

**NEUROANATOMY LAB SLIDES FROM
DR. RUDY WANG**

ATLAS OF DR. JIM FIX

PLATE 19.

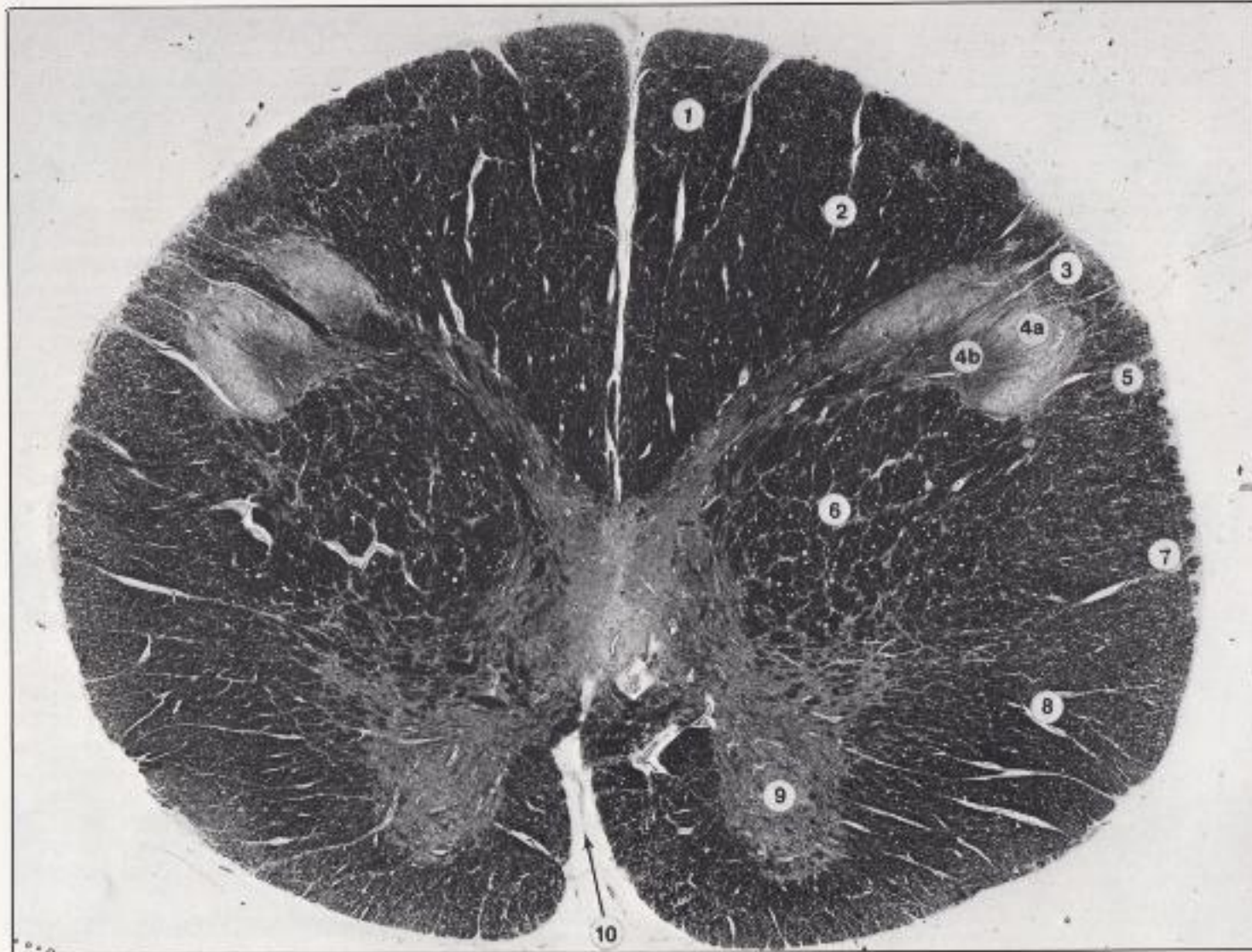


Plate 19. Spinal Cord at the Level of C-1

1. Fasciculus gracilis
2. Fasciculus cuneatus
3. Spinal trigeminal tract
- 4a. Spinal trigeminal nucleus (pars gelatinosa)
- 4b. Spinal trigeminal nucleus (pars magnocellularis)
5. Dorsal spinocerebellar tract
6. Lateral corticospinal tract
7. Ventral spinocerebellar tract
8. Lateral spinothalamic tract
9. Ventral horn (column)
10. Ventral median fissure
11. Central canal
12. Ventral white commissure
13. Ventral spinothalamic tract
14. Medial longitudinal fasciculus (MLF)
15. Ventral corticospinal tract
16. Tectospinal tract
17. Pontine reticulospinal tract
18. Medullary reticulospinal tract
19. Vestibulospinal tract
20. Spinothalamic tract
21. Rubrospinal tract

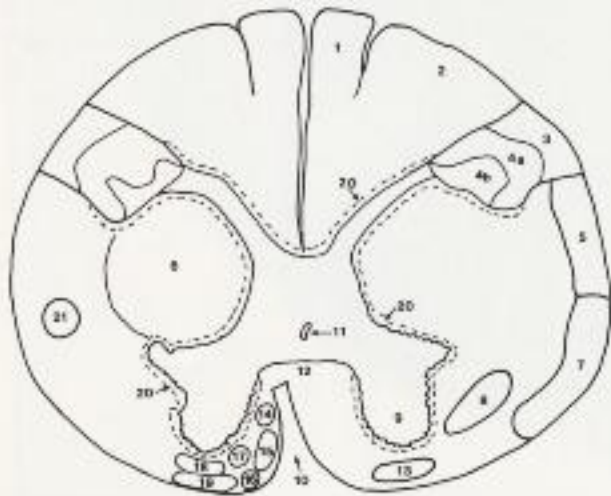


PLATE 20.

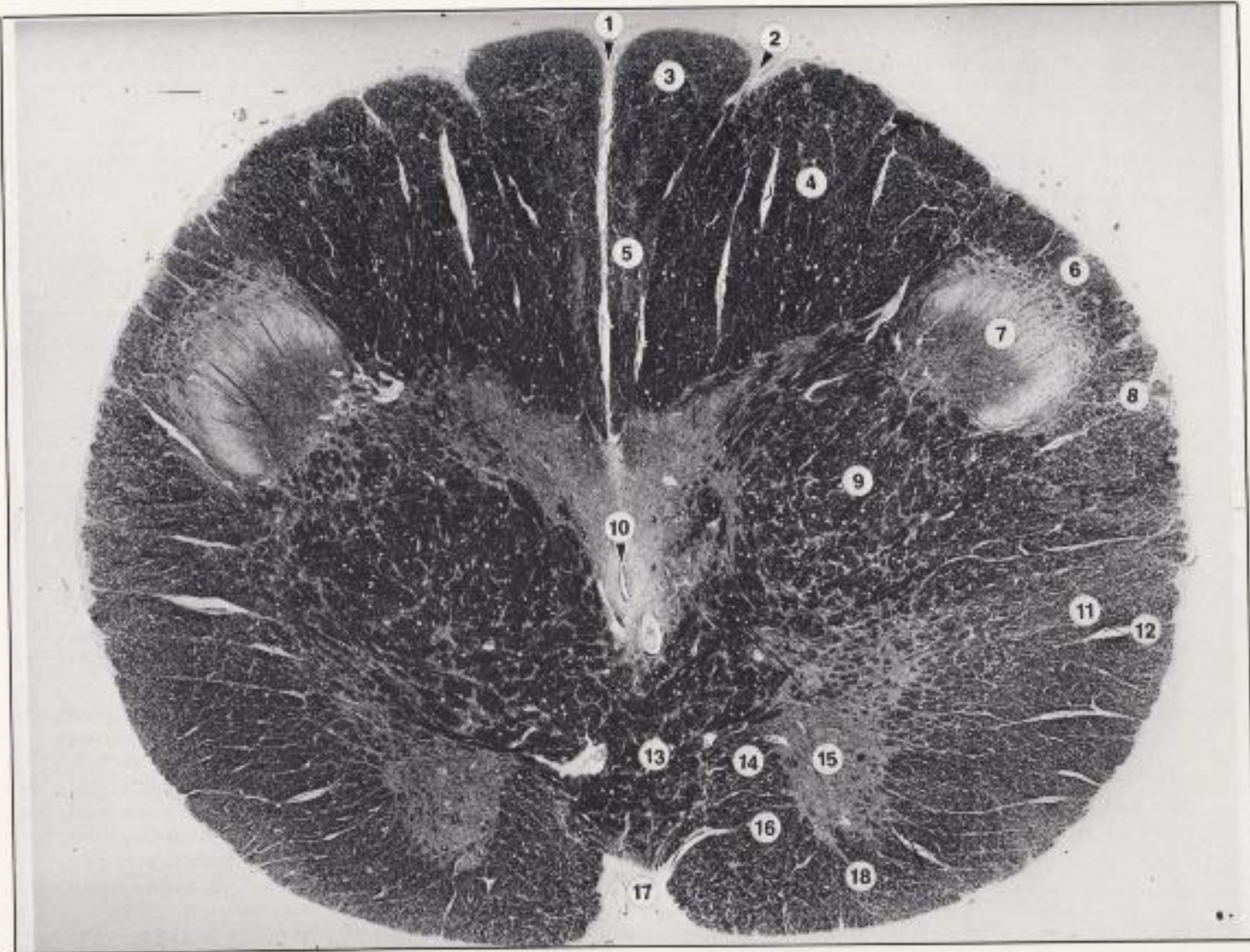


Plate 20. Medulla Oblongata at the Caudal Level of the Pyramidal Decussation (Transition from Spinal Cord to Medulla Oblongata)

1. Dorsal median sulcus
2. Dorsal intermediate sulcus
3. Fasciculus gracilis
4. Fasciculus cuneatus
5. Nucleus gracilis
6. Spinal trigeminal tract
7. Spinal trigeminal nucleus
8. Dorsal spinocerebellar tract (DSCT)
9. Lateral corticospinal tract
10. Central canal
11. Lateral spinothalamic tract
12. Ventral spinocerebellar tract (VSCT)
13. Pyramidal decussation (decussation of lateral corticospinal tract)
14. Medial longitudinal fasciculus (MLF)
15. Ventral horn (column) (spinal accessory nucleus)
16. Ventral corticospinal tract
17. Ventral median fissure
18. Ventral spinothalamic tract



PLATE 21.

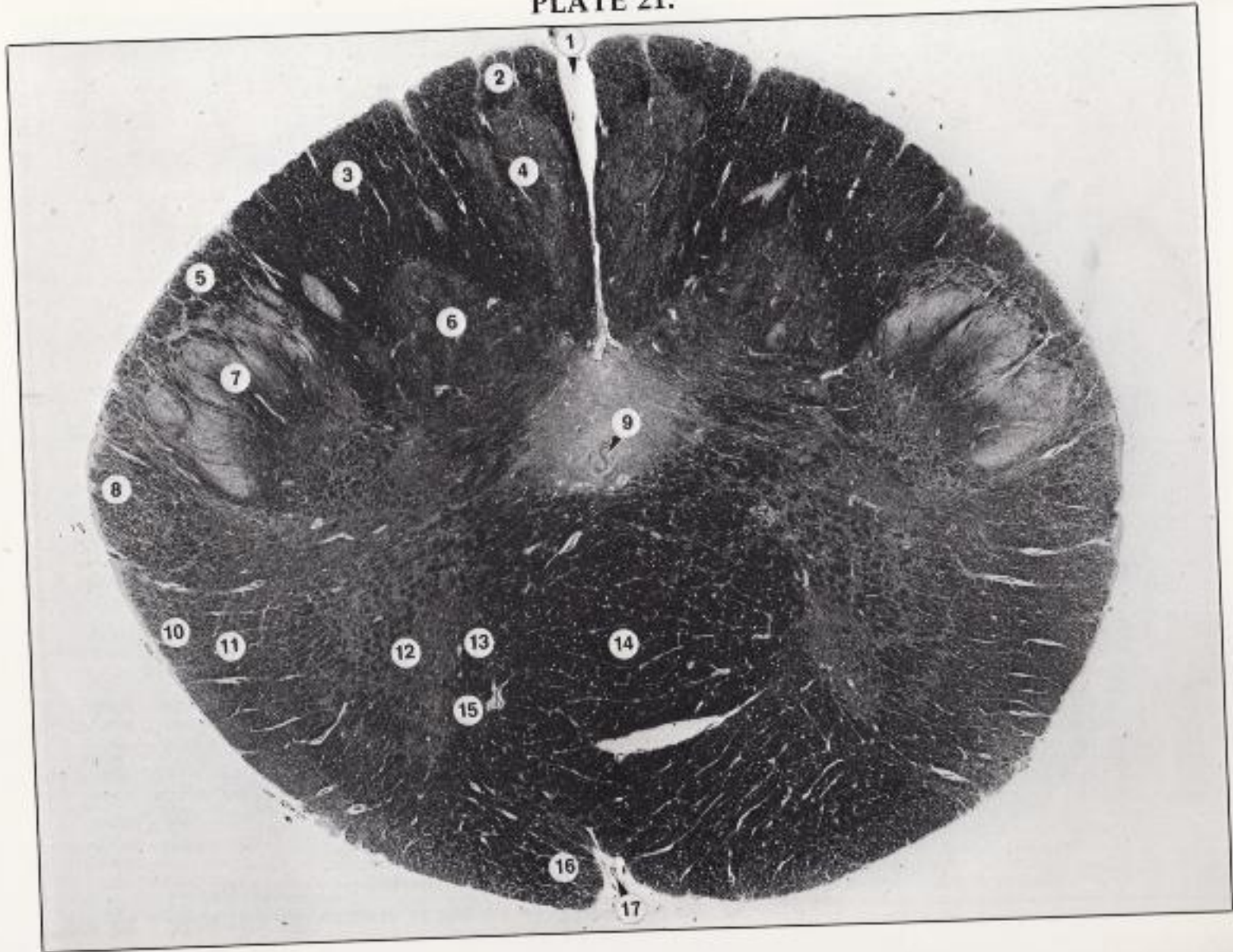


Plate 21. Medulla Oblongata at the Rostral Level of the Pyramidal Decussation (Motor Decussation)

1. Dorsal median sulcus
2. Fasciculus gracilis
3. Fasciculus cuneatus
4. Nucleus gracilis
5. Spinal trigeminal tract
6. Nucleus cuneatus
7. Spinal trigeminal nucleus
8. Dorsal spinocerebellar tract (DSCT)
9. Central canal and surrounding central gray matter
10. Ventral spinocerebellar tract (VSCT)
11. Lateral spinothalamic tract
12. Spinal accessory nucleus
13. Medial longitudinal fasciculus (MLF)
14. Pyramidal decussation
15. Tectospinal tract
16. Ventral corticospinal tract
17. Ventral median fissure



TE 21.

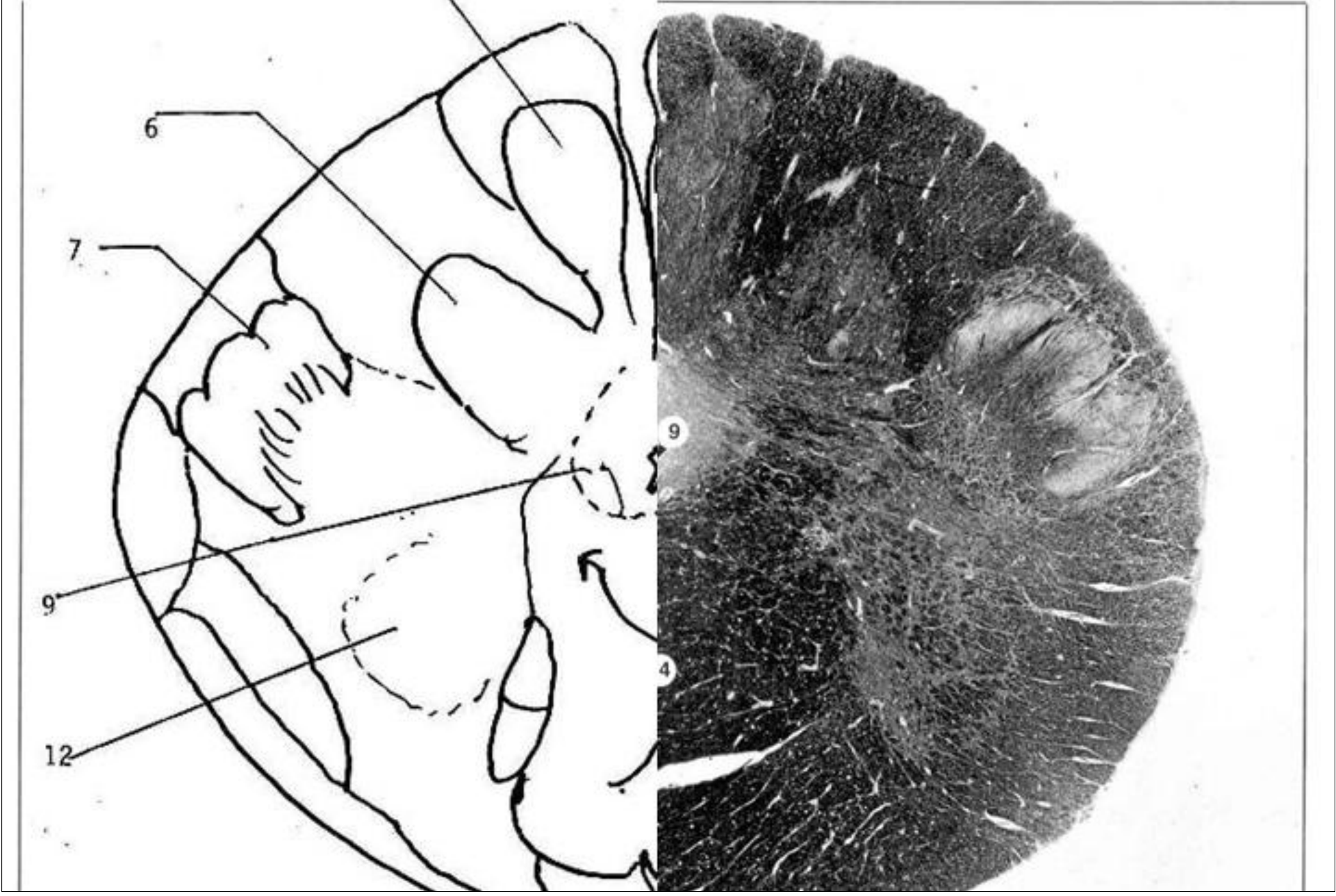
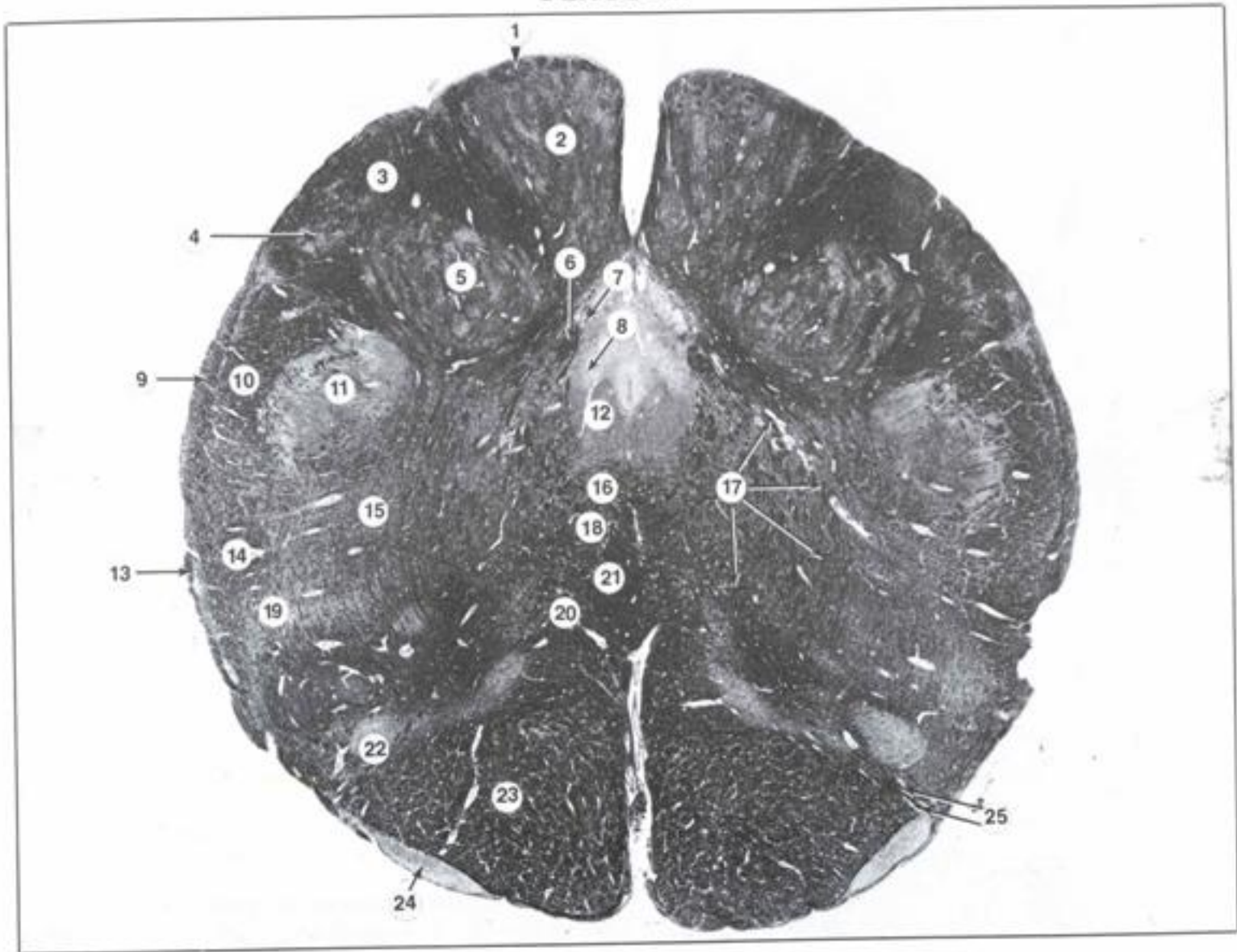


PLATE 22.



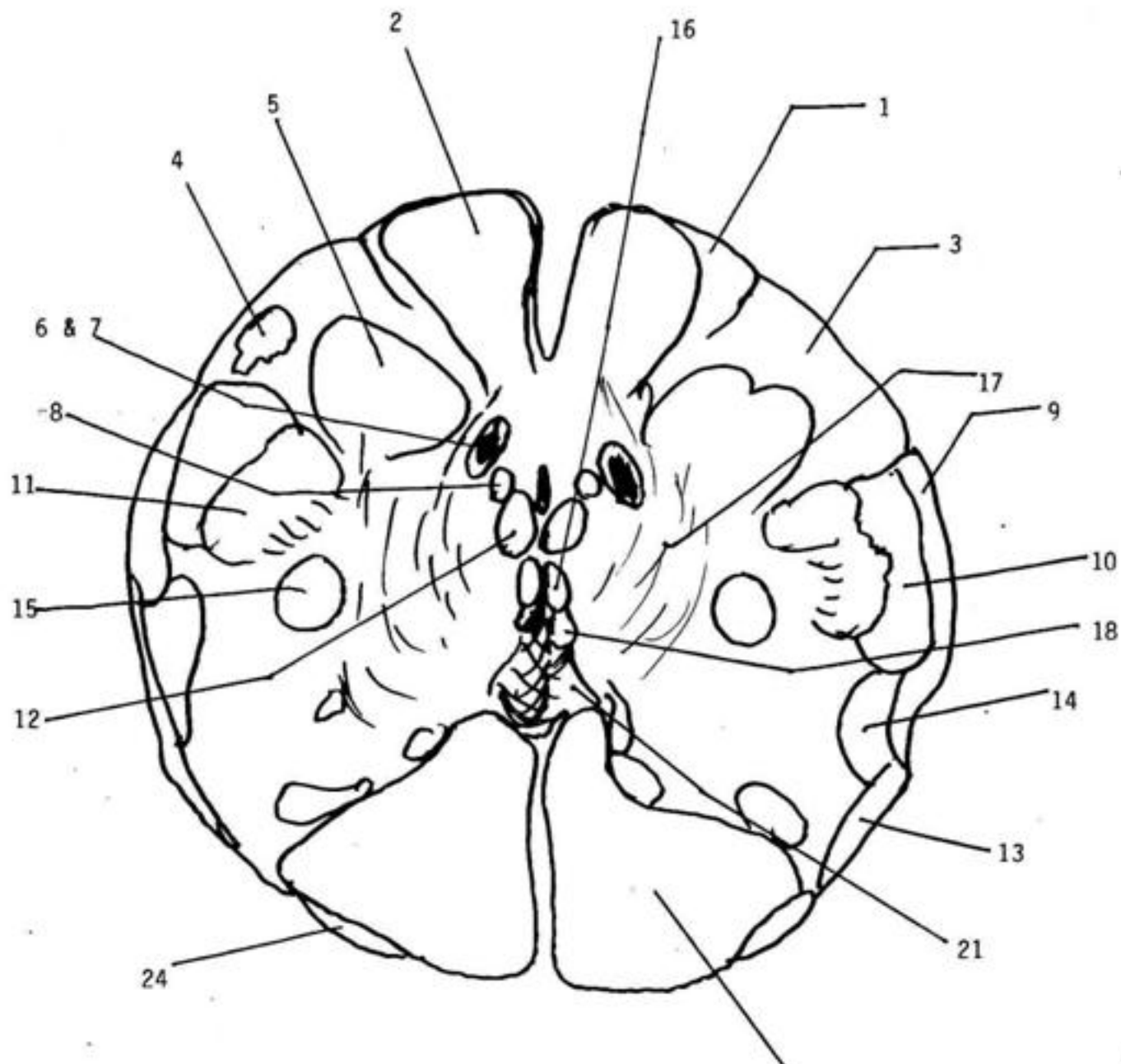


PLATE 22.

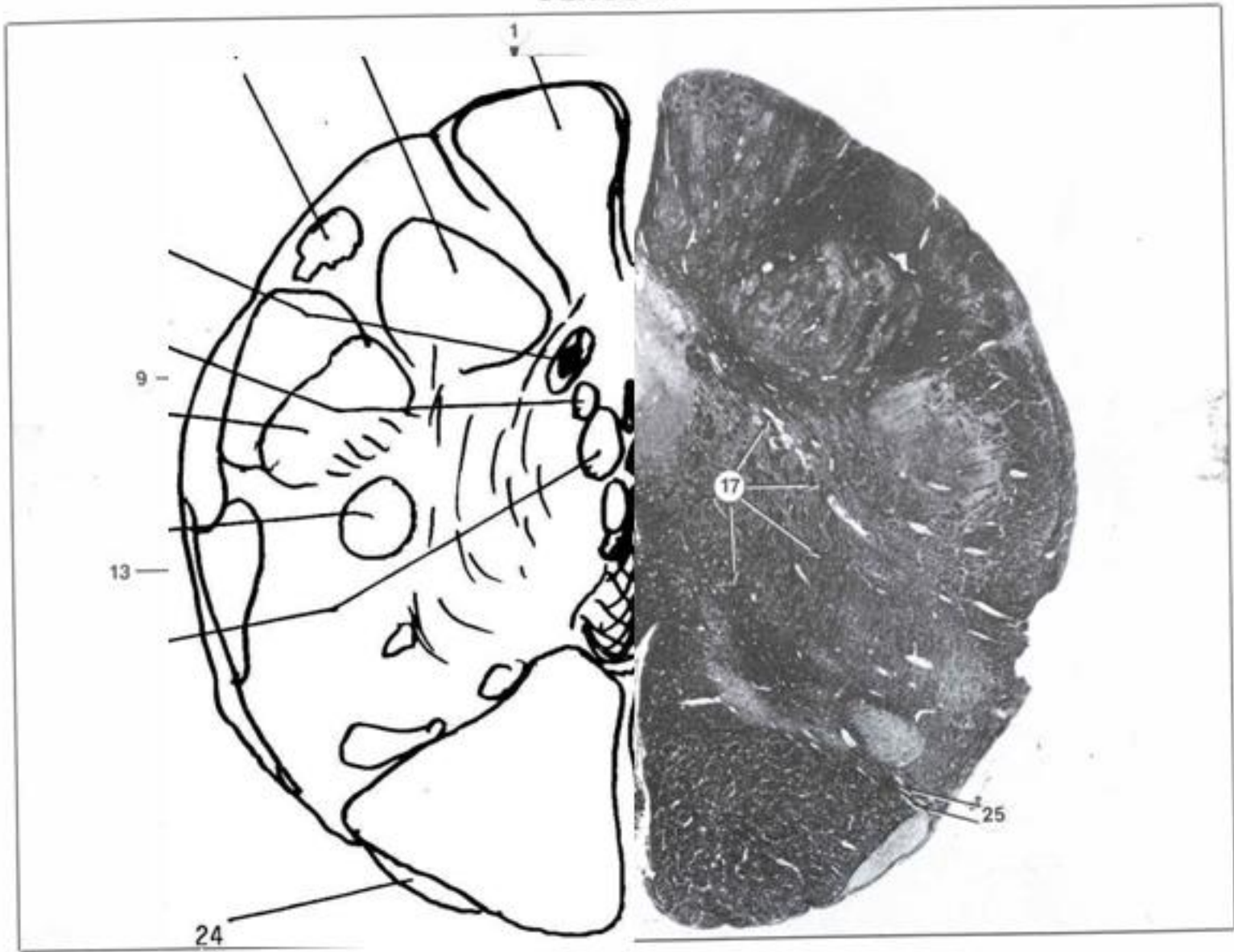


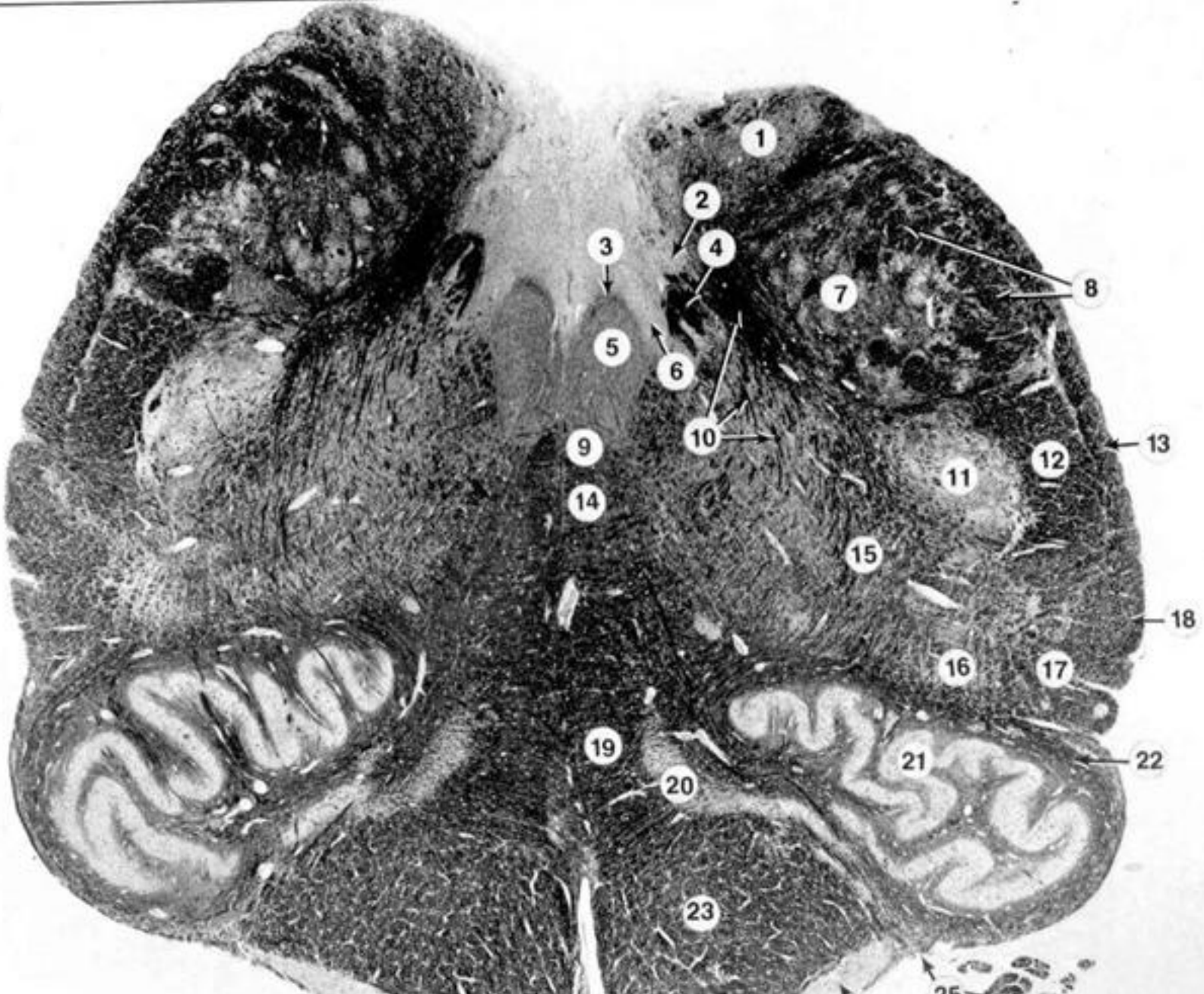
Plate 22. Medulla Oblongata at the Caudal Level of the Decussation of the Medial Lemniscus (Sensory Decussation)

1. Fasciculus gracilis
2. Nucleus gracilis
3. Fasciculus cuneatus
4. Accessory cuneate nucleus
5. Nucleus cuneatus
6. Solitary tract
7. Solitary nucleus
8. Dorsal motor nucleus of vagal nerve
9. Dorsal spinocerebellar tract (DSCT)
10. Spinal trigeminal tract
11. Spinal trigeminal nucleus
12. Hypoglossal nucleus
13. Ventral spinocerebellar tract (VSCT)
14. Spinal lemniscus*
15. Nucleus ambiguus
16. Medial longitudinal fasciculus (MLF)
17. Internal arcuate fibers
18. Tectospinal tract*
19. Lateral reticular nucleus
20. Medial lemniscus
21. Decussation of medial lemniscus
22. Inferior olivary nucleus
23. Corticospinal tract (pyramidal tract)
24. Arcuate nucleus of medulla
25. Intra-axial root fibers of hypoglossal nerve

*Spinal lemniscus = lateral and ventral spinothalamic tracts and spinotectal tract



PLATE 23.



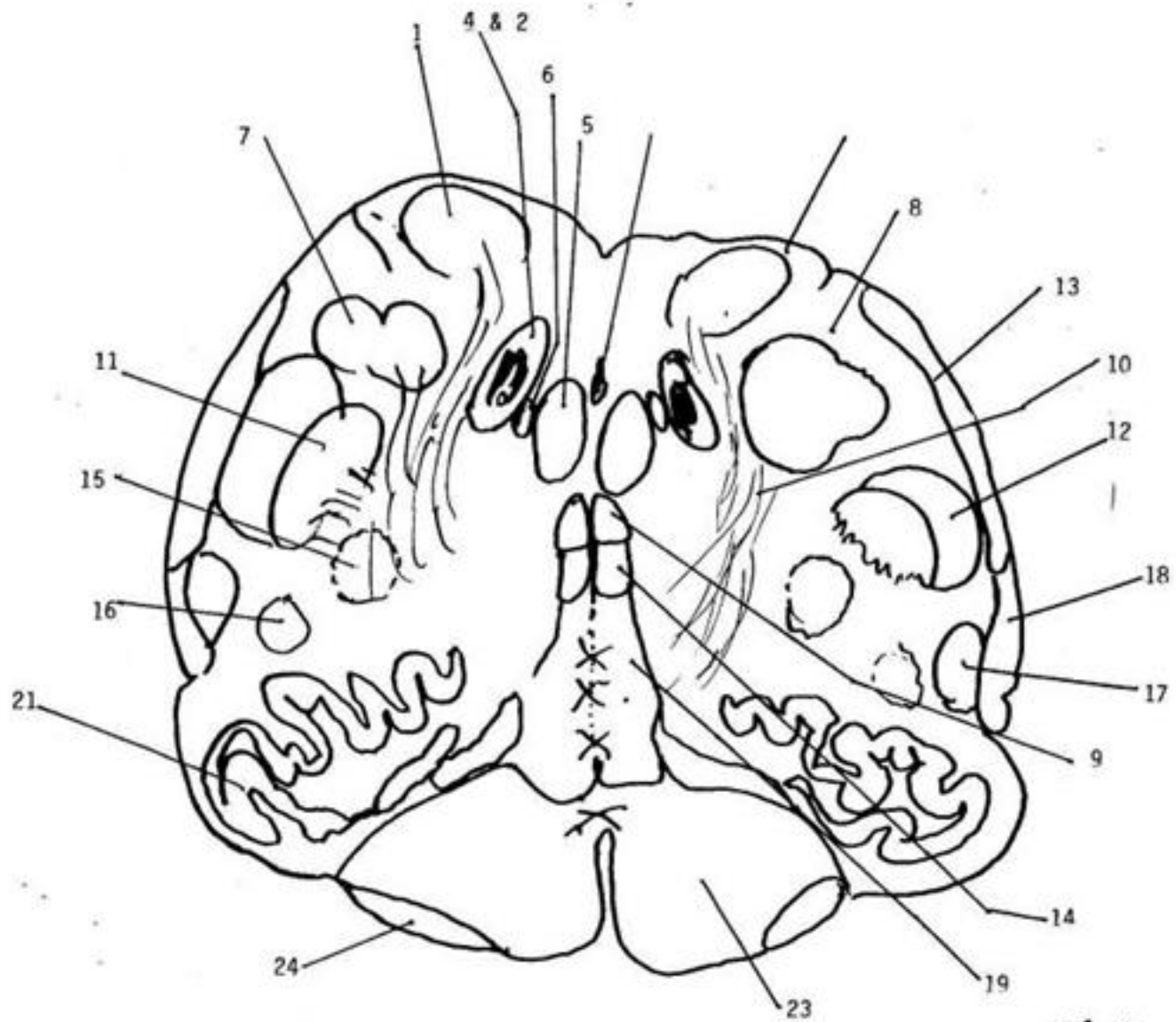


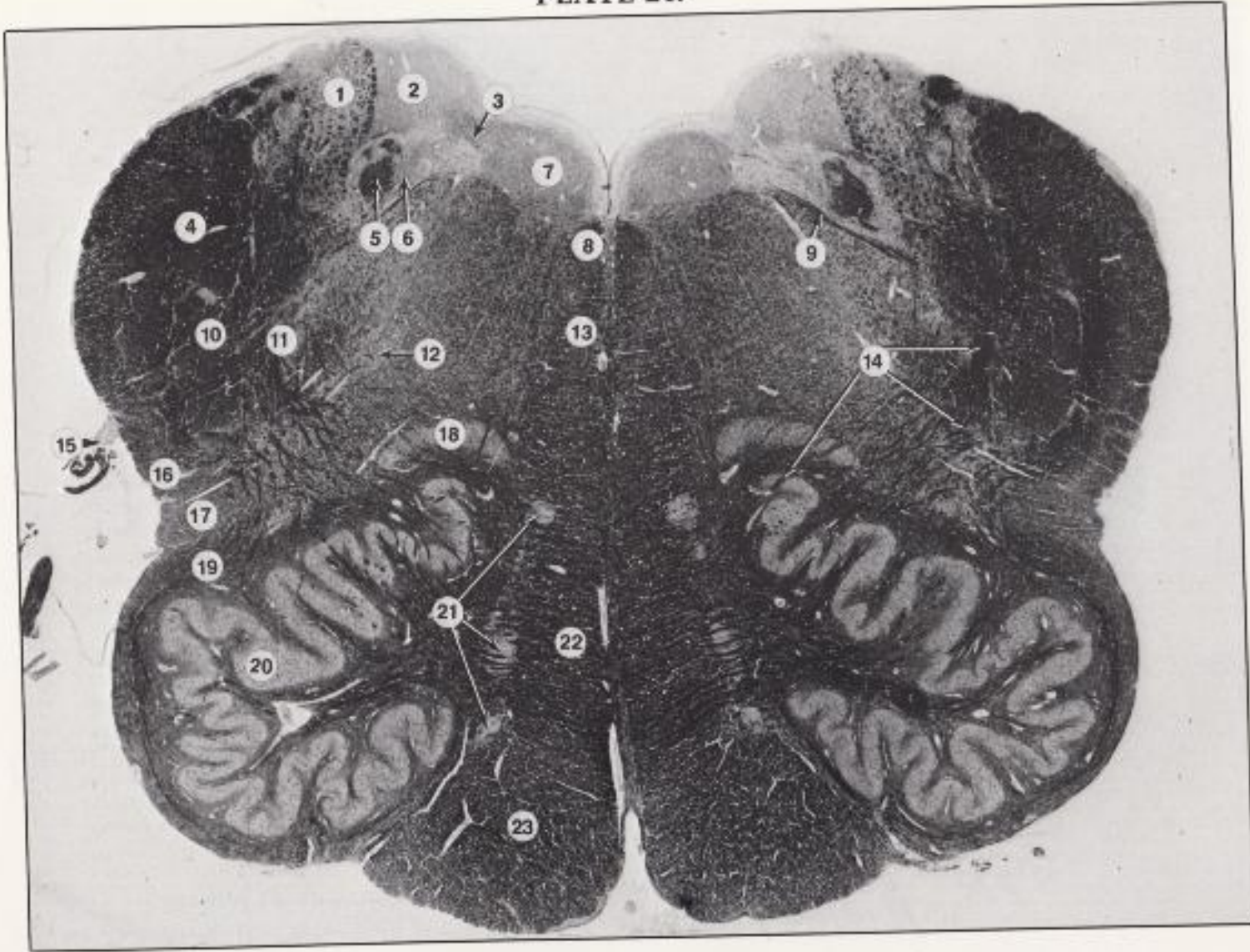
Plate 23

Plate 23. Medulla Oblongata at the Rostral Level of the Decussation of the Medial Lemniscus

1. Nucleus gracilis
2. Solitary nucleus
3. Dorsal longitudinal fasciculus
4. Solitary tract
5. Hypoglossal nucleus
6. Dorsal motor nucleus of vagal nerve
7. Nucleus cuneatus
8. Fasciculus cuneatus
9. Medial longitudinal fasciculus (MLF)
10. Internal arcuate fibers
11. Spinal trigeminal nucleus
12. Spinal trigeminal tract
13. Dorsal spinocerebellar tract (DSCT)
14. Tectospinal tract
15. Nucleus ambiguus
16. Lateral reticular nucleus
17. Spinal lemniscus
18. Ventral spinocerebellar tract (VSCT)
19. Medial lemniscus
20. Medial accessory olivary nucleus
21. Inferior olivary nucleus
22. Central tegmental tract
23. Corticospinal tract
24. Arcuate nucleus of medulla
25. Hypoglossal nerve (in preolivary sulcus)



PLATE 24.



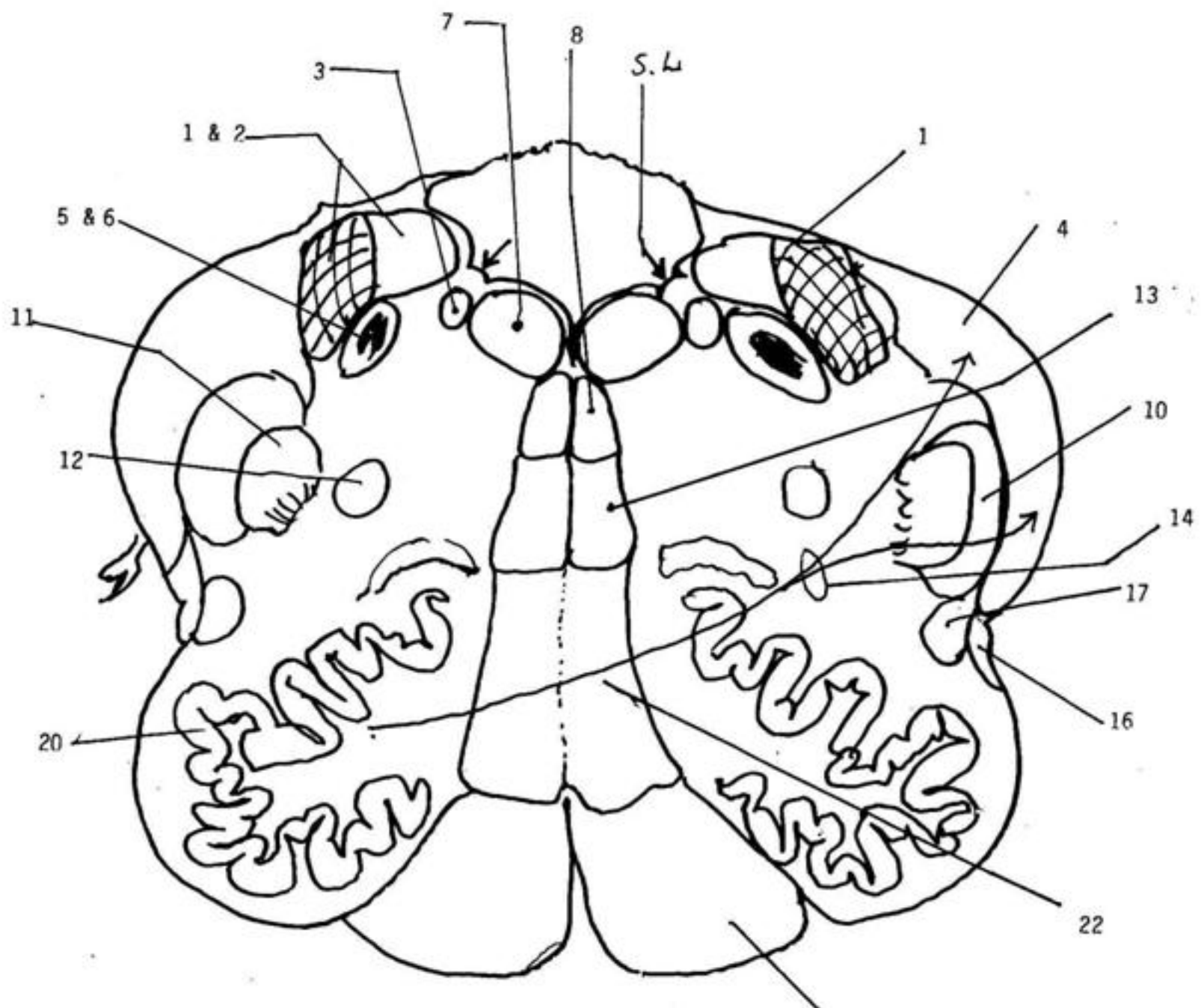


Plate 24. Medulla Oblongata at Midolivary Level; Medulla Has "Opened" into Fourth Ventricle

1. Inferior vestibular nucleus
2. Medial vestibular nucleus
3. Dorsal motor nucleus of vagal nerve
4. Inferior cerebellar peduncle
5. Solitary tract
6. Solitary nucleus
7. Hypoglossal nucleus
8. Medial longitudinal fasciculus (MLF)
9. Intra-axial fibers of vagal nerve
10. Spinal trigeminal tract
11. Spinal trigeminal nucleus (masked by olivocerebellar fibers)
12. Nucleus ambiguus
13. Tectospinal tract
14. Olivocerebellar fibers
15. Vagal nerve rootlet (in postolivary sulcus)
16. Ventral spinocerebellar tract (VSCT)
17. Spinal lemniscus
18. Dorsal accessory olivary nucleus
19. Central tegmental tract
20. Inferior olivary nucleus
21. Medial accessory olivary nucleus
22. Medial lemniscus
23. Corticospinal tract

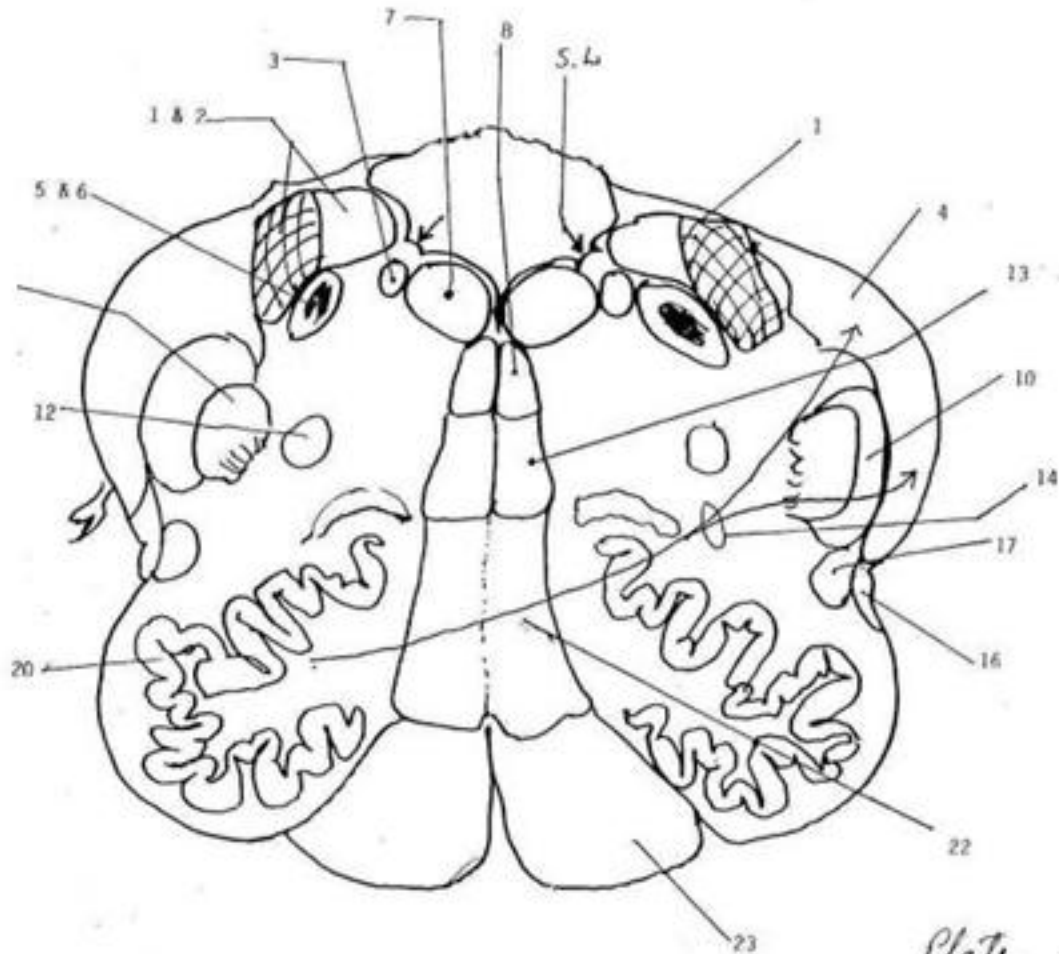


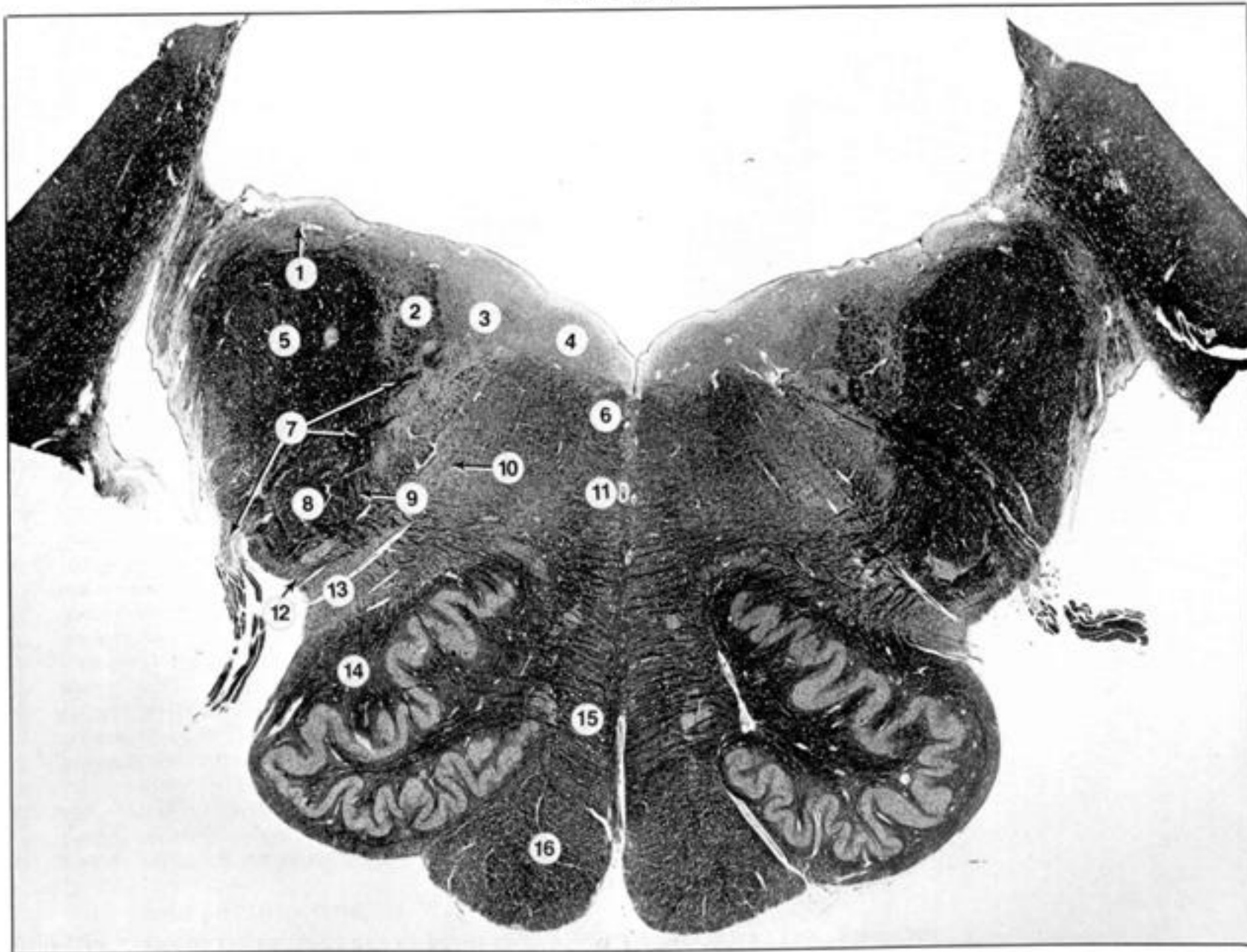
Plate 24

**Plate 24. Medulla Oblongata at Midolivary Level; Medulla Has "Opened"
into Fourth Ventricle**

1. Inferior vestibular nucleus
2. Medial vestibular nucleus
3. Dorsal motor nucleus of vagal nerve
4. Inferior cerebellar peduncle
5. Solitary tract
6. Solitary nucleus
7. Hypoglossal nucleus
8. Medial longitudinal fasciculus (MLF)
9. Intra-axial fibers of vagal nerve
10. Spinal trigeminal tract
11. Spinal trigeminal nucleus (masked by olivocerebellar fibers)
12. Nucleus ambiguus
13. Tectospinal tract
14. Olivocerebellar fibers
15. Vagal nerve rootlet (in postolivary sulcus)
16. Ventral spinocerebellar tract (VSCT)
17. Spinal lemniscus
18. Dorsal accessory olivary nucleus
19. Central tegmental tract
20. Inferior olivary nucleus
21. Medial accessory olivary nucleus
22. Medial lemniscus
23. Corticospinal tract



PLATE 25.



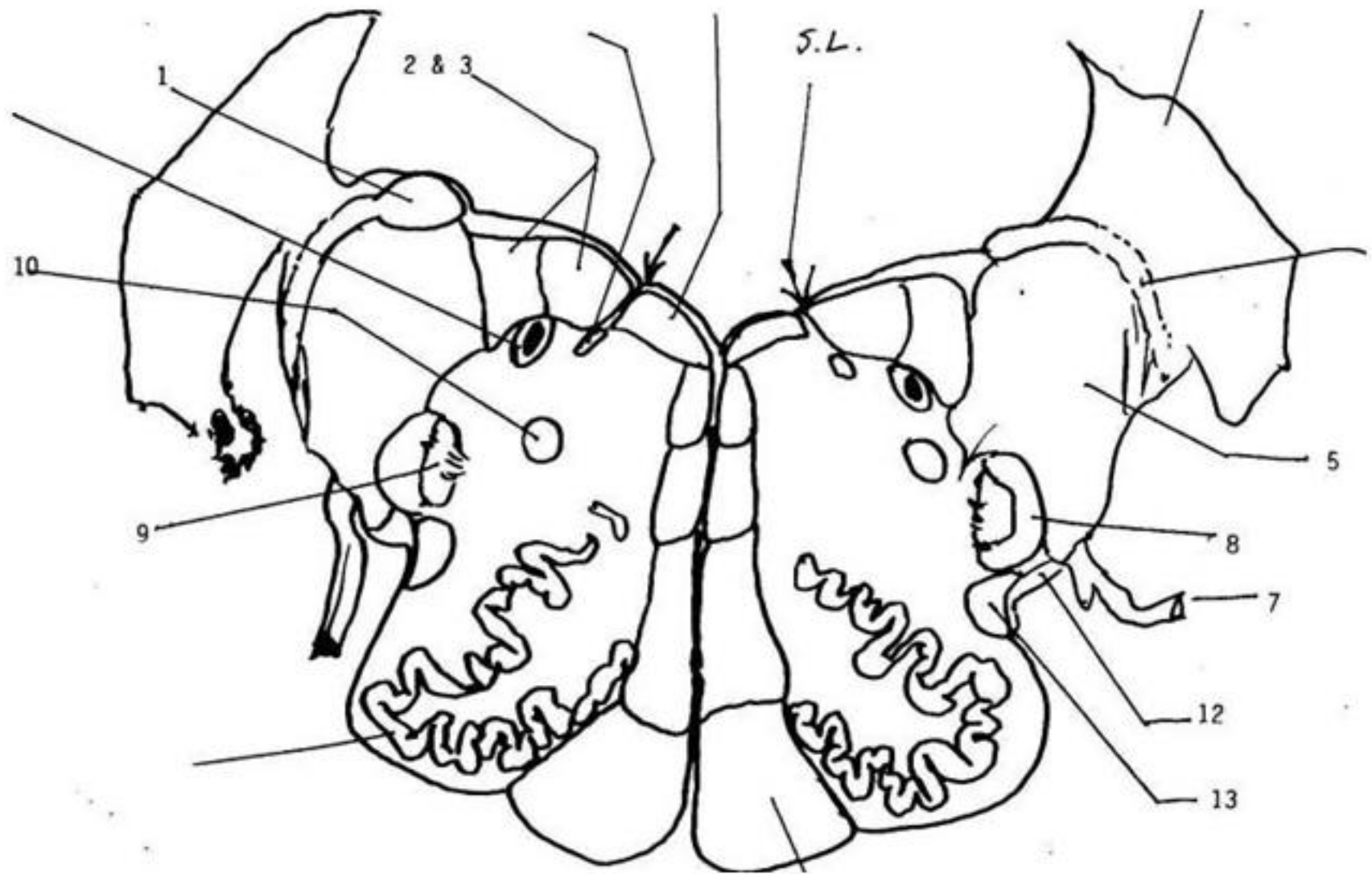


Plate 25. Medulla Oblon

of the Dorsal Cochlear Nucleus

1. Dorsal cochlear nucleus
2. Inferior vestibular nucleus
3. Medial vestibular nucleus
4. Nucleus prepositus
5. Inferior cerebellar peduncle
6. Medial longitudinal fasciculus (MLF)
7. Intra-axial root fibers and rootlet of glossopharyngeal nerve
8. Spinal trigeminal tract
9. Spinal trigeminal nucleus (partially masked by olivocerebellar fibers)
10. Nucleus ambiguus
11. Tectospinal tract
12. Ventral spinocerebellar tract (VSCT)
13. Spinal lemniscus
14. Central tegmental tract
15. Medial lemniscus
16. Corticospinal tract

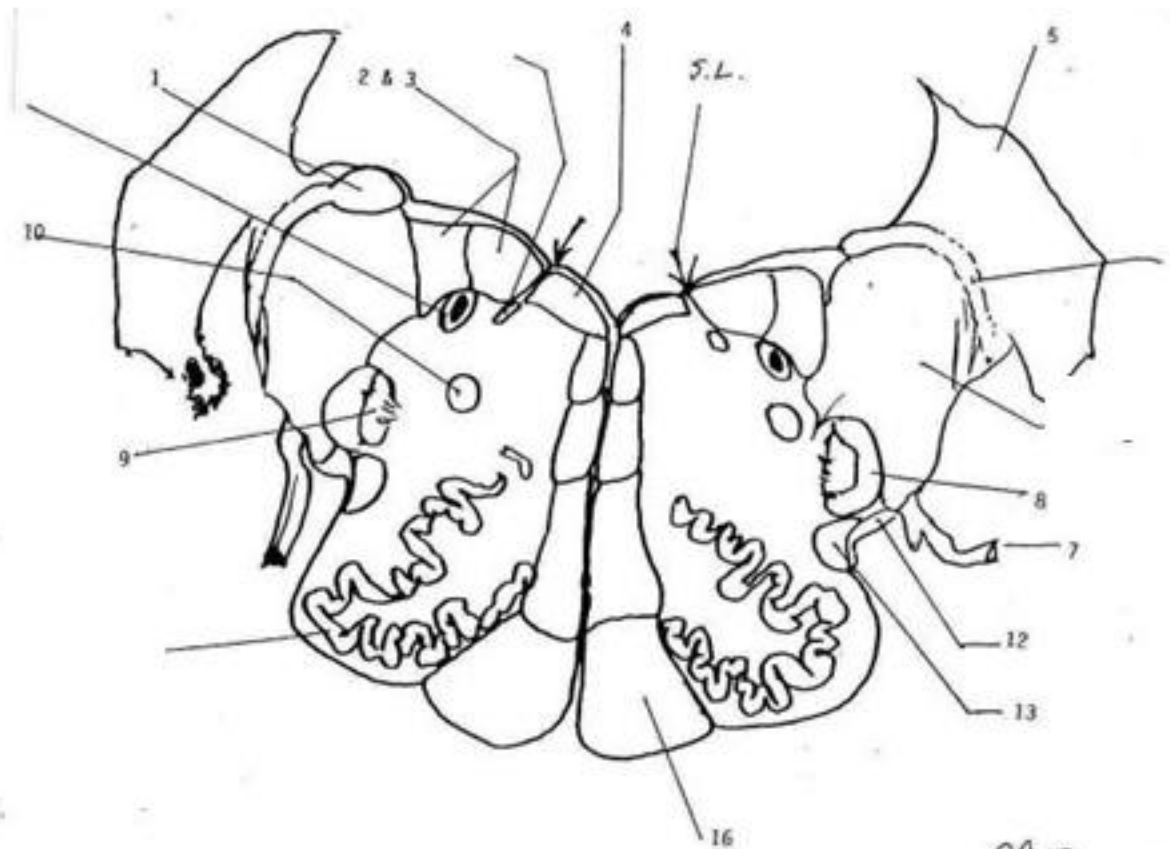


Plate 25. Medulla Oblongata at the Level of the Dorsal Cochlear Nucleus

1. Dorsal cochlear nucleus
2. Inferior vestibular nucleus
3. Medial vestibular nucleus
4. Nucleus prepositus
5. Inferior cerebellar peduncle
6. Medial longitudinal fasciculus (MLF)
7. Intra-axial root fibers and rootlet of glossopharyngeal nerve
8. Spinal trigeminal tract
9. Spinal trigeminal nucleus (partially masked by olivocerebellar fibers)
10. Nucleus ambiguus
11. Tectospinal tract
12. Ventral spinocerebellar tract (VSCT)
13. Spinal lemniscus
14. Central tegmental tract
15. Medial lemniscus
16. Corticospinal tract



PLATE 26.

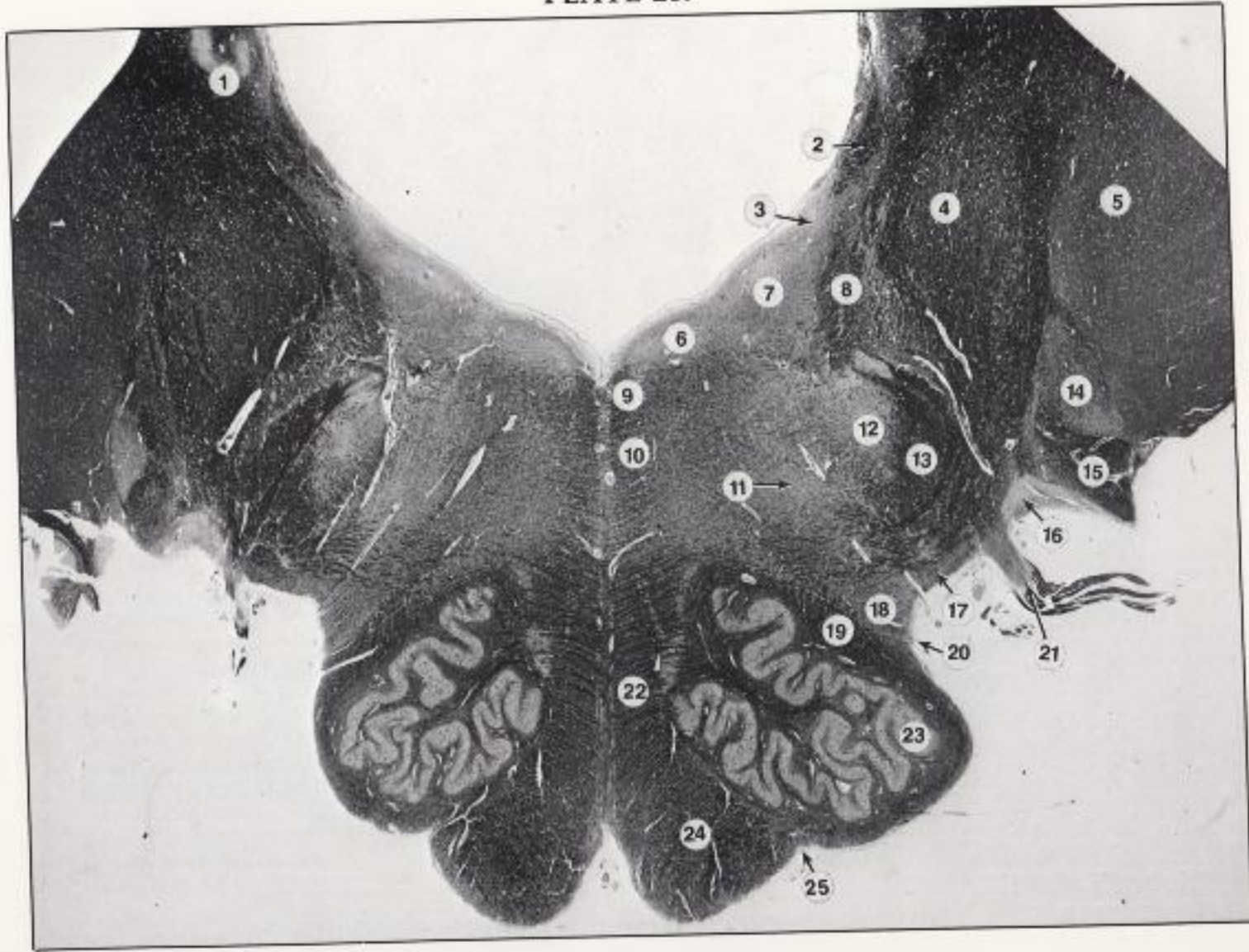


Plate 26. Medulla Oblongata at the Level of the Ventral Cochlear Nucleus

1. Dentate nucleus
2. Juxtarestiform body
3. Superior vestibular nucleus
4. Inferior cerebellar peduncle
5. Middle cerebellar peduncle
6. Nucleus prepositus
7. Medial vestibular nucleus
8. Lateral vestibular nucleus
9. Medial longitudinal fasciculus (MLF)
10. Tectospinal tract
11. Nucleus ambiguus
12. Spinal trigeminal nucleus
13. Spinal trigeminal tract
14. Ventral cochlear nucleus
15. Vestibulocochlear nerve
16. Pontobulbar body
17. Ventral spinocerebellar tract (VSCT)
18. Spinal lemniscus
19. Central tegmental tract
20. Postolivary sulcus
21. Glossopharyngeal nerve
22. Medial lemniscus
23. Inferior olivary nucleus
24. Corticospinal tract
25. Preolivary sulcus



PLATE 27.

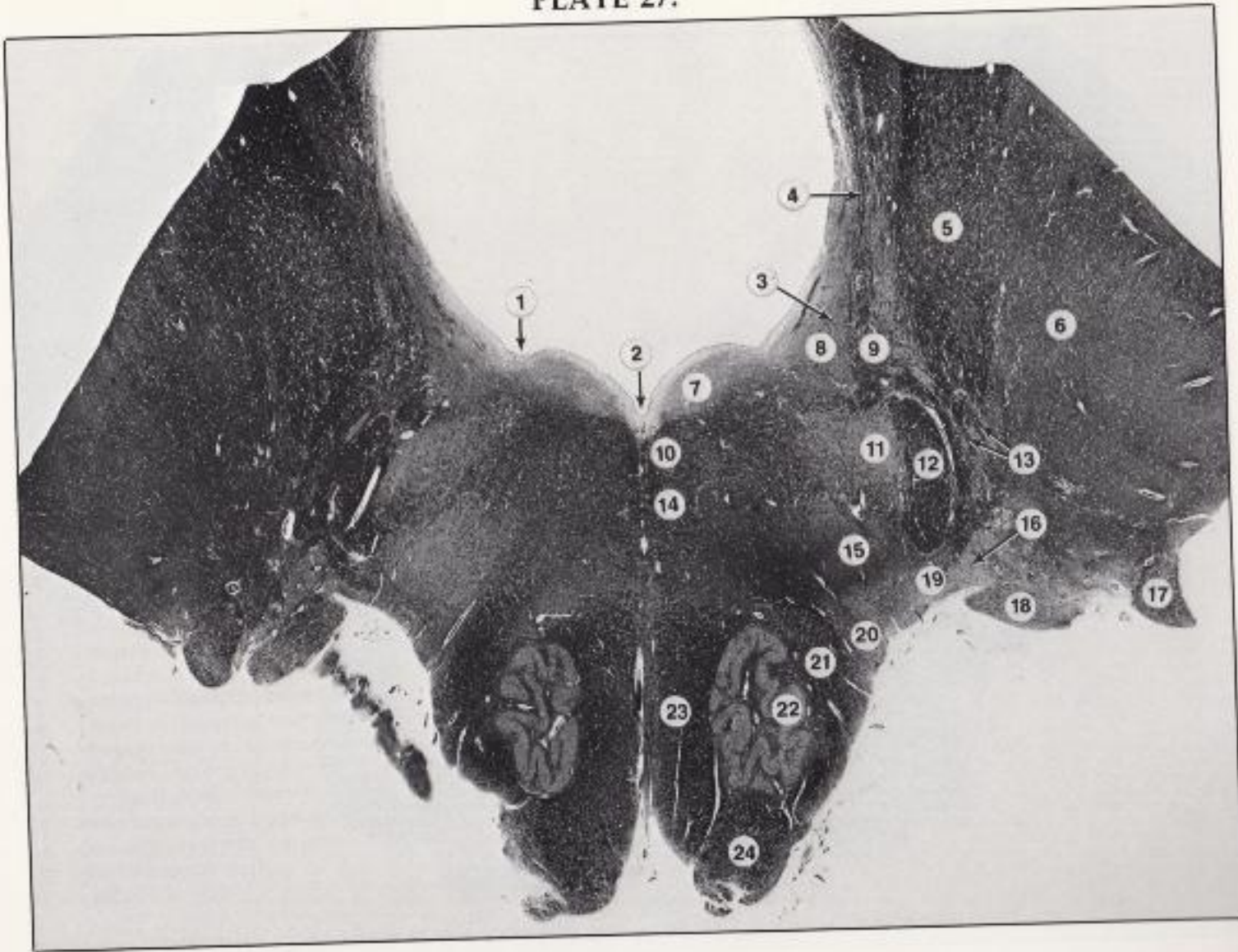


Plate 27. Oblique Section through the Rostral Medulla Oblongata and the Caudal Pontine Tegmentum at the Level of the Facial Nucleus

1. Sulcus limitans
2. Dorsal median sulcus
3. Superior vestibular nucleus
4. Juxtarestiform body
5. Inferior cerebellar peduncle
6. Middle cerebellar peduncle
7. Nucleus prepositus
8. Medial vestibular nucleus
9. Lateral vestibular nucleus
10. Medial longitudinal fasciculus (MLF)
11. Spinal trigeminal nucleus
12. Spinal trigeminal tract
13. Intra-axial fibers of vestibular division of CN VIII
14. Tectospinal tract
15. Facial nucleus
16. Pontobulbar body
17. Vestibular division of CN VIII in cerebellopontine angle
18. Facial nerve in cerebellopontine angle
19. Ventral spinocerebellar tract (VSCT)
20. Spinal lemniscus
21. Central tegmental tract
22. Inferior olivary nucleus
23. Medial lemniscus
24. Corticospinal tract



PLATE 28.

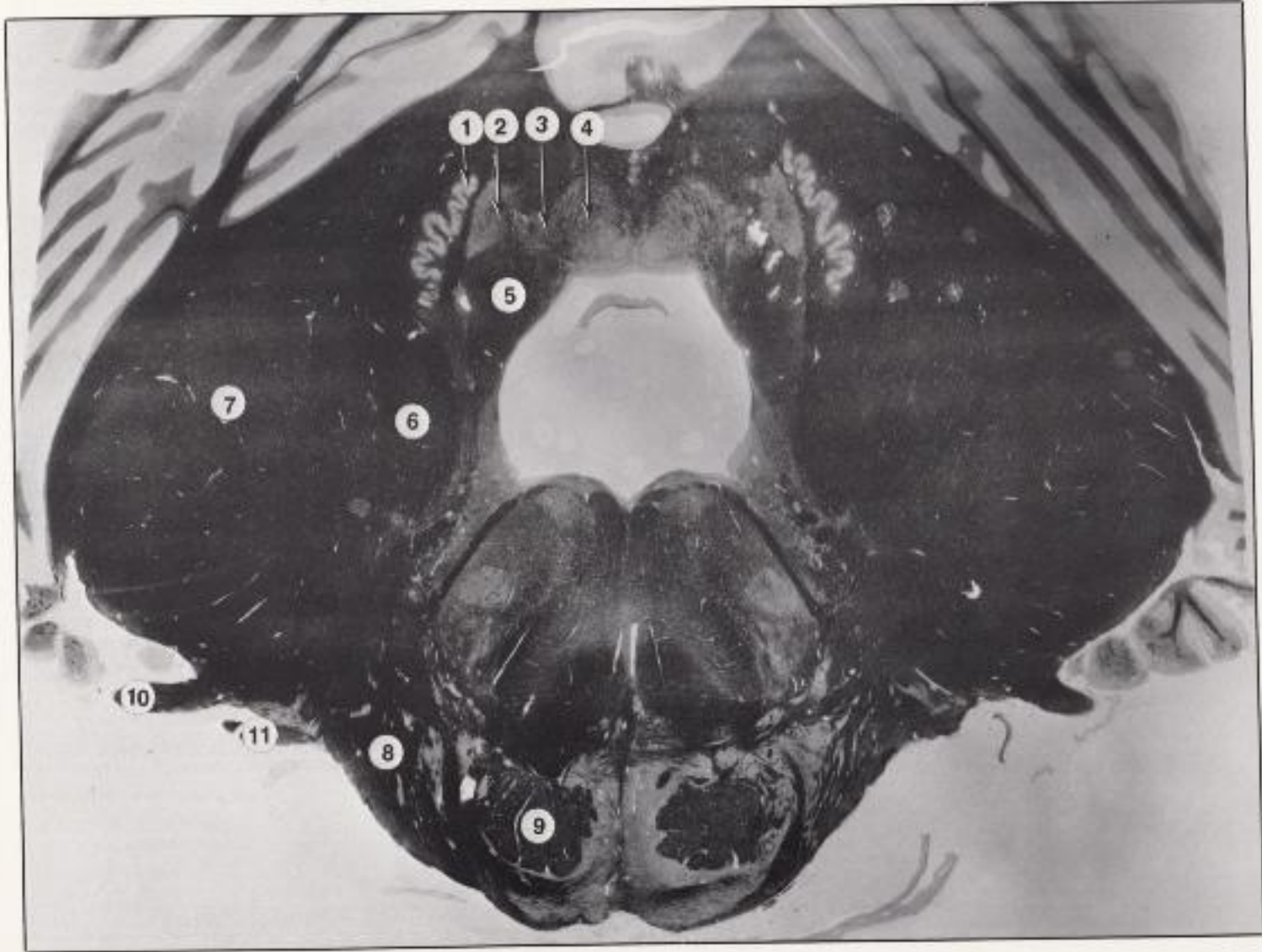
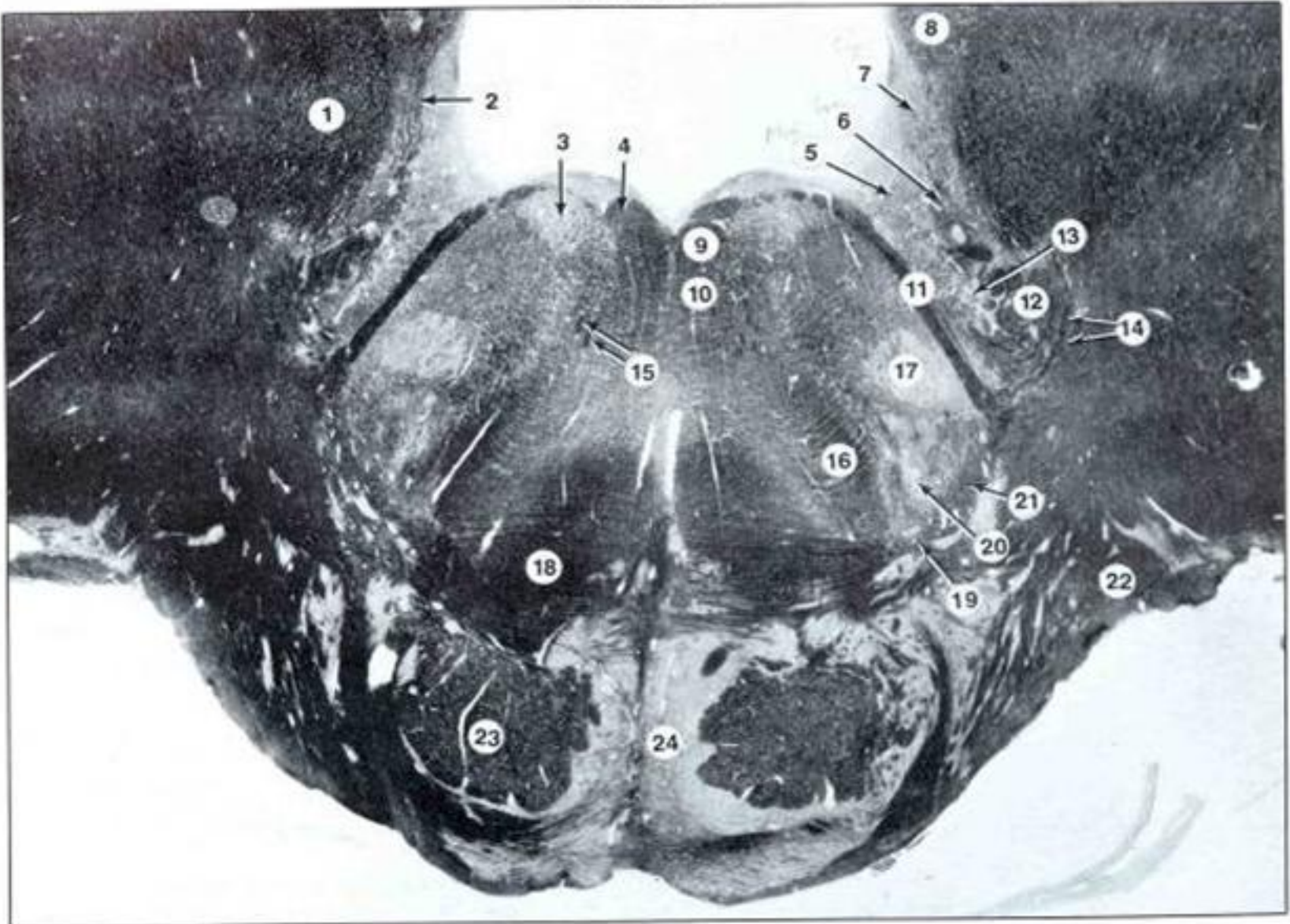


Plate 28. Pons at the Level of the Facial and the Abducent Nuclei, and the Cerebellum at the Level of the Deep Cerebellar Nuclei

1. Dentate nucleus
2. Emboliform nucleus
3. Globose nucleus
4. Fastigial nucleus
5. Superior cerebellar peduncle
6. Inferior cerebellar peduncle
7. Middle cerebellar peduncle and corpus medullare
8. Middle cerebellar peduncle
9. Corticospinal tract
10. Vestibulocochlear nerve in cerebellopontine angle
11. Facial nerve in cerebellopontine angle

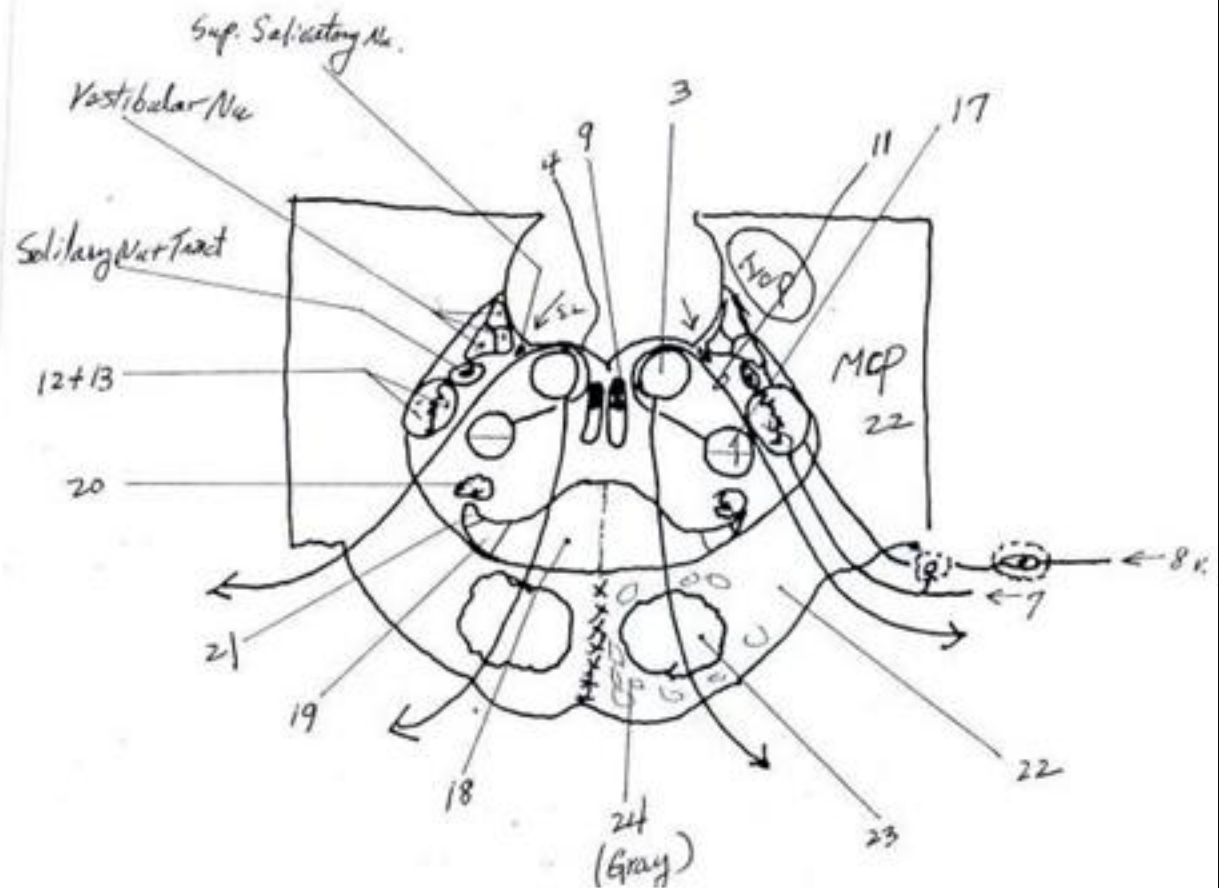


PLATE 29.



**Plate 29. Pons at the Level of the Trapezoid Body and the Facial Colliculus
(Same Level as Plate 28)**

1. Inferior cerebellar peduncle
2. Juxtarestiform body
3. Abducent nucleus
4. Genu of facial nerve
5. Medial vestibular nucleus
6. Lateral vestibular nucleus
7. Superior vestibular nucleus
8. Superior cerebellar peduncle
9. Medial longitudinal fasciculus (MLF)
10. Tectospinal tract
11. Descending intra-axial fibers of facia nerve
12. Spinal trigeminal tract
13. Spinal trigeminal nucleus
14. Ventral spinocerebellar tract (VSCT)
15. Intra-axial fibers of abducent nerve
16. Central tegmental tract
17. Facial nucleus (Motor, SVE 7)
18. Trapezoid body
19. Spinal lemniscus
20. Superior olivary nucleus
21. Lateral lemniscus
22. Middle cerebellar peduncle
23. Corticospinal tract + Corticopontine
24. Pontine nuclei (pontine gray)



**Plate 29. Pons at the Level of the Trapezoid Body and the Facial Colliculus
(Same Level as Plate 28)**

1. Inferior cerebellar peduncle
2. Juxtarestiform body
3. Abducent nucleus
4. Genu of facial nerve
5. Medial vestibular nucleus
6. Lateral vestibular nucleus
7. Superior vestibular nucleus
8. Superior cerebellar peduncle
9. Medial longitudinal fasciculus (MLF)
10. Tectospinal tract
11. Descending intra-axial fibers of facial nerve
12. Spinal trigeminal tract
13. Spinal trigeminal nucleus
14. Ventral spinocerebellar tract (VSCT)
15. Intra-axial fibers of abducent nerve
16. Central tegmental tract
17. Facial nucleus
18. Trapezoid body
19. Spinal lemniscus
20. Superior olivary nucleus
21. Lateral lemniscus
22. Middle cerebellar peduncle
23. Corticospinal tract
24. Pontine nuclei (pontine gray)



Plate 30. Pons at the Level of the Trapezoid Body and the Motor and the Chief Sensory Nuclei of the Trigeminal Nerve

1. Cerebellar vermis
2. Superior medullary velum
3. Superior cerebellar peduncle
4. Ventral spinocerebellar tract (VSCT)
5. Mesencephalic tract and nucleus of CN V
6. Medial longitudinal fasciculus (MLF)
7. Motor nucleus of trigeminal nerve
8. **Root fibers of trigeminal nerve**
9. Principal sensory nucleus of trigeminal nerve
10. Lateral lemniscus
11. Superior olivary nucleus
12. Central tegmental tract
13. **Trapezoid body: 1) ventral acoustic striae, 2) medial lemniscus, 3) corticobulbar fibers**
14. **Spinal lemniscus (ventral and lateral spinothalamic tracts, spinotectal tract)**
15. Corticospinal tract
16. Pontine nuclei (pontine gray)
17. Basilar sulcus
18. Abducent nerve

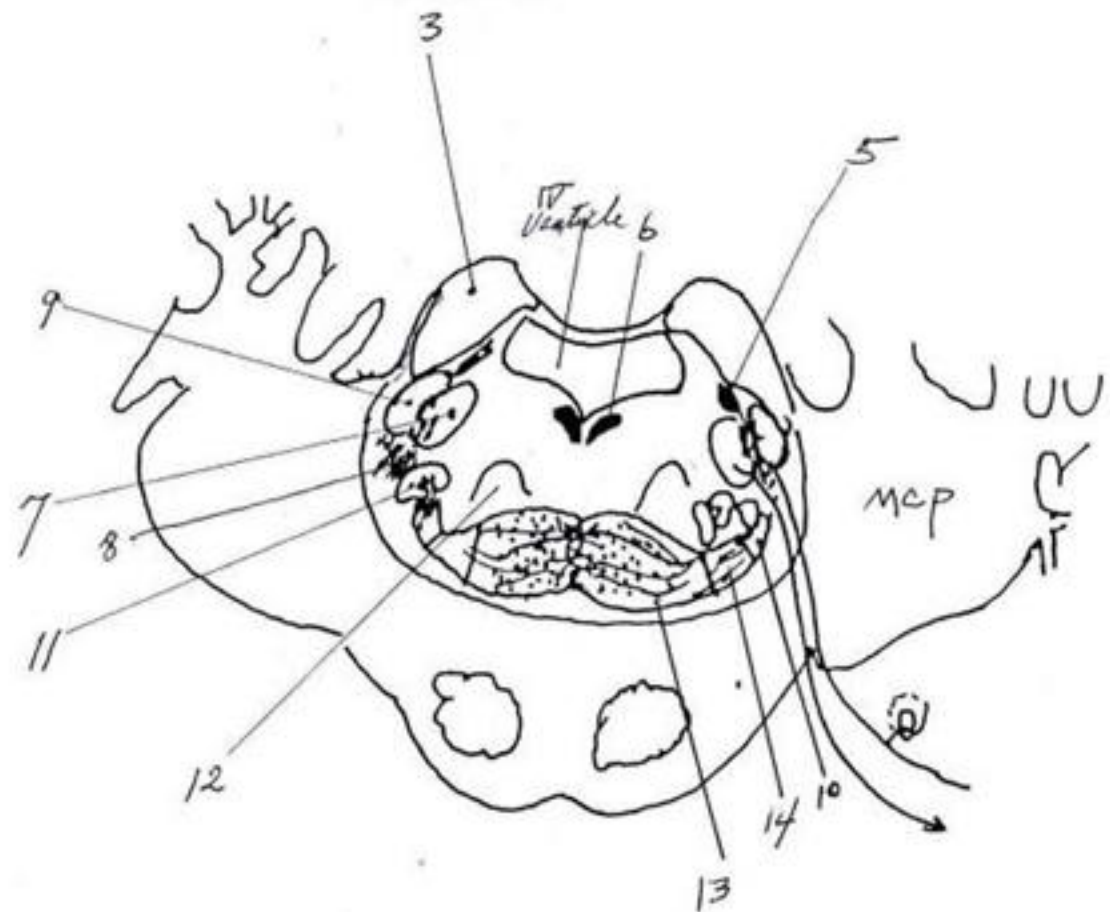


Plate 30. Pons at the Level of the Trapezoid Body and the Motor and the Chief Sensory Nuclei of the Trigeminal Nerve

1. Cerebellar vermis
2. Superior medullary velum
3. Superior cerebellar peduncle
4. Ventral spinocerebellar tract (VSCT)
5. Mesencephalic tract and nucleus of CN V
6. Medial longitudinal fasciculus (MLF)
7. Motor nucleus of trigeminal nerve
8. Root fibers of trigeminal nerve
9. Principal sensory nucleus of trigeminal nerve
10. Lateral lemniscus
11. Superior olivary nucleus
12. Central tegmental tract
13. Trapezoid body: 1) ventral acoustic striae, 2) medial lemniscus, 3) corticobulbar fibers
14. Spinal lemniscus (ventral and lateral spinothalamic tracts, spinotectal tract)
15. Corticospinal tract
16. Pontine nuclei (pontine gray)
17. Basilar sulcus
18. Abducent nerve



PLATE 31.

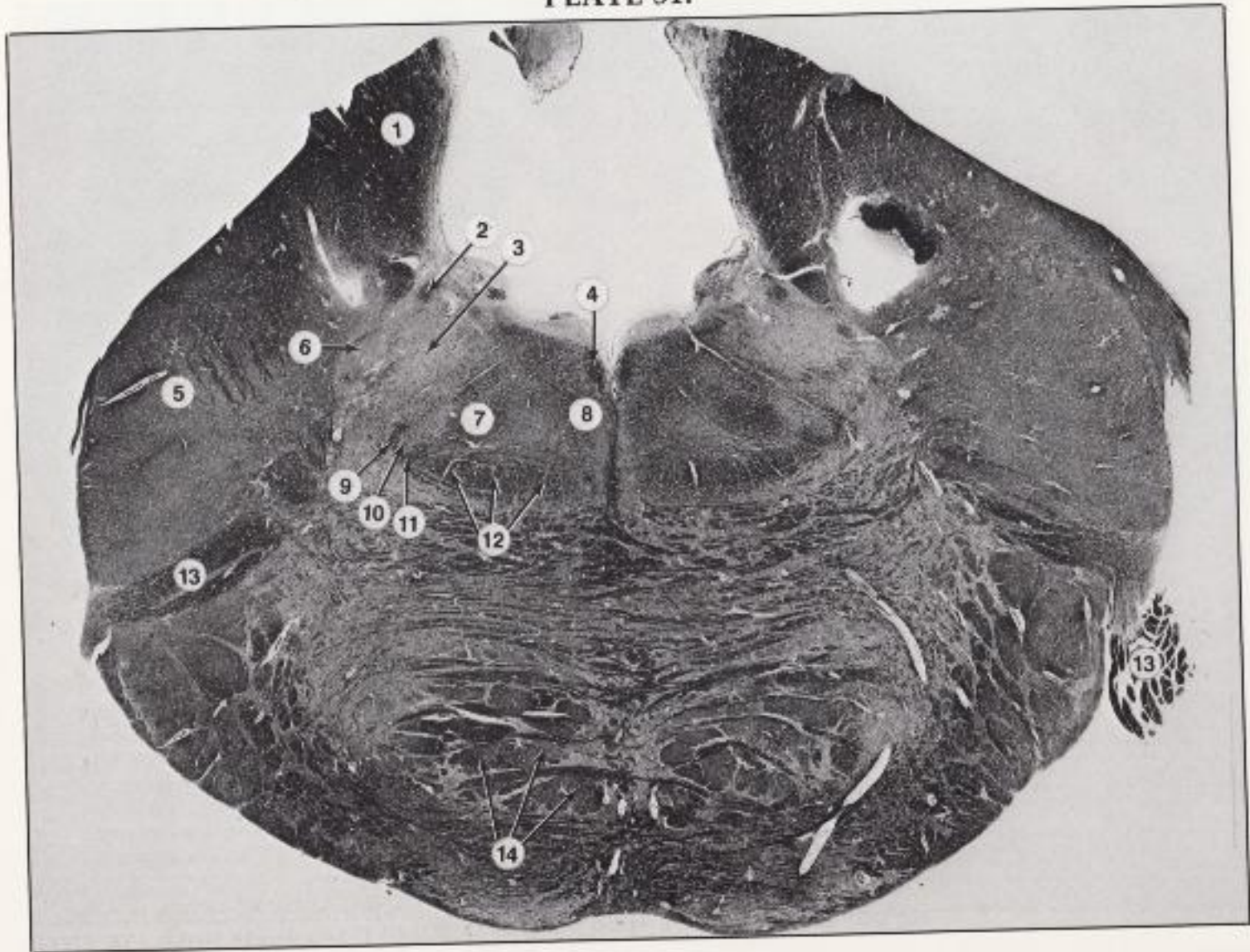


Plate 31. Pons at the Level of the Trigeminal Nerve

1. Superior cerebellar peduncle
2. Mesencephalic tract and nucleus of CN V
3. Motor nucleus of trigeminal nerve
4. Medial longitudinal fasciculus (MLF)
5. Middle cerebellar peduncle
6. Principal sensory nucleus of trigeminal nerve
7. Central tegmental tract
8. Tectospinal tract
9. Lateral lemniscus
10. Ventral nucleus of lateral lemniscus
11. Spinal lemniscus
12. Medial lemniscus
13. Intra-axial root fibers and root of trigeminal nerve
14. Corticospinal tract



PLATE 32.

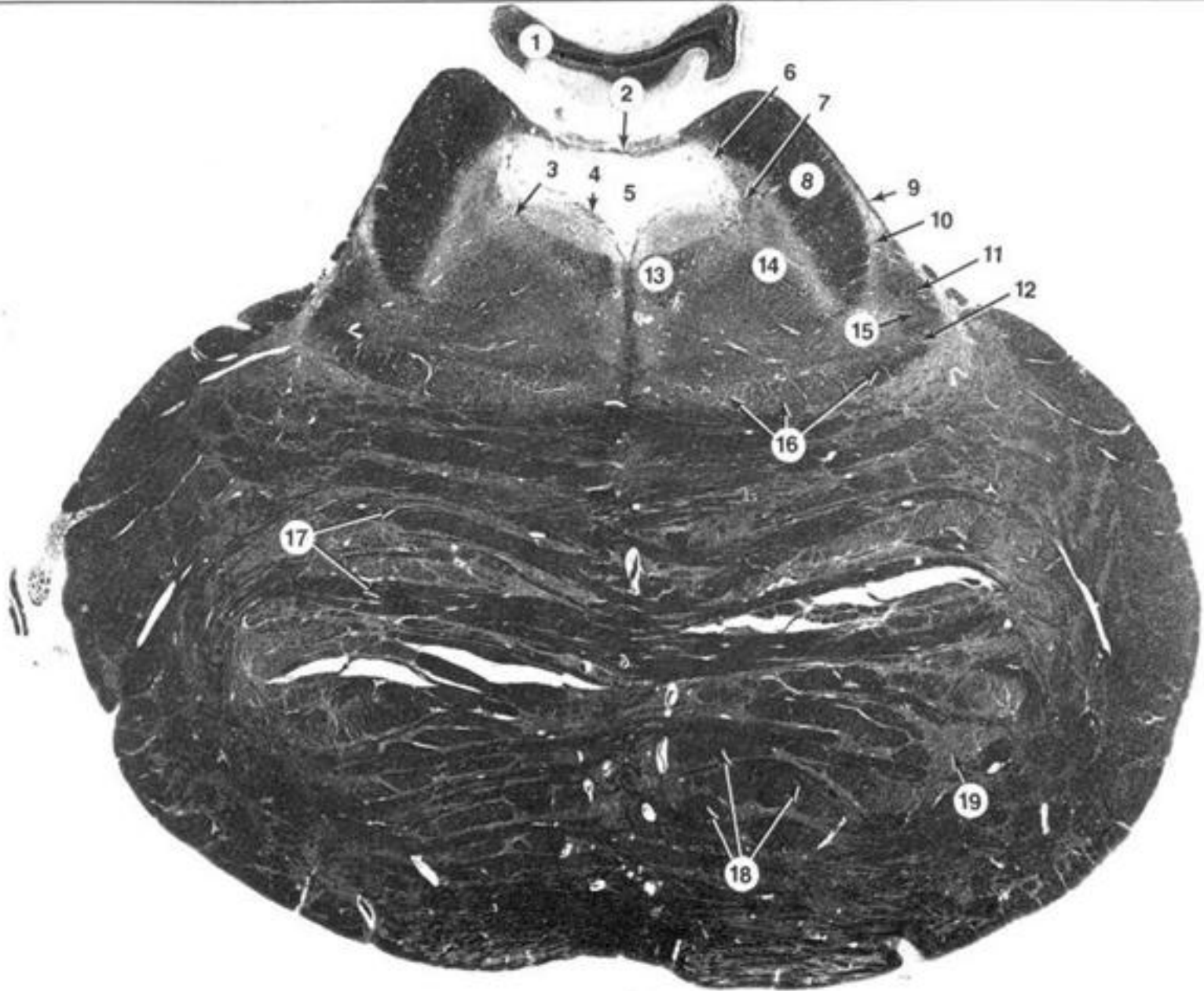


PLATE 32.

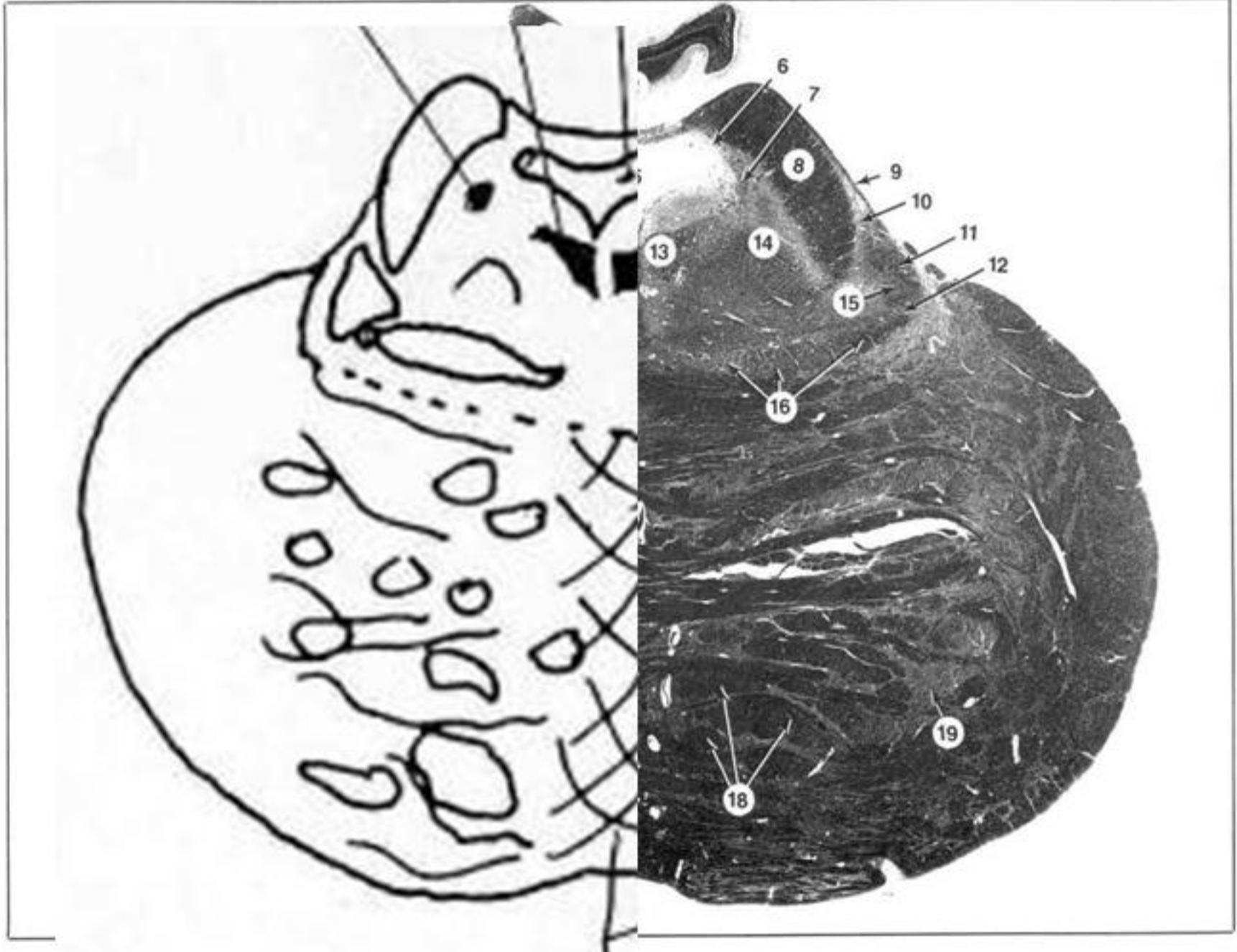


Plate 32. Rostral Pons at the Level of the Locus Ceruleus

1. Cerebellar vermis
2. Superior medullary velum
3. Nucleus loci cerulei (locus ceruleus)
4. Dorsal longitudinal fasciculus (Schütz)
5. Fourth ventricle
6. Pigmented tegmentocerebellar nucleus
7. Mesencephalic tract and nucleus of CN V
8. Superior cerebellar peduncle
9. Ventral spinocerebellar tract (VSCT)
10. Pigmented nucleus of superior cerebellar peduncle
11. Lateral lemniscus
12. Spinal lemniscus
13. Medial longitudinal fasciculus (MLF)
14. Central tegmental tract
15. Ventral nucleus of lateral lemniscus
16. Medial lemniscus
17. Transverse pontine fibers
18. Corticospinal tract & *Corticospinal tract*
19. Pontine nucleus

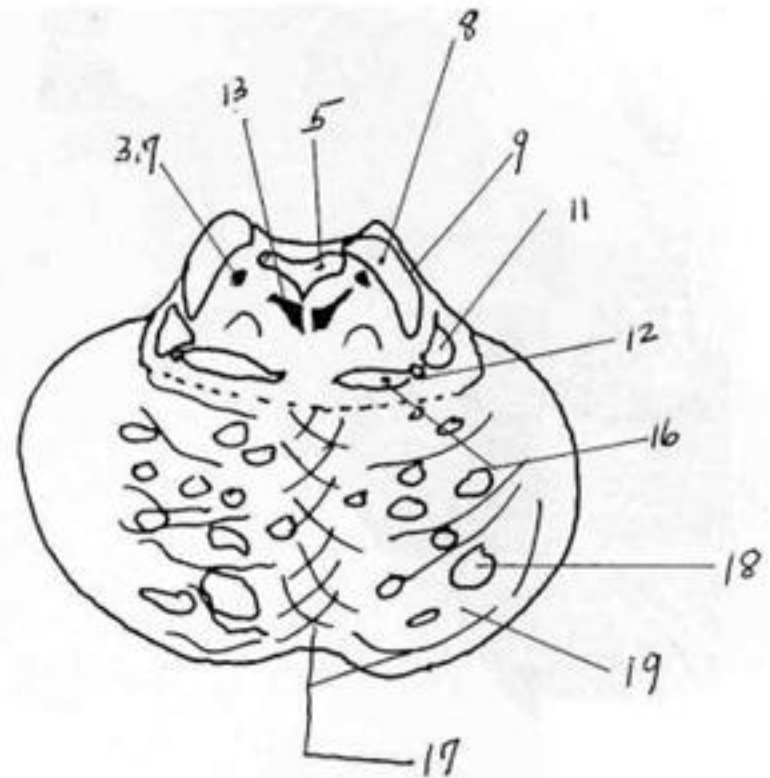


Plate 32. Rostral Pons at the Level of the Locus Ceruleus

1. Cerebellar vermis
2. Superior medullary velum
3. Nucleus loci cerulei (locus ceruleus)
4. Dorsal longitudinal fasciculus (Schütz)
5. Fourth ventricle
6. Pigmented tegmentocerebellar nucleus
7. Mesencephalic tract and nucleus of CN V
8. Superior cerebellar peduncle
9. Ventral spinocerebellar tract (VSCCT)
10. Pigmented nucleus of superior cerebellar peduncle
11. Lateral lemniscus
12. Spinal lemniscus
13. Medial longitudinal fasciculus (MLF)
14. Central tegmental tract
15. Ventral nucleus of lateral lemniscus
16. Medial lemniscus
17. Transverse pontine fibers
18. Corticospinal tract
19. Pontine nucleus



PLATE 33.

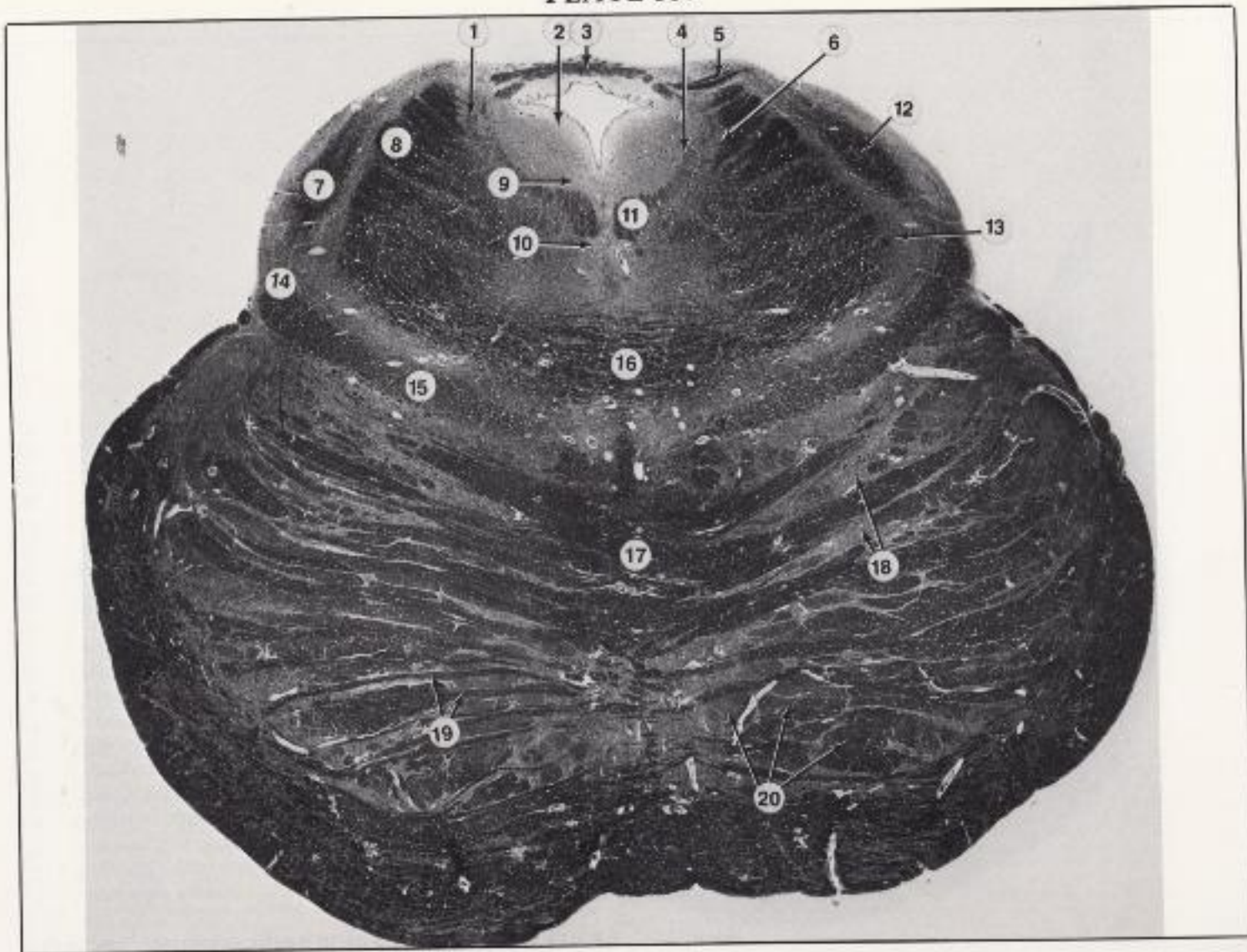


Plate 33. Pons at the Level of the Isthmus

1. Mesencephalic tract and nucleus of CN V
2. Dorsal longitudinal fasciculus (Schütz)
3. Decussation of trochlear nerves
4. Nucleus loci cerulei (locus ceruleus)
5. Intra-axial fibers of trochlear nerve
6. Pigmented tegmentocerebellar nucleus
7. Lateral lemniscus
8. Superior cerebellar peduncle
9. Dorsal tegmental nucleus
10. Ventral tegmental nucleus
11. Medial longitudinal fasciculus (MLF)
12. Dorsal nucleus of lateral lemniscus
13. Pigmented nucleus of superior cerebellar peduncle
14. Spinal lemniscus
15. Medial lemniscus
16. Decussation of superior cerebellar peduncles
17. Transverse pontine fibers (decussation)
18. Pontine nuclei (pontine gray)
19. Transverse pontine fibers
20. Corticospinal tract



PLATE 34.

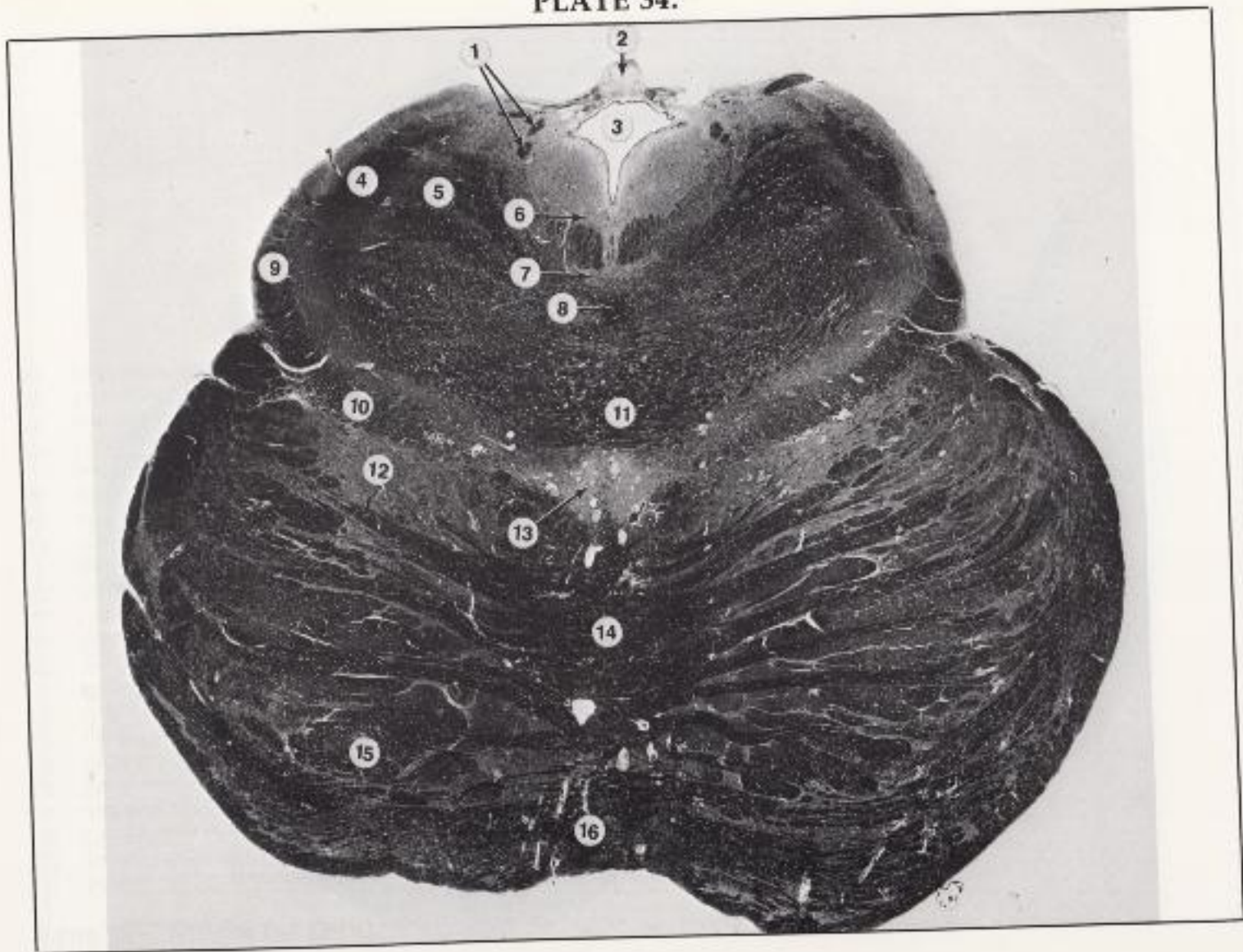


Plate 34. Pons at the Level of the Frenulum of the Superior Medullary Velum

1. Intra-axial fibers of trochlear nerve
2. Frenulum of superior medullary velum
3. Cerebral aqueduct
4. Lateral lemniscus
5. Superior cerebellar peduncle
6. Dorsal tegmental nucleus
7. Ventral tegmental nucleus
8. Dorsal decussation of superior cerebellar peduncle
9. Spinal lemniscus
10. Medial lemniscus
11. Ventral decussation of superior cerebellar peduncles
12. Pontine nucleus (pontine gray)
13. Extension of pontine gray
14. Dorsal decussation of transverse pontine fibers
15. Corticospinal tract
16. Ventral decussation of transverse pontine fibers



PLATE 35.

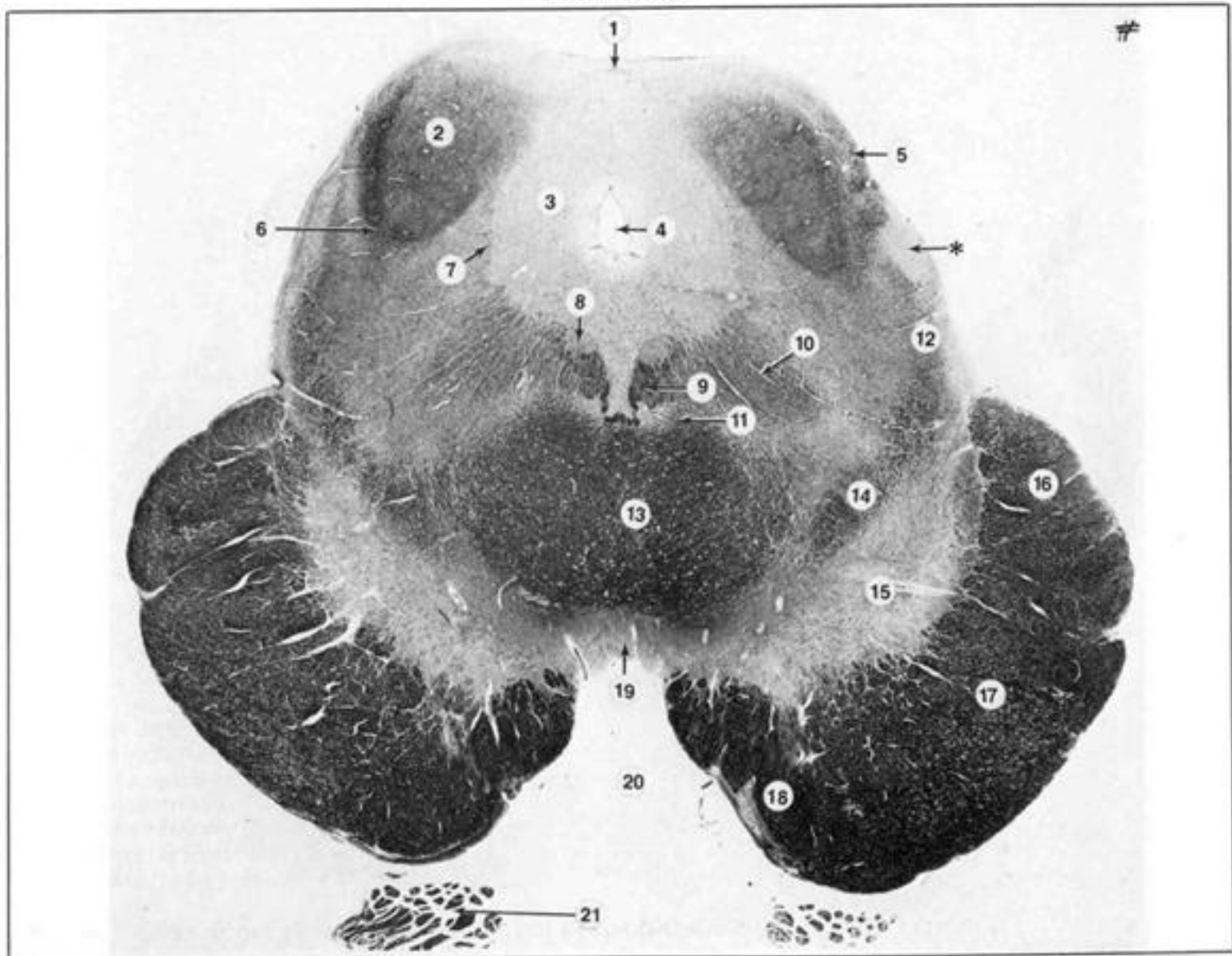


Plate 35. Mesencephalon at the Level of the Inferior Colliculus

1. Commissure of inferior colliculus
2. Nucleus of inferior colliculus
3. Periaqueductal gray
4. Cerebral aqueduct
5. Brachium of inferior colliculus
6. Lateral lemniscus
7. Mesencephalic tract and nucleus of CN V
8. Trochlear nucleus
9. Medial longitudinal fasciculus (MLF)
10. Central tegmental tract
11. Tectospinal tract
12. Spinal lemniscus
13. Decussation of superior cerebellar peduncles
14. Medial lemniscus
15. Substantia nigra
16. Parietotemporooccipitopontine tracts
17. Corticospinal and corticobulbar tracts
18. Frontopontine tract
19. Interpeduncular nucleus
20. Interpeduncular fossa
21. Oculomotor nerve

*Corpus parabigeminum

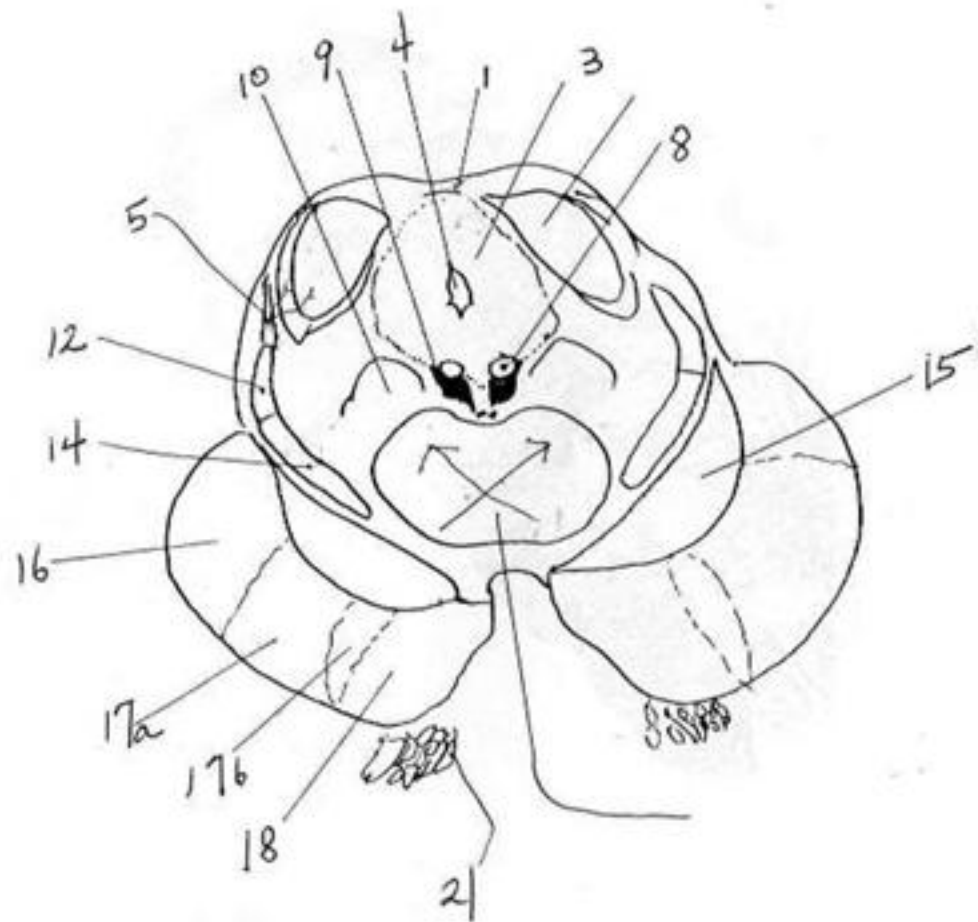


PLATE 36.

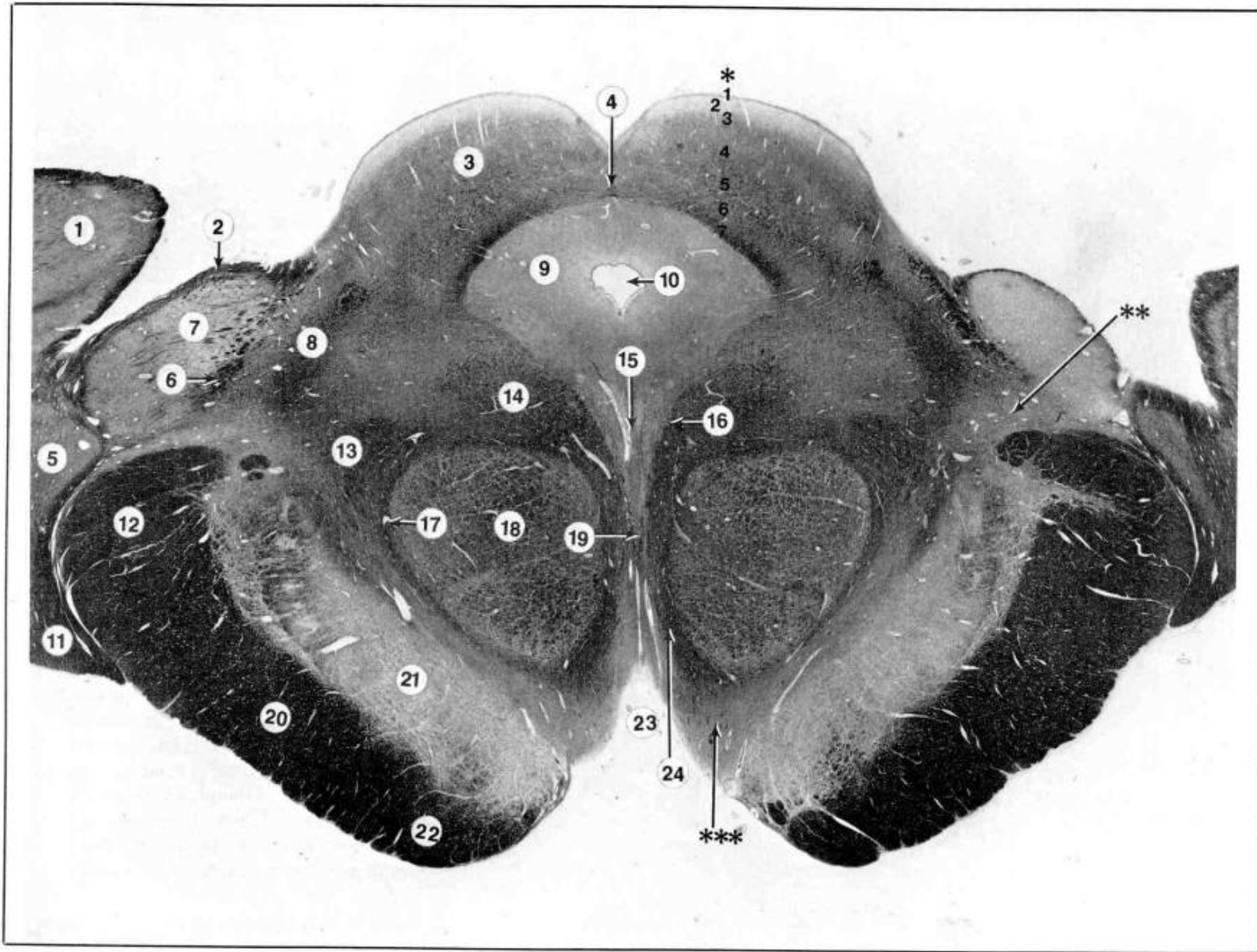


PLATE 36.

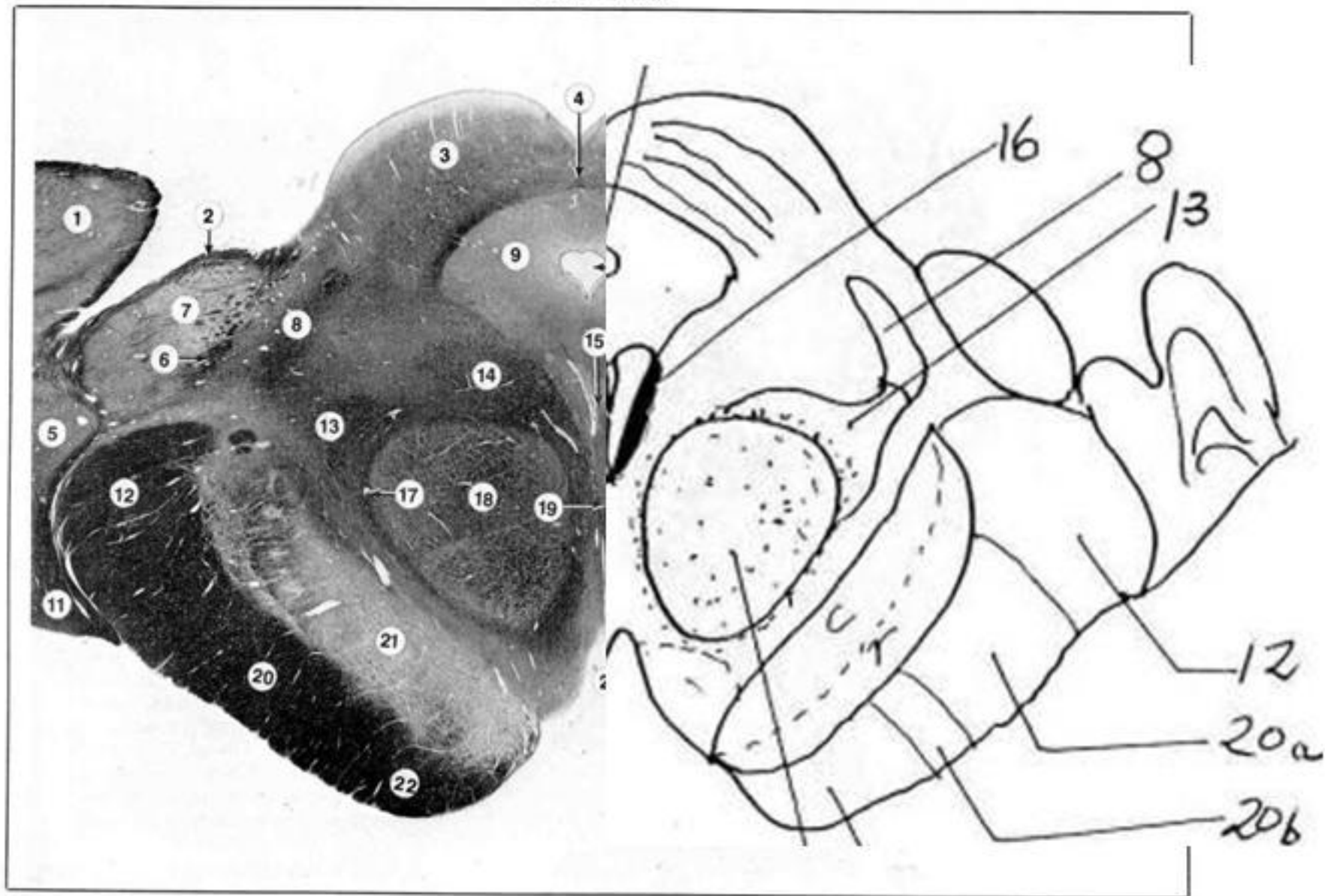


Plate 36. Mesencephalon at the Level of the Superior Colliculus

1. Pulvinar
2. Brachium of superior colliculus
3. Superior colliculus
4. Commissure of superior colliculus
5. Lateral geniculate body
6. Brachium of inferior colliculus
7. Medial geniculate body
8. Spinal lemniscus
9. Periaqueductal gray
10. Cerebral aqueduct
11. Optic tract
12. Parietotemporooccipitopontine tracts
13. Medial lemniscus
14. Central tegmental tract
15. Oculomotor nucleus
16. Medial longitudinal fasciculus (MLF)
17. Dentatorubrothalamic tracts, capsule of red nucleus
18. Red nucleus
19. Dorsal tegmental decussation
20. Corticospinal and corticobulbar tracts
21. Substantia nigra
22. Frontopontine tract
23. Interpeduncular fossa
24. Habenulointerpeduncular tract

*Layers of superior colliculus

1. Stratum zonale
2. Stratum cinereum
3. Stratum opticum
4. Stratum griseum intermediale
5. Stratum album intermediale
6. Stratum griseum profundum
7. Stratum album profundum

NOTE: Stratum lemnisci = Strata 4-7

**Peripeduncular nucleus

***Ventral tegmental area of Tsai

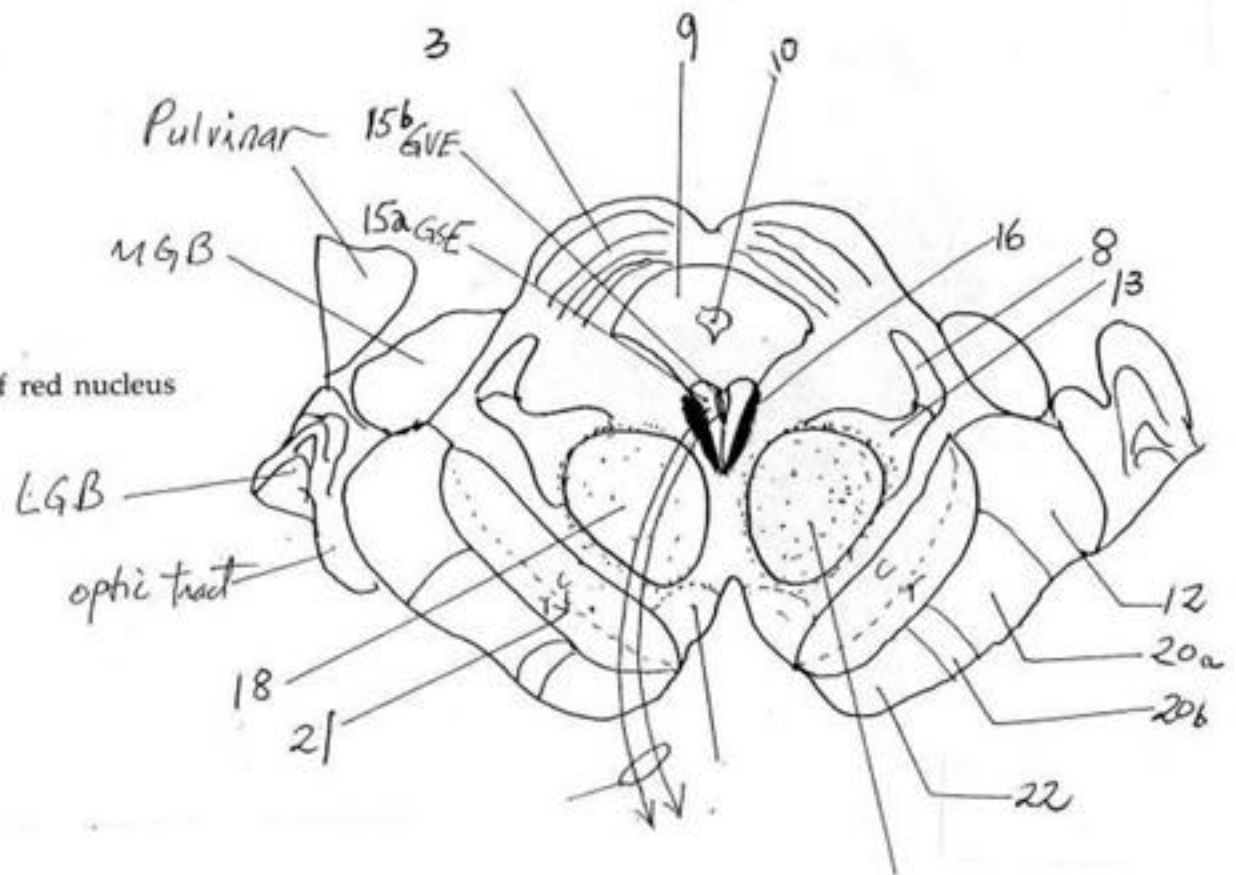


Plate 36. Mesencephalon at the Level of the Superior Colliculus

1. Pulvinar
2. Brachium of superior colliculus
3. Superior colliculus
4. Commissure of superior colliculus
5. Lateral geniculate body
6. Brachium of inferior colliculus
7. Medial geniculate body
8. Spinal lemniscus
9. Periaqueductal gray
10. Cerebral aqueduct
11. Optic tract
12. Parietotemporooccipitopontine tracts
13. Medial lemniscus
14. Central tegmental tract
15. Oculomotor nucleus
16. Medial longitudinal fasciculus (MLF)
17. Dentatorubrothalamic tracts, capsule of red nucleus
18. Red nucleus
19. Dorsal tegmental decussation
20. Corticospinal and corticobulbar tracts
21. Substantia nigra
22. Frontopontine tract
23. Interpeduncular fossa
24. Habenulointerpeduncular tract

*Layers of superior colliculus

1. Stratum zonale
2. Stratum cinereum
3. Stratum opticum
4. Stratum griseum intermediale
5. Stratum album intermediale
6. Stratum griseum profundum
7. Stratum album profundum

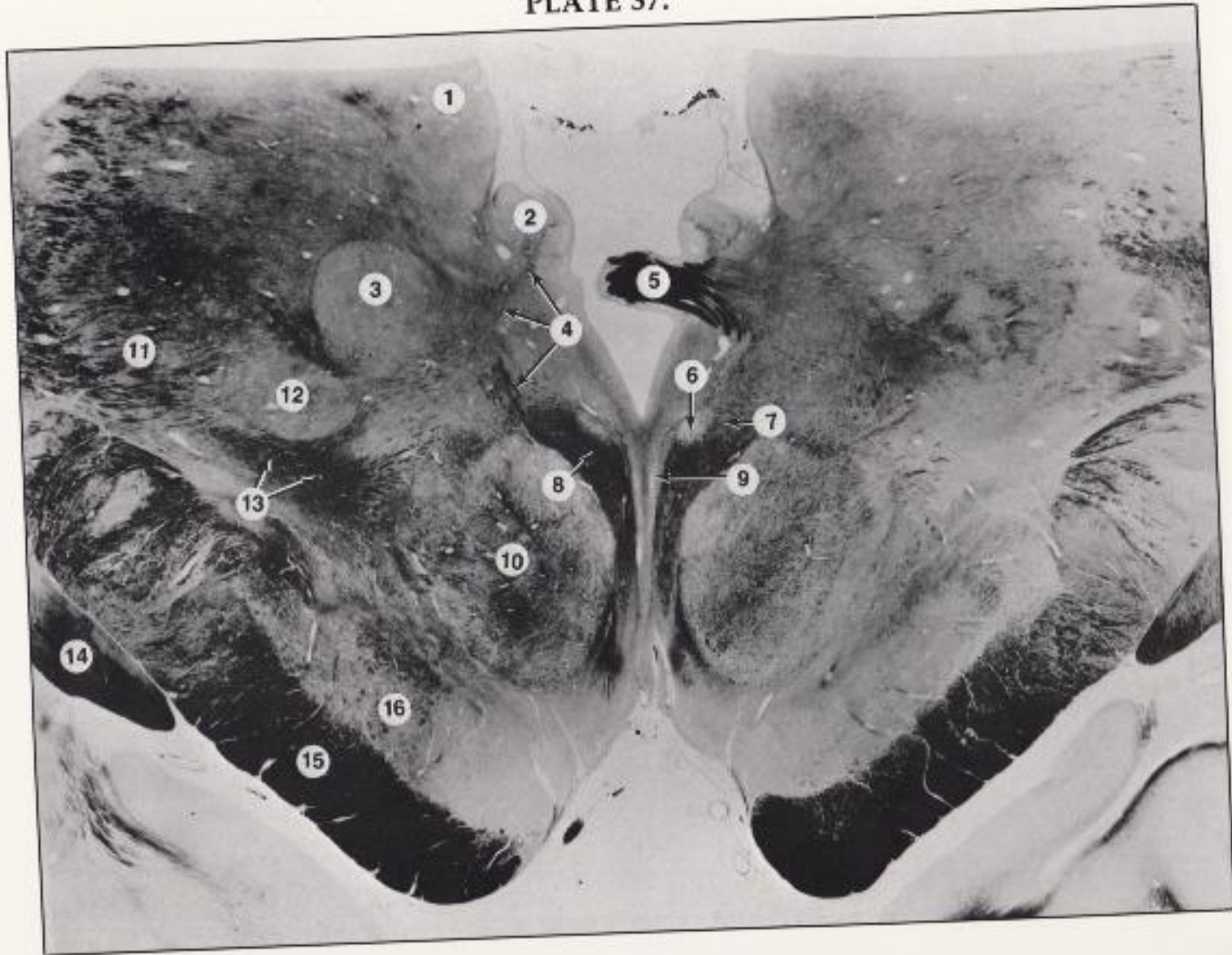
NOTE: Stratum lemnisci – Strata 4–7

**Peripeduncular nucleus

***Ventral tegmental area of Tsai



PLATE 37.



**Plate 37. Transition Mesencephalon–Diencephalon at the Level of the
Ventral Posterior Lateral and the Ventral Posterior Medial Nuclei
(VPL and VPM) of the Thalamus**

1. Pulvinar
2. Habenular nuclei
3. Centromedian nucleus (centrum medianum)
4. Habenulointerpeduncular tract (tractus retroflexus of Meynert)
5. Posterior commissure (PC)
6. Nucleus of Darkschewitsch
7. Interstitial nucleus of Cajal
8. Medial longitudinal fasciculus (MLF)
9. Oculomotor nucleus
10. Red nucleus
11. Ventral posterior lateral nucleus (VPL)
12. Ventral posterior medial nucleus (VPM)
13. Medial lemniscus, spinothalamic and trigeminothalamic tracts
14. Optic tract
15. Basis pedunculi
16. Substantia nigra

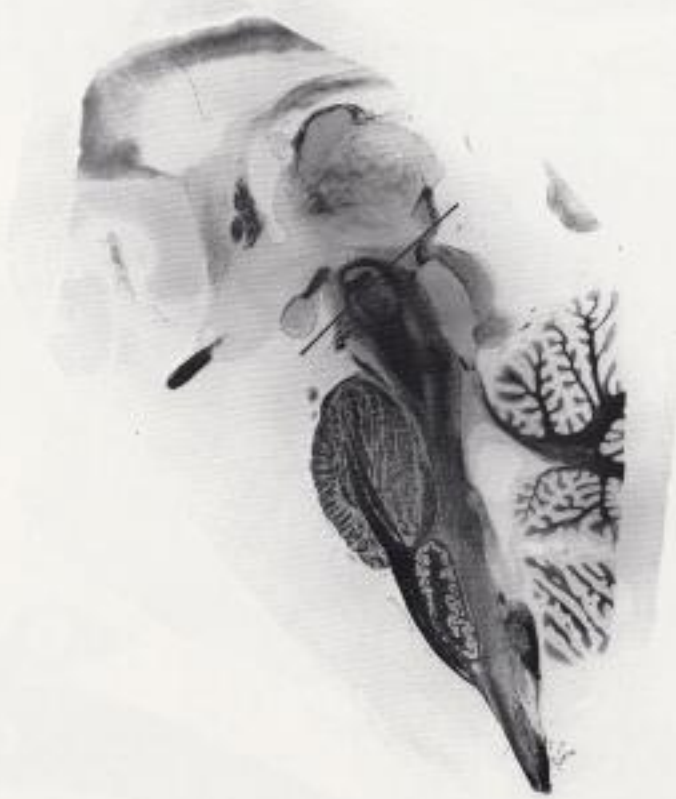


PLATE 37.

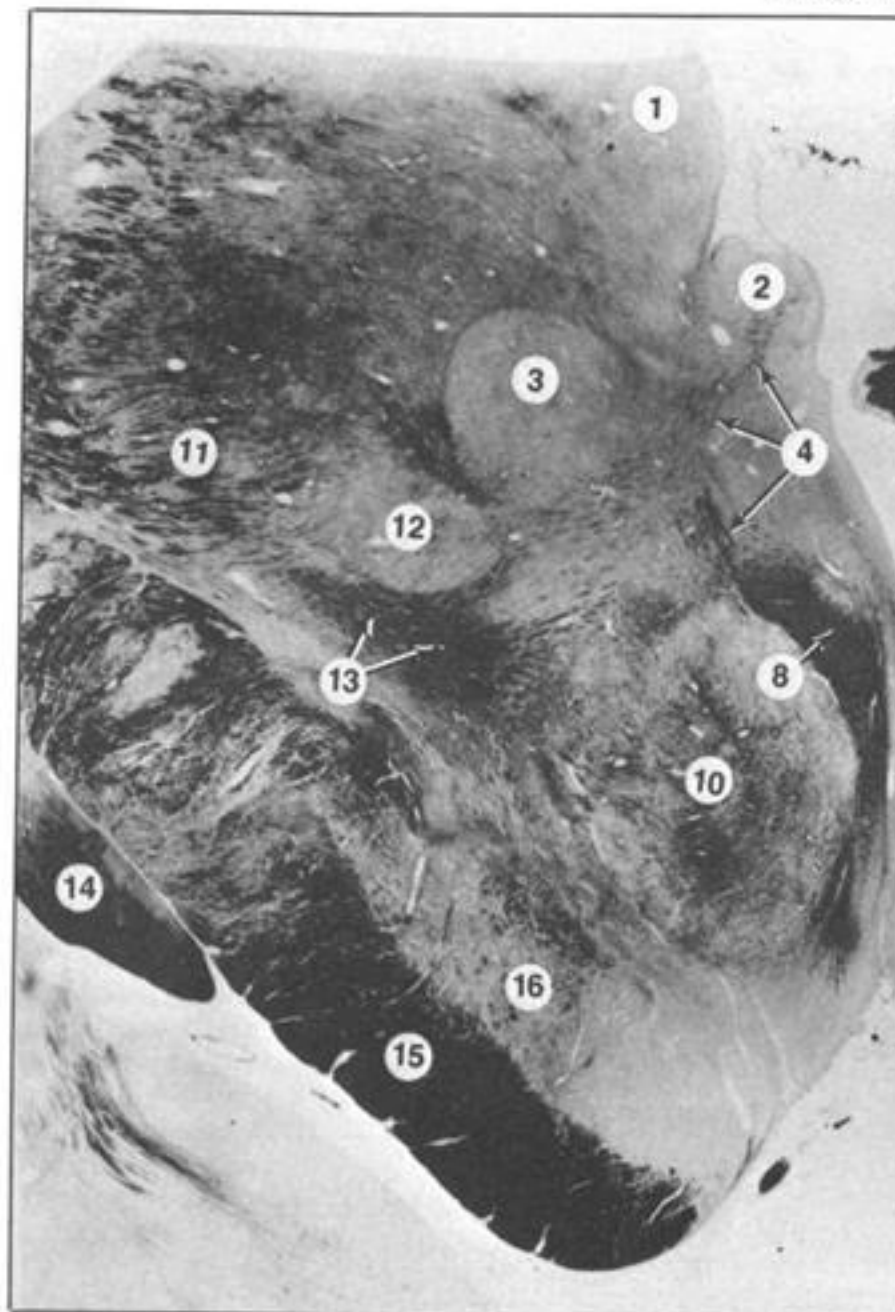


Plate 37. Transition Mesencephalon–Diencephalon at the Level of the Ventral Posterior Lateral and the Ventral Posterior Medial Nuclei (VPL and VPM) of the Thalamus

1. Pulvinar
2. Habenular nuclei
3. Centromedian nucleus (centrum medianum)
4. Habenulointerpeduncular tract (tractus retroflexus of Meynert)
5. Posterior commissure (PC)
6. Nucleus of Darkschewitsch
7. Interstitial nucleus of Cajal
8. Medial longitudinal fasciculus (MLF)
9. Oculomotor nucleus
10. Red nucleus
11. Ventral posterior lateral nucleus (VPL)
12. Ventral posterior medial nucleus (VPM)
13. Medial lemniscus, spinothalamic and trigeminothalamic tracts
14. Optic tract
15. Basis pedunculi
16. Substantia nigra

17. Pretectal Olivary Nucleus

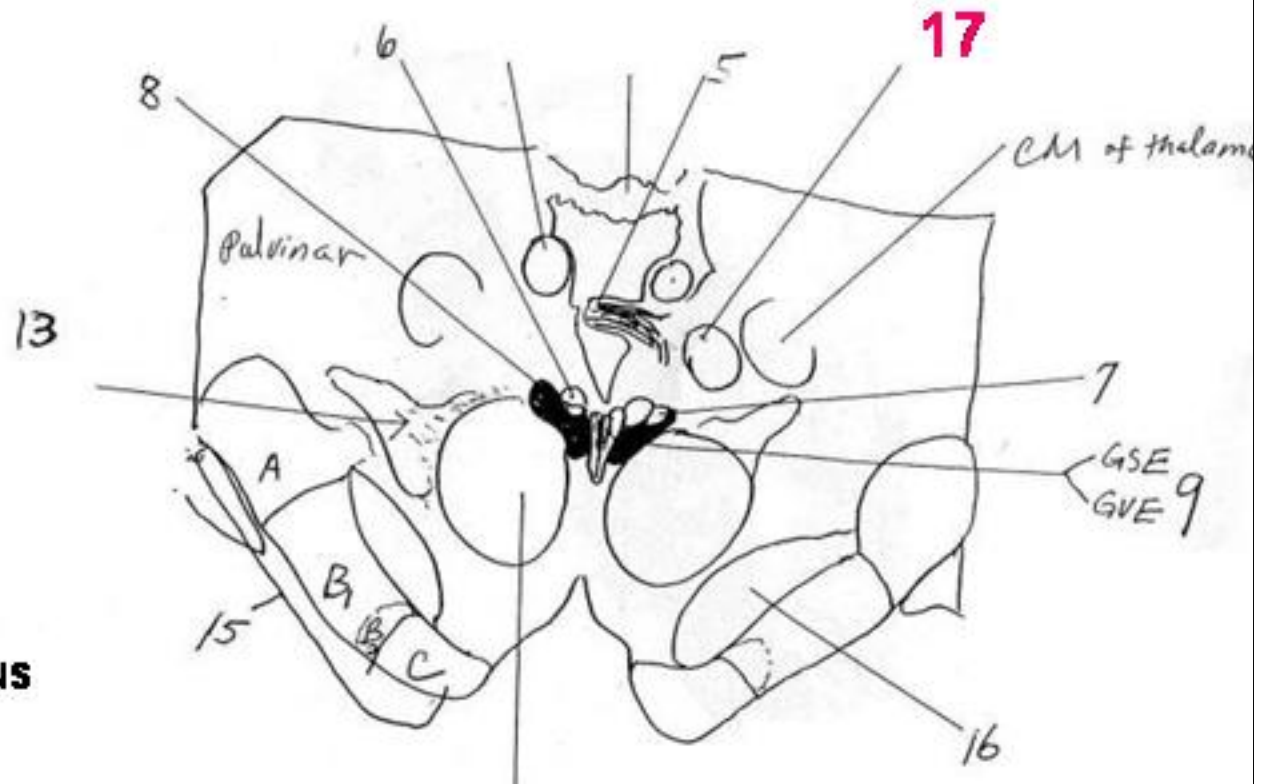


Plate 38. Midthalamus at the Level of the Lateral Dorsal Thalamic Nucleus and the Subthalamic Nucleus

1. Cingulate gyrus
2. Cingulum
3. Corpus callosum, body
4. Caudate nucleus, body
5. Lateral dorsal nucleus of thalamus
6. Fornix, body
7. Stria medullaris of thalamus
8. Putamen
9. Lateral reticular nucleus of thalamus
10. Dorsal median nucleus (DM)
11. Internal medullary lamina of thalamus
12. Globus pallidus, lateral segment
13. Ventral lateral nucleus (VL)
14. Interthalamic adhesion
15. Globus pallidus, medial segment
16. Internal capsule, posterior limb
17. Lenticular fasciculus (H_2 of Forel)
18. Thalamic fasciculus (H_1 of Forel)
19. Zona incerta (ventral extension of lateral reticular nucleus of thalamus)
20. Forel's field H (prerubral field)
21. Third ventricle
22. Principal mamillary fasciculus (including mamillothalamic tract)
23. Mamillary body
24. Subthalamic nucleus
25. Optic tract
26. Basis pedunculi
27. Substantia nigra
28. Hippocampus
29. Ansa lenticularis

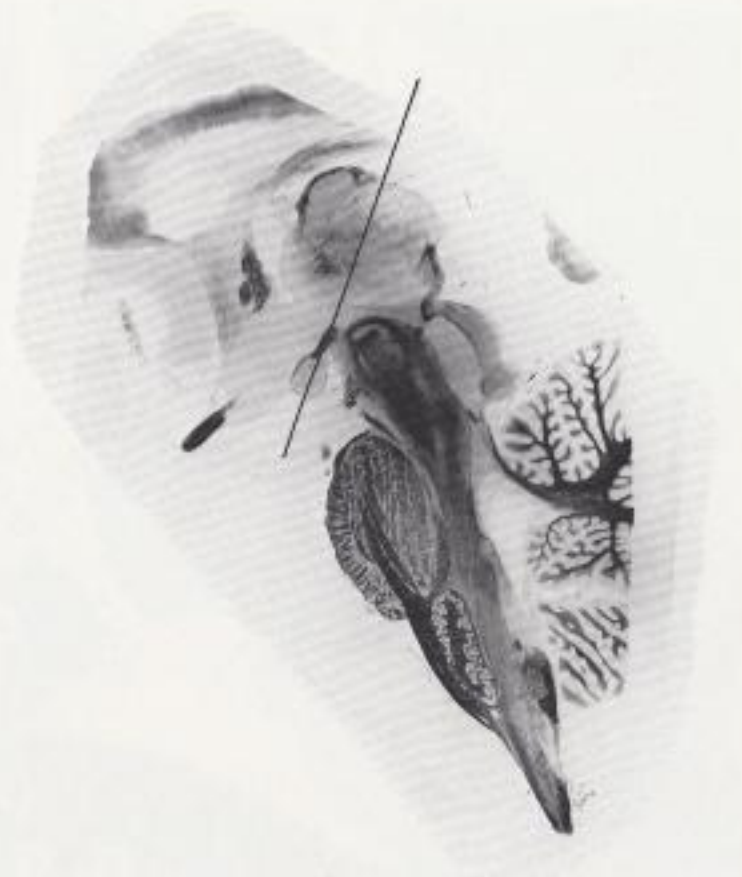


PLATE 39.

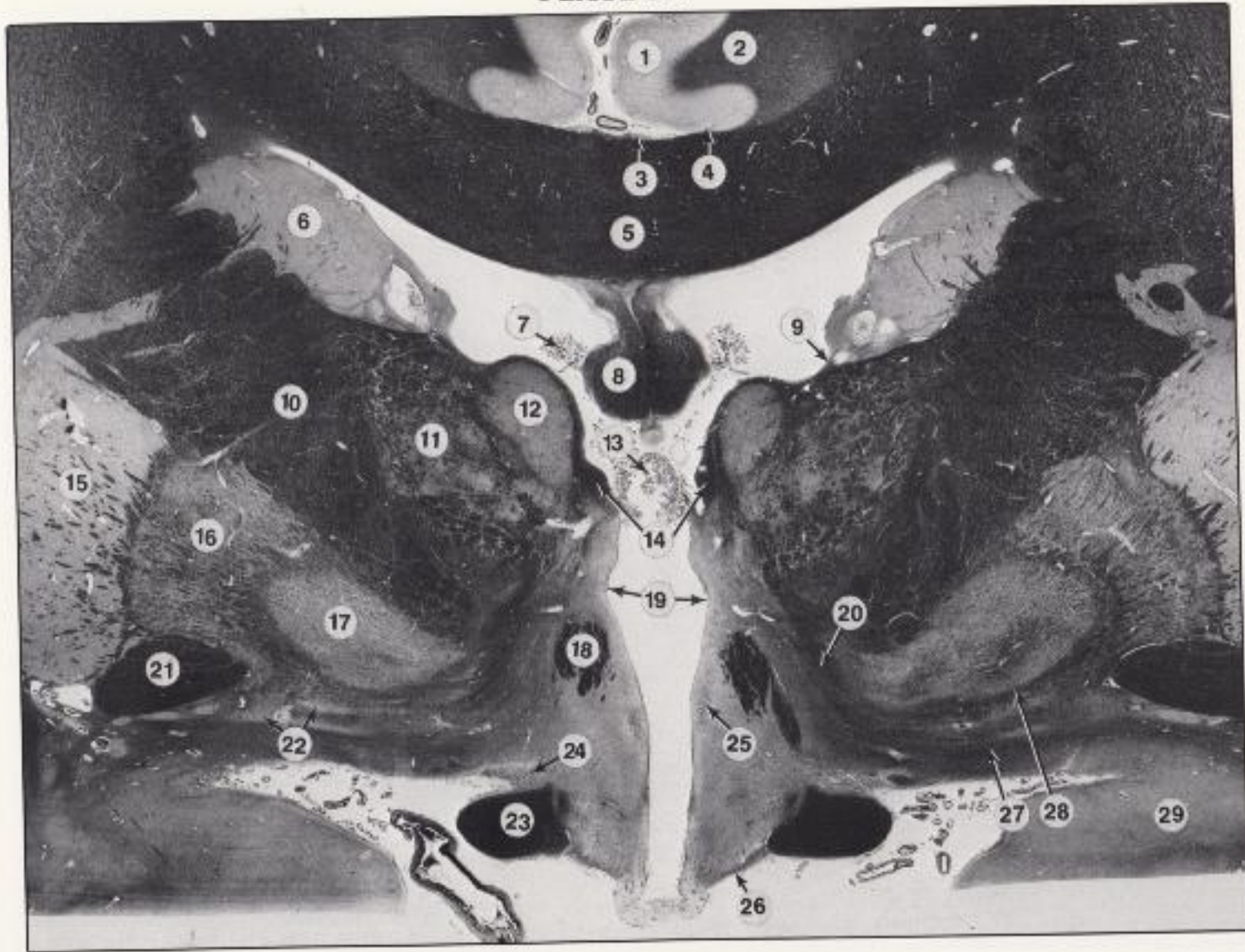


Plate 39. Rostral Thalamus at the Level of the Anterior Thalamic Nucleus and the Tuber Cinereum

1. Cingulate gyrus
2. Cingulum
3. Medial longitudinal stria of indusium griseum
4. Lateral longitudinal stria of indusium griseum
5. Corpus callosum, body
6. Caudate nucleus, head
7. Choroid plexus of lateral ventricle
8. Fornix (body) and subfornical organ*
9. Sulcus terminalis, stria terminalis, and vena terminalis
10. Internal capsule, posterior limb
11. Ventral anterior nucleus (VA)
12. Anterior nucleus (AV)
13. Choroid plexus of third ventricle
14. Stria medullaris of thalamus
15. Putamen
16. Globus pallidus, lateral segment
17. Globus pallidus, medial segment
18. Fornix, column
19. Hypothalamic sulcus
20. Inferior thalamic peduncle
21. Anterior commissure
22. Substantia innominata of Reichert (contains basal nucleus of Meynert)
23. Optic tract
24. Supraoptic nucleus
25. Paraventricular nucleus
26. Tuber cinereum

*The subfornical organ is seen on the ventral surface of the fornix.



27. Ansa peduncularis
28. Ansa lenticularis
29. Amygdaloid nucleus

PLATE 40.



**Plate 40. Frontal Section through the Neostriatum at the Level of the
Rostrum of the Corpus Callosum**

1. Longitudinal cerebral fissure
2. Corpus callosum, body
3. Lateral ventricle, frontal horn
4. Septum pellucidum
5. Corpus callosum, rostrum
6. Caudate nucleus, head
7. Internal capsule, anterior limb
8. Putamen
9. Anterior cerebral arteries
10. External capsule
11. Claustrum
12. Extreme capsule
13. Insular cortex

PLATE 41.

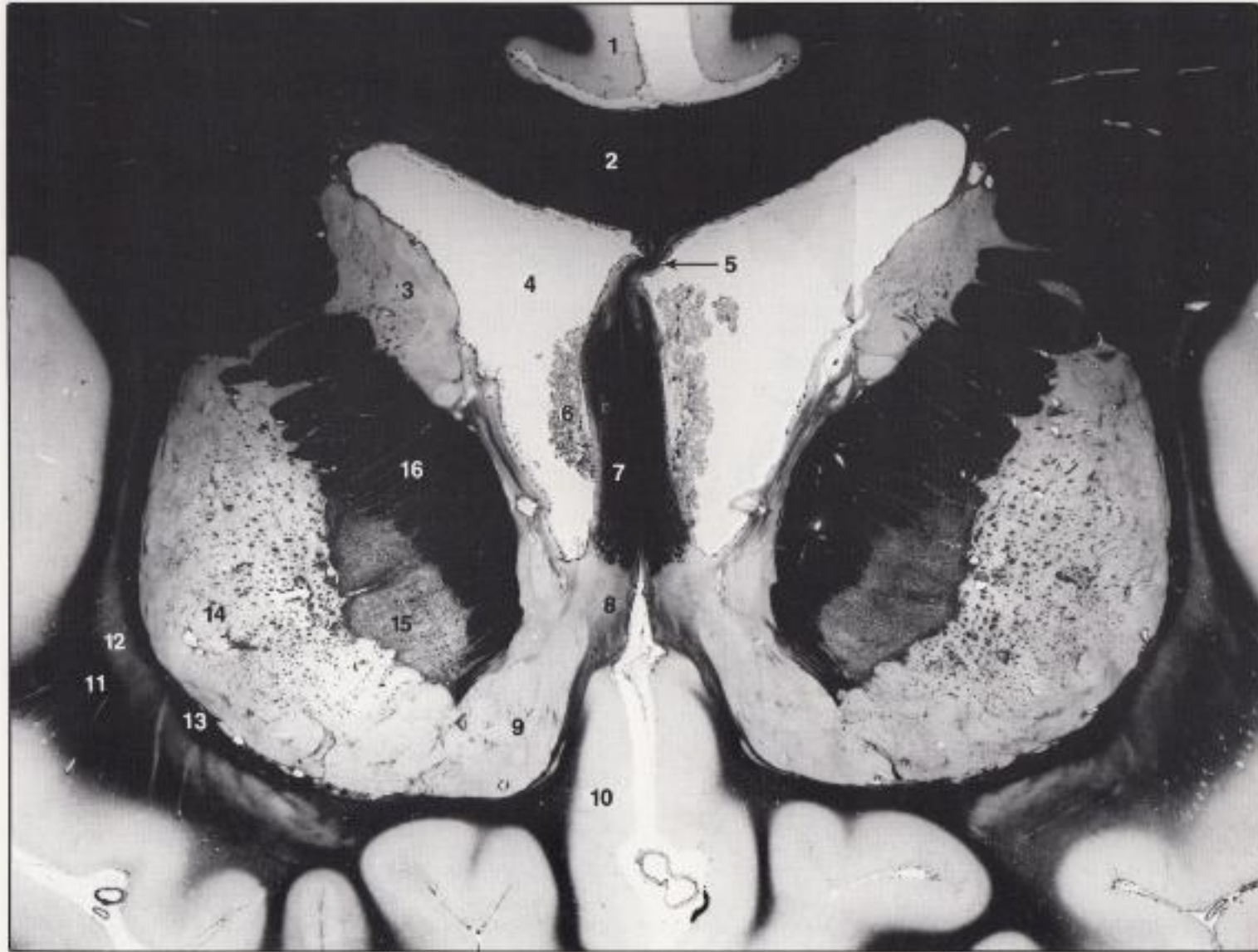


Plate 41. Frontal Section through the Corpus Striatum at the Level of the Columns of the Fornix

1. Cingulate gyrus
2. Corpus callosum, body
3. Caudate nucleus, head
4. Lateral ventricle
5. Septum pellucidum
6. Choroid plexus of lateral ventricle
7. Fornix, column
8. Septal gray
9. Nucleus accumbens septi
10. Subcallosal area
11. Extreme capsule
12. Claustrum
13. External capsule

PLATE 42.

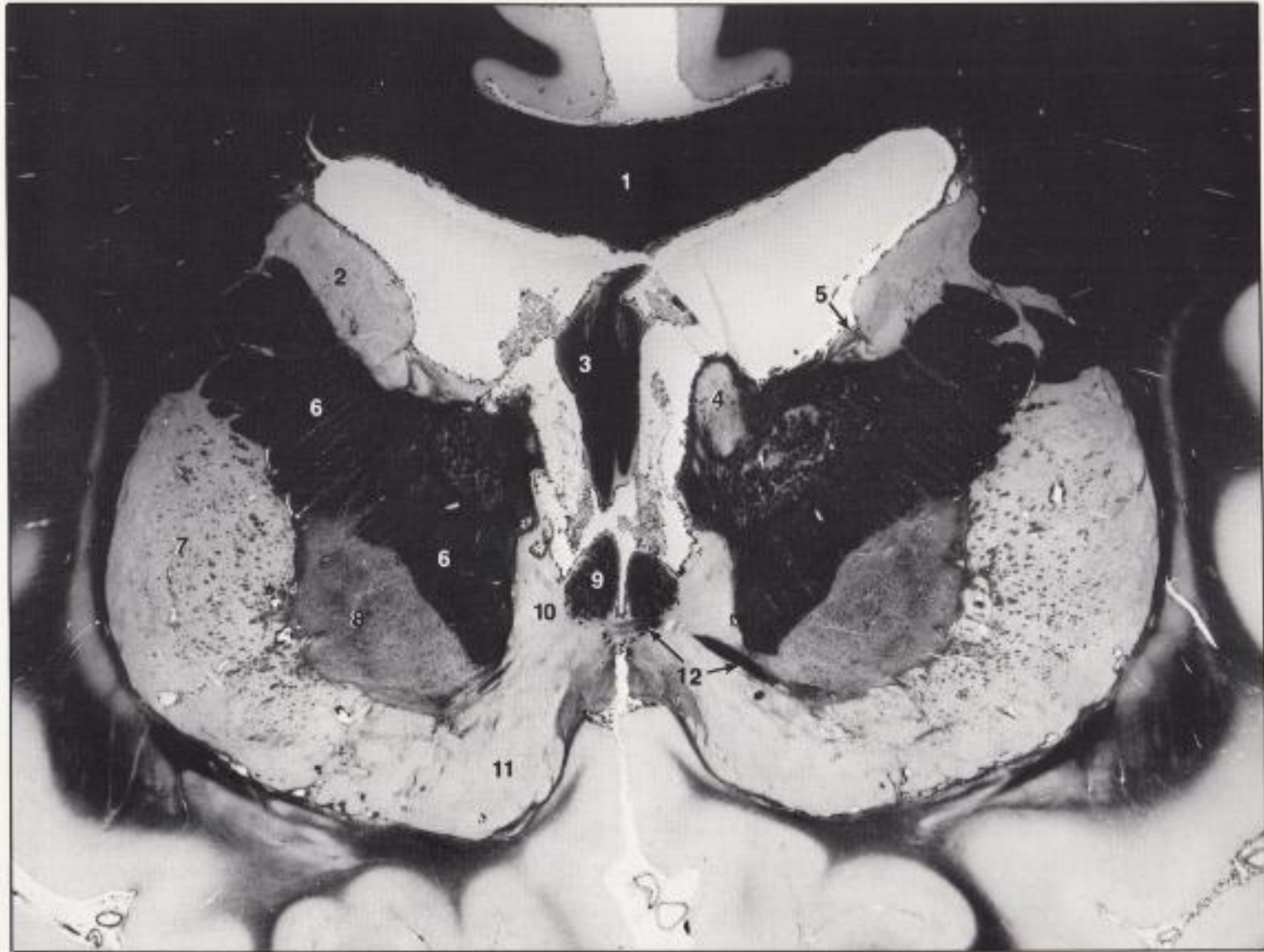


Plate 42. Frontal Section through the Corpus Striatum, the Anterior Commissure, and the Genu of the Internal Capsule

1. Corpus callosum, body
2. Caudate nucleus, head
3. Fornix, column
4. Anterior nucleus of thalamus
5. Sulcus, vena, and stria terminalis
6. Internal capsule, genu
7. Putamen
8. Globus pallidus, lateral segment
9. Fornix, column
10. Bed nucleus of stria terminalis
11. Nucleus accumbens septi
12. Anterior commissure

PLATE 43.

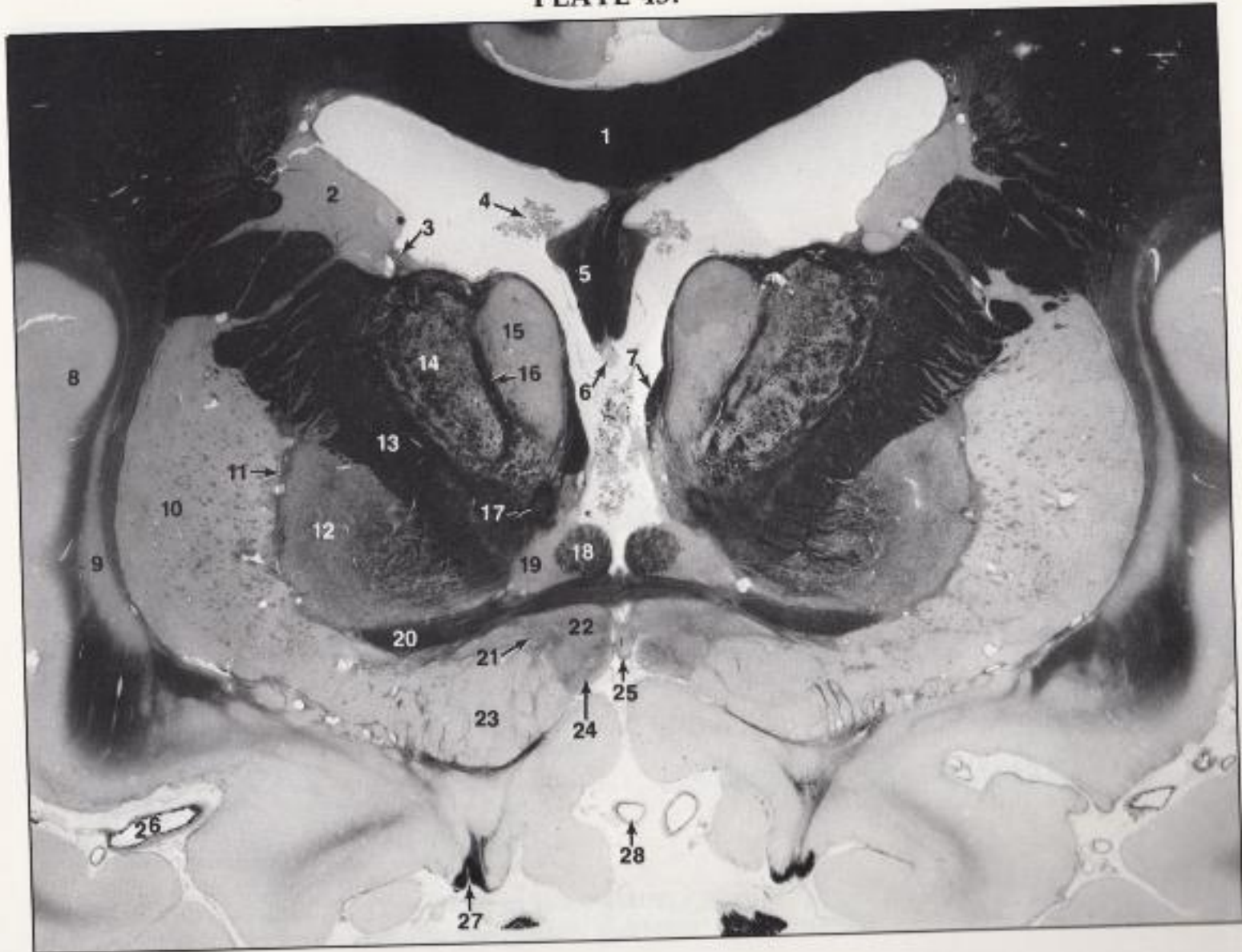


Plate 43. Frontal Section through the Anterior Thalamus at the Level of the Anterior Commissure and the Olfactory Trigone

1. Corpus callosum, body
2. Caudate nucleus, body
3. Sulcus, vena, and stria terminalis
4. Choroid plexus of lateral ventricle
5. Fornix, body
6. Subfornical organ
7. Stria medullaris thalami
8. Insular cortex
9. Claustrum
10. Putamen
11. Lateral medullary lamina of globus pallidus
12. Globus pallidus, lateral segment
13. Internal capsule, posterior limb
14. Ventral anterior nucleus of thalamus
15. Anterior nucleus of thalamus
16. Internal medullary lamina of thalamus
17. Mamillothalamic tract
18. Fornix, column
19. Lateral preoptic area
20. Anterior commissure
21. Lateral preoptic area and medial forebrain bundle
22. Medial preoptic area
23. Nucleus accumbens septi
24. Diagonal band of Broca
25. Lamina terminalis
26. Middle cerebral artery
27. Olfactory trigone
28. Anterior cerebral artery

PLATE 44.

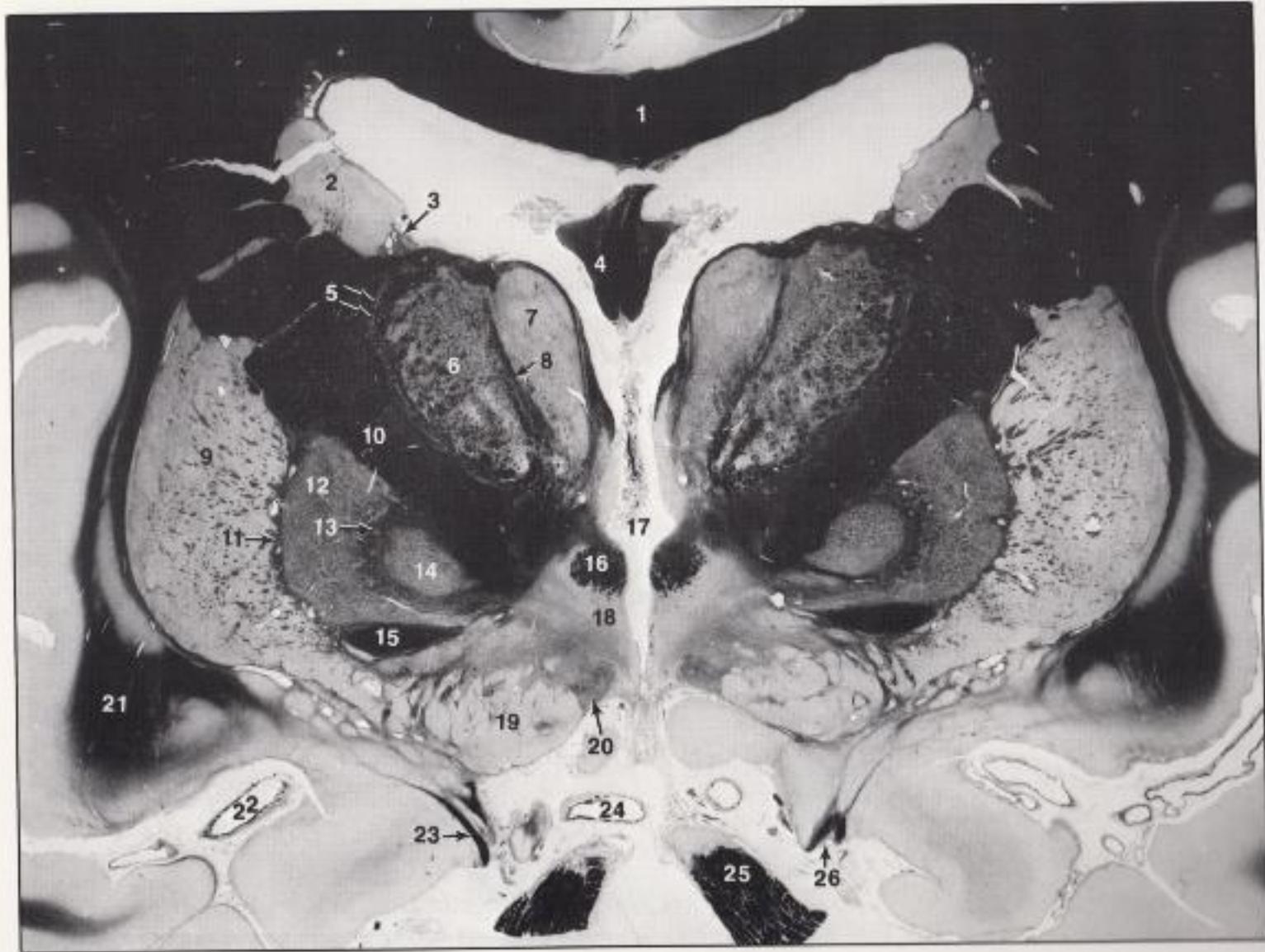


Plate 44. Frontal Section through the Anterior Thalamus at the Level of the Preoptic Nuclei of the Hypothalamus

1. Corpus callosum, body
2. Caudate nucleus, body
3. Sulcus, vena, and stria terminalis
4. Fornix, body
5. Lateral reticular nucleus
6. Ventral anterior nucleus
7. Anterior nucleus
8. Internal medullary lamina of thalamus
9. Putamen
10. Internal capsule, posterior limb
11. Lateral medullary lamina of globus pallidus
12. Globus pallidus, lateral segment
13. Medial medullary lamina of globus pallidus
14. Globus pallidus, medial segment
15. Anterior commissure
16. Fornix, column
17. Third ventricle and choroid plexus
18. Medial preoptic area
19. Nucleus accumbens septi
20. Diagonal band of Broca
21. Uncinate fasciculus
22. Middle cerebral artery
23. Lateral olfactory stria
24. Anterior cerebral artery
25. Optic nerve
26. Olfactory trigone

PLATE 45.



Plate 45. Frontal Section through the Anterior Thalamus at the Level of the Optic Chiasm and the Anterior Perforated Substance

1. Cingulate gyrus
2. Lateral longitudinal stria of indusium griseum
3. Medial longitudinal stria of indusium griseum
4. Corpus callosum, body
5. Caudate nucleus, body
6. Lateral ventricle, body
7. Sulcus, vena, and stria terminalis
8. Fornix, body
9. Putamen
10. Lateral medullary lamina of globus pallidus
11. Globus pallidus, lateral segment
12. Medial medullary lamina of globus pallidus
13. Globus pallidus, medial segment
14. Internal capsule, posterior limb
15. Ventral anterior nucleus
16. Anterior nucleus
17. Midline nuclei
18. Hypothalamic sulcus
19. Claustrum
20. Uncinate fasciculus
21. Anterior commissure
22. Ansa lenticularis
23. Inferior thalamic peduncle
24. Fornix, column
25. Lateral hypothalamic area
26. Medial hypothalamic area
27. Lateral olfactory stria
28. Middle cerebral artery
29. Anterior perforated substance
30. Diagonal band of Broca
31. Optic chiasm

PLATE 46.



Plate 46. Frontal Section through the Midthalamus at the Level of the Ventral Lateral Nucleus, the Interthalamic Adhesion, and the Tuber Cinereum

1. Cingulate gyrus
2. Lateral longitudinal stria of indusium griseum
3. Corpus callosum, body
4. Caudate nucleus, body
5. Lateral ventricle, body
6. Fornix, body
7. Ventral lateral nucleus
8. Lateral dorsal nucleus
9. Stria medullaris of thalamus
10. Internal medullary lamina of thalamus
11. Dorsal medial nucleus
12. Mamillothalamic tract
13. Interthalamic adhesion (*massa intermedia*) and midline nuclei
14. Third ventricle
15. Extreme capsule
16. Claustrum
17. Putamen
18. Globus pallidus, lateral segment
19. Accessory medullary lamina of globus pallidus
20. Globus pallidus, medial segment
21. Internal capsule, posterior limb
22. Uncinate fasciculus
23. Anterior commissure
24. Ansa lenticularis
25. Supraoptic nucleus
26. Fornix, column
27. Amygdaloid nucleus
28. Dorsal supraoptic commissure and supraoptic nucleus
29. Optic tract
30. Medial hypothalamic area (*paraventricular nucleus*)
31. Arcuate nucleus of hypothalamus
32. Tuber cinereum

PLATE 47.

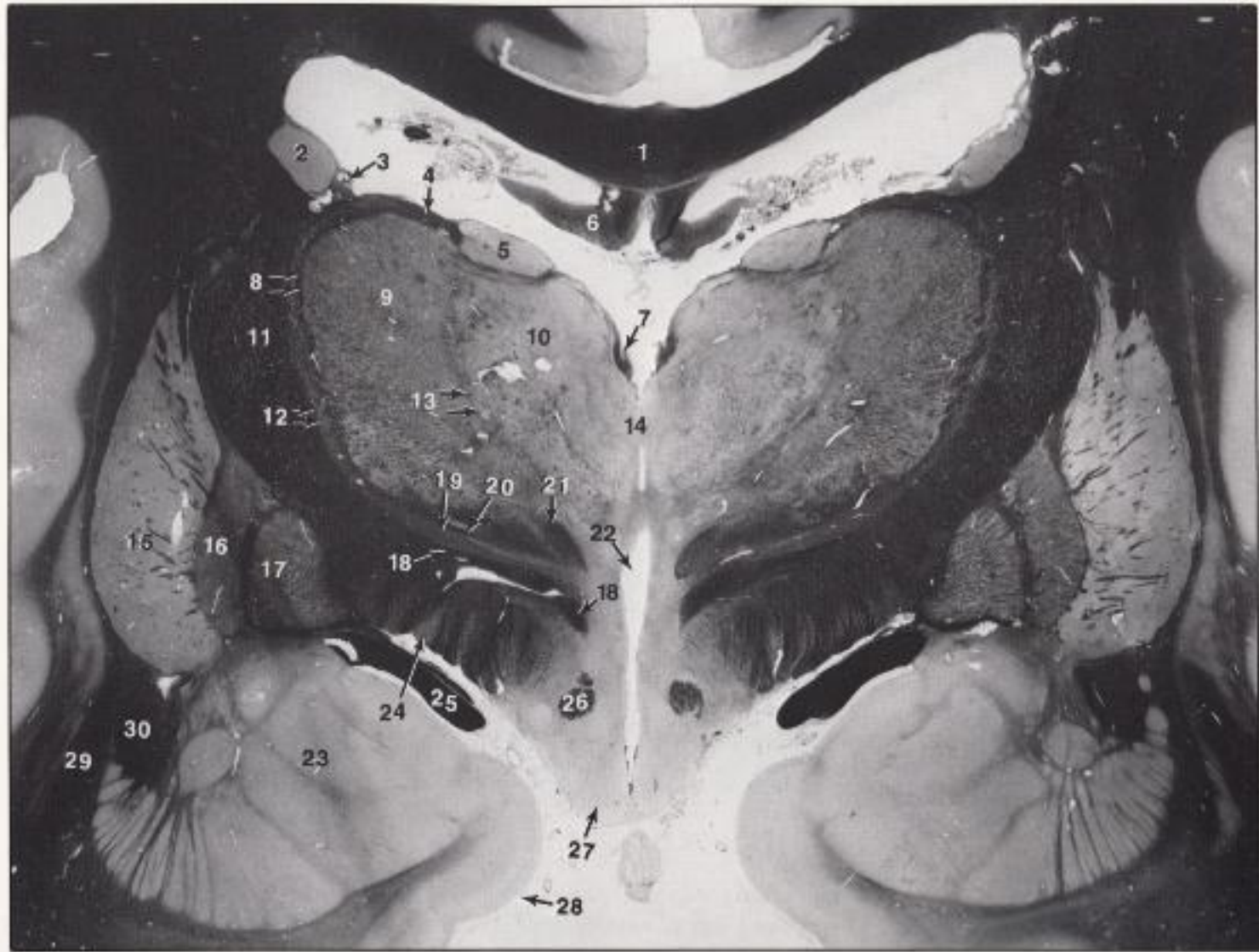


Plate 47. Frontal Section through the Midthalamus at the Level of the Fields of Forel and the Tuber Cinereum

1. Corpus callosum, body
2. Caudate nucleus, body
3. Stria, vena, and sulcus terminalis
4. Stratum zonale of thalamus
5. Lateral dorsal nucleus
6. Fornix, crus
7. Stria medullaris of thalamus
8. External medullary lamina of thalamus
9. Ventral lateral nucleus
10. Dorsal medial nucleus
11. Internal capsule, posterior limb
12. Lateral reticular nucleus
13. Internal medullary lamina of thalamus
14. Interthalamic adhesion (massa intermedia) and midline nuclei
15. Putamen
16. Globus pallidus, lateral segment
17. Globus pallidus, medial segment
18. Lenticular fasciculus (H_2 of Forel)
19. Zona incerta
20. Thalamic fasciculus (H_1 of Forel)
21. Mamillothalamic tract
22. Third ventricle
23. Amygdaloid nucleus
24. Substantia nigra
25. Optic tract
26. Fornix, column
27. Tuber cinereum
28. Uncus
29. Uncinate fasciculus
30. Anterior commissure

PLATE 48.

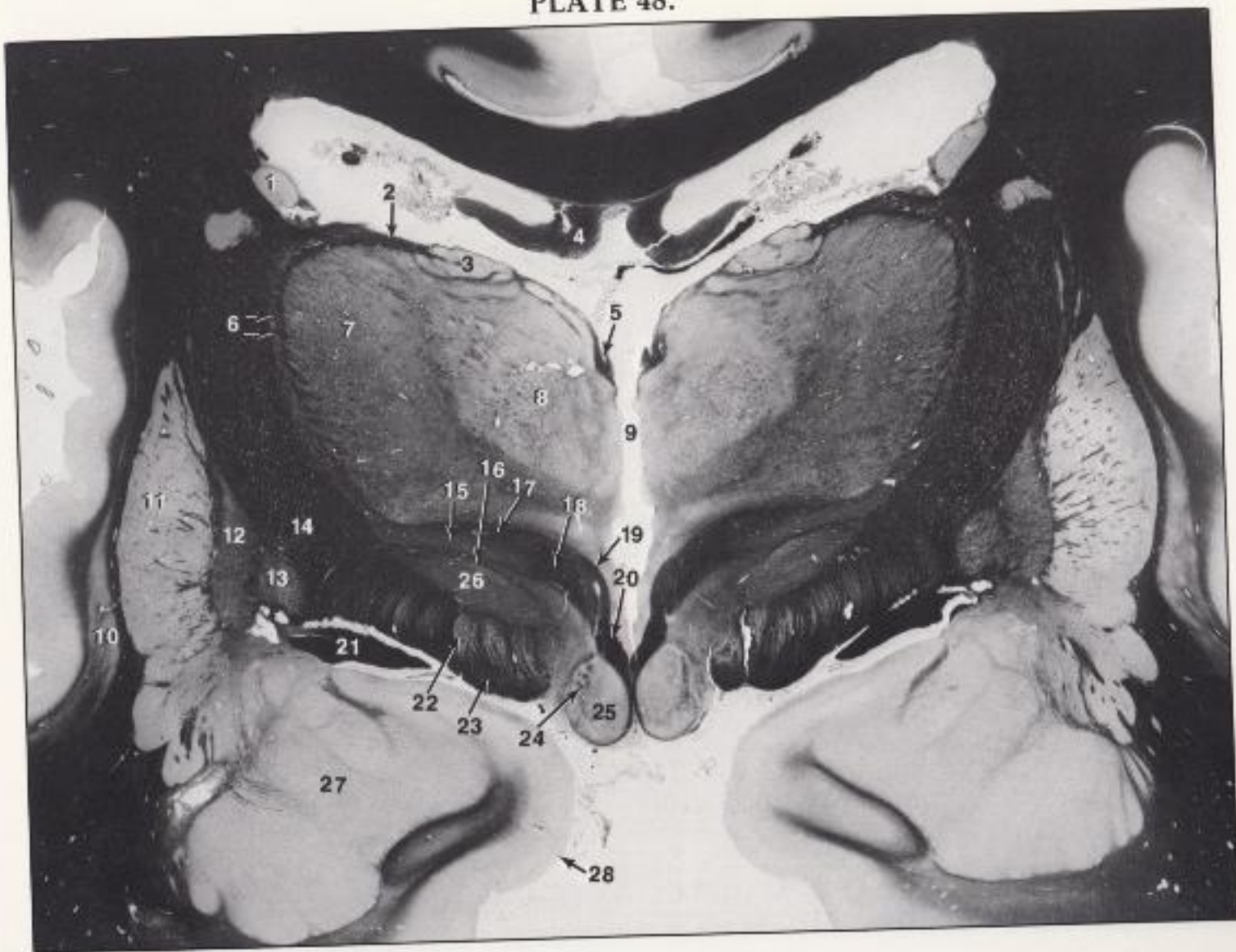


Plate 48. Frontal Section through the Midthalamus at the Level of the Subthalamic Nucleus and the Mamillary Bodies

1. Caudate nucleus, tail
2. Stratum zonale of thalamus
3. Lateral dorsal nucleus
4. Fornix, crus
5. Stria medullaris of thalamus
6. Lateral reticular nucleus
7. Ventral lateral nucleus
8. Dorsal medial nucleus
9. Dehiscence of interthalamic adhesion
10. Claustrum
11. Putamen
12. Globus pallidus, lateral segment
13. Globus pallidus, medial segment
14. Internal capsule, posterior limb
15. Zona incerta
16. Lenticular fasciculus (H_2 of Forel)
17. Thalamic fasciculus (H_1 of Forel)
18. Tegmental field H of Forel
19. Mamillothalamic tract
20. Principal mamillary fasciculus (including mamillothalamic tract)
21. Optic tract
22. Substantia nigra
23. Basis pedunculi
24. Fornix fibers
25. Medial nucleus of mamillary body
26. Subthalamic nucleus
27. Amygdaloid nucleus
28. Uncus

PLATE 49.

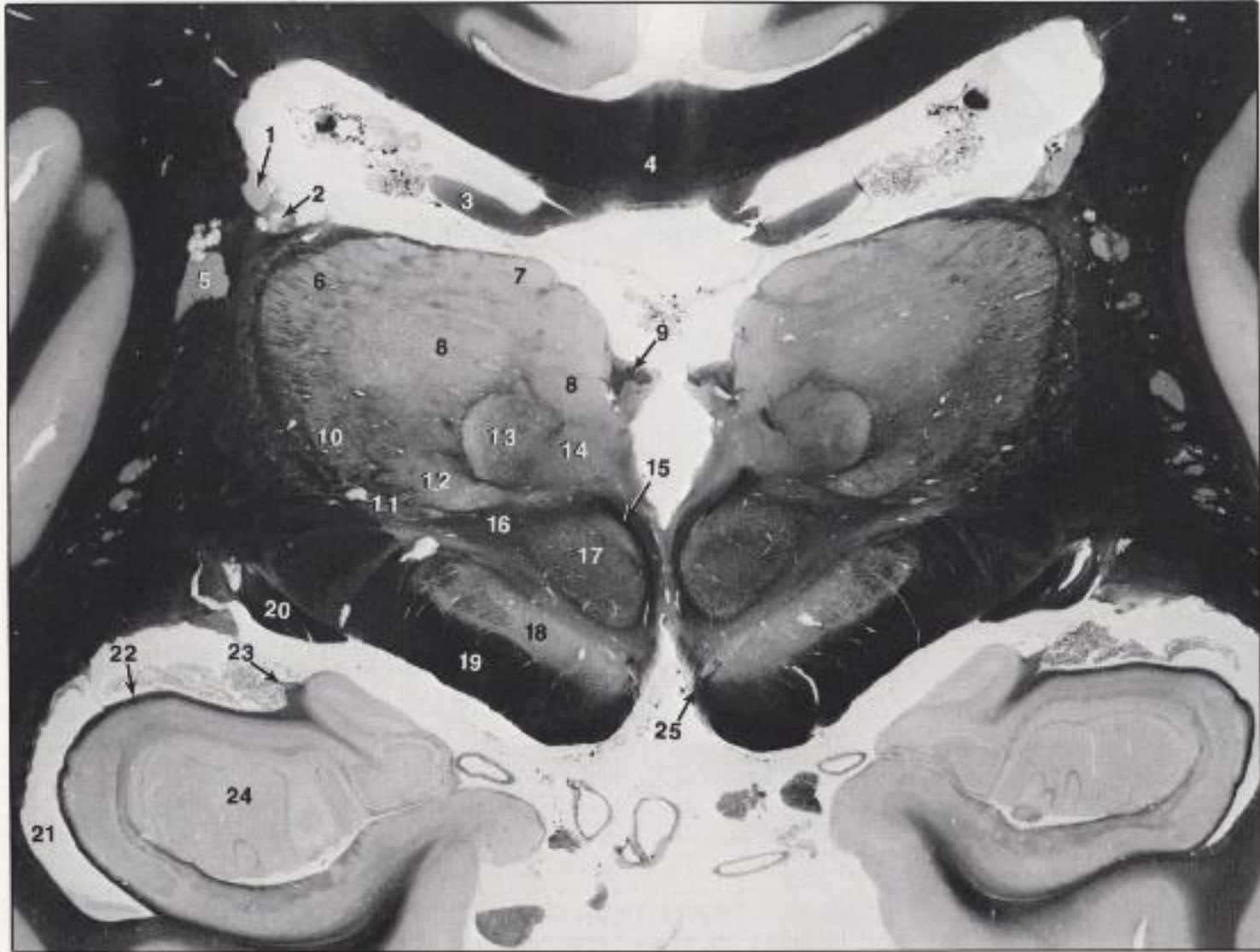


Plate 49. Frontal Section through the Posterior Thalamus at the Level of the Ventral Posterior Nucleus (VPL and VPM) and the Diencephalo-Mesencephalic Junction

1. Caudate nucleus, tail
2. Sulcus, vena, and stria terminalis
3. Fornix, crus
4. Corpus callosum, body
5. Putamen
6. Lateral posterior nucleus
7. Lateral dorsal nucleus
8. Dorsal medial nucleus
9. Stria medullaris thalami and habenular nuclei
10. Ventral posterior lateral nucleus (VPL)
11. Ventral posterior inferior nucleus (VPI)
12. Ventral posterior medial nucleus (VPM)
13. Centromedian nucleus (centrum medianum)
14. Parafascicular nucleus
15. Habenulointerpeduncular nucleus (tractus retroflexus of Meynert)
16. Medial lemniscus and trigeminothalamic tract
17. Red nucleus
18. Substantia nigra
19. Basis pedunculi
20. Optic tract
21. Lateral ventricle, inferior horn
22. Alveus
23. Fimbria of fornix
24. Hippocampus
25. Root fibers, oculomotor nerve

PLATE 50.

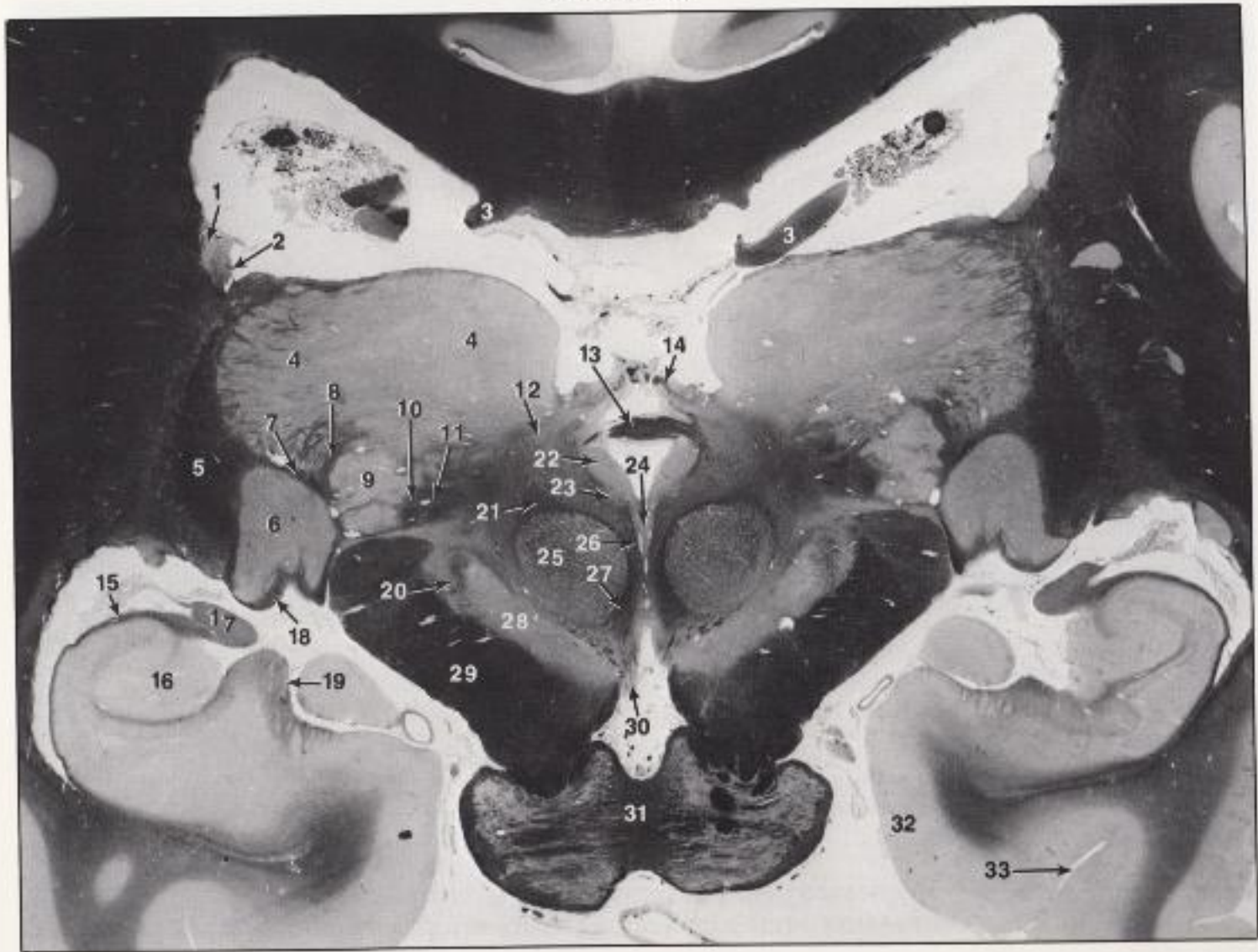


Plate 50. Frontal Section through the Posterior Thalamus at the Level of the Posterior Commissure and the Medial and Lateral Geniculate Bodies

1. Caudate nucleus, tail
2. Sulcus, vena, and stria terminalis
3. Fornix, crus
4. Pulvinar
5. Geniculocalcarine tract (optic radiation)
6. Lateral geniculate body
7. Brachium of superior colliculus
8. Auditory radiation
9. Medial geniculate body
10. Brachium of inferior colliculus
11. Medial lemniscus
12. Pretectal area
13. Posterior commissure
14. Habenular commissure
15. Alveus of hippocampus
16. Dentate gyrus of hippocampal formation
17. Fimbria of fornix
18. Optic tract
19. Superficial medullary lamina of entorhinal area
20. Nigrostriatal and striatonigral tracts
21. Dentatothalamic tract
22. Periaqueductal gray
23. Nucleus of Darkschewitsch
24. Oculomotor nucleus
25. Red nucleus
26. Medial longitudinal fasciculus (MLF)
27. Habenulointerpeduncular tract
28. Substantia nigra
29. Basis pedunculi
30. Oculomotor nerve
31. Pons, base
32. Parahippocampal gyrus
33. Collateral sulcus

PLATE 51.

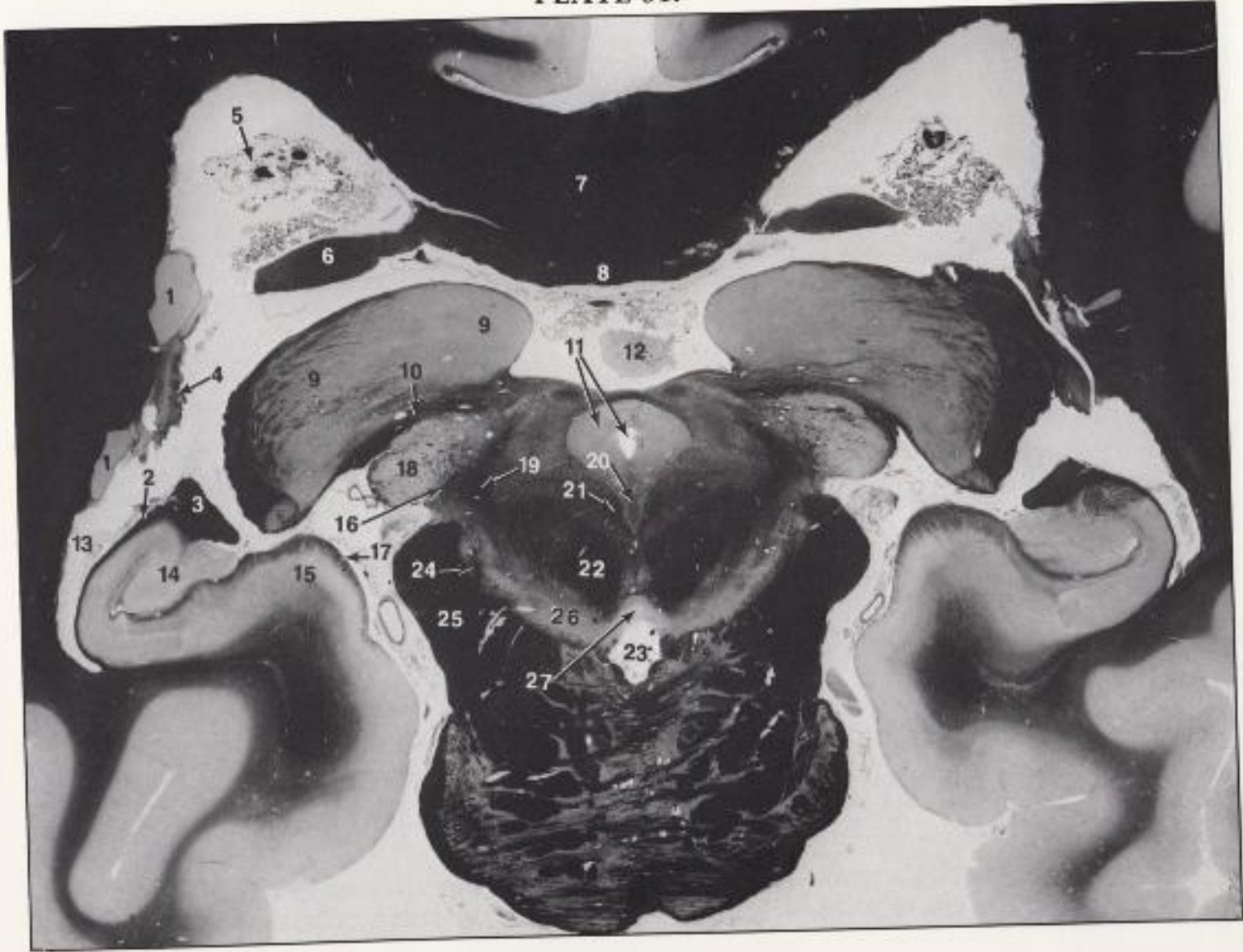


Plate 51. Frontal Section through the Posterior Thalamus at the Level of the Pulvinar, Pretectal Area, and Medial Geniculate Body

1. Caudate nucleus, tail
2. Alveus of hippocampus
3. Fimbria of fornix
4. Stria terminalis
5. Glomus of choroid plexus in trigone of lateral ventricle
6. Fornix, crus
7. Corpus callosum, splenium
8. Hippocampal commissure (commissure of fornix)
9. Pulvinar
10. Brachium of superior colliculus
11. Periaqueductal gray, and cerebral aqueduct
12. Pineal body (epiphysis)
13. Lateral ventricle, temporal horn
14. Dentate gyrus of hippocampal formation
15. Entorhinal area of parahippocampal gyrus
16. Brachium of inferior colliculus
17. Superficial medullary lamina of parahippocampal gyrus
18. Medial geniculate body
19. Medial lemniscus
20. Oculomotor nucleus
21. Medial longitudinal fasciculus (MLF)
22. Red nucleus, capsule
23. Interpeduncular fossa
24. Nigrostriatal and striatonigral tracts
25. Basis pedunculi
26. Substantia nigra
27. Interpeduncular nucleus

PLATE 52.



Plate 52. Horizontal Section through the Corpus Callosum and the Body of the Lateral Ventricle

1. Frontal pole
2. Longitudinal cerebral fissure
3. Insular cortex
4. Lateral ventricle, body
5. Corpus callosum, body
6. Visual cortex with stria of Gennari
7. Occipital pole

*Caudate visible bilaterally, not labeled

PLATE 53.

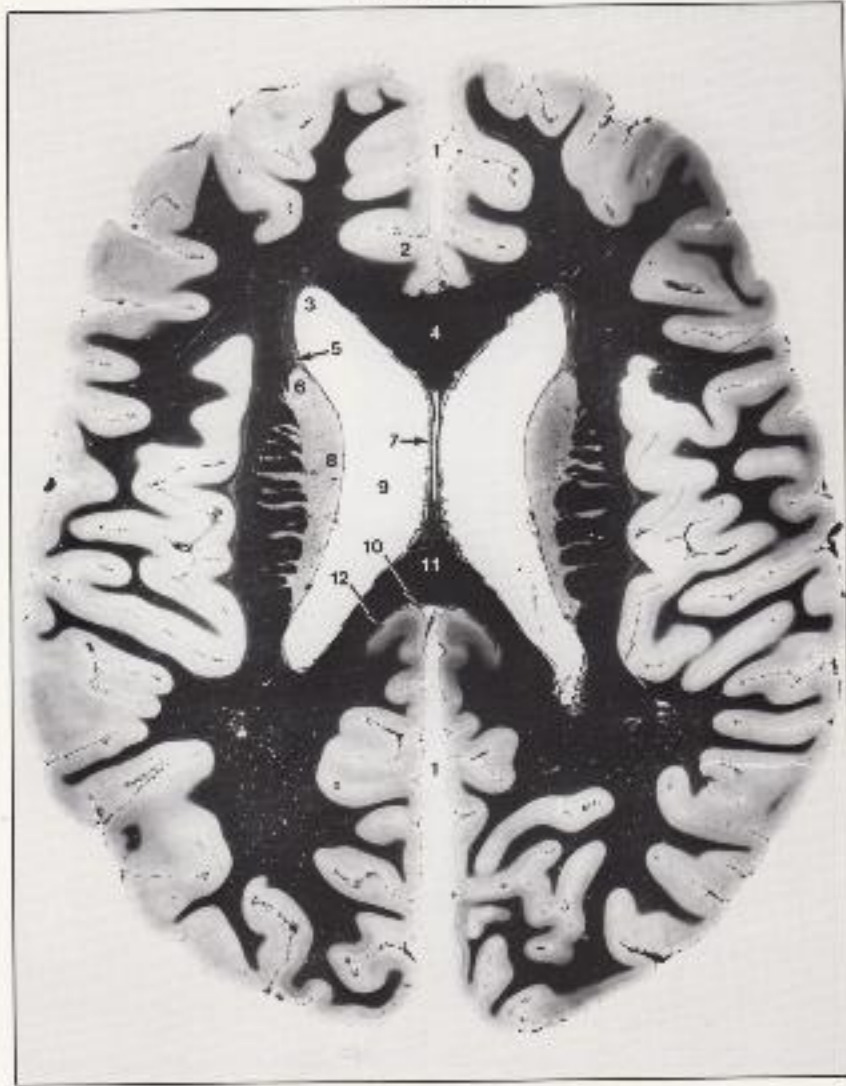


Plate 53. Horizontal Section through the Dorsal Aspect of the Caudate Nucleus and the Lateral Ventricle

1. Longitudinal cerebral fissure
2. Cingulate gyrus
3. Lateral ventricle, frontal horn
4. Corpus callosum, genu
5. Stria terminalis
6. Caudate nucleus, head
7. Septum pellucidum
8. Caudate nucleus, body
9. Lateral ventricle, body
10. Medial longitudinal stria of indusium griseum
11. Corpus callosum, body and hippocampal commissure
12. Lateral longitudinal stria of indusium griseum

PLATE 54.

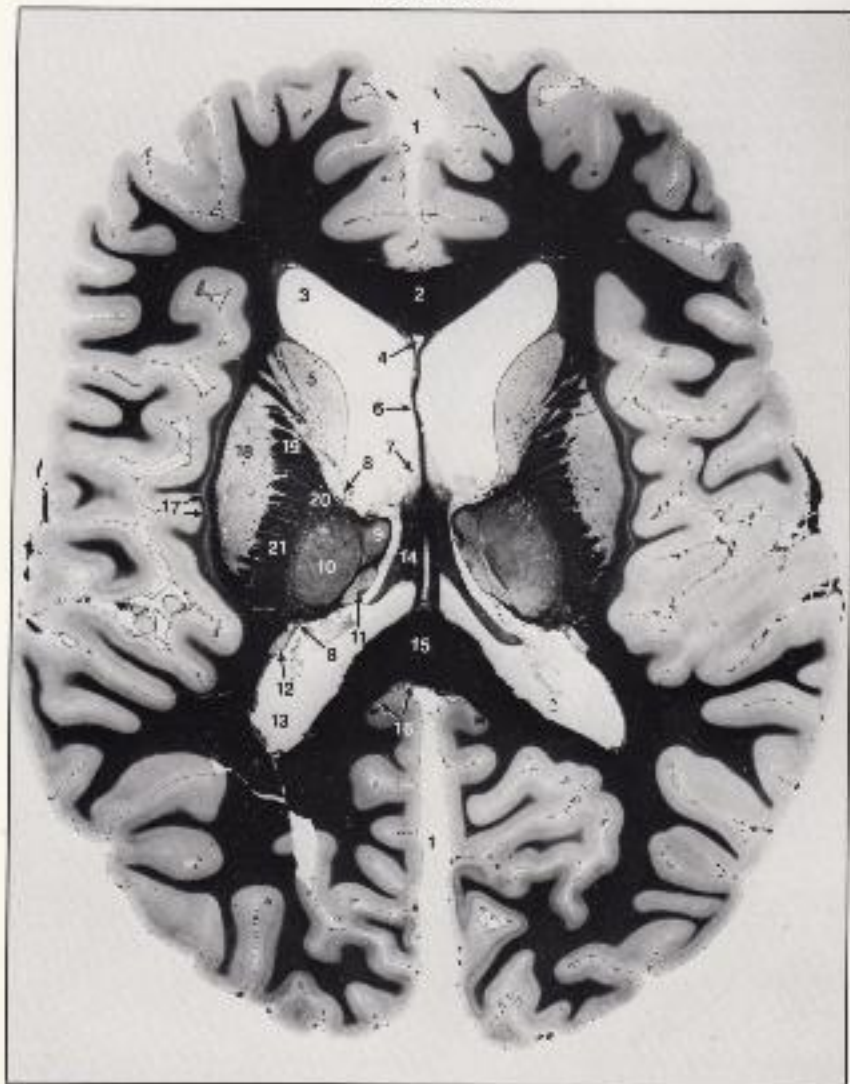


Plate 54. Horizontal Section through the Genu and the Splenium of the Corpus Callosum and the "Dorsal" Nuclei of the Thalamus

1. Longitudinal cerebral fissure
2. Corpus callosum, genu
3. Lateral ventricle, frontal horn
4. Cavum septi pellucidi
5. Caudate nucleus, head
6. Septum pellucidum
7. Septal gray
8. Sulcus, vena, and stria terminalis
9. Anterior nucleus
10. Lateral posterior nucleus
11. Lateral dorsal nucleus
12. Caudate nucleus, tail
13. Lateral ventricle, occipital horn
14. Fornix, crus
15. Corpus callosum, splenium
16. Medial and lateral longitudinal striae of indusium griseum
17. Claustrum
18. Putamen
19. Internal capsule, anterior limb
20. Internal capsule, genu
21. Internal capsule, posterior limb

PLATE 55.

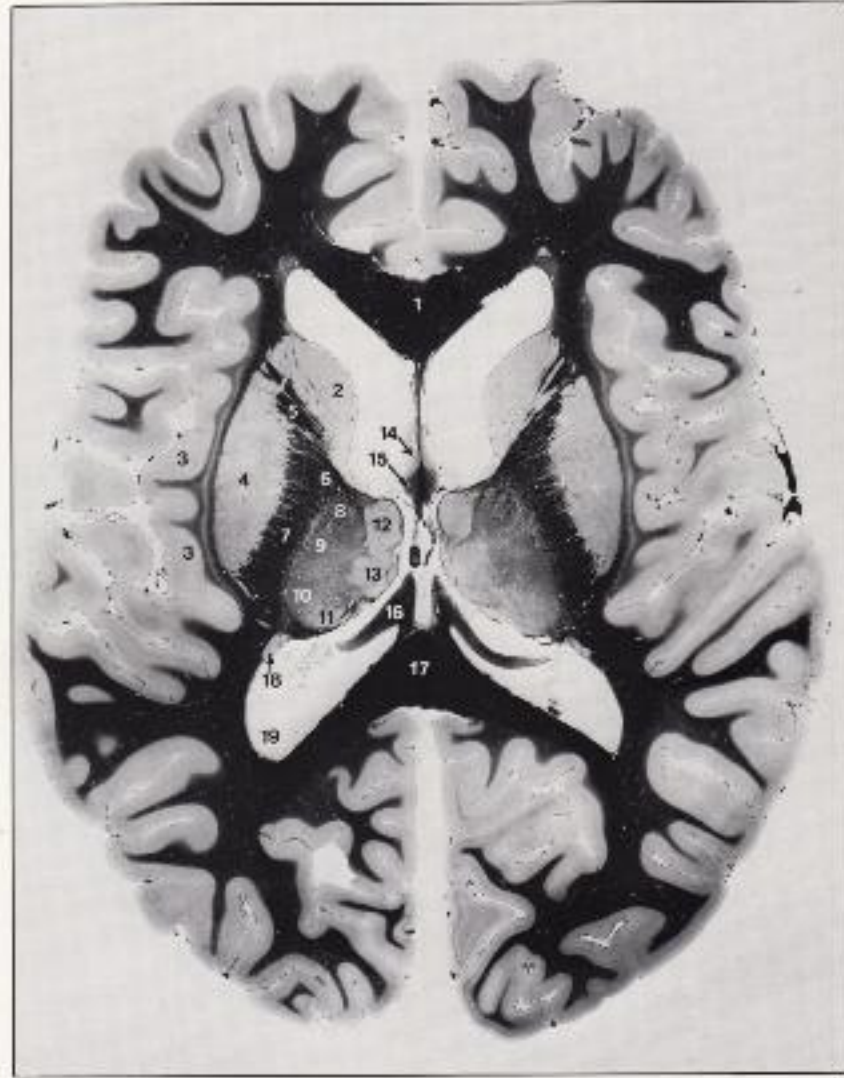
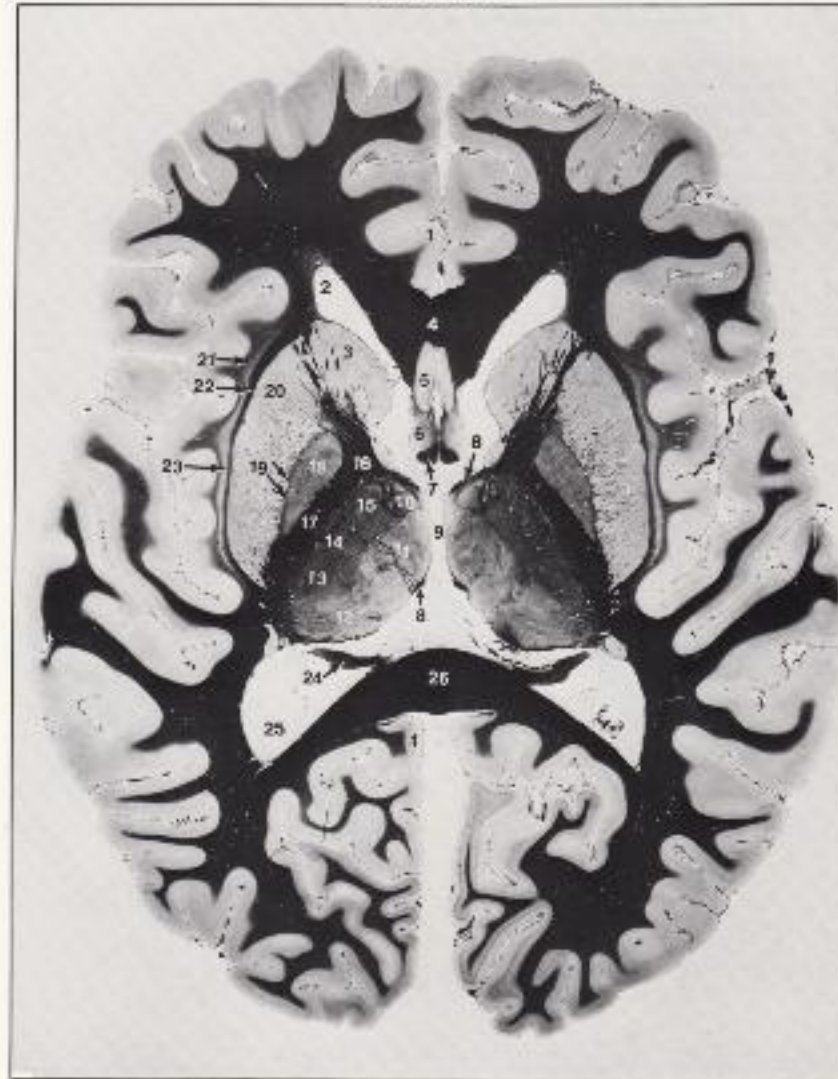


Plate 55. Horizontal Section through the Anterior and the Dorsal Medial Nuclei of the Thalamus

1. Corpus callosum, genu
2. Caudate nucleus, head
3. Insular cortex
4. Putamen
5. Internal capsule, anterior limb
6. Internal capsule, genu
7. Internal capsule, posterior limb
8. Ventral anterior nucleus
9. Ventral lateral nucleus
10. Lateral posterior nucleus
11. Pulvinar
12. Anterior nucleus
13. Dorsal medial nucleus
14. Septal gray
15. Fornix, body
16. Fornix, crus
17. Corpus callosum, splenium
18. Caudate nucleus, tail
19. Lateral ventricle, occipital horn

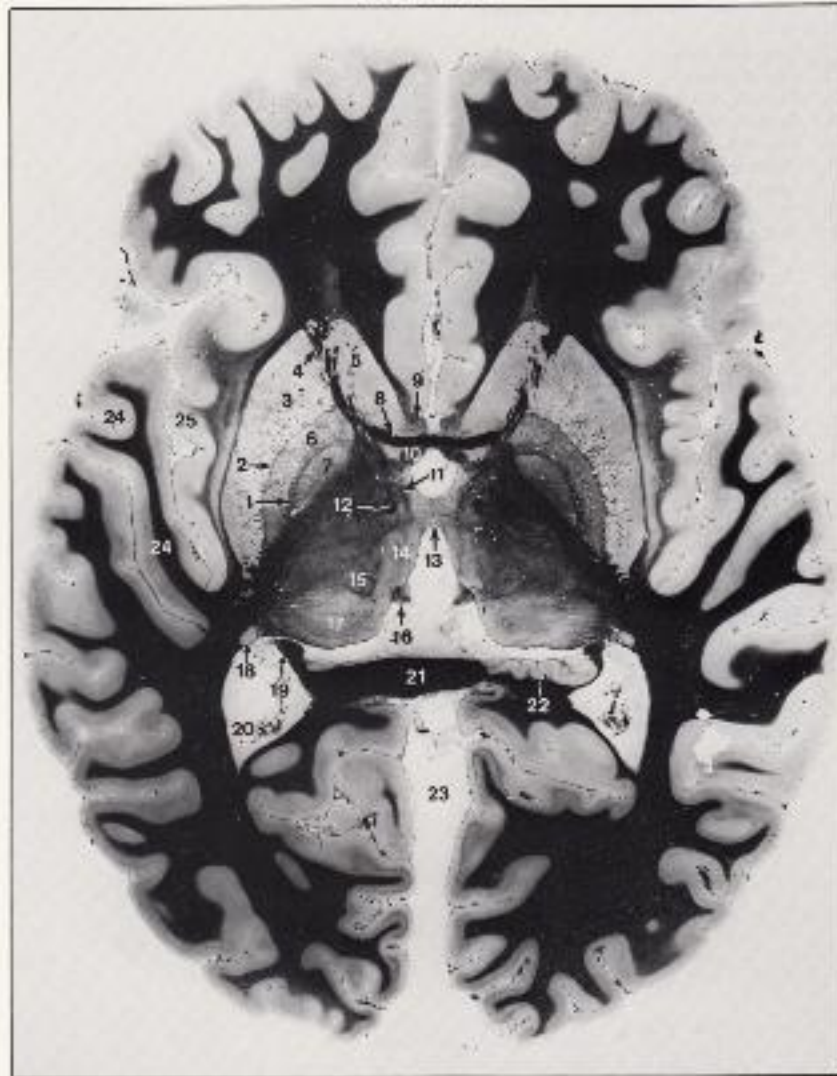
PLATE 56.



**Plate 56. Horizontal Section through the Rostrum and the Splenium
of the Corpus Callosum**

1. Cingulate gyrus
2. Lateral ventricle, frontal horn
3. Caudate nucleus, head
4. Corpus callosum, rostrum
5. Subcallosal area
6. Paraterminal gyrus
7. Fornix, column
8. Stria medullaris thalami
9. Third ventricle
10. Anterior nucleus
11. Dorsal medial nucleus
12. Putamen
13. Ventral posterior lateral nucleus
14. Ventral lateral nucleus
15. Ventral anterior nucleus
16. Internal capsule, genu
17. Internal capsule, posterior limb
18. Globus pallidus, lateral segment
19. Lateral medullary lamina of globus pallidus
20. Putamen
21. Extreme capsule
22. External capsule
23. Claustrum
24. Fornix, crus
25. Lateral ventricle, occipital horn
26. Corpus callosum, splenium

PLATE 57.



**Plate 57. Horizontal Section through the Anterior Commissure,
the Interthalamic Adhesion, and the Splenium of the
Corpus Callosum**

1. Medial medullary lamina of globus pallidus
2. Lateral medullary lamina of globus pallidus
3. Putamen
4. Internal capsule, anterior limb
5. Caudate nucleus, head
6. Globus pallidus, lateral segment
7. Globus pallidus, medial segment
8. Anterior commissure
9. Paraterminal gyrus
10. Fornix, column
11. Inferior thalamic peduncle
12. Mamillothalamic tract
13. Interthalamic adhesion
14. Dorsal medial nucleus
15. Centromedian nucleus (centrum medianum)
16. Habenula (habenular nuclei and stria medullaris thalami)
17. Pulvinar
18. Caudate nucleus, tail
19. Fornix, fimbria
20. Lateral ventricle, trigone
21. Corpus callosum, splenium
22. Retrosplenial gyrus
23. Longitudinal cerebral fissure
24. Transverse temporal gyrus of Heschl
25. Insular cortex

PLATE 58.



Plate 58. Horizontal Section through the Anterior Commissure, the Habenular Commissure, and the Pineal Body

1. Anterior commissure
2. Caudate nucleus, head
3. Fornix, column
4. Mammillothalamic tract
5. Habenula and habenular commissure
6. Pineal body with acervulus
7. Fornix, fimbria
8. Caudate nucleus, tail
9. Lateral ventricle, trigone
10. Pulvinar
11. Centromedian nucleus (centrum medianum)
12. Dorsal medial nucleus
13. Ventral posterior lateral nucleus
14. Ventral posterior medial nucleus
15. Internal capsule, posterior limb
16. Globus pallidus, medial segment
17. Globus pallidus, lateral segment
18. Putamen
19. Internal capsule, anterior limb
20. Insular cortex
21. Claustrum
22. Transverse temporal gyrus (auditory cortex)

PLATE 59.

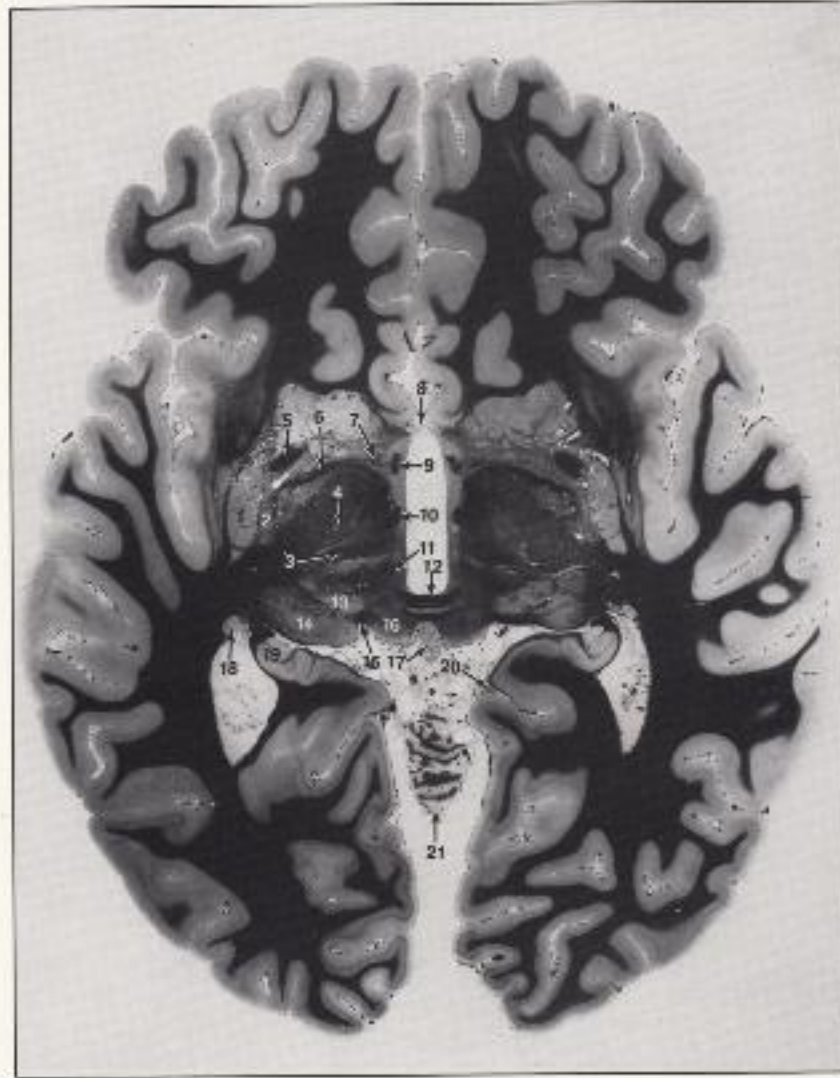


Plate 59. Horizontal Section through the Posterior Commissure, the Medial and the Lateral Geniculate Bodies, and the Subthalamic Nucleus

1. Putamen
2. Globus pallidus, lateral segment
3. Medial lemniscus, trigeminal lemniscus, spinothalamic tracts, and dentatothalamic tract
4. Subthalamic nucleus
5. Anterior commissure
6. Area lenticularis
7. Inferior thalamic peduncle
8. Lamina terminalis
9. Fornix, column
10. Mammillothalamic tract
11. Habenulointerpeduncular tract (tractus retroflexus of Meynert)
12. Posterior commissure
13. Medial geniculate body
14. Pulvinar
15. Brachium of superior colliculus
16. Superior colliculus
17. Pineal body
18. Caudate nucleus, tail
19. Hippocampal formation, dentate gyrus
20. Collateral sulcus
21. Cerebellar vermis

PLATE 60.

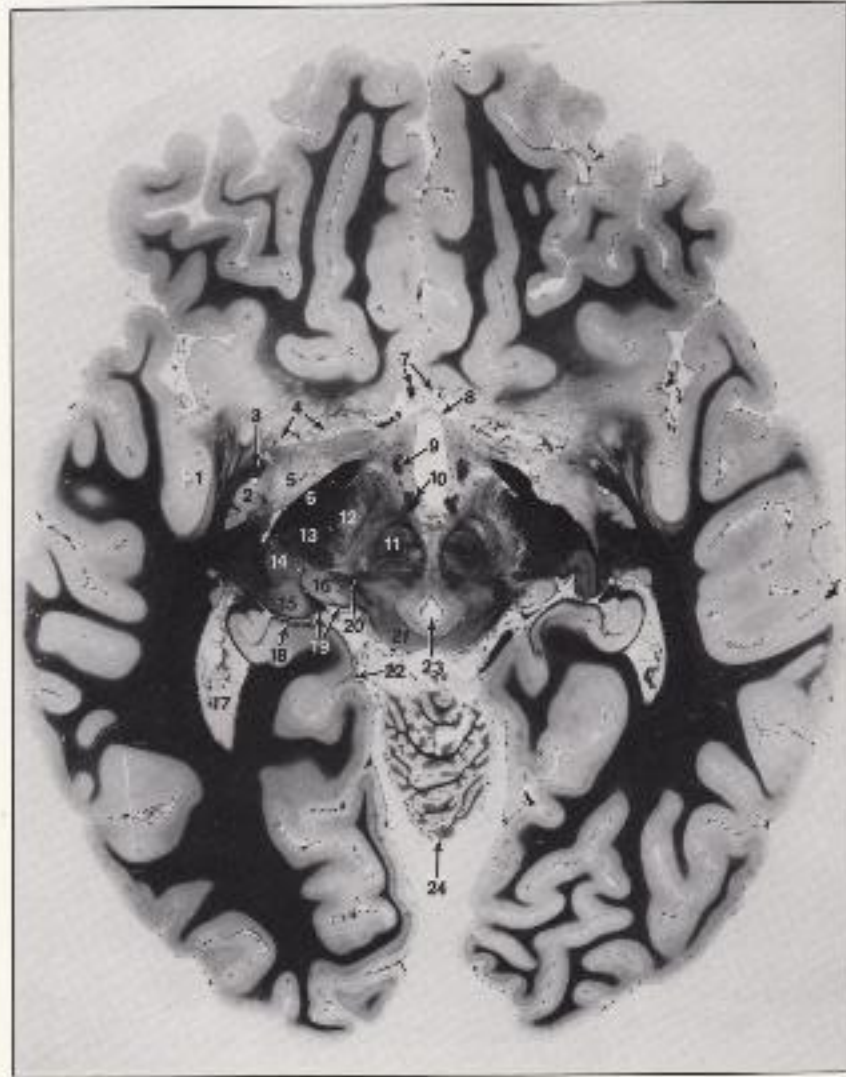


Plate 60. Horizontal Section through the Superior Colliculus, the Medial and the Lateral Geniculate Bodies, the Hypothalamus, and the Amygdaloid Nucleus

1. Insular cortex
2. Putamen
3. Anterior commissure
4. Anterior perforated substance
5. Amygdaloid nucleus
6. Optic tract
7. Anterior cerebral arteries
8. Lamina terminalis
9. Fornix, column
10. Mamillothalamic tract
11. Red nucleus
12. Substantia nigra
13. Basis pedunculi
14. Lateral geniculate body
15. Pulvinar
16. Medial geniculate body
17. Lateral ventricle, trigone
18. Superficial medullary lamina
19. Brachium of superior colliculus
20. Medial lemniscus
21. Superior colliculus
22. Collateral sulcus
23. Cerebral aqueduct
24. Cerebellar vermis

PLATE 61.

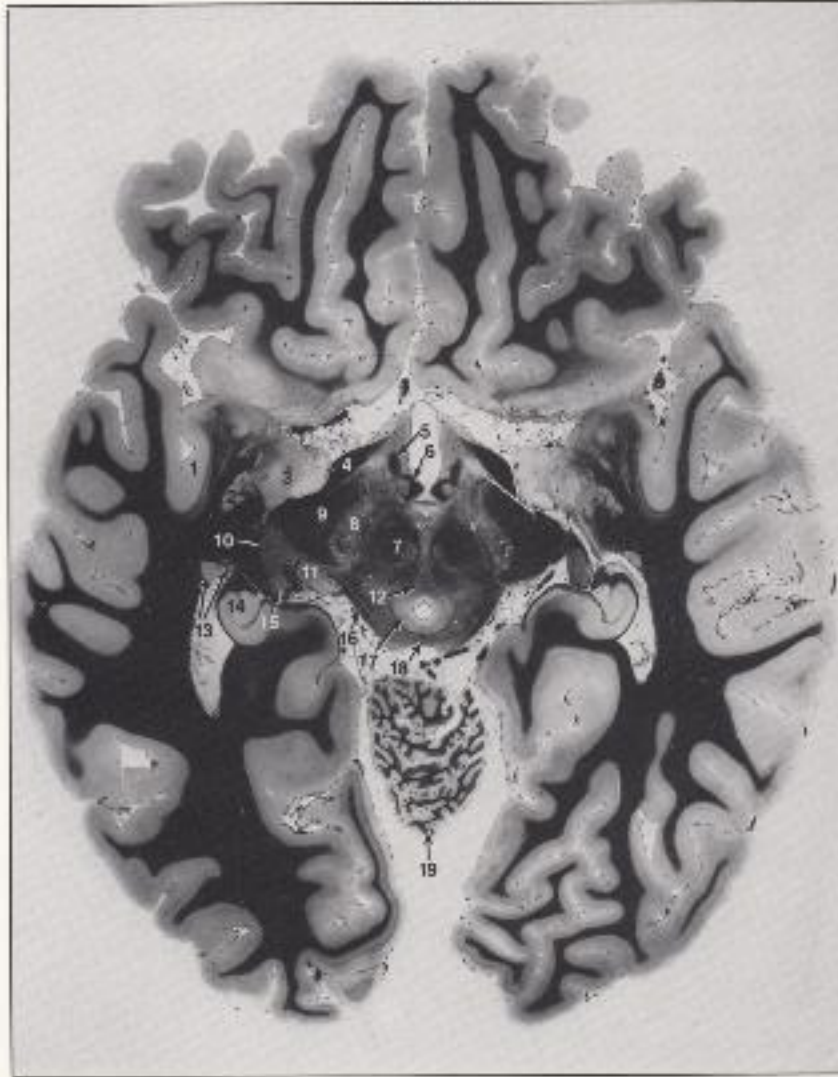


Plate 61. Horizontal Section through the Mesencephalon at the Level of the Oculomotor Nucleus and the Mamillary Bodies

1. Insular cortex
2. Putamen
3. Amygdaloid nucleus
4. Optic tract
5. Fornix, column
6. Principal mamillary fasciculus
7. Red nucleus
8. Substantia nigra
9. Basis pedunculi
10. Lateral geniculate body
11. Medial geniculate body
12. Oculomotor nucleus
13. Caudate nucleus, tail and stria terminalis
14. Dentate gyrus of hippocampal formation
15. Pulvinar
16. Brachium of inferior colliculus
17. Foraqueeductal gray
18. Decussation of superior colliculus
19. Cerebellar vermis

PLATE 62.

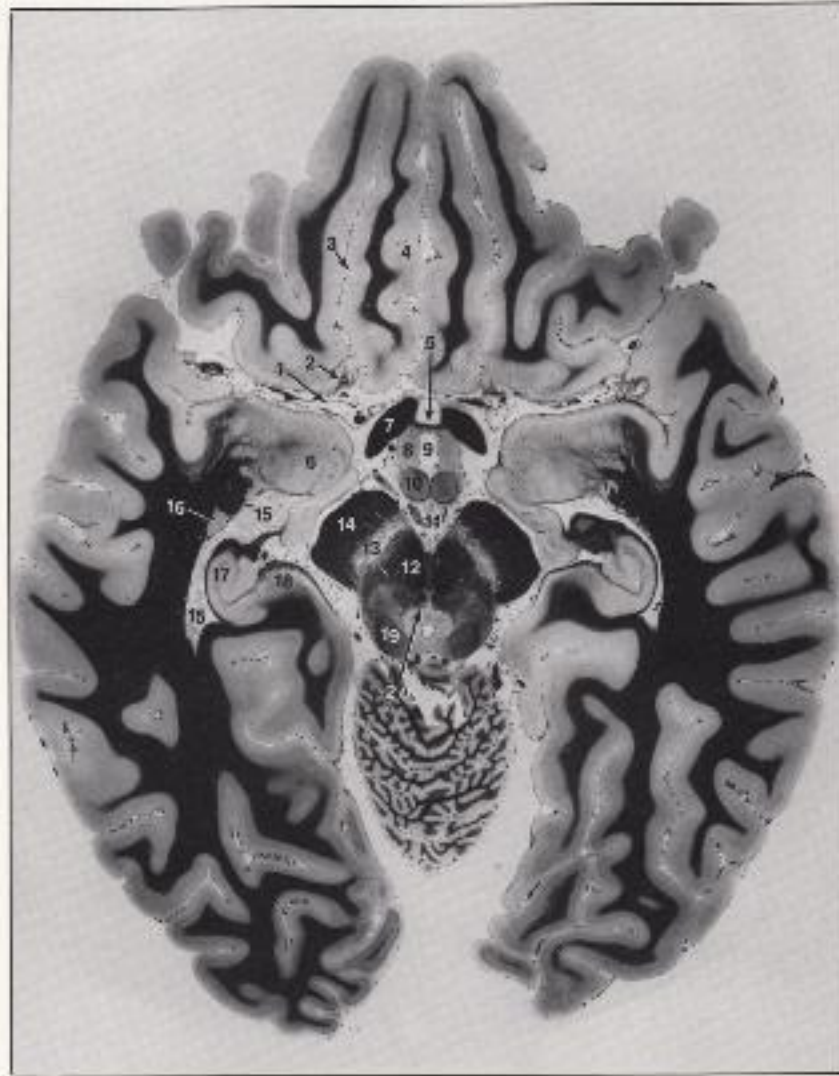


Plate 62. Horizontal Section through the Mesencephalon at the Level of the Inferior Colliculus and the Amygdaloid Nucleus

1. Middle cerebral artery
2. Olfactory trigone
3. Olfactory sulcus
4. Gyus rectus
5. Dorsal septo-optic commissure
6. Amygdaloid nucleus
7. Optic tract
8. Hypothalamus
9. Third ventricle
10. Mammillary body
11. Interpeduncular fossa and oculomotor nerves
12. Red nucleus and capsule
13. Substantia nigra
14. Basis pedunculi
15. Lateral ventricle, temporal horn
16. Caudate nucleus, tail
17. Hippocampus
18. Parahippocampal gyrus
19. Inferior colliculus, nucleus
20. Trochlear nucleus

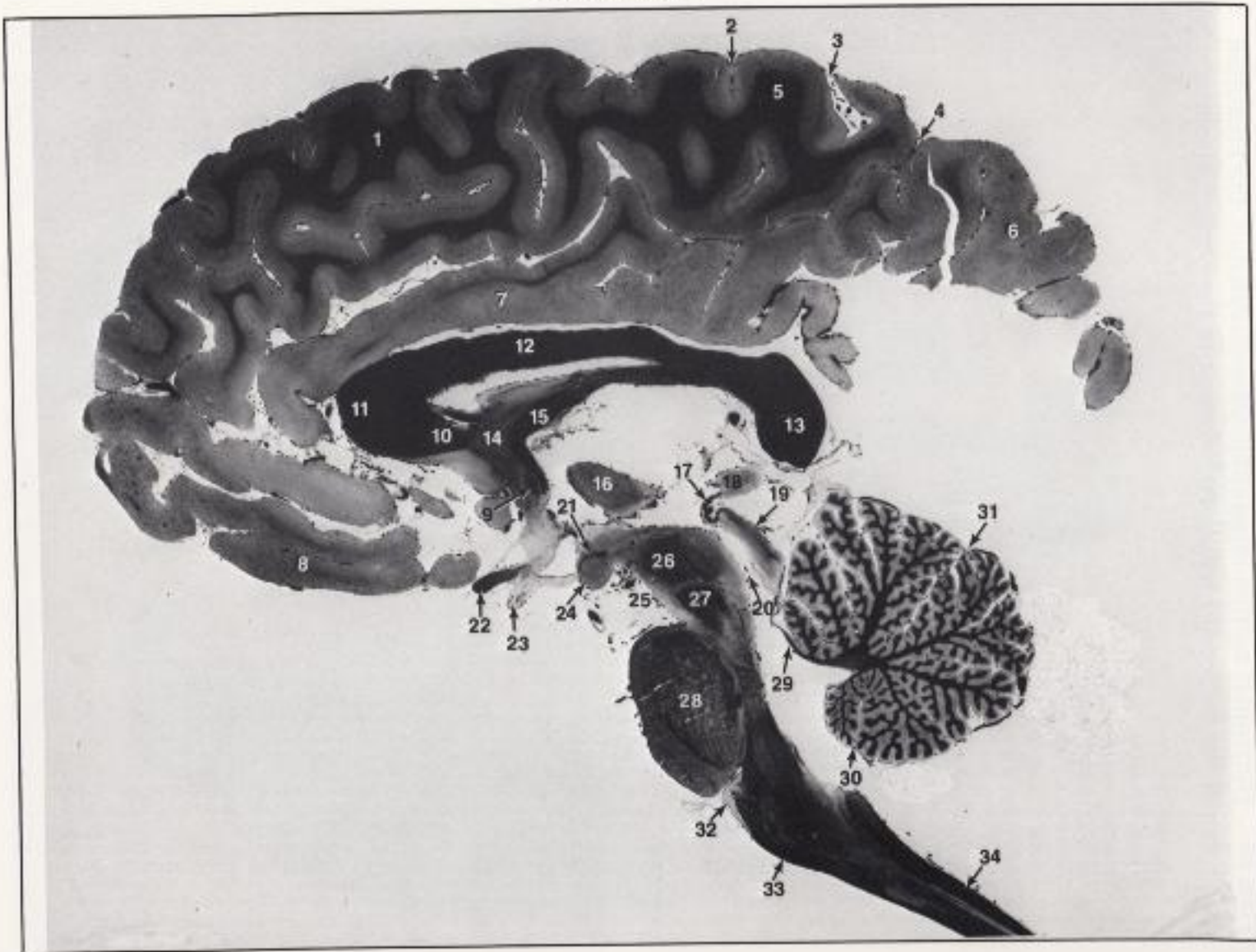
PLATE 63.



Plate 63. Horizontal Section through the Mesencephalon, the Frenulum of the Superior Medullary Velum, and the Optic Chiasm

1. Olfactory trigone
2. Gyrus rectus
3. Internal carotid artery
4. Optic chiasm
5. Infundibular recess of the third ventricle
6. Caudate nucleus, tail
7. Lateral ventricle, inferior horn
8. Hippocampus
9. Parahippocampal gyrus (entorhinal area)
10. Amygdaloid nucleus
11. Basis pedunculi
12. Oculomotor nerves in interpeduncular fossa
13. Substantia nigra
14. Decussation of inferior cerebellar peduncles
15. Trochlear nerve

PLATE 64.



**Plate 64. Parasagittal Section through the Optic Chiasm, the Pineal Body,
and the Cerebral Aqueduct**

1. Superior frontal gyrus
2. Precentral sulcus
3. Central sulcus
4. Cingulate sulcus, marginal branch
5. Paracentral lobule
6. Precuneus
7. Cingulate gyrus
8. Gyrus rectus
9. Anterior commissure
10. Corpus callosum, rostrum
11. Corpus callosum, genu
12. Corpus callosum, body
13. Corpus callosum, splenium
14. Septal gray
15. Fornix, column
16. Thalamus
17. Posterior commissure
18. Pineal body
19. Tectum of mesencephalon
20. Cerebral aqueduct
21. Principal mamillary fasciculus
22. Optic chiasm
23. Infundibulum of hypothalamus
24. Mamillary body
25. Interpeduncular fossa
26. Red nucleus, capsule
27. Decussation of superior cerebellar peduncles
28. Pons
29. Superior medullary velum
30. Posterior lateral fissure
31. Primary fissure
32. Arcuate nucleus of medulla
33. Pyramid, corticospinal tract
34. Fasciculus gracilis

PLATE 65.

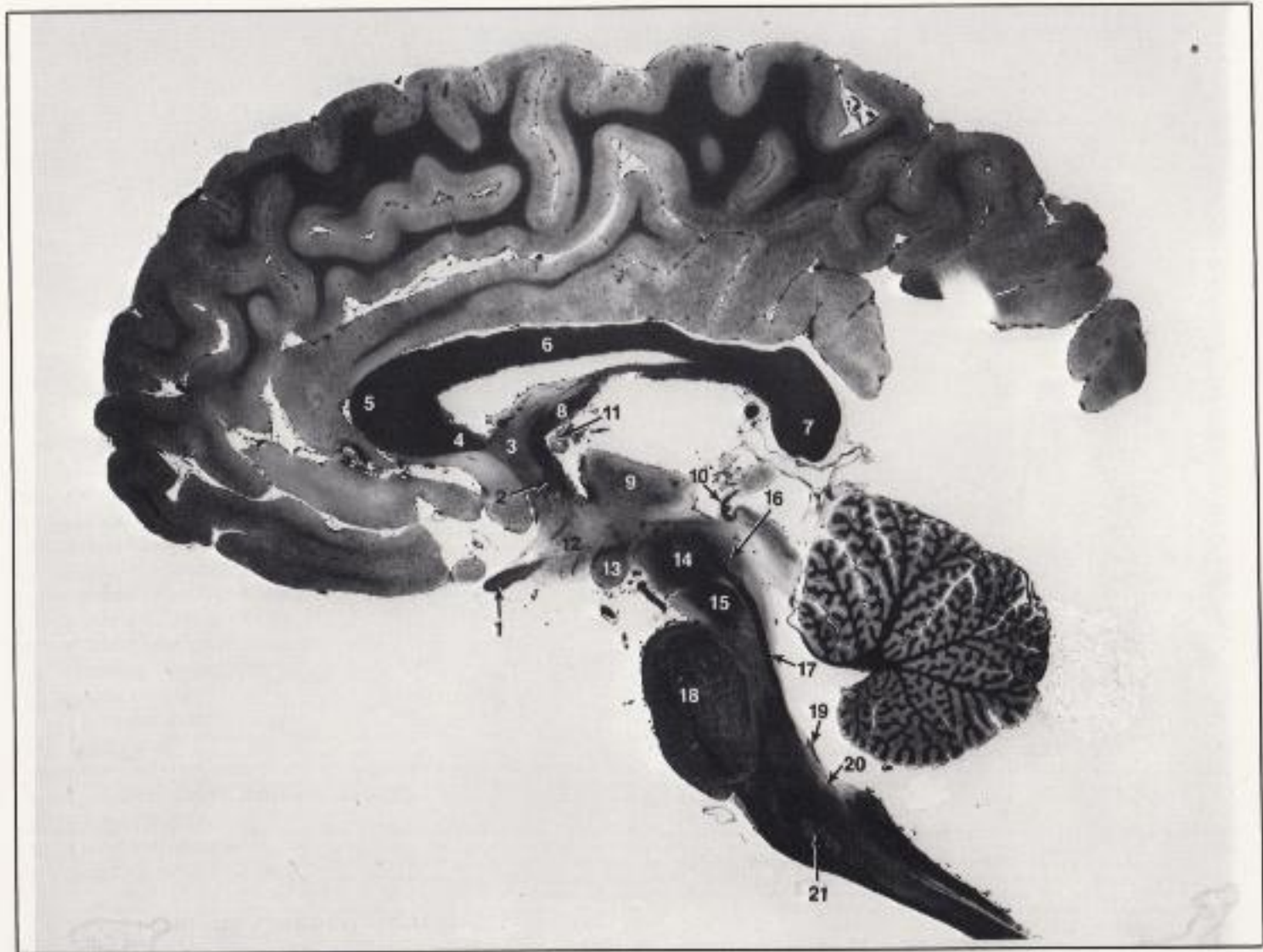


Plate 65. Parasagittal Section through the Medial Longitudinal Fasciculus

1. Optic chiasm
2. Anterior commissure
3. Septal gray
4. Corpus callosum, rostrum
5. Corpus callosum, genu
6. Corpus callosum, body
7. Corpus callosum, splenium
8. Fornix, column
9. Thalamus
10. Posterior commissure
11. Interventricular foramen (Monro), and choroid plexus
12. Hypothalamus
13. Mamillary body
14. Red nucleus and capsule
15. Decussation of superior cerebellar peduncles
16. Oculomotor-trochlear nuclear complex
17. Medial longitudinal fasciculus (MLF)
18. Pons
19. Striae medullares of the fourth ventricle
20. Hypoglossal nucleus
21. Inferior olivary nucleus

PLATE 66,

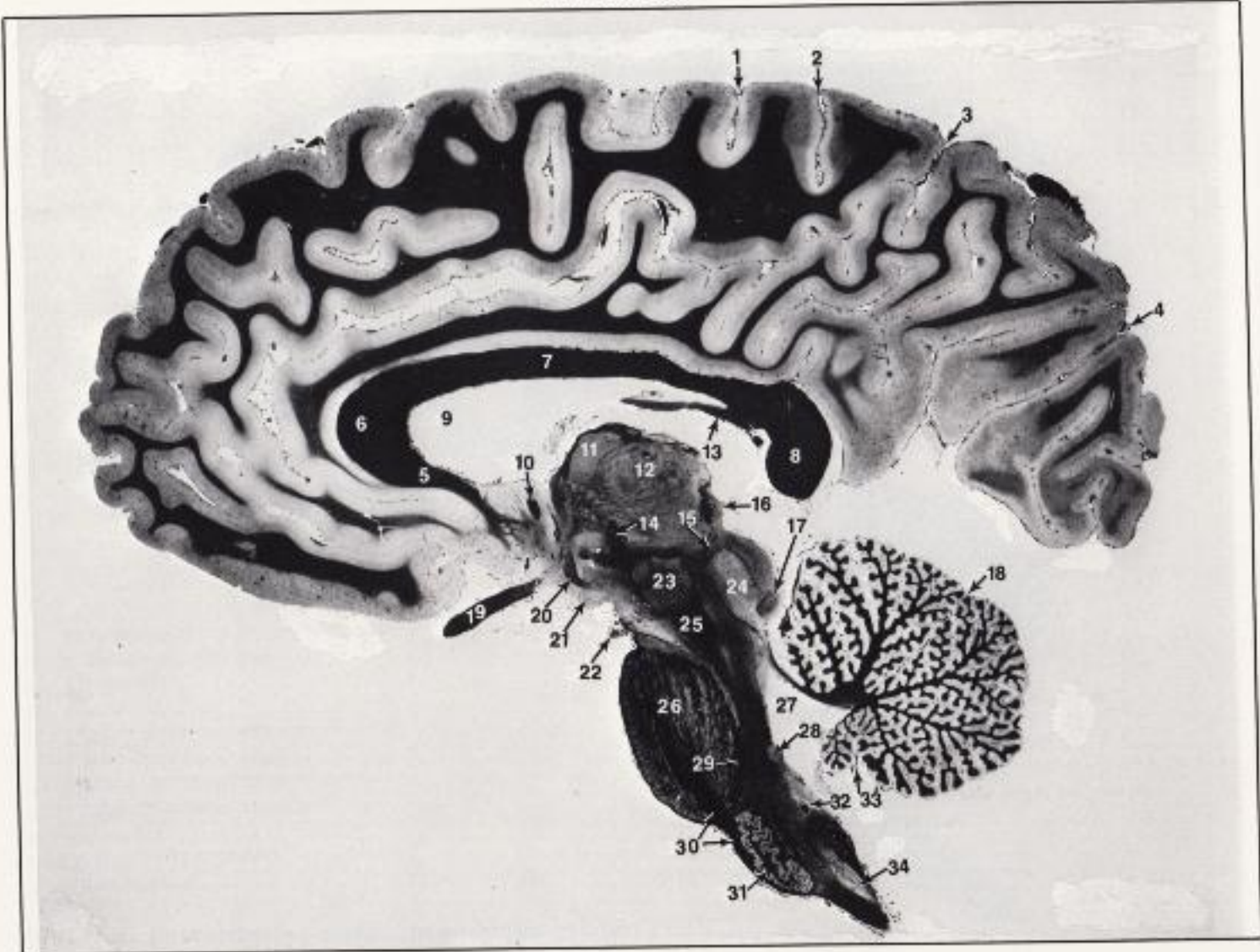


Plate 66. Parasagittal Section through the Habenular Trigone and the Abducent Nucleus

1. Precentral sulcus
2. Central sulcus
3. Cingulate sulcus, marginal ramus
4. Parietooccipital sulcus
5. Corpus callosum, rostrum
6. Corpus callosum, genu
7. Corpus callosum, body
8. Corpus callosum, splenium
9. Lateral ventricle
10. Anterior commissure
11. Anterior nucleus
12. Dorsal medial nucleus
13. Fornix, crus
14. Mamillothalamic tract
15. Posterior commissure
16. Habenula (habenular trigone)
17. Inferior colliculus
18. Primary fissure
19. Optic chiasm
20. Pars tecta fornicis
21. Mamillary body
22. Oculomotor nerve
23. Red nucleus
24. Periaqueductal gray
25. Decussation of superior cerebellar peduncles
26. Pons
27. Fourth ventricle
28. Abducent nucleus
29. Medial lemniscus
30. Corticospinal tract
31. Inferior olivary nucleus
32. Solitary tract and nucleus
33. Posterior lateral fissure
34. Spinal trigeminal nucleus

PLATE 67.

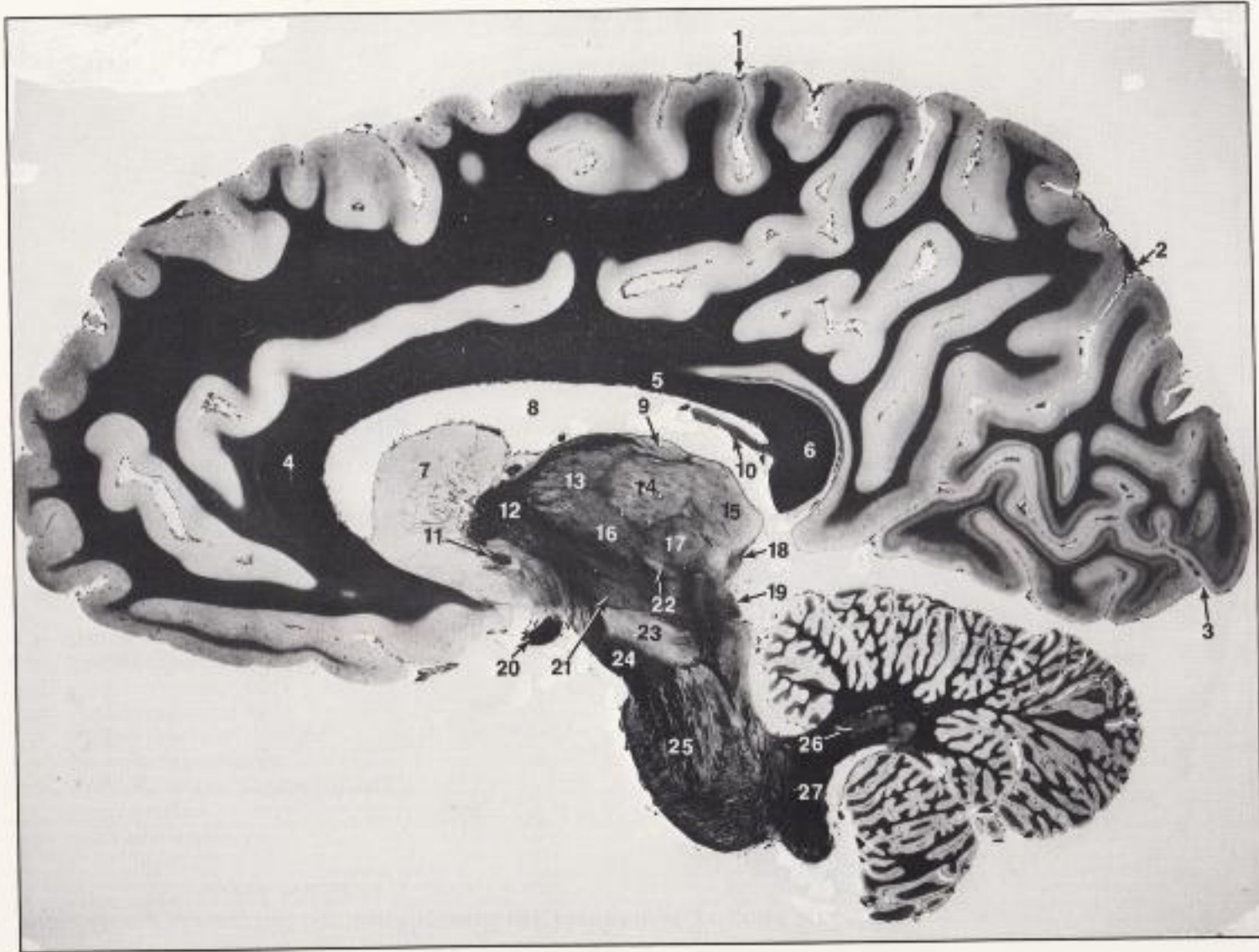


Plate 67. Parasagittal Section through the Centrum Medianum and the Subthalamic Nucleus

1. Central sulcus
2. Parietooccipital sulcus
3. Calcarine sulcus
4. Corpus callosum, genu
5. Corpus callosum, body
6. Corpus callosum, splenium
7. Caudate nucleus, head
8. Lateral ventricle, body
9. Lateral dorsal nucleus
10. Fornix, crus
11. Anterior commissure
12. Internal capsule, genu
13. Ventral anterior nucleus
14. Dorsal medial nucleus
15. Pulvinar
16. Ventral lateral nucleus
17. Centromedian nucleus (centrum medianum)
18. Brachium of superior colliculus
19. Brachium of inferior colliculus
20. Optic tract
21. Subthalamic nucleus
22. Ventral posterior medial nucleus
23. Substantia nigra
24. Basis pedunculi
25. Pons
26. Emboliform nucleus
27. Inferior cerebellar peduncle

PLATE 68.

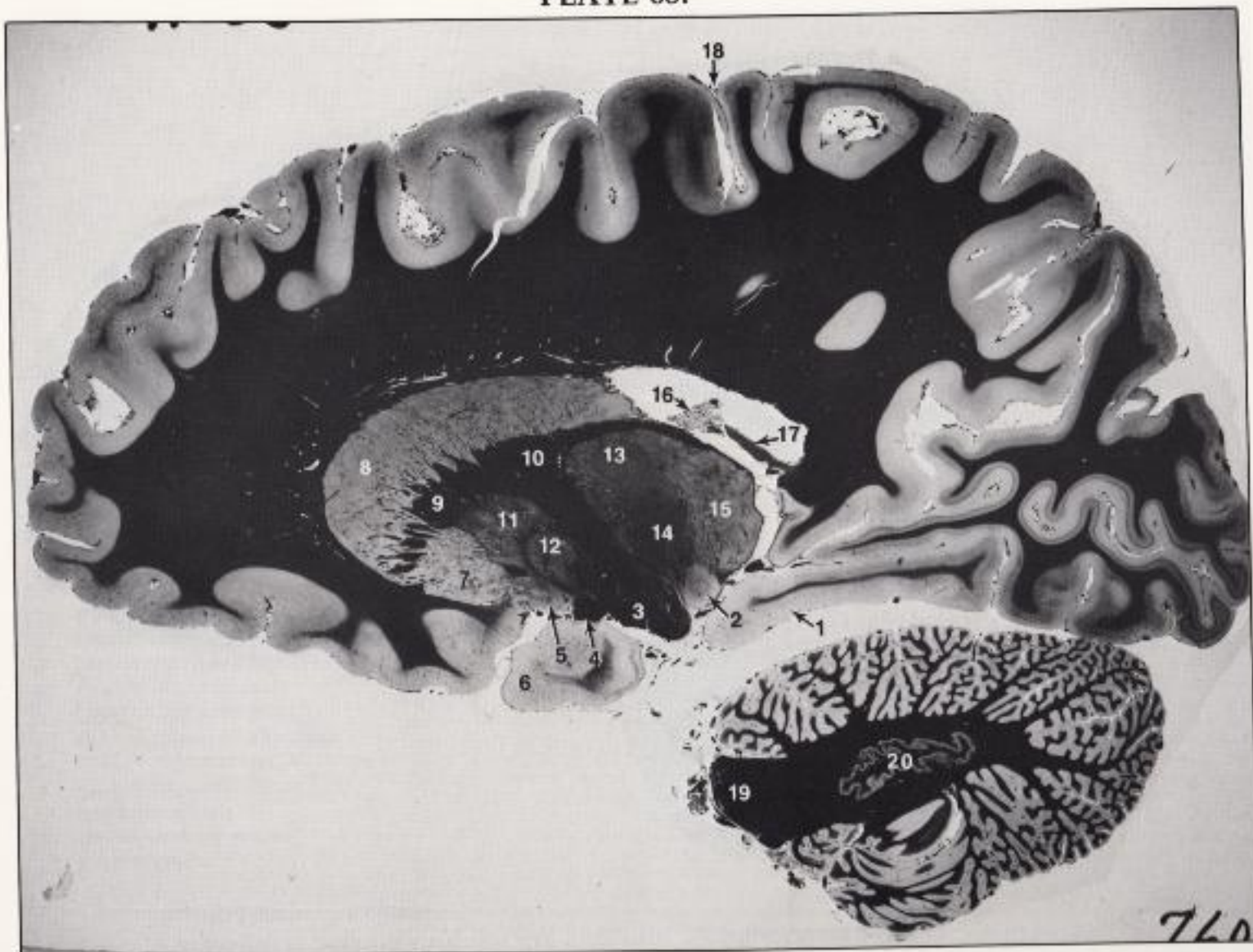


Plate 68. Parasagittal Section through the Medial Geniculate Body, the Globus Pallidus, and the Dentate Nucleus

1. Medial occipitotemporal gyrus (lingual gyrus)
2. Medial geniculate body
3. Basis pedunculi
4. Optic tract
5. Substantia innominata (Reichert) including nucleus basalis of Meynert
6. Uncus
7. Putamen
8. Caudate nucleus, head
9. Internal capsule, anterior limb
10. Internal capsule, genu
11. Globus pallidus, lateral segment
12. Globus pallidus, medial segment
13. Lateral posterior nucleus
14. Ventral posterior lateral nucleus (VPL)
15. Pulvinar
16. Choroid plexus of lateral ventricle
17. Fornix, fimbria
18. Central sulcus
19. Middle cerebellar peduncle
20. Dentate nucleus

PLATE 69.

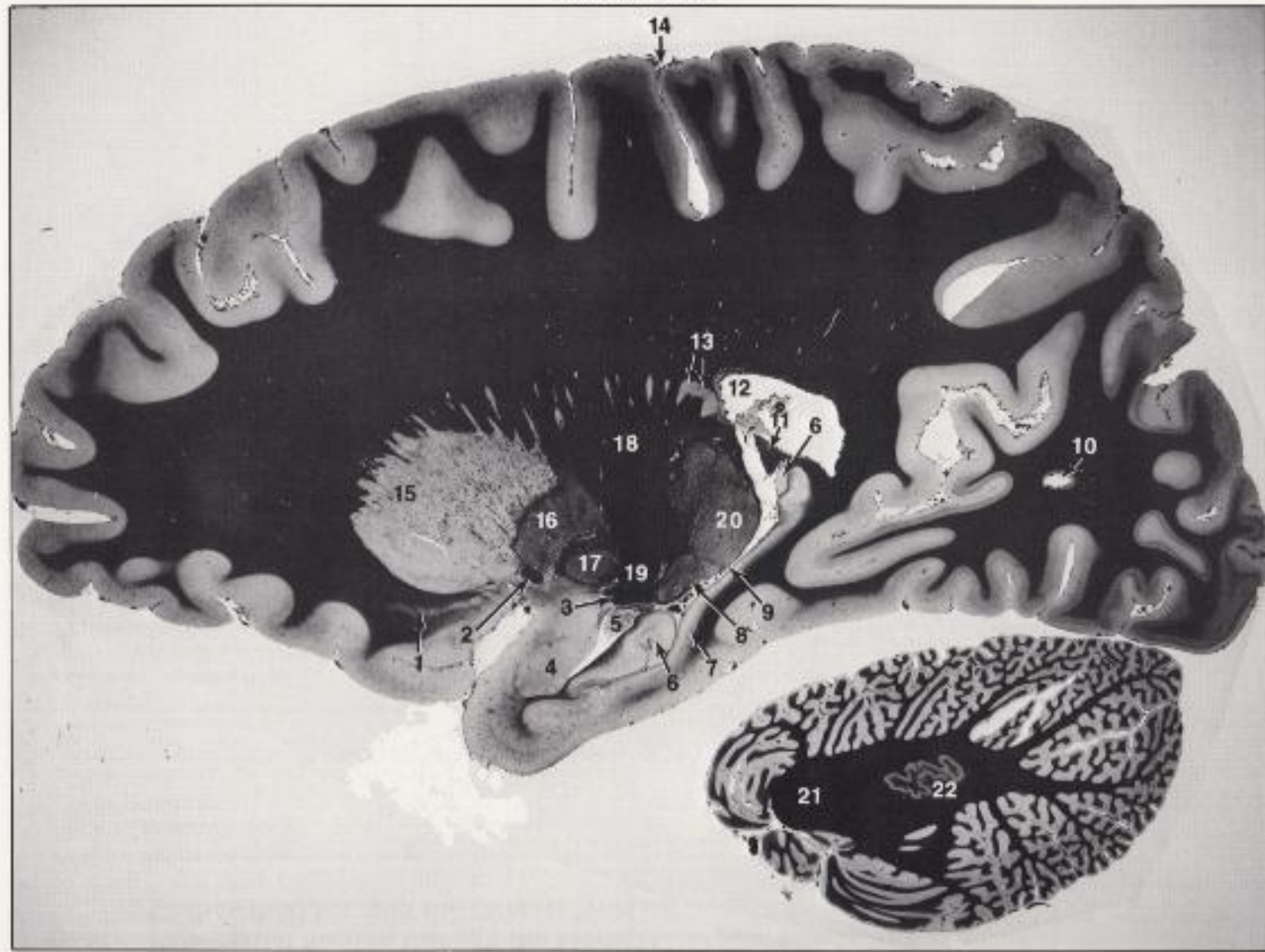


Plate 69. Parasagittal Section through the Lateral Geniculate Body, the Amygdaloid Nucleus, and the Hippocampal Formation

1. Claustrum
2. Anterior commissure
3. Optic tract
4. Amygdaloid nucleus
5. Choroid plexus of lateral ventricle, temporal horn
6. Dentate gyrus
7. Hippocampus
8. Lateral geniculate body
9. Choroidal fissure
10. Lateral ventricle, occipital horn
11. Fornix, fimbria
12. Lateral ventricle, trigone
13. Caudate nucleus, tail
14. Central sulcus
15. Putamen
16. Globus pallidus, lateral segment
17. Globus pallidus, medial segment
18. Internal capsule, posterior limb
19. Basis pedunculi
20. Pulvinar
21. Corpus medullare cerebelli
22. Dentate nucleus

PLATE 70.

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Plate 70. Parasagittal Section through the Putamen, the Amygdaloid Nucleus, and the Hippocampal Formation

1. Claustrum
2. Insular cortex
3. Extreme capsule
4. External capsule
5. Putamen
6. Anterior commissure
7. Caudate nucleus, tail
8. Genucalcarine tract in sublenticular division of internal capsule
9. Auditory radiation
10. Internal capsule, retrolenticular division
11. Caudate nucleus, tail
12. Lateral ventricle, trigone
13. Calcar avis
14. Lateral ventricle, occipital horn
15. Amygdaloid nucleus
16. Lateral ventricle, temporal horn
17. Pes hippocampi of hippocampal formation
18. Dentate gyrus
19. Fornix, fimbria
20. Hippocampus of parahippocampal gyrus
21. Corpus medullare of cerebellum

PLATE 71.

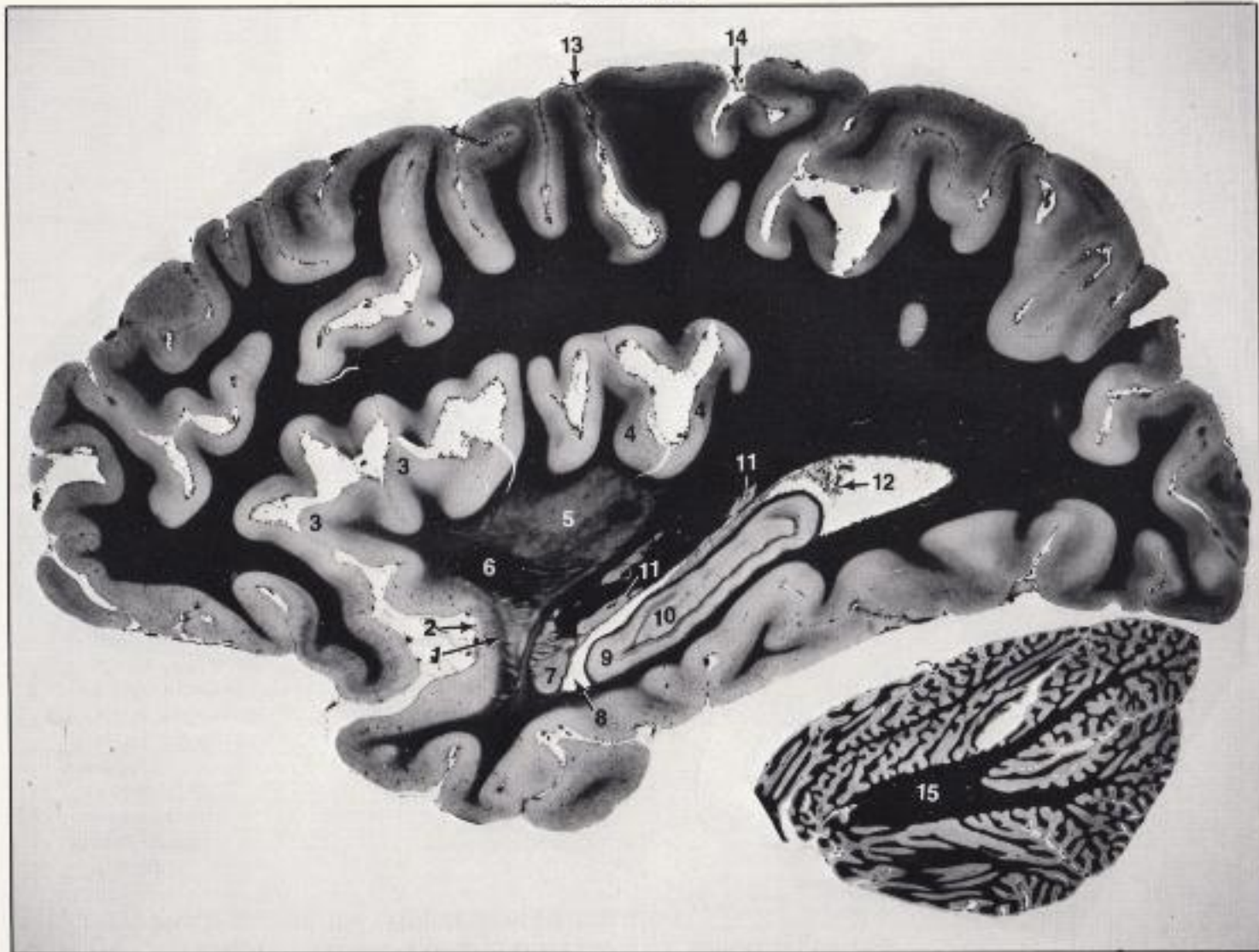
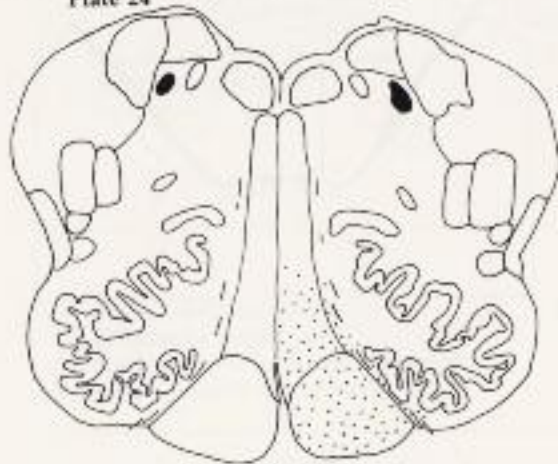


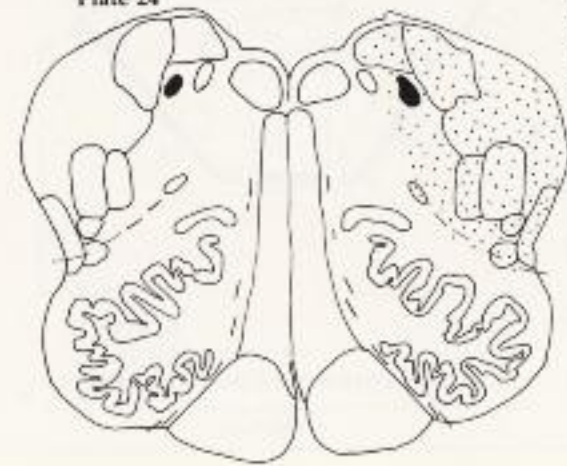
Plate 71. Parasagittal Section through the Insular Gyri, the Claustrum, and the Hippocampal Formation

1. Uncinate fasciculus
2. Limen insulae
3. Gyri breves insulae
4. Transverse temporal gyri
5. Claustrum
6. External capsule
7. Amygdaloid nucleus
8. Lateral ventricle, temporal horn
9. Pes hippocampi of hippocampal formation
10. Dentate gyrus of hippocampal formation
11. Caudate nucleus, tail
12. Choroid plexus
13. Central sulcus
14. Postcentral sulcus
15. Corpus medullare of cerebellum

Syndrome	Structures Affected	Clinical Manifestations
10. Medial medullary syndrome Plate 24	<ol style="list-style-type: none"> 1. Hypoglossal nerve roots 2. Corticospinal tracts 3. Medial lemniscus 	<ol style="list-style-type: none"> 1. Ipsilateral flaccid paralysis of tongue 2. Contralateral hemiparesis of trunk and extremities 3. Contralateral loss of proprioception, discriminative tactile sensation and vibration sense from trunk and extremities

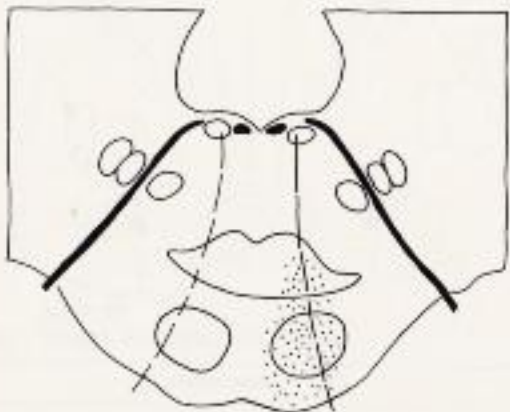
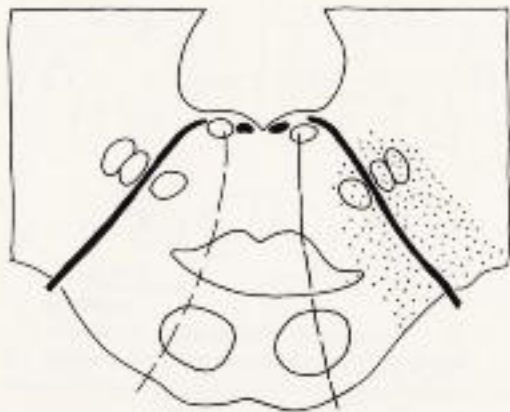


11. Lateral medullary syndrome (PICA syndrome or Wallenberg's syndrome)
Plate 24



<ol style="list-style-type: none"> 1. Vestibular nuclei (medial and inferior) 2. Inferior cerebellar peduncle 3. Nucleus ambiguus and/or root fibers 4. Glossopharyngeal root fibers 5. Spinal lemniscus 6. Spinal trigeminal nucleus and/or tract 7. Lateral tectotegmentospinal tract (not shown) 8. Medial reticular formation (inspiratory center) 	<ol style="list-style-type: none"> 1. Nystagmus, nausea, vomiting, and vertigo 2. Ipsilateral cerebellar signs (ataxia, dysmetria, dysidiadochokinesia) 3. Ipsilateral flaccid laryngeal and pharyngeal paralysis (loss of gag reflex, dysarthria, dysphagia) 4. Loss of gag reflex (afferent limb) 5. Contralateral loss of pain and temperature from trunk and extremities 6. Ipsilateral loss of pain and temperature from face 7. Ipsilateral Horner's syndrome (ptosis, miosis, hemianhydrosis, apparent enophthalmos) 8. Singultus
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Syndrome	Structures Affected	Clinical Manifestations
12. Inferior lateral pontine syndrome (AICA syndrome) Plate 29	<ol style="list-style-type: none"> 1. Intra-axial fibers of facial nerve and/or facial nucleus 2. Spinal trigeminal nucleus and/or tract 3. Intra-axial root fibers of vestibulocochlear nerve and/or vestibular nuclei 4. Spinal lemniscus 5. Lateral tectotegmentospinal tract 6. Inferior cerebellar peduncle and middle cerebellar peduncle 	<ol style="list-style-type: none"> 1. Ipsilateral flaccid facial paralysis; loss of taste from anterior two thirds of tongue 2. Ipsilateral loss of pain and temperature from face 3. Ipsilateral tinnitus and/or peripheral deafness, nystagmus, nausea, vomiting, and vertigo 4. Contralateral loss of pain and temperature from trunk and extremities 5. Horner's syndrome (ptosis, miosis, hemianhydrosis, and apparent enophthalmos) 6. Ipsilateral cerebellar signs (ataxia, dysmetria, dysdiadochokinesia)
13. Medial pontine syndrome (Basilar artery, median penetrating branches) Plate 29	<ol style="list-style-type: none"> 1. Root fibers of abducens nerve 2. Corticospinal tracts 3. Corticobulbar tracts 4. Medial lemniscus 	<ol style="list-style-type: none"> 1. Ipsilateral flaccid lateral rectus paralysis 2. Contralateral hemiplegia of trunk and extremities 3. Facial weakness 4. Contralateral loss of proprioception and discriminative tactile sensation from trunk and extremities

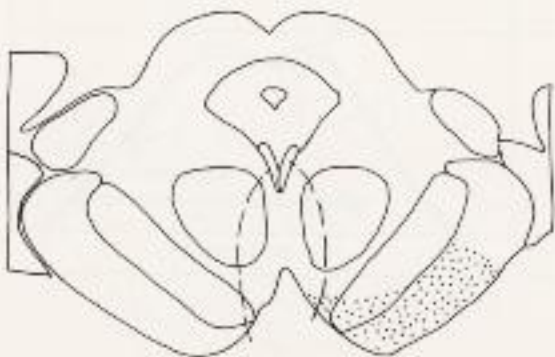


Syndrome	Structures Affected	Clinical Manifestations
14. Internuclear ophthalmoplegia (MLF syndrome) Plate 29	1. Medial longitudinal fasciculus (MLF)	1. Ipsilateral medial rectus paralysis on attempted horizontal gaze; monocular nystagmus of the abducting eye. Convergence is preserved.

15. Dorsal midbrain syndrome (Parinaud's syndrome) Plate 36	1. Superior colliculus	1. Paralysis of upward gaze, to a lesser extent, downward gaze. Practically always pupillary disturbances and, frequently, absence of convergence. Pupils characteristically do not react to light but do react to near focusing and differ from Argyll Robertson pupil only insofar as they are not miotic. Absence of convergence common when downward gaze is affected, but convergence is often retained when only upward gaze is involved.
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Syndrome	Structures Affected	Clinical Manifestations
16. Paramedian midbrain syndrome (Benedikt's syndrome) Plate 36	1. Root fibers of oculomotor nerve 2. Red nucleus	1. Ipsilateral flaccid paralysis of medial rectus, inferior oblique, superior rectus, inferior rectus, levator palpebrae, and intrinsic musculature of the bulb (complete internal ophthalmoplegia) 2. Contralateral dyskinesia (hyperkinesia, ataxia), and intention tremor of arm only
17. Medial midbrain syndrome (Weber's syndrome) Plate 36	1. Root fibers of oculomotor nerve 2. Corticospinal tract 3. Corticobulbar tract 4. Frontopontine tract	1. Ipsilateral flaccid paralysis of medial rectus, inferior oblique; superior rectus, inferior rectus, levator palpebrae, and intrinsic musculature of the bulb (complete internal ophthalmoplegia) 2. Contralateral hemiplegia 3. Contralateral weakness of lower face (VII), tongue (XII), and palate (X) 4. No outstanding clinical signs



Syndrome	Structures Affected	Clinical Manifestations
18. Argyll Robertson pupil Plate 50	1. Pretectal area	<p>1. Typical Argyll Robertson pupil is miotic in both eyes (not necessarily to same degree in both eyes; pupils frequently irregular). Absence or sluggishness of miotic reaction to light, both direct and consensual. Preservation of miotic reaction to near stimulus. Inverse pupillary reaction is occasionally present (slight dilation of pupil when light is shone in the eye).</p> <p>Note: The Argyll Robertson pupil must be differentiated from the benign Adie's pupil. The Adie's or myotonic pupil consists of absent or retarded constriction of the pupil with light or near stimulus. The Adie's pupil will dilate slowly when patient is put in a dark room and will then contract slowly in response to light. These patients are usually without accompanying neurological disease. This condition is usually unilateral, occurring generally in young women, with absent knee and ankle jerks.</p>
19. Hemiballism Plate 48	1. Subthalamic nucleus	1. Purposeless, involuntary, violent, and forceful flinging movement of proximal musculature of the upper and lower extremities
20. Huntington's chorea Plate 40	1. Caudate nucleus and putamen 2. Frontal cortex	1. Choreoathetoid hyperkinesia 2. Dementia
21. Parkinsonism (Hypokinetic-rigid syndrome) Plate 36	1. Substantia nigra, caudate nucleus, and putamen	1. Rigidity in both extensor and flexor muscles ("lead-pipe" and "cogwheel" rigidity), masked facies and drooling, resting (static) "pill-rolling" tremor. Bradykinesia (slowness and marked paucity of movement with diminished adventitial movements like arm swinging). Typical stooped posture and shuffling gait. Festination.

Syndrome	Structures Affected	Clinical Manifestations
22. Hepatolenticular degeneration (Wilson's disease)	<ol style="list-style-type: none"> 1. Putamen 2. Caudate nucleus 3. Globus pallidus 4. Subthalamic nucleus 5. Red nucleus 6. Substantia nigra 7. Dentate nucleus 8. Superior cerebellar peduncle 9. Focal degeneration of frontal cortex 10. Liver (cirrhotic) 11. Kayser-Fleischer ring at sclerocorneal junction <p>Note: In this particular disease, there is such an intermix of extrapyramidal, cerebellar, cortical, and metabolic involvement that no attempt is made to correlate specific structures to specific or nonspecific neurological deficits.</p>	<p>Initial symptoms: Tremor of a limb or head Bradykinesia (slowness of movement) Dysarthria, dysphagia, hoarseness Occasional choretic movement of limbs Impairment of intellect, excessive emotionality</p> <p>The "classic" syndrome: Generalized rigidity Bradykinesia Dysarthria, dysphagia, hoarseness, and drooling Masked facies with mouth constantly agape Static tremor which increases when arms are outstretched ("flapping" tremor at wrists; "wingbeating" tremor at shoulders); cerebellar intention tremor Festinating gait with forward stoop Absence of arm swinging Progressive dementia, emotional lability, seizures, progressive muscular weakness. In variant forms of this disease, the following may appear: Choreoathetosis, prominent dystonic postures, cerebellar ataxia with minimal rigidity Deep tendon reflexes, often hyperactive Plantar reflexes, often extensor</p>

Syndrome	Structures Affected	Clinical Manifestations
23. "Classic" stroke of internal capsule Plate 56	<p>Internal capsule</p> <ol style="list-style-type: none"> 1. Corticobulbar fibers (genu) 2. Corticospinal tract (posterior limb) 3. Sensory radiations to somesthetic cortex (posterior limb) 4. Visual radiations to striate cortex (sublenticular part of posterior limb) 5. Auditory radiations to auditory cortex (sublenticular part of posterior limb) 6. Visual radiations to striate cortex (postlenticular part of posterior limb) 	<p>These manifestations are seen after the resolution of the initial flaccid shock phase of capsular stroke.</p> <p>Symptoms Are Contralateral</p> <ol style="list-style-type: none"> 1. Lower facial weakness (VII), weakness of tongue (XII), palatal weakness (X) 2. Spastic hemiparesis, hyperactive deep tendon reflexes, clonus (wrist, patellar, ankle), plantar reflex extensor (Babinski), flexor reflex of fingers (Hoffmann's sign), suppression or abolition of superficial reflexes (abdominal and cremasteric), symmetrical synkinesias (mirror movements), characteristic hemiplegic posture (upper limb in flexor-contraction, lower limb in extensor-contraction), and hemiplegic gait (circumduction of affected leg) 3. In varying degree following numbness and paresthesias: hemihyesthesia (loss of pain and temperature, loss of epicritic tactile sensibility, loss of vibration sense, loss of position sense (kinesesthesia)) 4. Hemianopia 5. Hemihypacusis 6. Hemianopia <p>Note: A multitude of additional fiber trajectories (extrapyramidal) is affected in this lesion which certainly influences the total motor deficit (abnormal reflexes, modified posture, and the poorly understood neurological phenomena of spasticity and muscle dystonia).</p>

Syndrome	Structures Affected	Clinical Manifestations
24. Visual field deficits Plate 60	<ol style="list-style-type: none"> 1. Optic fasciculus (nerve) (complete transection) 2. Optic chiasm <ol style="list-style-type: none"> a. Midsagittal section b. Bilateral constriction 3. Optic tract (complete transection) 4. Lateral geniculate body 5. Geniculocalcarine tract (complete transection) 6. Meyer's loop transection 7. Visual cortex of <ol style="list-style-type: none"> a. Cuneus b. Lingual gyrus 	<ol style="list-style-type: none"> 1. Complete ipsilateral blindness; absent direct light response 2. <ol style="list-style-type: none"> a. Bitemporal hemianopia b. Binasal hemianopia 3. Contralateral homonymous hemianopia 4. Contralateral homonymous hemianopia 5. Contralateral homonymous hemianopia 6. Contralateral upper homonymous quadrantanopia 7. <ol style="list-style-type: none"> a. Contralateral lower homonymous quadrantanopia b. Contralateral upper homonymous quadrantanopia

Visual Field Deficits

Note: 1) Contralateral in this case means that if the lesion, for example, is on the left side, the homonymous field deficit will be on the right side in both visual fields. 2) Destruction of visual (striate) cortex results in cortical blindness. 3) Destruction of the cuneus bilaterally (gunshot wound) results in a field deficit called lower altitudinal hemianopia. 4) Destruction of the lingual gyrus bilaterally (gunshot wound) results in a field deficit called upper altitudinal hemianopia. 5) Inferior nasal fibers (primarily central fibers) follow a peculiar course in the anterior chiasm and loop up into the contralateral optic fasciculus. If the optic fasciculus is transected close to the chiasm, these fibers may be involved. Such involvement results in a junctional scotoma.