INTRODUCTION TO NERVOUS TISSUE HISTOLOGY

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http://biology.clc.uc.edu/fankhauser/Labs/Anatomy_&_Physiology/A&P202/Nerve_Histology/Nervous_Tissue_Histology.htm

Examine the following slides and identify the listed features. Survey each slide for the best typical field which shows the listed features, and illustrate it at the indicated power, labeling these features. At home, fill in the significance of each feature in a sentence or two. Follow protocol Notebook Illustrations. (MF 9th = Eroshenko’s 9th Ed)

Slide 1: **Spinal motor nerve cell**, ox, hematoxylin-eosin stain (H 1660)
(MF 9th, page 89) at 400x:

- neuron: functional unit of nervous system
- nucleus: houses genetic material
- nucleolus: synthesizes ribosomal RNA, assembles ribosomes. Prominent in neurons.
- Nissl bodies: rough endoplasmic reticulum (synthesizes protein). Prominent in cytoplasm.
- perikaryon: also known as cell body, equals the area "around the nucleus"
- axon hillock: often tapered, gives rise to the axon, pale or clear due to lack of Nissl bodies
- darkened dendrites: darker stained projection, carries impulses toward cell body. Can be multiple.
- axon: clearer projection, carries impulses away from cell body
- astrocytes: most common neuroglial cells, support, nourish neurons
- microglia: cells with large nuclei dispersed among astrocytes (scarce), phagocytic

Slide 6: **Motor nerve endings** with end plates, snake, AuCl₂ stain (H 1685)

Motor end plates, known also as neuromuscular junctions
(MF 9th, page 81) at 400x:

- skeletal muscle: also known as striated muscle, bands of sarcomeres visible
- nerve bundle: axons bound together by Schwann cells (not visible)
- axon: delivers impulses from the cell body to the motor end plate
- motor end plate: a cluster of synaptic knobs attached to muscle fibers
- synaptic knobs: (or boutons) release acetylcholine, the neuromuscular neurotransmitter

FOR DAY OF PERIPHERAL NERVES IN THE CAT
(Seventh week of the quarter)
http://biology.clc.uc.edu/fankhauser/Labs/Anatomy_&_Physiology/A&P202/Special_Senses/Smell_Taste/Smell_and_Taste.htm

Slide 10: **Vater-Pacini corpuscles**, pancreas, Hematoxylin-eosin (H 1688)
Pacinian corpuscles, specialized nerve ending which detects pressure and vibration in an organ.
(MF 9th: page 229 and 147) at 100x:

Pacinian corpuscle:
- connective tissue capsule
- central cavity with numerous lamellae (with flattened nuclei, looks like an onion x)
- naked dendrite
- Pancreatic acini