 minutes per specimen
Lens to specimen distance

**Light box**
- Restricted

**Copy stand**
- Lens very close to specimen
### Light box
- **Expensive**
- **Photo-e-Box Bio:** $1,780
- Default camera mount is no good for DSLR
- Should buy a good copy stand for the camera mount

### Copy Stand
- Affordable and commonly found at university surplus
- Wider cost range
- Package with lights ca. $200
Ca. $50

Image from B&H Photo
Overview

• Ethanol specimens – Squeeze tank
  – affordable, easy to customize sizes, efficient, use in lab or field

• Glycerin specimens – Light box or Copy Stand
  – Image in glycerin, use strong light

• Dry specimens – Light box or Copy Stand
  – Both work great, Copy Stand more affordable, Light Box more user friendly
Questions?

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