

Vancouver Community College  
Biology 1120  
Instructor Maria Morlin

January 2022 – hybrid course

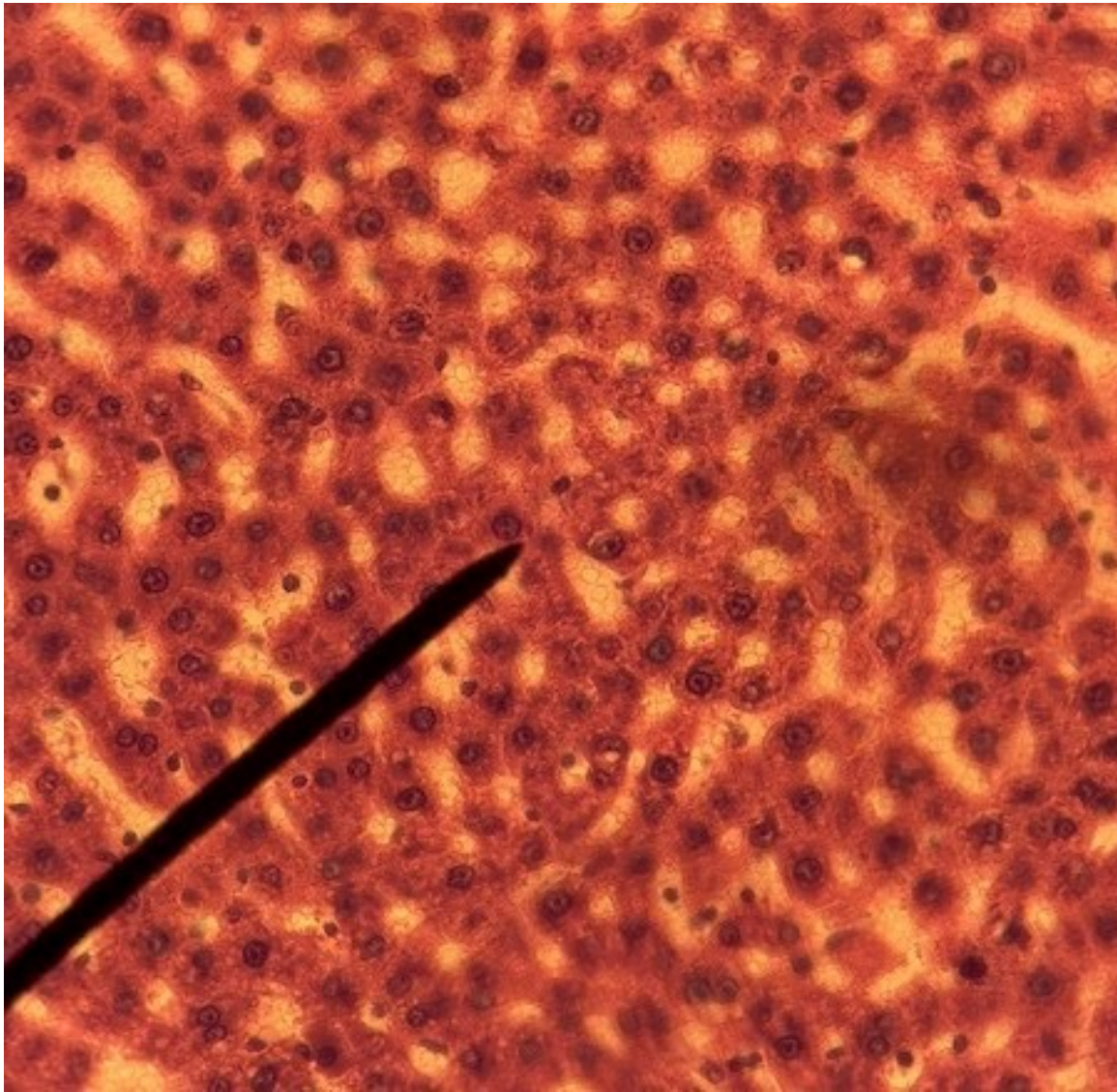
Lab: Cells

# Outline

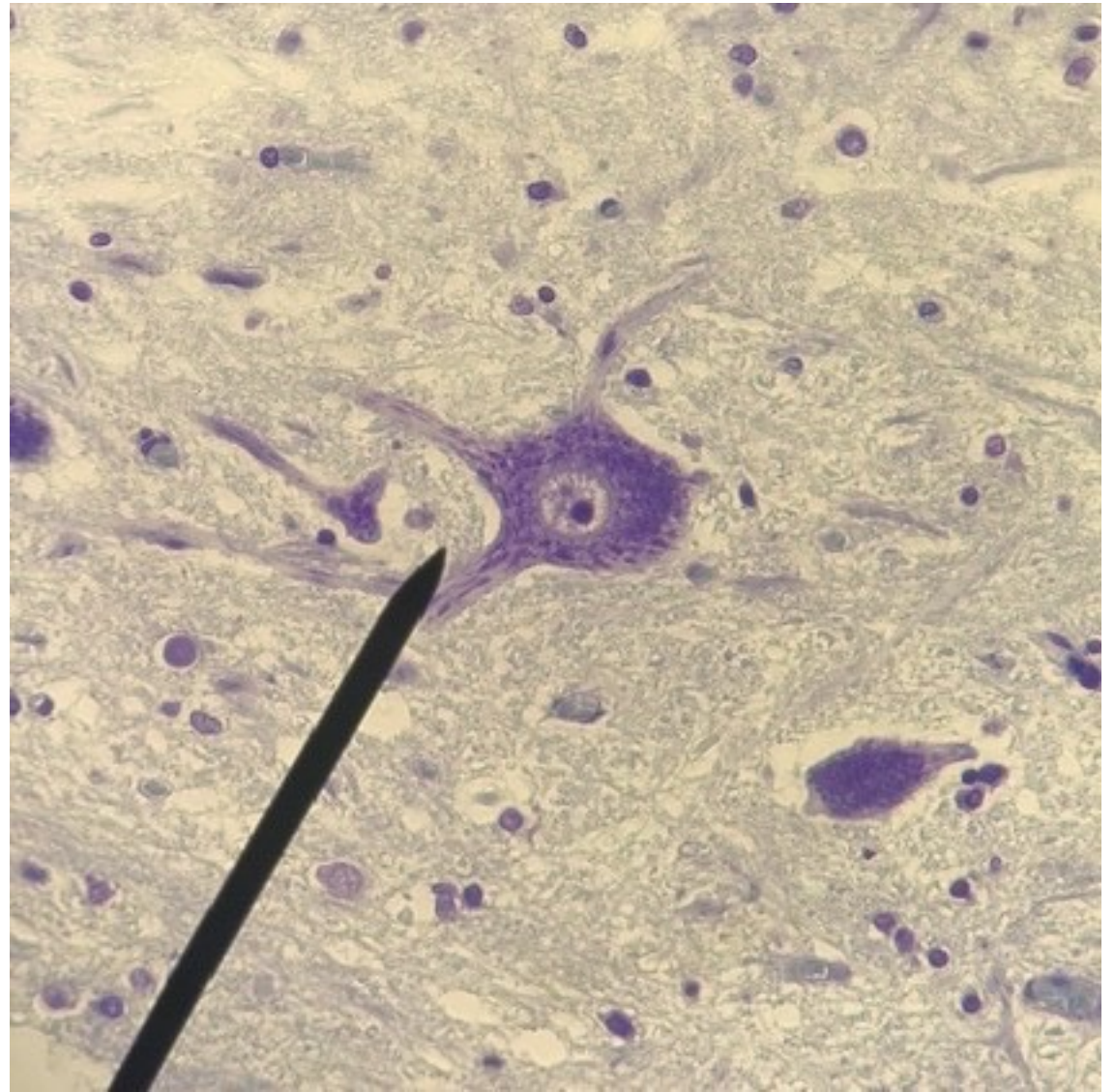
- Objectives
- Online resources (for students off-campus)
- VCC cell images for practice
- Notes on cells and observations

# Objectives

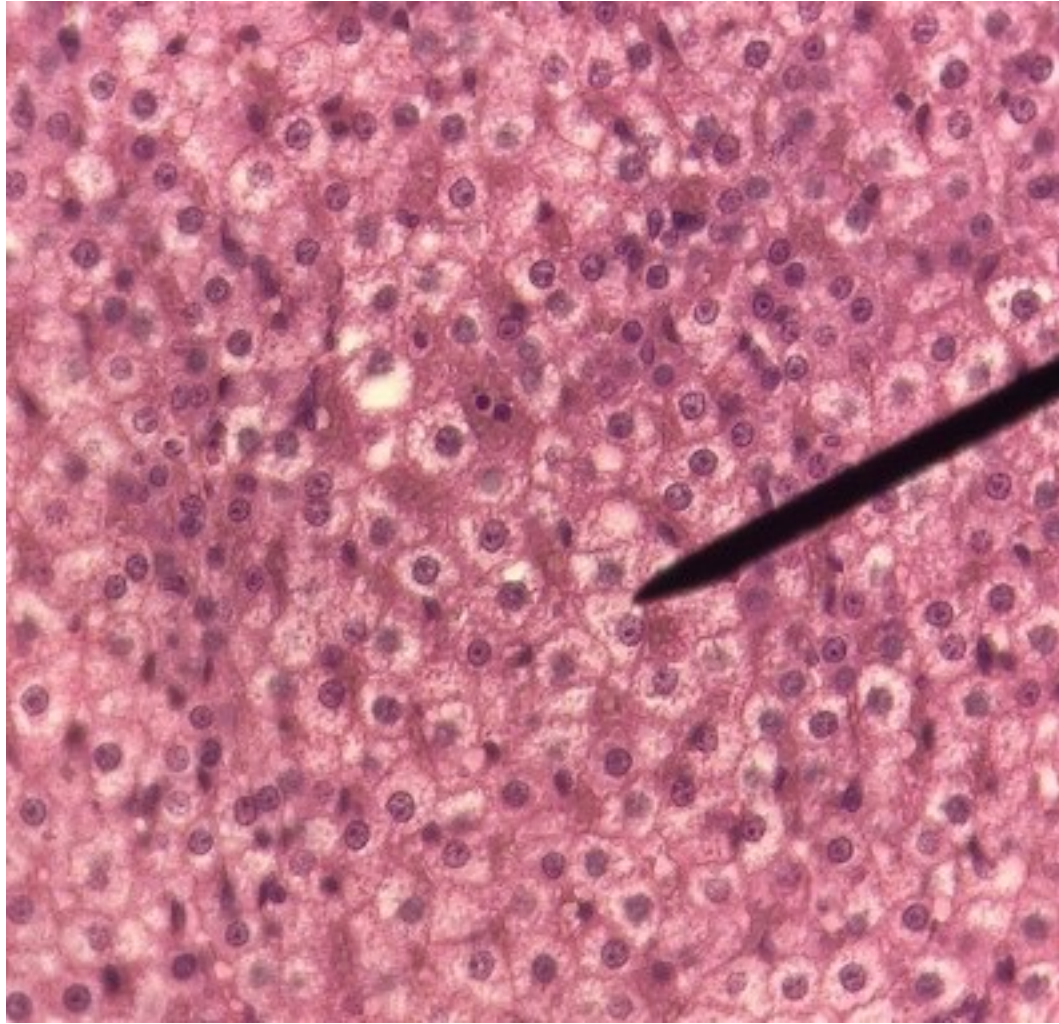
1. Observe various human cell types, locating the structures described in the manual description of each slide, using the cell images in the next few slides.
2. Note stained organelles, and their function in the cell
3. Note features of cells such as the intercalated disk between heart cells, desmosomes that hold cells together, basement membrane, flagellae (of sperm cells), cilia and microvilli.
4. Note stages of mitosis in the fish blastula.



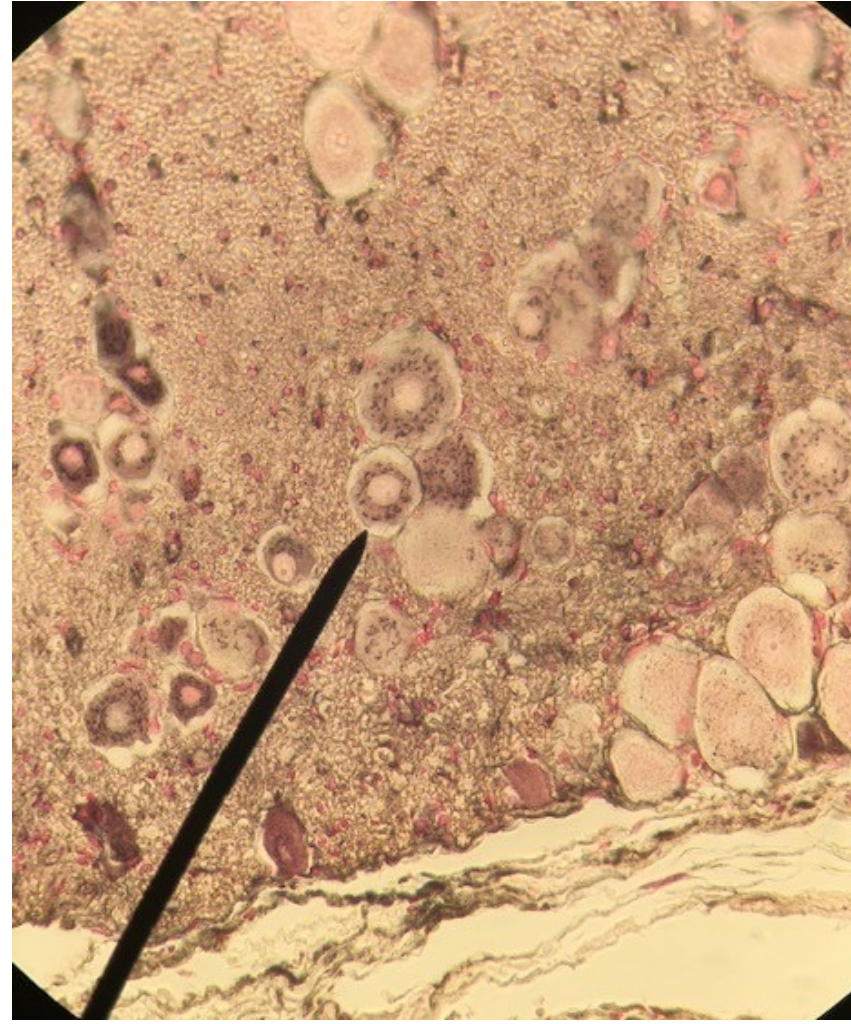
Generalized animal cell – the cells have a dark circle within them – the nucleus – which also contains a dark stain – the nucleolus



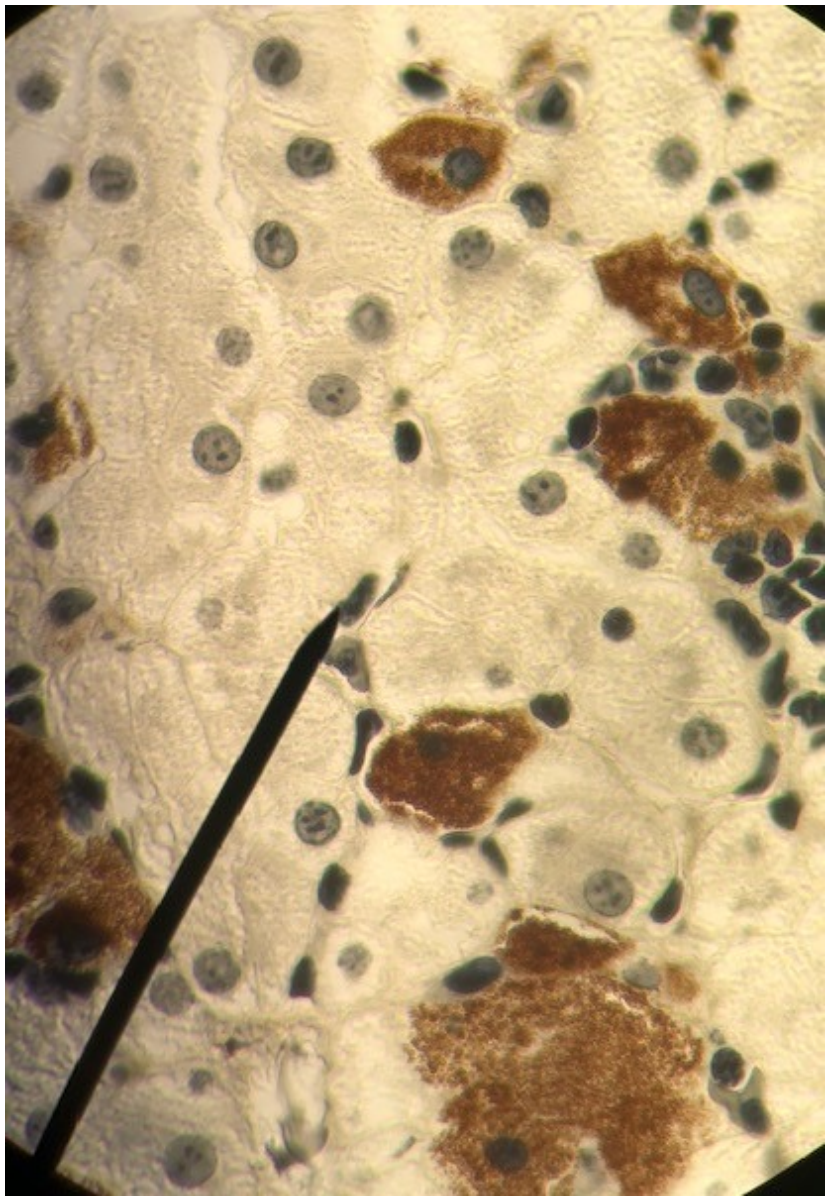
Spinal cord. Pointing at the cell body of a neuron and extensions (axon, dendrites)



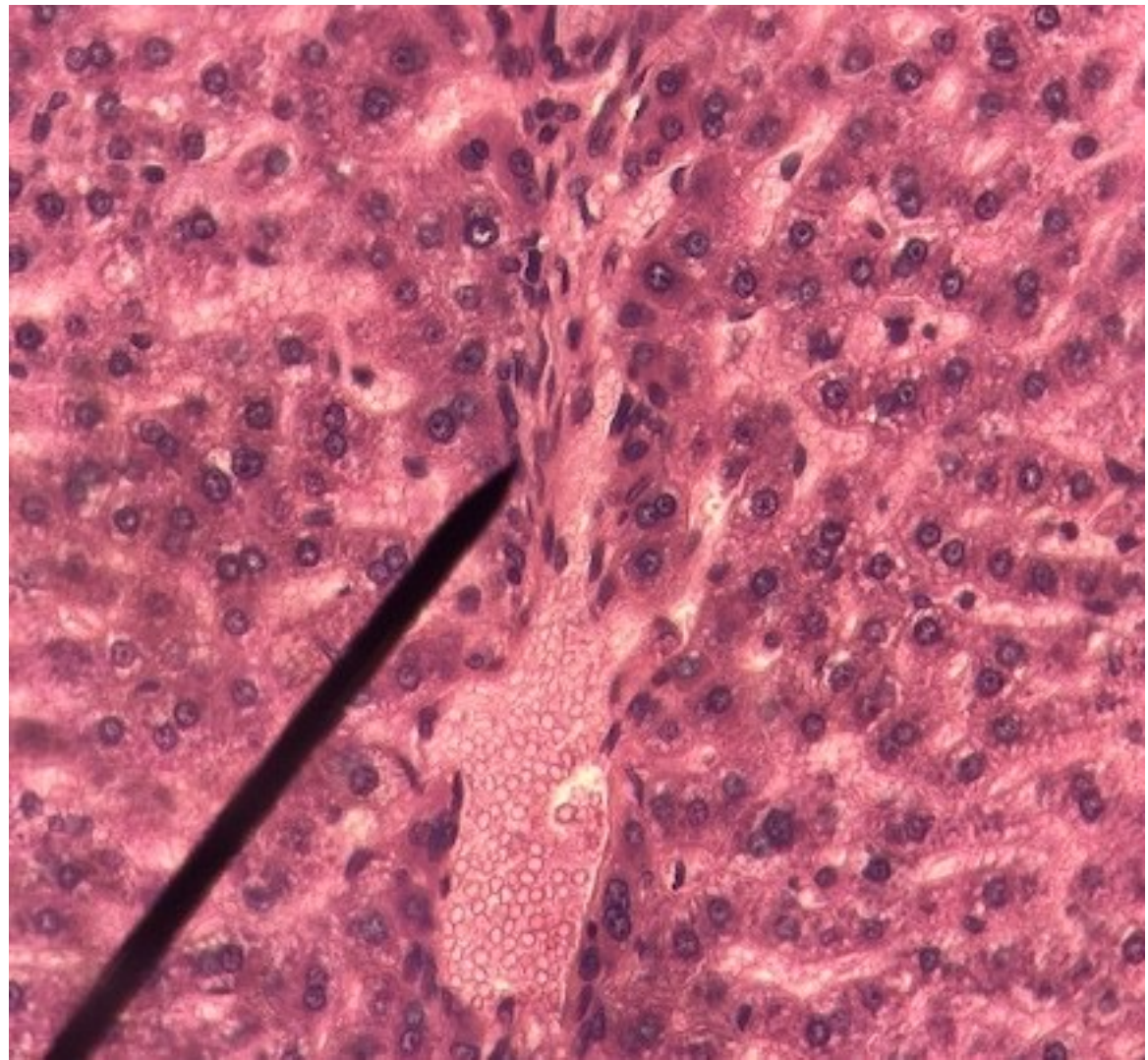
Adrenal gland - pointing at smooth ER – clear material around the nucleus



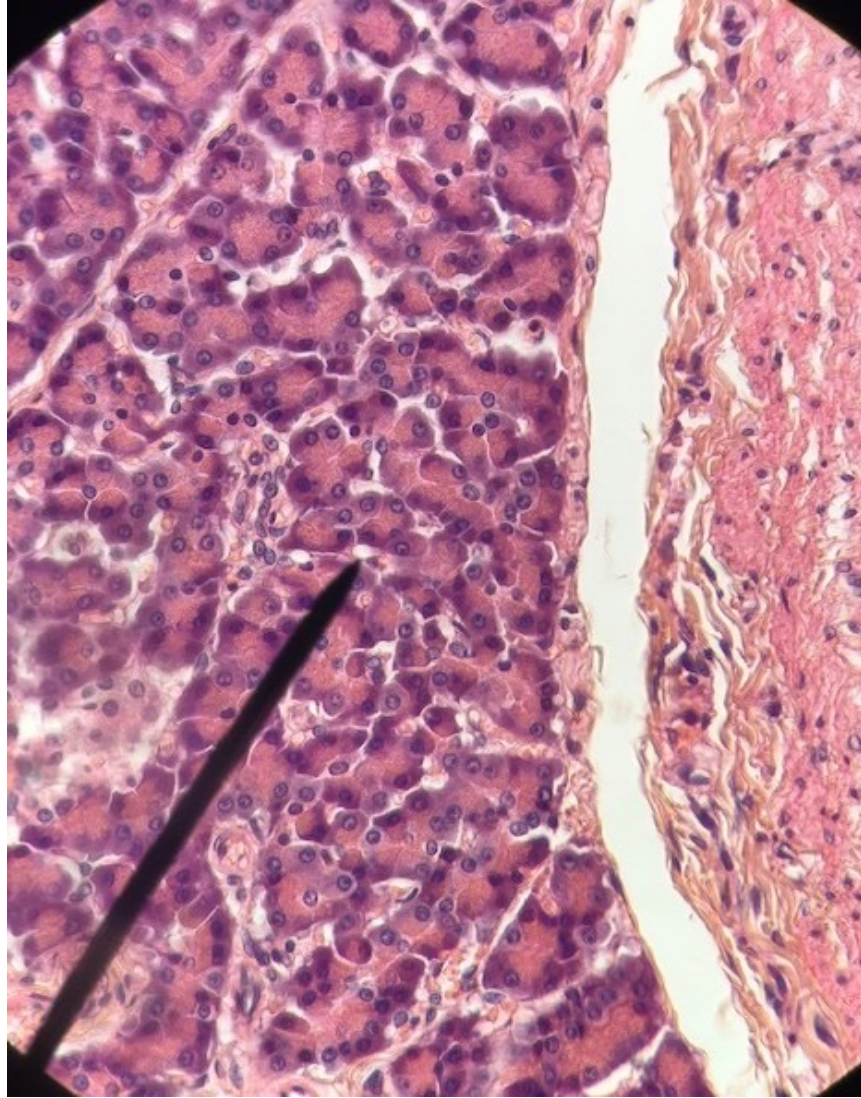
Dorsal root ganglion. Golgi apparatus in cell body – dark spots around the nucleus.



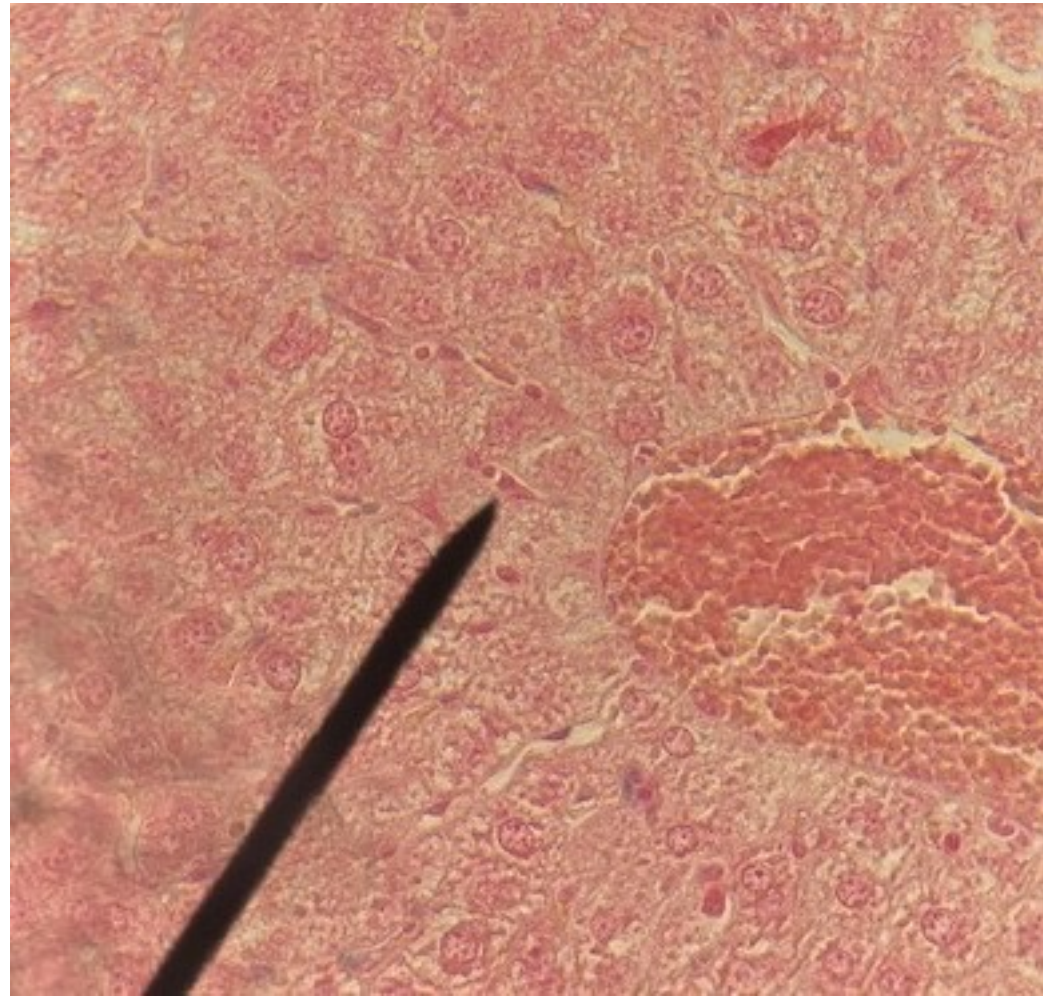
Amphium liver – pointing  
at stained mitochondrion



Mammal liver – pointing at lysosomes  
(dark vesicles digesting material)



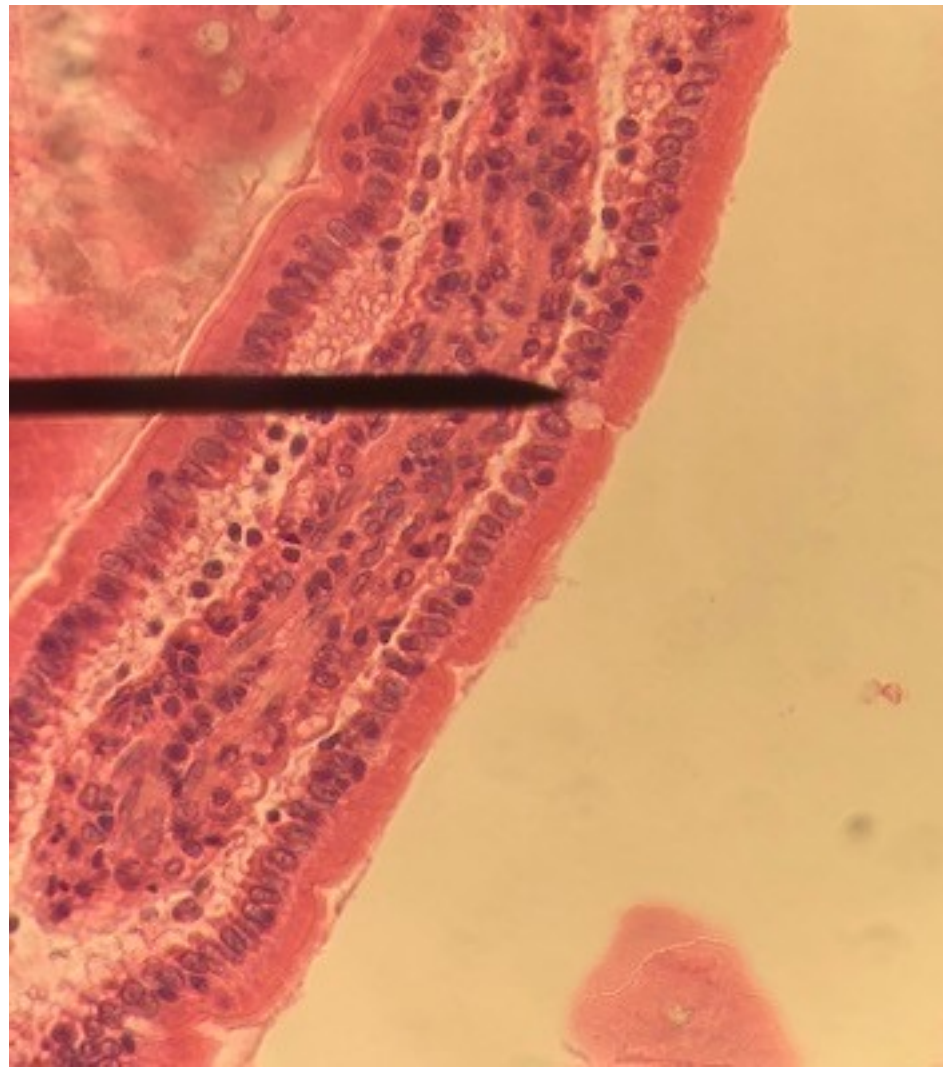
Pancreas pointing at exocytic vesicles (clear)



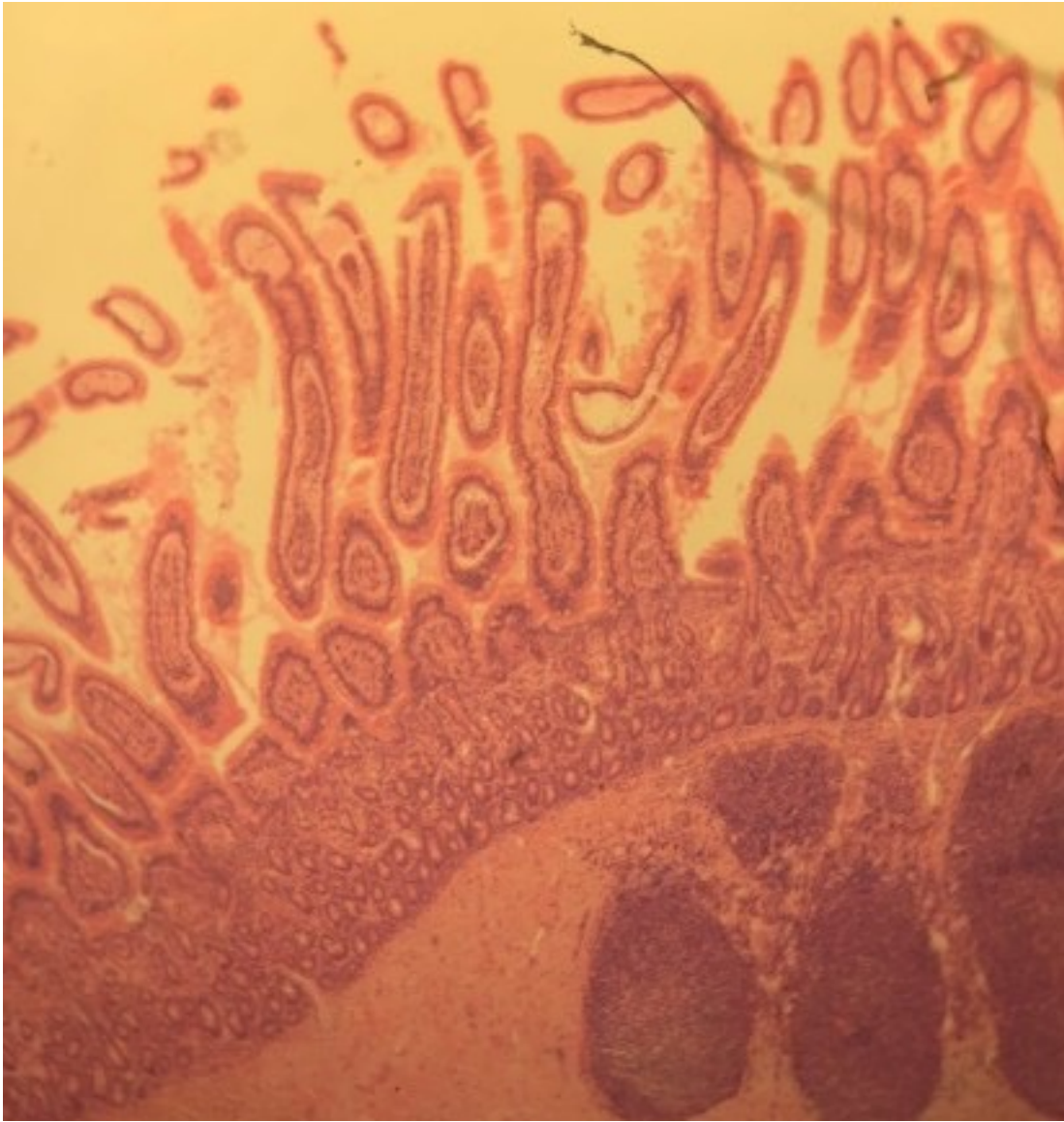
Pointing at liver macrophage (Kupffer cell) digesting red blood cells.



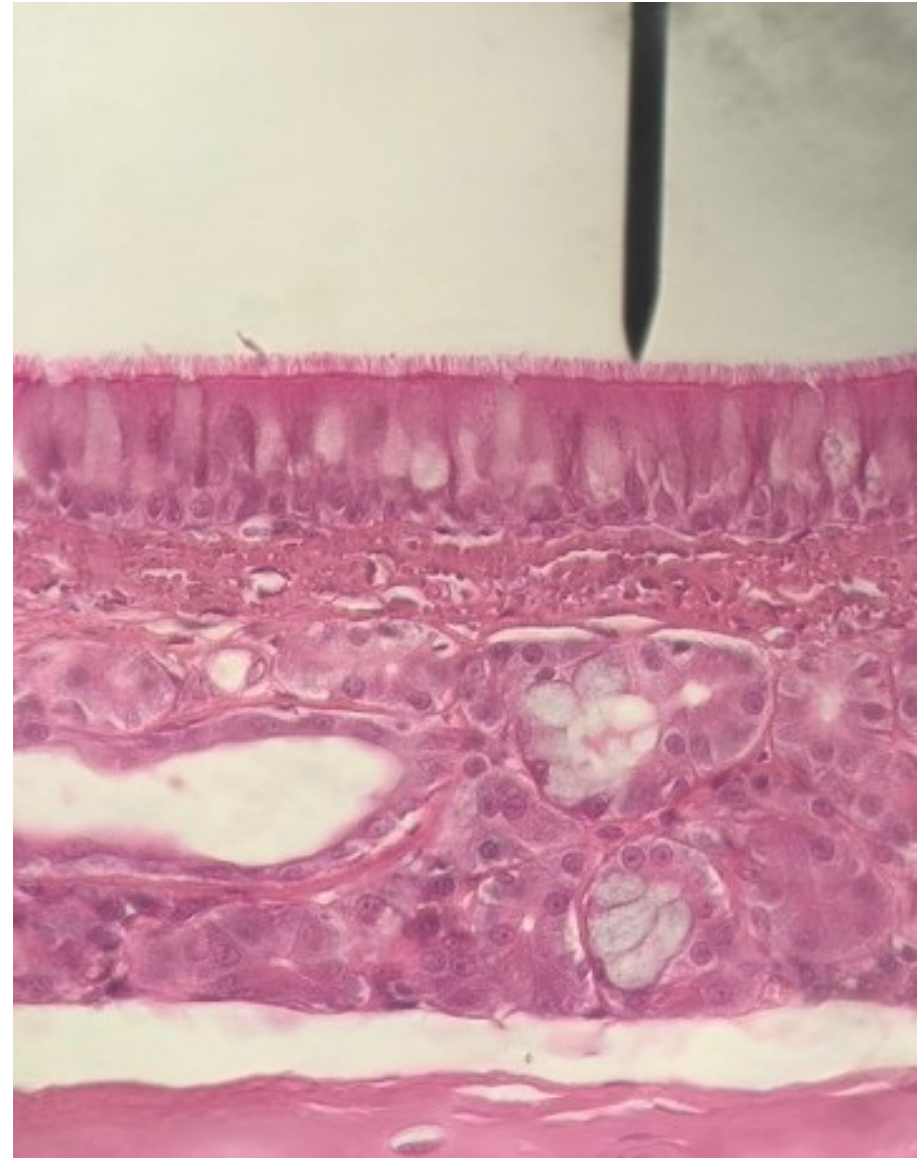
Liver section with  
glycogen (dark purple)



Ileum – pointer pointing  
at a goblet cell



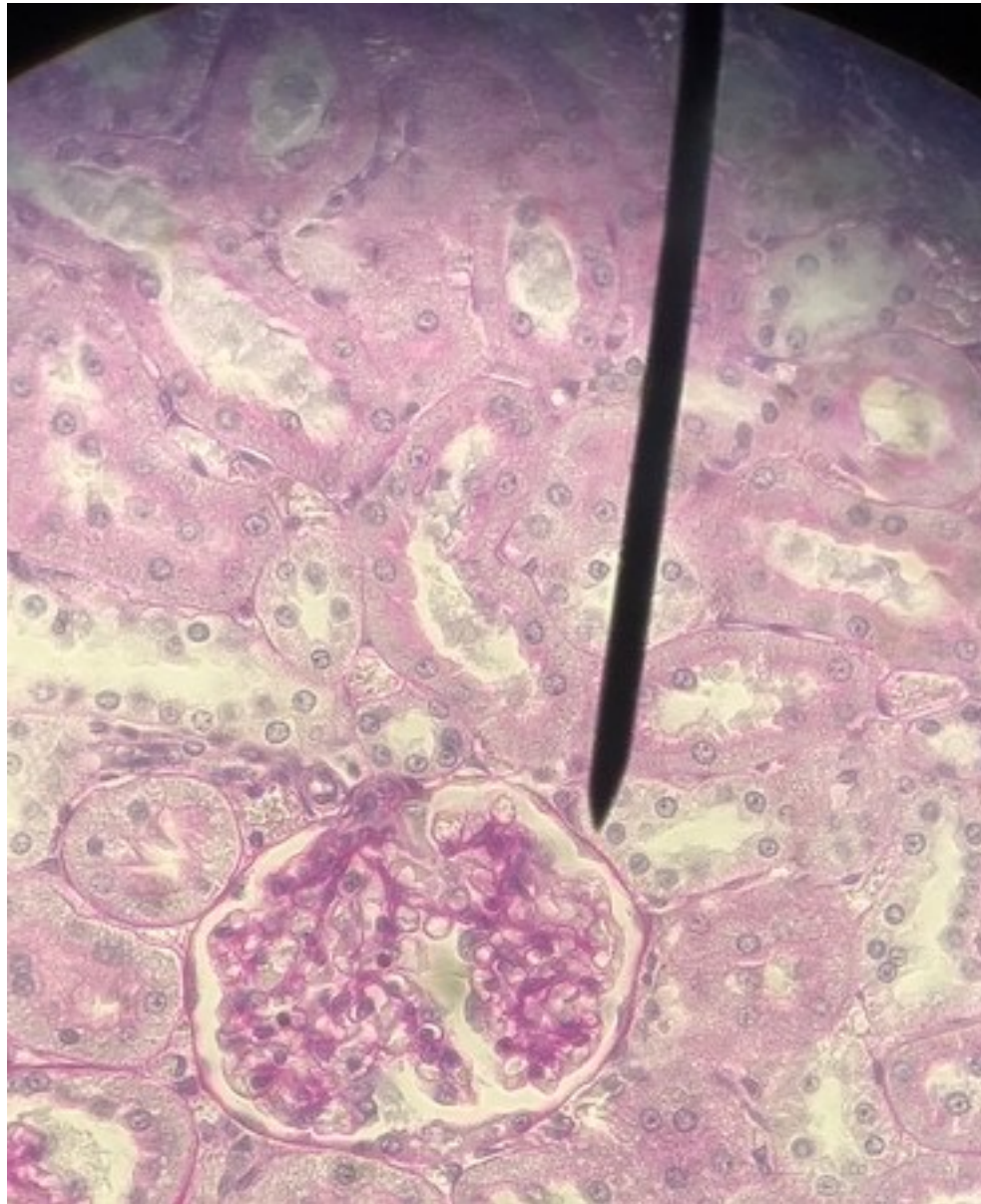
Ileum – peyer's patches dark large roundish structures bottom right



Pseudostratified ciliated columnar epithelium. Pointing at cilia (brush border).



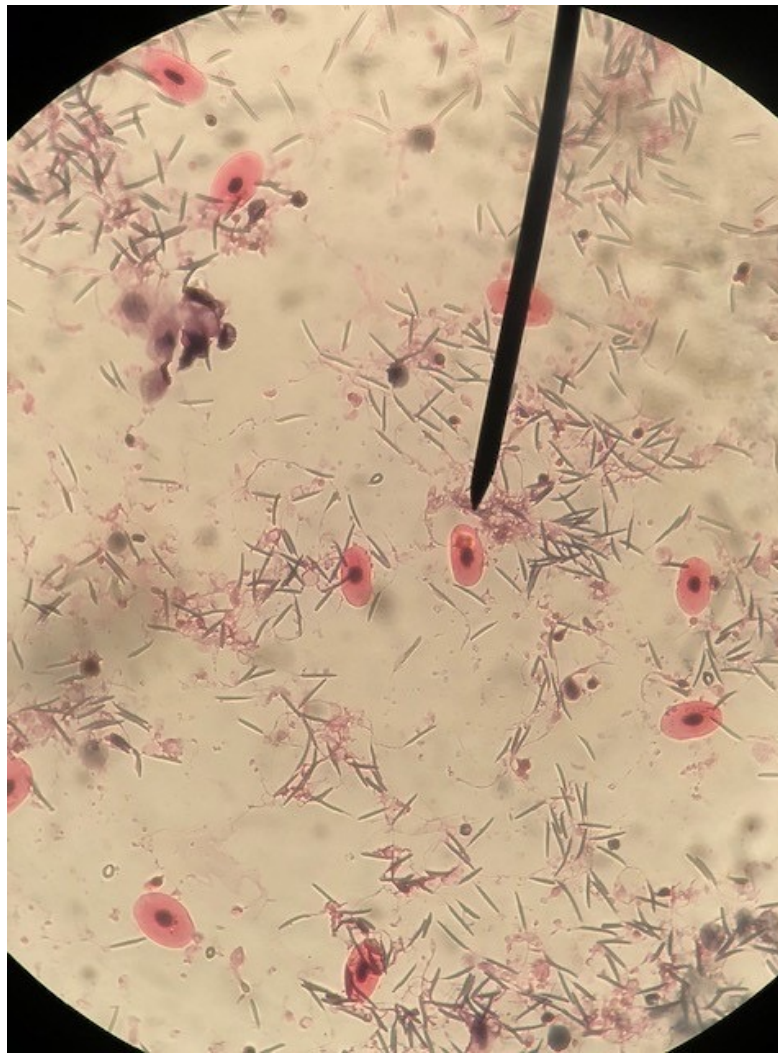
Cardiac cells - pointing at intercalated disk (dark horizontal line)



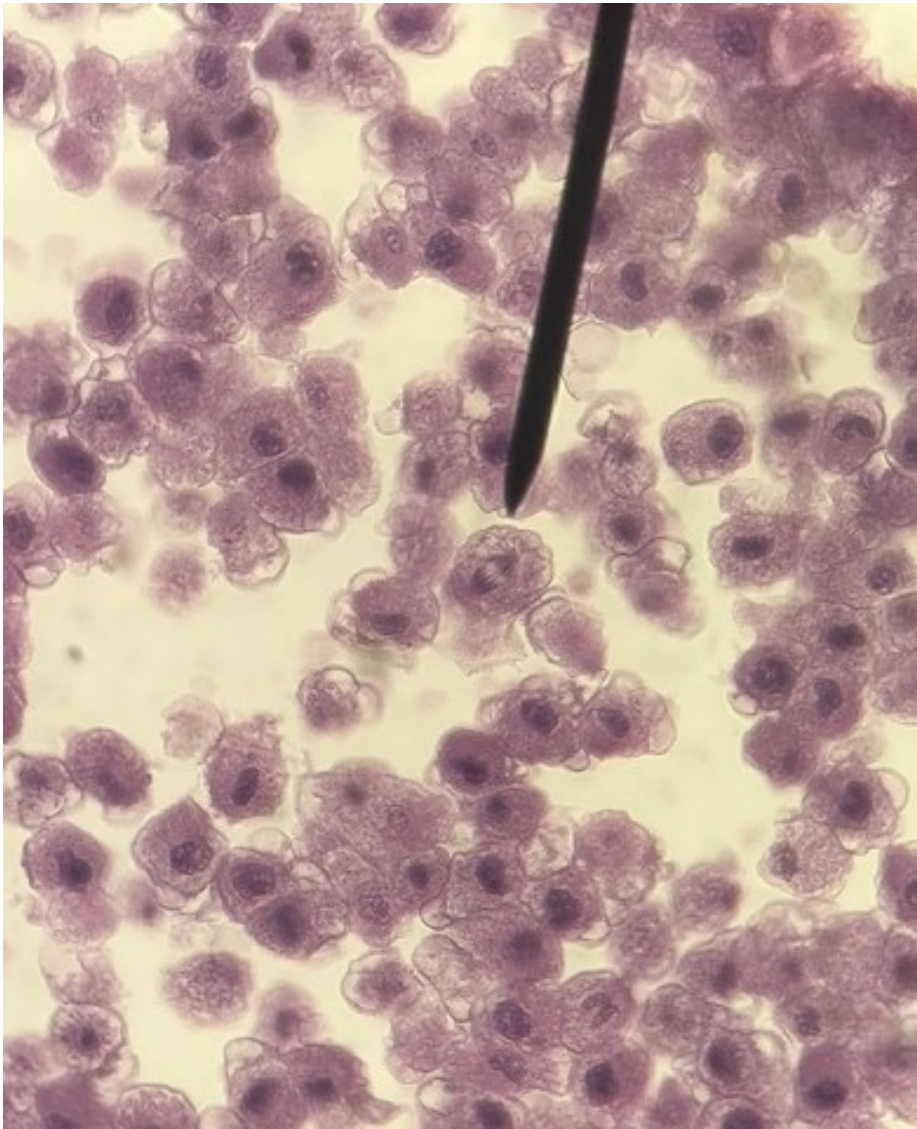
Mammal kidney – pointing at the basement membrane of the glomerulus



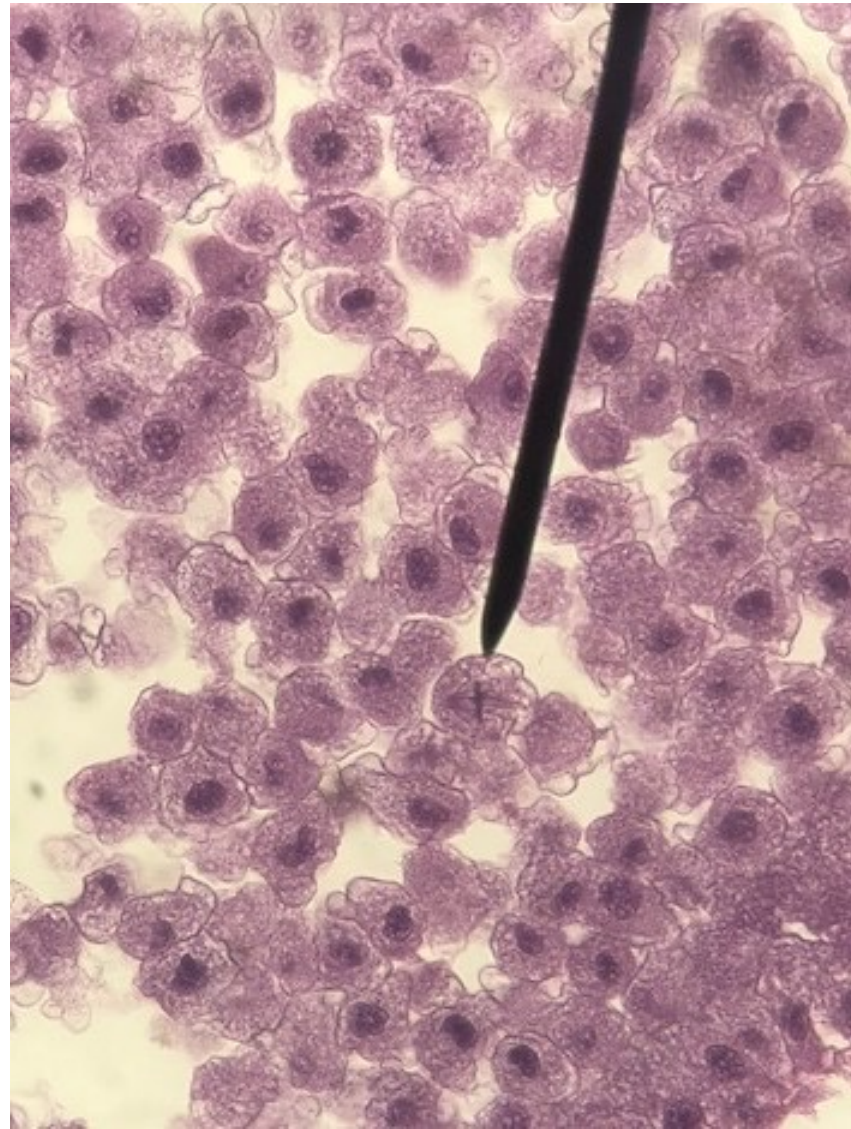
Cerebellum – pointing at  
anti-neurofilament



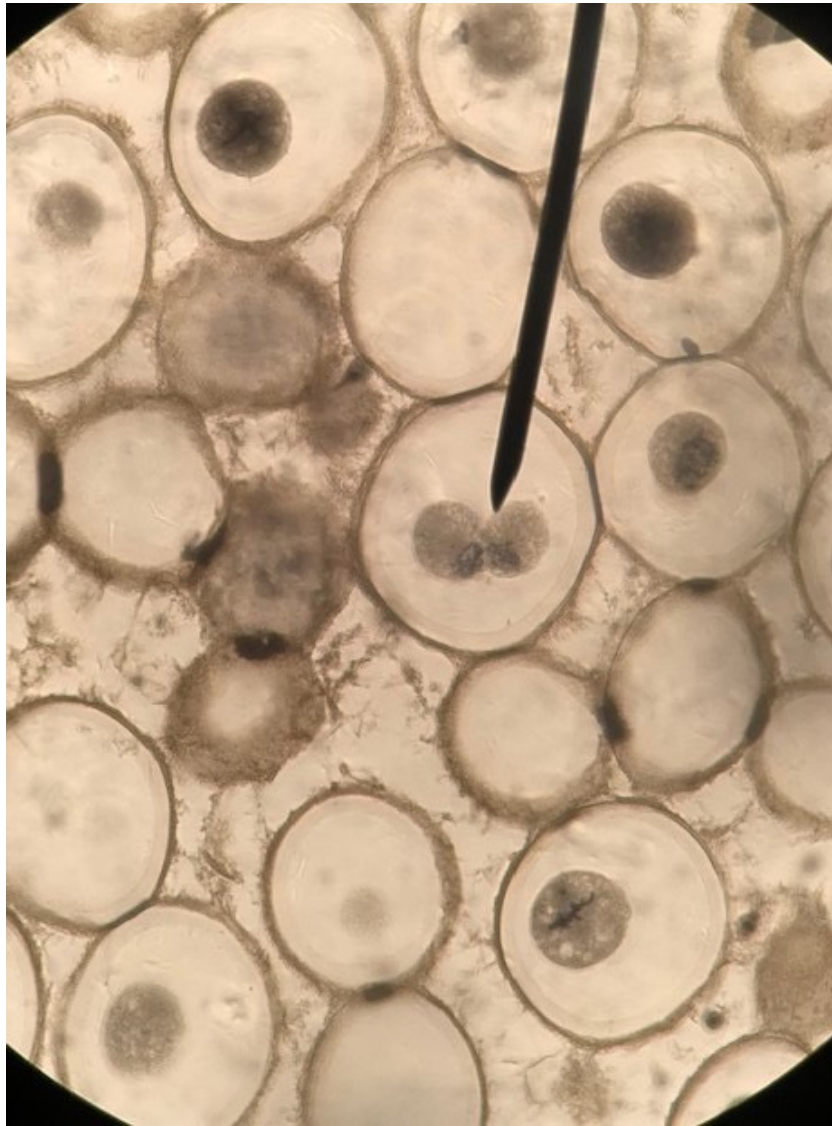
Frog sperm. Pointing at the sperm  
head. The small slivers are the  
broken off flagellae



Fish blastula – pointing at a cell in the anaphase stage of mitosis.



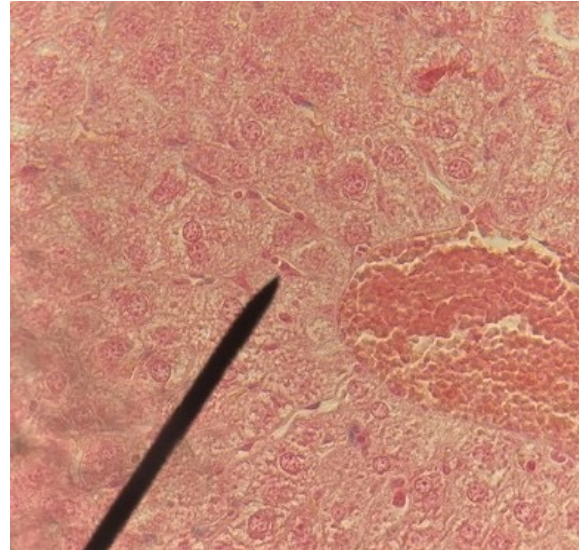
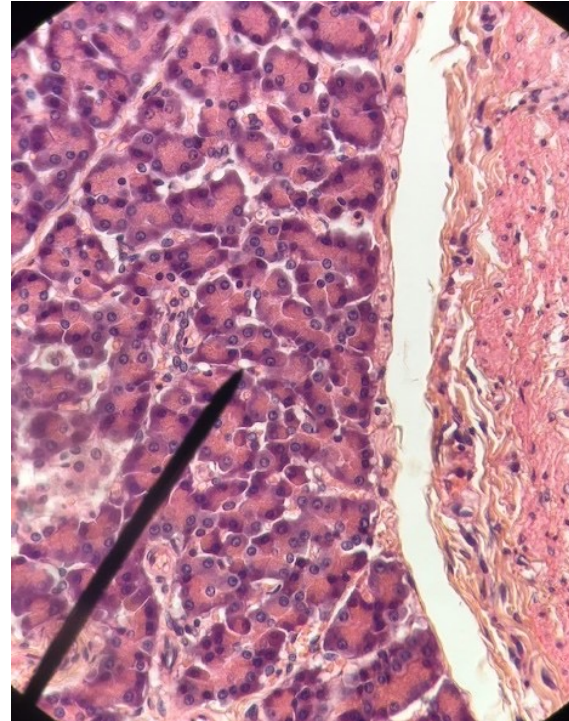
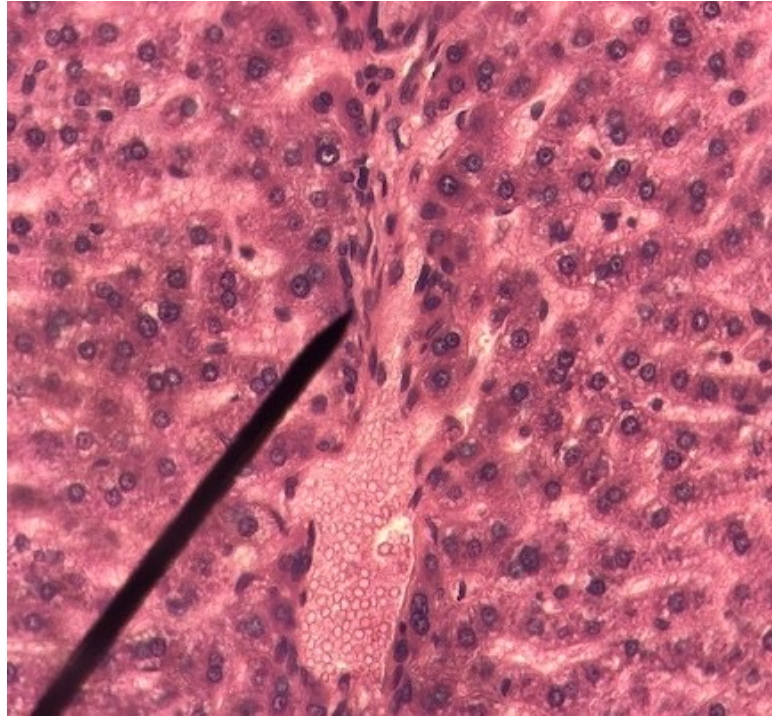
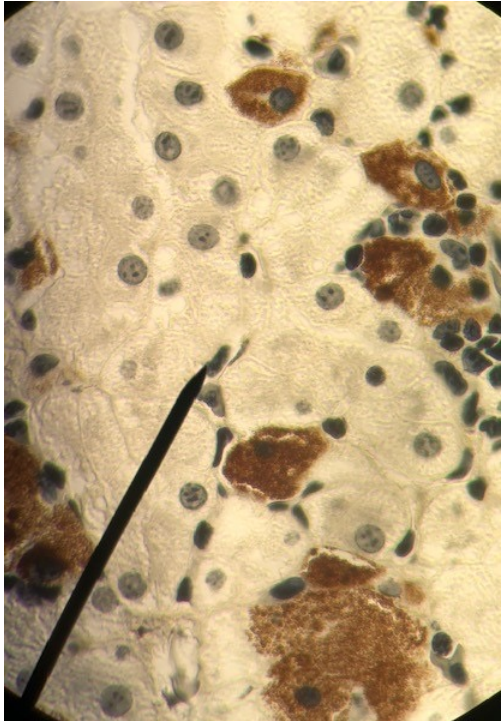
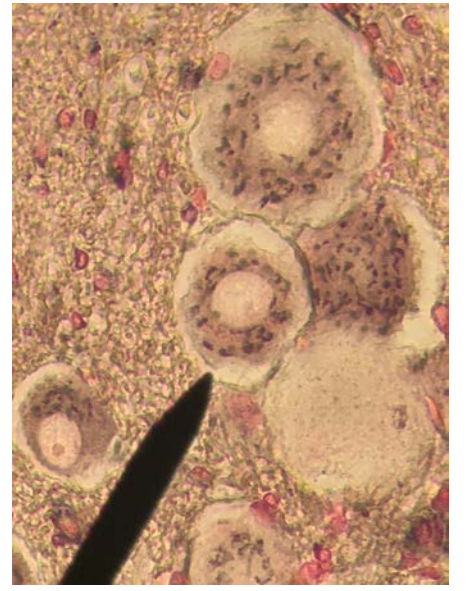
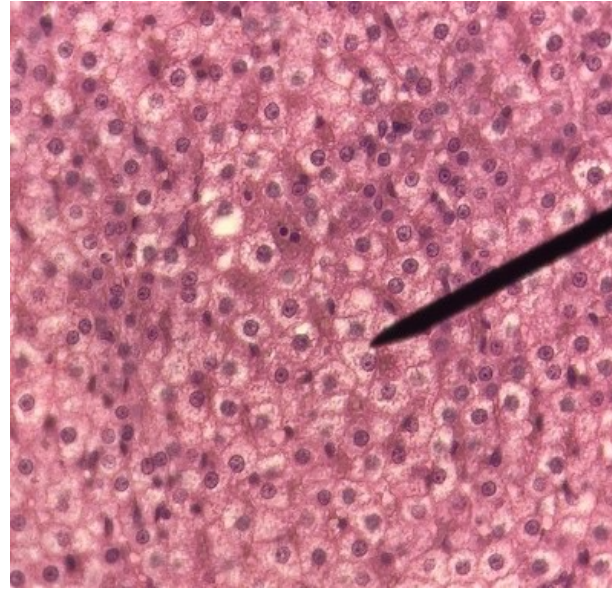
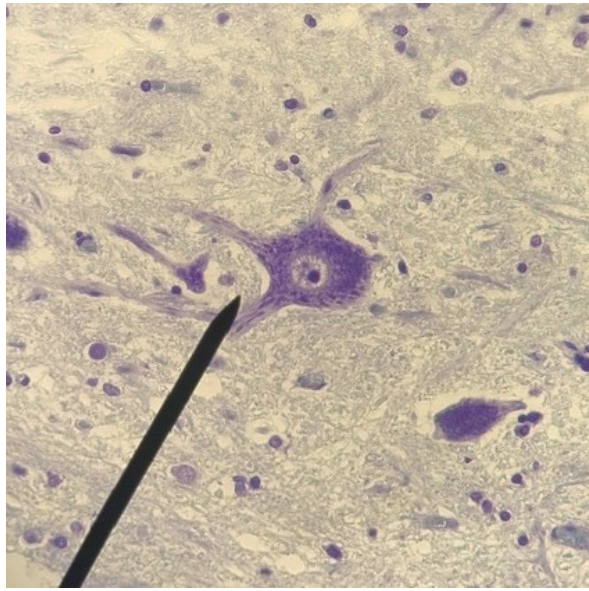
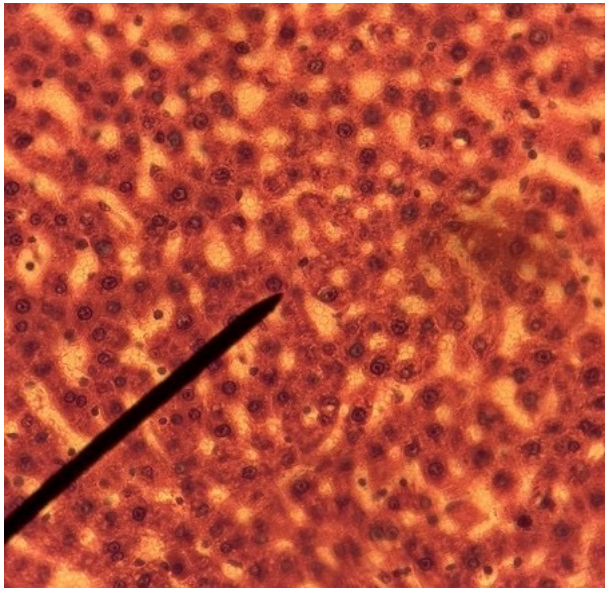
Fish blastula – pointing at the metaphase state of mitosis

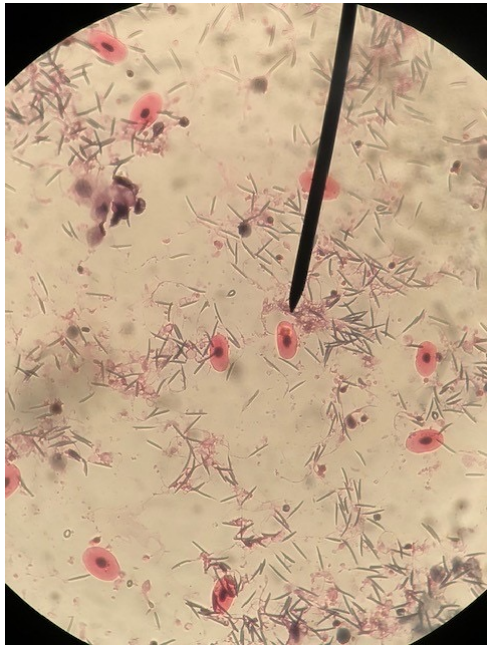
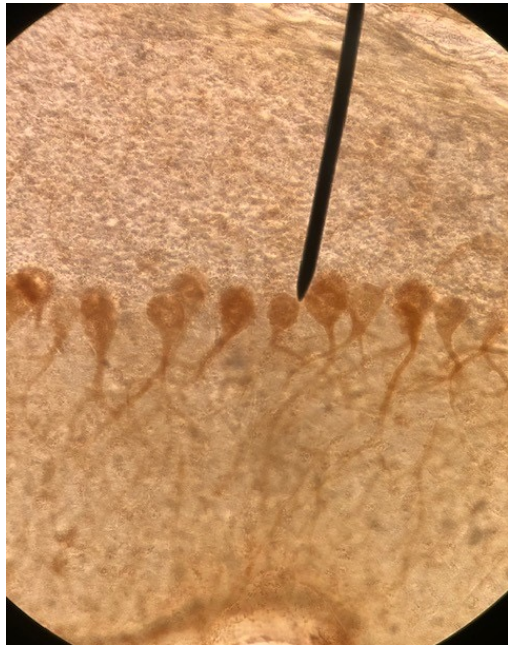
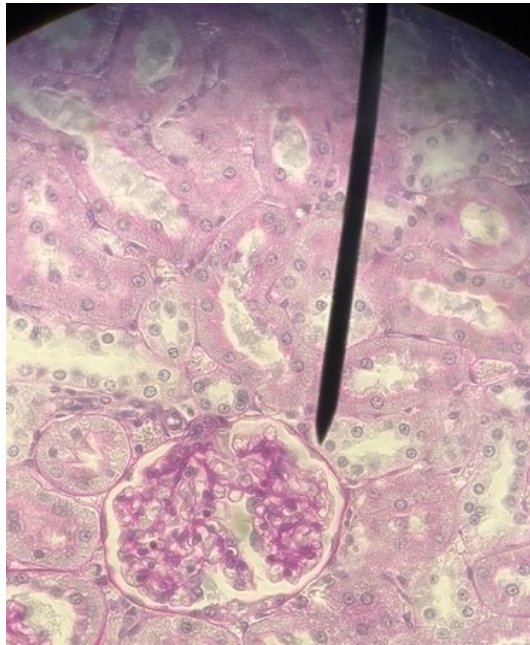
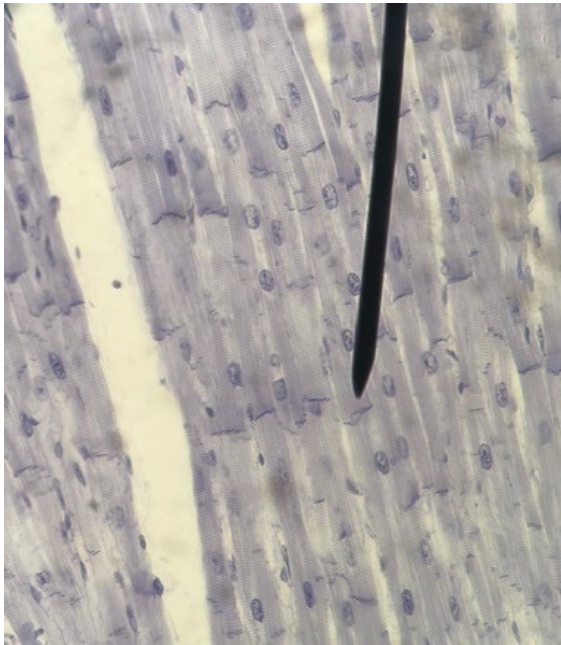
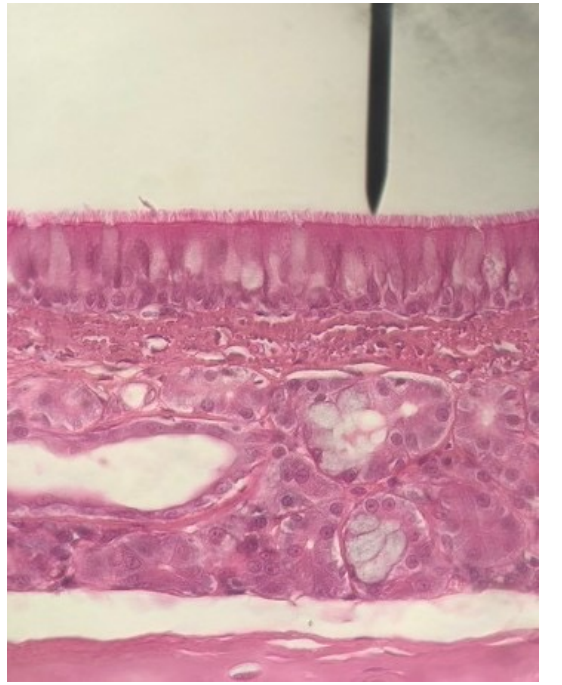
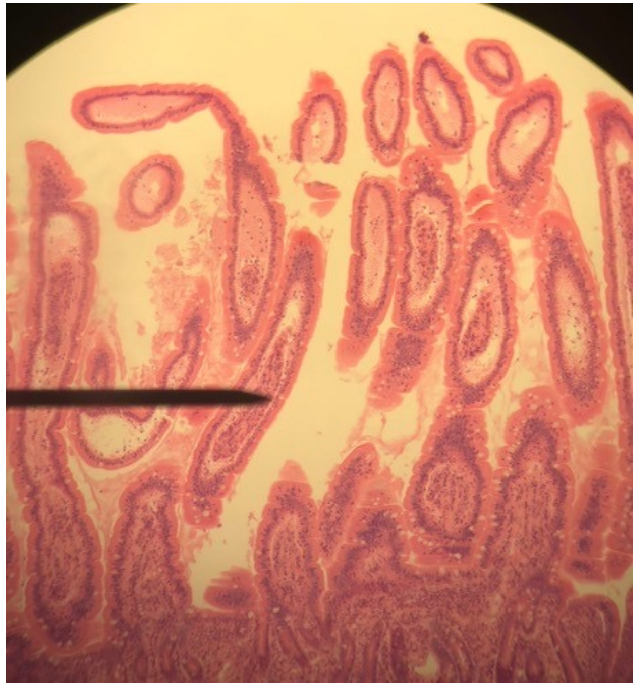
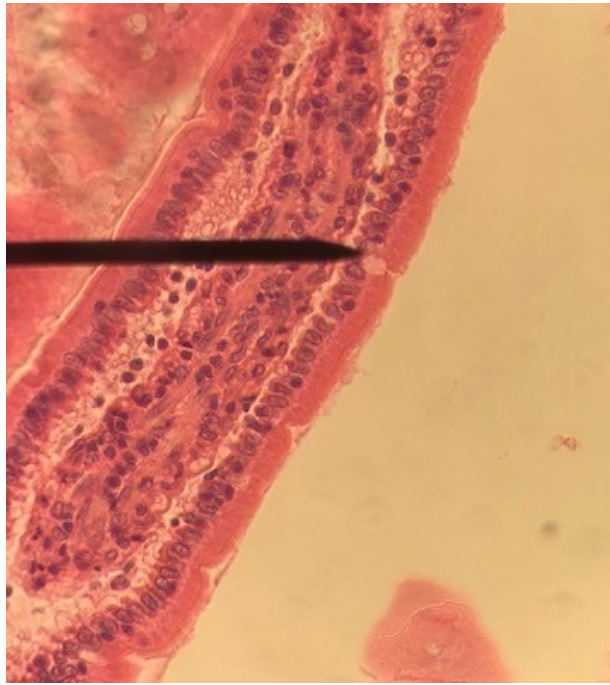


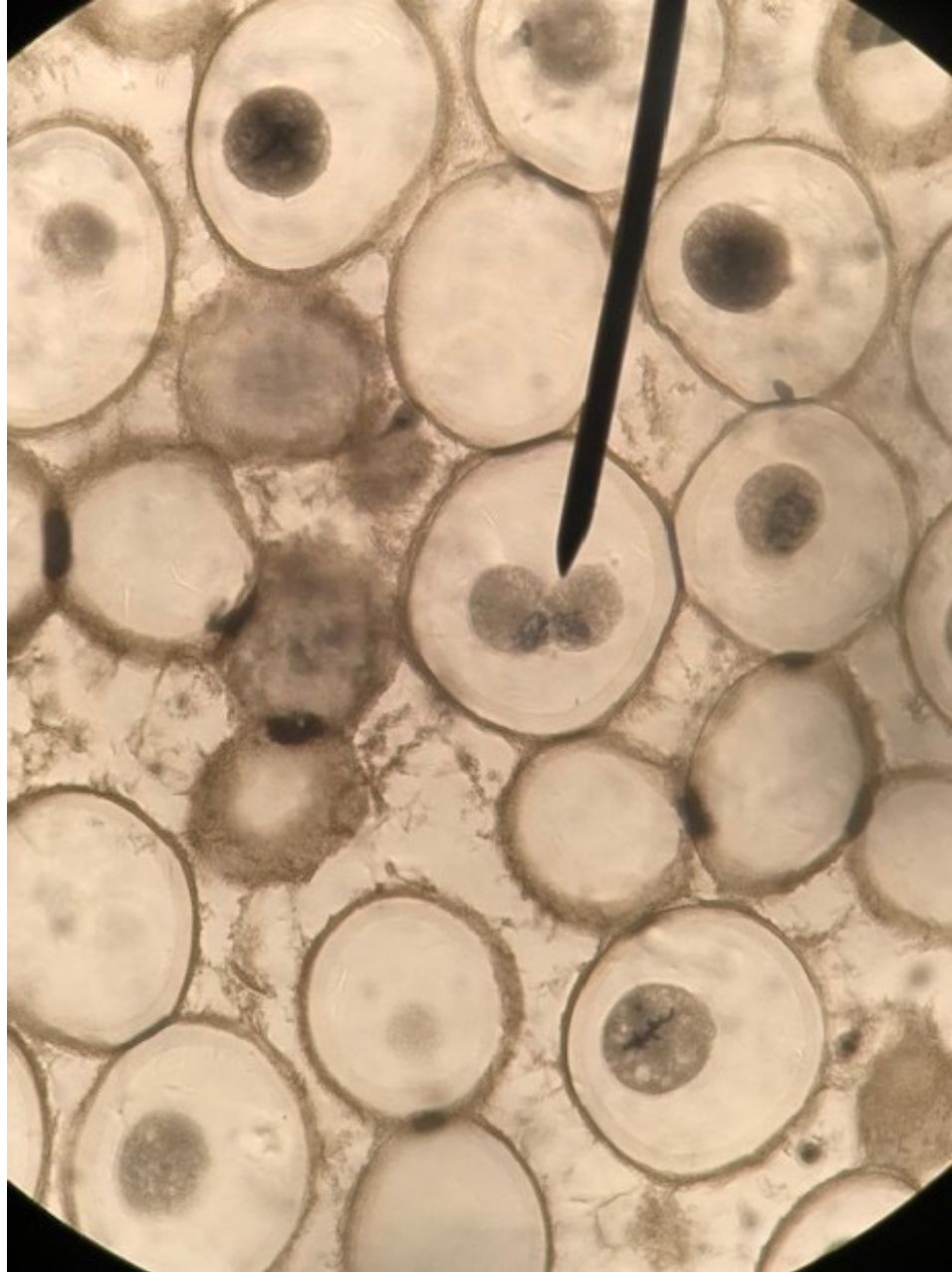
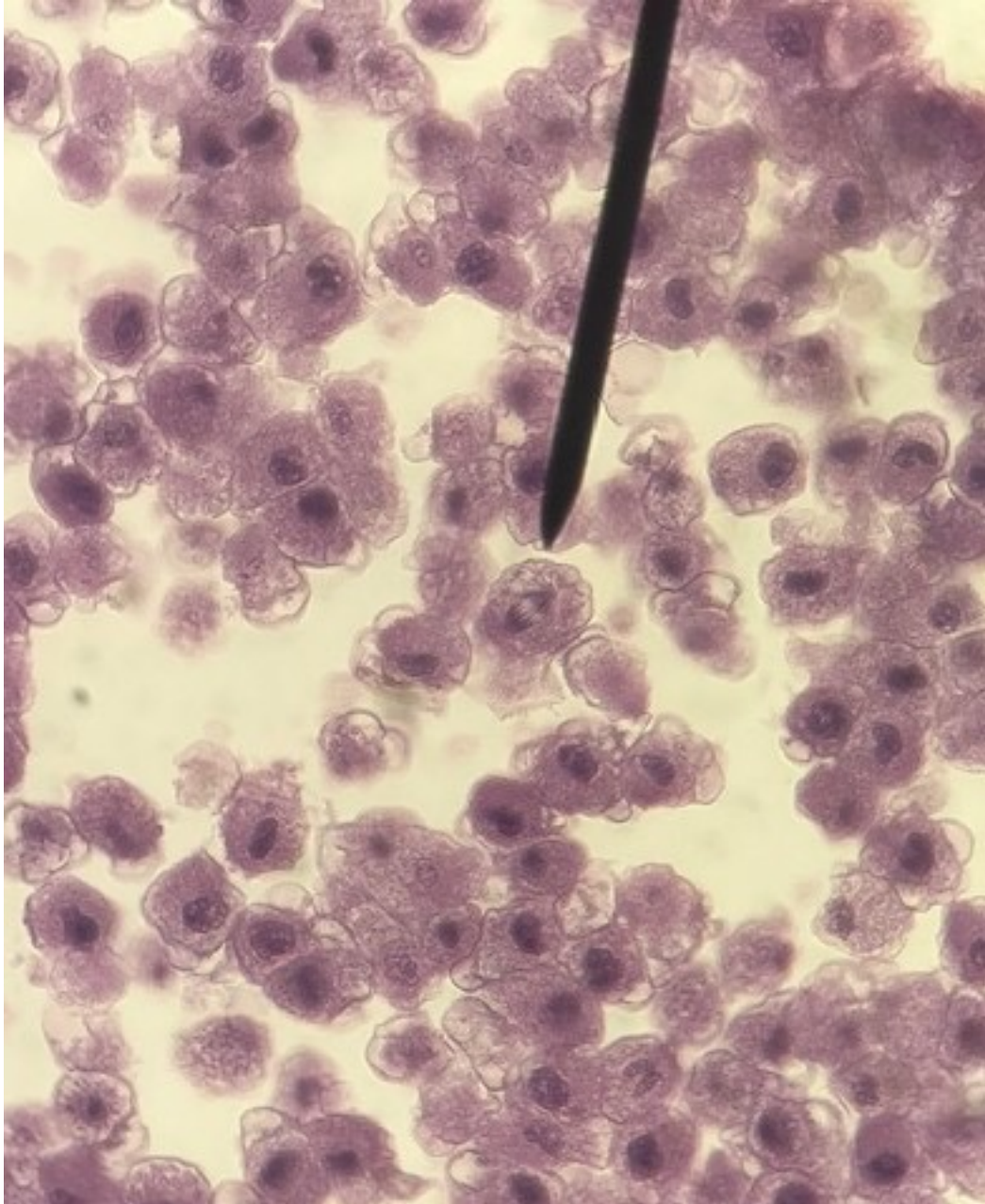
Ascaris (roundworm) egg  
cross-sections

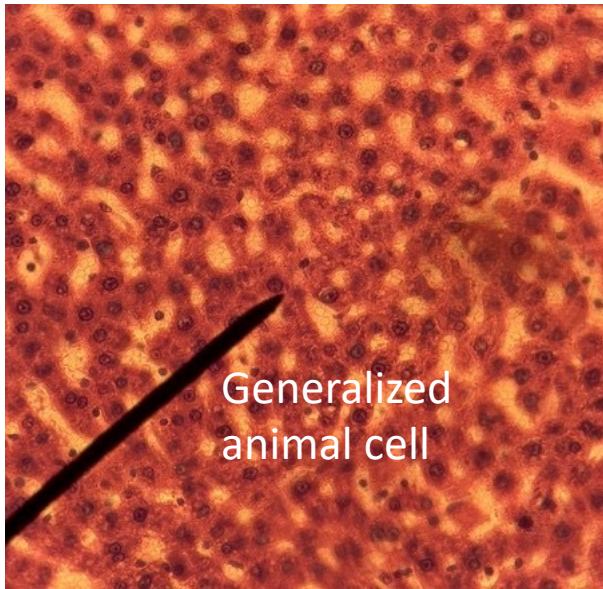
# Practice

- For practice, examine the following images from the cell lab. They are unlabeled (labelled ones are after).
- Identify the cell types generally (columnar, cuboidal, liver...)
- Identify the structure at or close to the tip of the pointer.
- This is a good site for cells and histology
  - <http://histologyatlas.wisc.edu/>

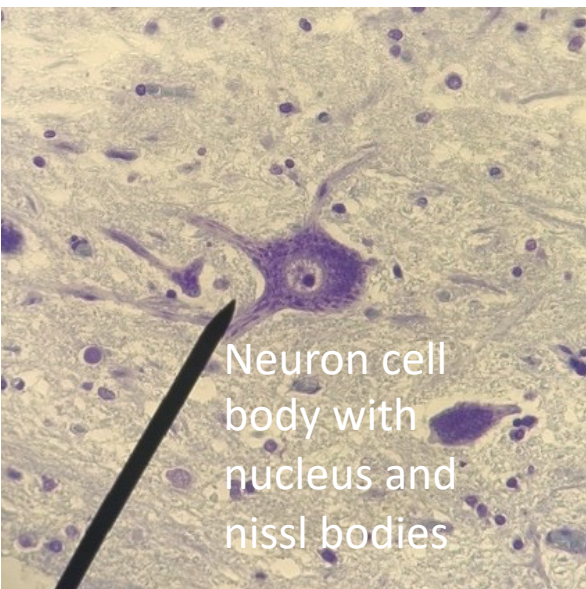








Generalized  
animal cell



Neuron cell  
body with  
nucleus and  
nissl bodies



Smooth ER in an  
adrenal gland cell



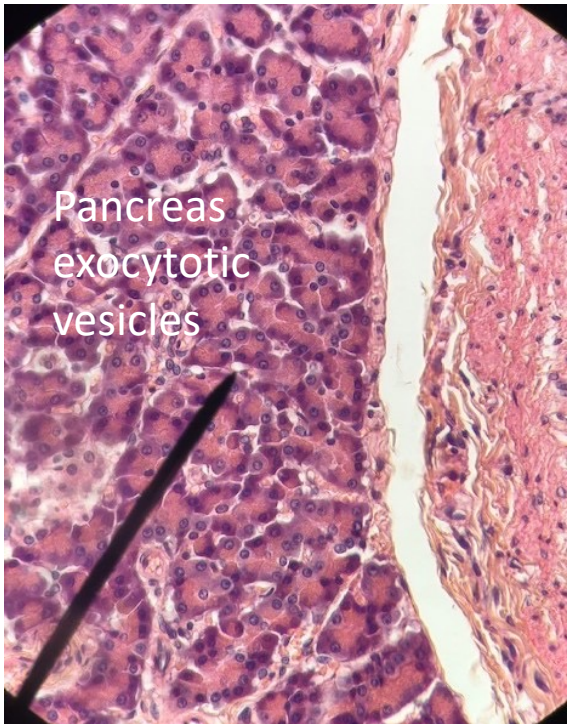
Dorsal root  
ganglion



mitochondria



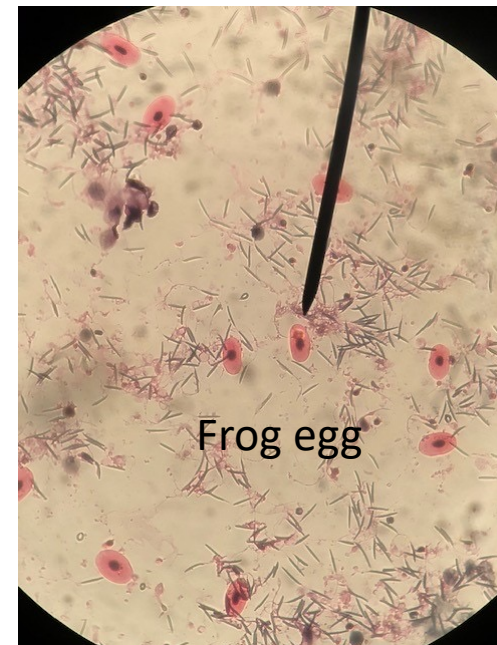
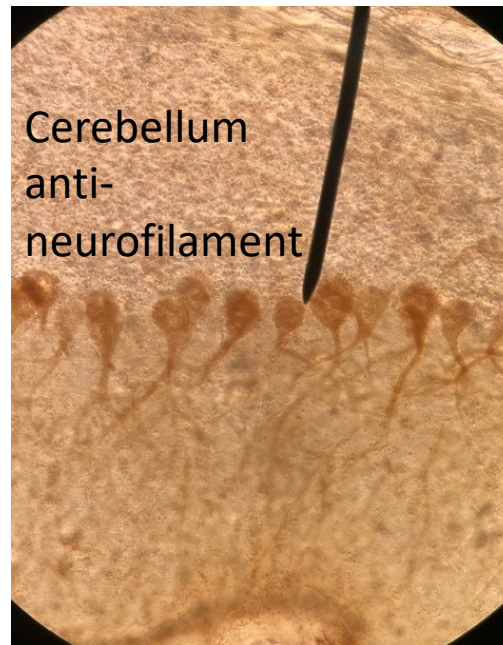
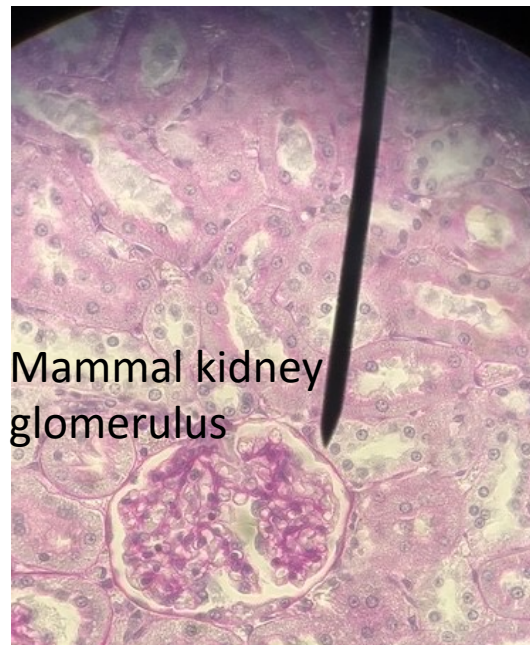
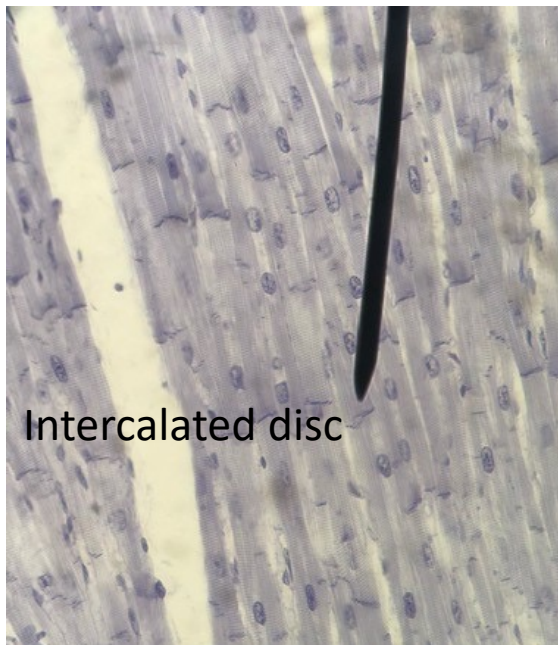
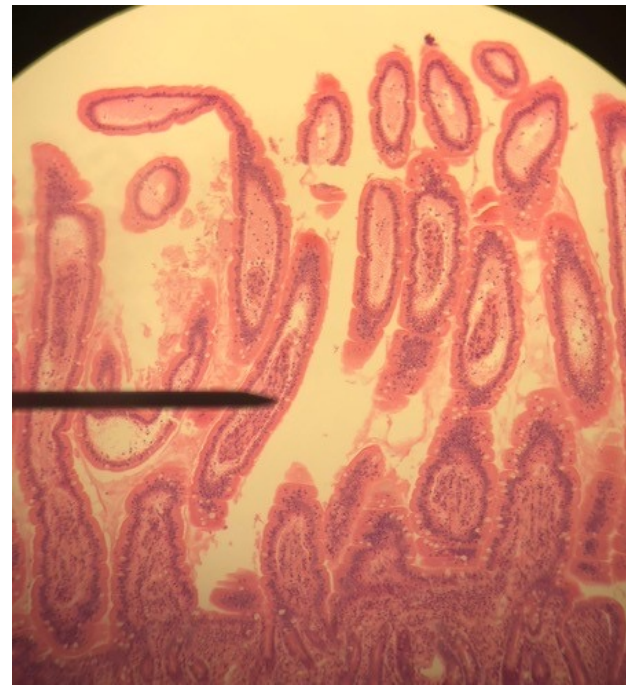
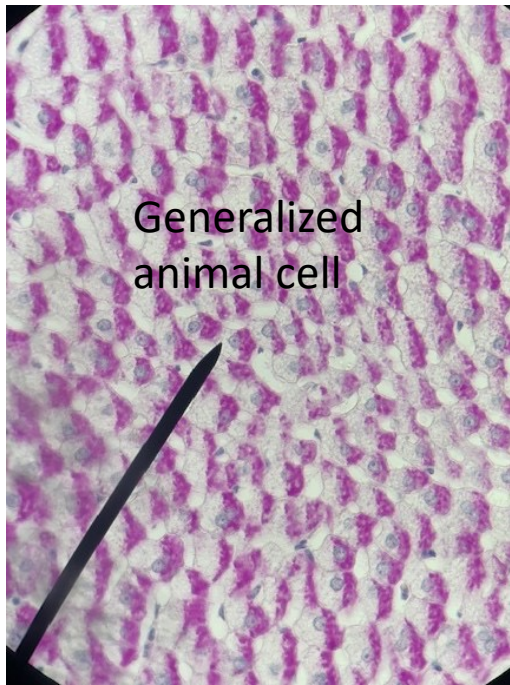
Mammal liver  
lysosomes

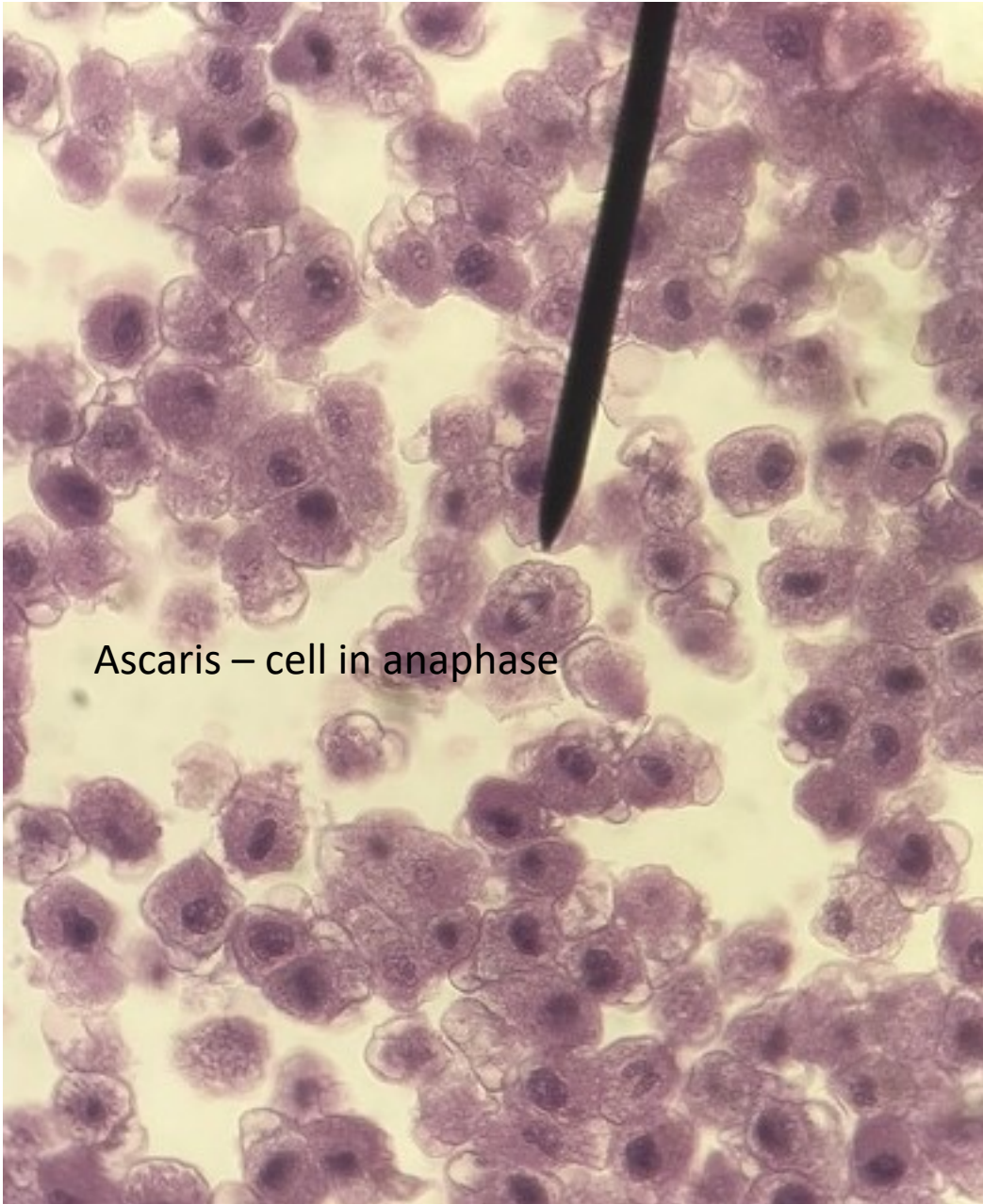


Pancreas  
exocytotic  
vesicles

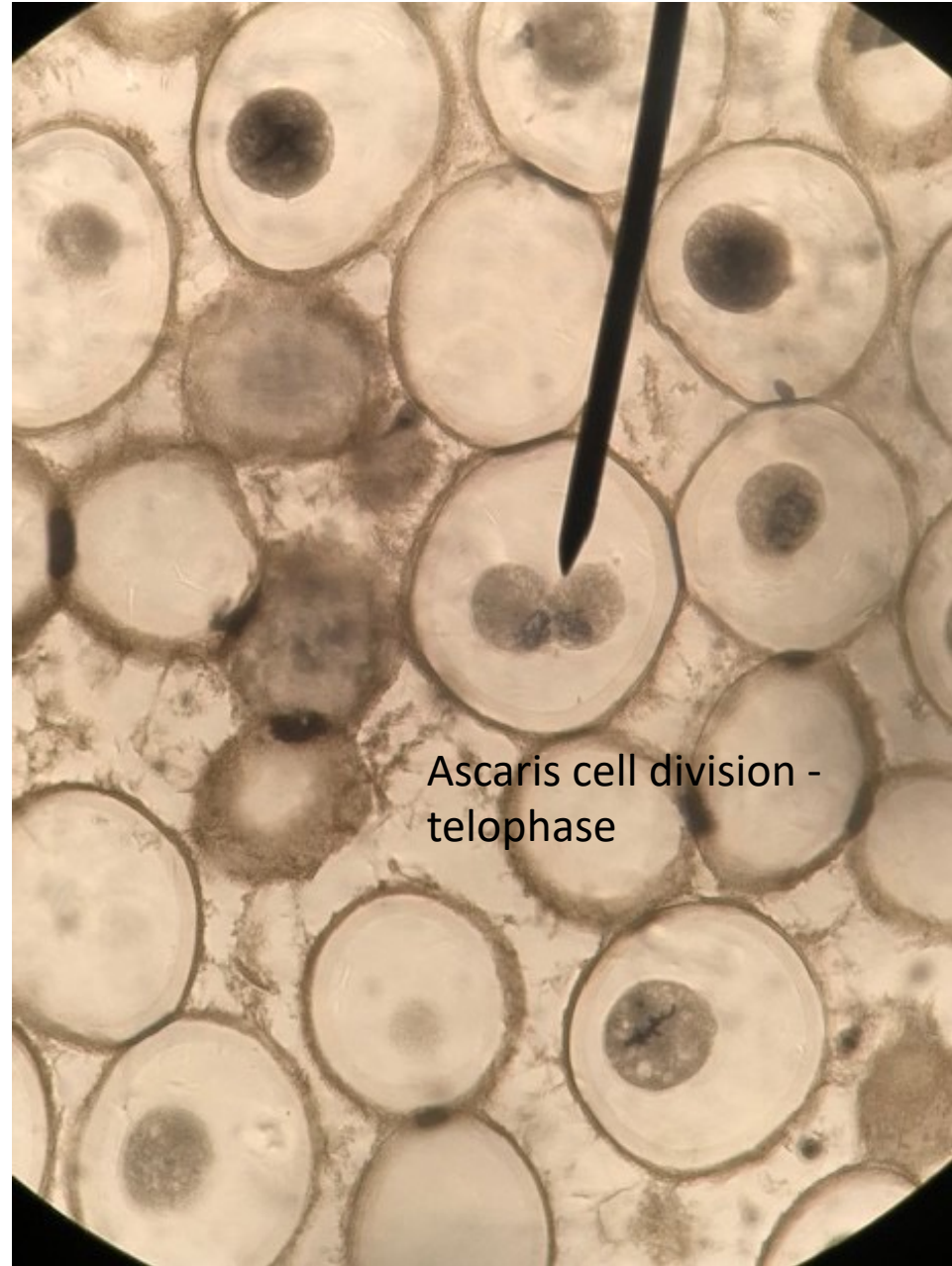


Liver Kupffer cell





Ascaris – cell in anaphase



Ascaris cell division -  
telophase

# Notes on cell observations

- Make sure to read the lab handout, in particular the description of each slide.
- Practice identifying various structures.
- Identifying cells is no easy task. You may have noticed at first they all look the same! However, after a while you start to notice subtle differences: the shape of the cell, the location relative to other structures. Identifying organelles can also be challenging. Generally, they need to be stained for identification, unless you are looking under an electron microscope.