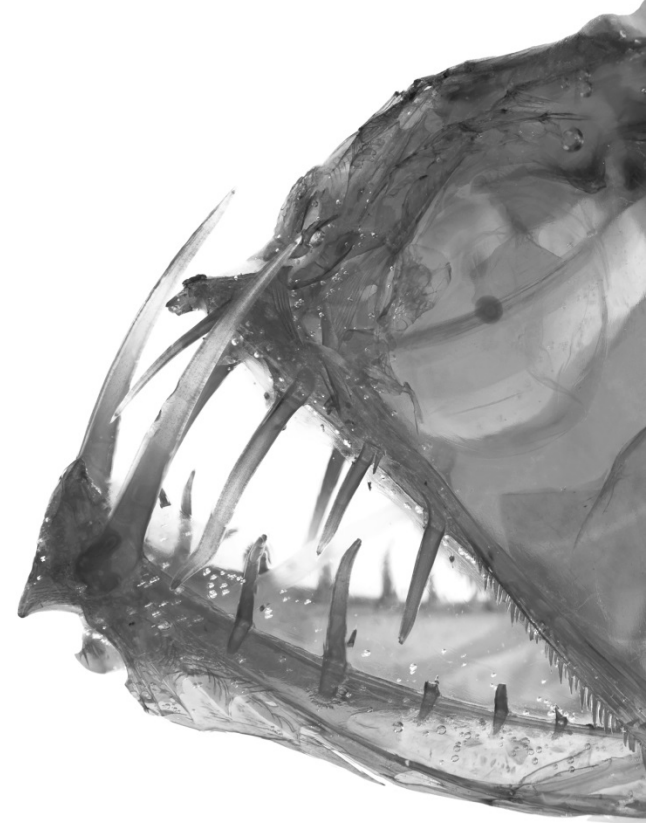
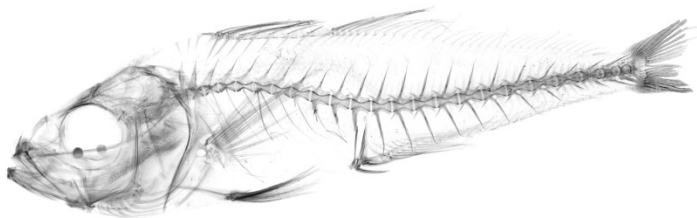
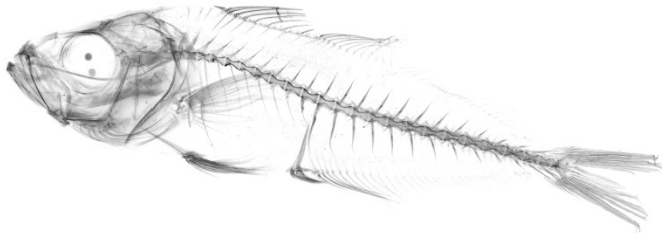
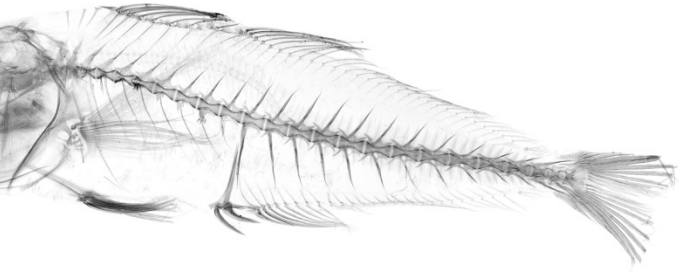


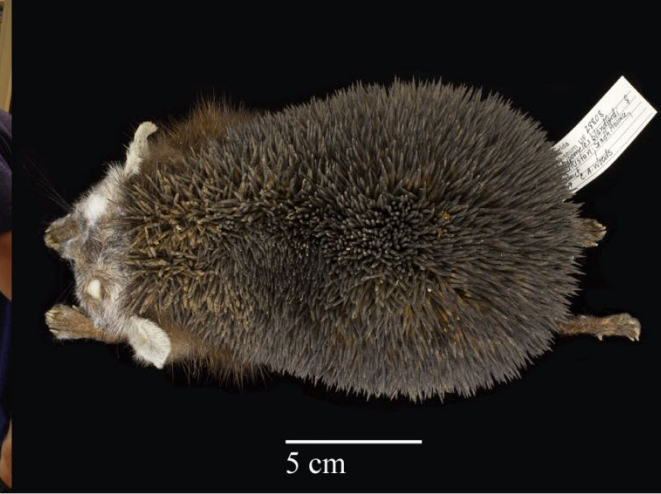
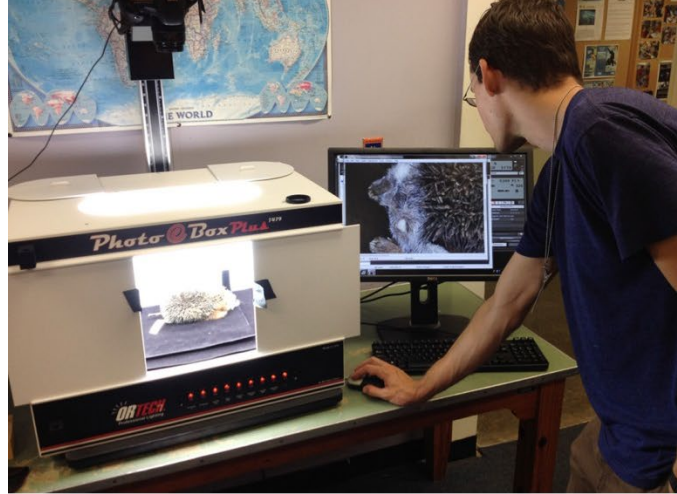
# Digitization in Museums: 2D Imaging



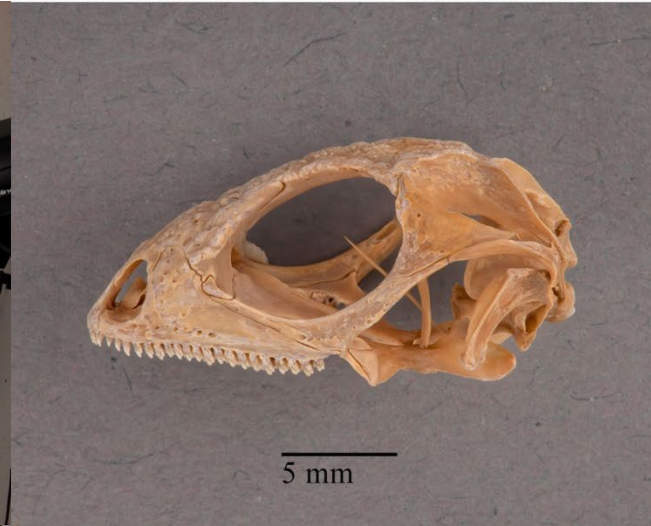
Zach Randall  
Ichthyology



# Most commonly used imaging stations



Hawksbill  
UF 10552





# How is the specimen preserved?

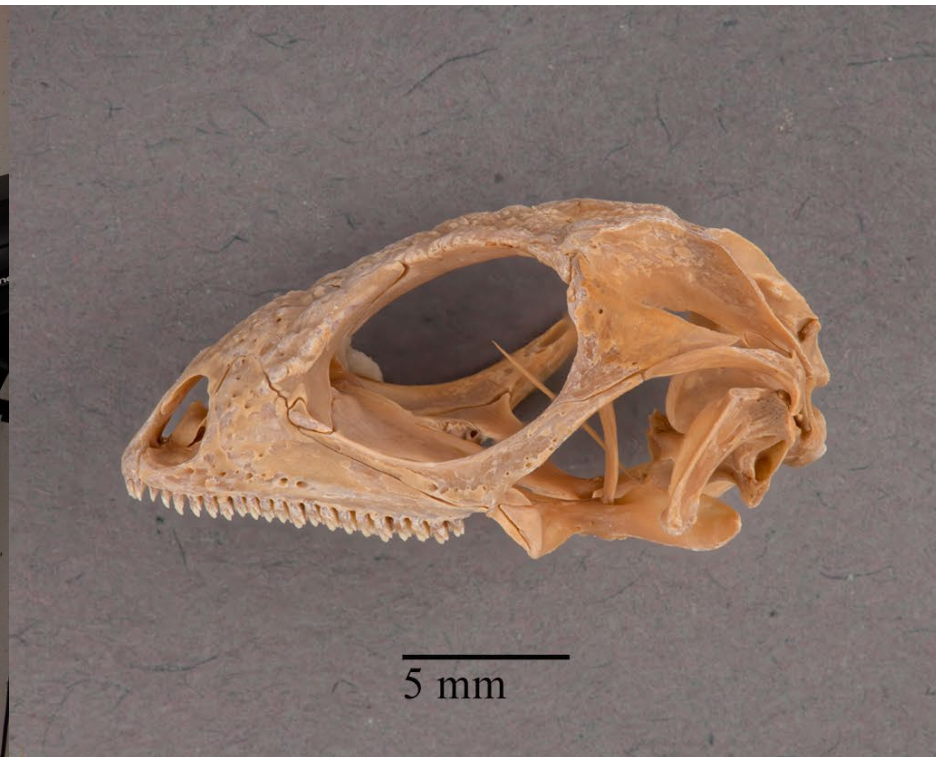
- Wet (ethanol, glycerin)
- Dry (skins, skeletons, fossils, eggs, nests etc.)



Bowfin

# Copy Stand Dry specimens/wet specimens

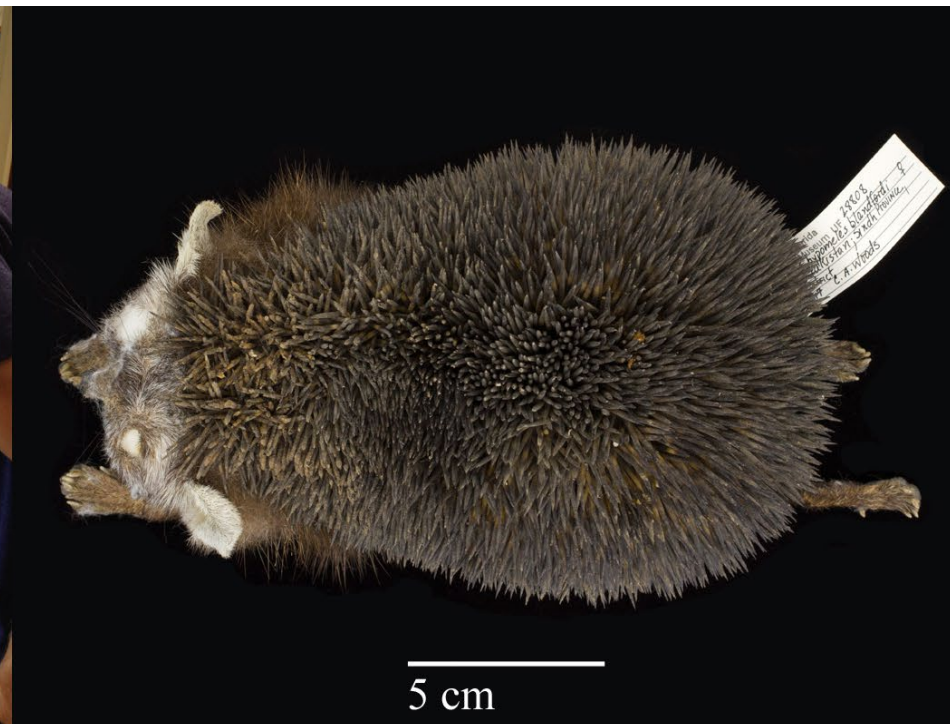
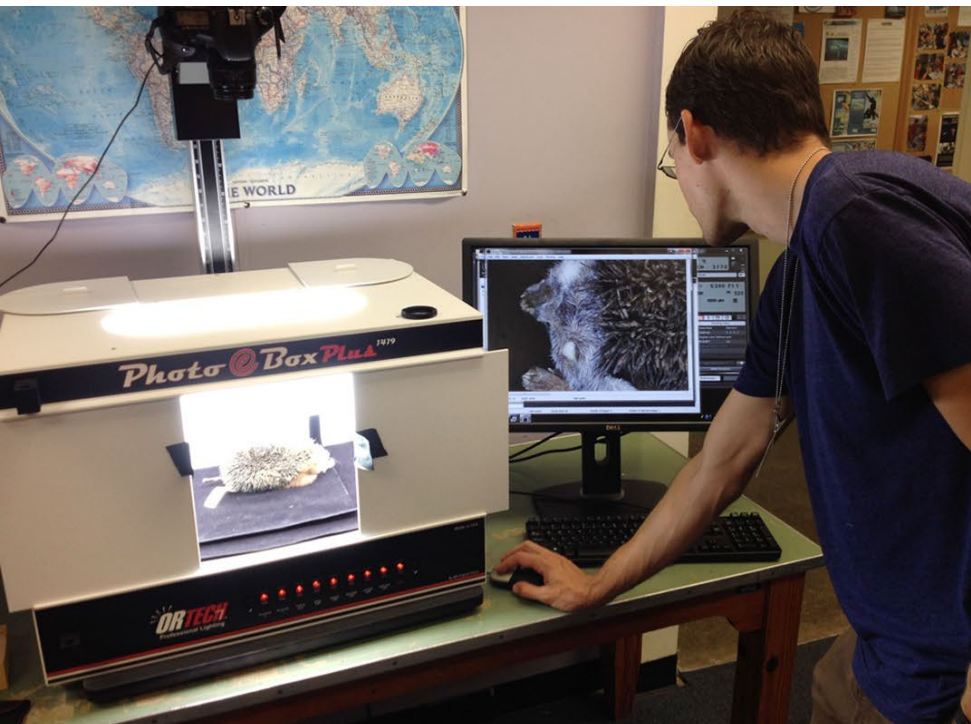
- Camera connected to a manual lift that can be raised or lowered
- Stationed between light units (flash or continuous) which are placed to its side
- Option of having direct or diffused lighting
- Tethered to computer





# Photo e-Box (Light Box) Dry specimens

- 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.



# Squeeze Tank

Wet specimens

- 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





# Squeeze tank

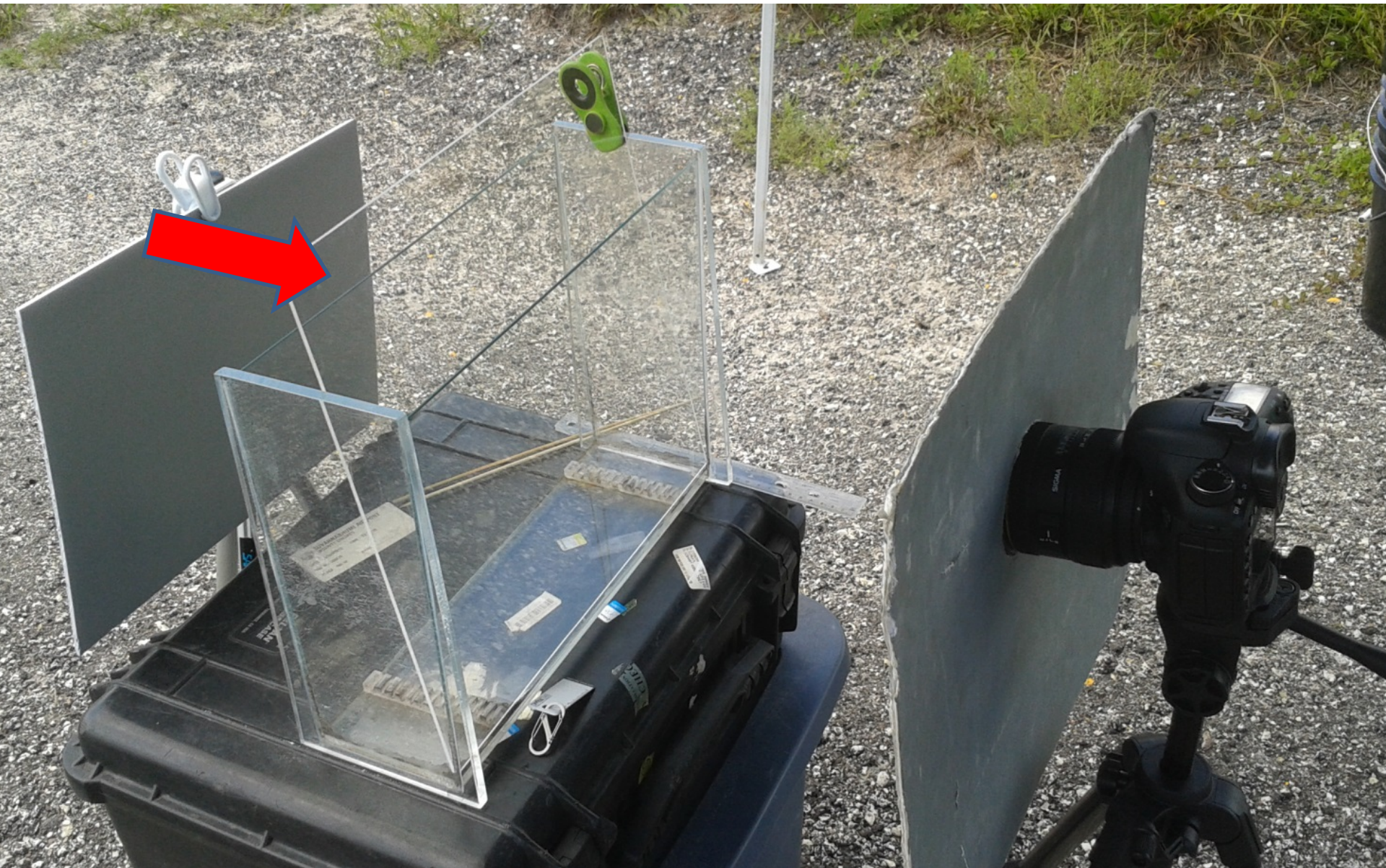
- Prevents specimen from drying out
- Prevents glare
- Will accommodate ca. 90% of specimens in the wet collections.



Whale Shark



# Field Setup

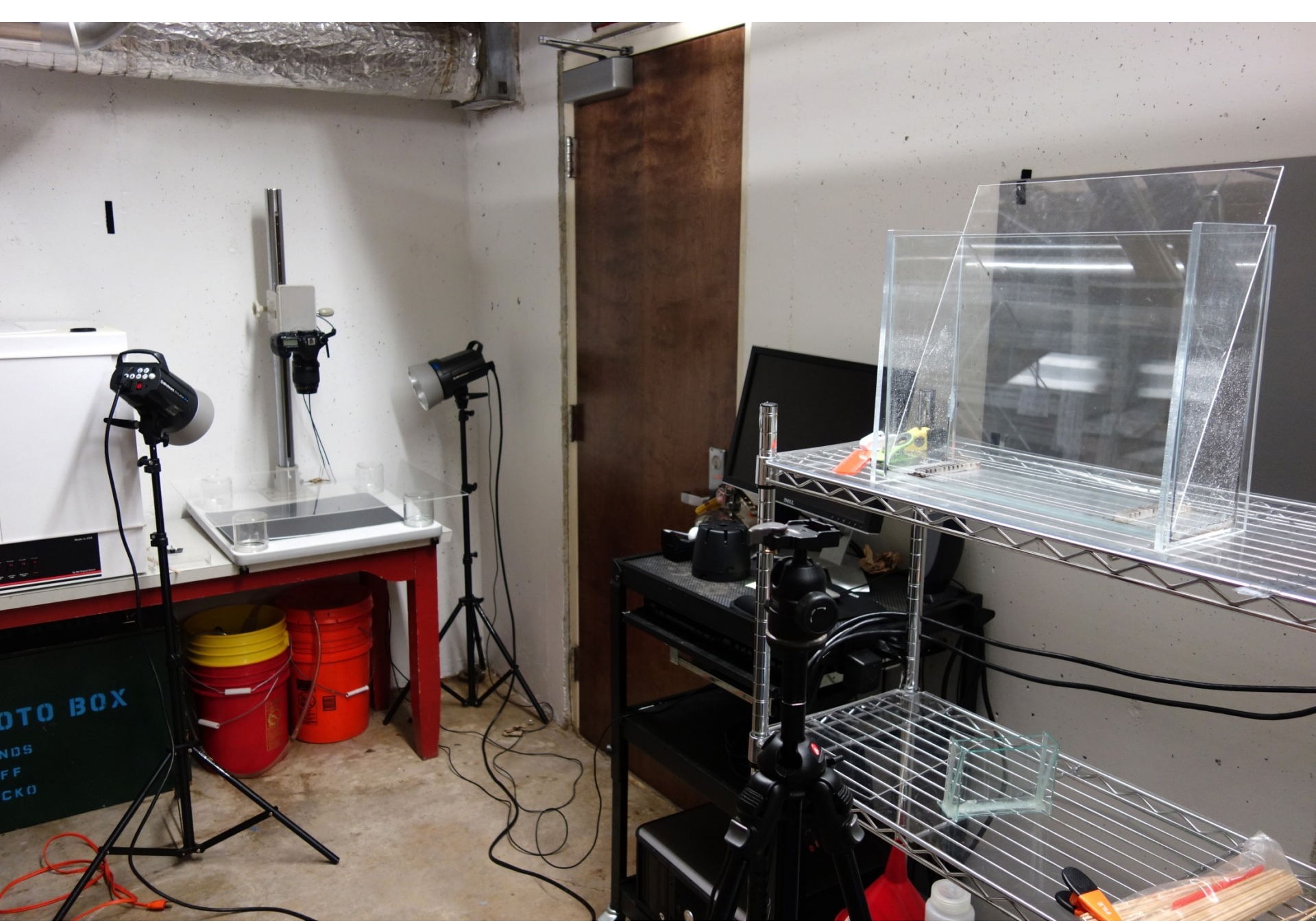




# Setup

- 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 (more time efficient)
- Lighting
  - Flash; Natural light
- Average 6 minutes per specimen





OTO BOX  
NDS  
FF  
CKO



# Labels

reg. no: 188071/1-5  
*Chiton laqueatus*  
Sowerby, 1842  
TYPE + 4 PARALOTYPES  
Sowerby, 1842. Proc. Zool.  
Soc. Lond. (1841): 104  
CUMING colln.  
5 specs. Acc. no: 1829  
Japan  
Andros Is.  
Philippines.  
TYPE selection in  
track, 1993. J. Malac. Soc.  
14: 23

B.M. (N.H.) reg. no: 112053  
*Chiton (Chitonellus)*  
*burrowsi* Smith, 1884  
TYPES  
Smith, 1884. Rep. Zool.  
Colln. U.S. Akrt 1891-92: 85  
H. CUMING colln.  
4 specs. Acc. no: 1829  
Port Adelaide  
S. Australia.  
fig'd. in Reeve, 1847. *Conch.*  
Icon. # *Chitonellus*,  
sp. 3, pl. 1, fig. 3  
as *larvaeformis*.

British Museum (Natural History)  
*Allochiton platessa*  
Gould, 1846  
Nilandau Atoll, Maldive Is.  
36 fms

British Museum (Natural History)  
*Chiton burrowsi* Smith  
Described vol. 91, p. 10, animal in  
figure. Brit. Mus., Zool. (1884)  
4 spec. fms.


Cancer productus (Randall)  
37, 18

Concordia

Cancer productus (Randall)  
18, 18

1492 42

ALLAN HANCOCK FOUNDATION  
ACC. NO. \_\_\_\_\_ CAT. NO. \_\_\_\_\_  
*Cancer productus* Randall  
South Bay, Cape Arago State Park,  
Coos Co., Oregon  
July 30, 1942 shore  
ID. BY J. H. STA. NO. 1492-42  
THE UNIVERSITY OF SOUTHERN CALIFORNIA

1000551 LACM MBC  


NATURAL HISTORY MUSEUM  
LOS ANGELES COUNTY

MARINE BIODIVERSITY CENTER

TH 16-15  
17.03710  
100.36888  
Lam Nam  
Kwaei Noi  
19 Jan. 2016

Megalopinus  
*cavifrons*  
spec. 405  
det. V. Puthz 1998

♫ HOLOTYPE

HOLOTYPE  
teste A. Westrich 2015  
GDI Imaging Project

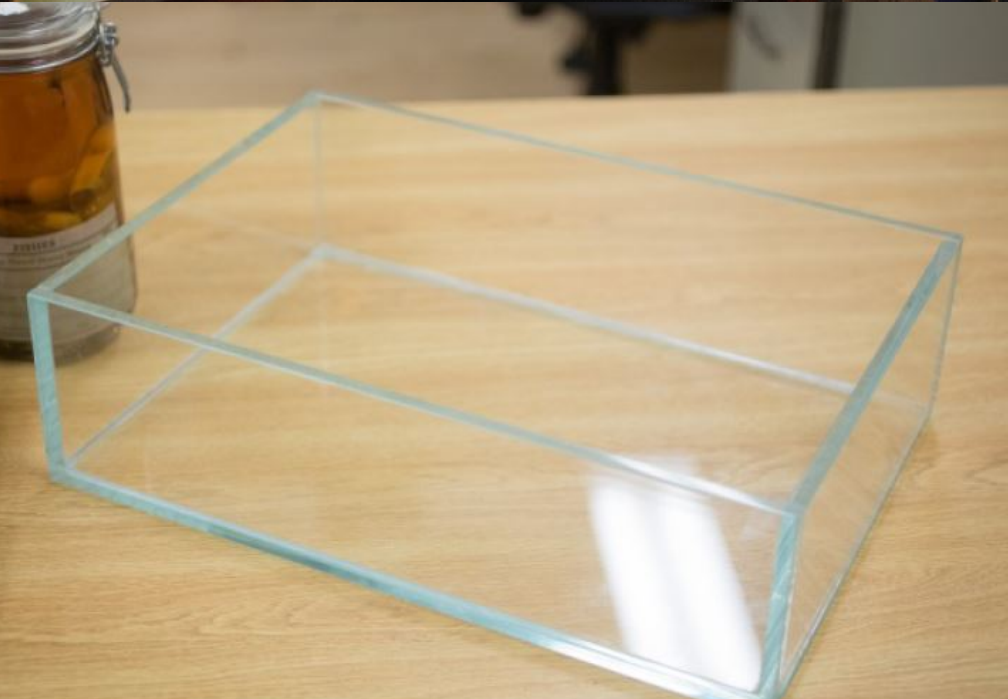
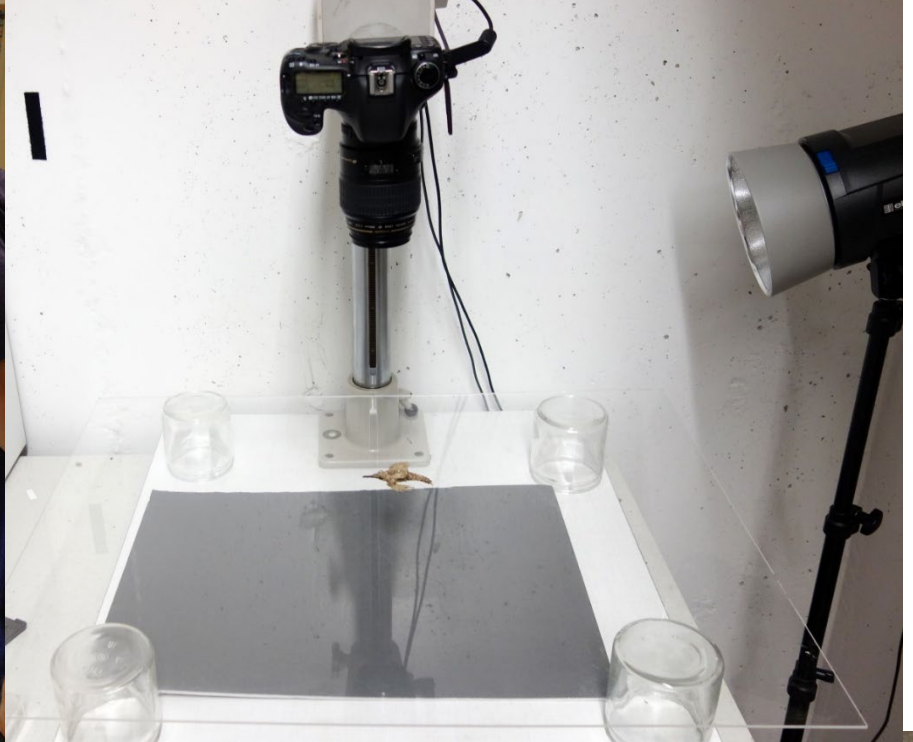
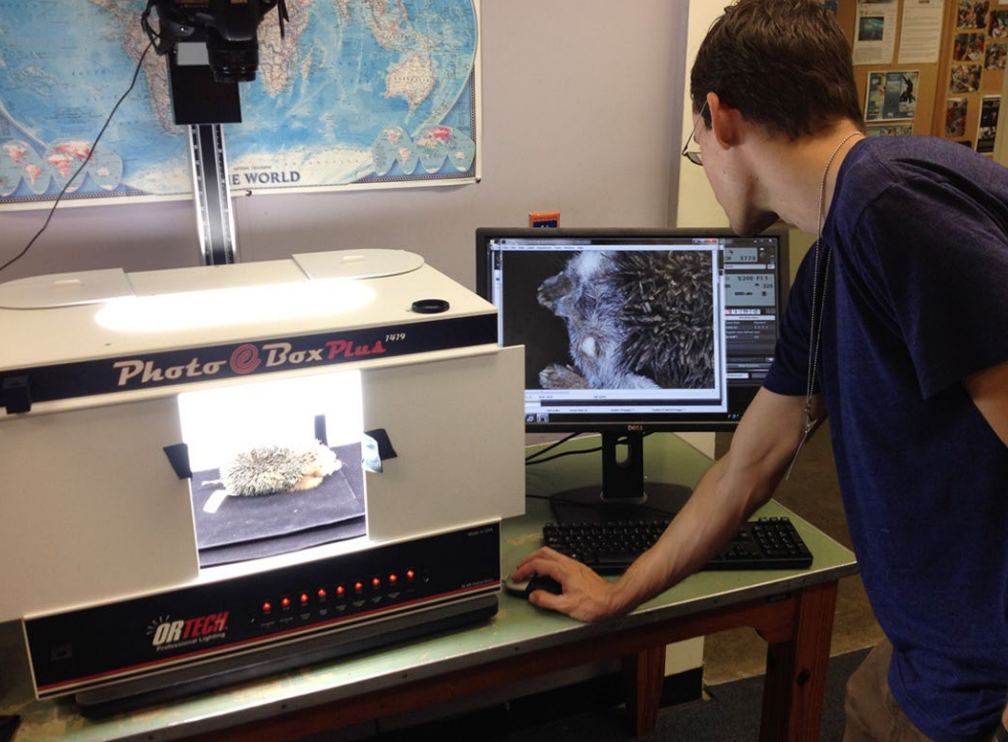
Nova Teutonia, Sta.  
Catharina, BRAZ,  
XII - 1953  
Fritz Plaumann leg.



FMNHINS  
3047974  
FIELD MUSEUM  
Pinned

PHOTOGRAPHED  
A. Westrich 2015  
EMu Catalog









# Inselect

- Identifies individual specimens & associated labels
- Places a bounding box cropping each specimen-level image
- Captured metadata such as catalogue numbers, location within the collection, and possibly information on labels
- Associating metadata with the cropped images





TH 16-15

17.03710

100.36888

Lam Nam  
Kwaei Noi

19 Jan. 2016





- Name
- TH16-28
- TH16-29
- TH16-30
- TH16-31
- TH16-32
- TH16-33
- TH16-34
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- TH16-53
- TH16-54
- TH16-55
- TH16-56
- TH16-57
- TH16-58
- TH16-59
- TH16-61
- Copy of TH16 locality data.xlsx

	A	B	C	D	E	F	G	H	I
1	FIELD NO	DATE	LOCALITY	DRAINAGE	DISTRICT (AMP	PROVINCE (CHA	COUNTRY	LATITUDE	
2	TH16-01	10 Jan 2016	Khong River at Rt. 1095 approx. 7.5 km N	Pai River	Pai	Mae Hong Son	Thailand	19.424591	
3	TH16-02	10 Jan 2016	Khong River at Ban Huai San on Rt. 1095	Pai River	Pang Mapha	Mae Hong Son	Thailand	19.535783	
4	TH16-03	10 Jan 2016	Pai River at Mae Hong Son Inland Fisheries	Salween River	Mueang Mae H	Mae Hong Son	Thailand	19.255453	
5	TH16-04	11 Jan 2016	Surin River approx. 1.5 km N of Ban Mae S	Pai River	Khun Yuam	Mae Hong Son	Thailand	18.927690	
6	TH16-05	11 Jan 2016	Yuam River at Ban Mae Tia on Rt. 108	Salween River	Mae La Noi	Mae Hong Son	Thailand	18.298351	
7	TH16-06	12 Jan 2016	Market at Mae Sariang	Salween River	Mae Sariang	Mae Hong Son	Thailand	18.158562	
8	TH16-07	12 Jan 2016	Sam Laep River at Ban Mae Sam Laep	Salween River	Sop Moei	Mae Hong Son	Thailand	17.978262	
9	TH16-08	12 Jan 2016	Moei River at Rt. 105 approx. 7 km SE of E	Salween River	Tha Song Yang	Tak	Thailand	17.516345	
10	TH16-09	15 Jan 2016	Mae Chaem River at Rt. 108 bridge approx	Ping River	Hot	Chiang Mai	Thailand	18.222638	
11	TH16-10	15 Jan 2016	Mae Chaem River at Ban Om Kood on Rt.	Ping River	Mae Chaem	Chiang Mai	Thailand	18.276885	
12	TH16-11	17 Jan 2016	Yom River SSW of Ban Nong Muang Khai	Nan River	Nong Muang Kl	Phrae	Thailand	18.252339	
13	TH16-12	17 Jan 2016	Yom River below dam at Ban Nun Nuea	Nan River	Song	Phrae	Thailand	18.484272	
14	TH16-13	18 Jan 2016	Yom River approx. 3 km N of Ban Khlong	Nan River	Sawankhalok	Sukhothai	Thailand	17.200491	
15	TH16-14	18 Jan 2016	Yom River at bridge off Rt. 101 approx. 3	Nan River	Si Satchanalai	Sukhothai	Thailand	17.551068	
16	TH16-15	19 Jan 2016	Khwa Noi River off Rt. 1026 approx. 7.5	Nan River	Wat Bot	Phitsanulok	Thailand	17.035996	
17	TH16-16	19 Jan 2016	Wang Thong River at Rt. 12 approx. 22 km	Krong Kreng Ri	Wang Thong	Phitsanulok	Thailand	16.852211	
18	TH16-17	19 Jan 2016	Nan River at Ban Bang Sai on Rt. 1063	Chao Phraya R	Mueang Phitsar	Phitsanulok	Thailand	16.682376	
19	TH16-18	20 Jan 2016	Pa Sak River at Rt. 12 bridge	Chao Phraya R	Lom Sak	Phetchabun	Thailand	16.729801	
20	TH16-19	20 Jan 2016	Loei River at Loei	Mekong River	Mueang Loei	Loei	Thailand	17.508872	
21	TH16-20	20 Jan 2016	Loei River at bridge S of Ban Wang Saphur	Mekong River	Wang Saphung	Loei	Thailand	17.287783	
22	TH16-21	21 Jan 2016	Kong Si River at bridge ESE of Ban Kumph	Lam Pao River	Kumphawapi	Udon Thani	Thailand	17.096920	
23	TH16-22	21 Jan 2016	Phai Chan Yai River at Rt. 2035 bridge	Lam Pao River	Nong Han	Udon Thani	Thailand	17.216134	
24	TH16-23	22 Jan 2016	Luang River at bridge N of Ban Sam Phrao	Mekong River	Mueang Udon T	Udon Thani	Thailand	17.455778	
25	TH16-24	22 Jan 2016	Mong River at Rt. 2348 bridge	Mekong River	Ban Phue	Udon Thani	Thailand	17.712757	
26	TH16-25	22 Jan 2016	Mekong River at NNW edge of Ban Phon S	South China Se	Tha Bo	Nong Khai	Thailand	17.819783	
27	TH16-26	23 Jan 2016	Mekong River at Nong Khai	South China Se	Mueang Nong k	Nong Khai	Thailand	17.882349	
28	TH16-27	24 Jan 2016	Mekong River approx. 70 km NW of Tha B	South China Se	Sangkhom	Nong Khai	Thailand	18.111062	
29	TH16-28	24 Jan 2016	Trib. of Mekong River at Rt. 211 bridge ap	Mekong River	Sangkhom	Nong Khai	Thailand	18.151070	
30	TH16-29	24 Jan 2016	Mekong River at confluence with Mong Ri	South China Se	Tha Bo	Nong Khai	Thailand	17.851984	
31	TH16-30	25 Jan 2016	Songkhram River at bridge W of Ban Na Si	Mekong River	Charoen Sin	Sakon Nakhon	Thailand	17.729470	
32	TH16-31	25 Jan 2016	Un River at Rt. 222 bridge	Songkhram Riv	Phang Khon	Sakon Nakhon	Thailand	17.442618	
33	TH16-32	26 Jan 2016	Un River at bridge approx. 3 km E of Ban	Songkhram Riv	Na Wa	Sakon Nakhon	Thailand	17.480165	
34	TH16-33	26 Jan 2016	Songkhram River near confluence with Ur	Mekong River	Si Songkhram	Nakhon Phanom	Thailand	17.634146	
35	TH16-34	27 Jan 2016	Trib. of Mekong River downstream of Rt.	Mekong River	Mueang Bueng	Bueng Kan	Thailand	18.332383	
36	TH16-35	27 Jan 2016	Mekong River at Ban Tha Pho on Rt. 212	South China Se	Mueang Bueng	Bueng Kan	Thailand	18.338504	
37	TH16-36	27 Jan 2016	Mekong River at Ban Huai Sueam Nuea or	South China Se	Mueang Bueng	Bueng Kan	Thailand	18.416475	
38	TH16-37	28 Jan 2016	Mao River below dam at Rt. 212 bridge ap	Mekong River	Mueang Bueng	Bueng Kan	Thailand	18.282598	
39	TH16-38	28 Jan 2016	Mekong River at Ban Bung Khla	South China Se	Bung Khla	Bueng Kan	Thailand	18.301226	
40	TH16-39	28 Jan 2016	Thuai River at Rt. 212 bridge S of Tha Uth	Mekong River	Tha Uthen	Nakhon Phanom	Thailand	17.562192	
41	TH16-40	28 Jan 2016	Bo River at confluence with Mekong River	Mekong River	Mueang Nakhon	Nakhon Phanom	Thailand	17.490645	

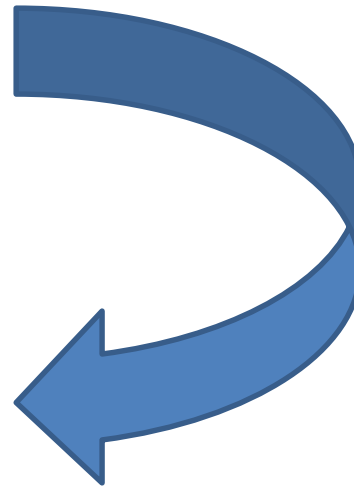
# Storage

Field photography

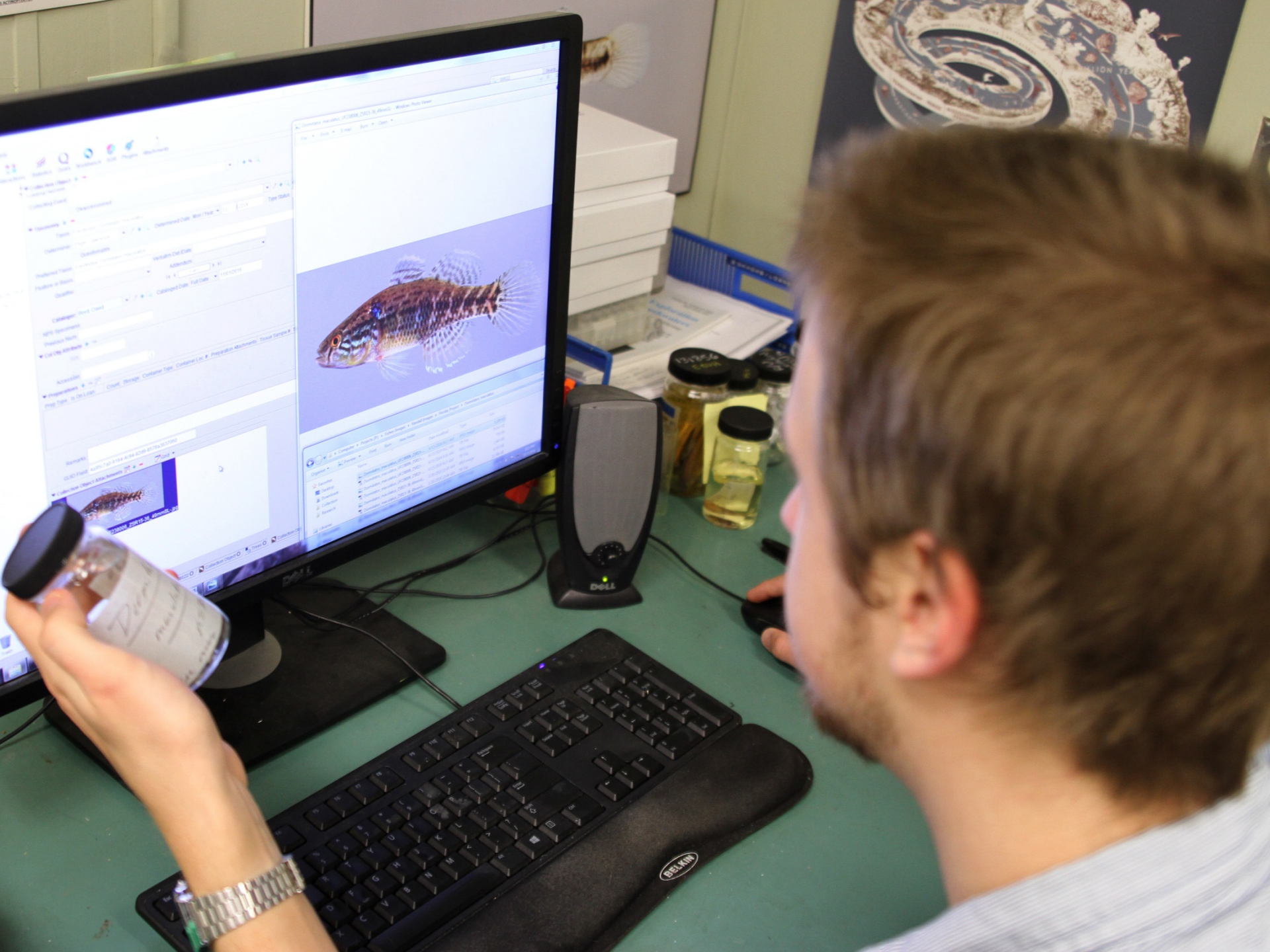
External hard drives

Lab photography

Internal Network Drive







# File Naming

Field (use Field number)

Default image number (IMG\_4137)

Cataloged

- Institution\_Collection Code\_Catalog number\_Field number

UF\_Fish\_192227\_TH18-15

- Or collection image: Institution\_Collection Code\_Catalog number

UF\_Fish\_192227\_Head



## ▼ Preparations

Prep Ty...	Is On Lo...	Co...	Stora...	Container T...	Container Lo...	Preparation Attachm...	Tissue Sampl...	Tissue Sou...
EtOH	No	33		standard jar				
photo	No	1						
tissue	No	1					ICH-00062	Left pectoral
tissue	No	1					ICH-00060	Right pelvic

Remarks:

GUID Field: ff7c51db-4161-453a-bdd0-18ad1cd266ee

## ▼ Collection Object Attachments Grid ▼



Gagata\_dolichonema\_UF188261\_TH16-07\_IMG\_5531.jpg

# Specify Online Web portal

FLMNH Fishes Specify Web Portal



Records

Images

Map

Preview (100 of 1797 items)



**FLORIDA MUSEUM**  
Ichthyology Collection

## Search Tools

Geo Coords  Images

## Advanced

Catalog Number:		=	▼
Genus:		=	▼
Species:		=	▼
Subspecies:		=	▼
Type Status:		=	▼
Preparations:		=	▼
Continent:		=	▼
Country:		=	▼
State:		=	▼
County:		=	▼
Locality:		=	▼
Drainage:		=	▼
Depth of Capture:		=	▼
Latitude:		=	▼
Longitude:		=	▼



Email: [zrandall@flmnh.ufl.edu](mailto:zrandall@flmnh.ufl.edu)



@Zach\_\_Randall

