

Is this a swallow-tail hummingbird?  
(*Eupetomena macroura*)



Does anyone know what tree this is?



Does anyone know what beetle this is?



# Digitizing Wet Collections



Photo of  
*Eucordyloporus aubryi*  
by Robin DeLaPena

Paul Mayer  
Robin DeLaPena  
Kelsey Keaton





**Photo by Leandro Sousa, rio Xingu, Brazil, 2012 from  
MARK SABAJ PÉREZ**

*Peckoltia sabaji*, rio Xingu by  
MARK SABAJ PÉREZ



- Difficult due to how they are organized
- More handling and more time required per specimen
  - Handling delicate specimens
  - Time consuming



**Digitizing Wet Collection**

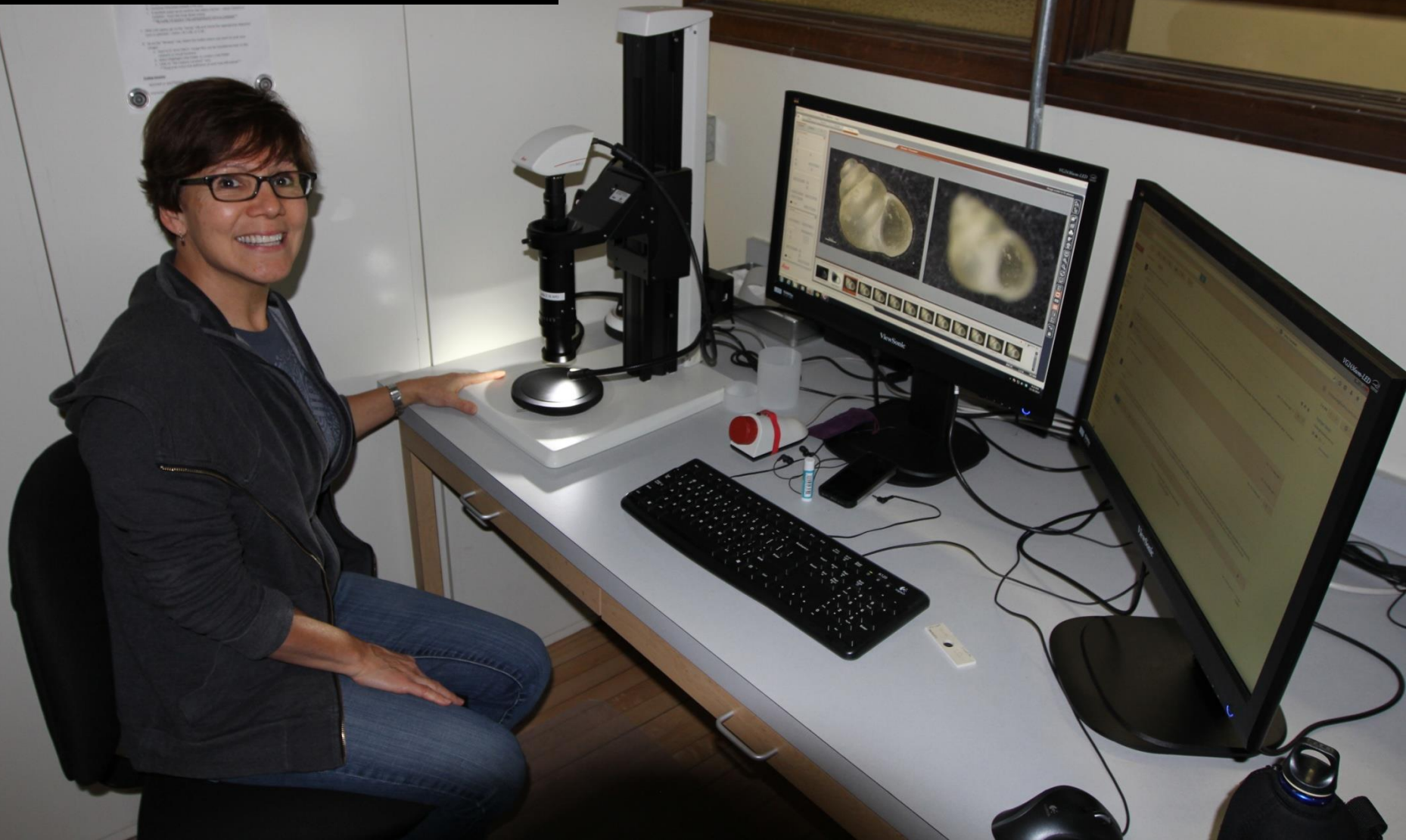


# Proposed Workflow at Academy of Natural Science of Philadelphia

## by William Lucken

- Transport specimens from the collection to the Imaging Lab (1 shelf at a time)!
- Verify Type information!
- Photograph 1 lot at a time in lateral view (dorsal and ventral if appropriate) insert “Imaged By” label!
- Radiograph 1 lot at a time in lateral view (dorsal/ventral if appropriate) insert “Imaged By” label!
- Enter Metadata for each lot into the Collection Database!
- Once all lots are imaged move all images to the server!
- Replace lids and jars if needed, top off Ethanol and return specimens to the collection!
- Complete image processing in Photoshop!
- Upload images to the Type Imaging website!
- Repeat!

Leica DFC 450 camera  
1 mm or less used on  
wet specimens



# Magnification





How many steps 250, 120 or 60 for stacking software?

# Specimen Positioning



Photo of  
*Spissustreptus wallacei*  
by Robin DeLaPena

Photo of  
*Zoosphaerium muscorum*  
by Robin DeLaPena



1.0 cm

# Wet Specimen Positioning

- K-Y Jelly
- Glycerin
- Hand Sanitizer
- Submerged in drop of alcohol



*Zoophaerium muscorum*

1.0 cm



3.0 cm

Photo of  
*Zoosphaerium villosum*  
by Robin DeLaPena



# Labels

FIELD MUSEUM NAT. HIST.

FMJK-71-1069

FIELD MUSEUM OF NAT. HISTORY  
Phillippine Zool. Exped. 1946-7  
PALAWAN Is., Palawan Prov., PI  
Mauyan, Puerto Princessa, or  
Iwahia Penal Colony, sea level  
Mar./Apr. 1947 F. Werner leg.

HARPAGOPHORIDAE:

Spissustreptus wallacei HFFM.

♀♀ PARATYPES!

sig. Hoffman 1973

PHOTOGRAPHED  
R. DeLaPena 2014  
EMu catalog

621



Photo of  
*Collembola* sp.  
by Robin DeLaPena

Photo of  
*Microcharmus fisheri*  
and a *Thrip*  
by Robin DeLaPena



5.0 mm



1 mm

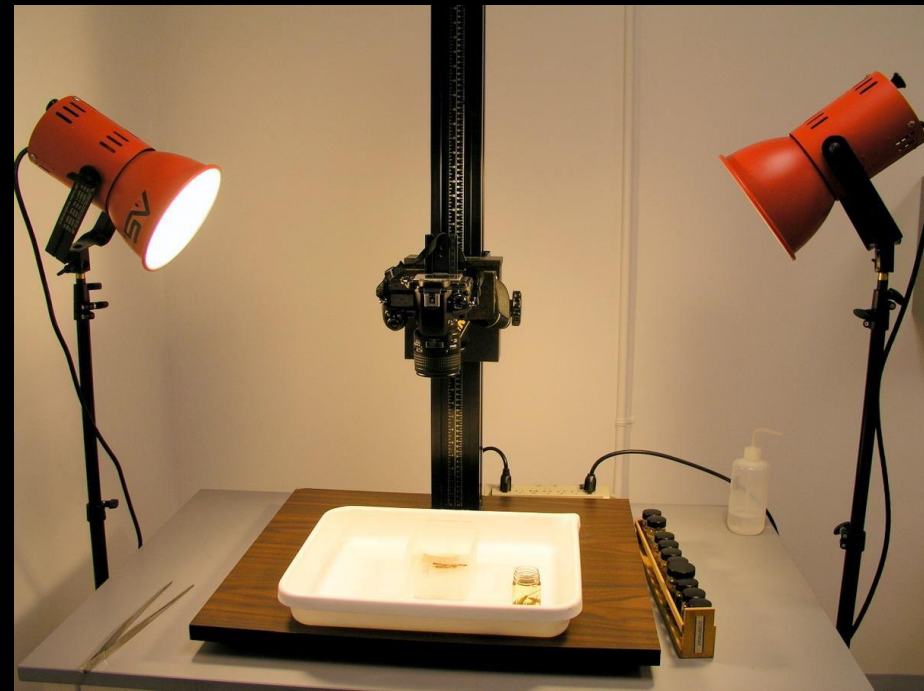
Photo of  
Soldier Termite  
*by Robin DeLaPena*

# Depth of Focus



# Macro Photography of wet specimen think safety

- Contain spills
- Clean workspace
- Absorbent pads
- Keep tools handy
- Well-ventilated



**Mark F. O'Brien**  
University of Michigan

# Specimen Holder

Two glass lantern slides with acrylic sides and bottom and glued with silicon adhesives

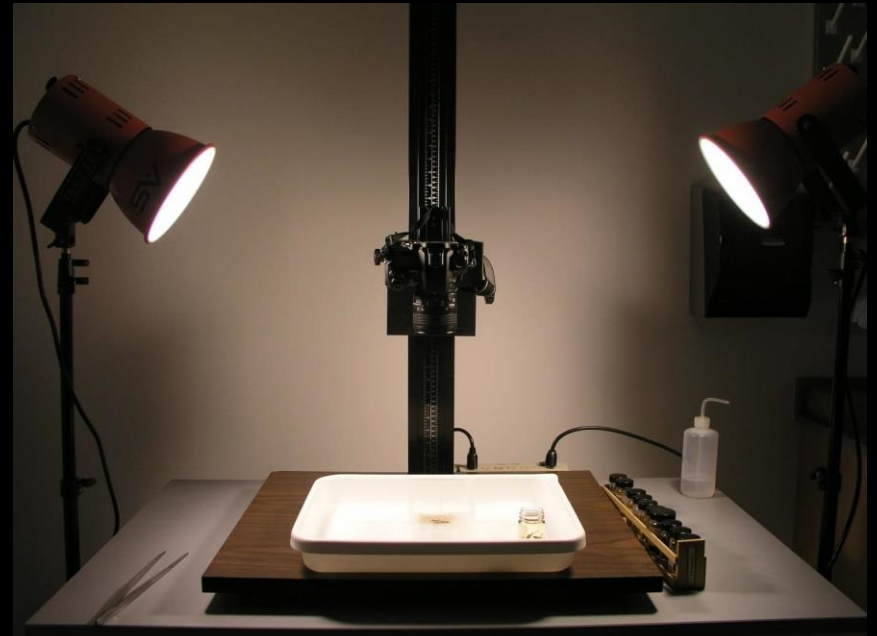
- Wet specimens are particularly difficult to photograph because of the alcohol/air interface.
- Difficult to position specimens in fluid
- Workflow is slower than dry specimens
- A specimen holder of some sort is desirable



**Mark F. O'Brien**  
University of Michigan

# Lighting Wet Specimen

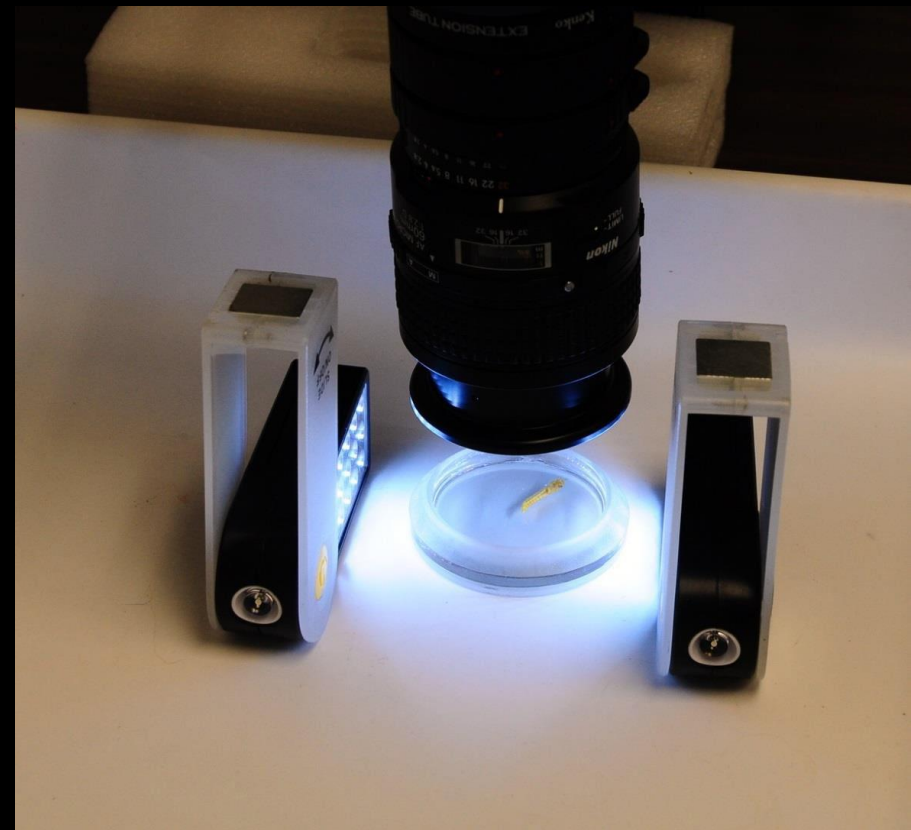
- **Compact Florescent Lighting (CFLs)**
  - Not hot
  - Many spectrums including 5500K
  - Low energy
  - even lighting of large specimens



**Mark F. O'Brien**  
University of Michigan

# LED Lighting

- Full-and limited spectrum
- Low power requirements
- Now fairly inexpensive
- Easily adapted
- Can be placed very close to objects
- Battery or AC power
- Wide variety of applications



**Mark F. O'Brien**  
University of Michigan



Thank You





# Magnification

