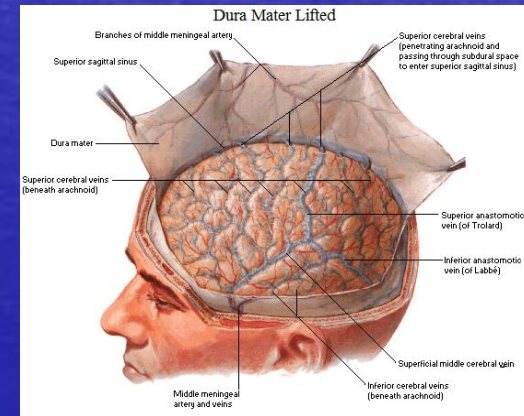
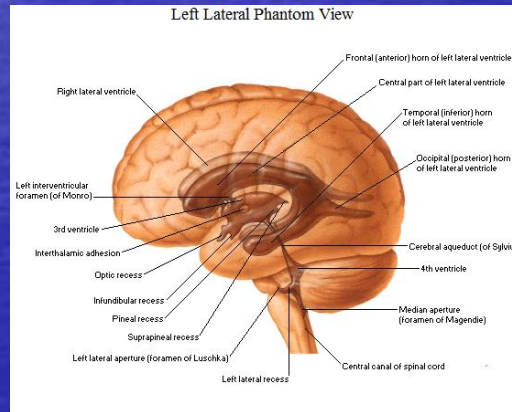
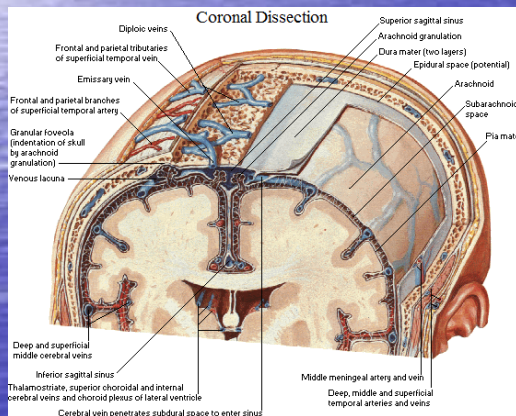


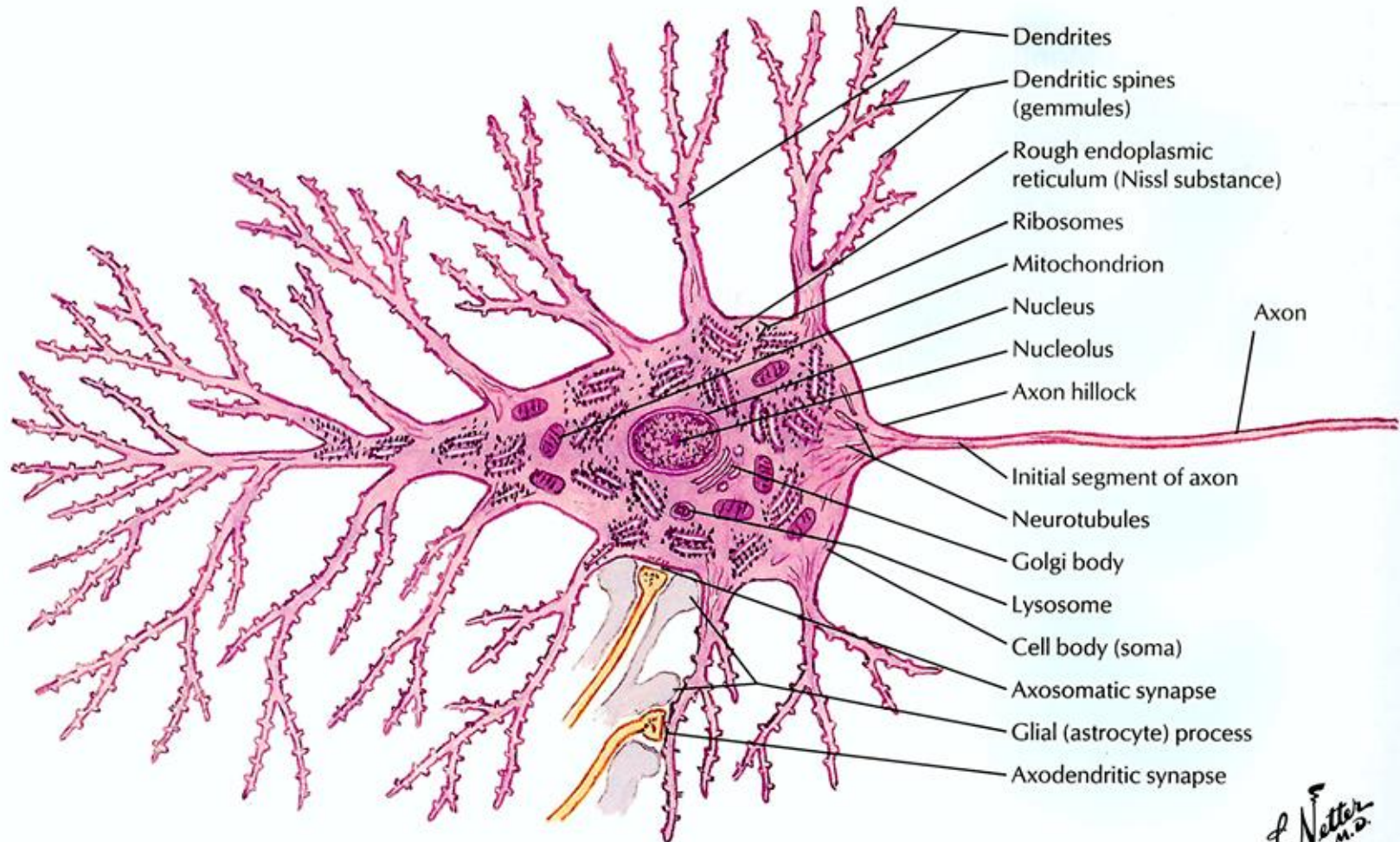
# Ośrodkowy Układ Nerwowy człowieka

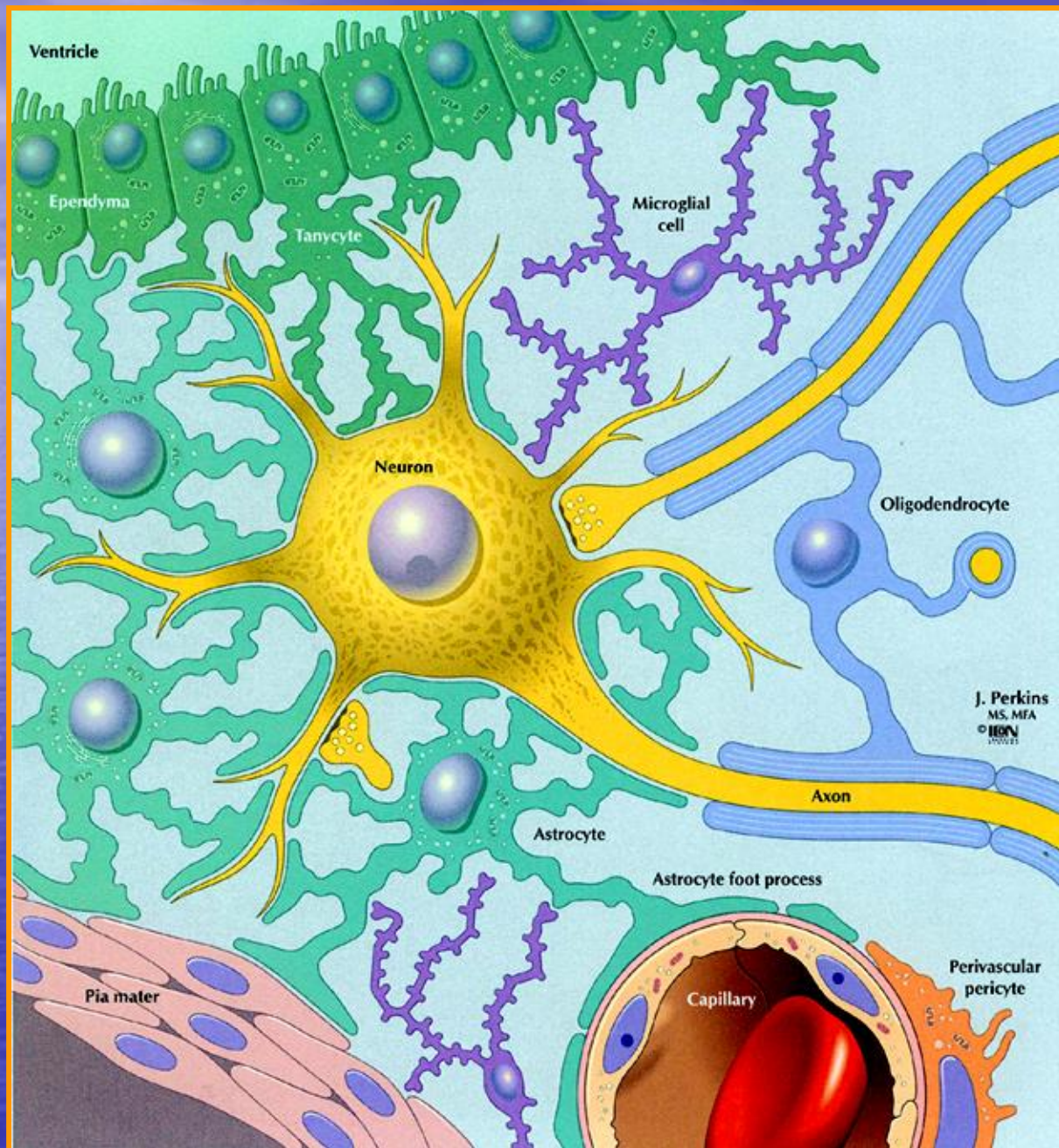
Wydział Lekarski CMUJ Kierunek Lekarsko Dentystyczny

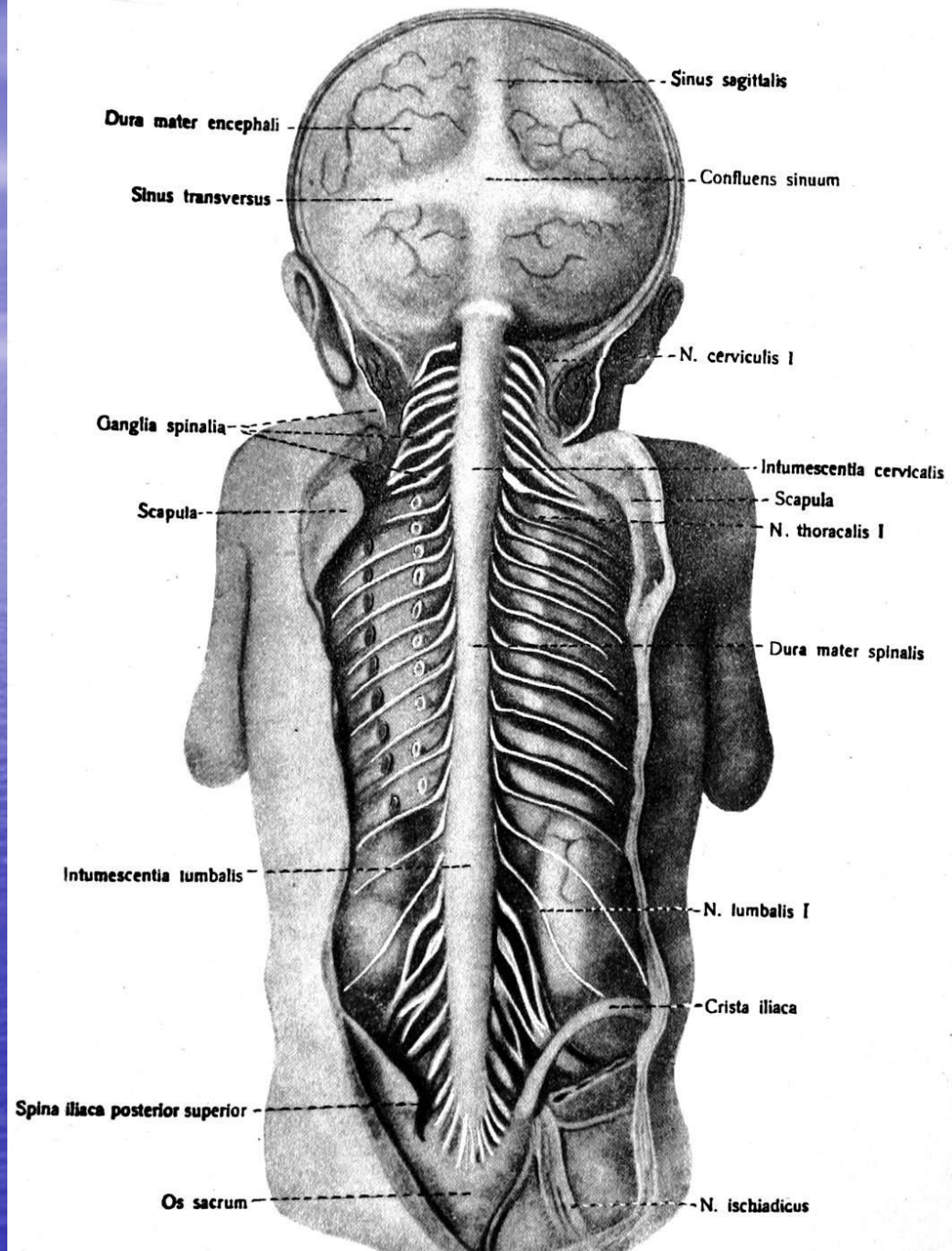


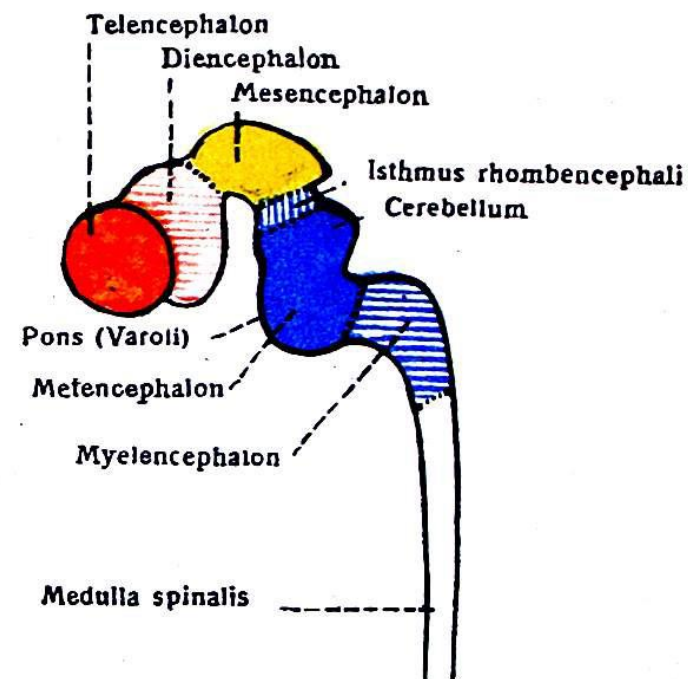
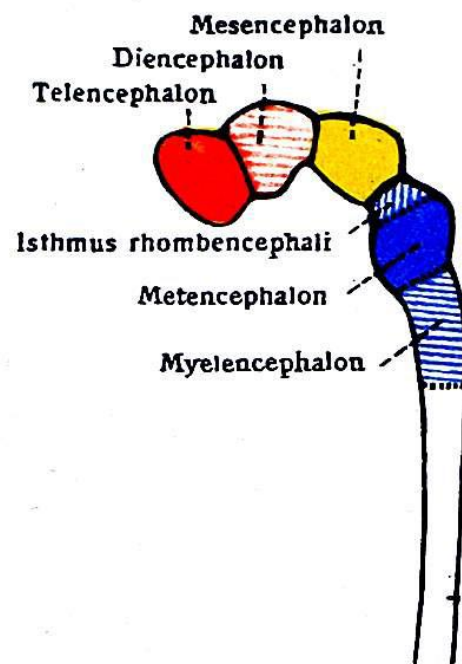
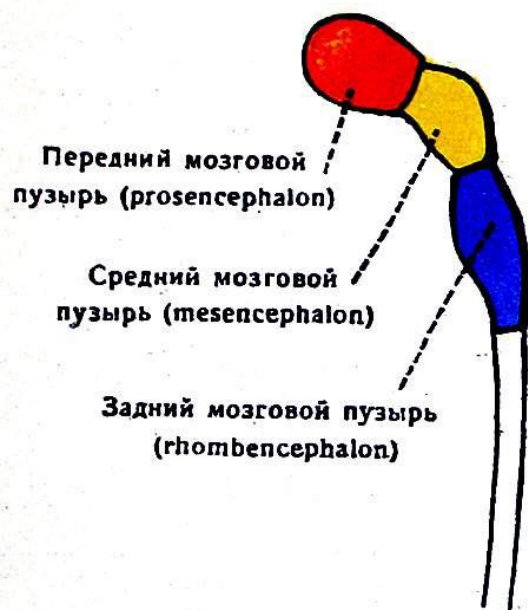
dr med. Jarosław Zawiliński

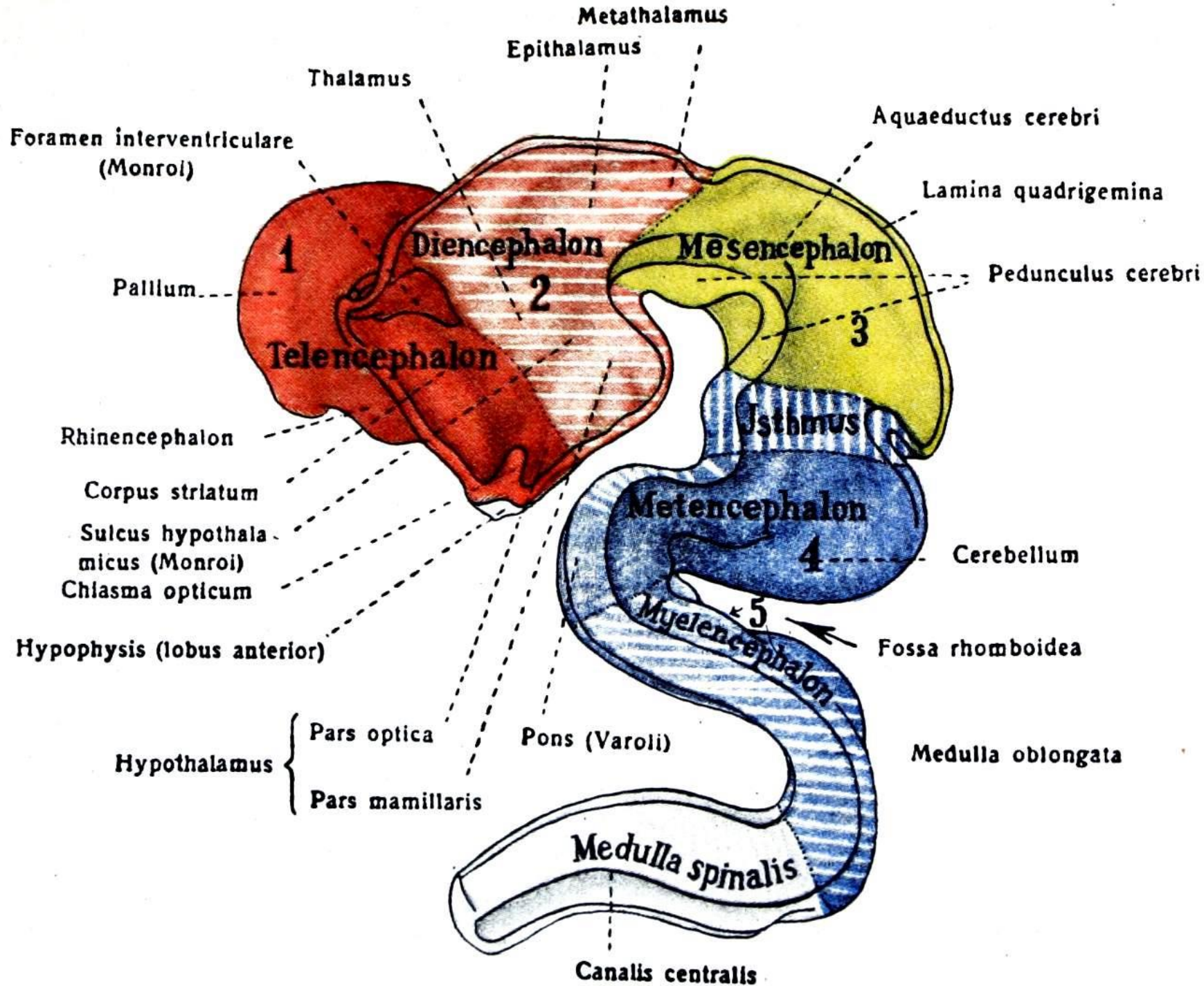
## Neuronal Structure

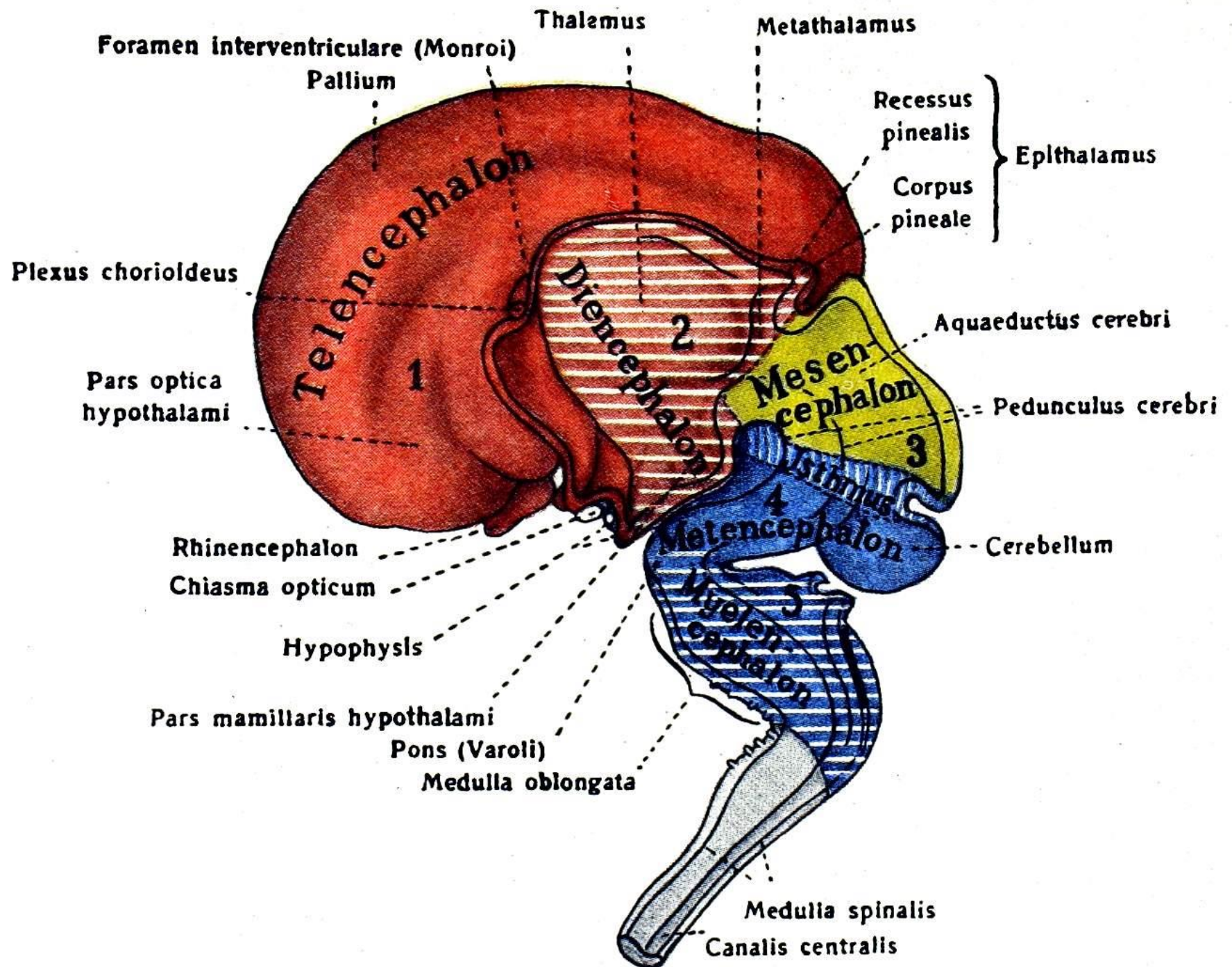












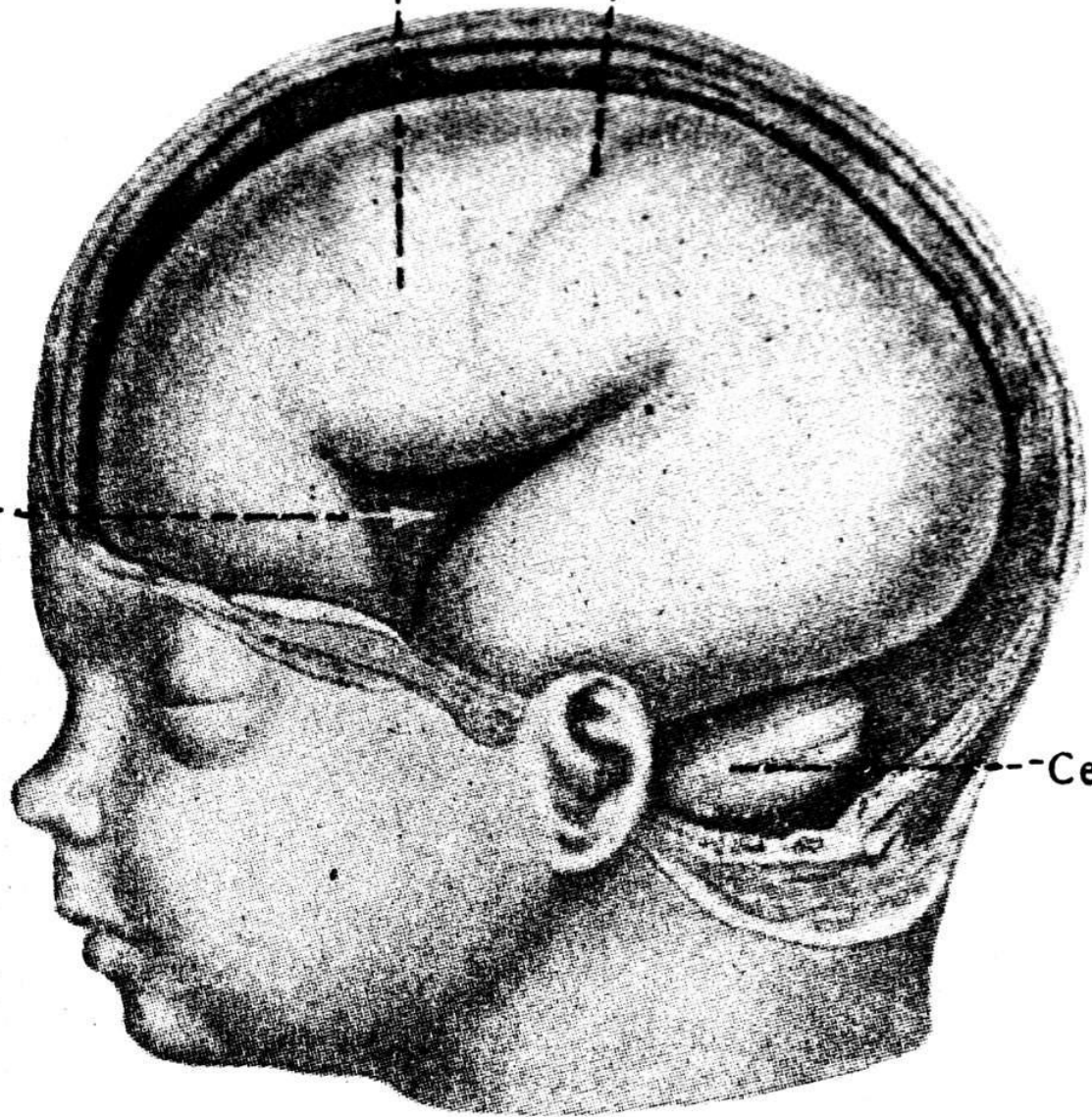
Hemisphaerium  
cerebri (pallium)

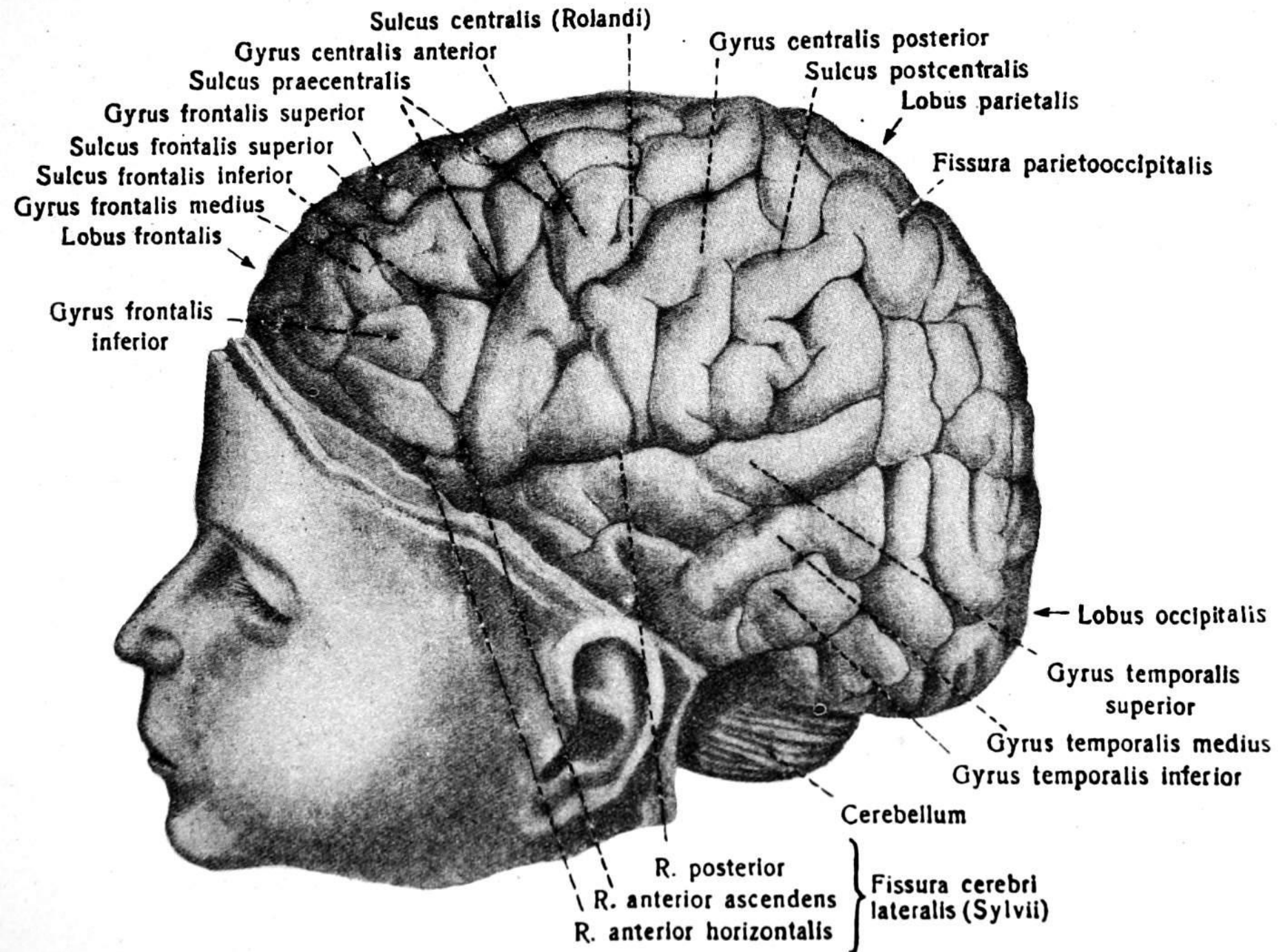
Sulcus centralis (Rolandi)

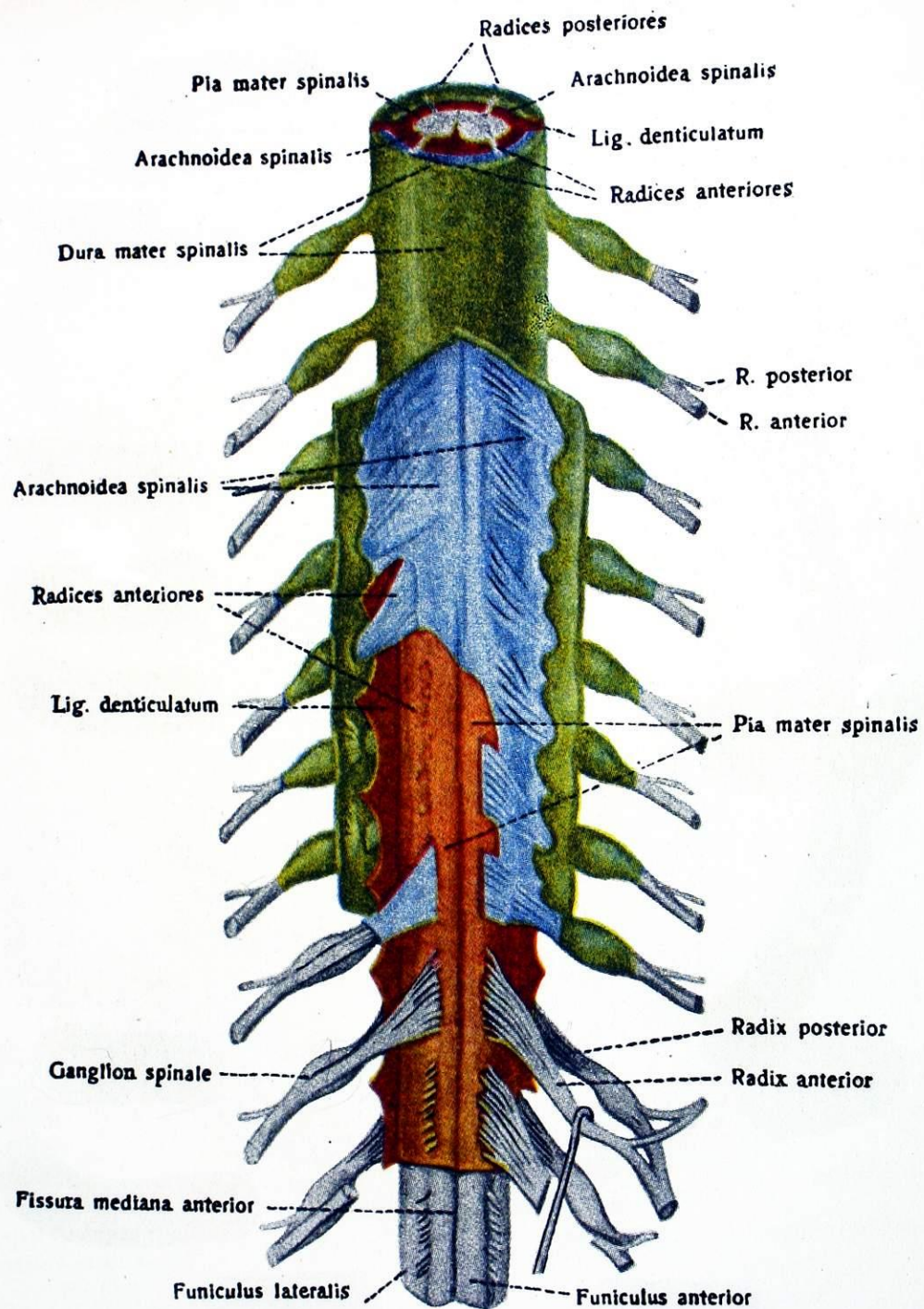
Fossa cerebri lateralis  
(Sylvii) и лежащая в

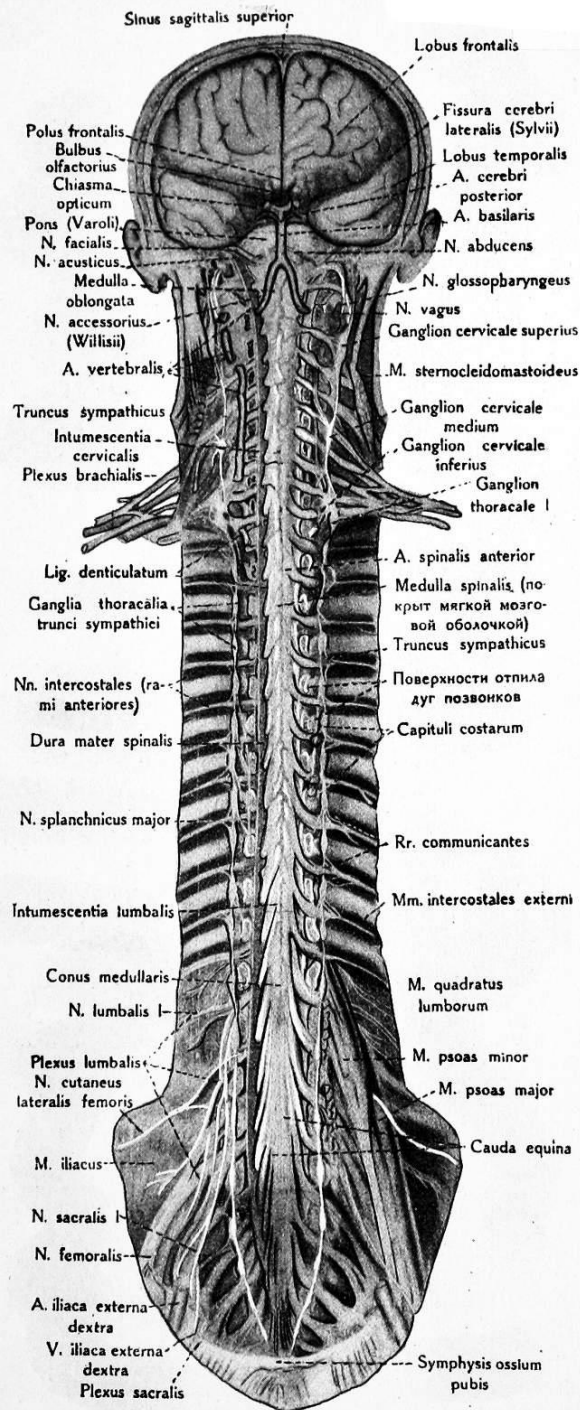
глубине ее insula (Reili)

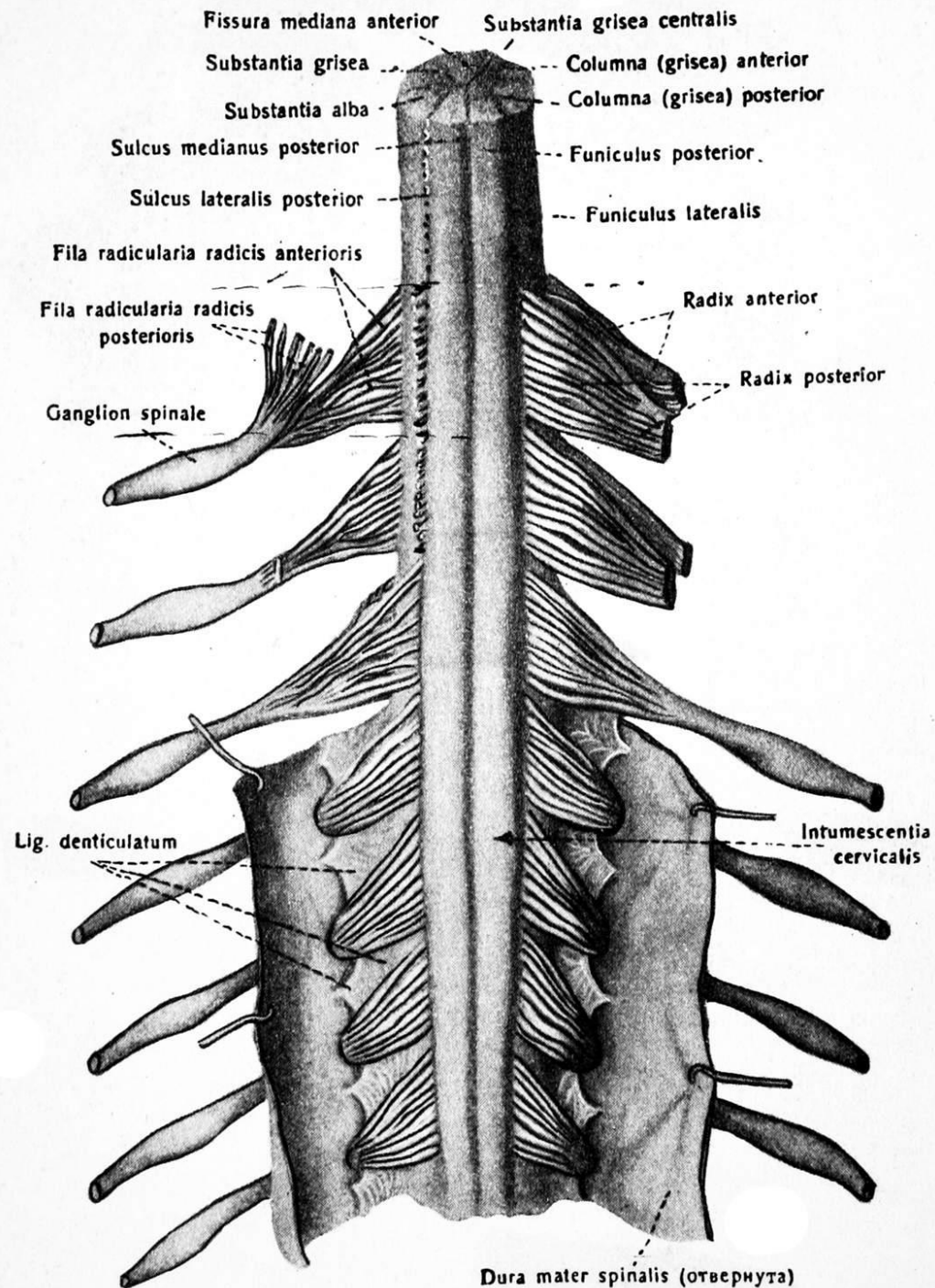
Cerebellum

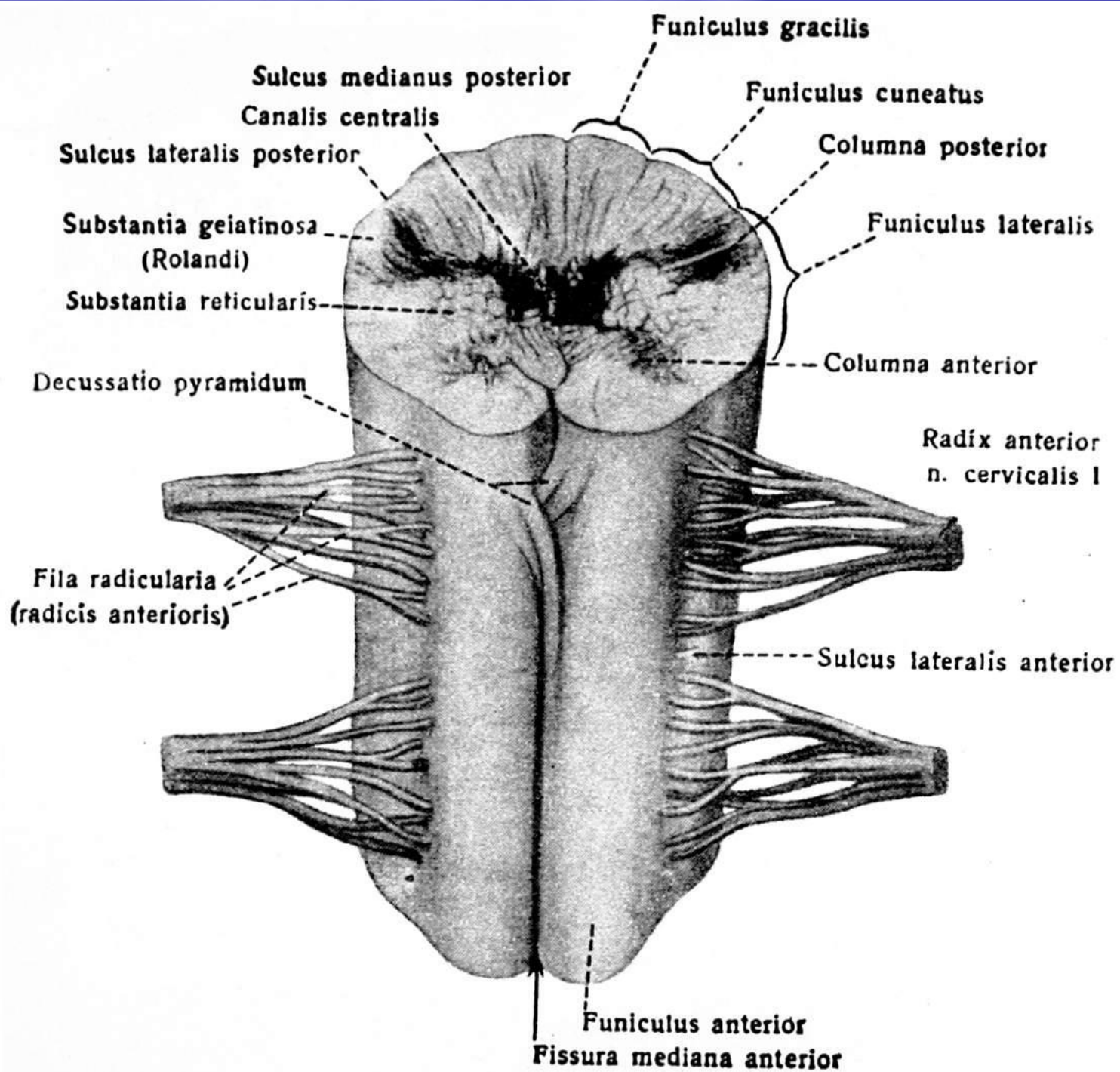


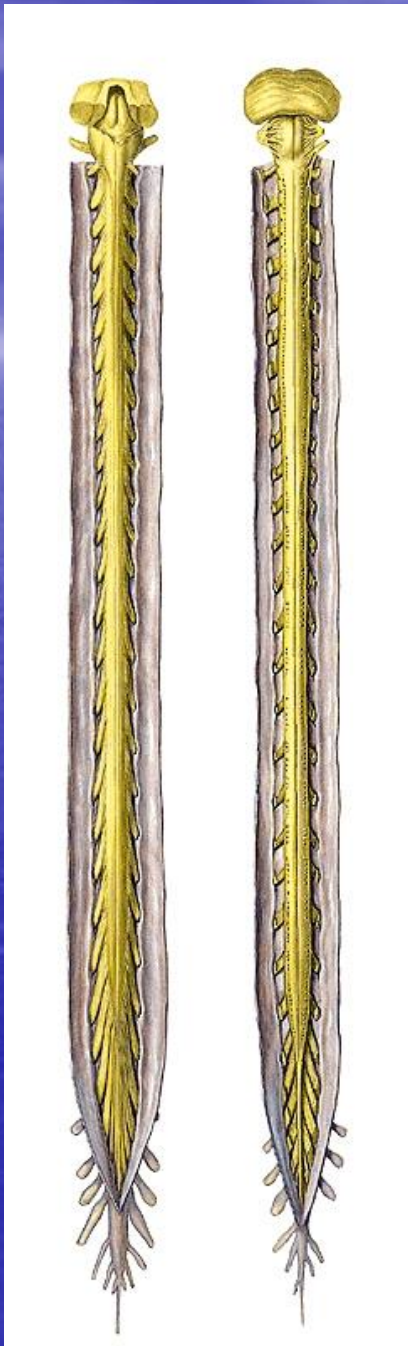


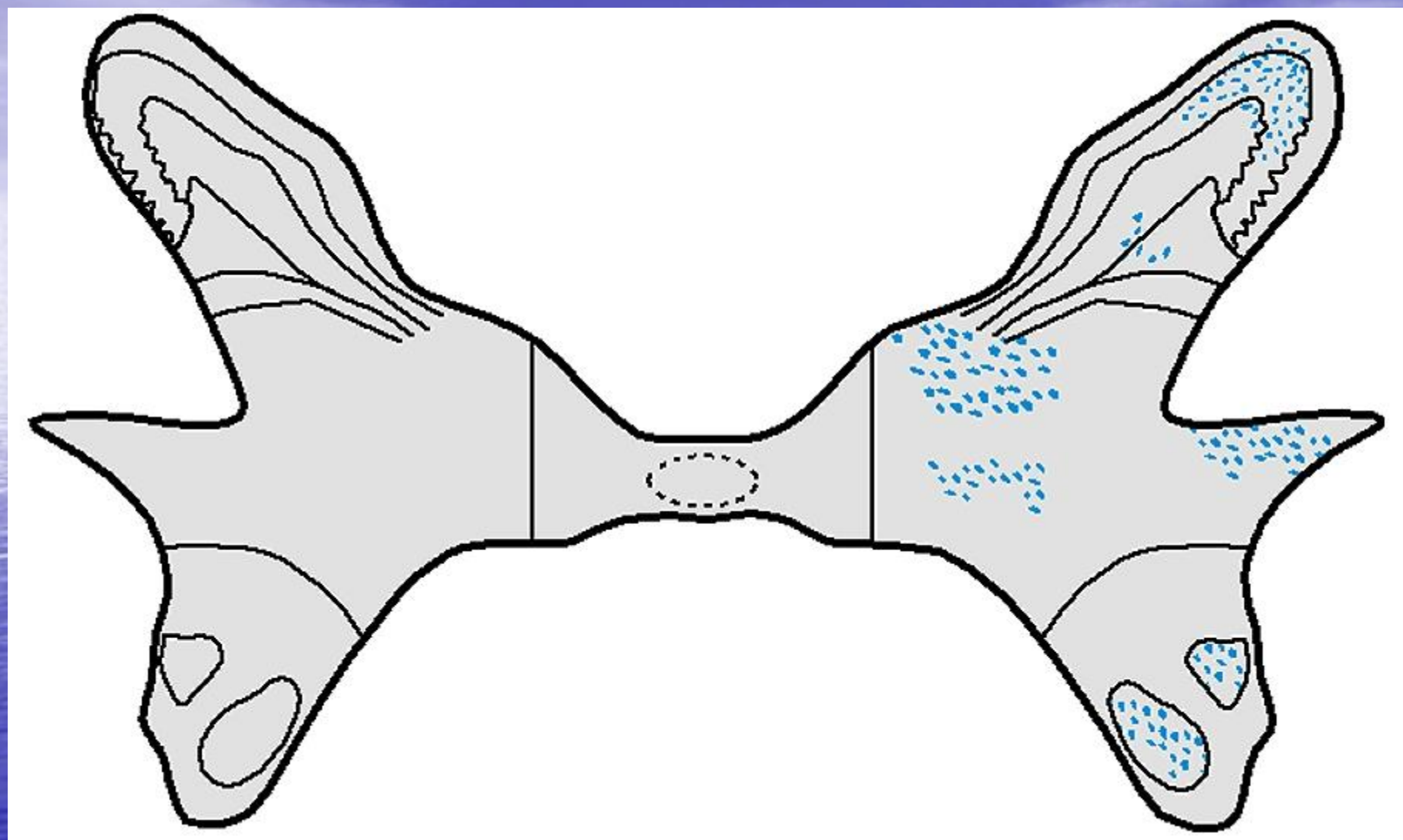


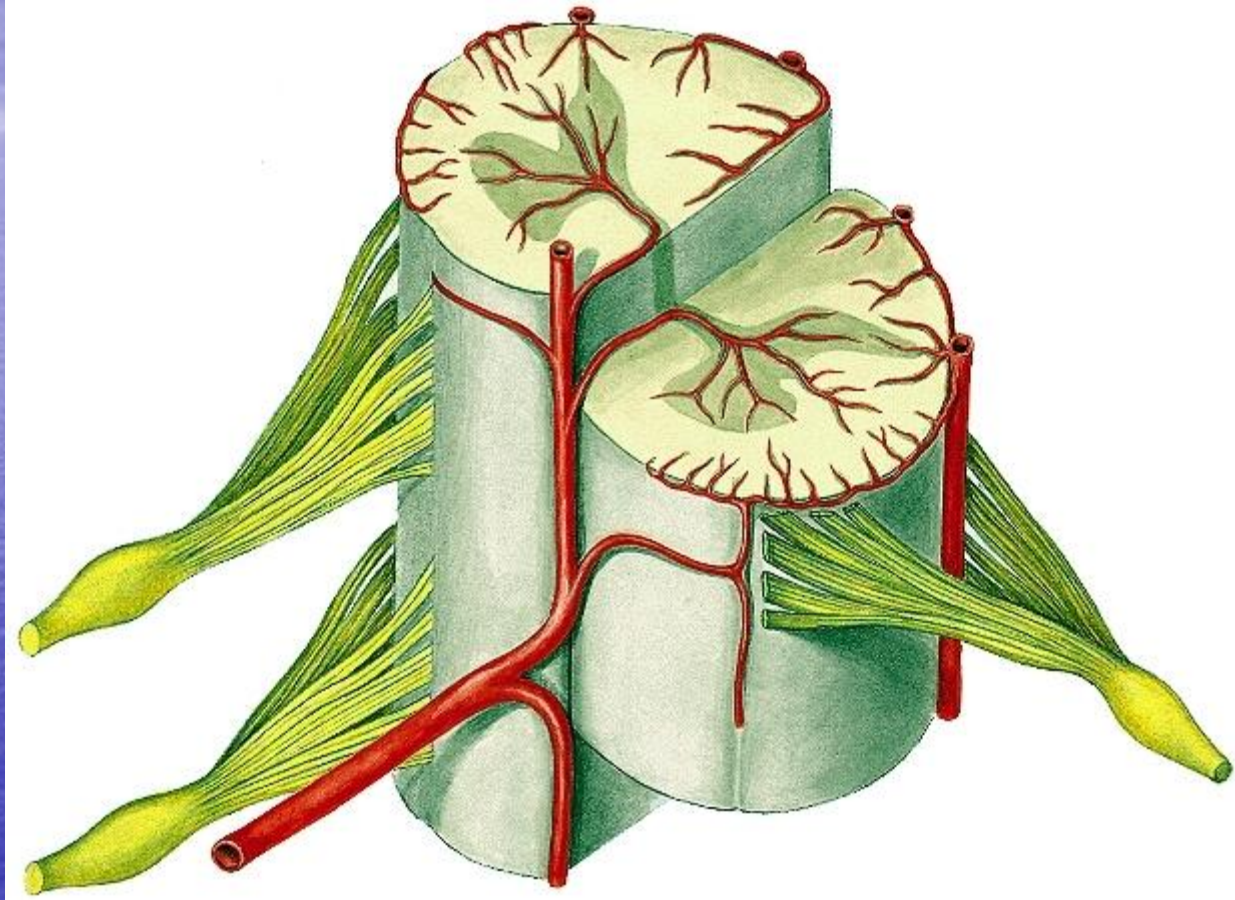


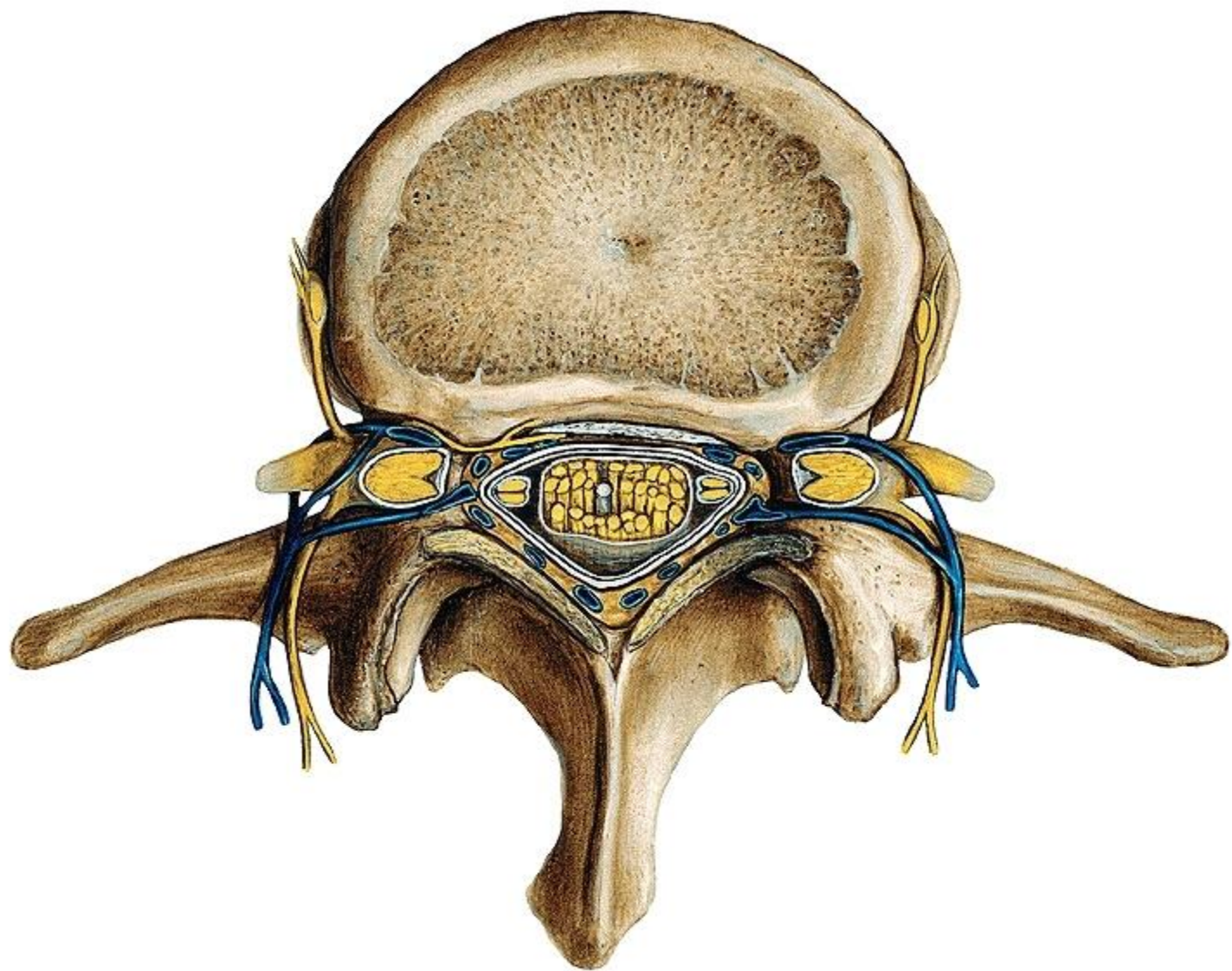




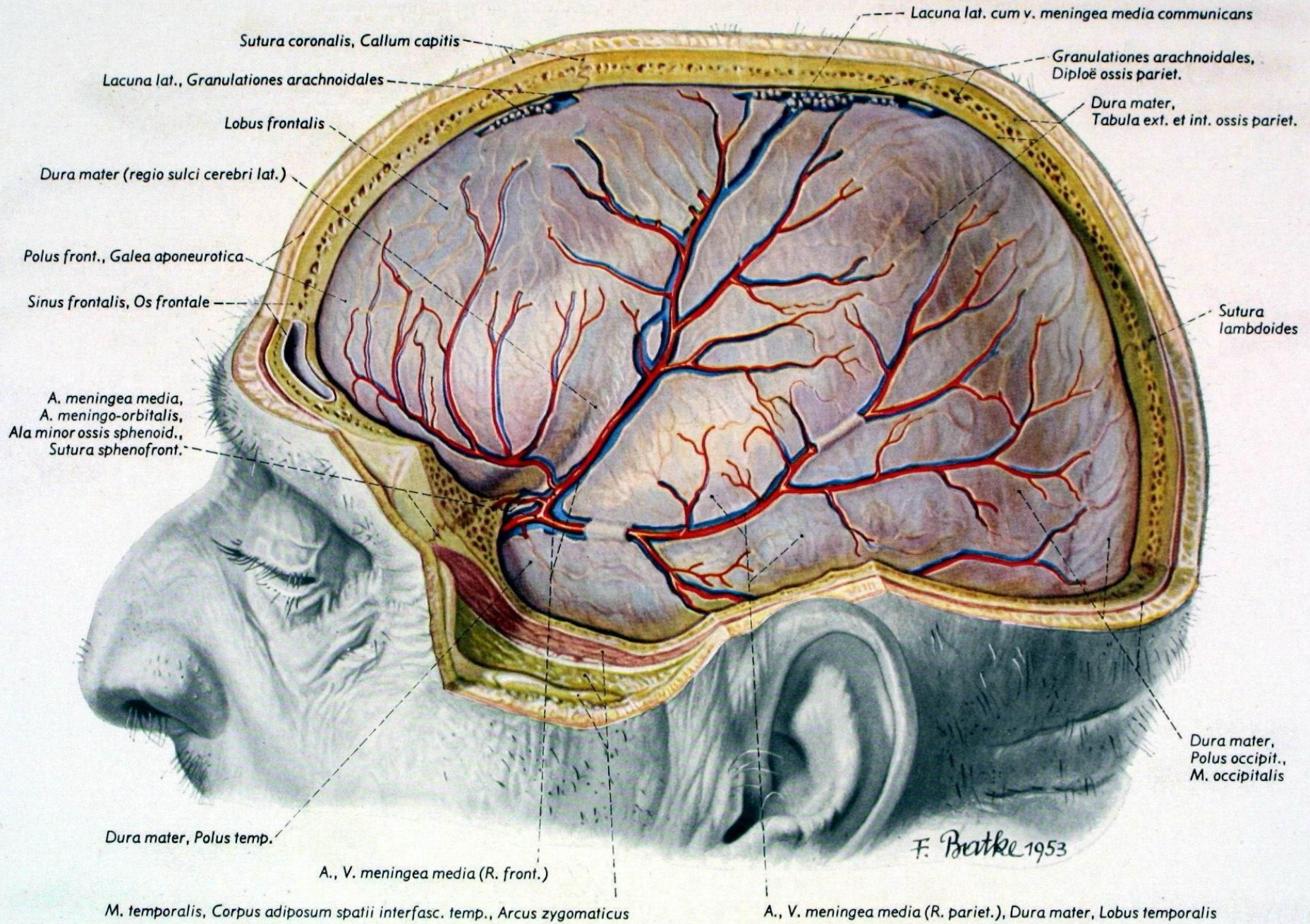






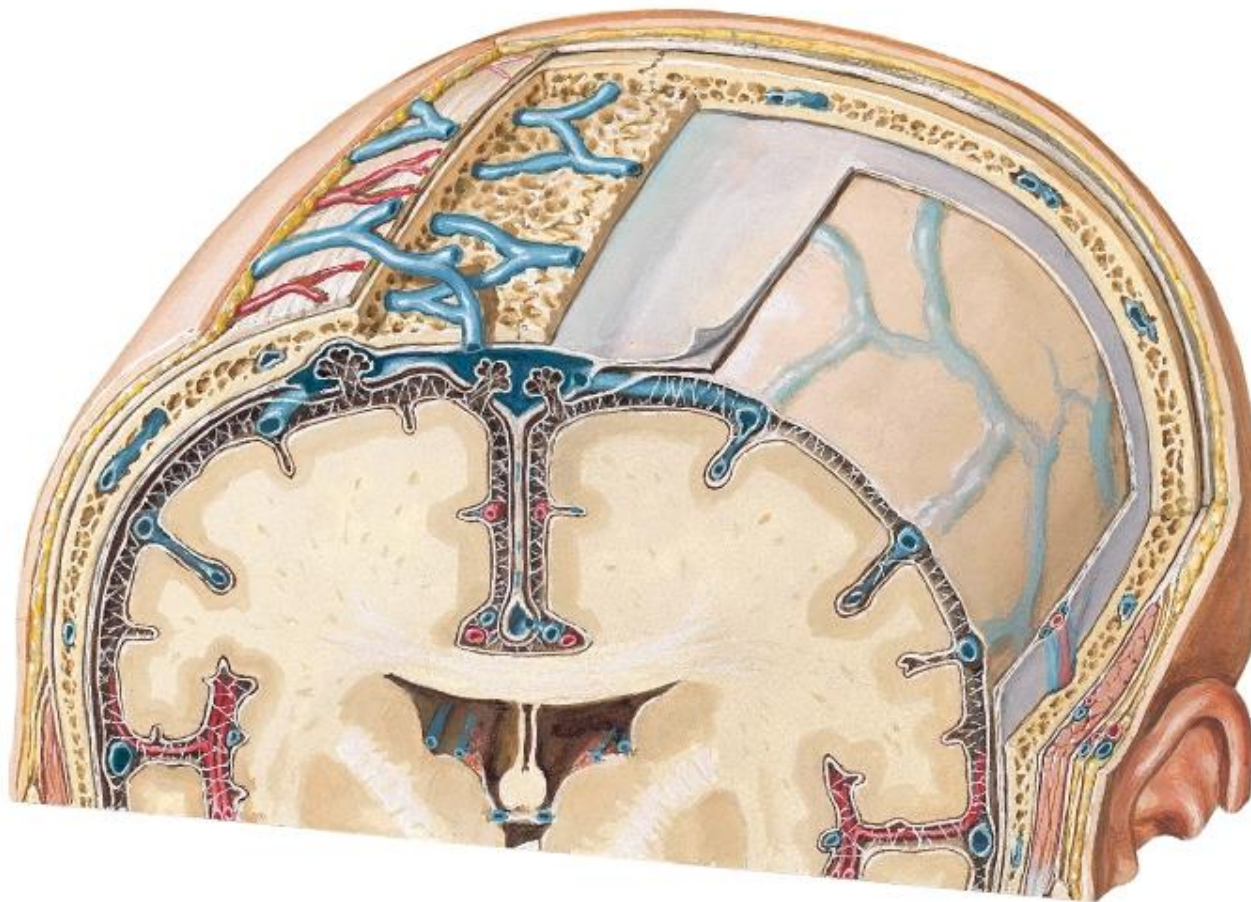






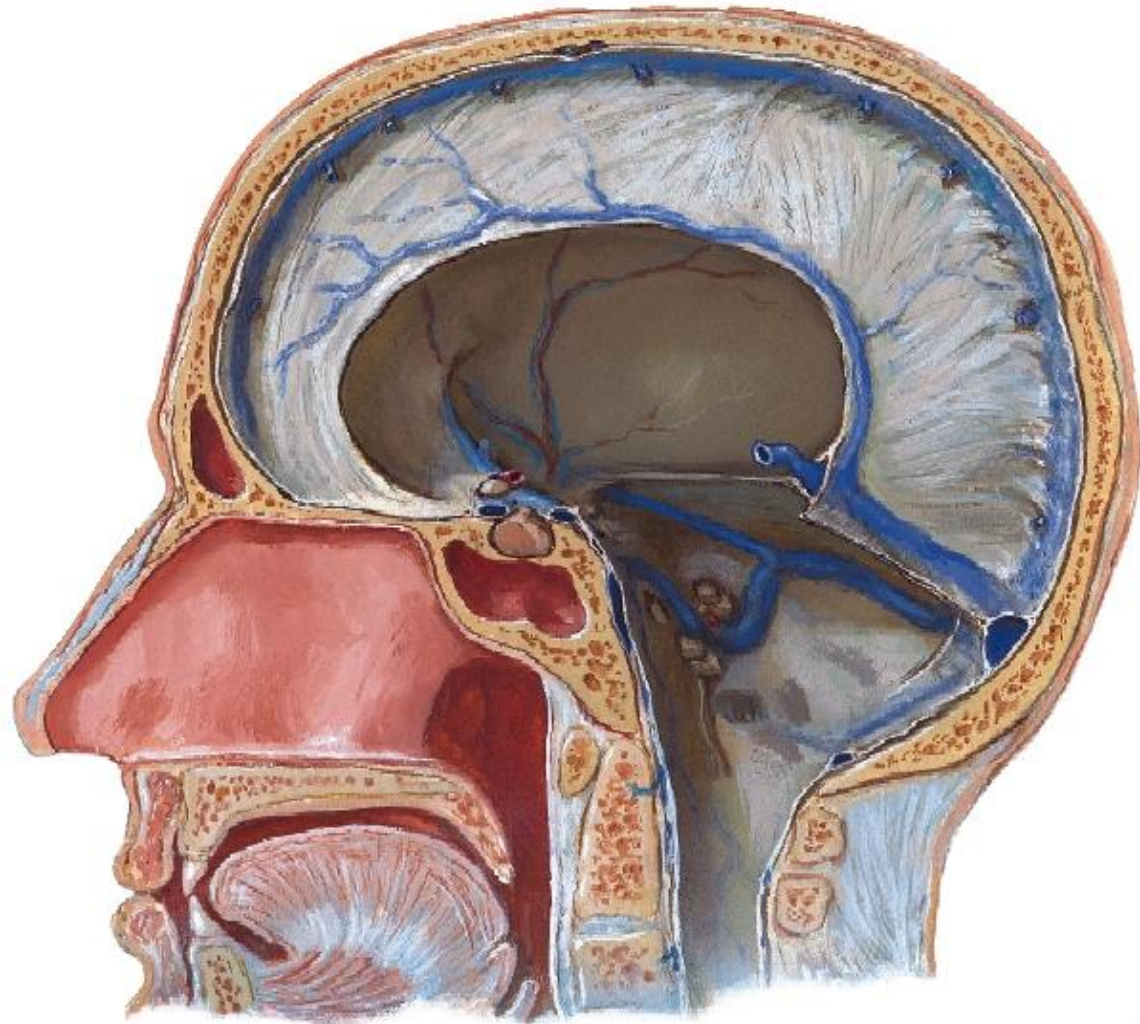
# Meninges and Diploic Veins

## Coronal Dissection



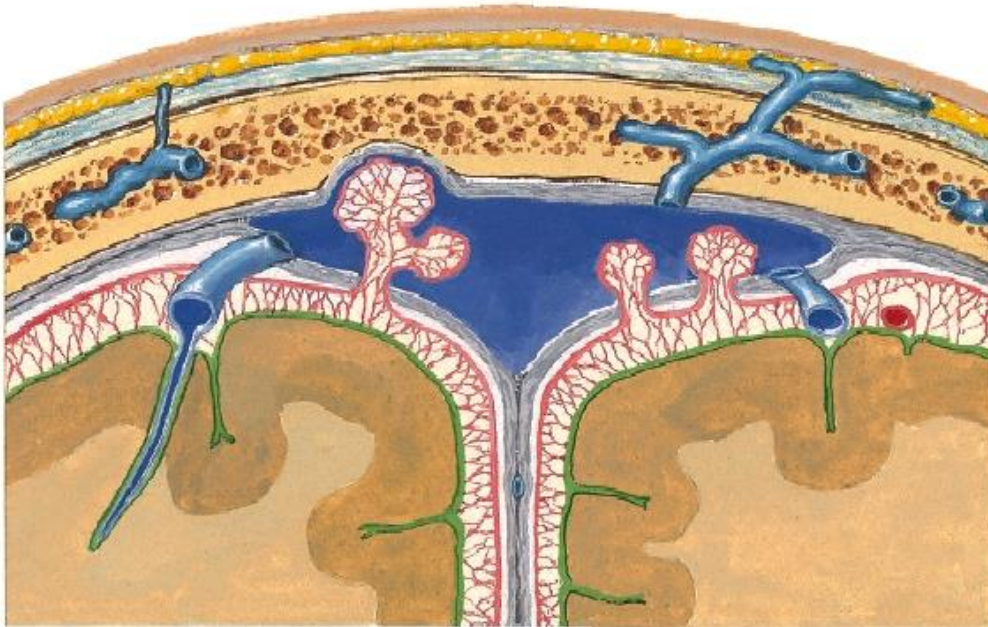
# Dural Venous Sinuses

## Sagittal section



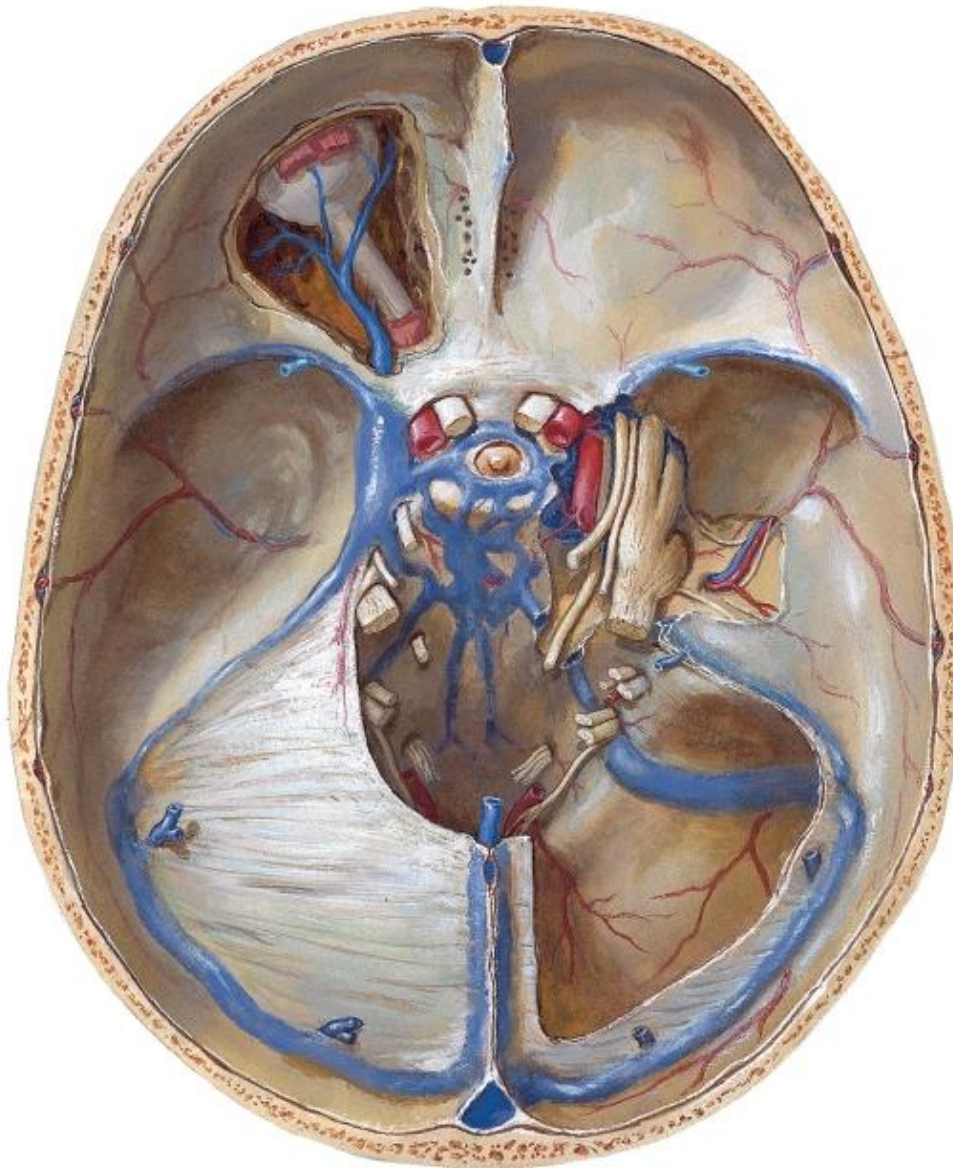
# Meninges and Superficial Cerebral Veins

## Frontal Section



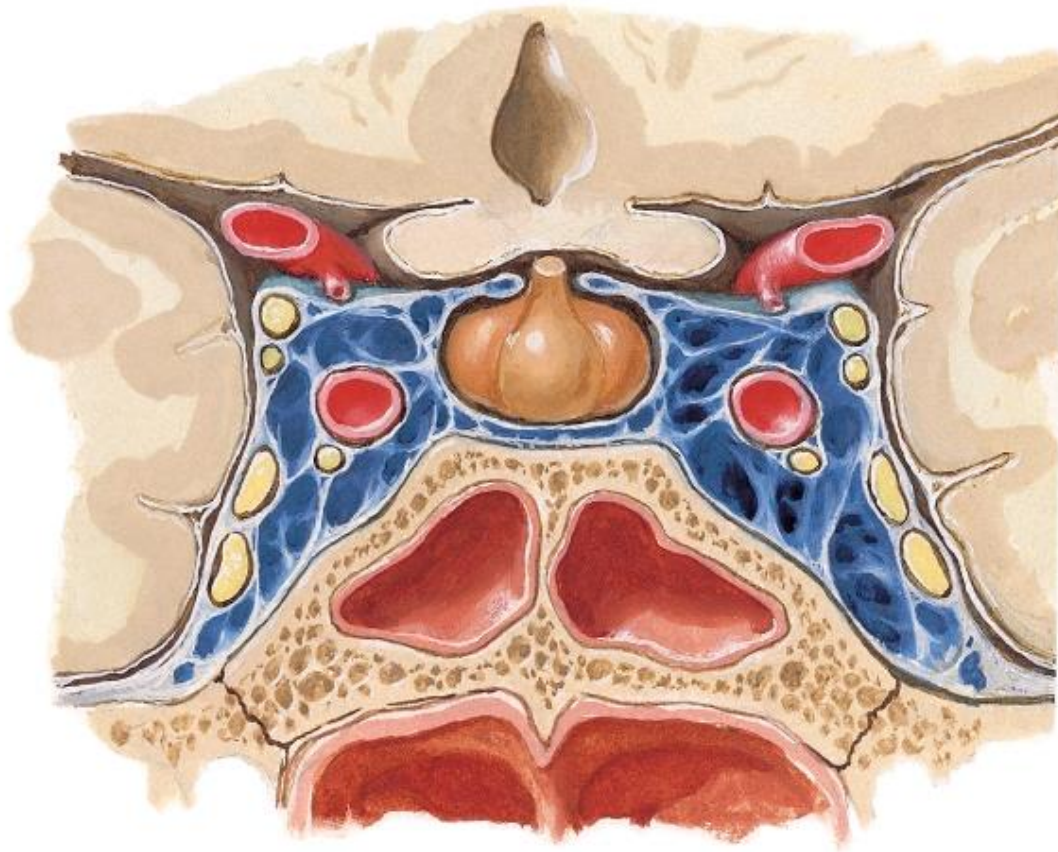
## Dural Venous Sinuses

### Cranial Floor - Superior View



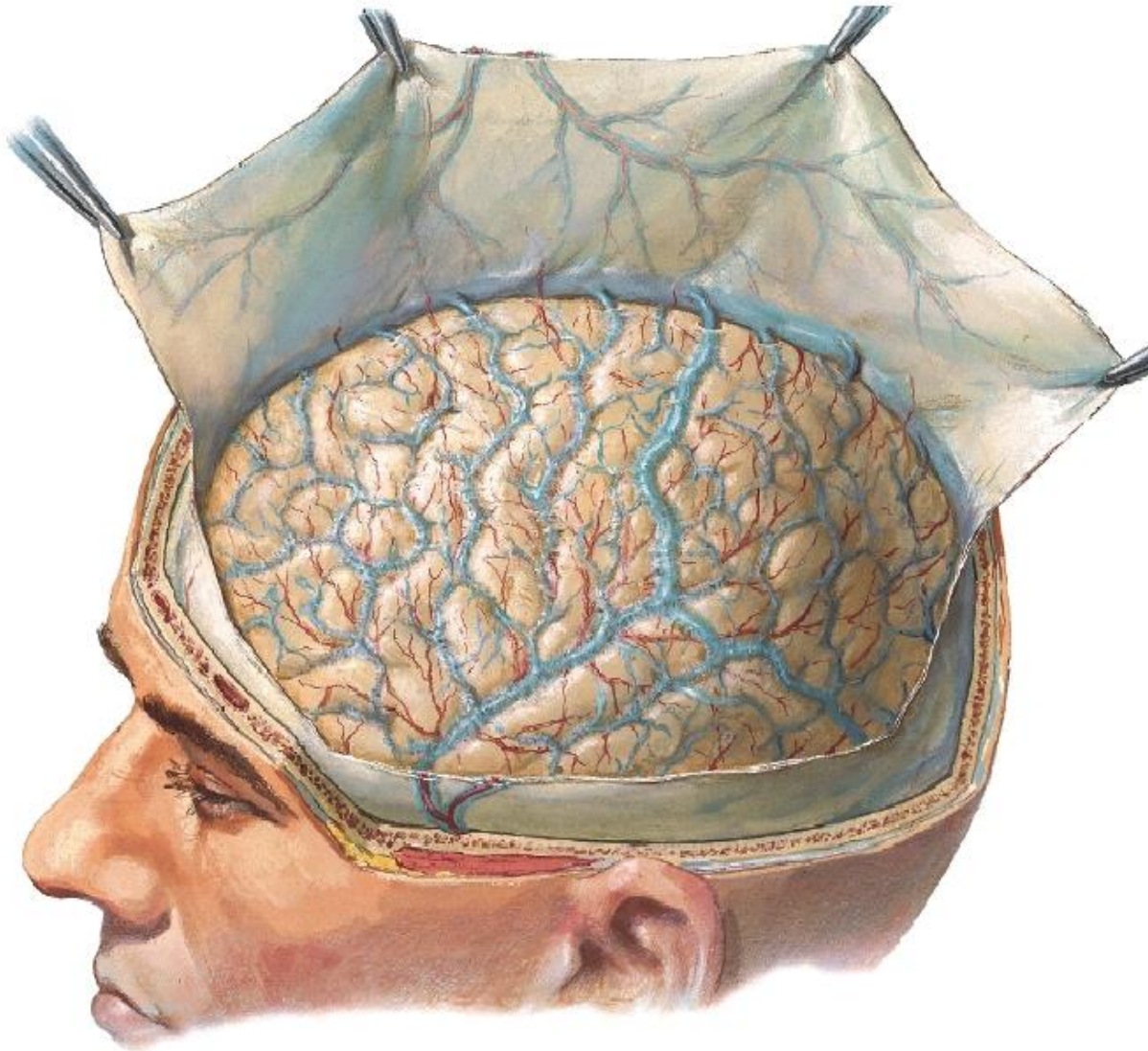
# Dural Venous Sinuses

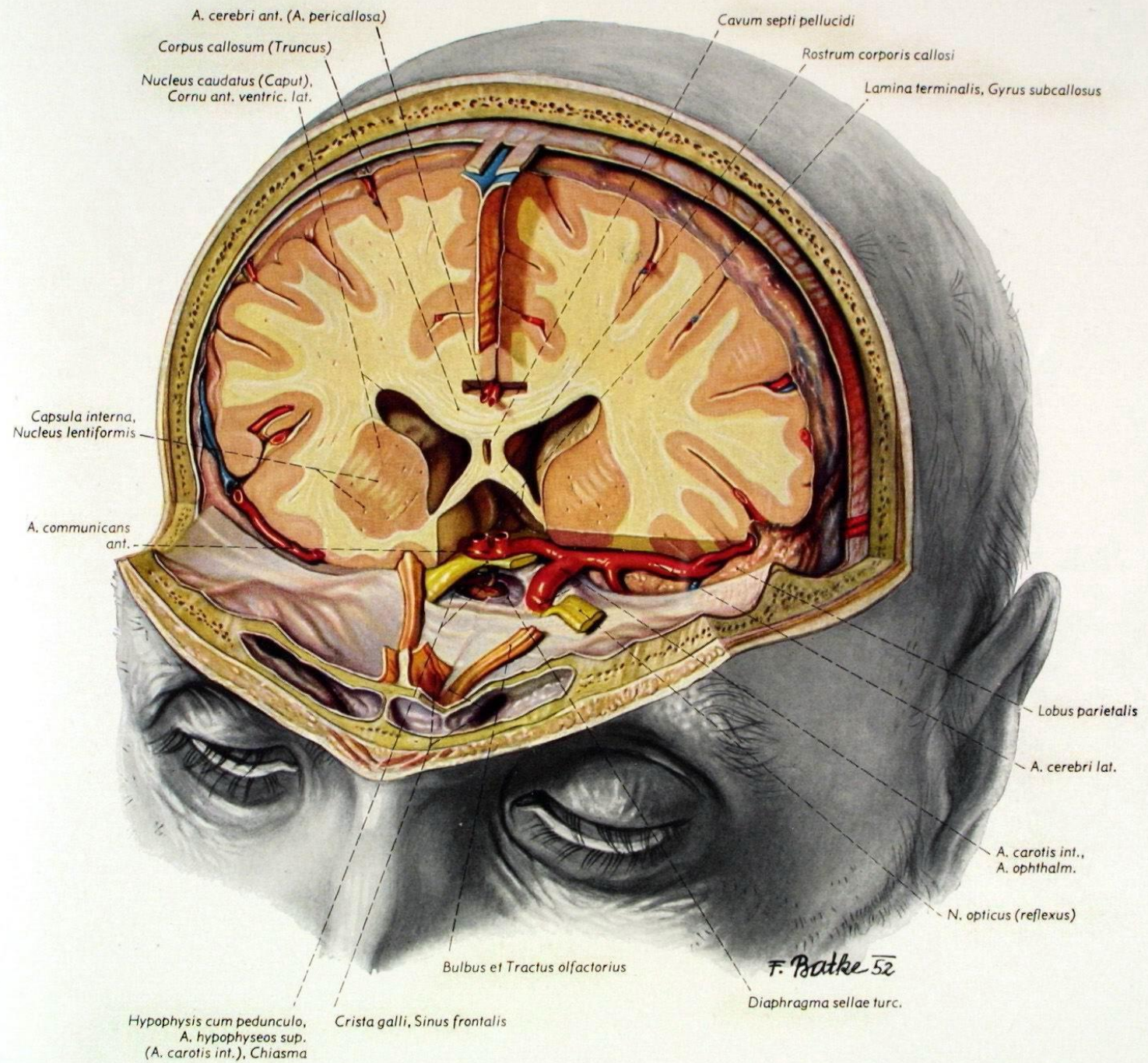
## Coronal Section Through Cavernous Sinus



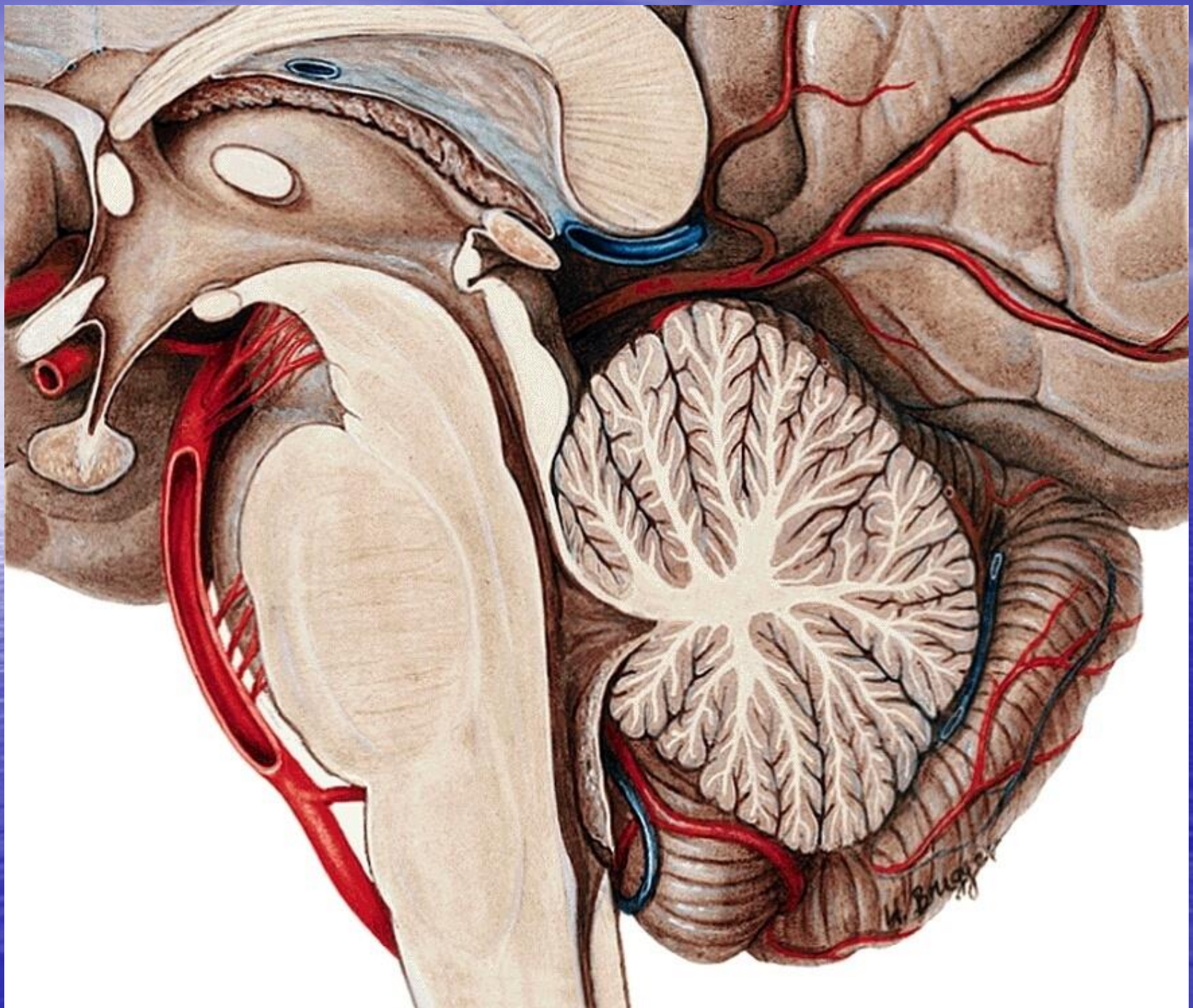
# Meninges and Superficial Cerebral Veins

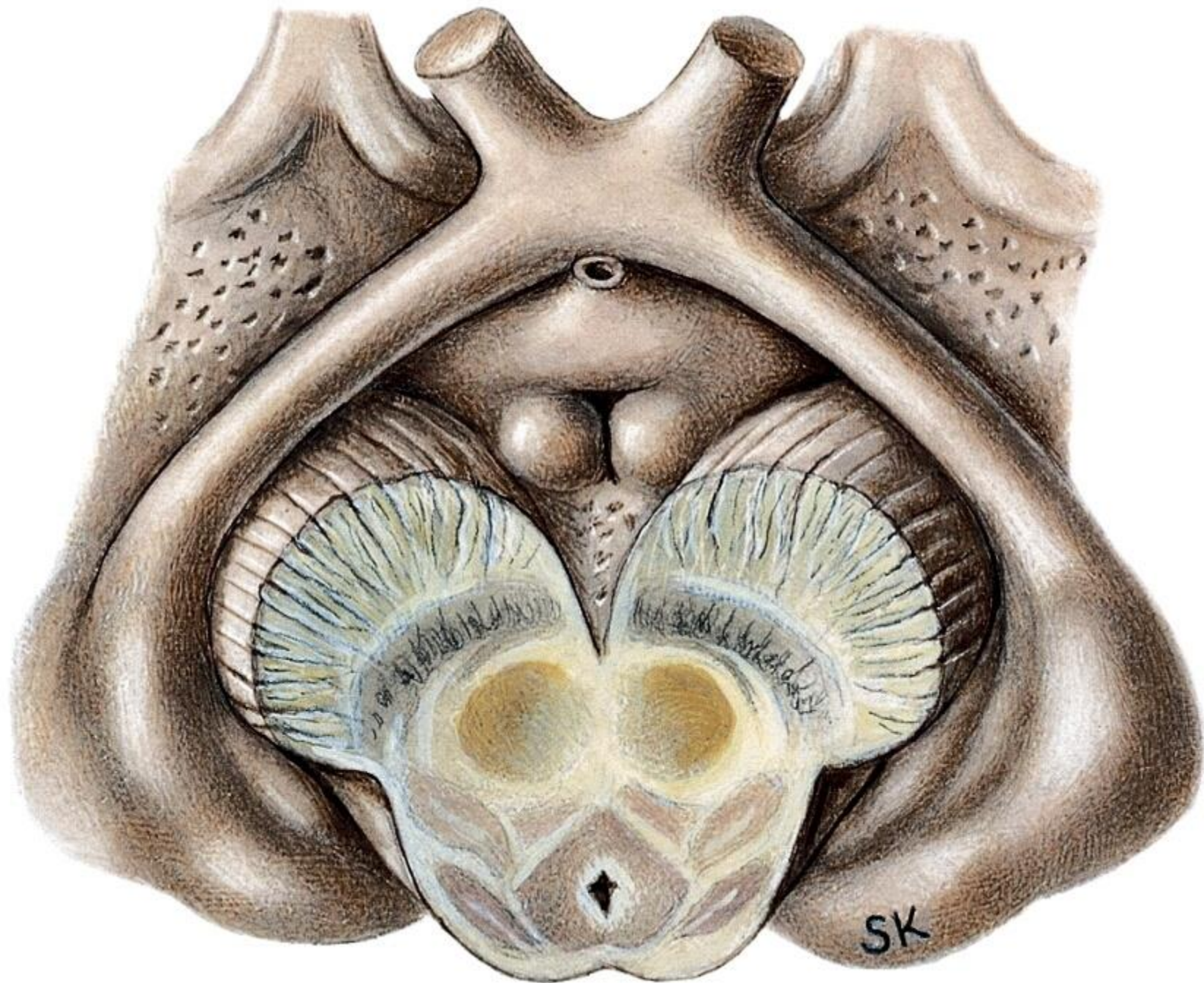
## Dura Mater Lifted











Nerwy czaszkowe

Zmysłowe I węchowy II wzrokowy

VIII statycznie słuchowy

Pozostałe oprócz nn. zmysłowych są

**RUCHOWE III, IV, V, VI, VII, IX, X, XI, XII**

**Czysto ruchowe to: IV, VI, XI, XII**

Czuciowe : V trójdzielný, VII twarzowy,

IX językowo gardłowy, X błędny

Parasympatyczne: III okoruchowy,

VII twarzowy, IX językowo gardłowy,

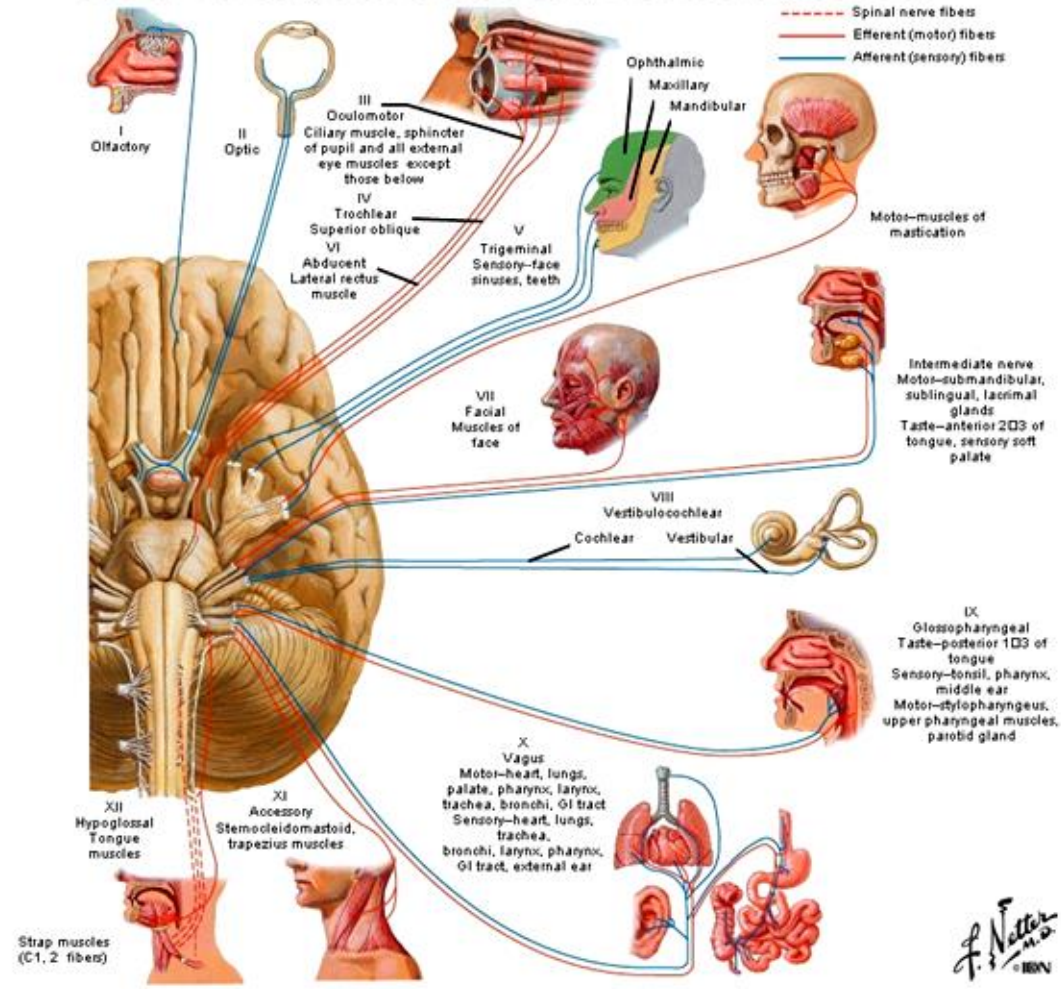
X błędny

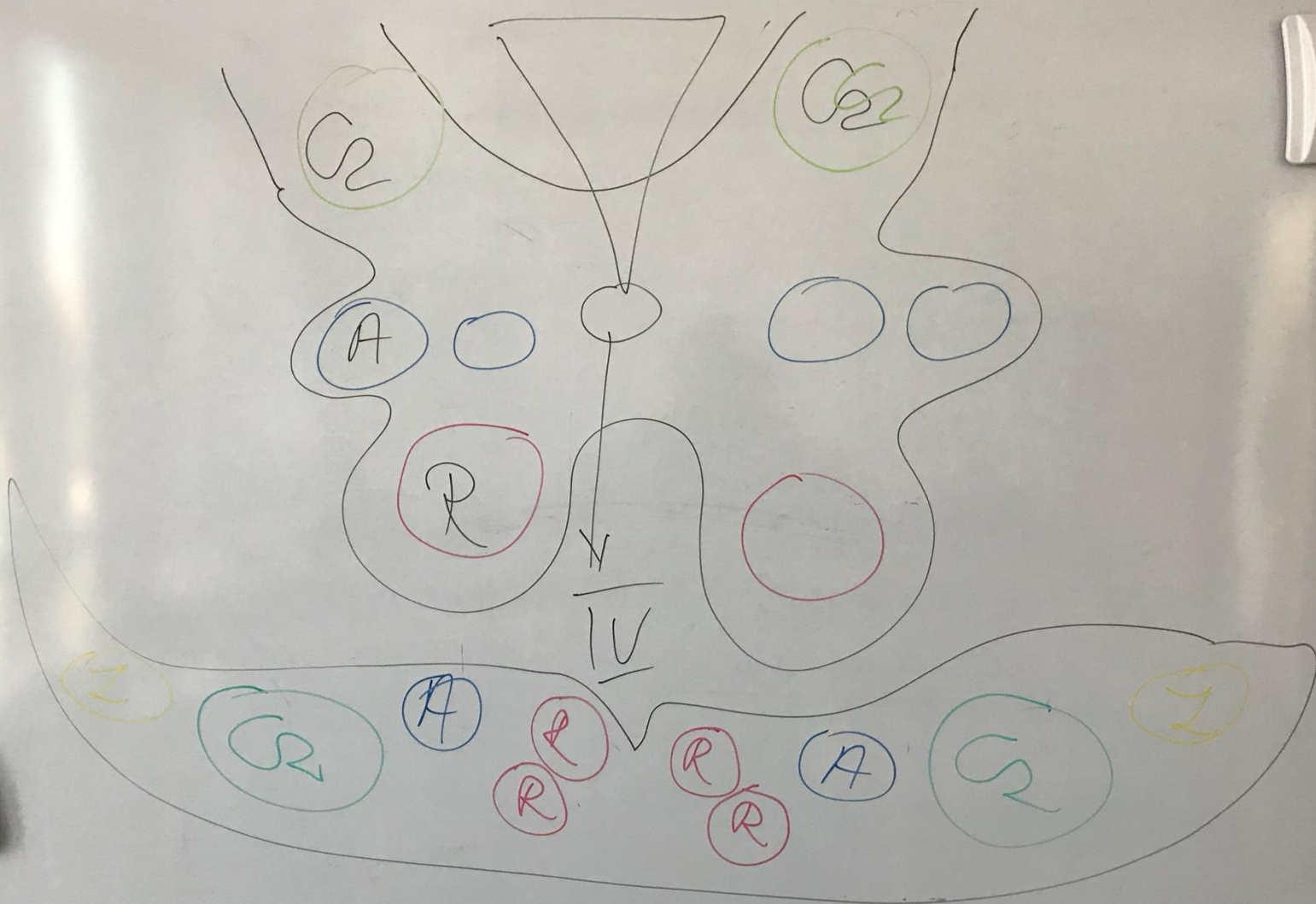
Nerwy łuków skrzелowych : V1 żuchwowy,

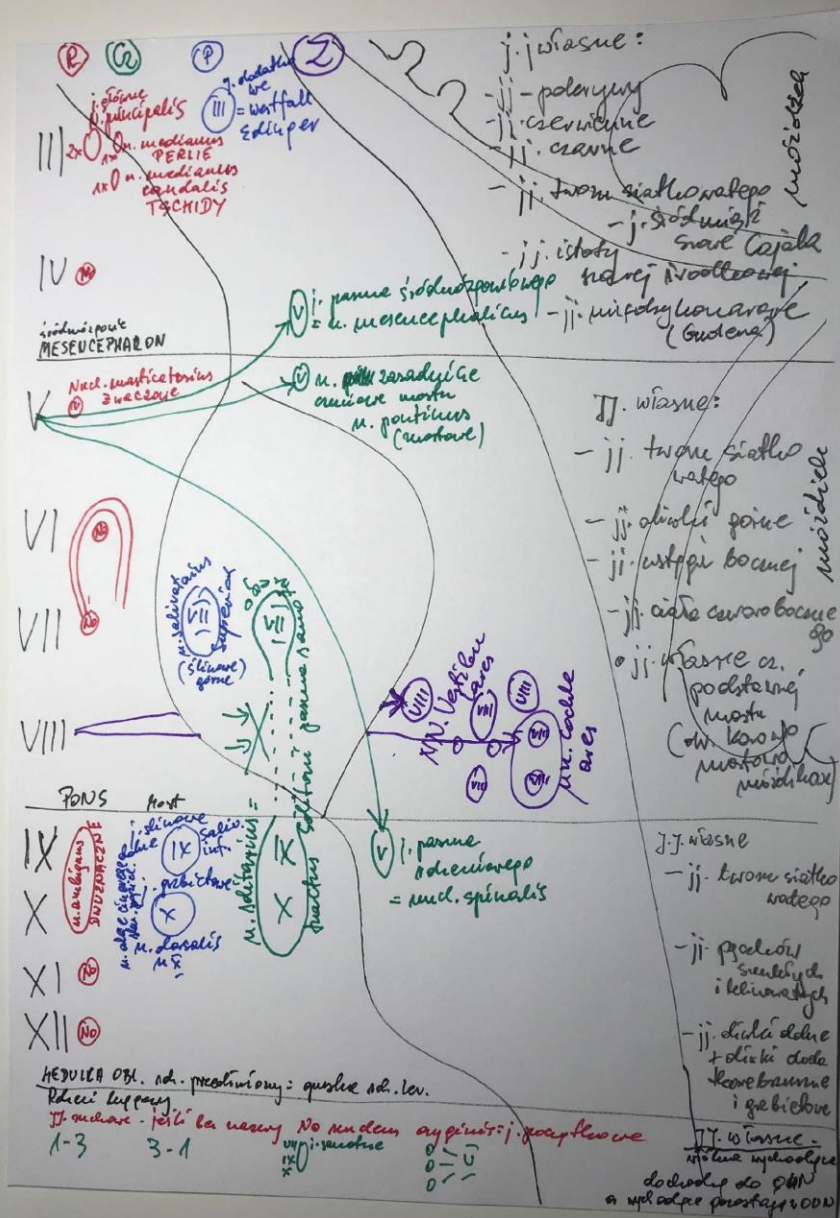
VII twarzowy, IX językowo gardłowy,

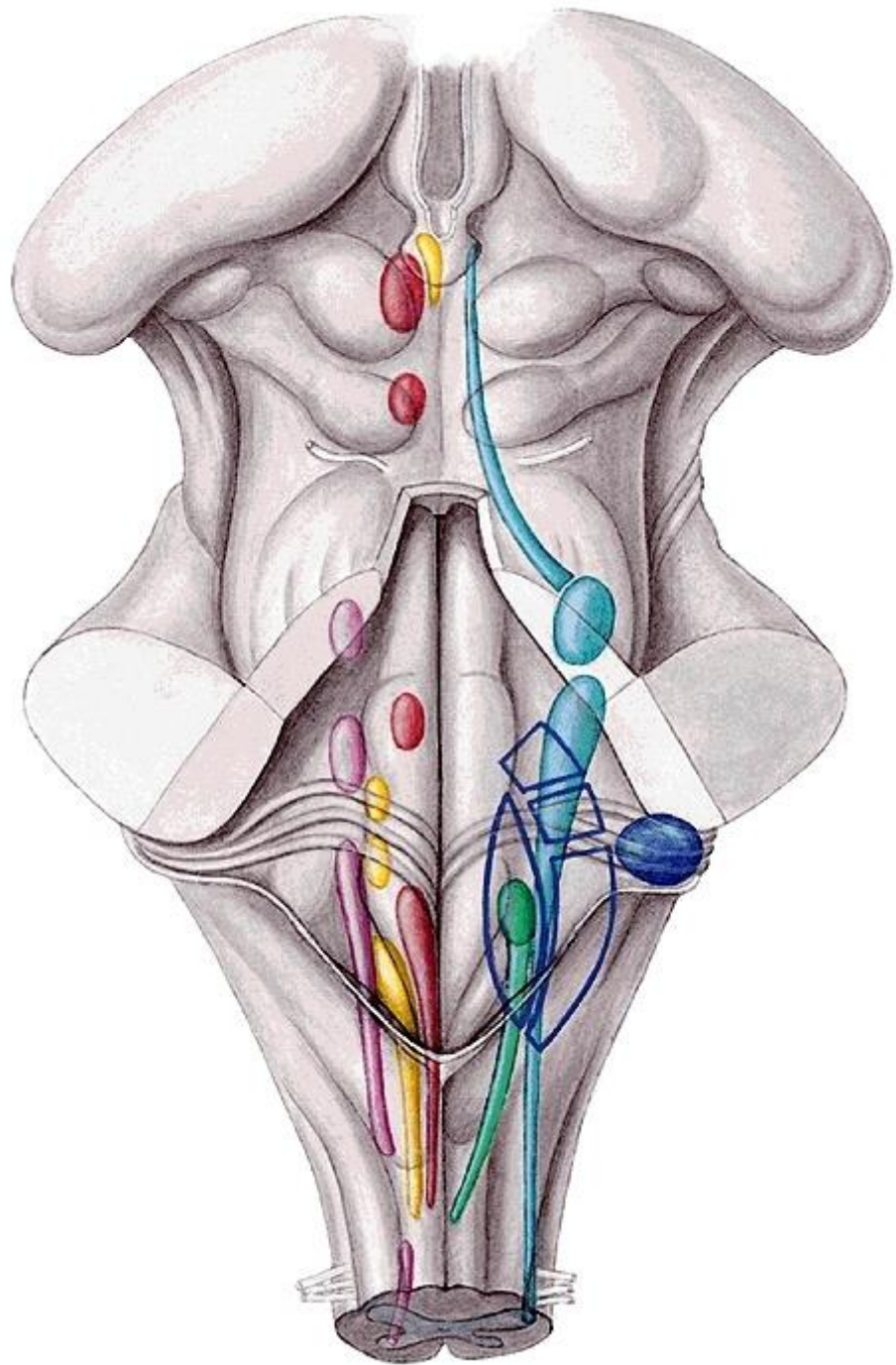
X błędny

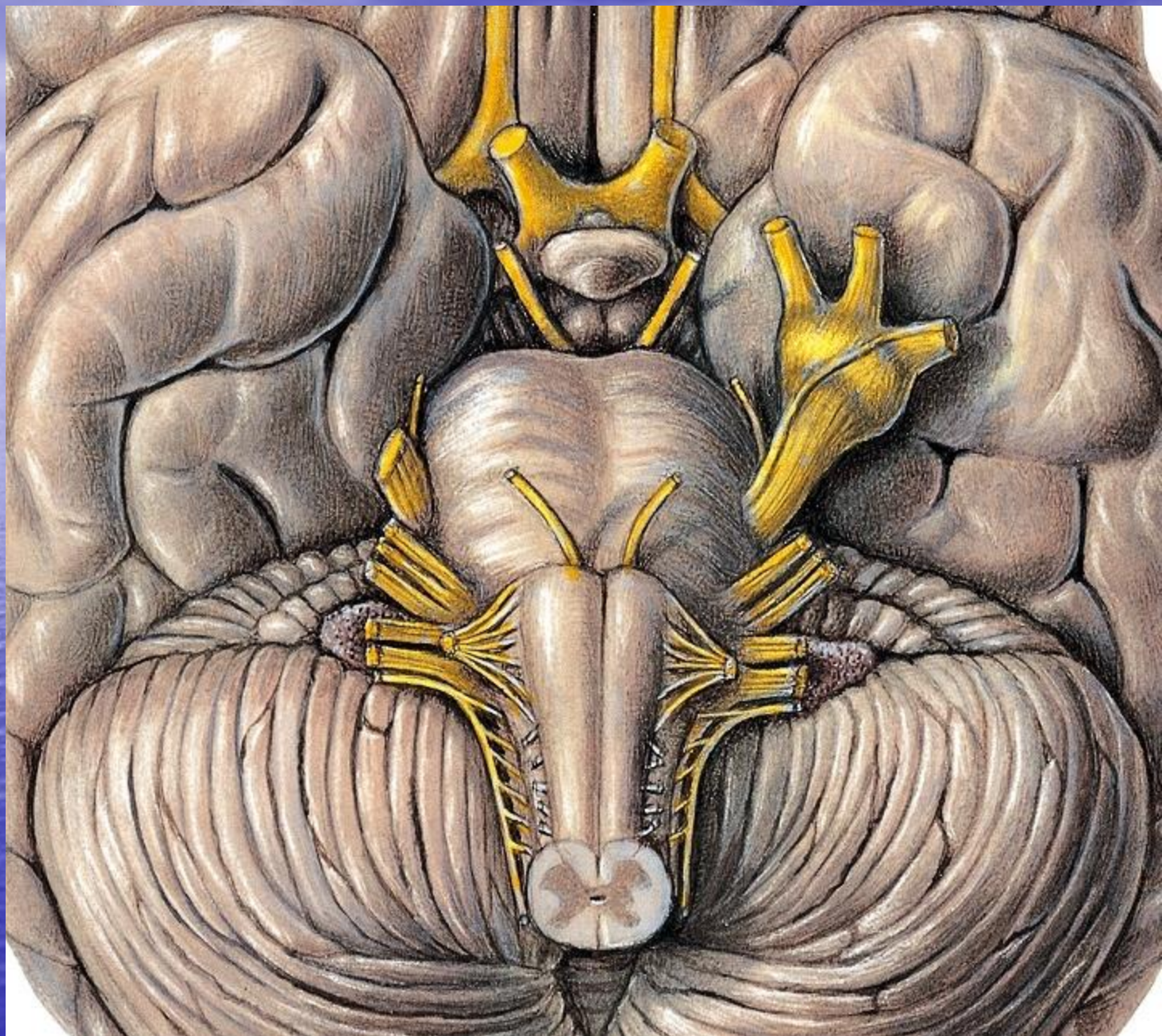
## Cranial Nerves (Motor and Sensory Distribution): Schema











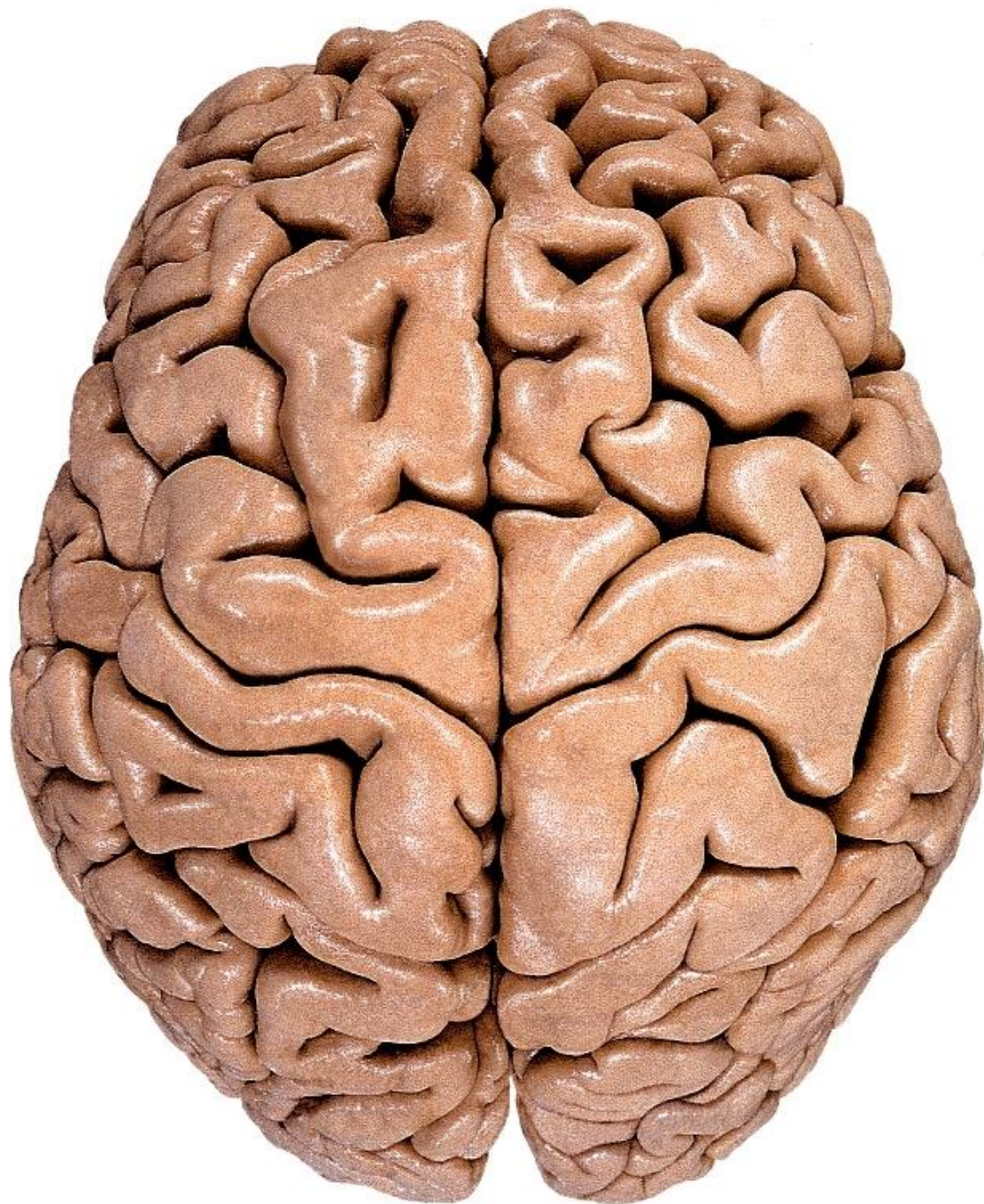
# **Hierarchiczność ośrodków Centralnego Systemu Nerwowego**

# Cerebrum

## Lateral View

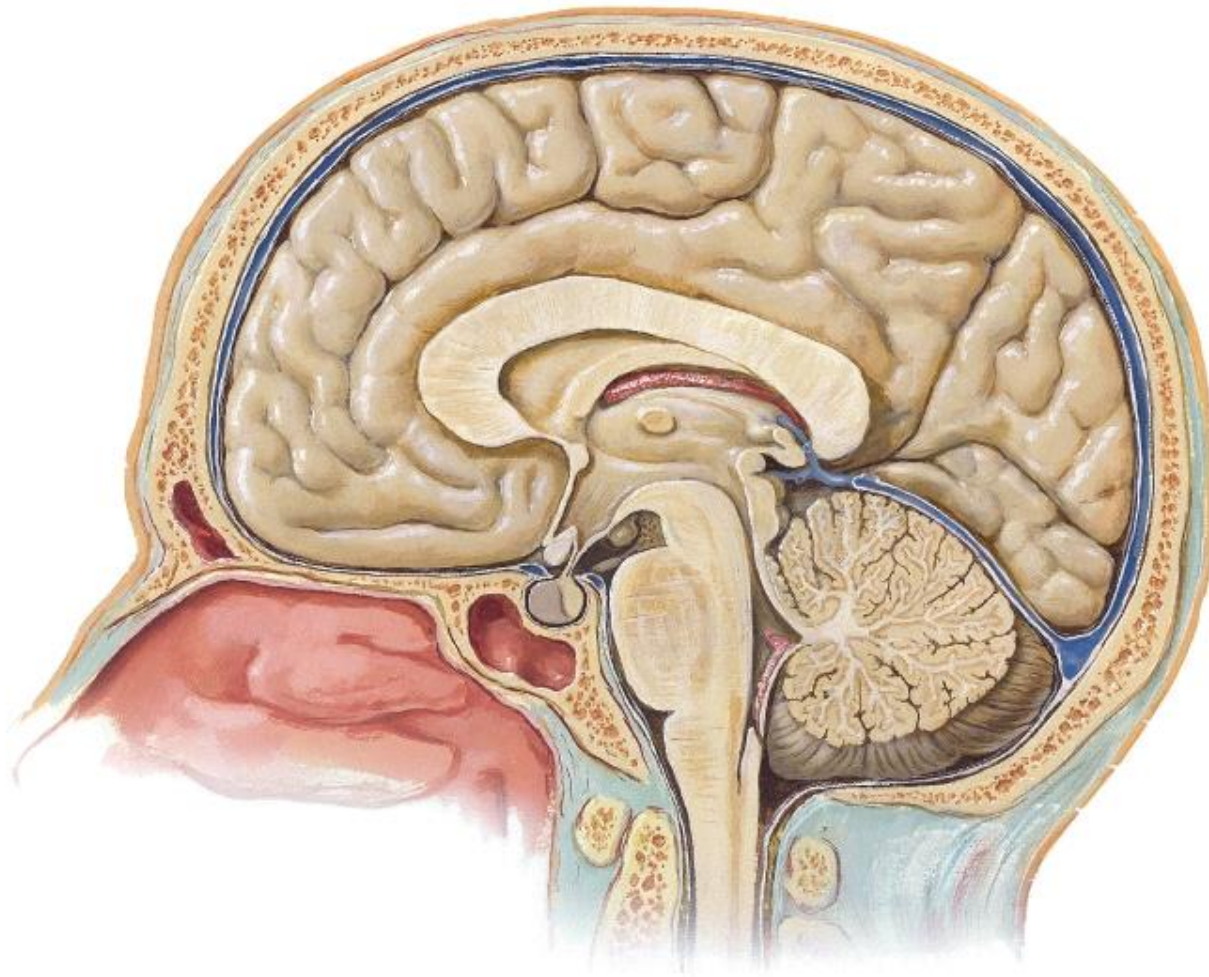


*F. Netter*  
M.D.  
© IEN



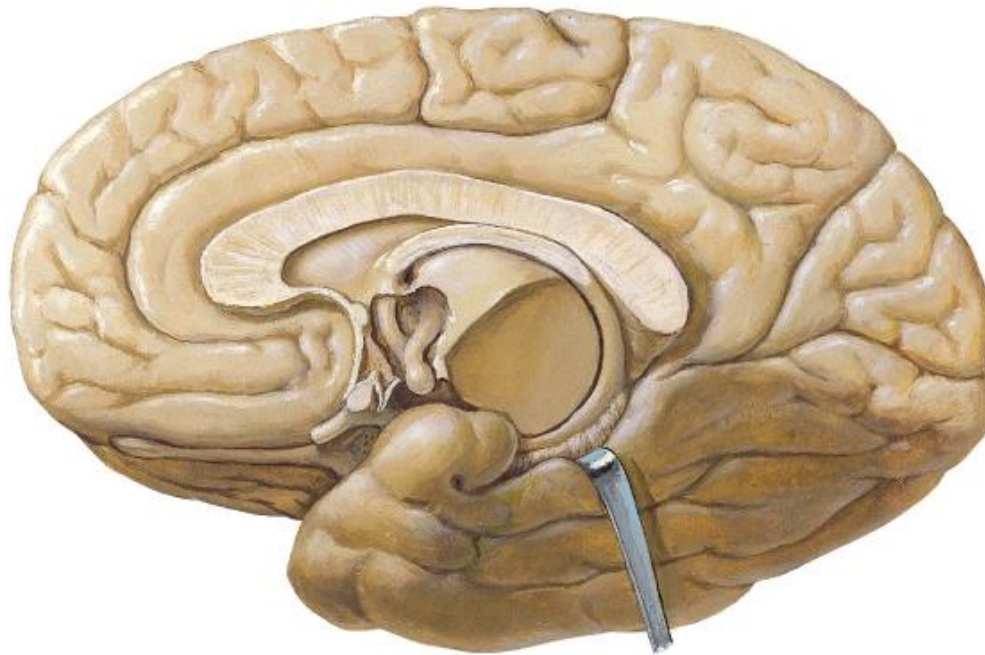
# Cerebrum - Brain In Situ

## Sagittal Section - Medial View

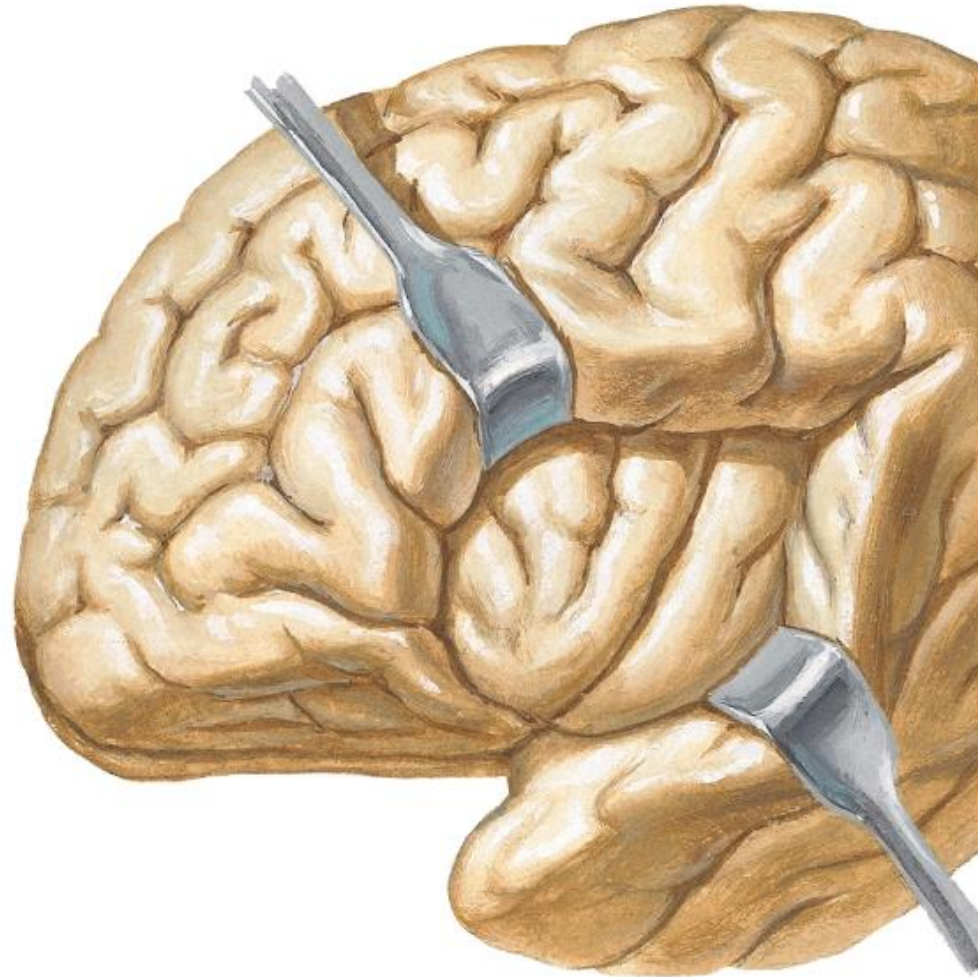


# Cerebrum - Hemisphere with Brainstem Excised

## Medial View



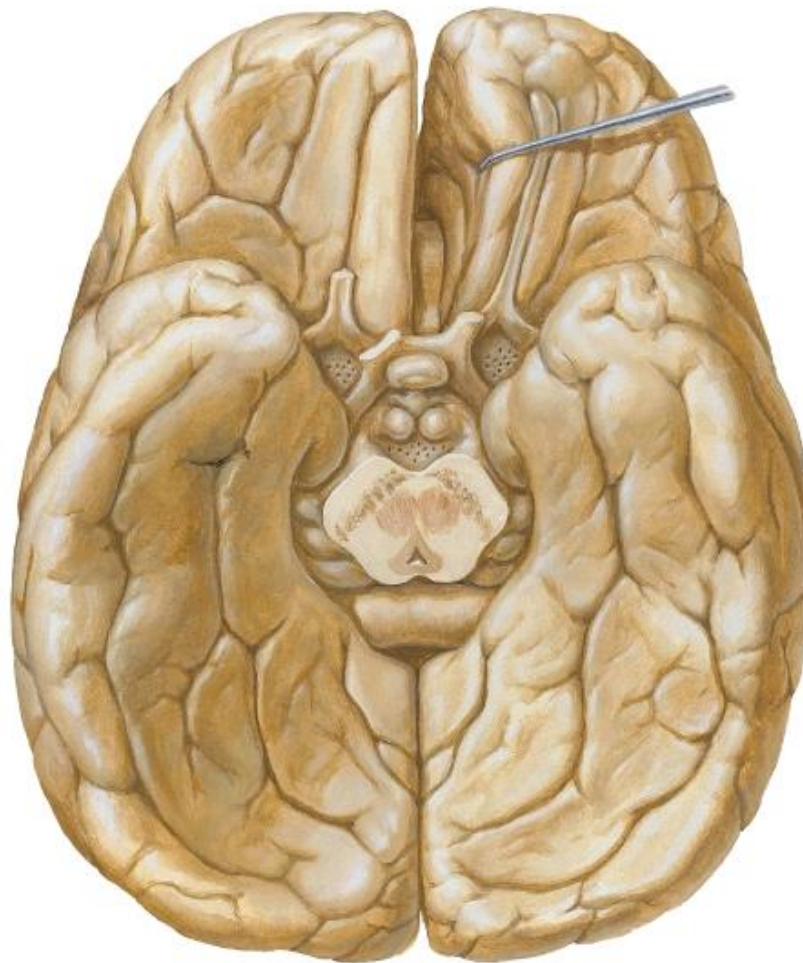
**Cerebrum - Insula (Island of Reil)**  
Lateral View



*F. Netter*  
M.D.  
© 1997

# Cerebrum

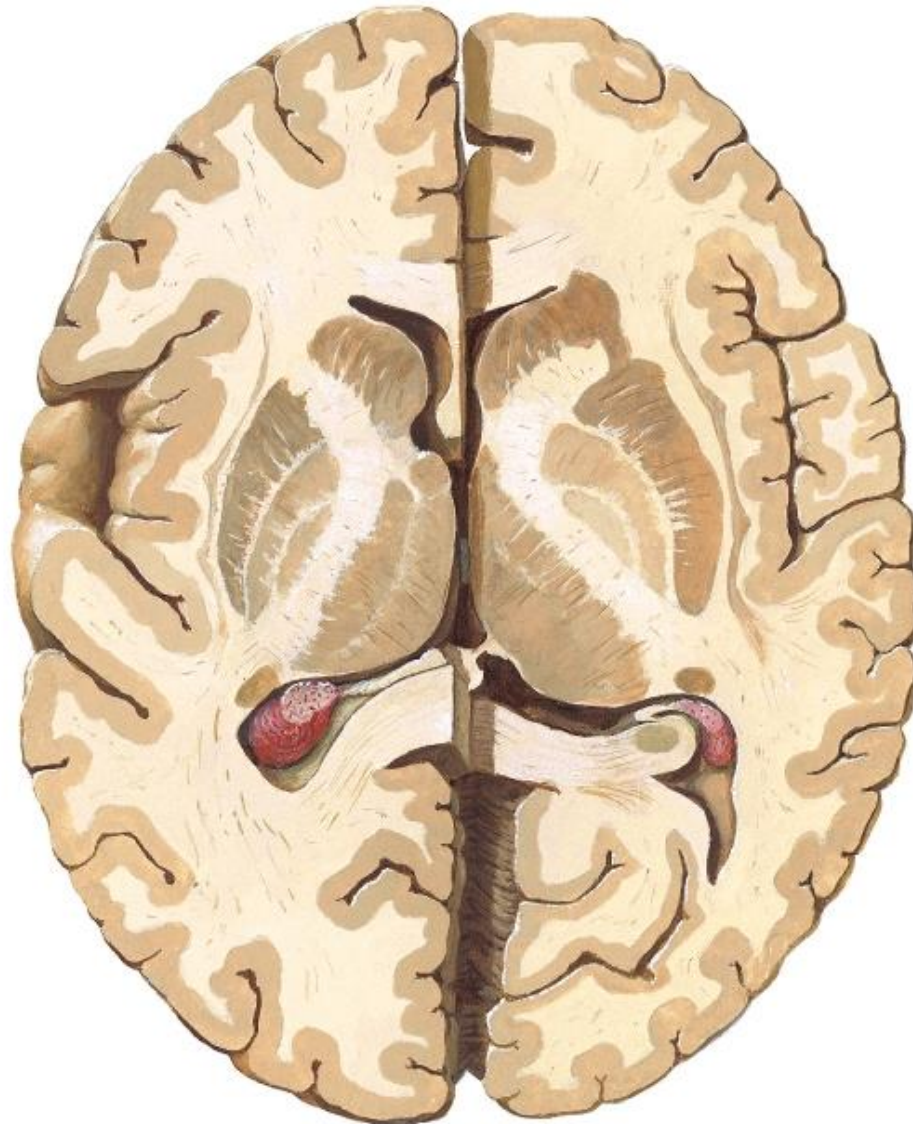
## Inferior View



*F. Netter*  
M.D.  
© I&N

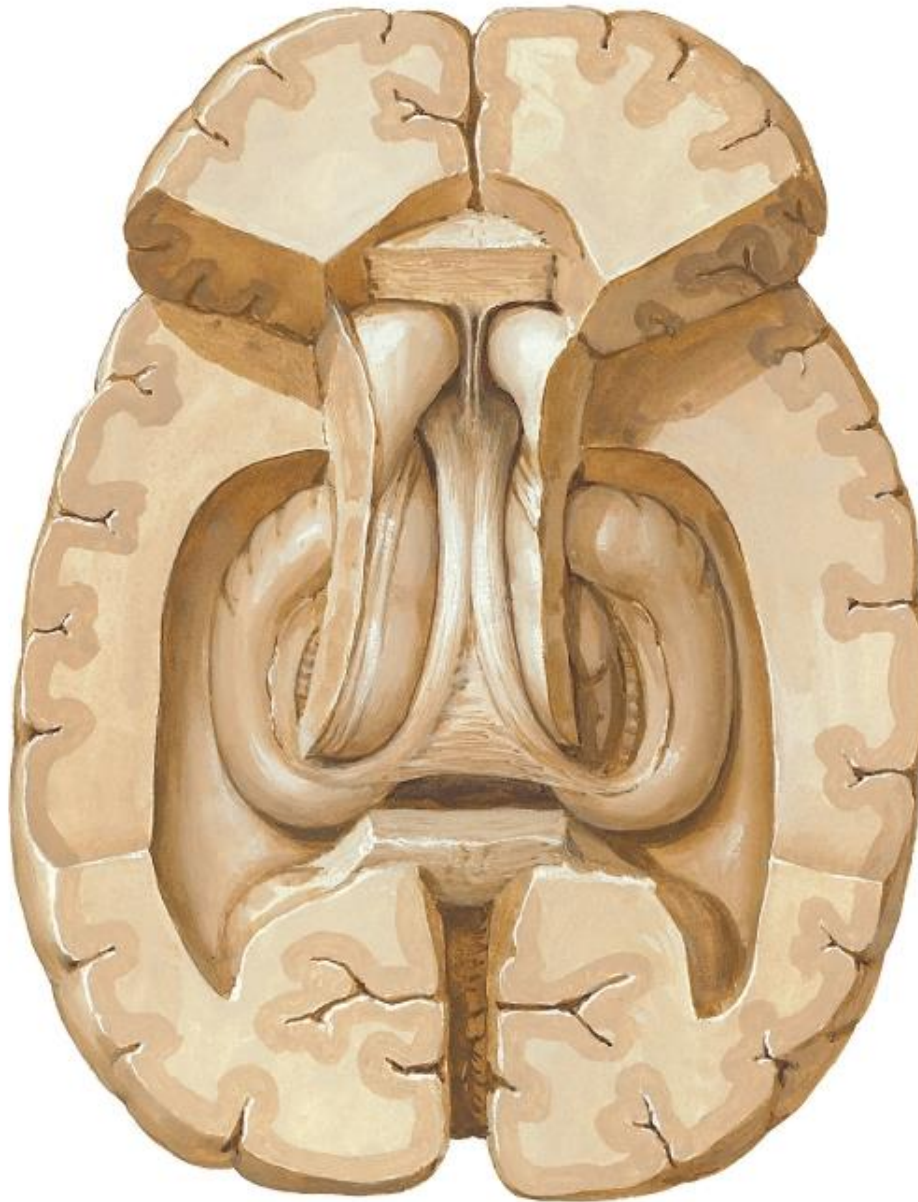
# Basal Nuclei (Ganglia)

## Horizontal Sections through Cerebrum



# Hippocampus and Fornix

## Superior Dissection



# Hippocampus and Fornix

Coronal Section: Posterior View



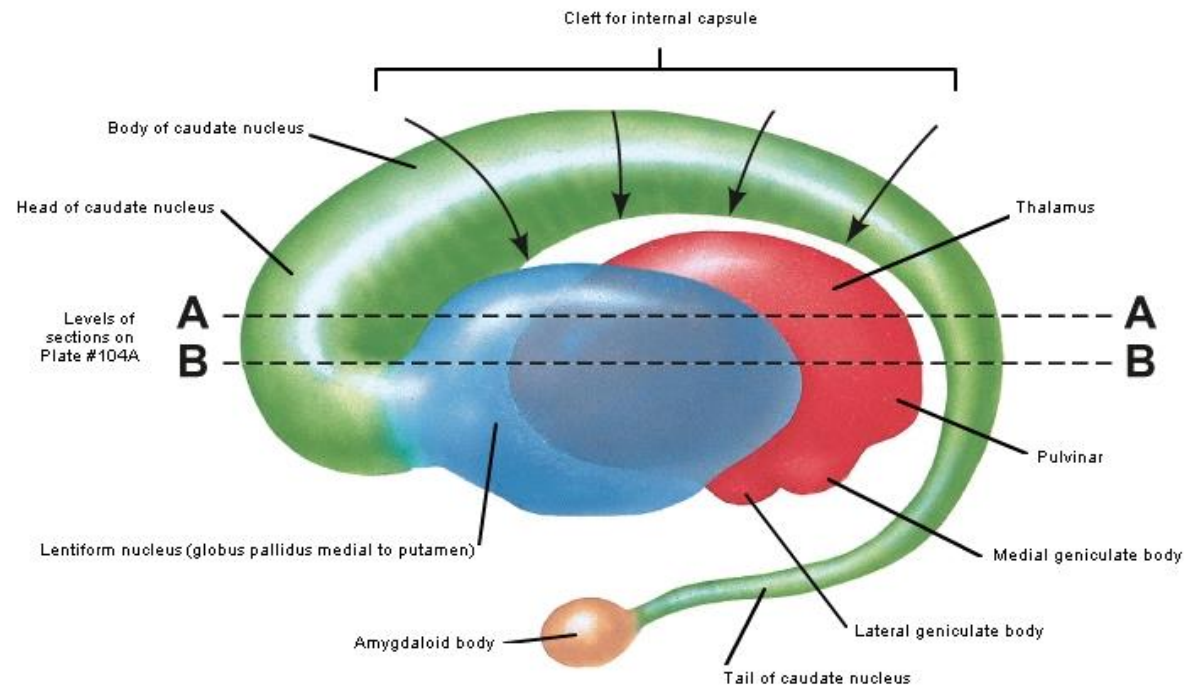
# Hippocampus and Fornix

## Schema of Fornix



# Basal Nuclei (Ganglia) - Schema

## Left Lateral View

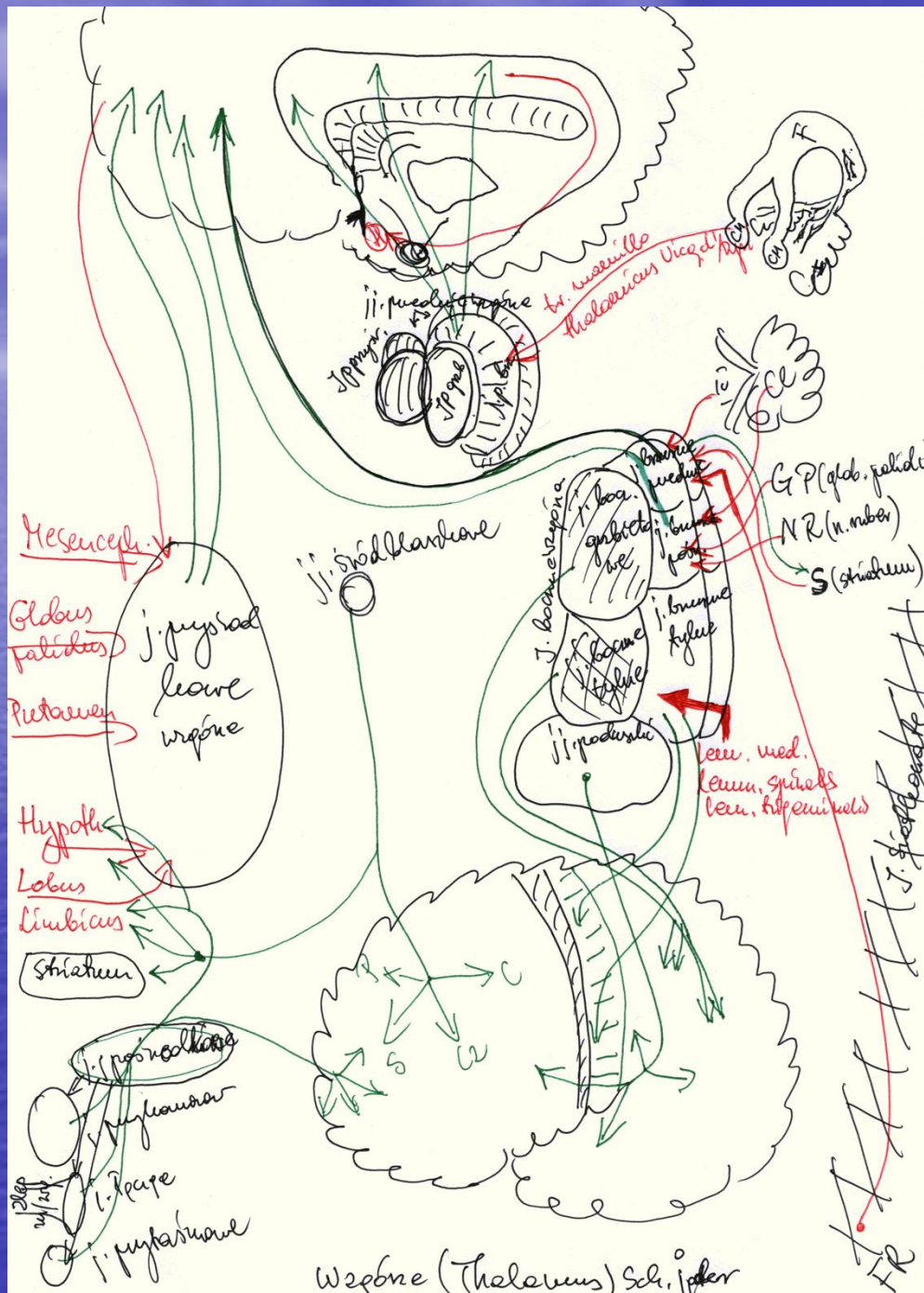


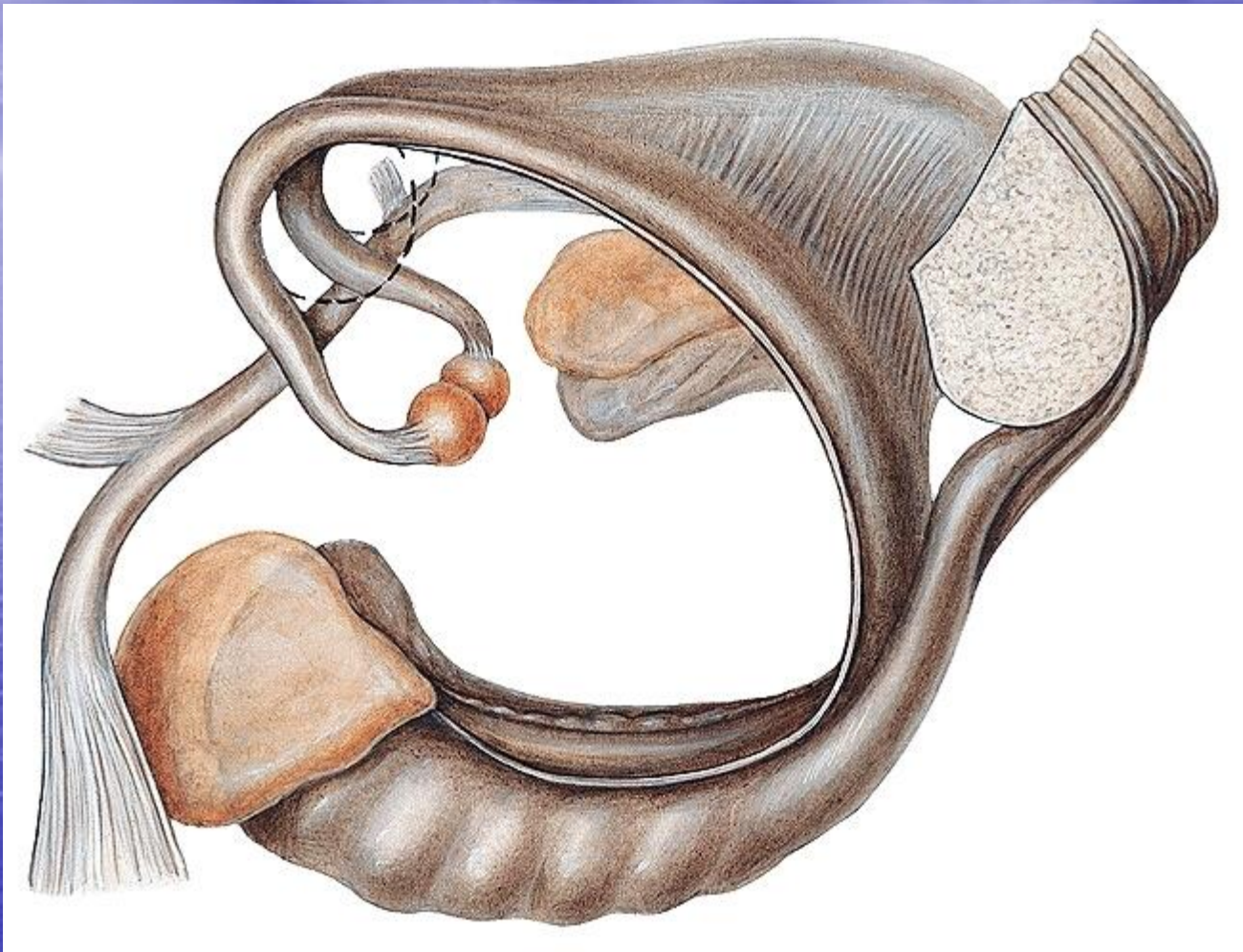
Interrelationship of thalamus, lentiform nucleus, caudate nucleus and amygdaloid body

# Ventricles of Brain

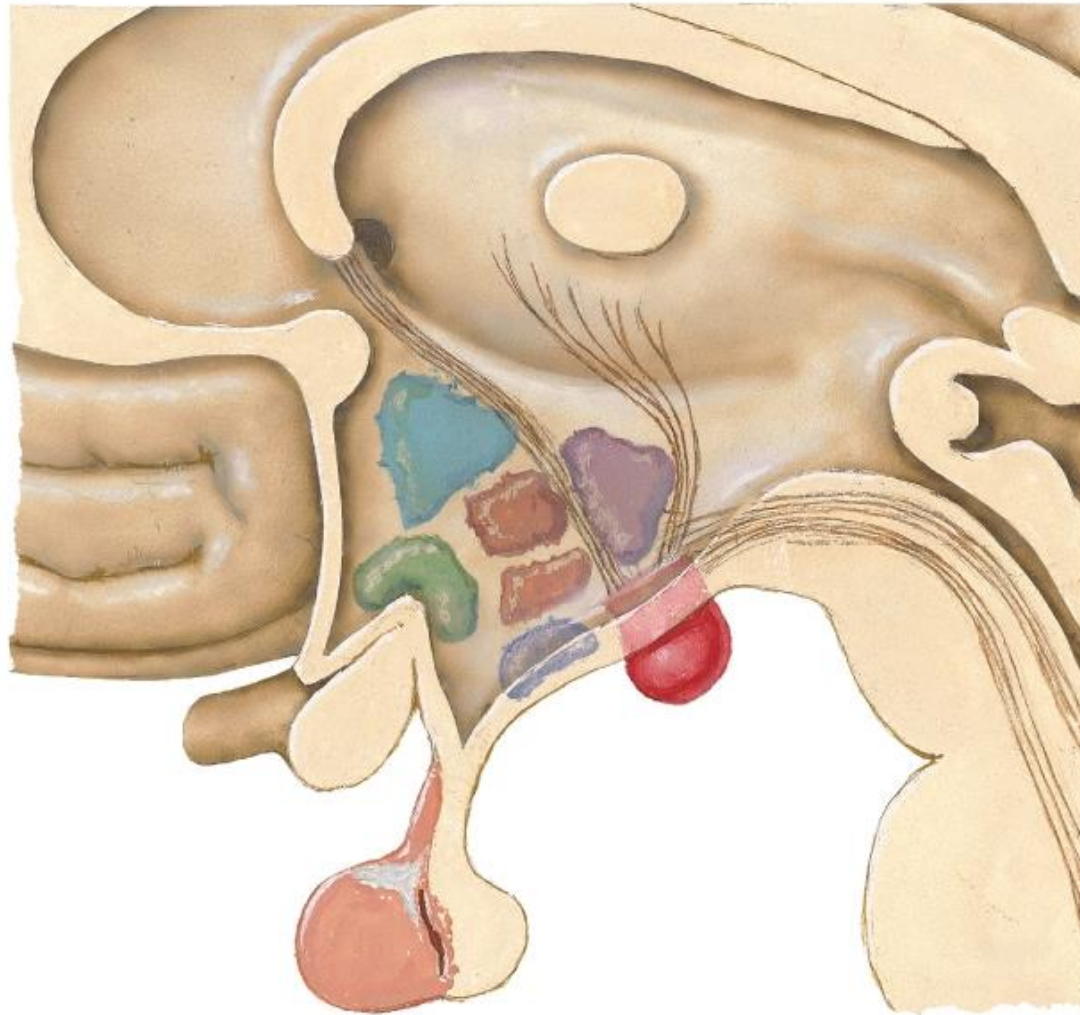
## Coronal Section: Posterior View



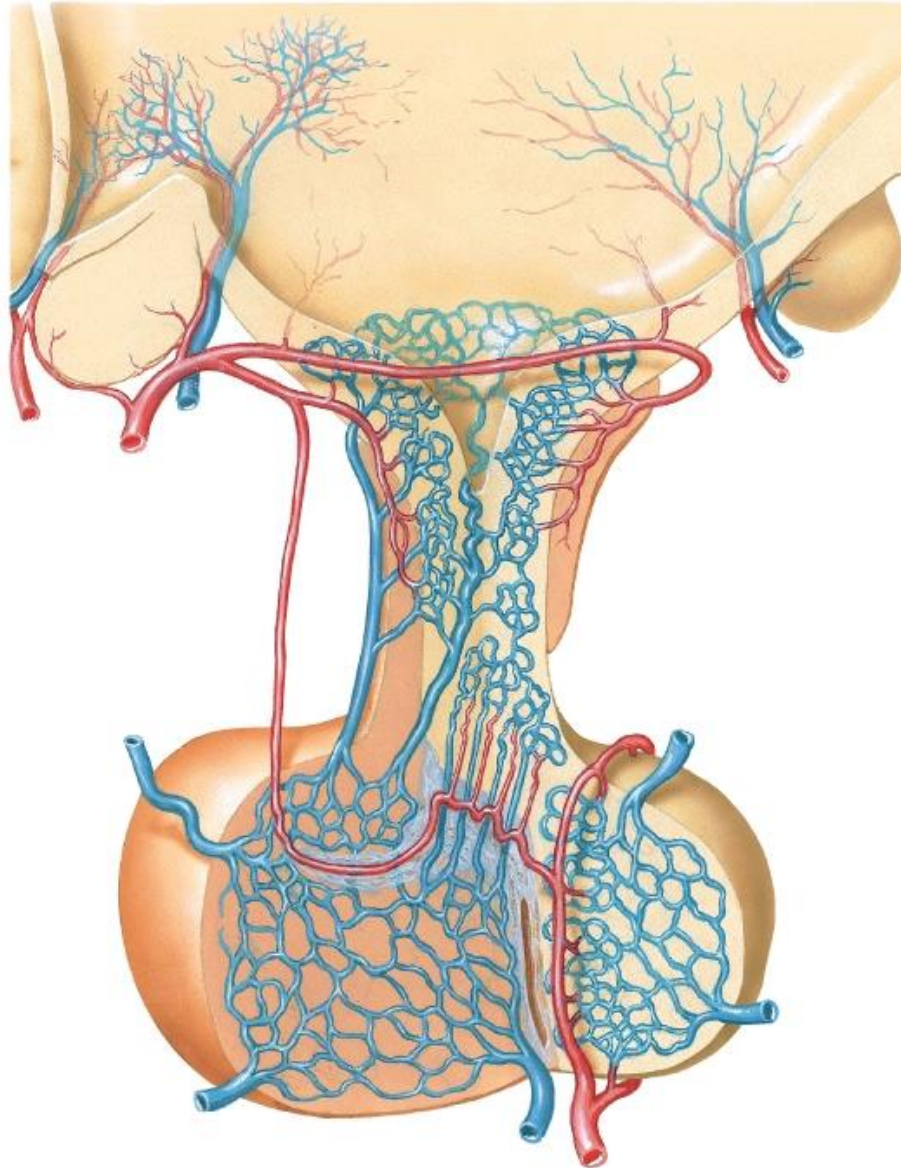




## Hypothalamus - Principal Nuclei

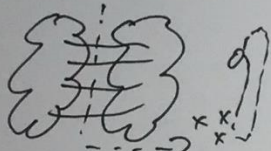


## Arteries and Veins of Hypothalamus and Hypophysis



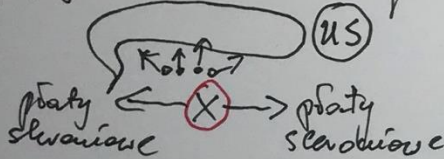
Włókna Nerwowe  
O u N

Wielkie projekcyjne = RZUTOWE =  
= DROGI NERWOWE

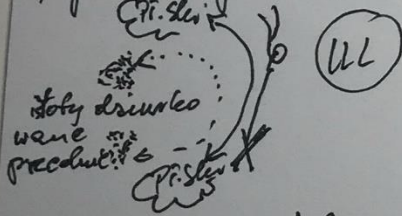


WŁ. SPOIDKOWE

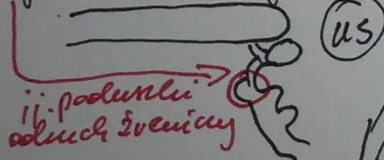
1) Spoidło wielkie mózgu



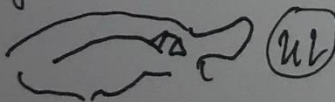
2) Spoidło przednie mózgu



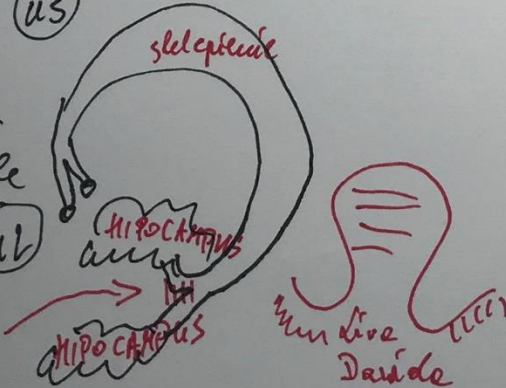
3) Spoidło mózgu tylne



4) Spoidło miedzy



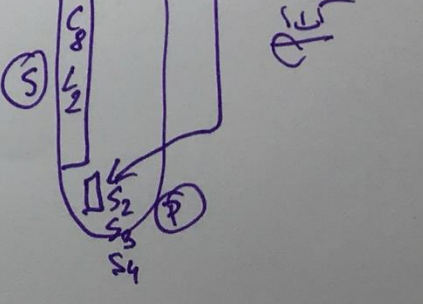
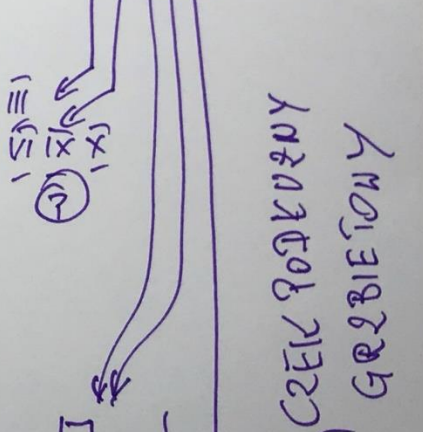
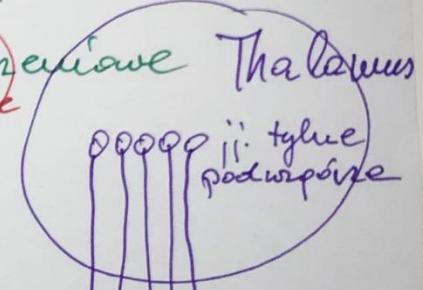
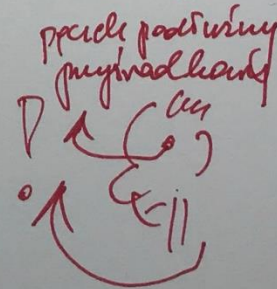
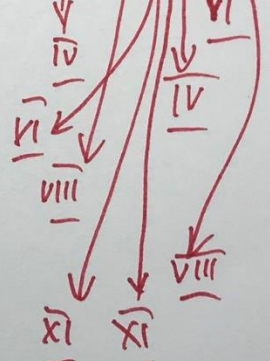
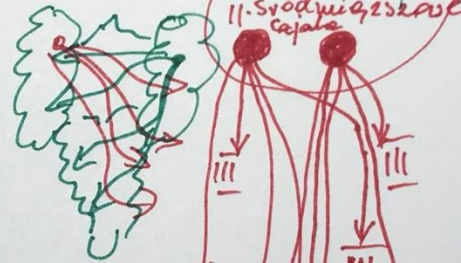
5) Spoidło sklepienie  
Hipo klanu pów



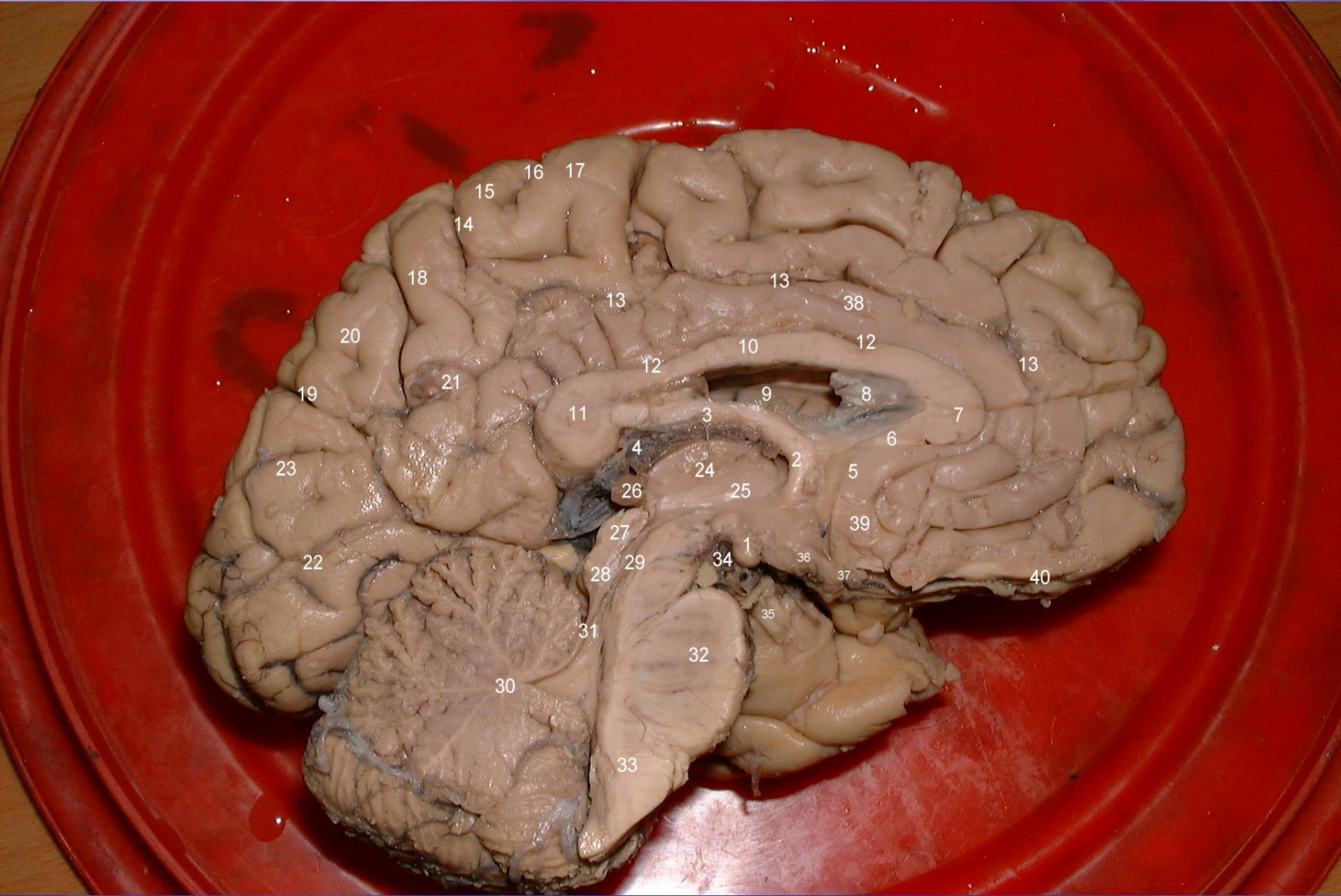
ŚRODMOZGO.  
ULI

Włókna kojarzeniowe

Thalamus



PECEK PODKONY  
GRZBIONY





# DROGI NERWOWE

DRO G1 RUCKOW E

Puchy celowe świadane  
precyzyjne olle   
DROGI

DROGI PIKARIDOWIE

Korawo isobare

Karav  
Kharav

tuf &  
Karavany

ΕΡ  
συμπίεσι  
παραμειώσε

P. Vaen  
dy

\* du leavatochenio  
10R Becan

15% permanent  
sympathy  
doe know  
previous  
medic.

DROGI  
CZULOWE.

DROGI →  
CZUCIOWE

Riedley ~~modeller~~ <sup>zautomatyzowane</sup>  
aplikacje minicolemani

~~DROGI POZA  
PIRA MIDOWE~~

Рис. 1. Схема движения

tecto  
rubro  
reticulo  
vestibulo  
olivo

spinalis

nucleus  
{ " }

nu. oliv  
nu. oliv.

3. 11. st. st.

Formation  
reticularis  
two cells  
spinalis  
oblique

1941042

## DRUGI CZUCIOWE

CZUCE GŁĘBOKIE

Stiensma da nian e <sup>Estado</sup>

- Fractus spinocerebellaris aut.

- fr. spinocerebellaris  
part.

(określano miedziowe  
rodzaje i style)

~~całkowicie z pominięciem~~  
~~stwierdzenia~~  
~~ze strony~~ ~~wyrażeń stereotypowych~~

Ušio de mane

iv. spin. bulbo thalamo  
corticalis

(odmienno punktno  
vyznano karane)

Drops open to the world  
from Lemniscata medicinalis  
(Wolff's pumpkins)

7. *neocortex*  
 2 głąb i wyj.  
 4. *nucleus striatus*  
 1. *hipocampus*  
 2. *amygdala*  
 3. *hipofiza*  
 4. *corpus callosum*  
 5. *corpus albicans*  
 6. *corpus luteum*  
 7. *corpus testis*  
 8. *corpus uteri*  
 9. *corpus ovarii*  
 10. *corpus epididymidis*  
 11. *corpus deferens*  
 12. *corpus vas deferens*  
 13. *corpus urethrae*  
 14. *corpus penile*  
 15. *corpus cavernosum*  
 16. *corpus spongiosum*  
 17. *corpus bulbosum*  
 18. *corpus clitoridis*  
 19. *corpus labiorum*  
 20. *corpus vaginae*  
 21. *corpus cervicis*  
 22. *corpus uteri*  
 23. *corpus ovarii*  
 24. *corpus epididymidis*  
 25. *corpus deferens*  
 26. *corpus vas deferens*  
 27. *corpus urethrae*  
 28. *corpus penile*  
 29. *corpus cavernosum*  
 30. *corpus spongiosum*  
 31. *corpus bulbosum*  
 32. *corpus clitoridis*  
 33. *corpus labiorum*  
 34. *corpus vaginae*  
 35. *corpus cervicis*  
 36. *corpus uteri*  
 37. *corpus ovarii*  
 38. *corpus epididymidis*  
 39. *corpus deferens*  
 40. *corpus vas deferens*  
 41. *corpus urethrae*  
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 49. *corpus cervicis*  
 50. *corpus uteri*  
 51. *corpus ovarii*  
 52. *corpus epididymidis*  
 53. *corpus deferens*  
 54. *corpus vas deferens*  
 55. *corpus urethrae*  
 56. *corpus penile*  
 57. *corpus cavernosum*  
 58. *corpus spongiosum*  
 59. *corpus bulbosum*  
 60. *corpus clitoridis*  
 61. *corpus labiorum*  
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 63. *corpus cervicis*  
 64. *corpus uteri*  
 65. *corpus ovarii*  
 66. *corpus epididymidis*  
 67. *corpus deferens*  
 68. *corpus vas deferens*  
 69. *corpus urethrae*  
 70. *corpus penile*  
 71. *corpus cavernosum*  
 72. *corpus spongiosum*  
 73. *corpus bulbosum*  
 74. *corpus clitoridis*  
 75. *corpus labiorum*  
 76. *corpus vaginae*  
 77. *corpus cervicis*  
 78. *corpus uteri*  
 79. *corpus ovarii*  
 80. *corpus epididymidis*  
 81. *corpus deferens*  
 82. *corpus vas deferens*  
 83. *corpus urethrae*  
 84. *corpus penile*  
 85. *corpus cavernosum*  
 86. *corpus spongiosum*  
 87. *corpus bulbosum*  
 88. *corpus clitoridis*  
 89. *corpus labiorum*  
 90. *corpus vaginae*  
 91. *corpus cervicis*  
 92. *corpus uteri*  
 93. *corpus ovarii*  
 94. *corpus epididymidis*  
 95. *corpus deferens*  
 96. *corpus vas deferens*  
 97. *corpus urethrae*  
 98. *corpus penile*  
 99. *corpus cavernosum*  
 100. *corpus spongiosum*  
 101. *corpus bulbosum*  
 102. *corpus clitoridis*  
 103. *corpus labiorum*  
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 105. *corpus cervicis*  
 106. *corpus uteri*  
 107. *corpus ovarii*  
 108. *corpus epididymidis*  
 109. *corpus deferens*  
 110. *corpus vas deferens*  
 111. *corpus urethrae*  
 112. *corpus penile*  
 113. *corpus cavernosum*  
 114. *corpus spongiosum*  
 115. *corpus bulbosum*  
 116. *corpus clitoridis*  
 117. *corpus labiorum*  
 118. *corpus vaginae*  
 119. *corpus cervicis*  
 120. *corpus uteri*  
 121. *corpus ovarii*  
 122. *corpus epididymidis*  
 123. *corpus deferens*  
 124. *corpus vas deferens*  
 125. *corpus urethrae*  
 126. *corpus penile*  
 127. *corpus cavernosum*  
 128. *corpus spongiosum*  
 129. *corpus bulbosum*  
 130. *corpus clitoridis*  
 131. *corpus labiorum*  
 132. *corpus vaginae*  
 133. *corpus cervicis*  
 134. *corpus uteri*  
 135. *corpus ovarii*  
 136. *corpus epididymidis*  
 137. *corpus deferens*  
 138. *corpus vas deferens*  
 139. *corpus urethrae*  
 140. *corpus penile*  
 141. *corpus cavernosum*  
 142. *corpus spongiosum*  
 143. *corpus bulbosum*  
 144. *corpus clitoridis*  
 145. *corpus labiorum*  
 146. *corpus vaginae*  
 147. *corpus cervicis*  
 148. *corpus uteri*  
 149. *corpus ovarii*  
 150. *corpus epididymidis*  
 151. *corpus deferens*  
 152. *corpus vas deferens*  
 153. *corpus urethrae*  
 154. *corpus penile*  
 155. *corpus cavernosum*  
 156. *corpus spongiosum*  
 157. *corpus bulbosum*  
 158. *corpus clitoridis*  
 159. *corpus labiorum*  
 160. *corpus vaginae*  
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 164. *corpus epididymidis*  
 165. *corpus deferens*  
 166. *corpus vas deferens*  
 167. *corpus urethrae*  
 168. *corpus penile*  
 169. *corpus cavernosum*  
 170. *corpus spongiosum*  
 171. *corpus bulbosum*  
 172. *corpus clitoridis*  
 173. *corpus labiorum*  
 174. *corpus vaginae*  
 175. *corpus cervicis*  
 176. *corpus uteri*  
 177. *corpus ovarii*  
 178. *corpus epididymidis*  
 179. *corpus deferens*  
 180. *corpus vas deferens*  
 181. *corpus urethrae*  
 182. *corpus penile*  
 183. *corpus cavernosum*  
 184. *corpus spongiosum*  
 185. *corpus bulbosum*  
 186. *corpus clitoridis*  
 187. *corpus labiorum*  
 188. *corpus vaginae*  
 189. *corpus cervicis*  
 190. *corpus uteri*  
 191. *corpus ovarii*  
 192. *corpus epididymidis*  
 193. *corpus deferens*  
 194. *corpus vas deferens*  
 195. *corpus urethrae*  
 196. *corpus penile*  
 197. *corpus cavernosum*  
 198. *corpus spongiosum*  
 199. *corpus bulbosum*  
 200. *corpus clitoridis*  
 201. *corpus labiorum*  
 202. *corpus vaginae*  
 203. *corpus cervicis*  
 204. *corpus uteri*  
 205. *corpus ovarii*  
 206. *corpus epididymidis*  
 207. *corpus deferens*  
 208. *corpus vas deferens*  
 209. *corpus urethrae*  
 210. *corpus pen*

Quelle poutre d'axe

M. S. W. & L. W. W.

*Tr. spiniferellus*  
corticis  
(admiris propolis  
koreana)

- roh. mp. pucoliva oblyh kuste
- roh. wy. bocine bol temperetue

Nicushia  
de wis

FR. ~~Mr.~~ ~~te~~

A hand-drawn diagram of a cell. A large circle represents the cell membrane. Inside, a smaller circle represents the nucleus, containing a nucleolus. Various organelles are drawn, including mitochondria (bean-shaped with internal folds), Golgi apparatus (stacked sacs), and other vesicles. Labels with arrows point to these structures, though the text is partially obscured by a watermark.

FR

44. 45

live in FR

- cunctor  
 - cunctor

20

Fr. undeo  $\swarrow$  11-22  
 Verticillatus mk. 22  
 olivaceus  $\nearrow$   
 reticulatus  $\nwarrow$   
 Mobergii  $\swarrow$   
 fectalis  $\swarrow$  Fr. spino



Корона

W zębinach

J. Pacine up.  
Os. Braunio  
tylina  
Podkowany osi.  
caucia somatogrupa

Lamiscus Medialis

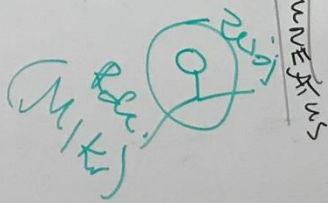
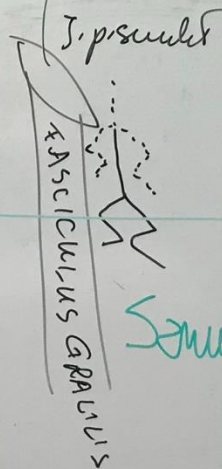
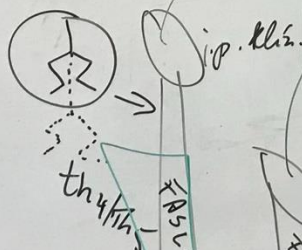
L.M.

L. Med.

Decussatio  
Lamiscorum

Most  
Opuntia  
P. L.

Opuntia  
Rob.



Somogyi

Rob.  
Kup

Główny struchony  
pł. a.c.

prężyć młotenne = struchone  
**Striae medullares**  
SEN ACUSTICAE

Ciało  
kolanki  
wół  
prężyć  
struchone

stimula  
j. prężyć  
n. VIII  
ST.

Prężyć Rasmussen

L. Med

stimula  
j. struchone  
n. VIII  
ST.

kor. str.  
wół.

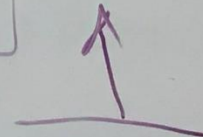
VIII

Corpus trapesoideum

o j. prężyć górnę  
o j. struchone  
o j. wół  
o j. struchone

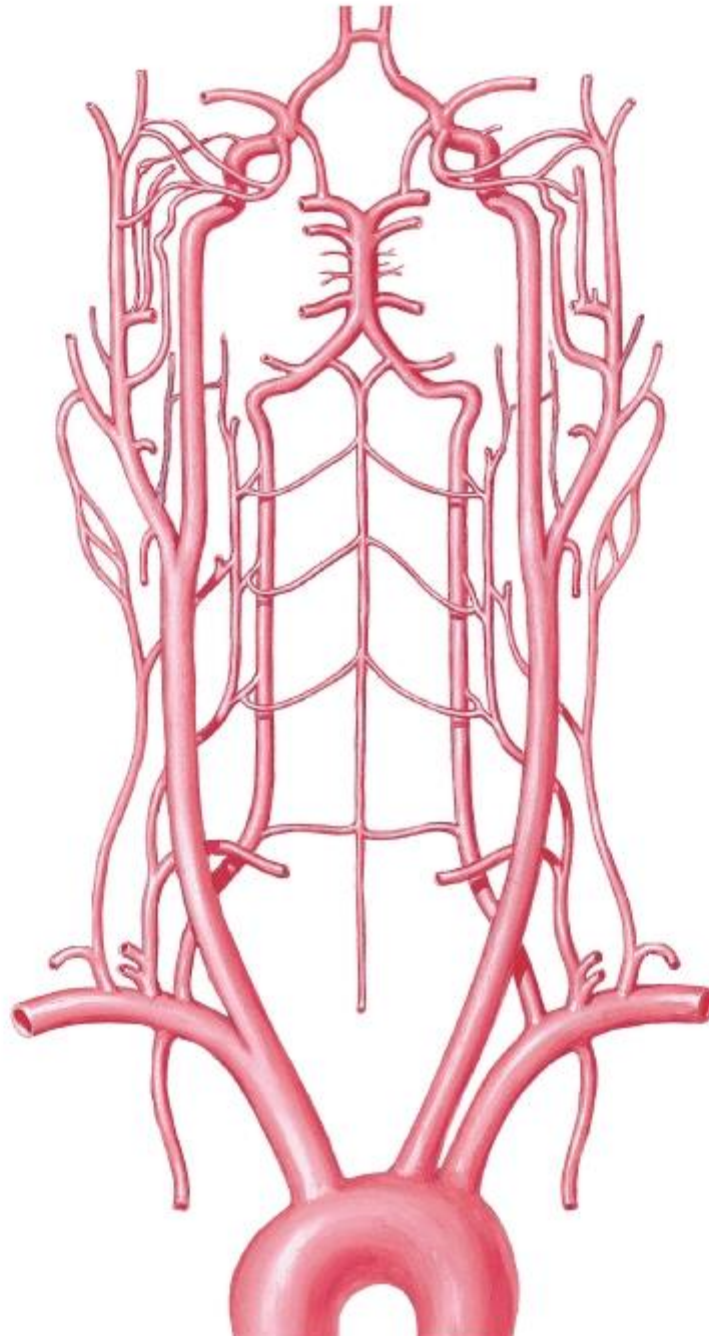
Wółpa barma = struchone

Lemniscus  
lat sen  
Acusticus

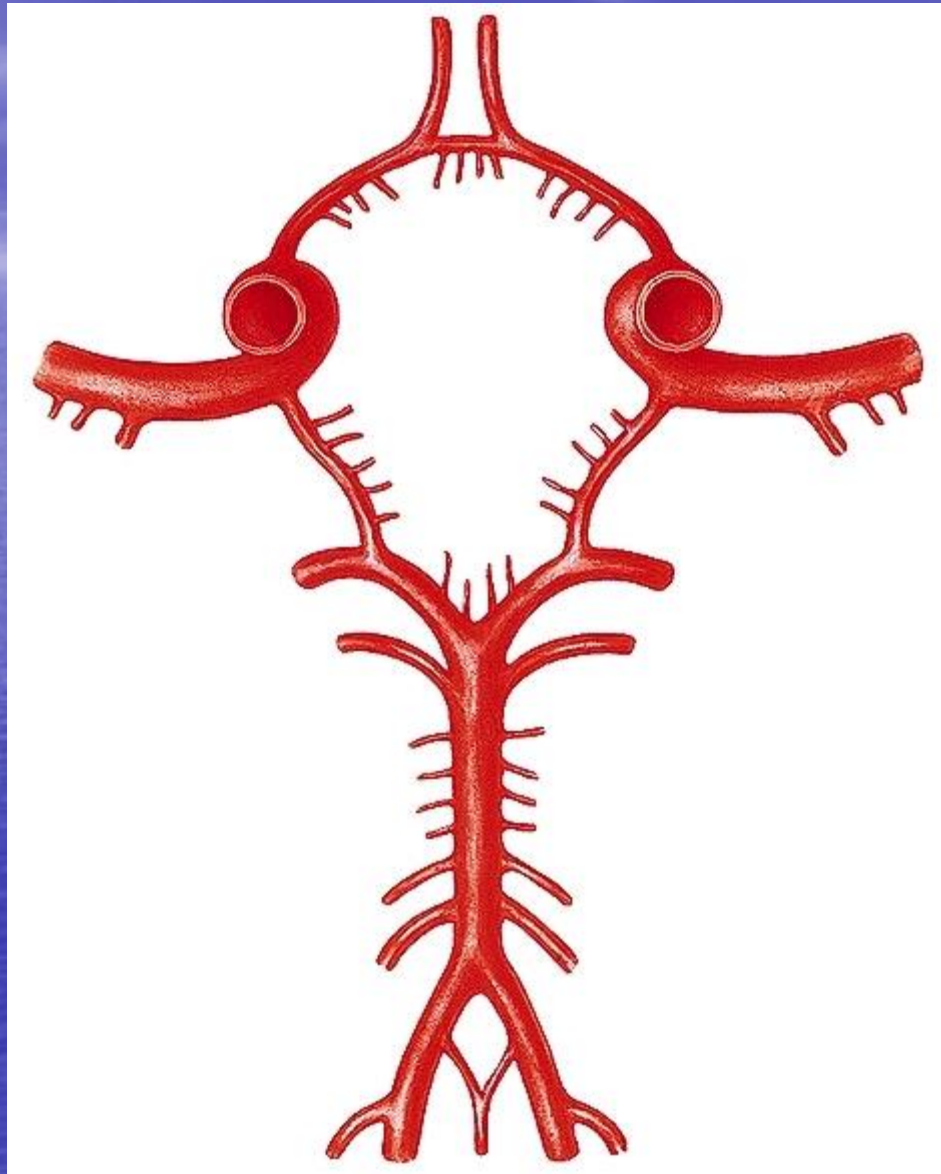


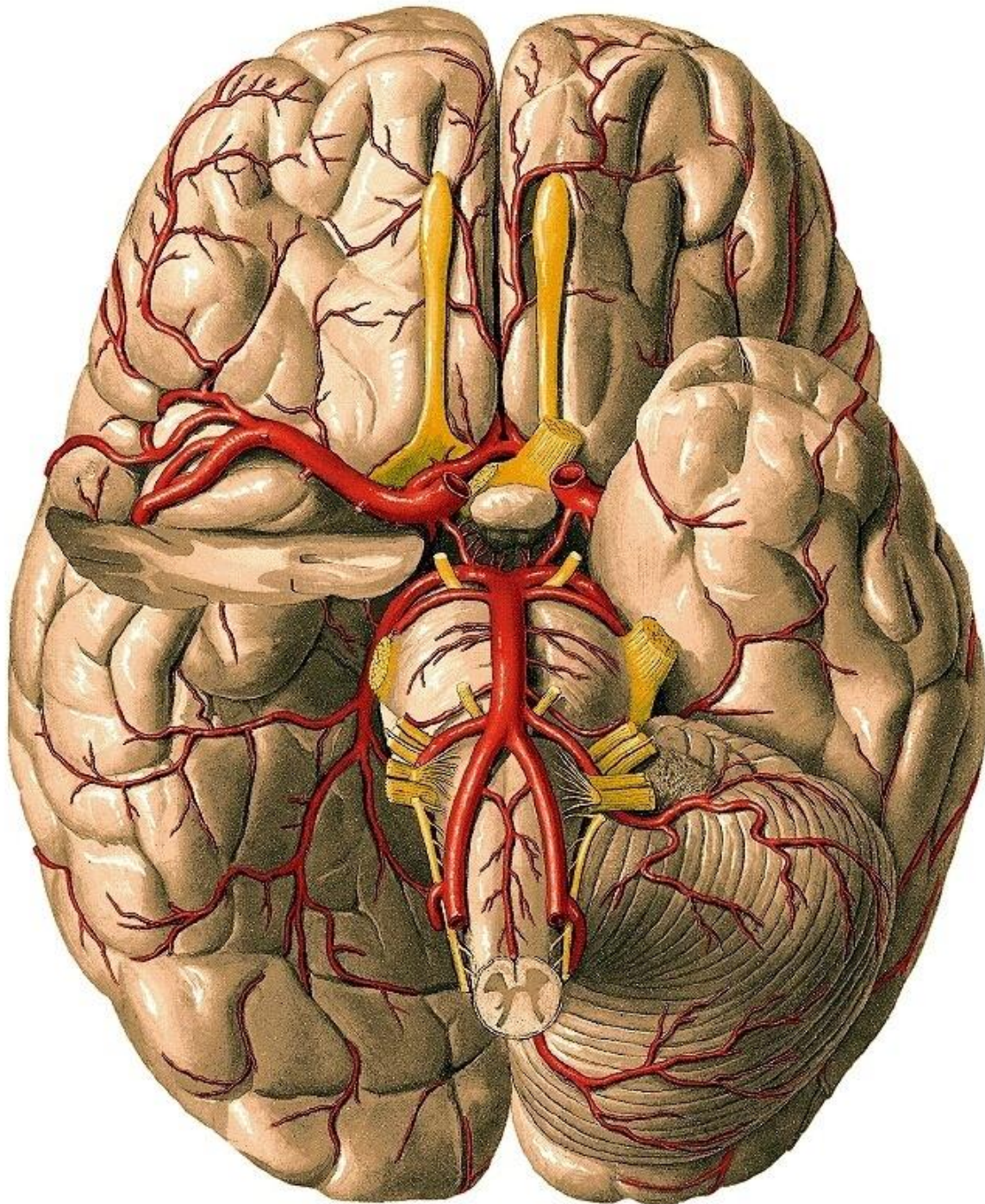
# **Naczynia Ośrodkowego Układu Nerwowego**

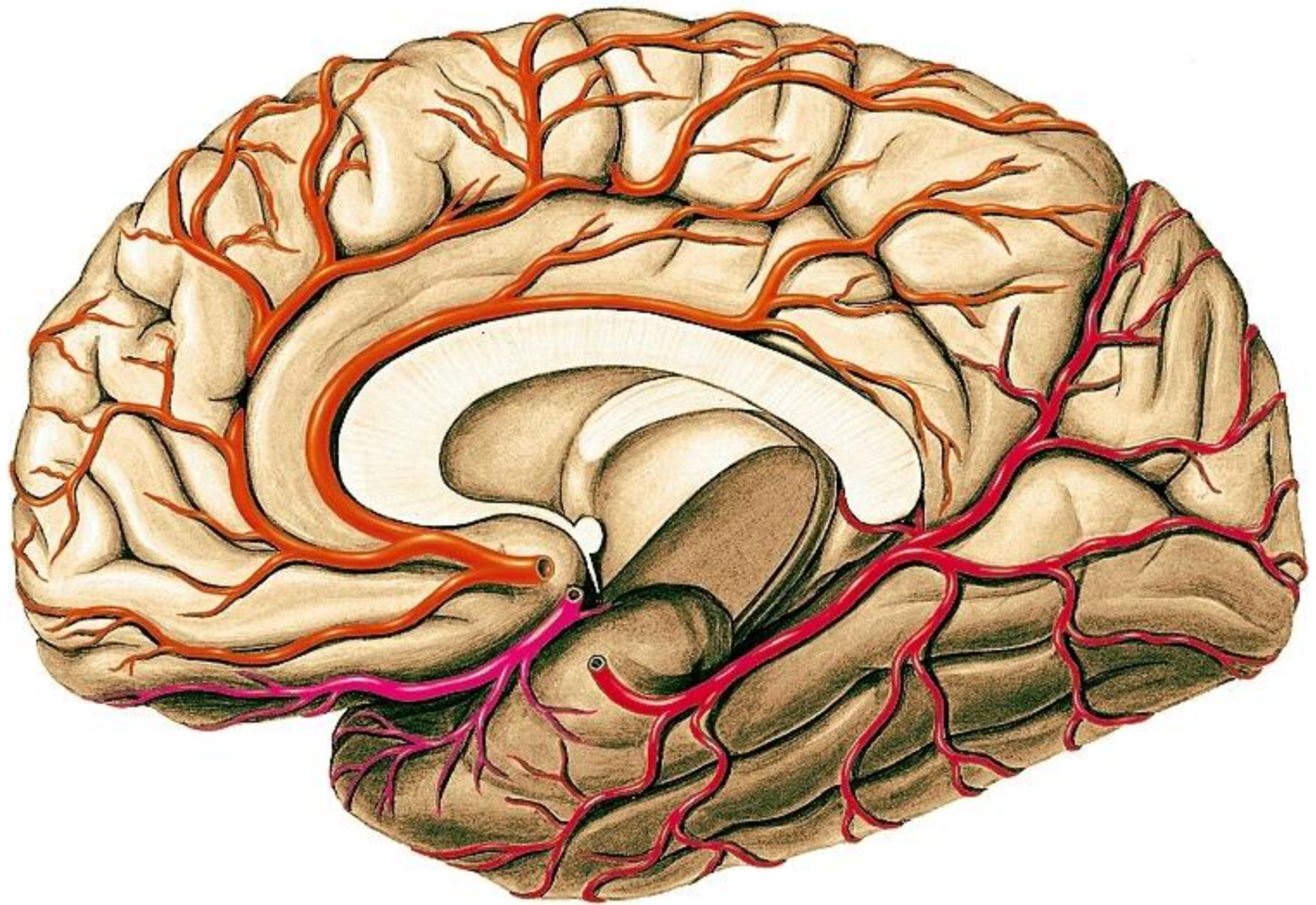
# Arteries to Brain: Schema



*F. Netter*  
M.D.  
© 1994

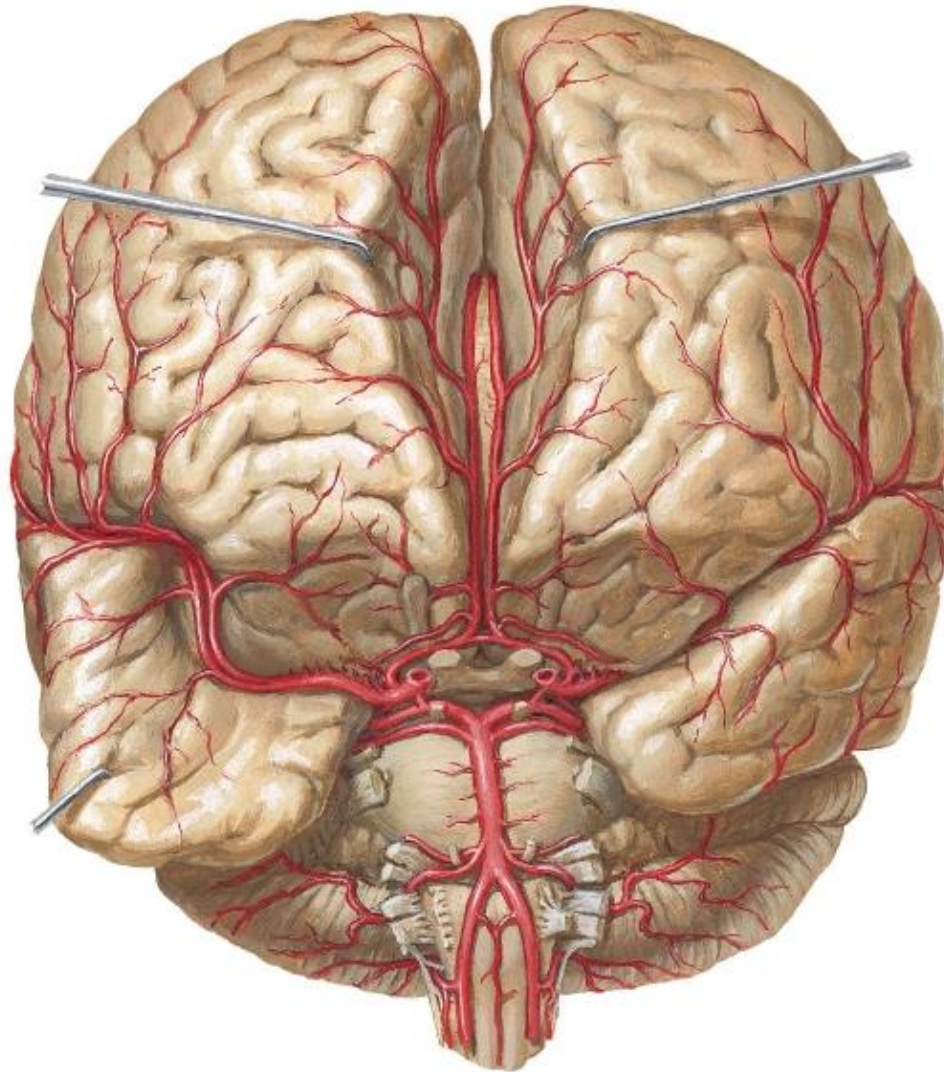






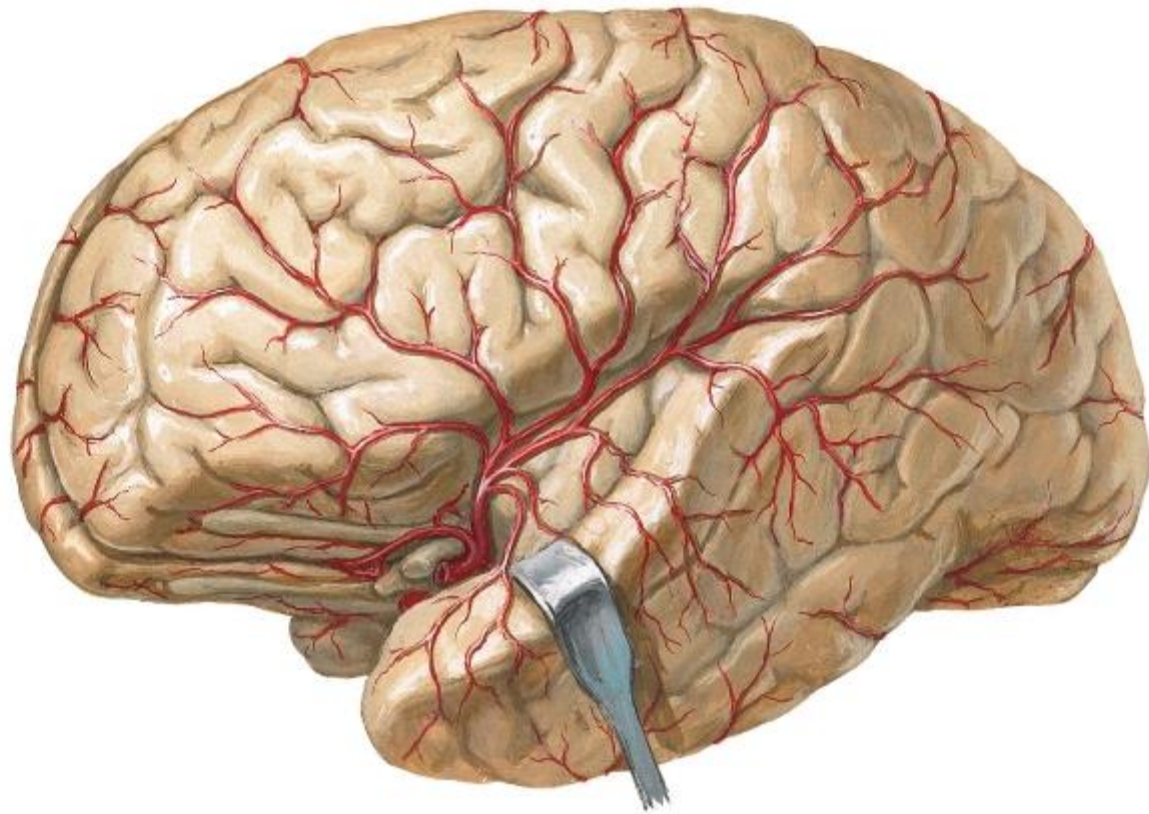
# Arteries of Brain

## Frontal View



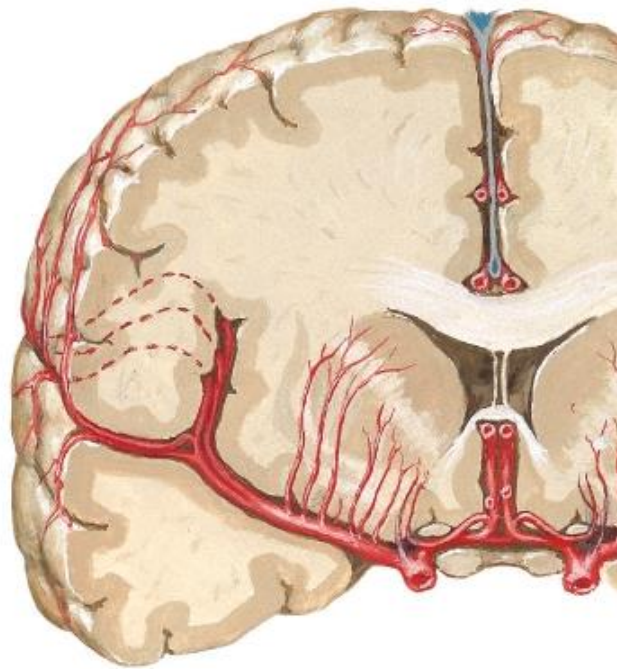
# Arteries of Brain

## Lateral View



# Arteries of Brain

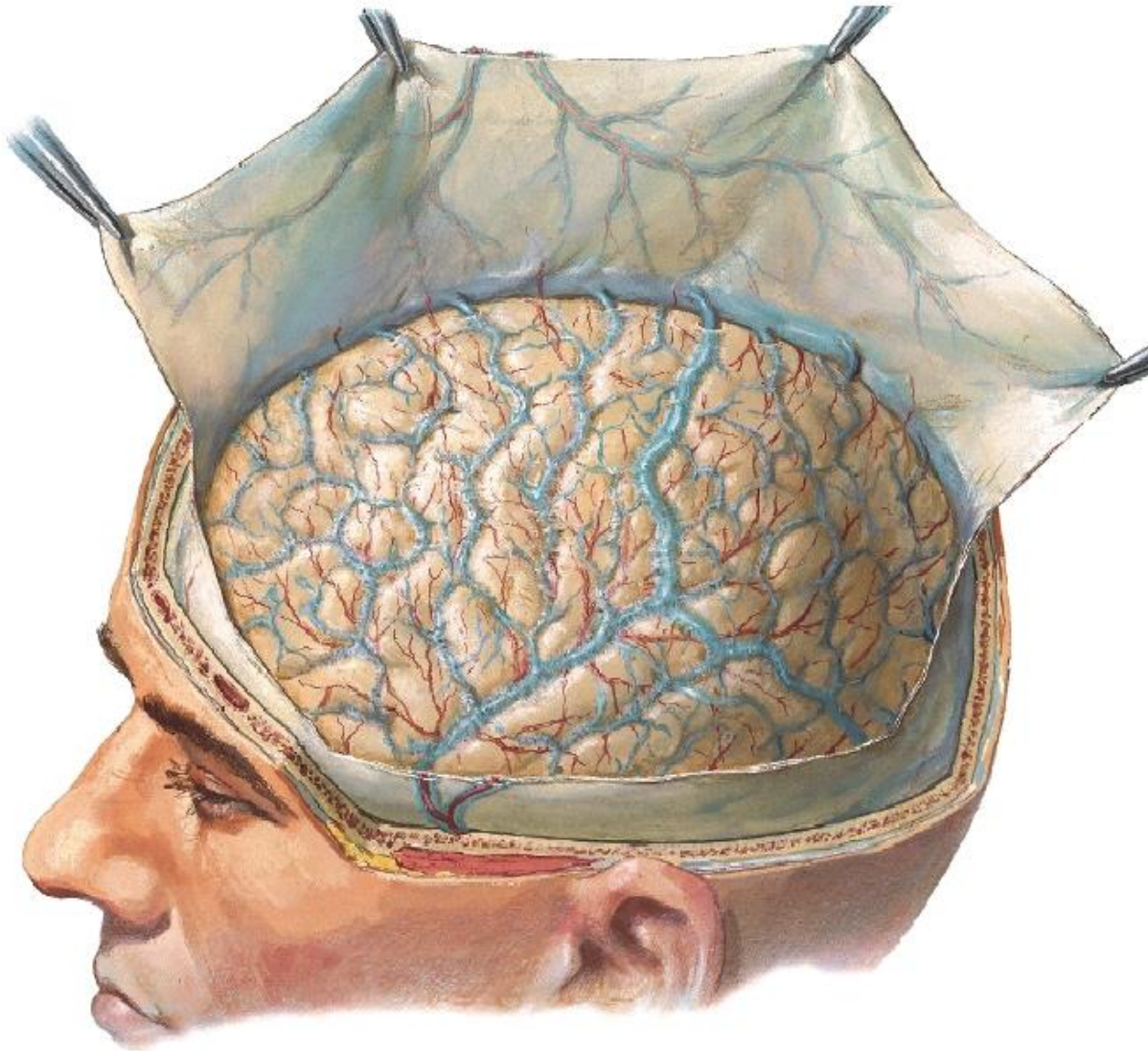
## Frontal Section

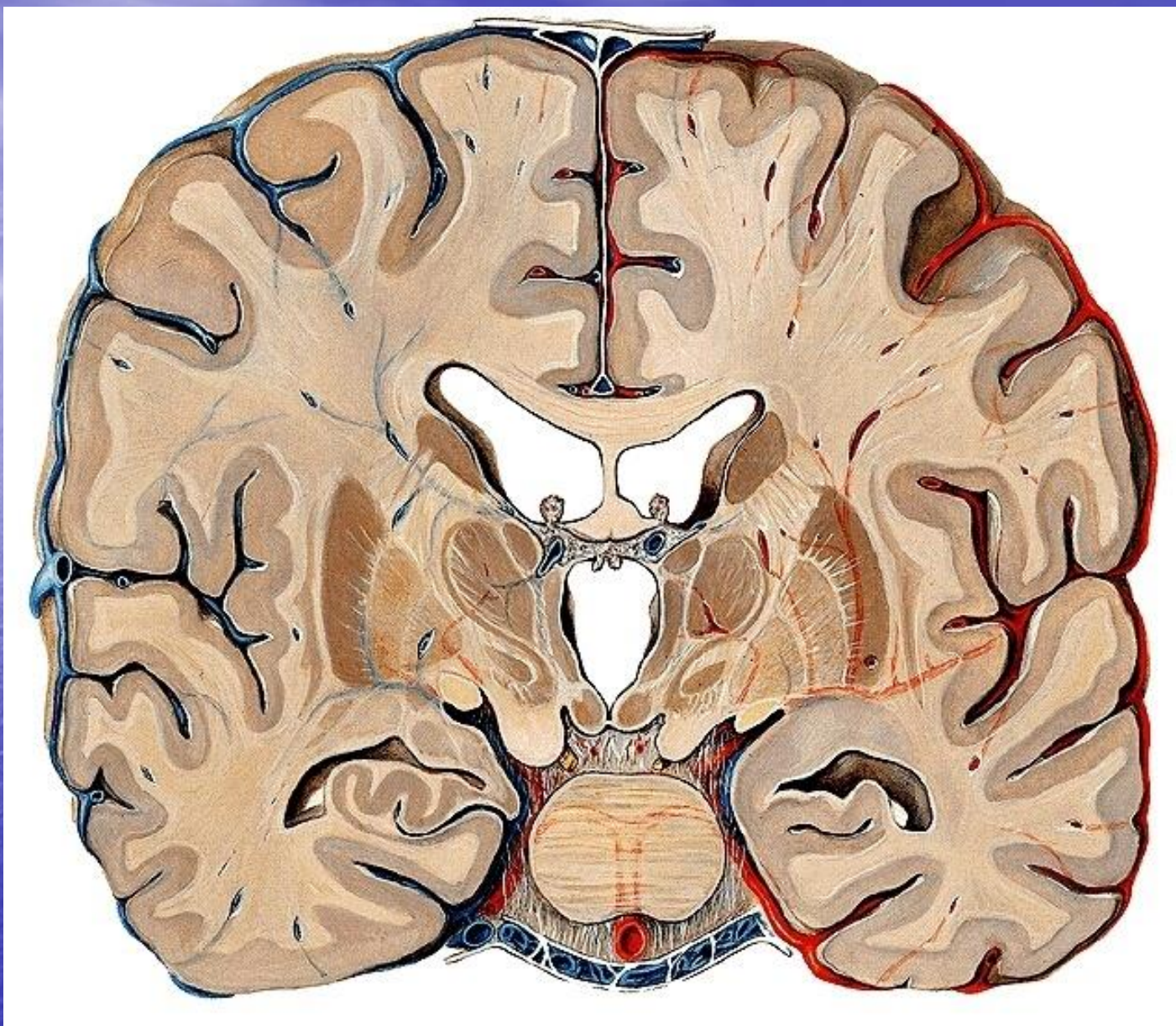




# Meninges and Superficial Cerebral Veins

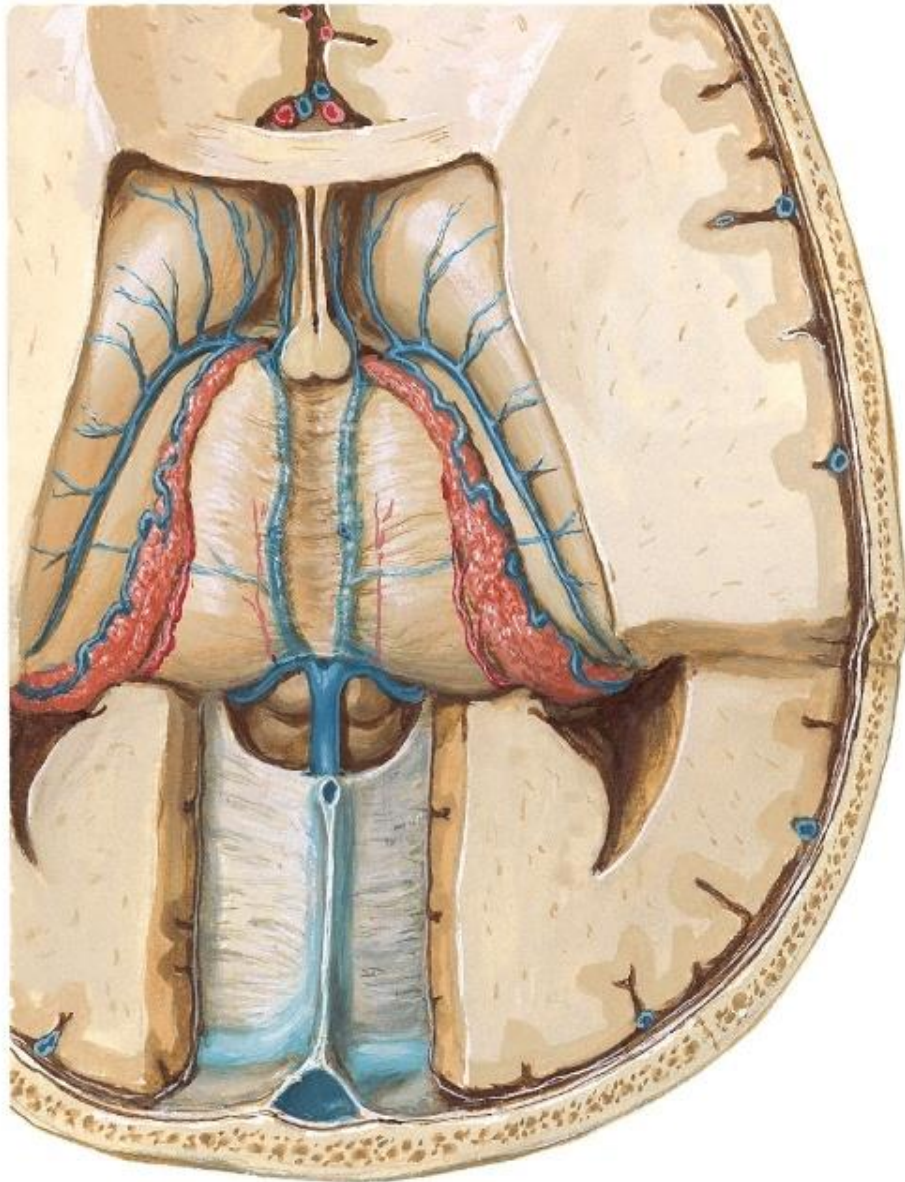
## Dura Mater Lifted





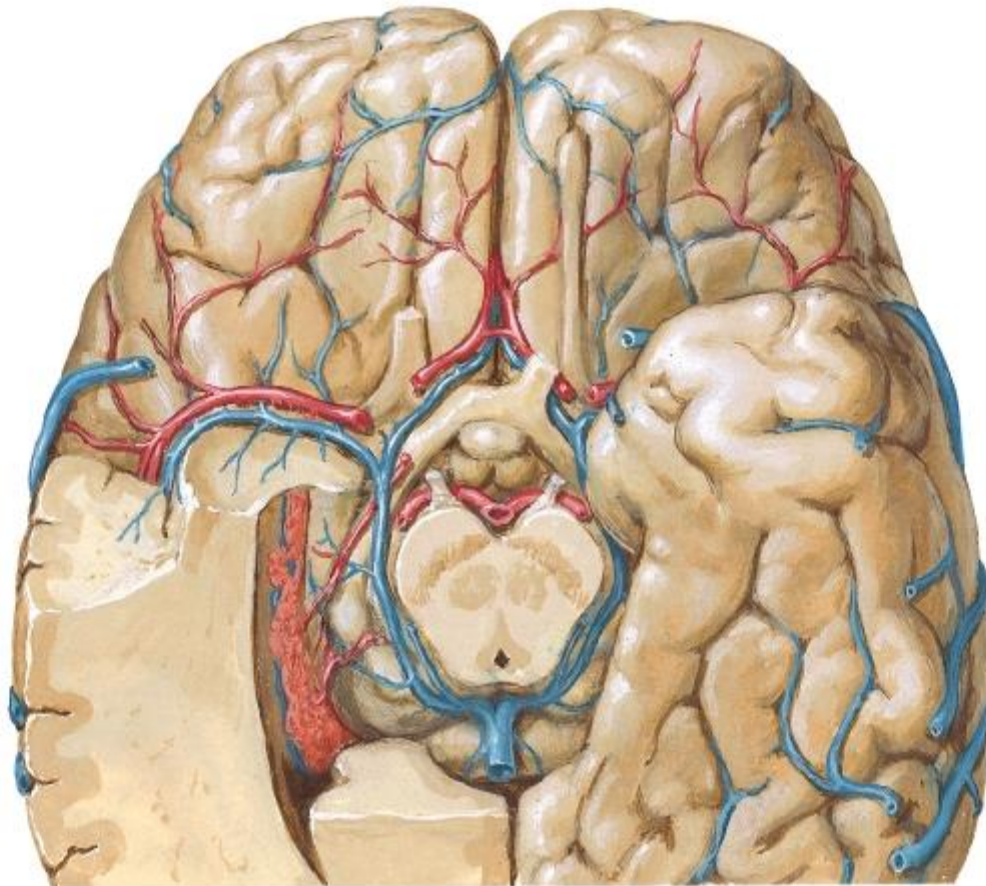
# Deep Veins of Brain - Dissection

## Superior View

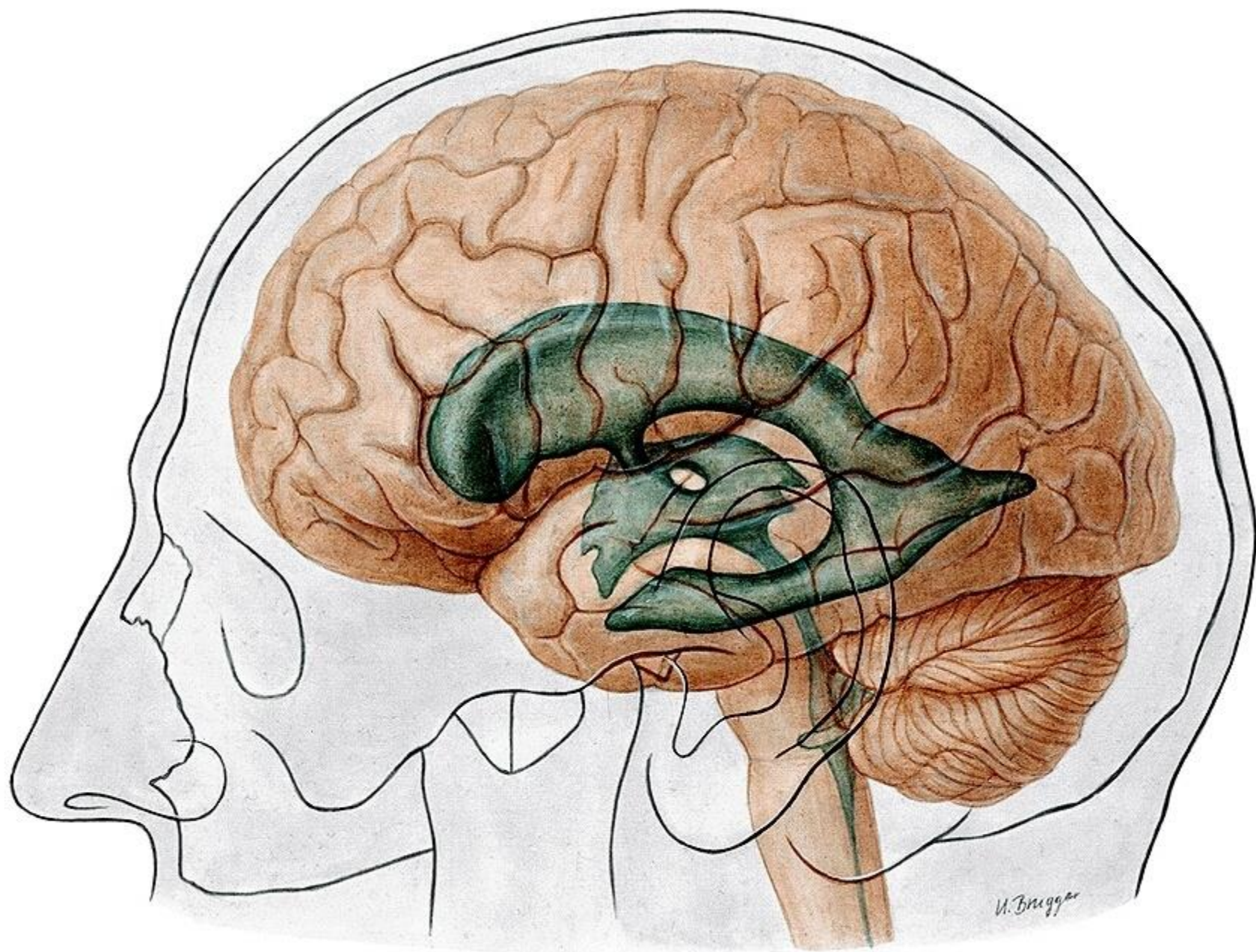


# Deep Veins of Brain - Dissection

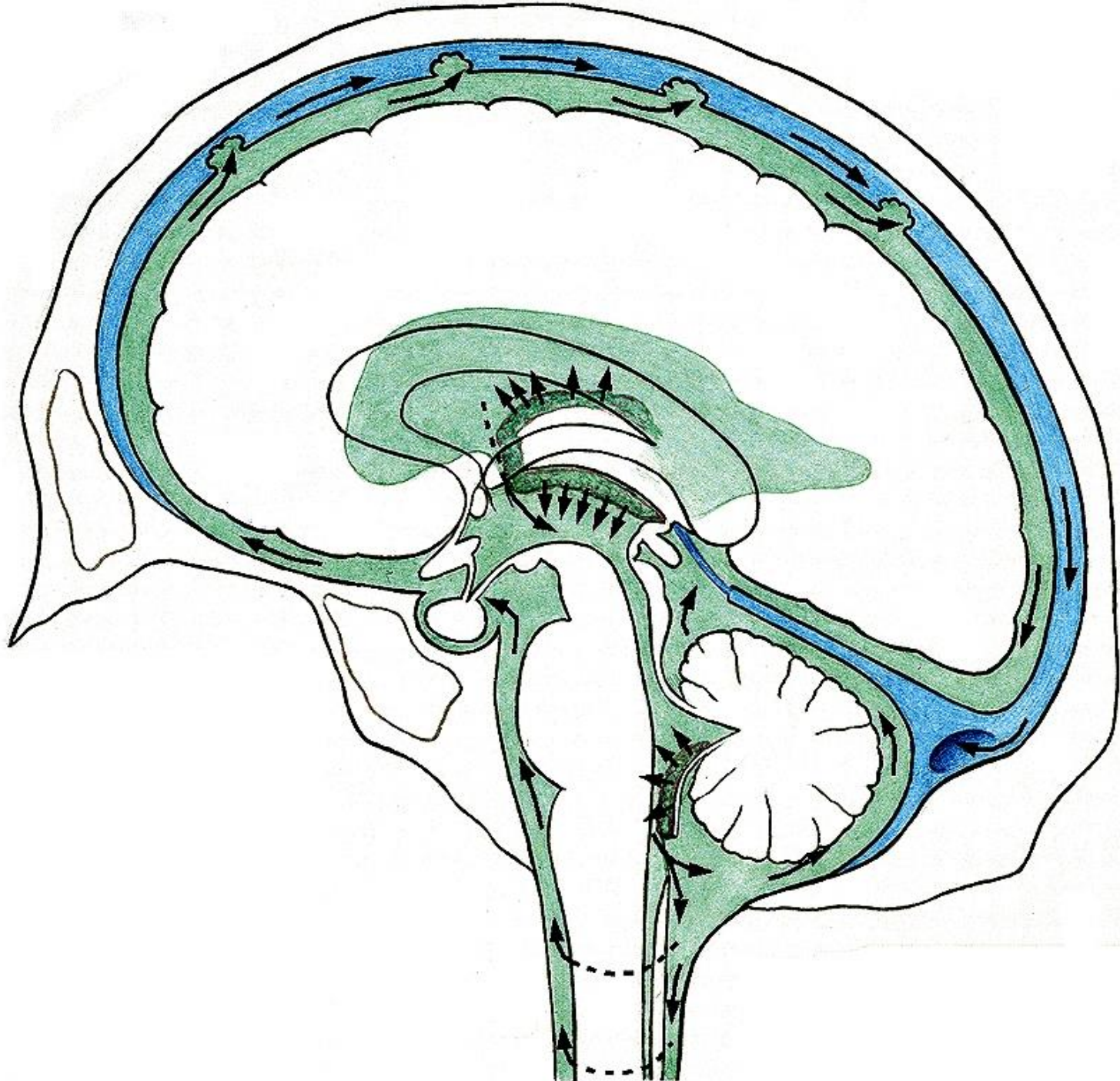
## Inferior View

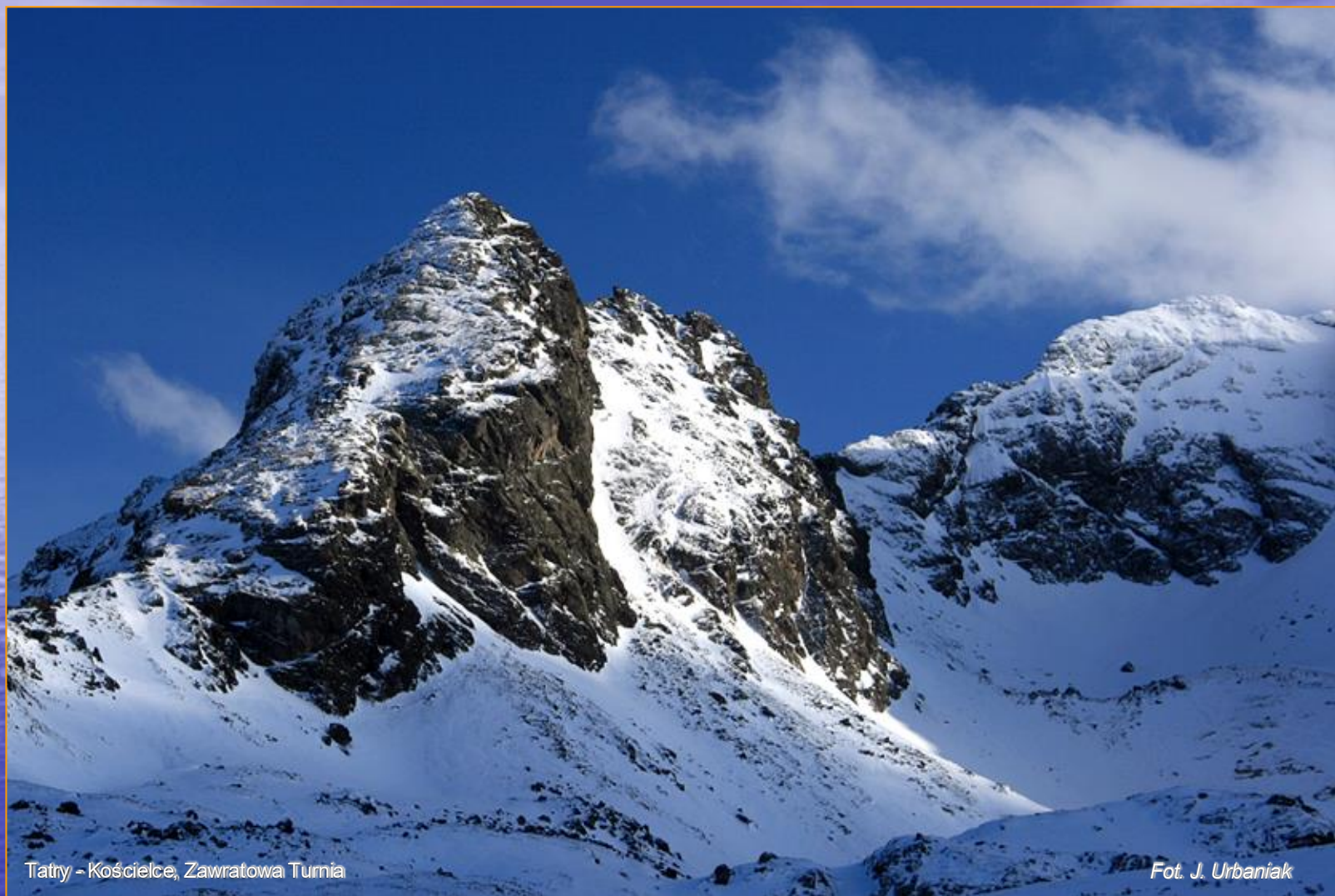


**Przestrzenie płynowe**  
**układ komór mózgu**  
**i zbiorniki**  
**podpajęczynówkowe**  
**płynu mózgowo rdzeniowego**









Tatry - Kościelce, Zawratowa Turnia

Fot. J. Urbaniak

*Dziękuję*