Comment: The cerebral lobes are arbitrary divisions of the cerebrum, taking their names, for the most part, from overlying bones. They are not functional subdivisions of the brain, but serve as a reference for locating specific functions within them. The anterior (rostral) end of the frontal lobe is referred to as the frontal pole. Similarly, the anterior end of the temporal lobe is the temporal pole, and the posterior end of the occipital lobe the occipital pole.
Comment: **Insula** (insular gyri) exposed by removal of overlying opercula ("lids" of frontal and parietal cortex).
Language sites and arcuate fasciculus. MRI reconstruction from a volunteer.

Language sites (squares) approximated from electrical stimulation sites in patients undergoing operations for epilepsy or tumor removal (Ojemann and Berger).

Dissection of arcuate fasciculus
Lateral Dissections

- Cut surface of middle frontal gyrus
- Middle temporal gyrus
- External capsule
- Pons
- Medulla
- Spinal cord
- Central sulcus
- Supramarginal gyrus
- Lateral fissure
- Putamen
- Corona radiata
- Internal capsule
- Pyramidal cell in precentral gyrus
- Fiber in cerebral peduncle
- Fiber in base of pons
- Fiber in pyramid
- Pyramidal decussation
Posterior View of Brain

longitudinal fissure

parieto-occipital sulcus

Parieto-occipital fissure

occipital lobe

tentorium lies between occipital lobes and cerebellum

cerebellum

medulla

Falx lies between the cerebral hemispheres in the longitudinal fissure

occipital lobe

pallium

cerebellum

medulla
TOPOGRAPHY

FRONTAL LOBE
- central sulcus
- lateral fissure
- intraparietal sulcus
- parieto-occipital fissure

OCCIPITAL LOBE
- central sulcus
- lateral fissure
- parieto-occipital fissure
- occipital pole
- cerebellum
- corpus callosum
- caudate nucleus
- thalamus
- lateral fissure
- lateral ventricle: posterior horn
- parieto-occipital fissure
- corpus callosum
- caudate nucleus
- thalamus
- lateral fissure
- lateral ventricle: inferior horn
Dorsal View of Brain

LEFT

- occipital lobe
- splenium of corpus callosum

RIGHT

- frontal lobe
- genu of corpus callosum
- body of corpus callosum
- genu of corpus callosum
- caudate nucleus
- internal capsule
- thalamus
- transverse temporal gyrus
- choroid plexus
- posterior horn of lateral ventricle
- splenium of corpus callosum
Medial View of Right Hemisphere

corpus callosum:
- cingulate gyrus
- central sulcus
- parieto-occipital fissure
- cuneus (cuneate gyrus)
- calcarine fissure
- septum pellucidum
- thalamus
- midbrain
- pons
- medulla
- superior and inferior colliculi
- fornix
- part of thalamus remaining after removal of brainstem
- isthmus of cingulate gyrus
- fimbria at edge of hippocampus (not seen)
- parahippocampal gyrus
- column of fornix entering dissected hypothalamus
- optic chiasm
- subcallosal gyrus
- anterior commissure
- uncus
- lamina terminalis
- corpor callosum
- fornix
- caudate

Medial View of Right Hemisphere: Brain Stem and Septum Pellucidum Removed
Magnetic Resonance Scan: midline

- septum pellucidum
- corpus callosum
- cingulate gyrus
- parieto-occipital fissure
- fornix
- third ventricle
- optic nerve
- pituitary fossa
- pons
- medulla
- spinal cord
- calcarine fissure
- superior and inferior colliculi
- cerebral aqueduct
- midbrain
- cerebellar vermis
- fourth ventricle
1. Septum Pellucidum, Hypothalamus & Most of Thalamus Removed

- Septum Pellucidum
- Hypothalamus
- Most of Thalamus

2. Remaining Thalamus & Fornix Removed

- Remaining Thalamus
- Fornix

3. Caudate Removed

- Caudate

Labels:
- parieto-occipital fissure
- fornix
- body of corpus callosum
- calcarine sulcus
- vermis
- pons
- thalamus
- uncus
- cerebral peduncle
- cingulate gyrus
- anterior commissure
- genu of corpus callosum
- internal capsule
- substantia nigra
- cingulum
- cingulate gyrus
- body of corpus callosum
- anterior commissure
Comment: The ventral surface of the brain is especially important. It is here that the blood supply to the brain enters. The brain stem and many of the cranial nerves are visible. In addition, one can see the cerebellum, portions of the frontal, temporal and occipital lobes, and the floor of the diencephalon. And it is also here that the pituitary gland (not shown) is attached to the hypothalamus by the small infundibulum (posterior to the optic chiasm).
Cranial Nerves: Numbers and Names

I. Olfactory bulb: olfactory nerves (in the nasal epithelium) terminate in the bulb.

II. Optic nerve: The cell bodies of origin are in the retina. Half the axons cross (optic chiasm) to the opposite optic tract, half continuing to help form the optic tract of the same side.

III. Oculomotor nerve

IV. Trochlear nerve

V. Trigeminal nerve

VI. Abducens nerve

VII. Facial nerve nerve

VIII. Vestibulocochlear nerve

IX. Glossopharyngeal and

X. Vagus nerve rootlets

XI. Accessory (cranial) nerve rootlets are too small to see here: position is rostral and caudal to the vagus in the same line
Ventral View Dissections

- Frontal pole
- Temporal pole
- Optic tract
- Uncus
- Substantia nigra
- Occipital pole

- Amygdala
- Infundibulum
- Optic tract
- Uncus
- Hippocampus
- Parahippocampal gyrus
- Mammillary body
- Mammillary nucleus (body)
- Cerebral peduncle
- Cerebral aqueduct
- Splenium of corpus callosum
- Posterior horn of lateral ventricle
- Inferior horn of lateral ventricle
- Optic chiasm
- Hypothalamus
- Frontal pole
- Temporal pole
- Occipital pole
- Optic tract
- Uncus
- Hippocampus
- Parahippocampal gyrus
- Mammillary body
- Mammillary nucleus (body)
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- Optic tract
- Uncus
- Hippocampus
- Parahippocampal gyrus
- Mammillary body
- Mammillary nucleus (body)
- Cerebral peduncle
- Cerebral aqueduct
- Splenium of corpus callosum
- Posterior horn of lateral ventricle
- Inferior horn of lateral ventricle
Ventral Dissection: Optic Radiation

- optic nerve, chiasm and tract
- middle cerebral artery
- dura
- cerebral peduncle
- optic radiation: temporal (Meyer's) loop
- lateral geniculate
- medial geniculate
- pulvinar
- optic radiation
- midbrain
- splenium of corpus callosum
- dissected lower bank of calcarine fissure
- parahippocampal gyrus
- substantia nigra
- oculomotor nerve
- hypothalamus
- infundibulum and hypothalamus
- olfactory bulb and tract

RIGHT

LEFT
**TOPOGRAPHY**

**BRAINSTEM**

1. **Medial view of right hemisphere**

   - septum pellucidum
   - hypothalamus
   - optic chiasm
   - thalamus
   - midbrain
cerebellar vermishypothalamus
   - mamillary body
   - medulla
   - fourth ventricle

2. **Anterior view**

   - striatum
   - cerebral peduncle
   - hypothalamus
   - optic chiasm and tract
   - internal capsule
   - tonsil
   - pyramid
   - medulla

3. **Posterior view: cerebellum removed**

   - superior colliculus
   - inferior colliculus
   - cerebral peduncle
   - superior cerebellar peduncle
   - middle cerebellar peduncle
   - floor of 4th ventricle
   - inferior cerebellar peduncle

4. **Lateral view from left side**

   - optic tract
   - hypothalamus
   - pyramid
   - cerebral peduncle
cerebellar hemisphere
   - trigeminal nerve (V)
flocculus
   - tonsil
   - inferior olive
   - medulla