DIY Vertebrate Specimen Photography

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iDigBio
Integrated Digitized Biocollections

University of Michigan

DIY Sub-Areas

LIGHTING

Advances in LED lighting

Constant vs flash

Daylight bulbs

LED panels

Light Tents

SUPPORTS

Macro Pods

Copy Stands

Gorilla Pods

Tripods

Other

ACCESSORIES

Backdrops

stands

Photo aids

Scissors tables

We have come a long way…

Archives of the Museum of Vertebrate Zoology, University of California, Berkeley

LIGHTING

The most important aspect of any photo project is lighting. With vertebrates, the range of lighting requirements is far greater than any other group. From macro-photography to whale-sized bones presents a challenge.

LED Panel Lights

5500K daylight, dimmable, 4400 LUX at 1 m

Can be used with a diffusion panel.

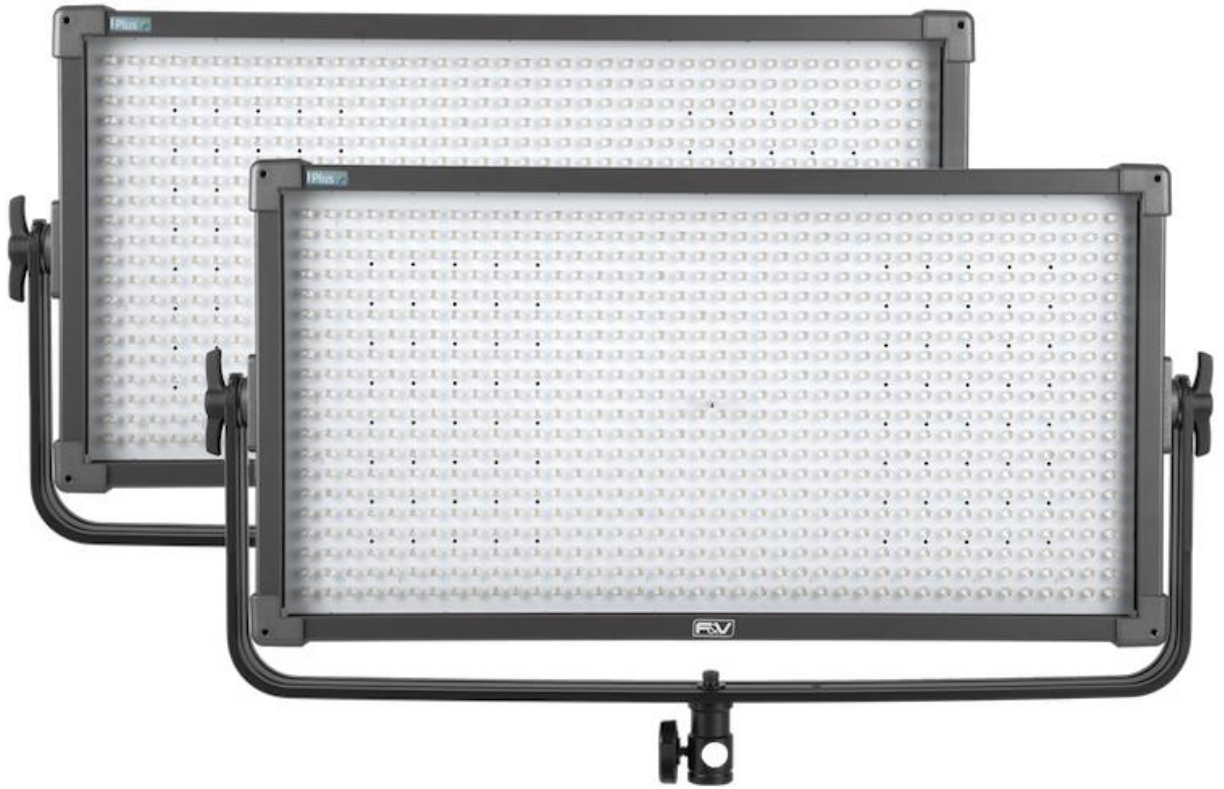
Low-heat generation

$170

Other models range $80-$950, depending on size and features. Some can be mounted on cameras.

Large Light Panels - Studio

Used for studio applications, these are about $800 each, and higher. However, perform well for coverage of large areas. Low-heat, often have adjustable white balance and brightness.



LED Strip Lights

Supplied on reels, cut to length, require 12V DC. Easy to stick to a backing support.

LED Replacements for Fluorescent Bulbs

FEIT makes one that is sold at Costco. Just plug it in.

Otherwise, buy T-8 replacement LED bulbs for some fluorescent light fixtures.

Replace Incandescent and CFLs with LEDs

Screw-in replacements can often be used with existing studio lamp housings and reflectors, reducing the heat generated, as well as providing a steady 5000K light source.

LED Ring-Lights

Use on-camera for close-ups and macro images. A variety of manufacturers. Most are in $40-$100 range.

Constant light source, but some models actually flash the LEDS as an option.

Light Modifiers

- Light Tents and Enclosures
- Diffusion screens
- Reflectors

Light Tents

- Light tents are an inexpensive way to create a bright, yet diffuse lighting environment for many applications. You can make your own, or simply purchase them in various sizes from 12" to 48" square. The folding models are ideal because they are easily stored when not in use.
- Some light tents are people-sized, which may be an ideal solution where studio conditions are not available, and could be used for mounted trophy heads, larger skeletons, and taxidermy examples.
- Table-top light tents can be used vertically or horizontally.
- Any current lighting method can be used, but hot-lights are not recommended.

Making your own light tents

- Use ½" white PVC tubing and elbows. Your hardware store is your shopping mall. Use PVC as it is easy to cut and glue together.
- Covering – white rip-stop nylon works well, but any thin translucent white material can be used.
- Cover all but one side.
- Customize to your dimensions.

http://www.simplifiedbuilding.com/blog/pvc-light-tent/

Light tent in use

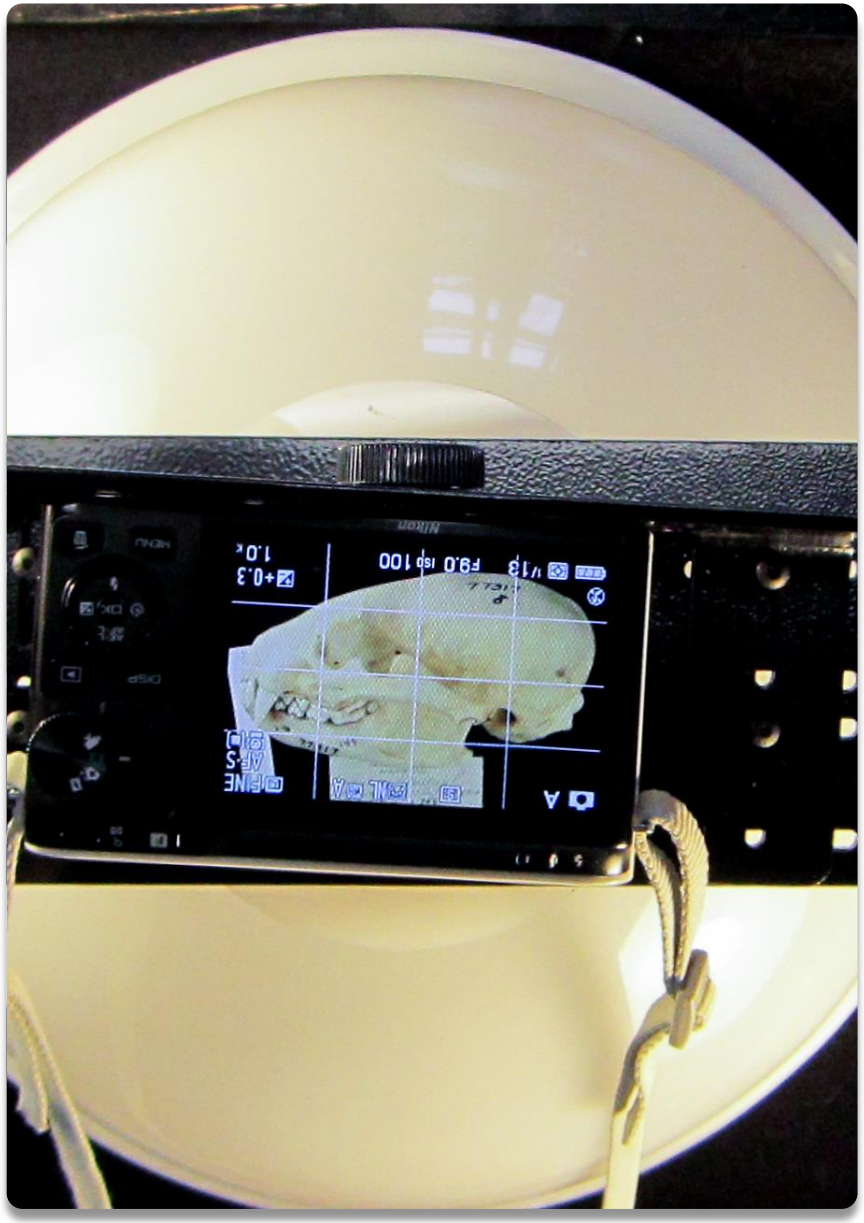
Inexpensive AC strobes ($20 each) provide enough light in this situation.

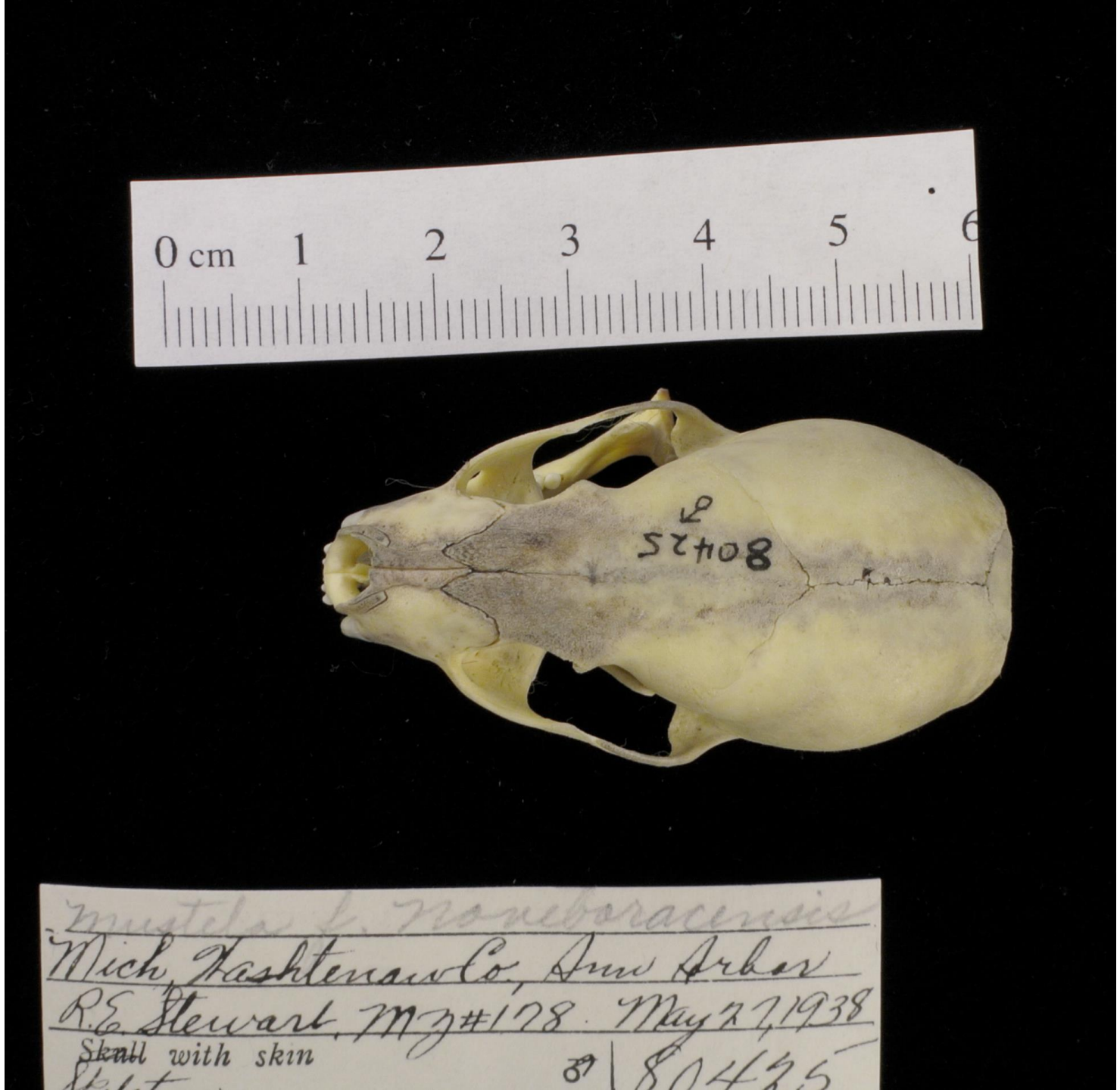
Cloud-Dome

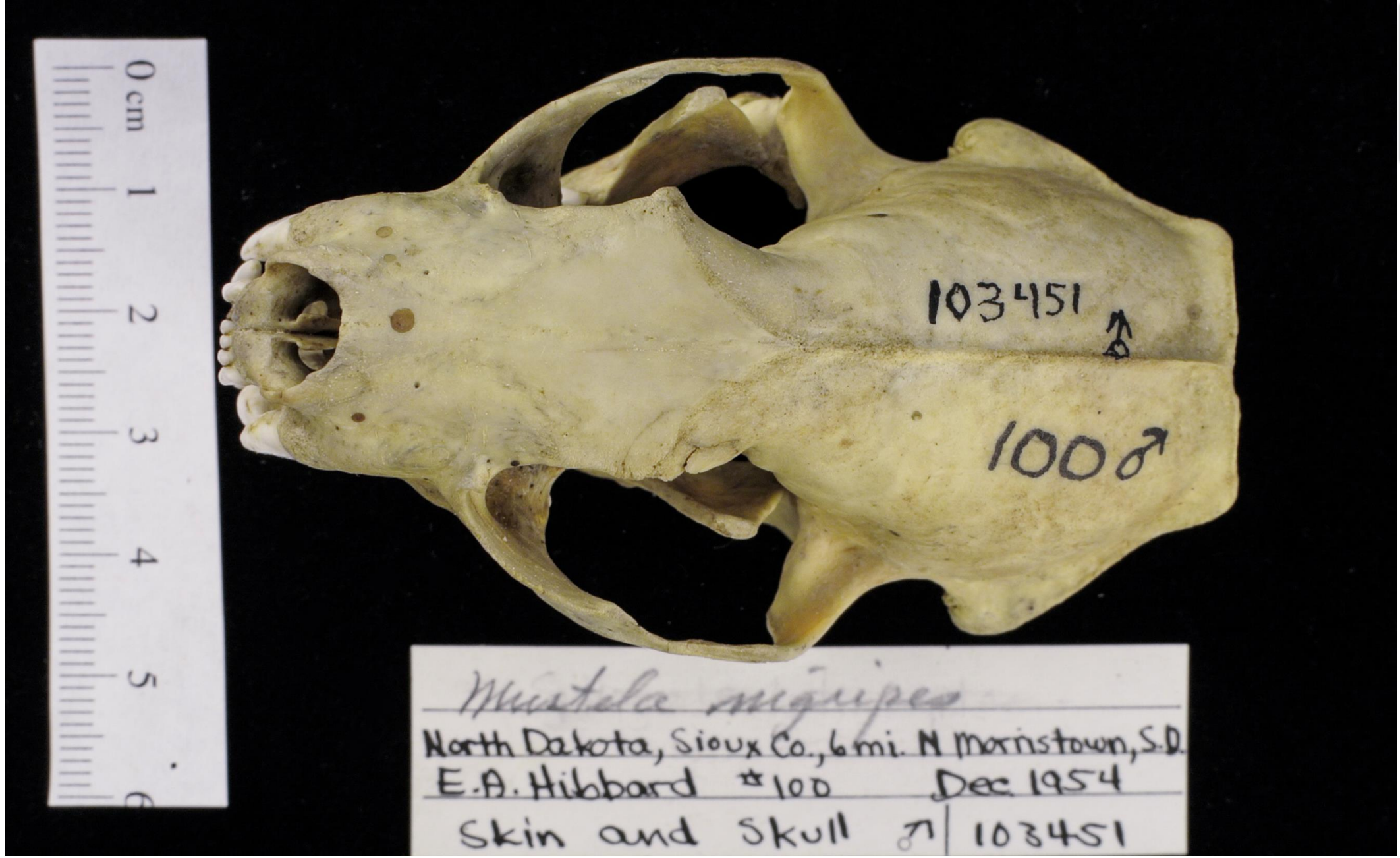
White acrylic hemisphere that is rigid, with an aperture at one end to accommodate a camera lens. Excellent for smaller objects.

Cloud-Dome

Ideal for smaller cameras, including smart-phones, mirrorless, and p&s compacts.



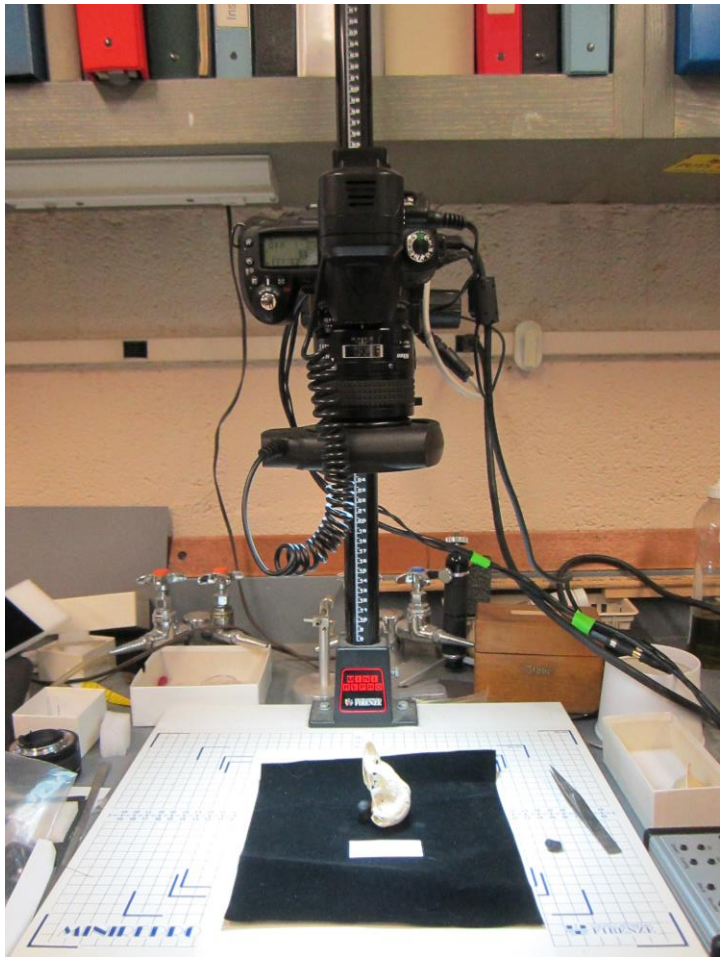

0 cm 1 2 3 4 5 6
♀
52408
Mustela l. novaboracensis
Mich. Washtenaw Co. Ann Arbor
R.E. Stewart. M.J. #178. May 27, 1938
Skull with skin
♂ 80425


0 cm 1 2 3 4 5 6
103451
100 ♂
Mustela nigripes
North Dakota, Sioux Co., 6 mi. N Morristown, S.D.
E.A. Hibbard #100 Dec 1954
Skin and Skull ♂ | 103451


C-53

Supports

- Copy Stands are one of the most useful supports due to their rigidity and are a staple of specimen photography.
- However, they are not ideal for large objects, horizontal support, or field-use.



Copy Stands

Are used for sturdy support that is easily adjusted. For stacking hardware, they are essential.

This rabbit skull image was taken with the Stackshot hardware, Nikon D90, 60mm macro lens, and LED ringlight.

DIY Stand

If you don't have a copy stand, this solution will cost you less than $50

¾” threaded galvanized pipe
Threaded base flange

16 x 24” base board of some sort

Attach the threaded pipe flange
to the baseboard with screws or bolts,
And add screw-in rubber feet on the
bottom corners of the baseboard

Screw the galvanized pipe (suggested
Length is 24-36”) into the flange

Manfrotto Super Clamp

ca. $30 online

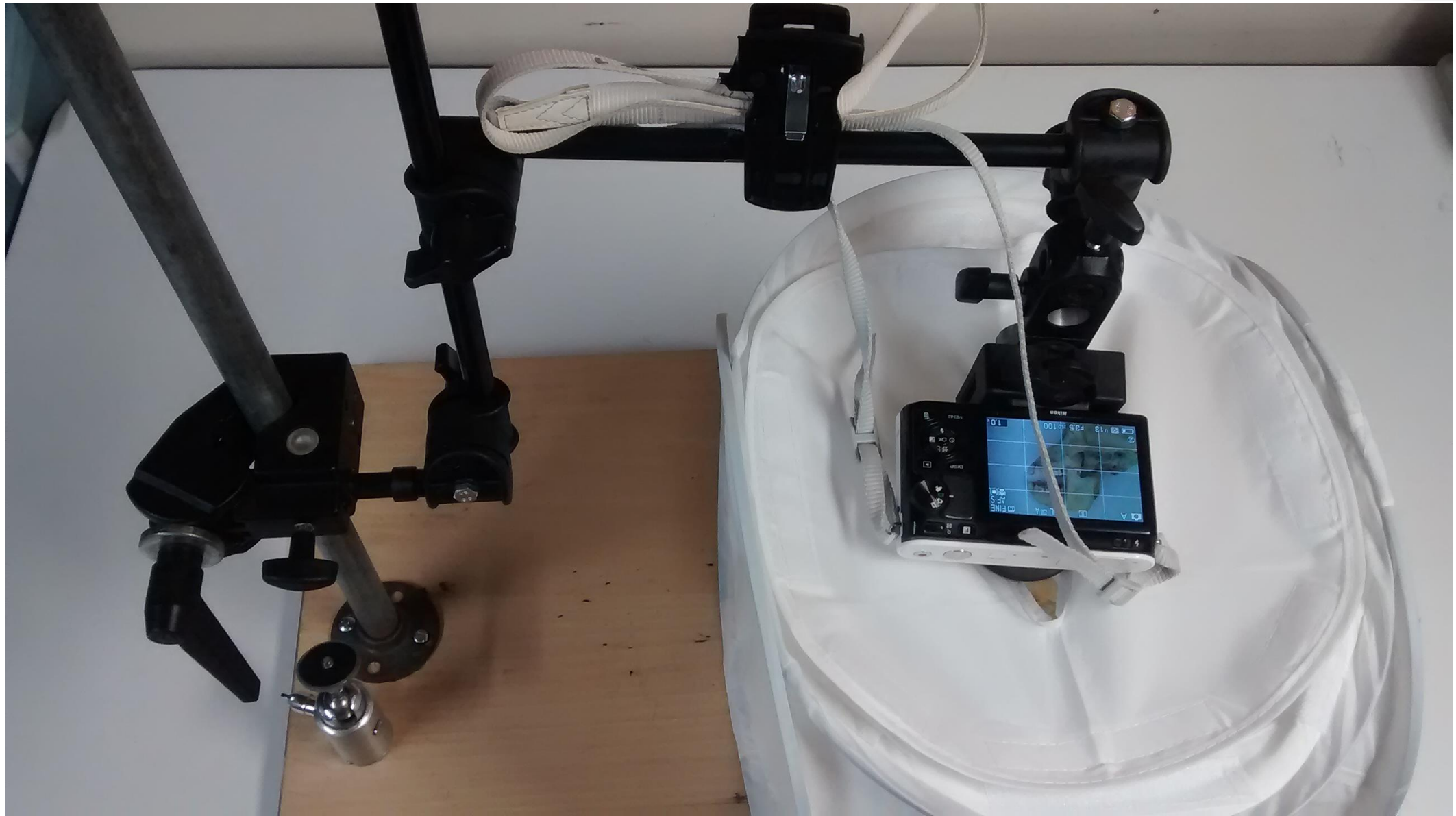
The Super Clamp comes with a stud
That allows use of ¼ -20 threaded
Accessories, such as ball heads

The Super Clamp can attach to
Just about any object.

Add a Manfrotto Articulated Arm

Works great for smaller cameras such as mirrorless system cameras. Allows greater reach and versatility.

Price ca. $50.

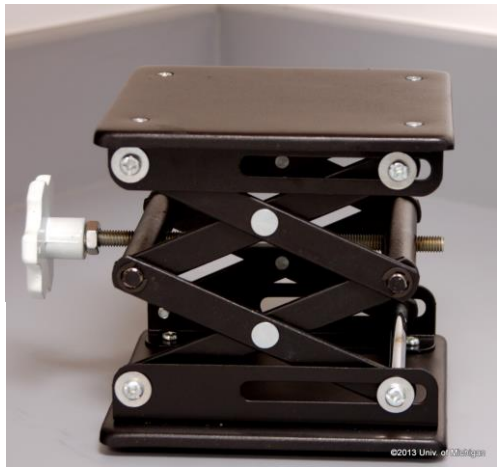


Gorillapods

- Gorilla Pods - can wrap around objects. There is a magnetic version for smart phones, iPods, etc..

Accessories

- Printable Rulers – always useful! - http://www.vendian.org/mncharity/dir3/paper_rulers/
- Black Velvet backdrop – short nap velvet – at any fabric store
- Scissor Jacks – elevate the specimens or equipment
- Specimen support pillows – make a "bean bag" using the black velvet
- Mini-light stands – for tabletop lights



Why Do - It-Yourself?

- Most of us work in collections where funds are limited
- DIY doesn't mean less quality
- DIY can be part of a project at less cost than a turn-key solution
- DIY can engage students to think creatively
- DIY may save significant $
- DIY allows customization
- DIY is scalable
- DIY allows proof of concept before committing to a workflow

Resources

- **Best Practices for Photographing 3D objects:** https://www.carli.illinois.edu/sites/files/digital_collections/documentation/guidelines_for_3D.pdf
- **Five task clusters that enable efficient and effective digitization of biological collections.** http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3406464/
- **Tips and Tools for Digitizing a Museum Collection** http://www.nist.gov/nvl/upload/Digitizing_Museum_Collection_RA_SS_KM_Online_2011-12.pdf