

## Method

Proceed a

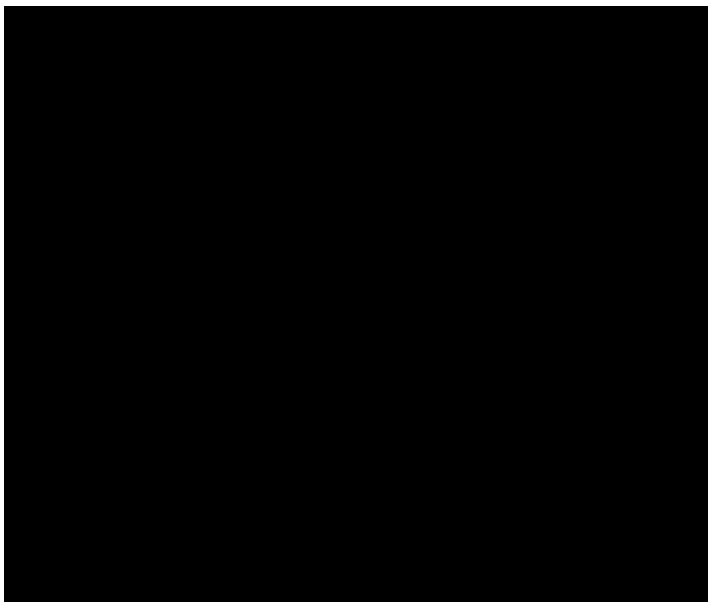
Insert tips  
through the canal  
everting from pos

the side of the head so as to clip  
of the head. Pull skin off by

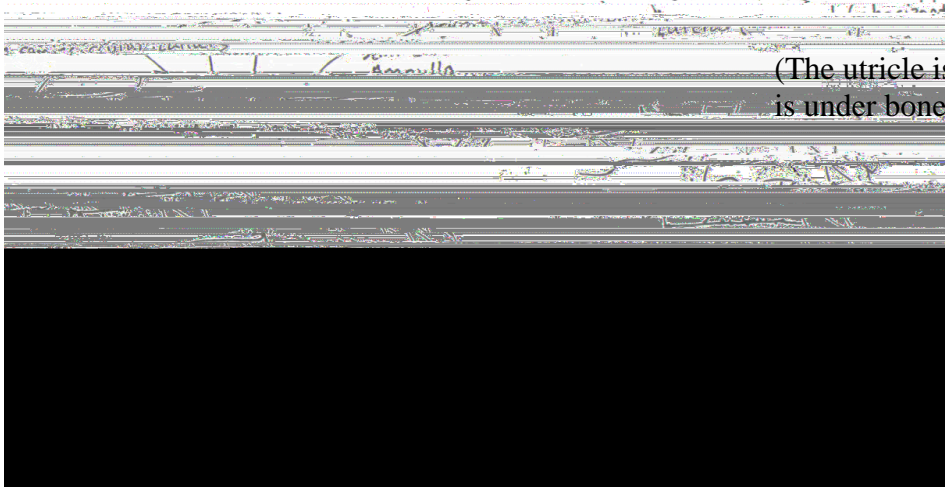
Use a dissection microscope from here on. Using the beak as a "handle", tilt head to look at the cut surface.



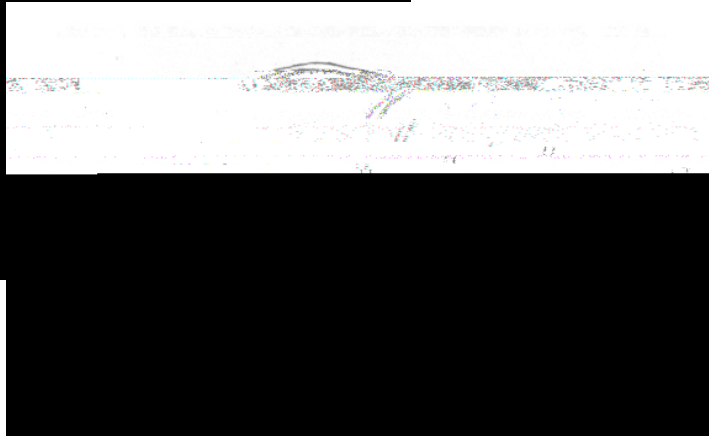
After you have removed the tympanic membrane locate the columella (=



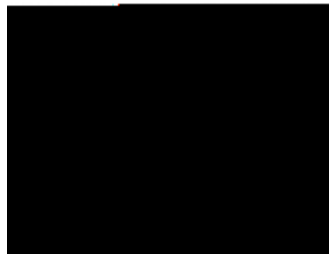
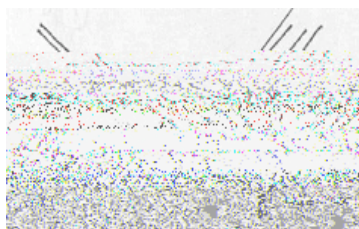
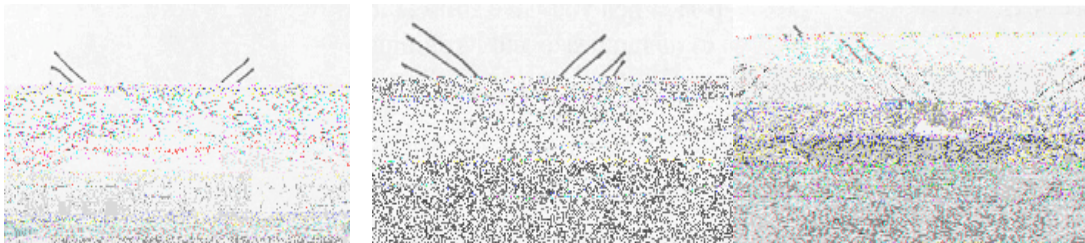
Side View of Left Ear, Utricle Covered



(The utricle is not visible at this point. It is under bone and medial to the lateral



A common method is to gently remove the bone that lies on top of the utricle when viewed from this position. The best way seems to be inserting the tip of the “chisel forceps” under the edge of the bone *just slightly* then prying up that bone to get a small fragment to break free.



Pull the utricle out of the cavity and immediately transfer it to a black

To delaminate the utricle (i.e., to separate the sensory epithelium from the non-sensory epithelium), I do the following.

First, I use a sapphire knife to trim away the outside edges of the piece. This is important for two reasons: the first is that the periphery of the utricle is composed of non-sensory cells and we want to isolate only sensory epithelium, and secondly, cutting the edge makes it much easier to visualize the separation between the two layers of cells (i.e., the sensory epithelium vs. the underlying connective tissue stroma).

Next, peel or pry up the sensory epithelium using a sterile 30G 1/2-inch hypodermic needle attached to a 1ml syringe. Start from the nerve insertion side and take care to keep as much of the tissue intact as possible. This is the most difficult step in the procedure and requires the most patience and practice.

Once you have separated the sensory epithelia, remove all non-sensory debris from the working area. Using a fine pair of forceps to transport the debris from the working area to an unused area is usually sufficient. But if I am working with many utricles at one time or just want to clean up the area more thoroughly, I will aspirate the waste tissue using a Pipetman and discard it completely. Please don't hesitate to ask for help or guidance if you're having trouble with this.

Once you have isolated pure sensory epithelium, cut it into 9-12 pieces using the sapphire knife (see diagram).



Again, clean the area and only keep the good (i.e. the right size and shape) pieces.  
Using a 100  $\mu$ l Pipetman, transfer the pieces (4-