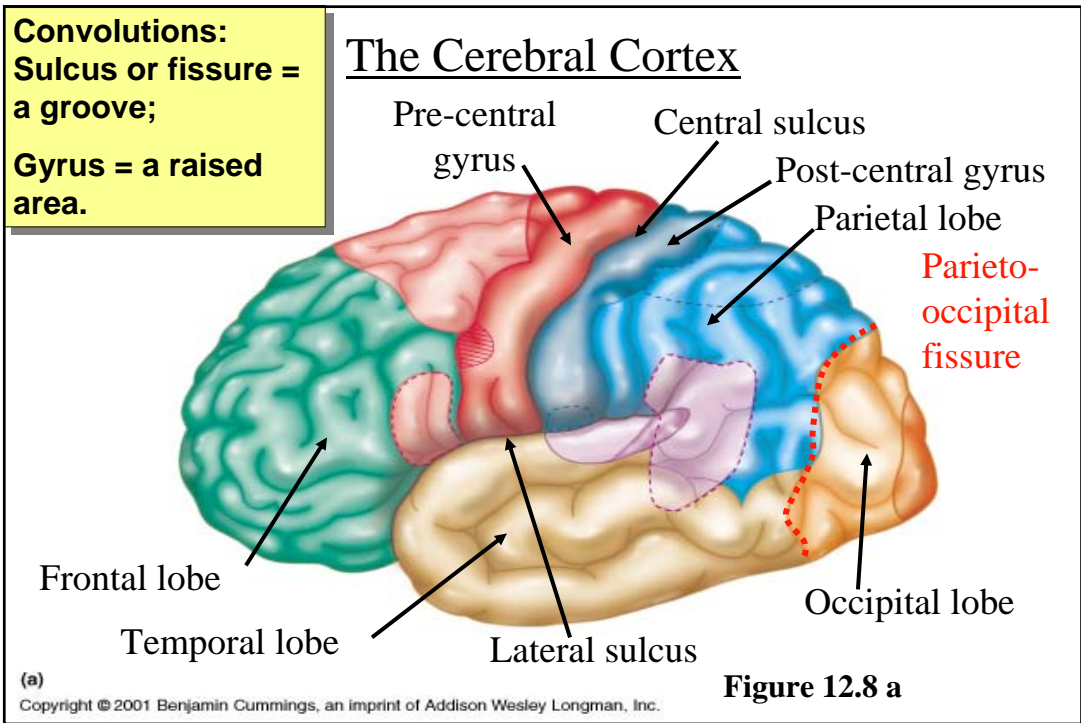
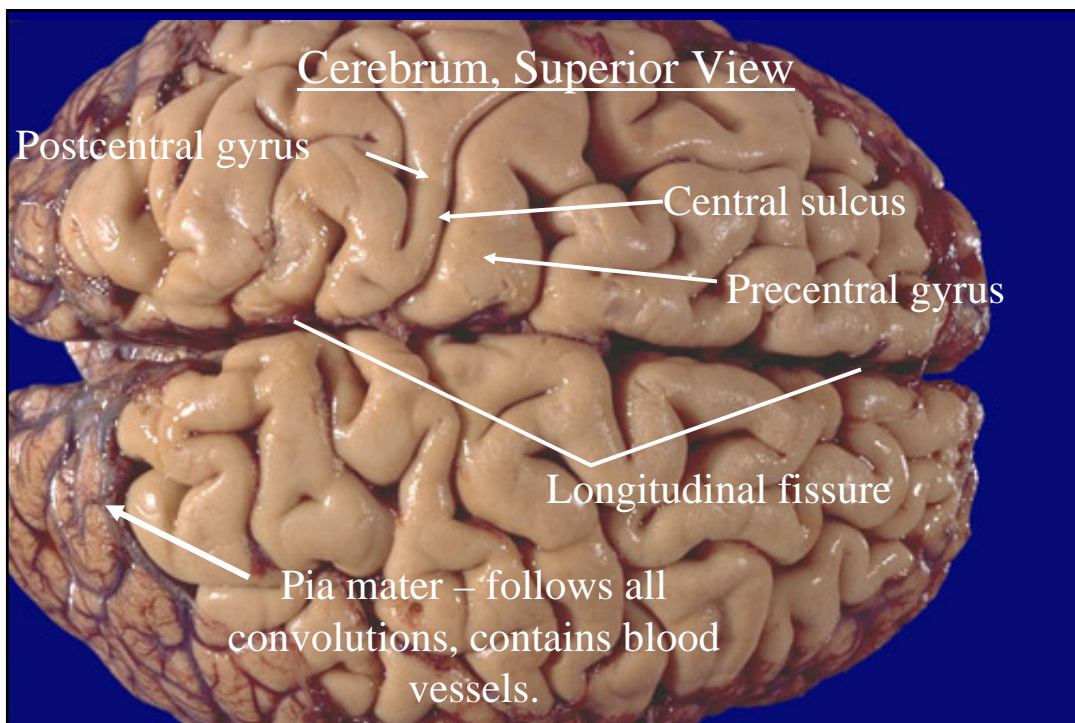
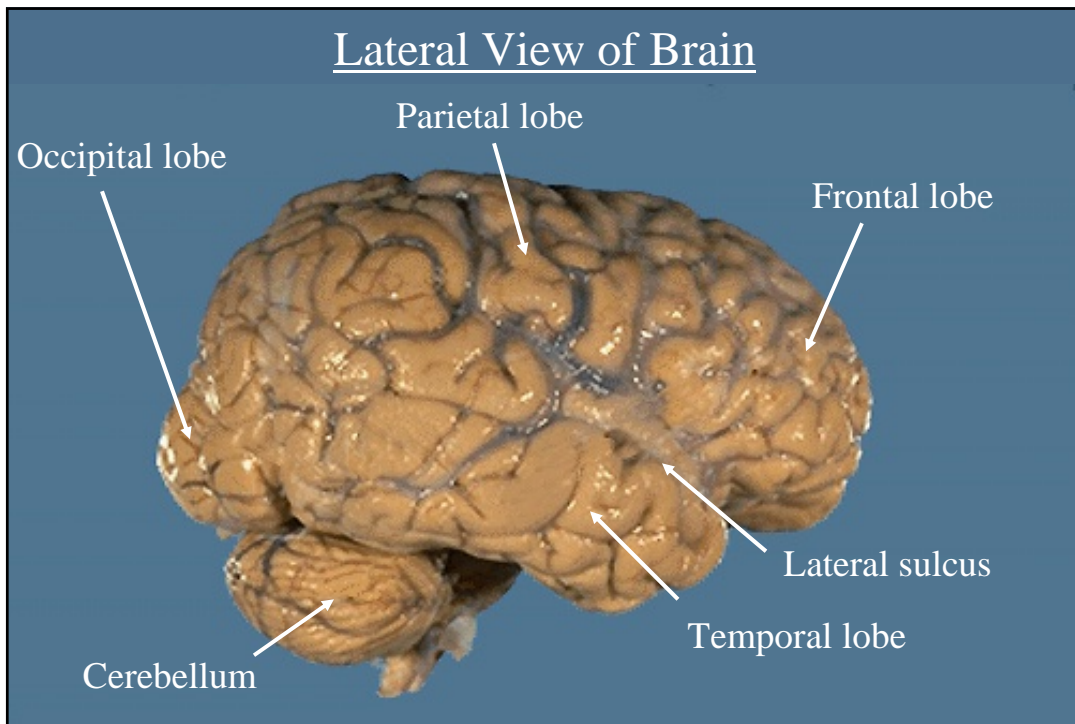


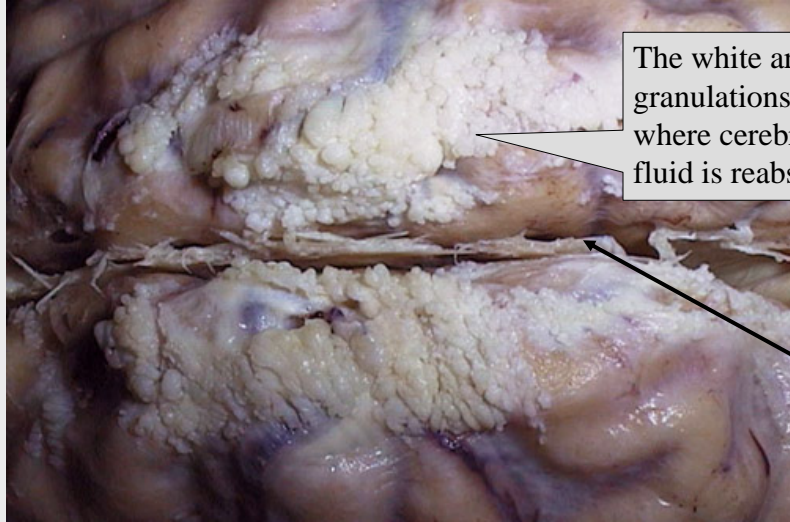
Laboratory Study of
The Brain

1





Arachnoid Granulations



The white arachnoid granulations are where cerebrospinal fluid is reabsorbed.

Falx cerebri

5

Ventral View of Brain w/ Cranial Nerves

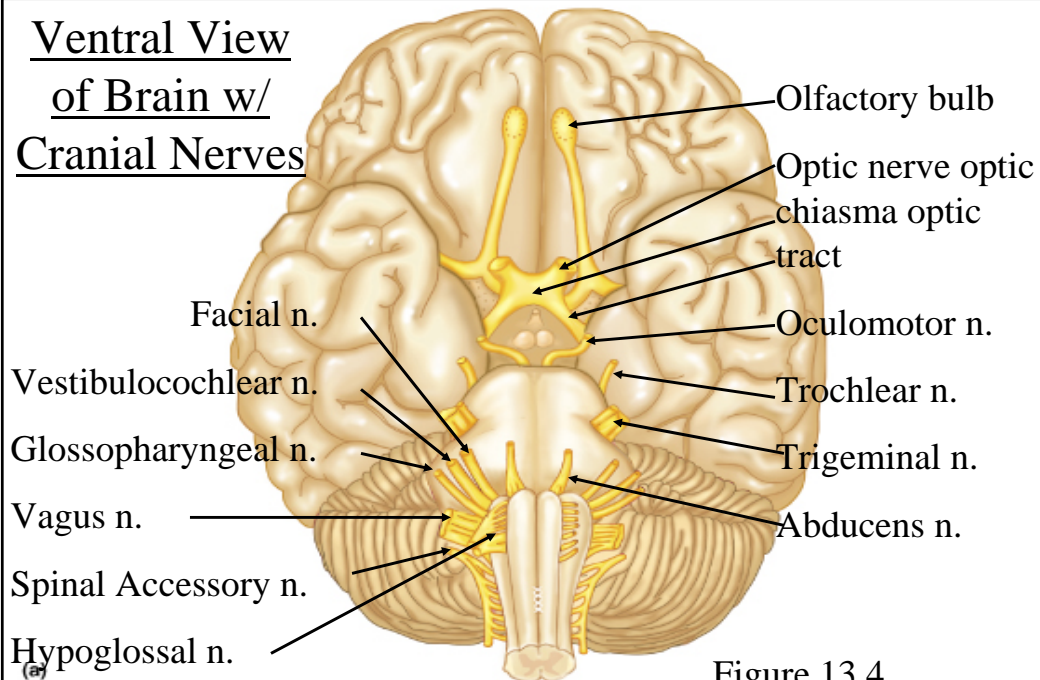
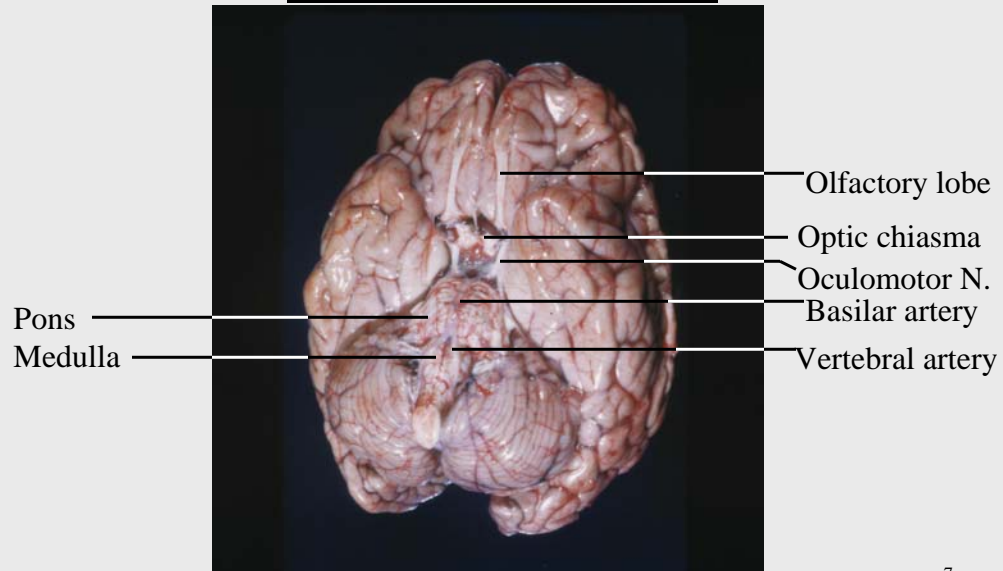


Figure 13.4

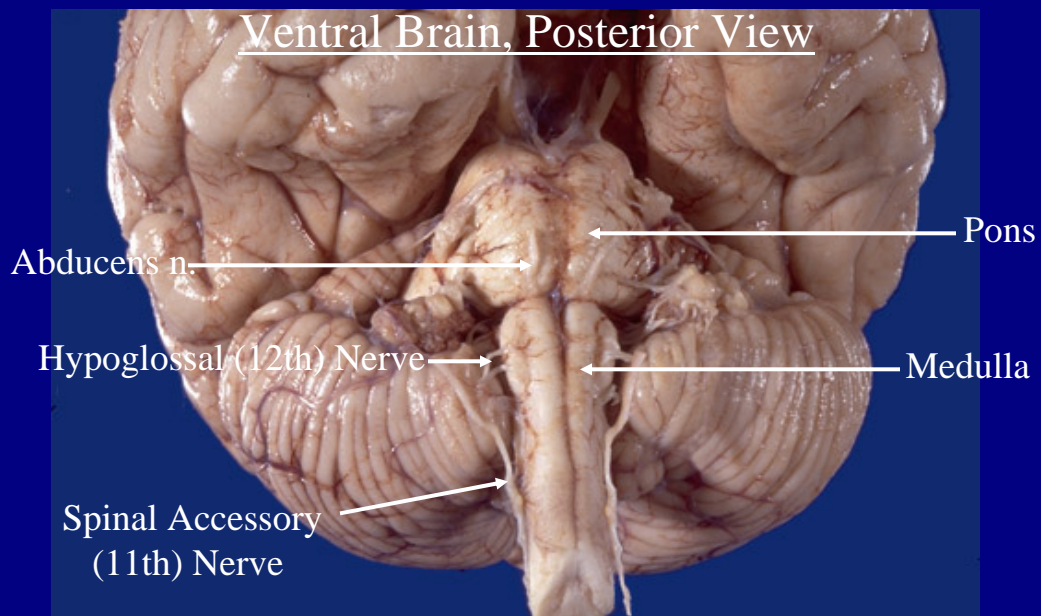
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Ventral View of Brain



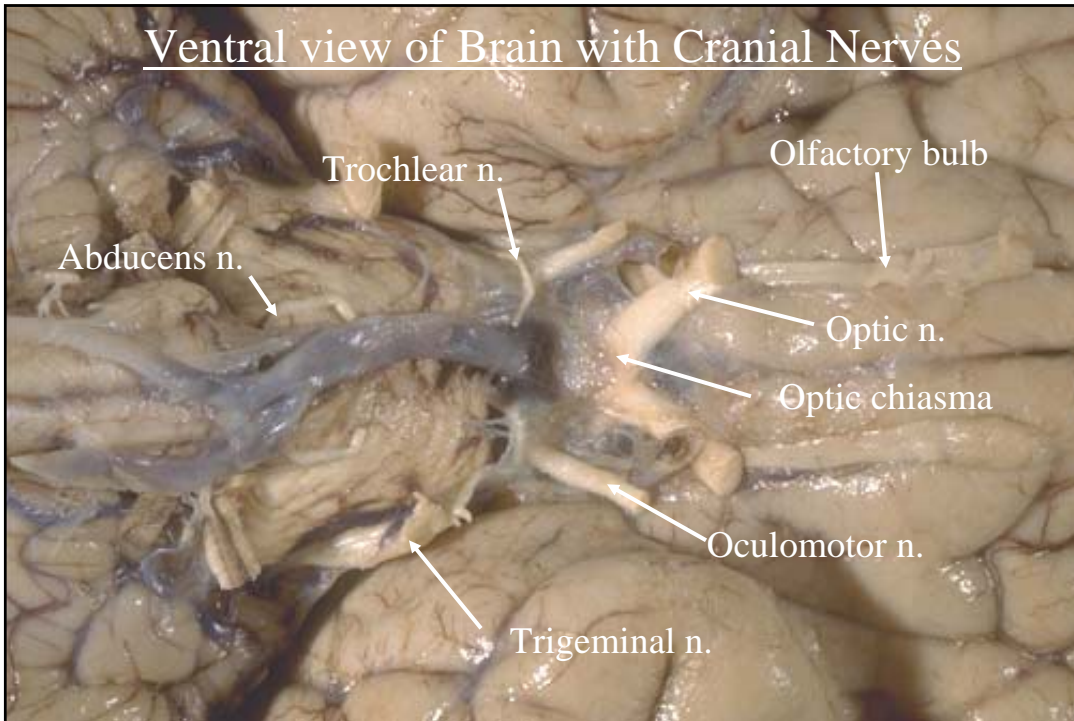
7

Ventral Brain, Posterior View



8

Ventral view of Brain with Cranial Nerves



Brain, Ventral View



- 1) Inferior Frontal Lobe,
- 2) Temporal Lobe,
- 3) Pons,
- 4) Medulla Oblongata,
- 5) Left Cerebellar Hemisphere,
- 6) Right Cerebellar Hemisphere

Sagittal Section of Brain

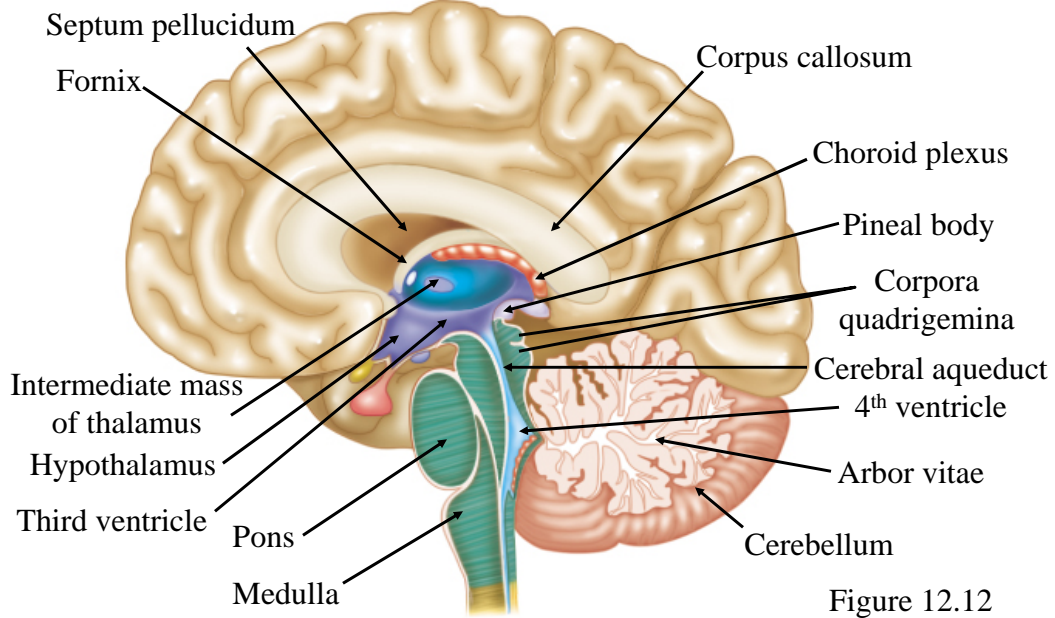
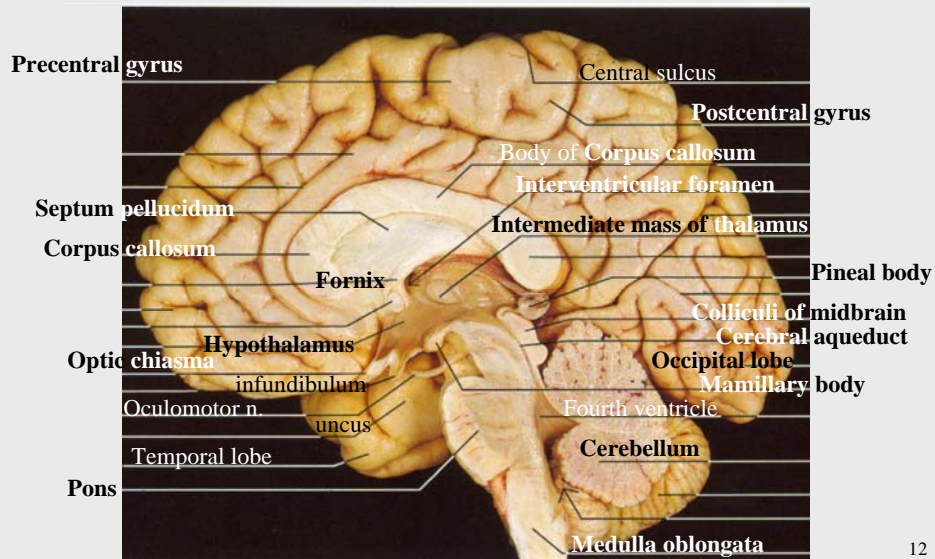


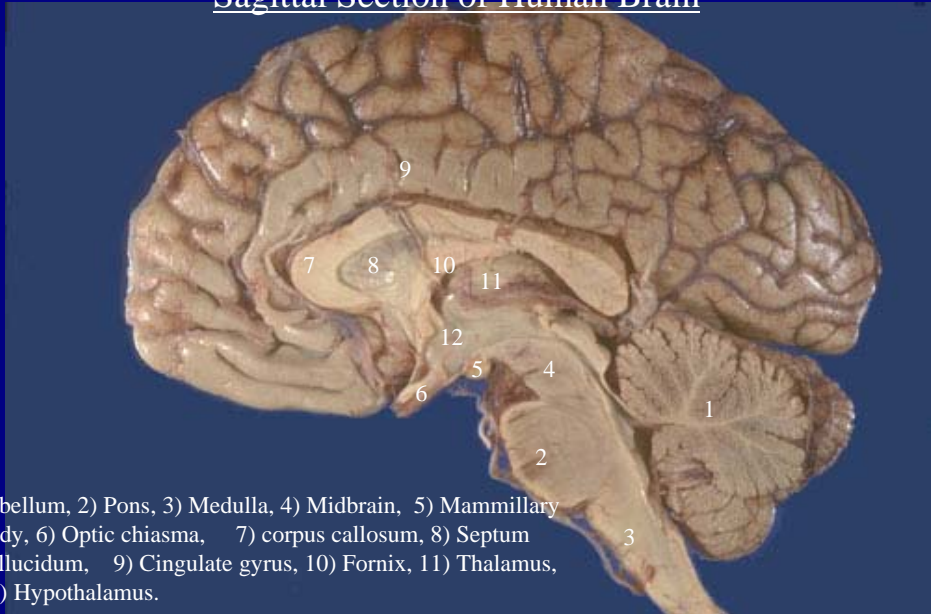
Figure 12.12

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Sagittal Brain Section

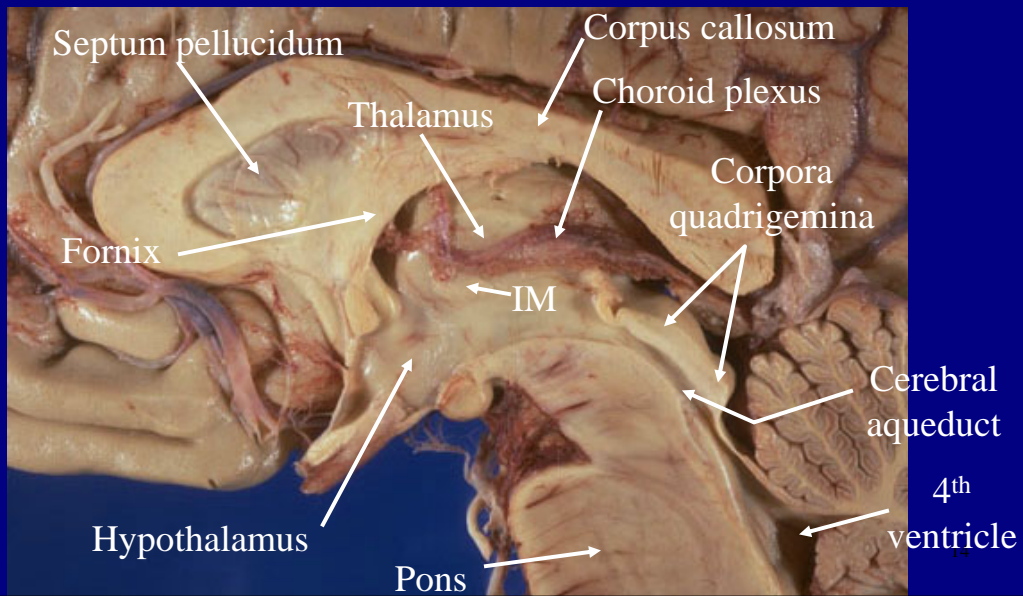


Sagittal Section of Human Brain

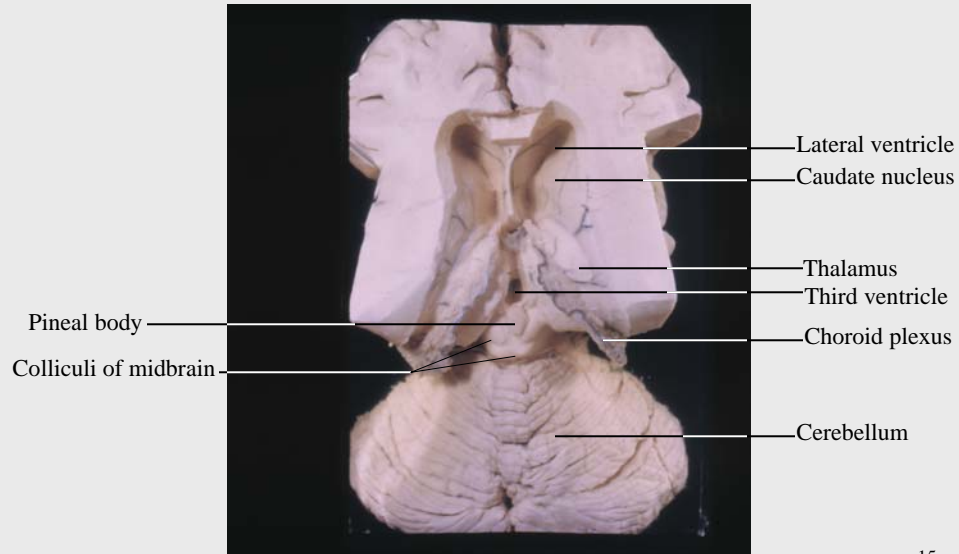


- 1) Cerebellum, 2) Pons, 3) Medulla, 4) Midbrain, 5) Mammillary body, 6) Optic chiasma, 7) corpus callosum, 8) Septum pellucidum, 9) Cingulate gyrus, 10) Fornix, 11) Thalamus, 12) Hypothalamus.

Sagittal Section of Midbrain and Diencephalon



Ventricles of the Brain



15

Sheep Brain Dissection



16

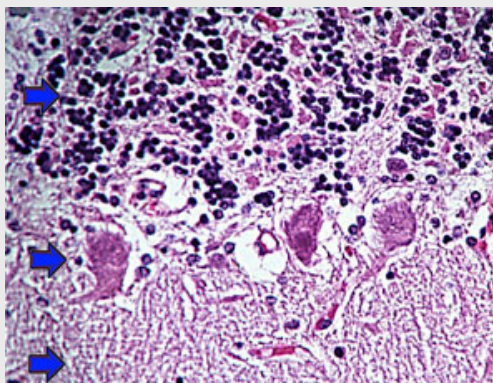
Layers of the Cerebellum



At low power, the cerebellum is distinguished by its three visible layers. The inner layer (blue arrow) is white matter on the inside compared to its "outer" spinal cord position. The outer layers are gray matter: granular layer (red arrow), molecular layer (green arrow), and Purkinje cell layer between those two layers.

17

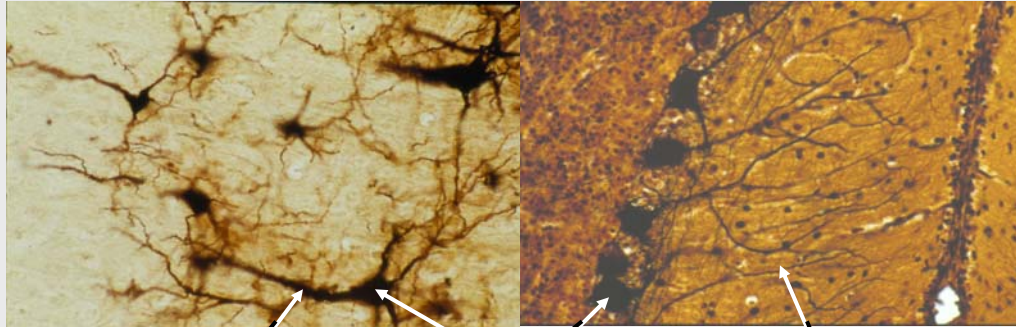
Gray Matter of the Cerebellum



The gray matter of the cerebellum has three layers: granular layer (top arrow), monolayer of Purkinje cells (middle arrow), and the molecular layer (bottom arrow). The Purkinje cells send axons to other parts of the CNS.

18

Cerebellar Purkinje Cells



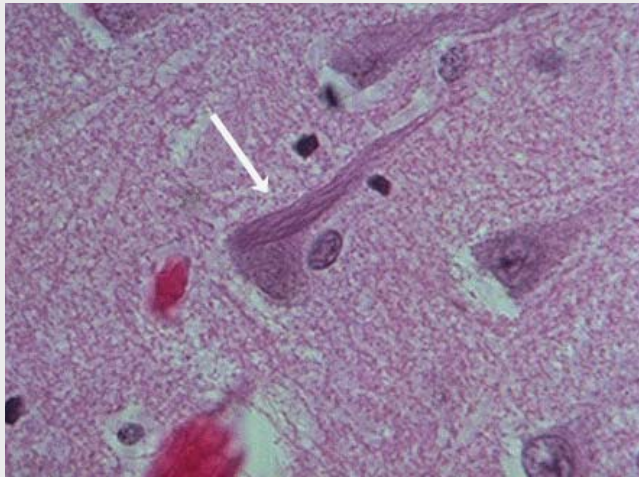
Axon to cerebellar
outflow

Interneuron cell
bodies

Dendrites

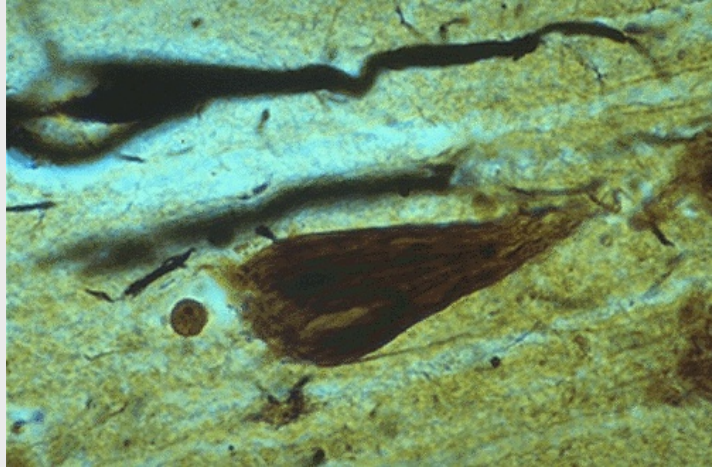
Purkinje cells are the largest and most distinguishing cells of the cerebellum. They have numerous dendrites and an axon which is the beginning of cerebellar outflow.

Alzheimer's Tangle



This is a neurofibrillary "tangle" of Alzheimer's disease. The tangle appears as long pink filaments in the cytoplasm. They are composed of cytoskeletal intermediate filaments.

Alzheimer's Tangle, Silver Stain



The characteristic microscopic findings of Alzheimer's disease include "senile plaques" which are collections of degenerative presynaptic endings along with astrocytes and microglia. These plaques are best seen with a silver stain, as seen here in a case with many plaques of varying size.

21

Lab Protocol

I. Anatomy of the Brain: Exercise 19

A. Materials:

1. Cadaver dissections: excised brain specimens
2. sheep brains for student dissection
3. brain models
4. brain sections preserved in lucite

B. Procedures:

1. Identify indicated parts in models and specimens and relate structures to their functions.
2. Dissect sheep brain and relate to human brain.

22

II. Cranial Nerves

A. Materials:

1. dissection/preparation of cranial nerves in cadaver
2. other view of cranial nerves, e.g., skull preparation, manual, etc.

B. Procedures:

1. Discuss nomenclature (On Old Olympus Towering
Tops A Fin And German Viewed Some Hops), location, origin and
course of cranial nerves.
2. Discuss functions of cranial nerves.