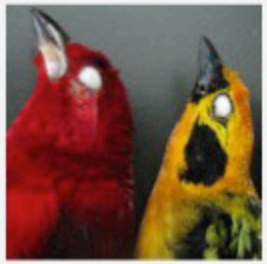
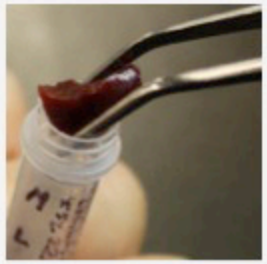
HOW TO

PREPARE BIRD SPECIMENS

Part 5a – Other Stuffing and pinning methods

Part 5b – Birds parts





The Migratory Bird Conventions Act regulates the take and possession of birds in Canada. The Migratory Bird Treaty Act regulates the take and possession of birds in the United States. In addition, the provinces (in Canada) and the states (in the United States) also require permits. For some species SARA, ESA, or CITES permits may be required.

Always check the laws of your country and obtain the proper permits; failure to do so may result in civil and/or criminal penalties.

When handling dead birds, it is probably impossible to tell if a bird is infected with a pathogen that may cause human illness even if you know the cause of death to be a wound or an injury. Take reasonable precautions to protect yourself. The Ornithological Council offers a peer-reviewed fact sheet on avian zoonotic disease and safety precautions for those who handle birds in the field and in the lab.

http://www.nmnh.si.edu/BIRDNET/documents/WNV&H5N1-FactSheet.pdf

Birds with extremely long necks

Preparing a flamingo with a short neck is misleading.

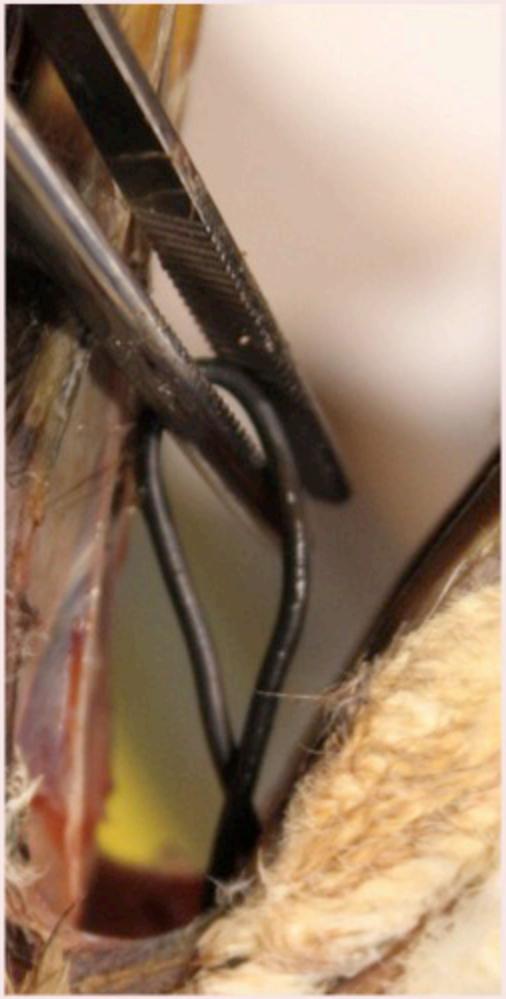
Wire, surrounded by cotton, strengthens plus adds flexibility to the neck.

Measure the drawer (storage space) before preparing large birds. Aim for the specimen being 5 cm smaller.

Photo taken at the Canadian Museum of Nature

Create a loop at the end of the wire to:

- Reduces the changes of puncturing the neck
- Make it easier to pull
- Attaching a string to aid guiding the wire up the neck.



Normally the wire ends invisibly inside the beak or head. Specimens with a wire protruding from the crown are rare.

Photo taken at the Canadian Museum of Nature

The neck wire visible in the beak of this Lammergeoer (Bearded Vulture) is covered with wood wool (Excelsior).

Note that the packing string used to ship the bird was never removed.

Photo taken at the Field Museum

Attach wire firmly to a dowel.
Wind cotton around the wire.

Continue stuffing
the bird using
your usual method.

Button Sticks

If a wing was removed, use a button stick as a replacement wing (structural support) for the remaining wing.
Tie the button stick to the humerus or ulna depending on your method.
Check the severed wing hole, if it is large, sew from the inside of the bird to make it smaller.

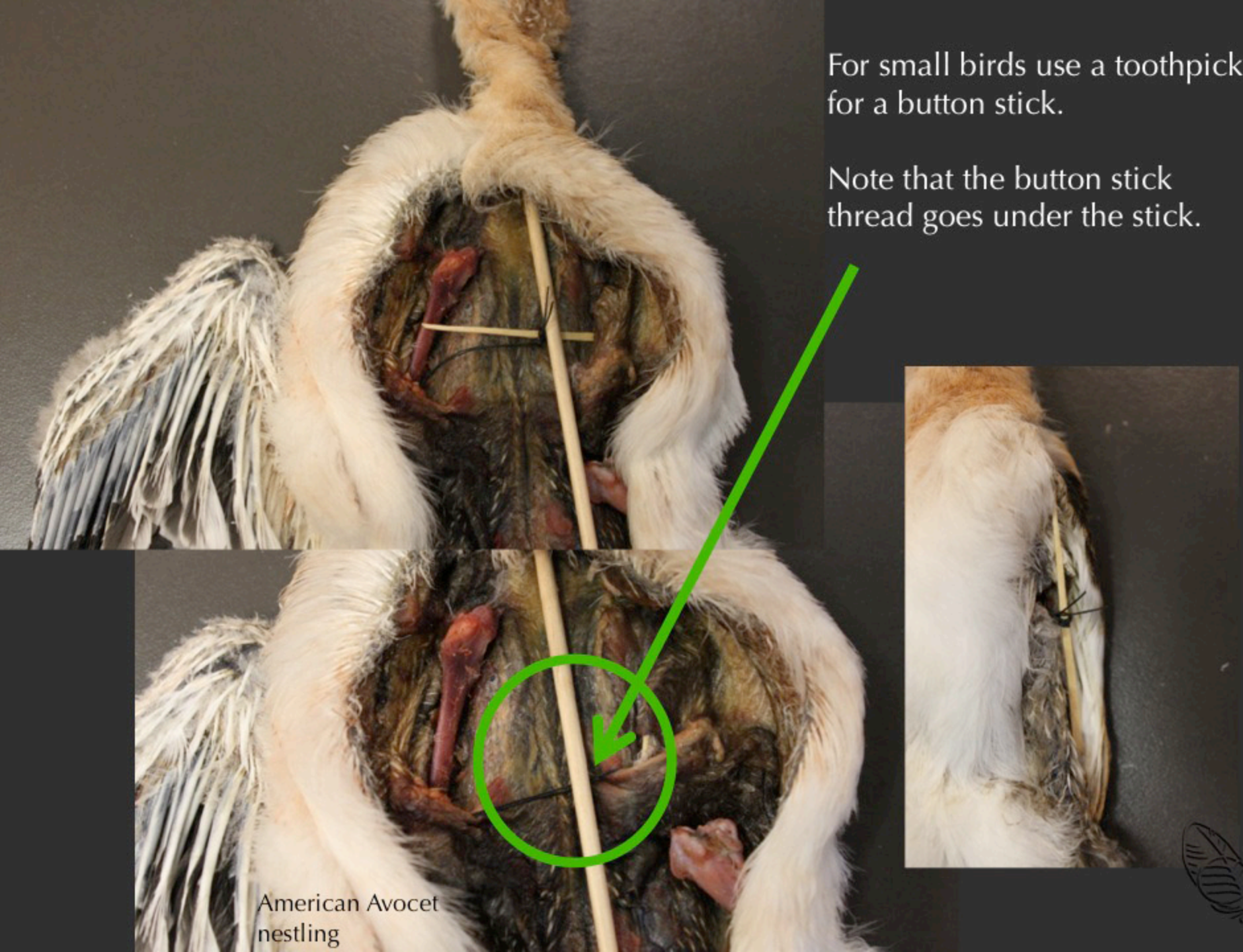
- Anchor a double thread to the remaining wing bone.
- Tie other end of the thread to the centre of the button stick.

- Thread the button stick through the hole
- Align the button stick along the axes of the body
- Bury the button stick in the flank and scapular feathers
- Stuff the bird using your usual method
- Trim the button stick if necessary

The button stick should not be visible on the finished bird.

For small birds use a toothpick for a button stick.

Note that the button stick thread goes under the stick.



American Avocet nestling

Beak Closing Methods

Beak depth measurements require that the mandibles are:

- Perfectly aligned
- Tightly shut

If using thread, anchoring it securely by:

- Inserting a pin at the base of the beak

or

- Inserting a pin through the beak
- Use a square (or reef) knot
- Wetting the thread to reduces slippage during knot tying
- Double looping the first part of the square knot

On large birds, like this bustard, the nares can accommodate a piece of twine. Because this damages the nares of some bird families, some museums never use this method.

Measuring beaks tied to the body is difficult.

A fine needle can be threaded through the nares of many birds. Depending on museum protocol, this is either left in or removed.


Be flexible.
Switch methods depending on beak morphology.

As the beak shrinks, an elastic band contracts insuring that the beak remains tightly closed.

Tygon surgical tubing slipped over the beak functions in the same way.

Plasticine or putty works well.

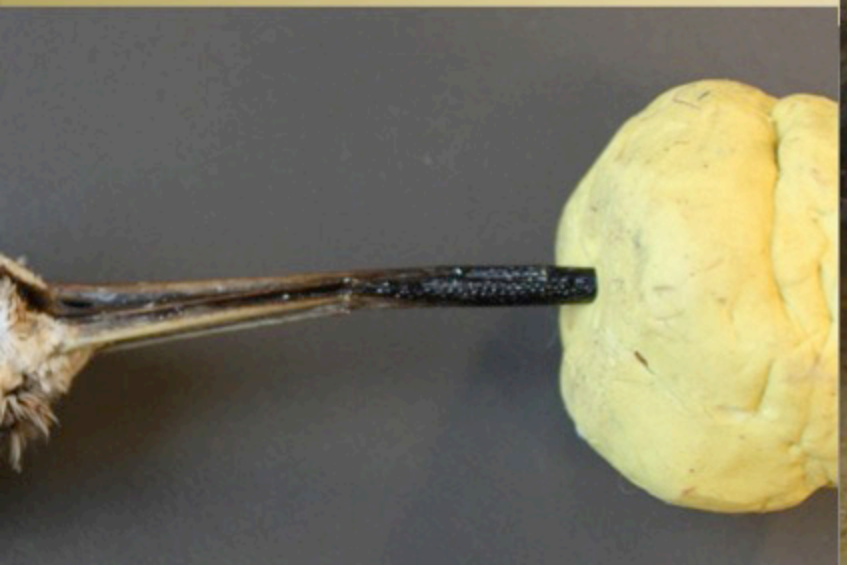


Photo taken at the Slater Museum

Some museums always glue beaks - others never do.

Things to consider:

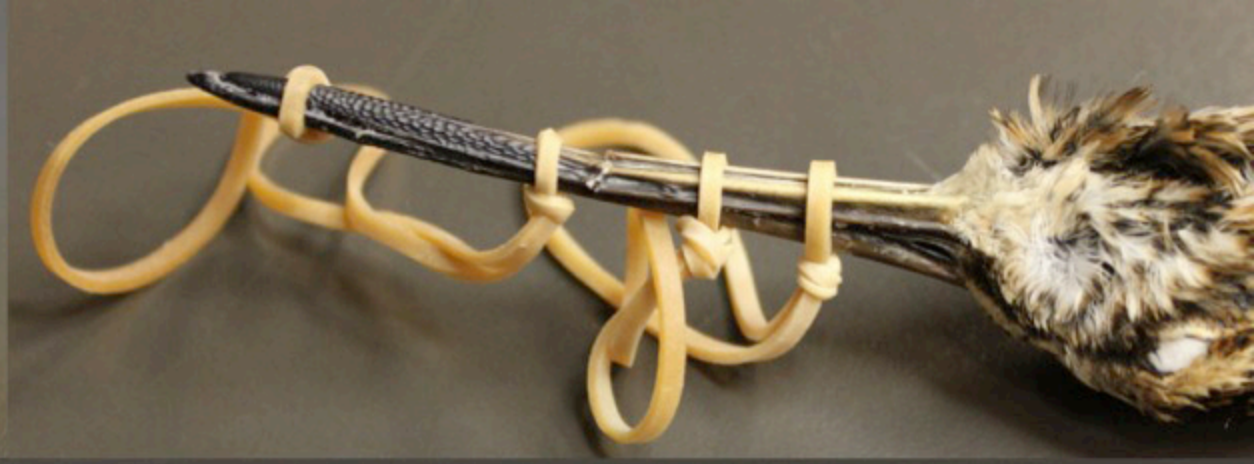
- A small drop of glue at tip is usually sufficient
- Glue that sets up too quickly does not allow time to correct a misaligned beak
- It is next to impossible to remove glue from feathers
- Hold the beak firmly while the glue sets
- Do not become glued to the specimen

Recommended acid-free glues are:

- Elmer's Craft Bond Memory Book Glue Pen
- Beacon Adhesives' Fabri-Tac

Some glues are water soluble which in theory allows for a second chance.

Many people use Crazy Glue or whatever is handy.



Glue is the best method for fixing broken or damaged beaks.

- Long beaked birds which die from window or vehicle collision often have damaged beaks
- Prepare the bird in your usual manner
- If parts of the beak fall off, save all fragments in a labelled vial
- Apply glue inside the beak and aligned the mandibles
- Add any broken fragments

This snipe's beak was bent and cracked in several places.
Each segment was glued, pressure applied, then the next section glued.
The elastics were added to insure glued section did not become misaligned while working on the next segment.

Always record beak repairs on the prep sheet. Repaired beaks should not be measured for statistical purposes

Use steam to straighten feathers:

- Boil water in an open container or kettle
- Hold feathers in the steam for ~5 seconds
- Flip the bird. Repeat.

The trick is to do nothing and be patient
Although nothing appears to be happening at first, the bent feathers will slowly start moving or suddenly snap back into position.

Warning:

To not scald your hands in the steam.
There is no need to touch the feathers.

Metal dowels are not recommended.
Some older preparations have them.

Trim the dowel 1cm past the tail.
This protects the tail if the skins shift
when a drawer is opened or moved.


It is common for long legged birds to have their legs compacted in some fashion.
On this damaged specimen, thin dowels were inserted to reinforcing both tarsi.
Acc.: 1982-249
knees, feet, & base of bill still pink 48 hrs after death
legs grayish-pink
Skull:
Max.:
Mand.:
Tars.:
Toes:
Int.:
Gonads: testes
T.L.: 120.4 cm
Weight: 2530.2 g
Fat: 00
Photo taken at the Canadian Museum of Nature


Stick bird method is best to secure
the remaining leg of a skin/partial skeleton.
CSW7245
Photo taken at the University of Washington Burke Museum


Spread the feet.
It is significantly easier
to extra toe-pad tissue
for DNA testing from
birds with spread toes.
Photo taken at the Canadian Museum of Nature

Prior to drying, do several of the following:

- Pull the toes apart
- Disarticulate the toe joints slightly
- Pin open
- Insert spacers

Bird Parts: recycling what would have been biowaste.

This Barn Owl facial disc was salvaged from a skeleton preparation.

Photo taken at the Australian Museum

Many salvaged bird are in very poor condition and cannot be prepared as either a skeleton or a study skin. Think creatively in terms of adding bird parts to the teaching or outreach collection.

Bird parts are quick and fun to make.

The duck head was prepared with the beak open for a comparative vertebrate lab on teeth morphology.


Trapping air in storage bags
helps to protect beaks.
Photos taken at the Australian Museum

Having a stock pile of bird parts opens up the possibility of creating different types of displays and teaching aids.

This storage method works equally well for small spread wings.

Photo taken at the Natural History Museum of Los Angeles County

This same storage method is used to keep the primaries of a White-Bellied Sea Eagle in numeric order.

Photo taken at the Australian Museum

People laugh when they see feet!

Feet are easy to prepare and have greater impact when grouped together. Think twice, before discarding damaged birds.

Pelican foot photo taken at the Australian Museum

IN MEMORIUM

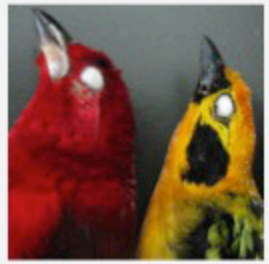
DR. REX KENNER

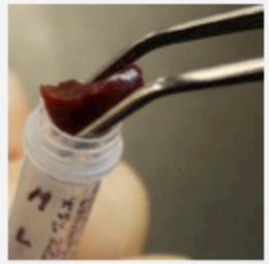
Former Curator of the Cowan Tetrapod Collection who encouraged me to begin this project.

Special thanks to Glen Browning, Jaynia Sladek, Eve Szabo, Roy Teo, Wan-Chih Yang, Ellen Paul, and all the wildlife rehabilitators, bird banders, pathologist, museum curators and collection managers who has helped and encouraged me to complete this project. I take full responsibility for any remaining mistakes.

Without the technical assistance of Derek Tan, this project would never have gotten off the drawing board. Dr. Darren Irwin kindly suggested and made the arrangements for this series to be posted on the Beaty Biodiversity Museum website. A huge thank you to the staff and volunteers at the Cowan Tetrapod Collection for providing space and creating a terrific work environment.

Unless otherwise indicted, all pictures were taken by the author at the Cowan Tetrapod Collection, University of British Columbia Beaty Biodiversity Museum.





OTHER PRESENTATIONS IN THIS SERIES

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- Part 3 - Other skinning methods
- Part 4 - Stuffing your first bird
- Part 5 - Other stuffing and pinning methods & Bird parts
- Part 6 - Sexing birds using gonads (includes 2 quizzes with answer sheets)
- Part 7 - Determining skull pneumatization & Skeleton preparation
- Part 8 - DNA tissue sampling & Gut analysis
- Part 9 - Washing skins for ectoparasites & Drying washed skins
- Part 10 - Recording fat levels & Cleaning fatty or stinky skins
- Part 11 - Flat skins, shmoos, and other types of study skins
- Part 12 - Preserving eggs and shell fragments (in prep)
- Part 13 - Determining cause of death
- Part 14 - Labelling: the most important step

To download another PowerPoint presentation in this series go to:
http://www.beatymuseum.ubc.ca/research/birds