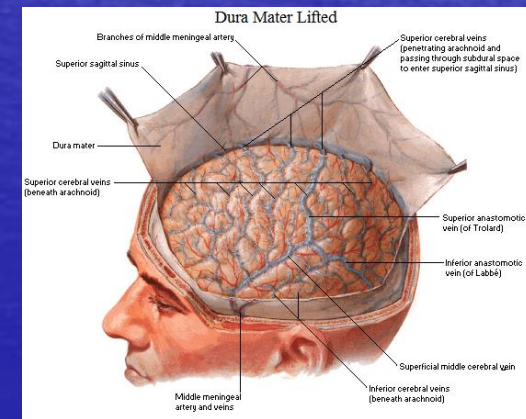
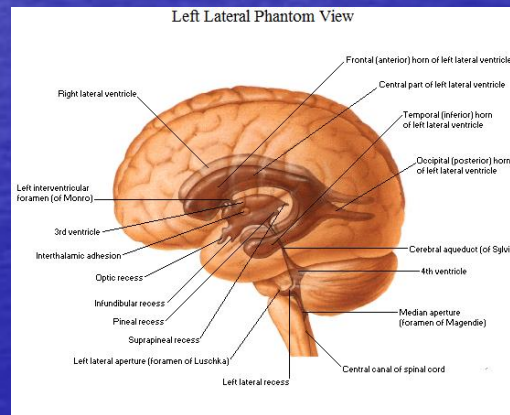
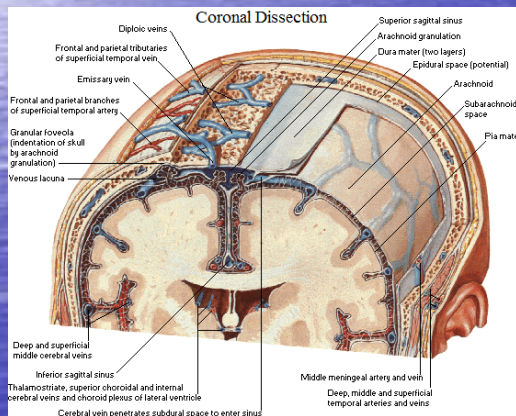


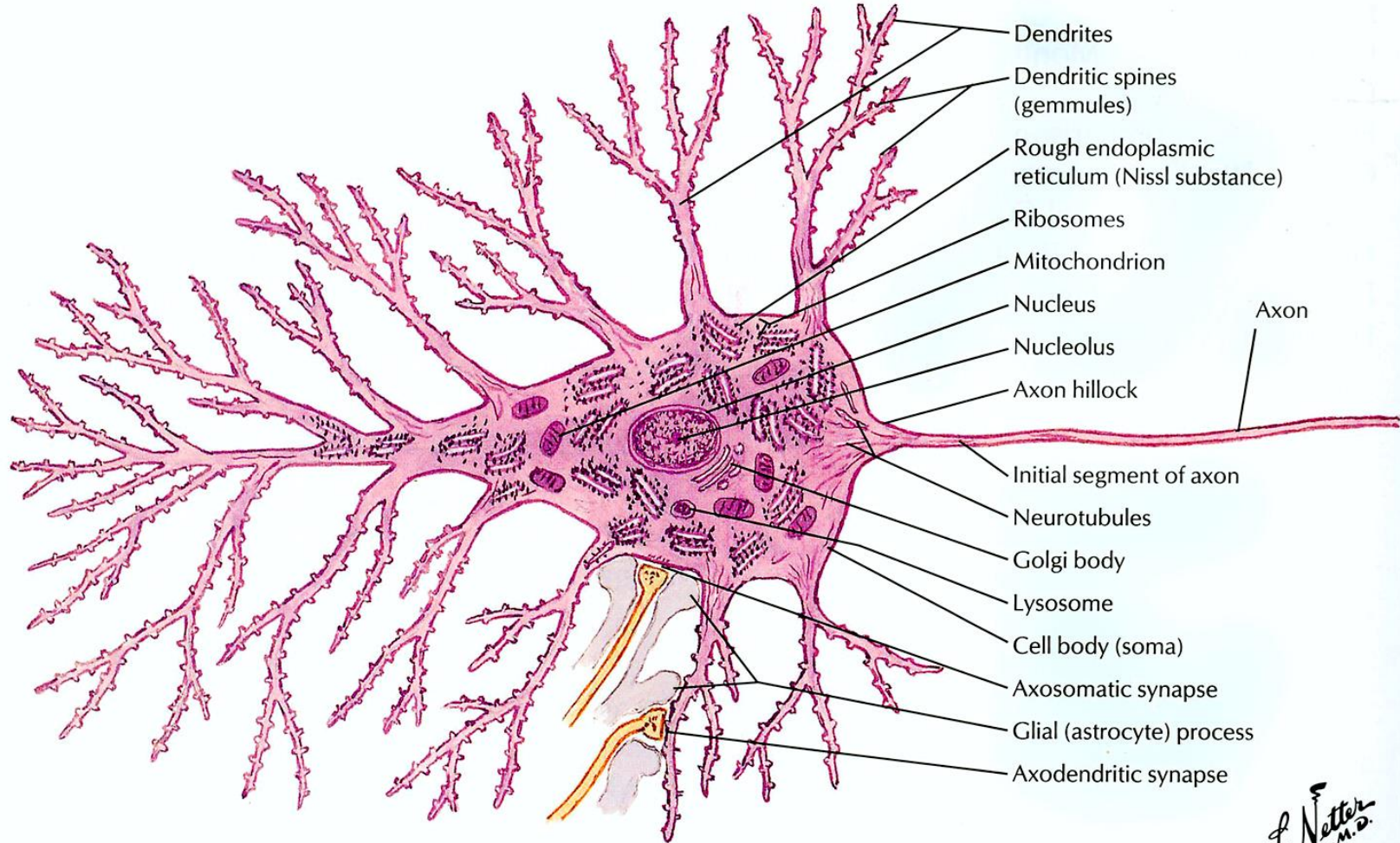
# Ośrodkowy Układ Nerwowy człowieka

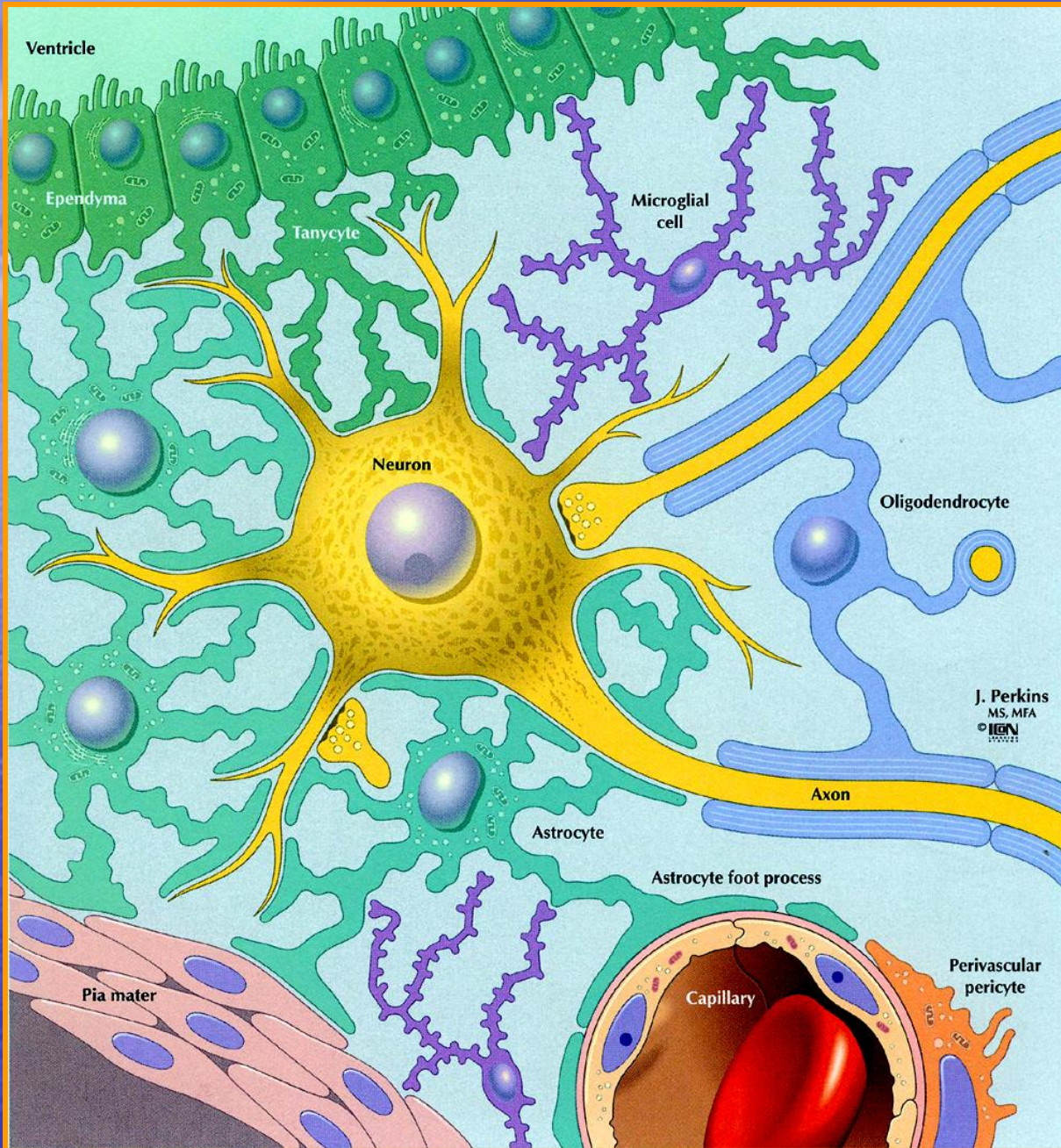
Wydział Lekarski CMUJ Kierunek Lekarsko Dentystyczny

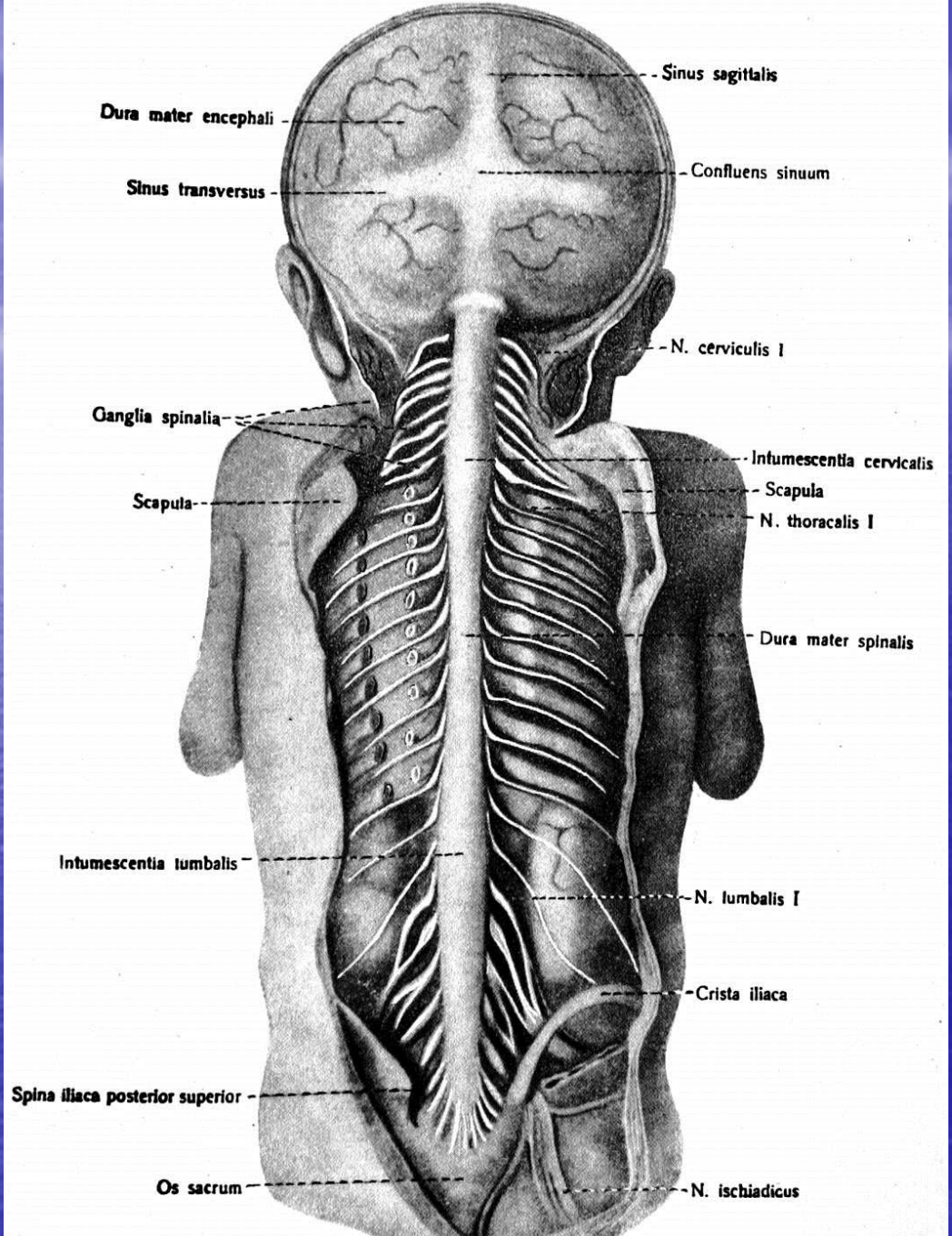


dr med. Jarosław Zawiliński

# Neuronal Structure







Sinus sagittalis

Dura mater encephali

Confluens sinuum

Sinus transversus

N. cerviculis I

Ganglia spinalia

Intumescentia cervicalis

Scapula

Scapula

N. thoracalis I

Dura mater spinalis

Intumescentia lumbalis

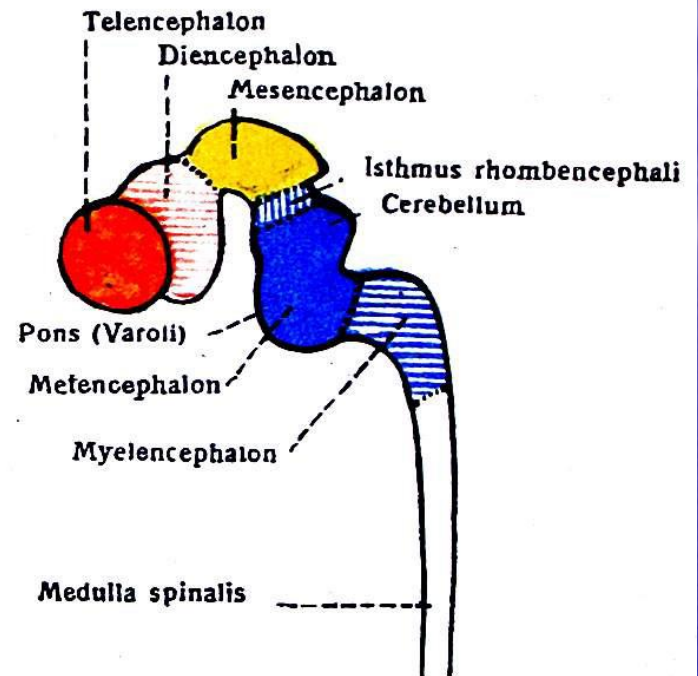
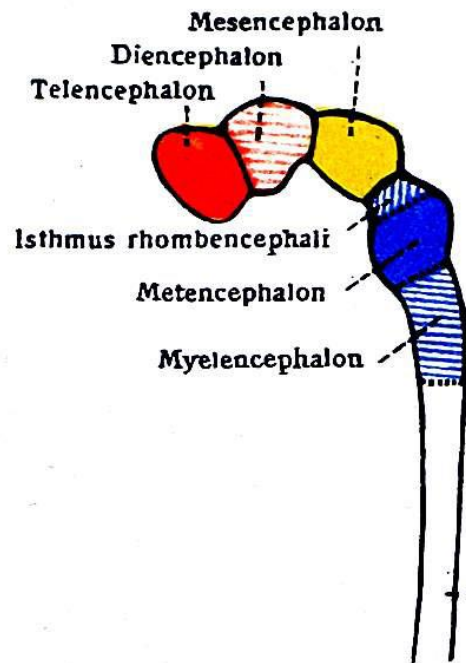
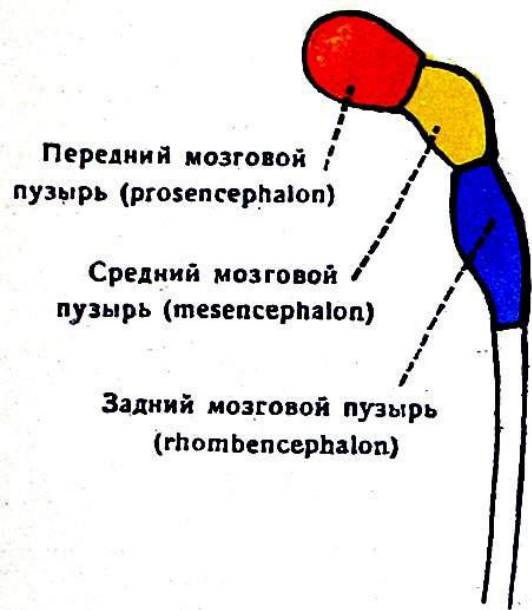
N. lumbalis I

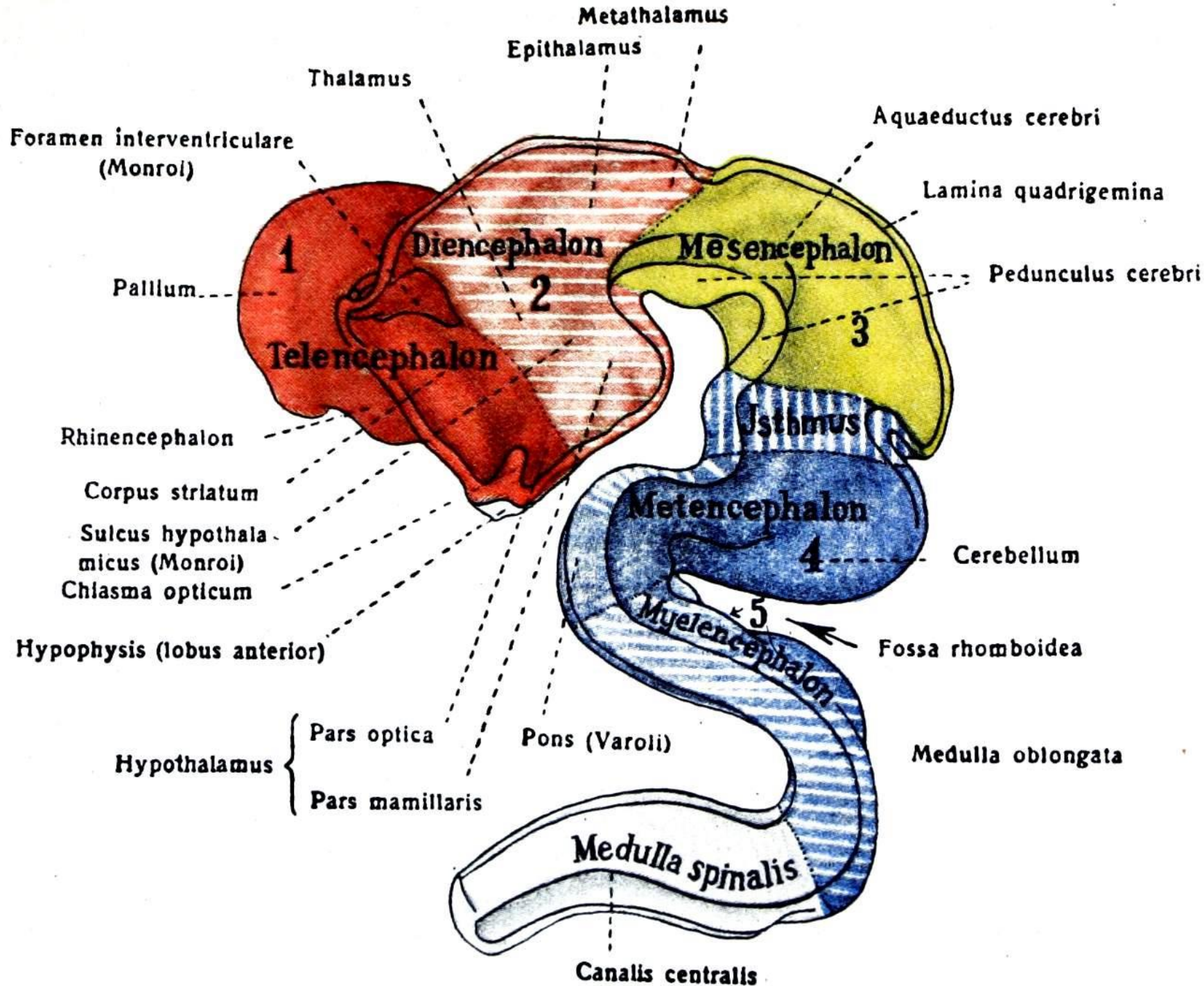
Crista iliaca

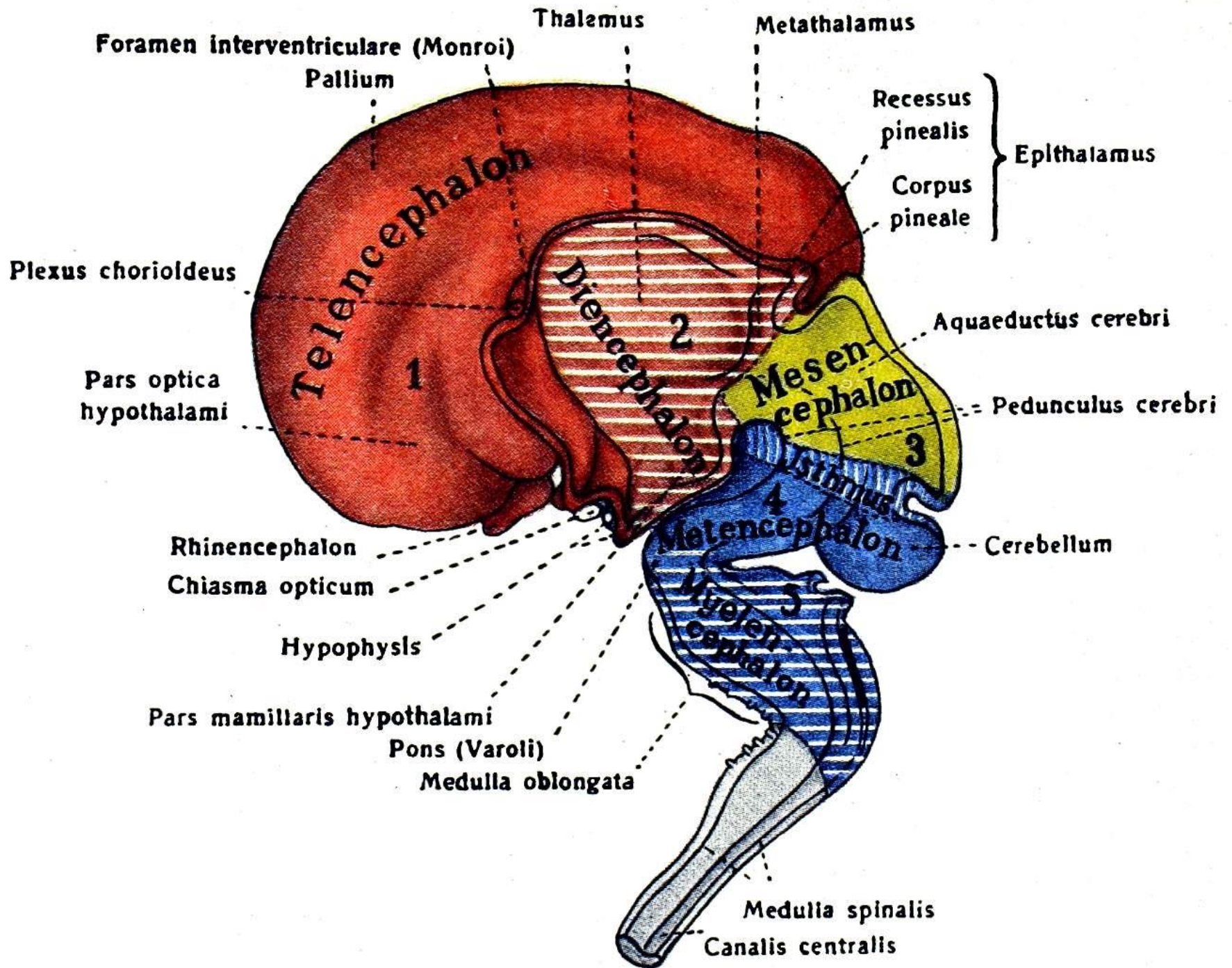
Spina iliaca posterior superior

Os sacrum

N. ischiadicus



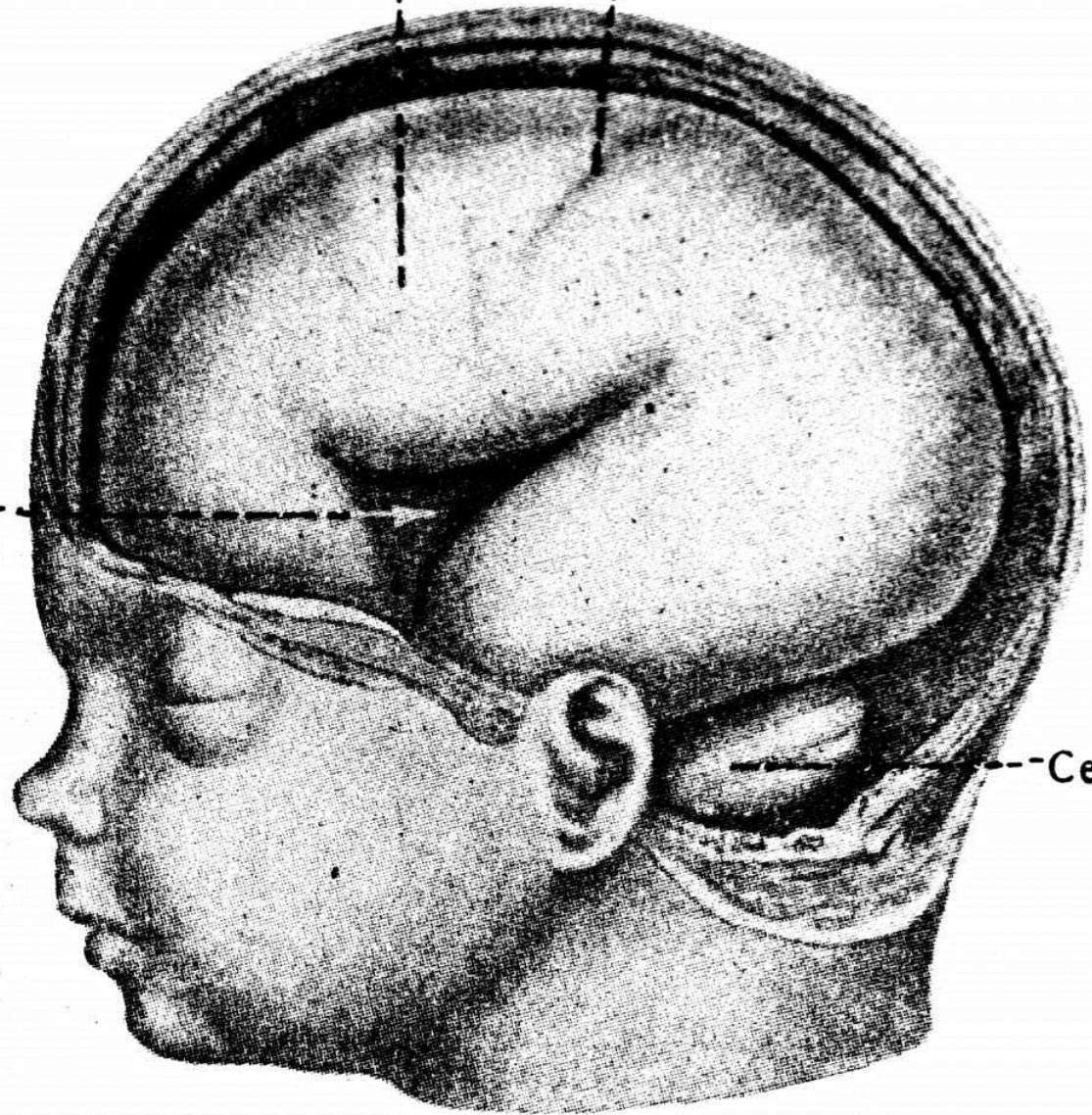




Hemisphaerium  
cerebri (pallium)

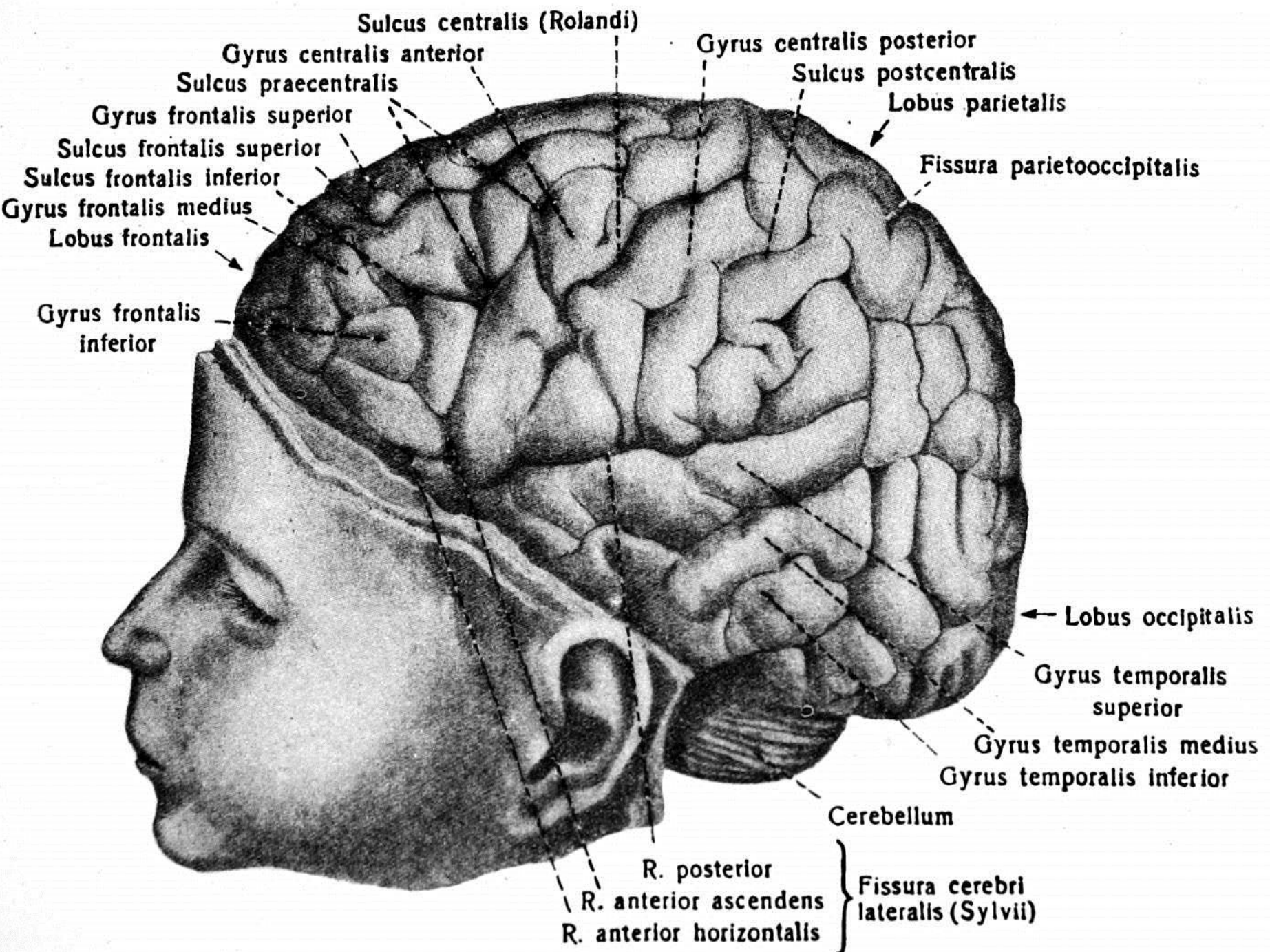
Sulcus centralis (Rolandi)

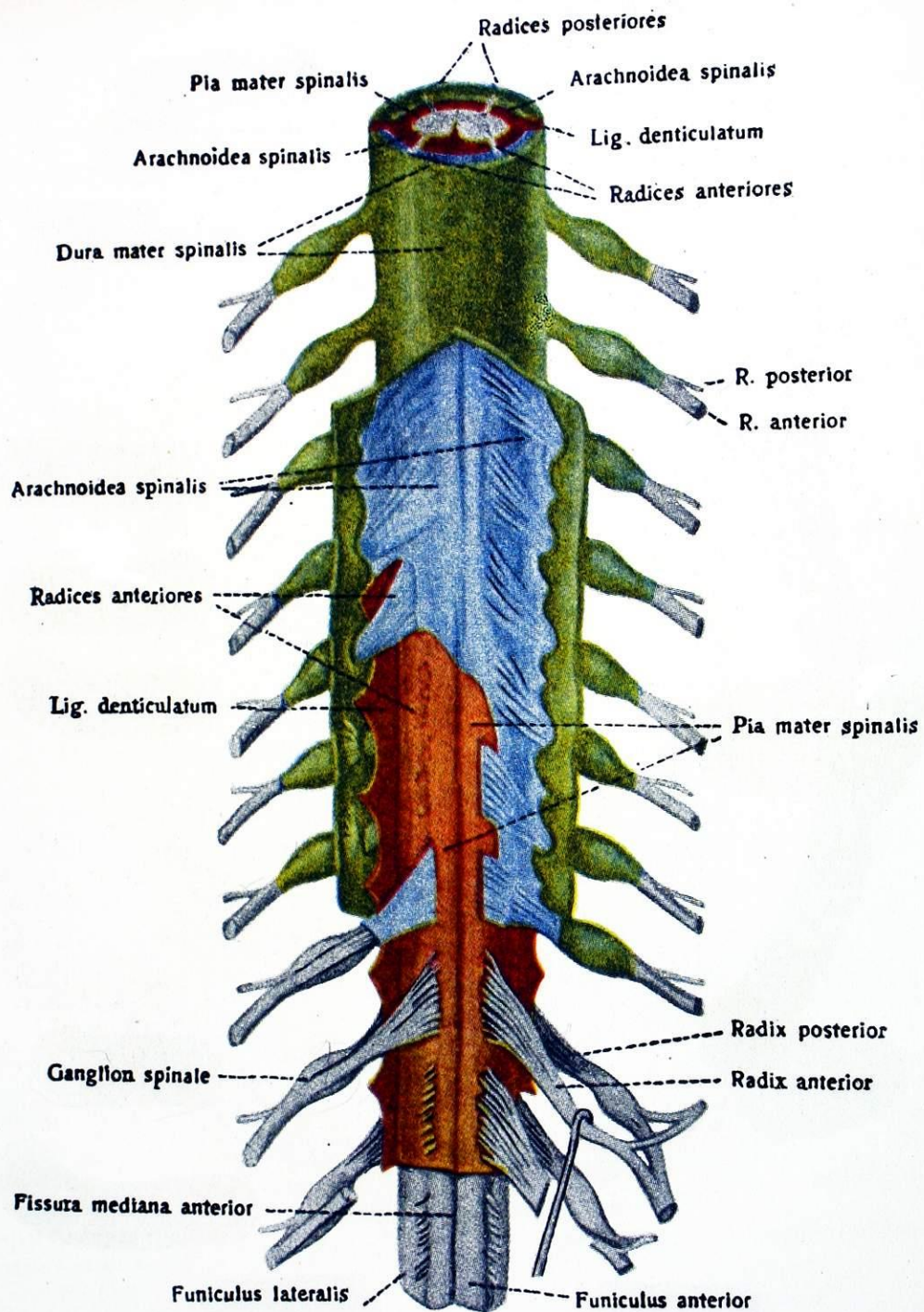
Fossa cerebri lateralis  
(Sylvii) и лежащая в  
глубине ее insula (Reili)



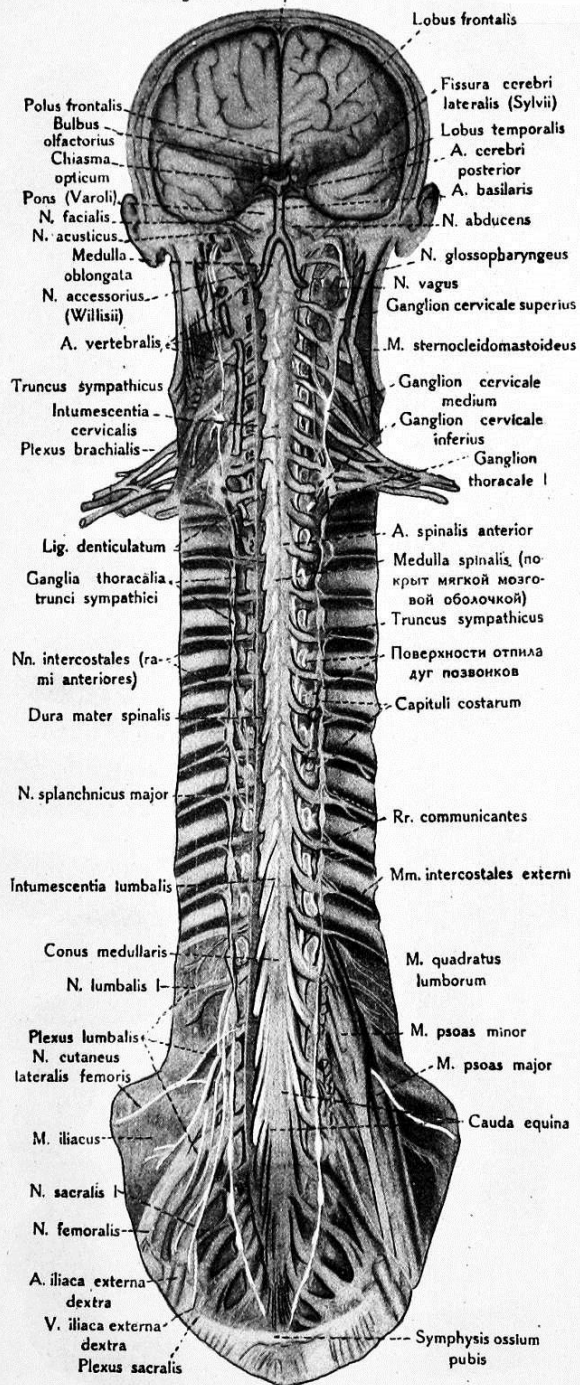
Cerebellum

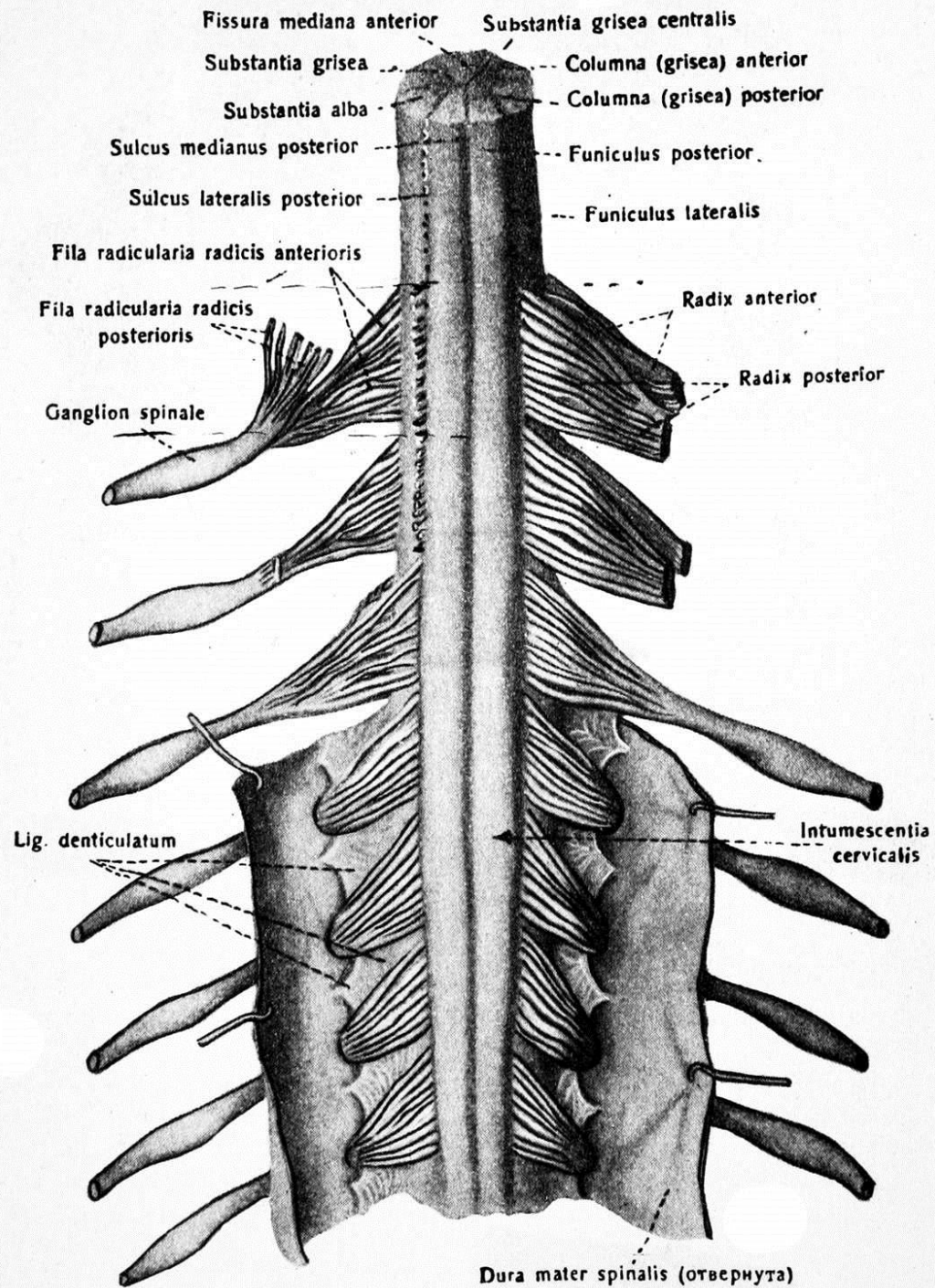


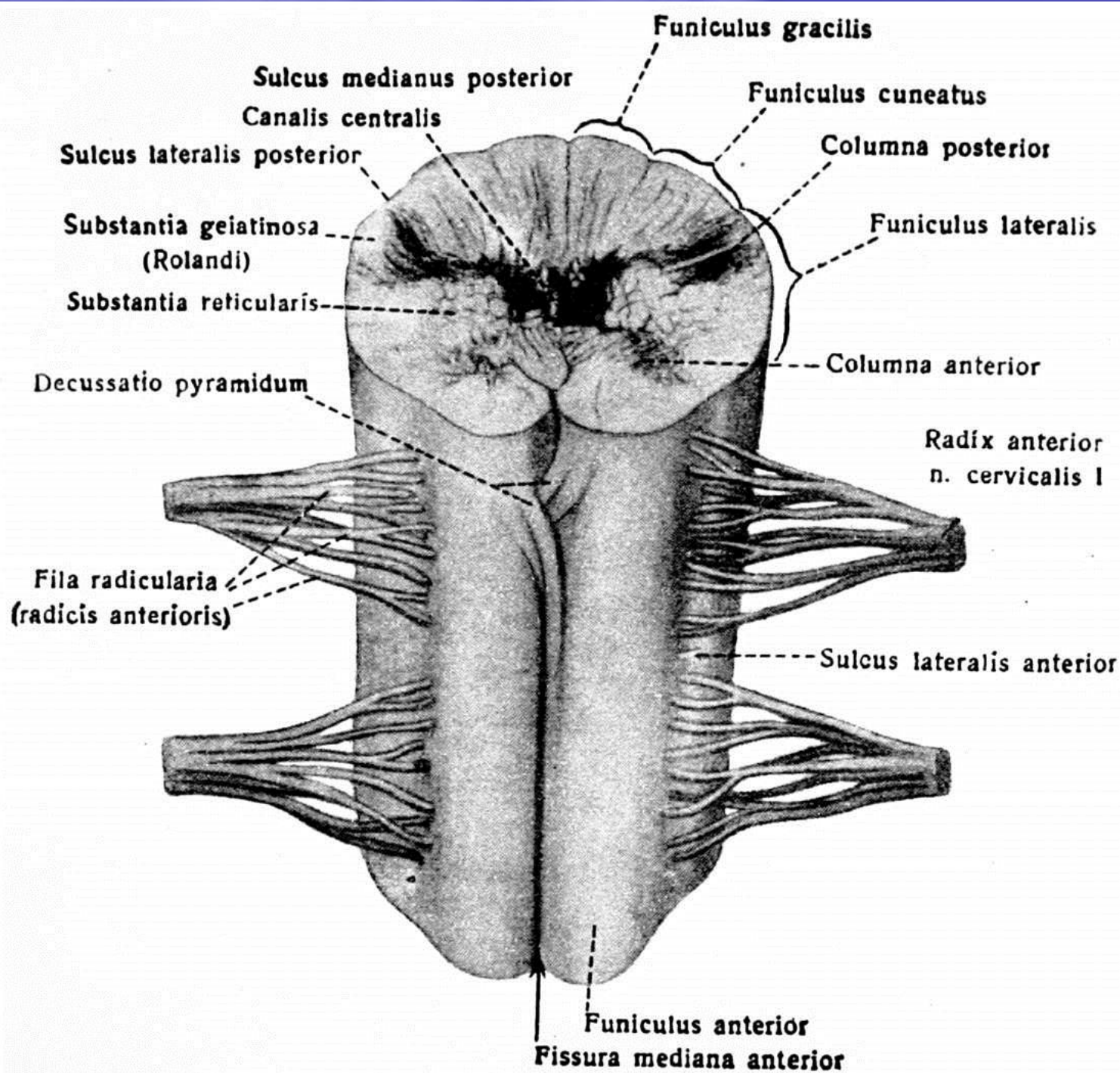


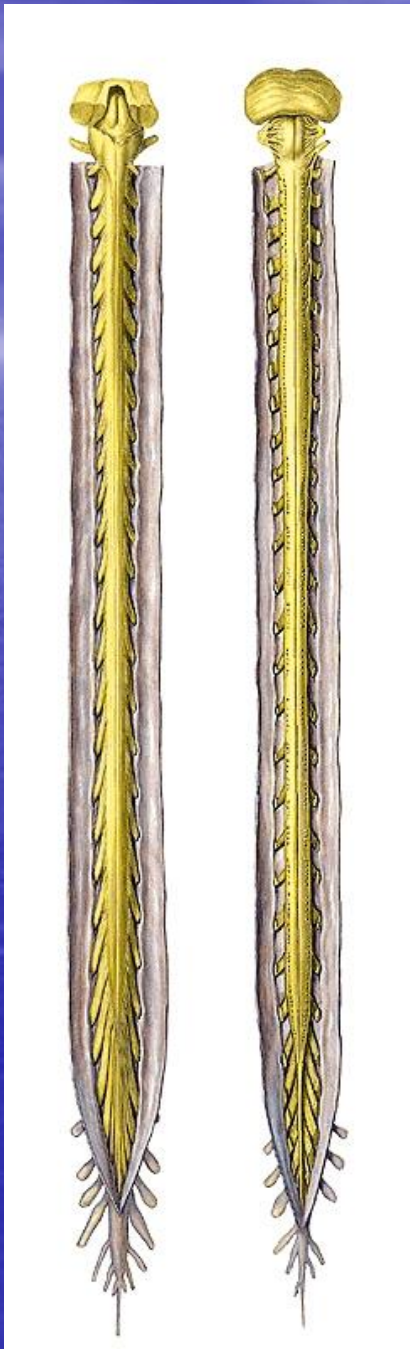


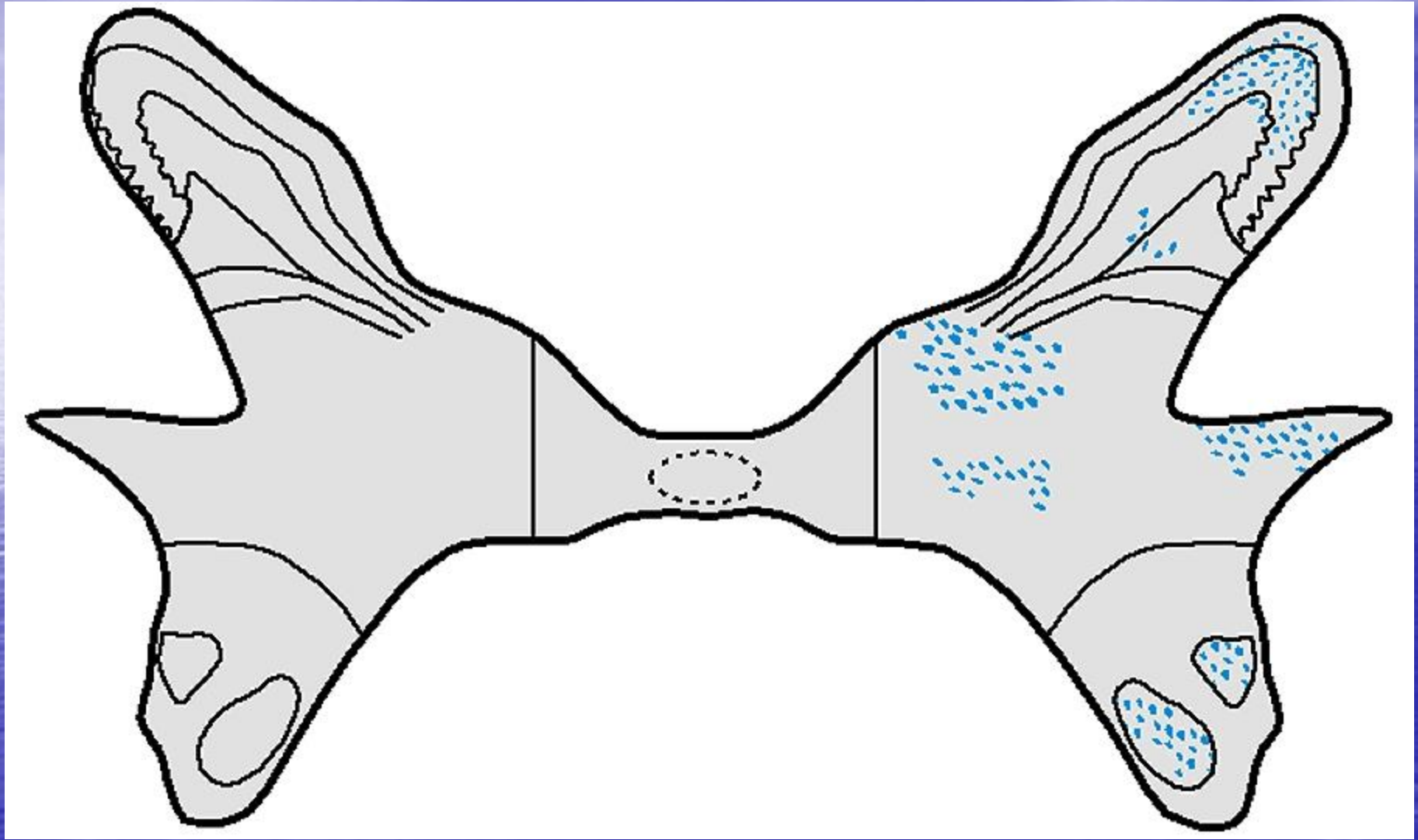
Sinus sagittalis superior

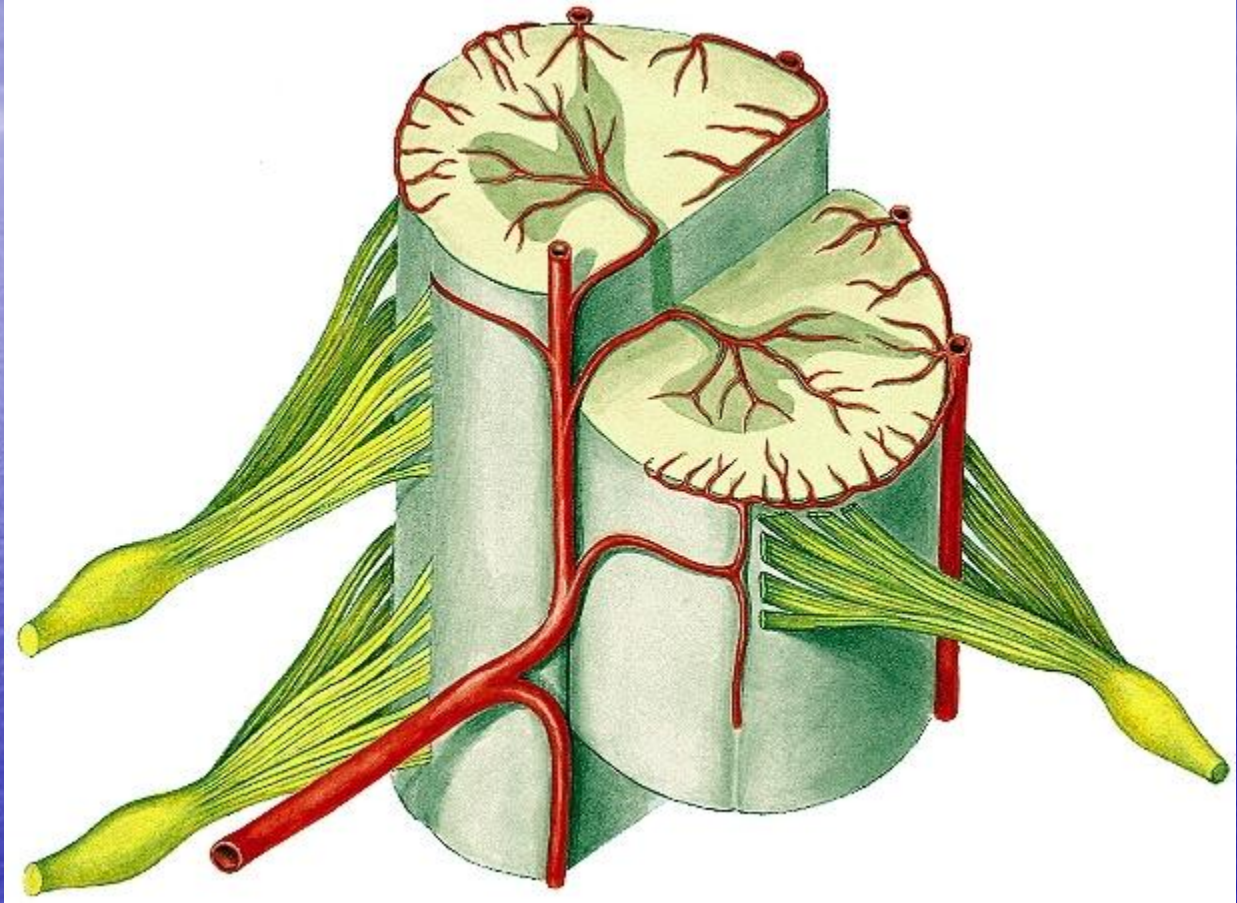




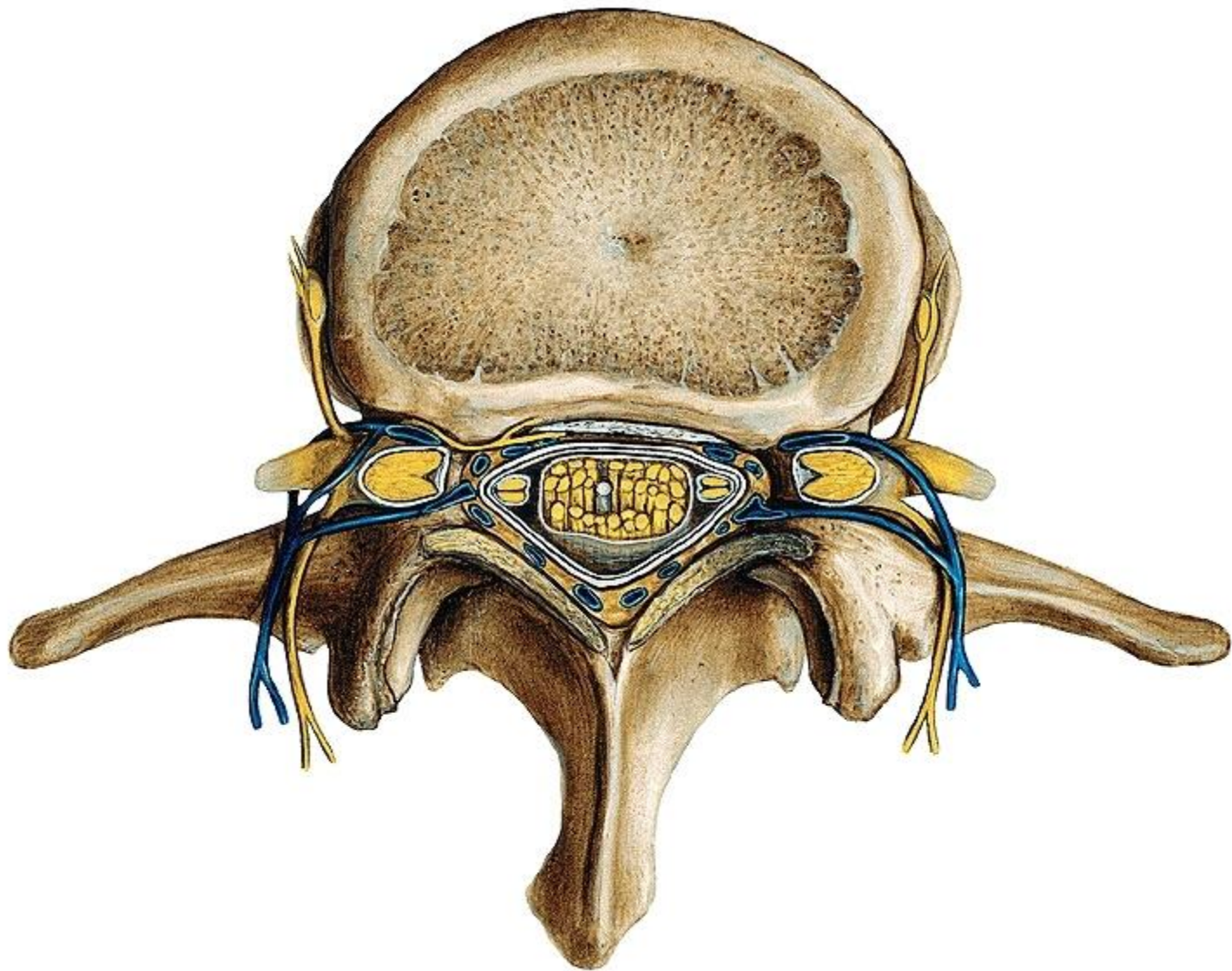




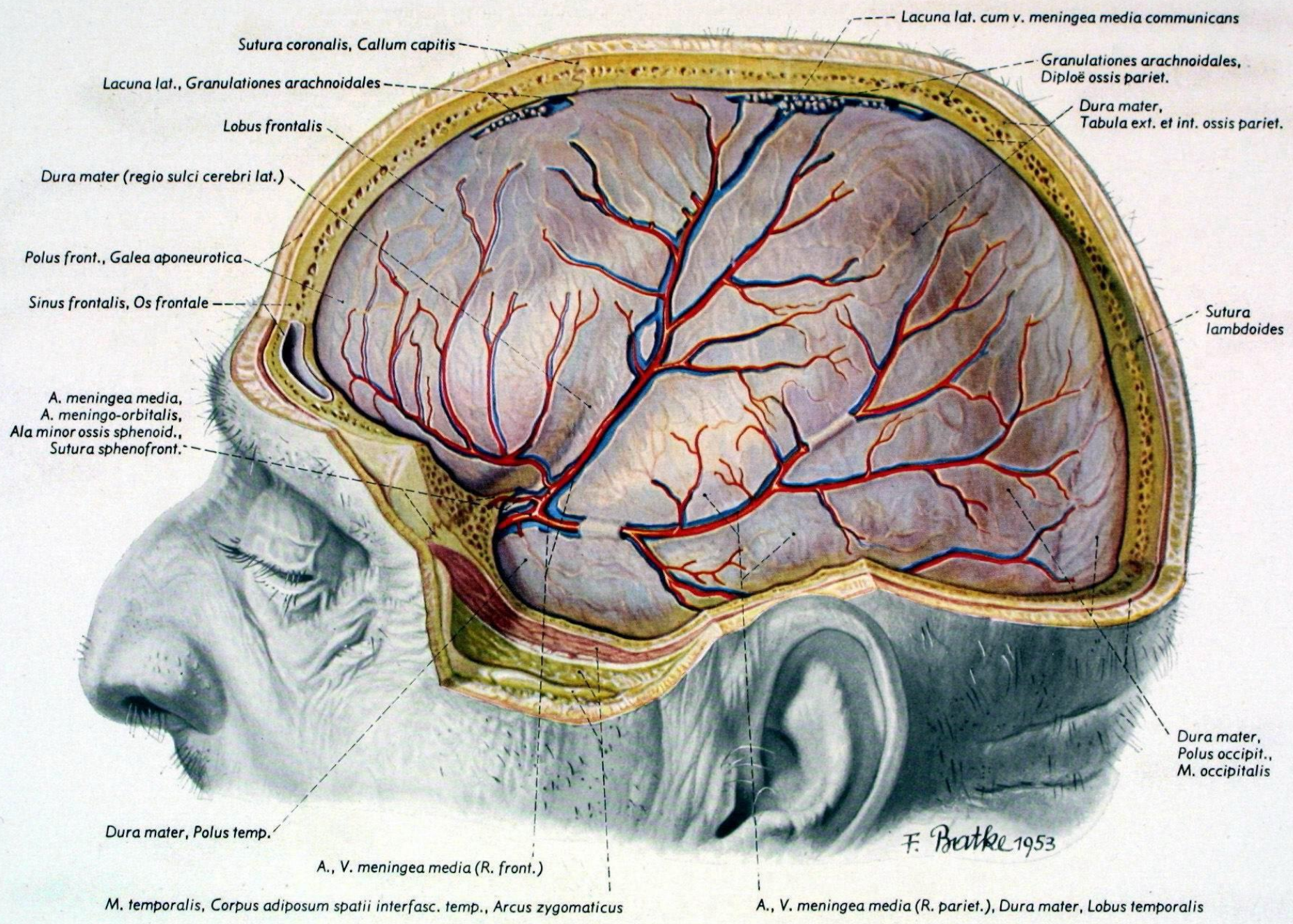












Sutura coronalis, Callum capitis

Lacuna lat., Granulationes arachnoideales

Lobus frontalis

Dura mater (regio sulci cerebri lat.)

Polus front., Galea aponeurotica

Sinus frontalis, Os frontale

A. meningea media,  
A. meningo-orbitalis,  
Ala minor ossis sphenoid.,  
Sutura sphenofront.

Lacuna lat. cum v. meningea media communicans

Granulationes arachnoideales,  
Diplœ ossis pariet.

Dura mater,  
Tabula ext. et int. ossis pariet.

Sutura  
lambdoides

Dura mater,  
Polus occipit.,  
M. occipitalis

Dura mater, Polus temp.

A., V. meningea media (R. front.)

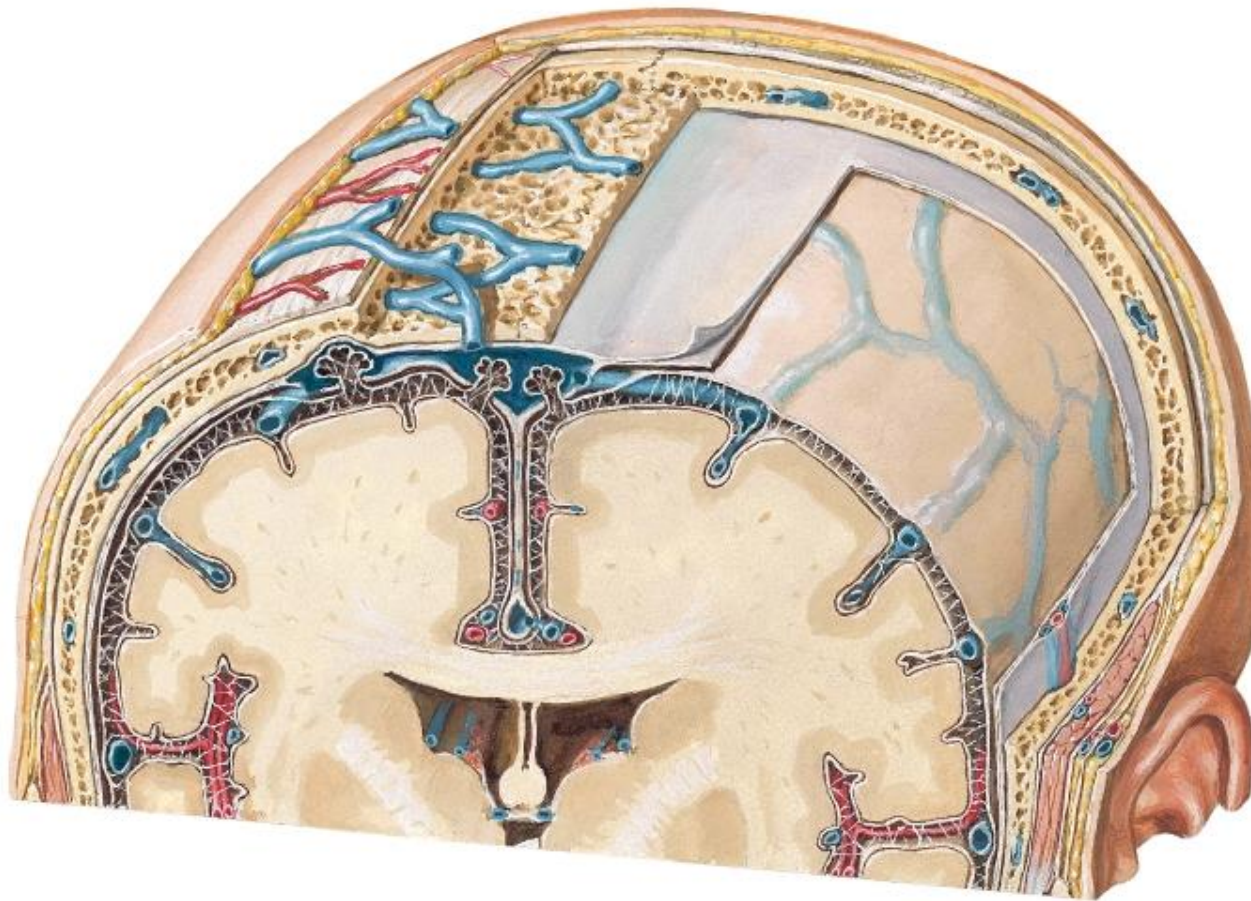
F. Bratke 1953

M. temporalis, Corpus adiposum spatii interfasc. temp., Arcus zygomaticus

A., V. meningea media (R. pariet.), Dura mater, Lobus temporalis

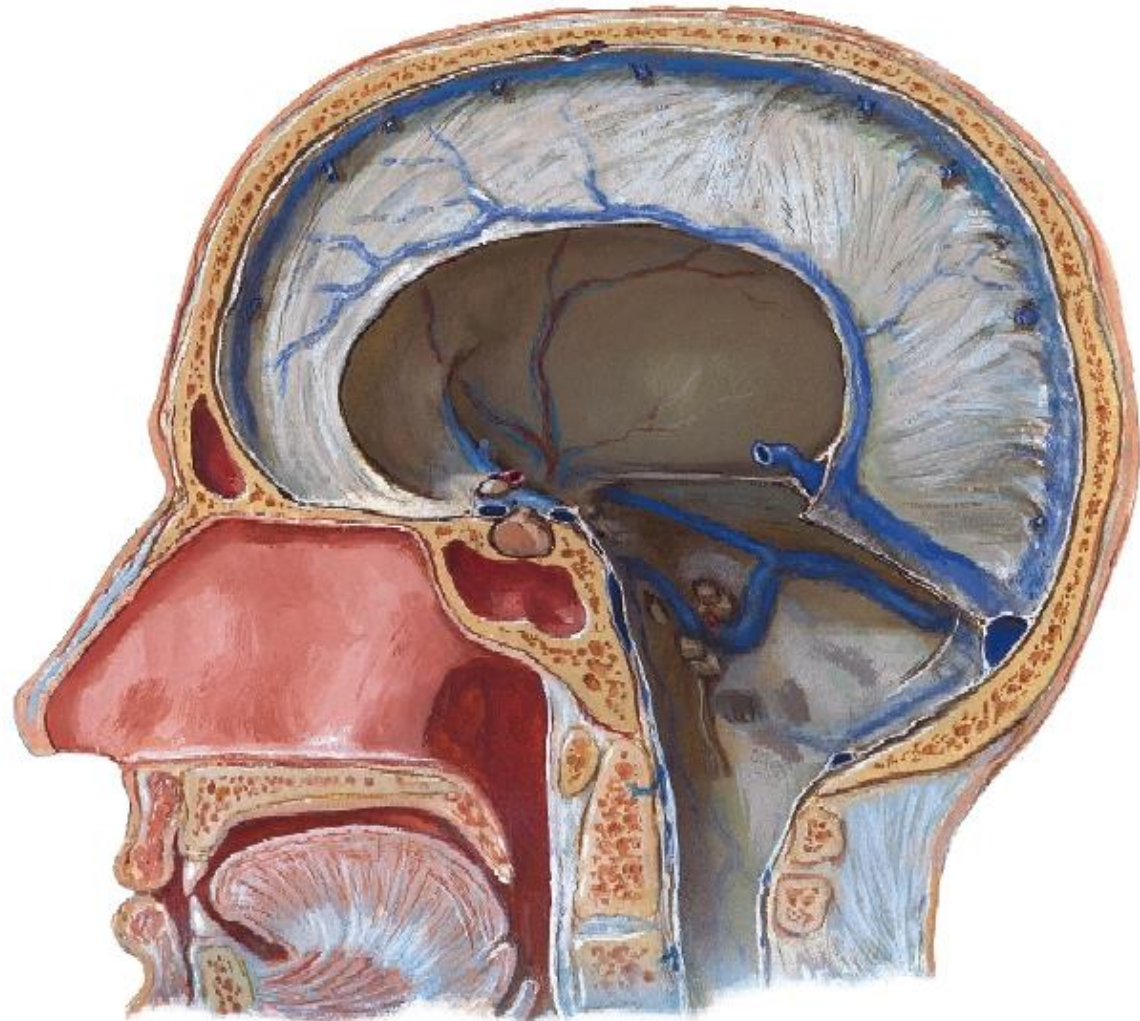
# Meninges and Diploic Veins

## Coronal Dissection



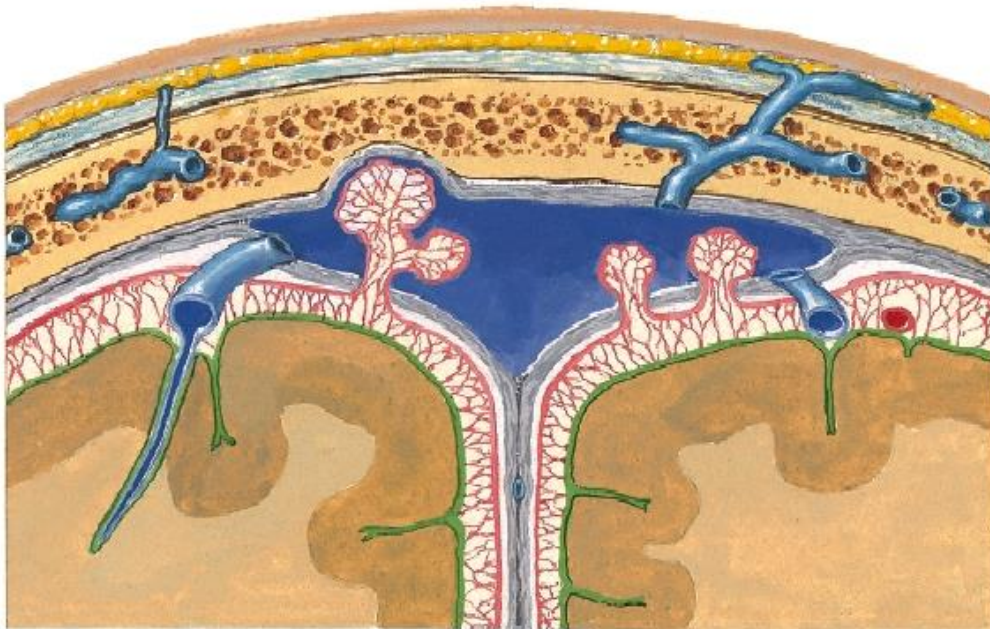
# Dural Venous Sinuses

## Sagittal section



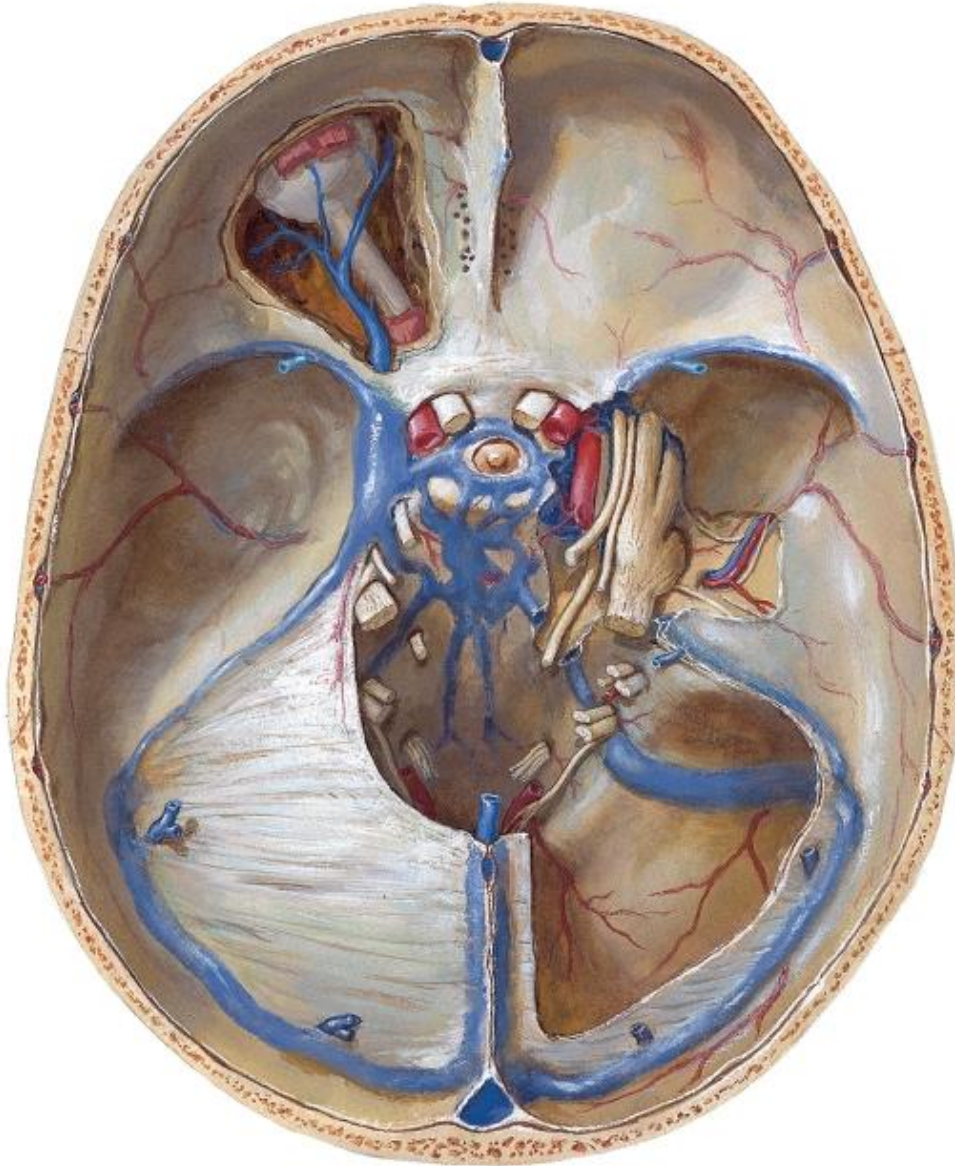
# Meninges and Superficial Cerebral Veins

## Frontal Section



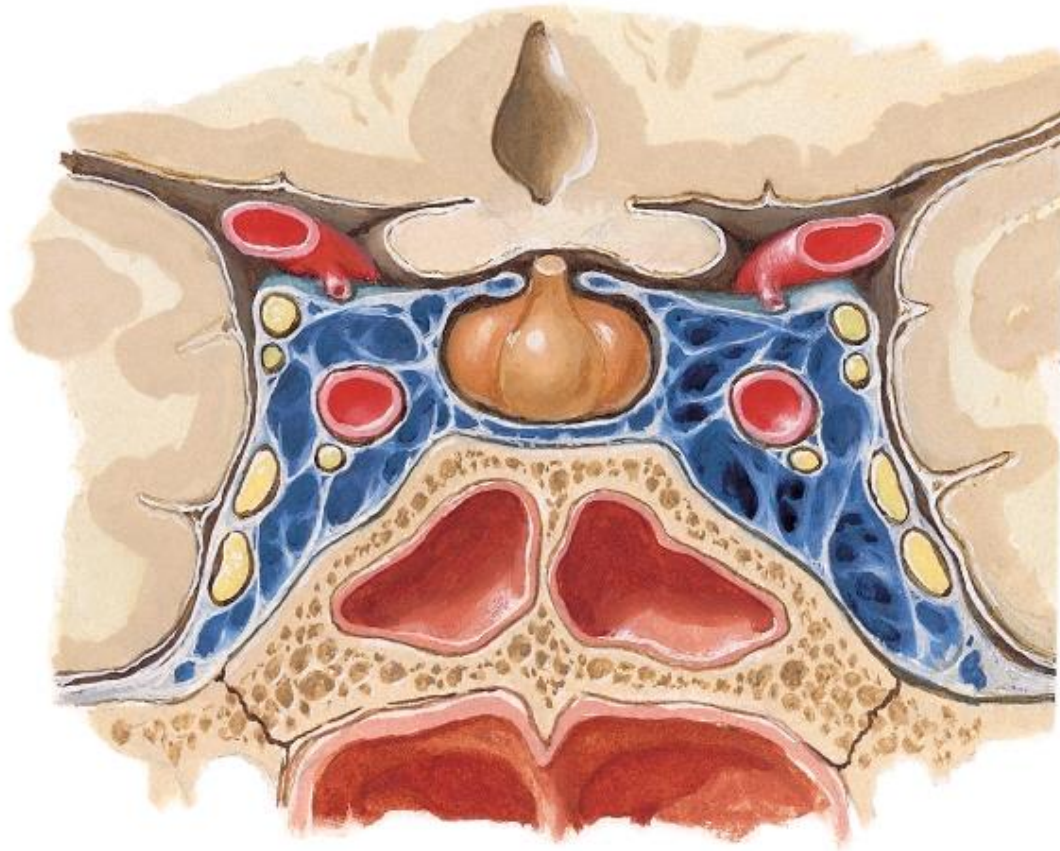
# Dural Venous Sinuses

## Cranial Floor - Superior View



# Dural Venous Sinuses

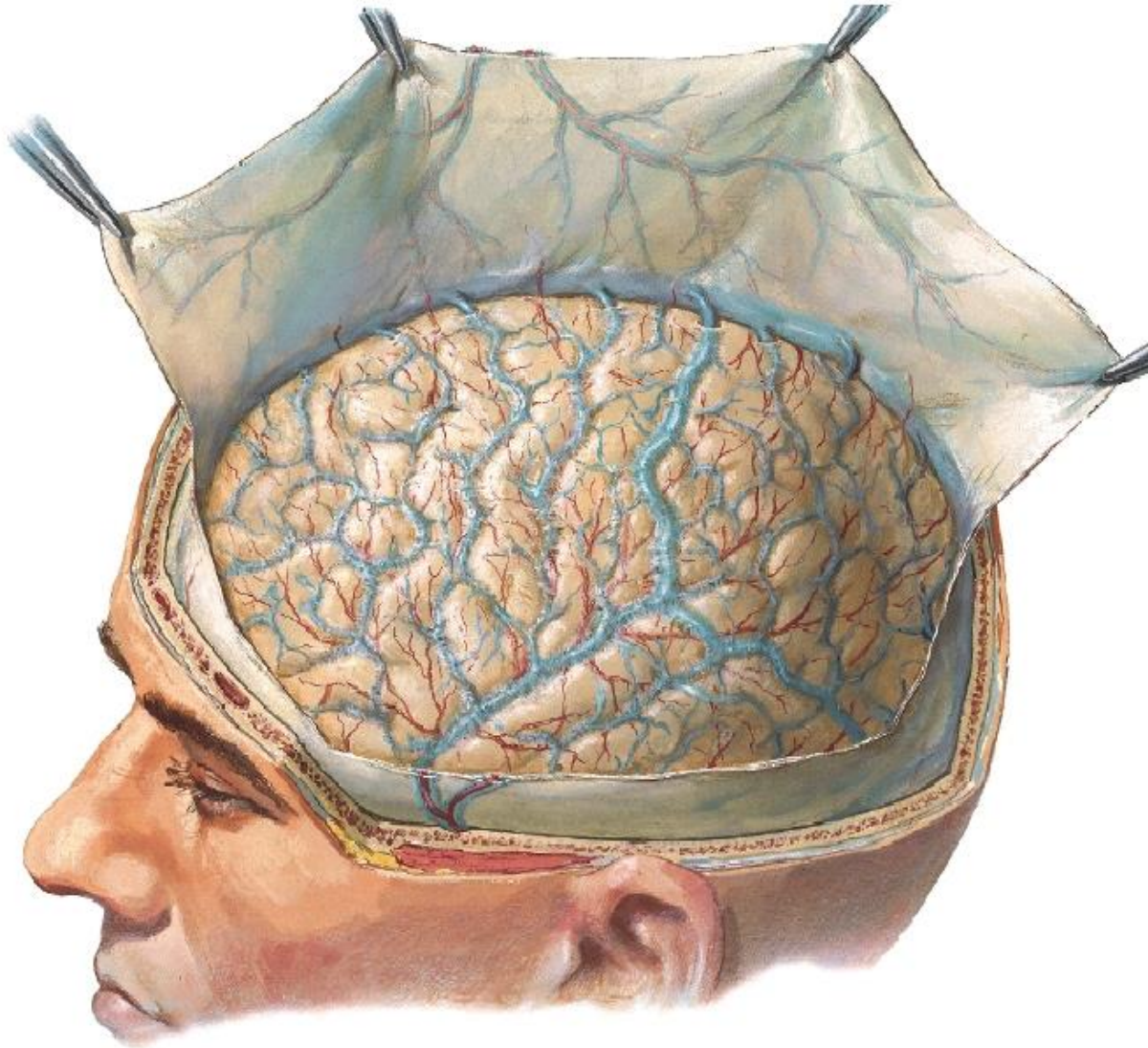
## Coronal Section Through Cavernous Sinus



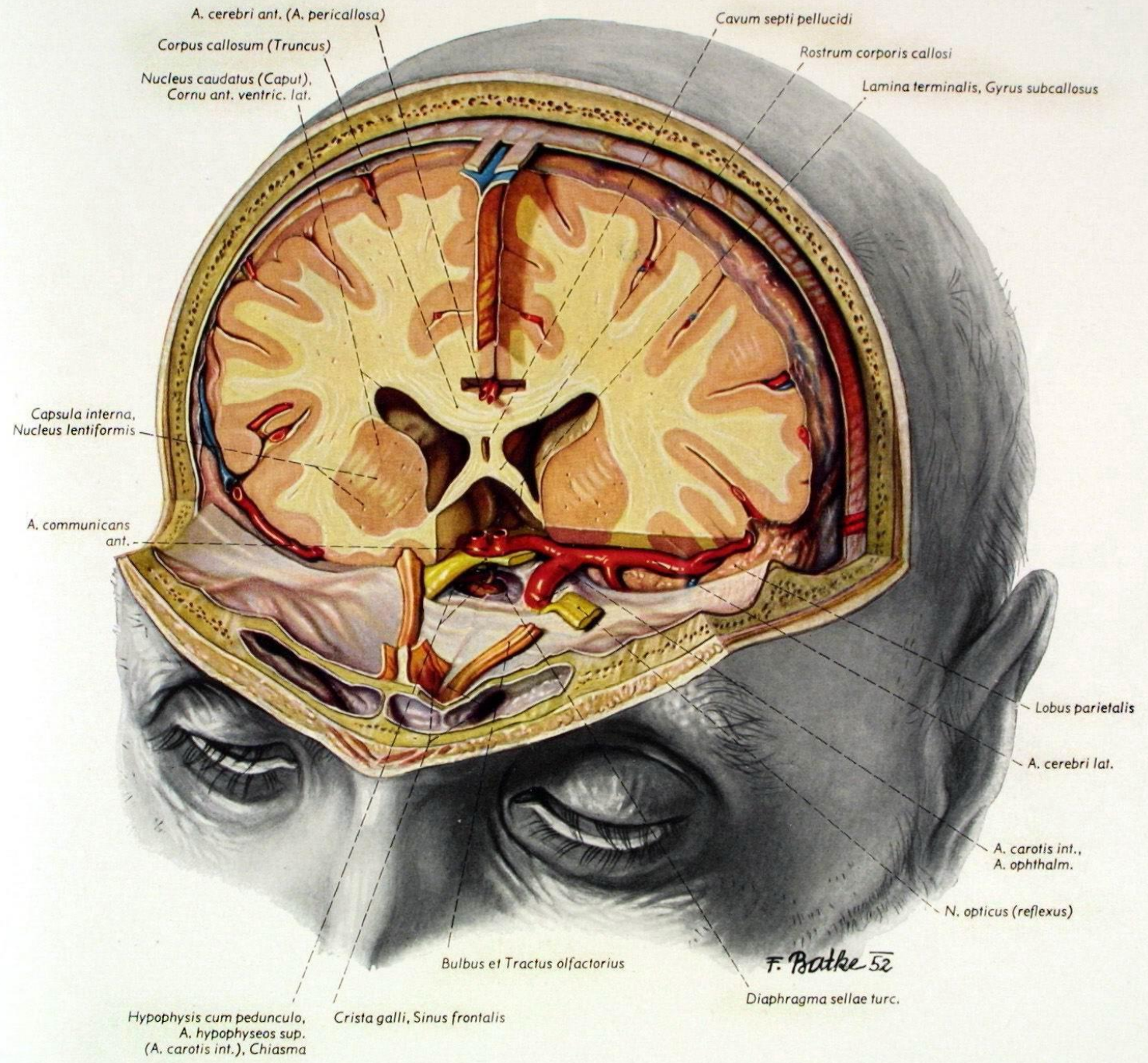


# Meninges and Superficial Cerebral Veins

Dura Mater Lifted



F. Netter  
M.D.  
© IGV



A. cerebri ant. (A. pericallosa)  
Corpus callosum (Truncus)  
Nucleus caudatus (Caput),  
Cornu ant. ventric. lat.

Cavum septi pellucidi  
Rostrum corporis callosi  
Lamina terminalis, Gyrus subcallosus

Capsula interna,  
Nucleus lentiformis

A. communicans  
ant.

Lobus parietalis

A. cerebri lat.

A. carotis int.,  
A. ophthalm.

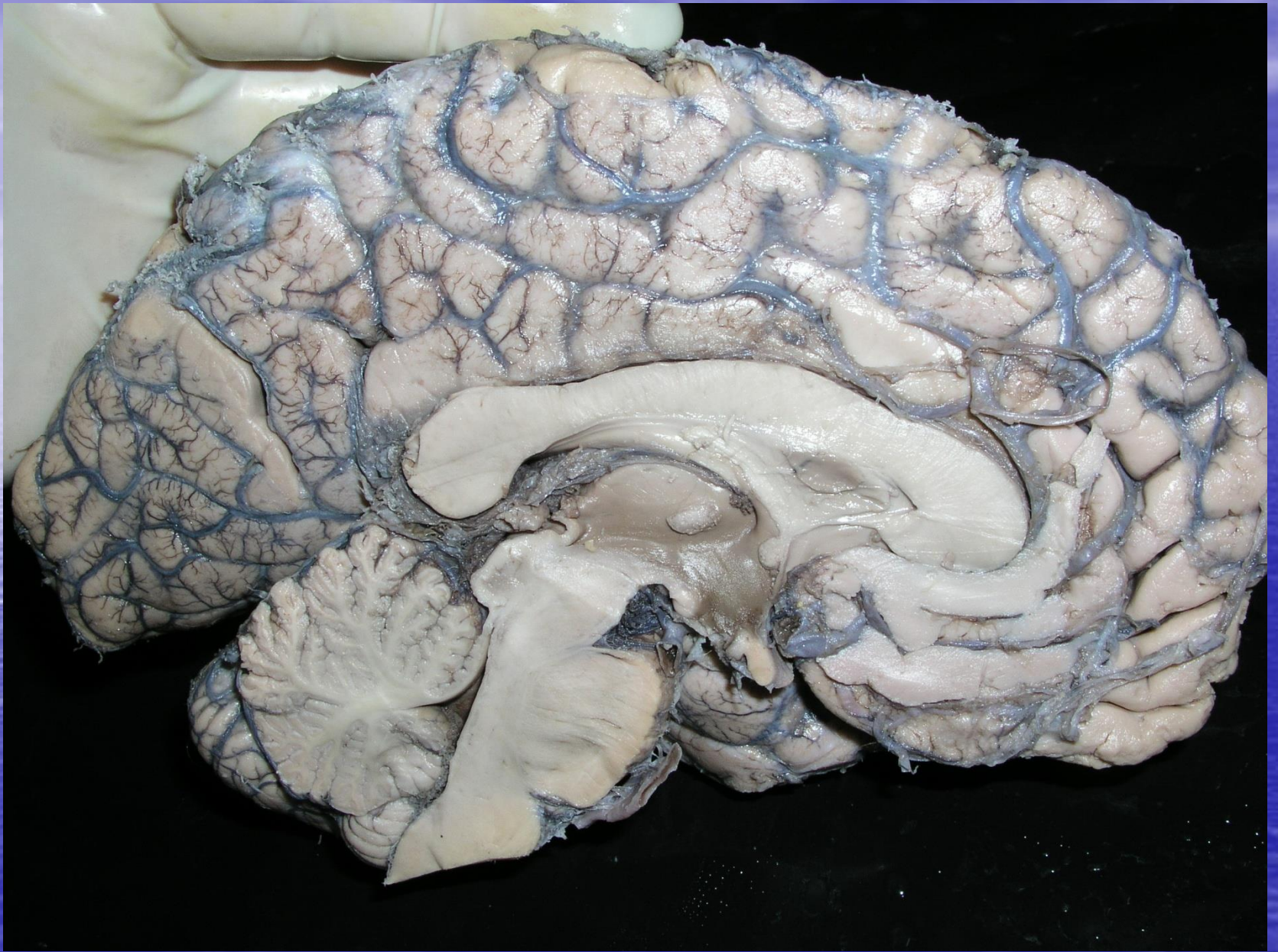
N. opticus (reflexus)

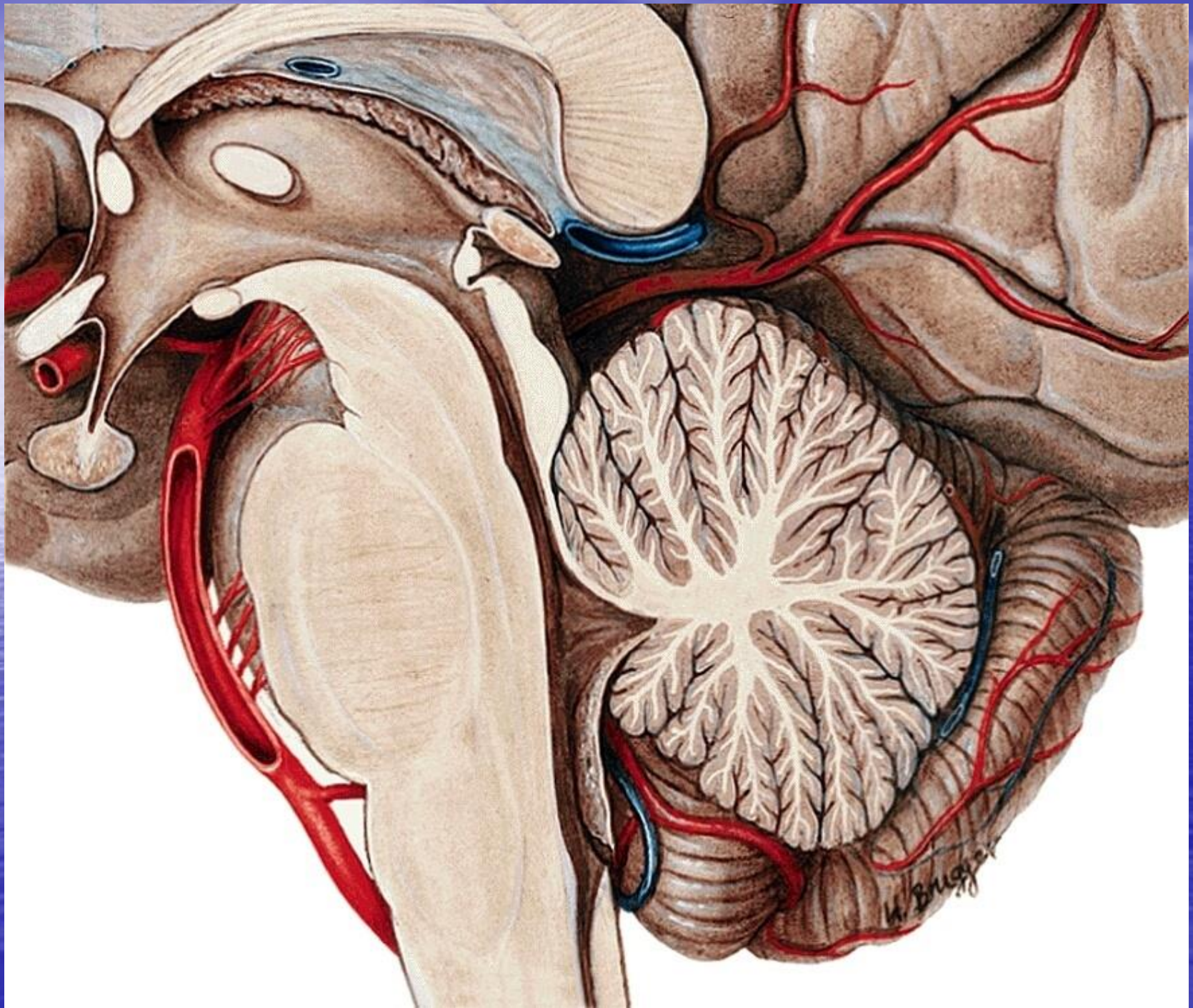
Bulbus et Tractus olfactorius

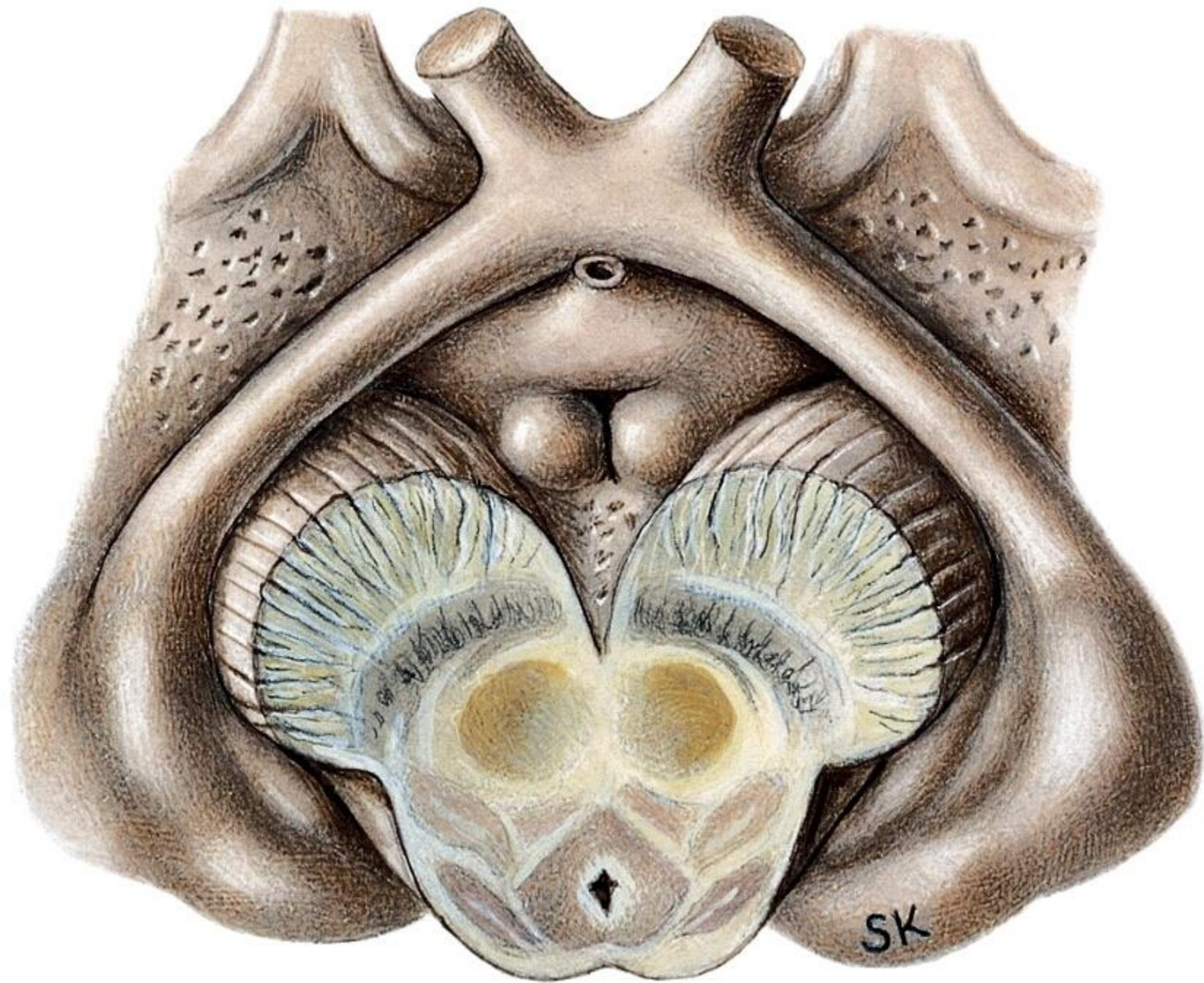
F. Batke 52

Diaphragma sellae turc.

Hypophysis cum pedunculo,  
A. hypophyseos sup.  
(A. carotis int.), Chiasma  
Crista galli, Sinus frontalis







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**

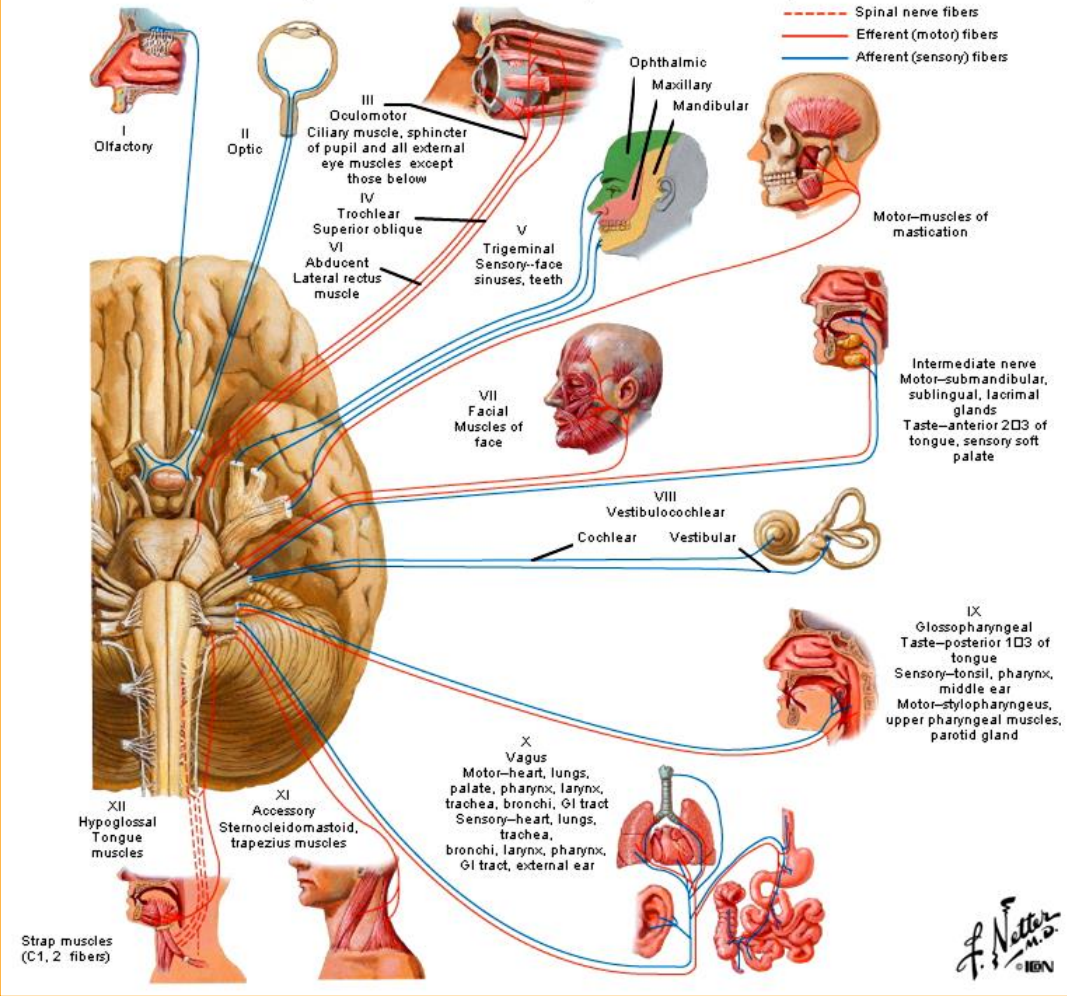
Czysto ruchowe to: **IV, VI, XI, XII**

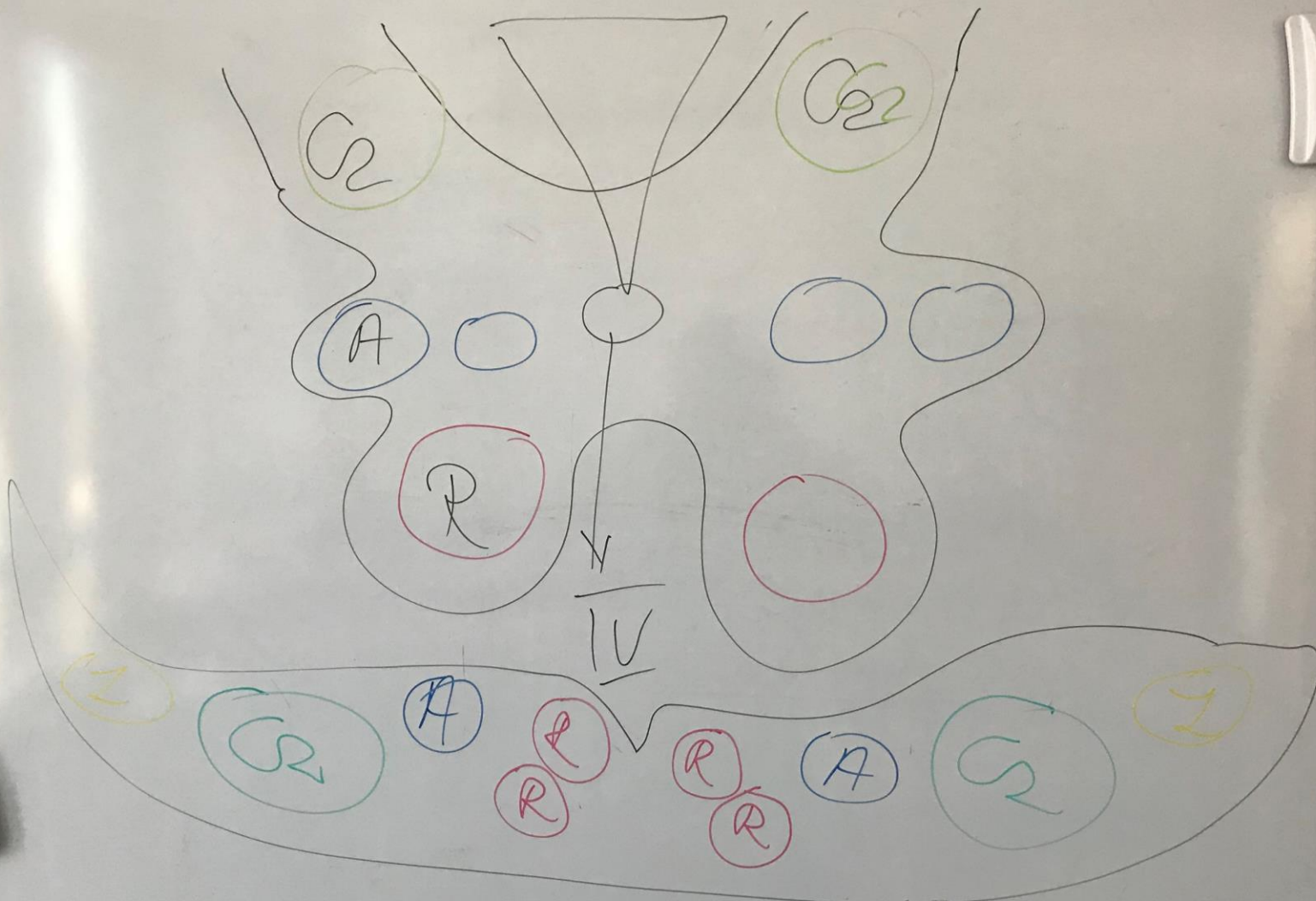
Czuciowe : V trójdzielny, VII twarzowy,  
IX językowo gardłowy, X błędny

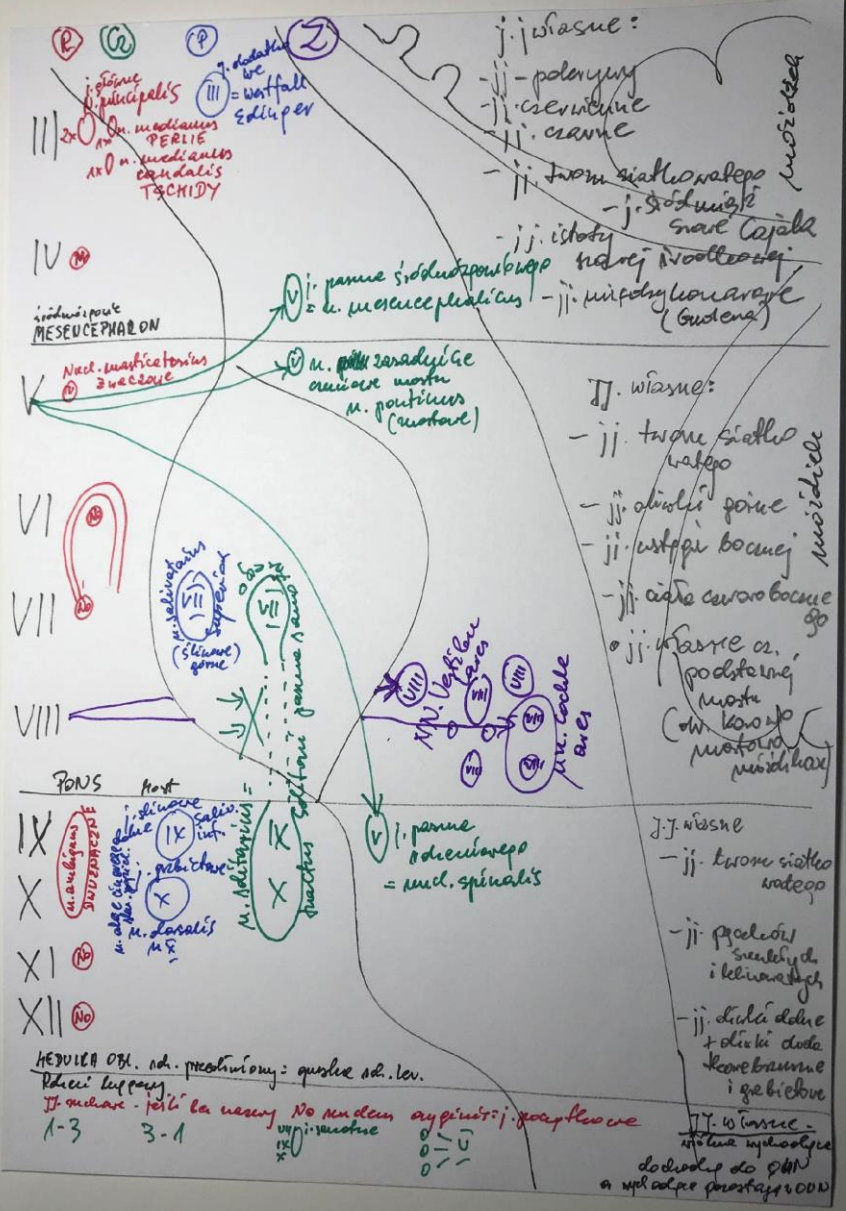
Parasympatyczne: III okoruchowy,  
VII twarzowy, IX językowo gardłowy,  
X błędny

Nerwy łuków skrzelowych : V1 żuchwowy,  
VII twarzowy, IX językowo gardłowy,  
X błędny

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





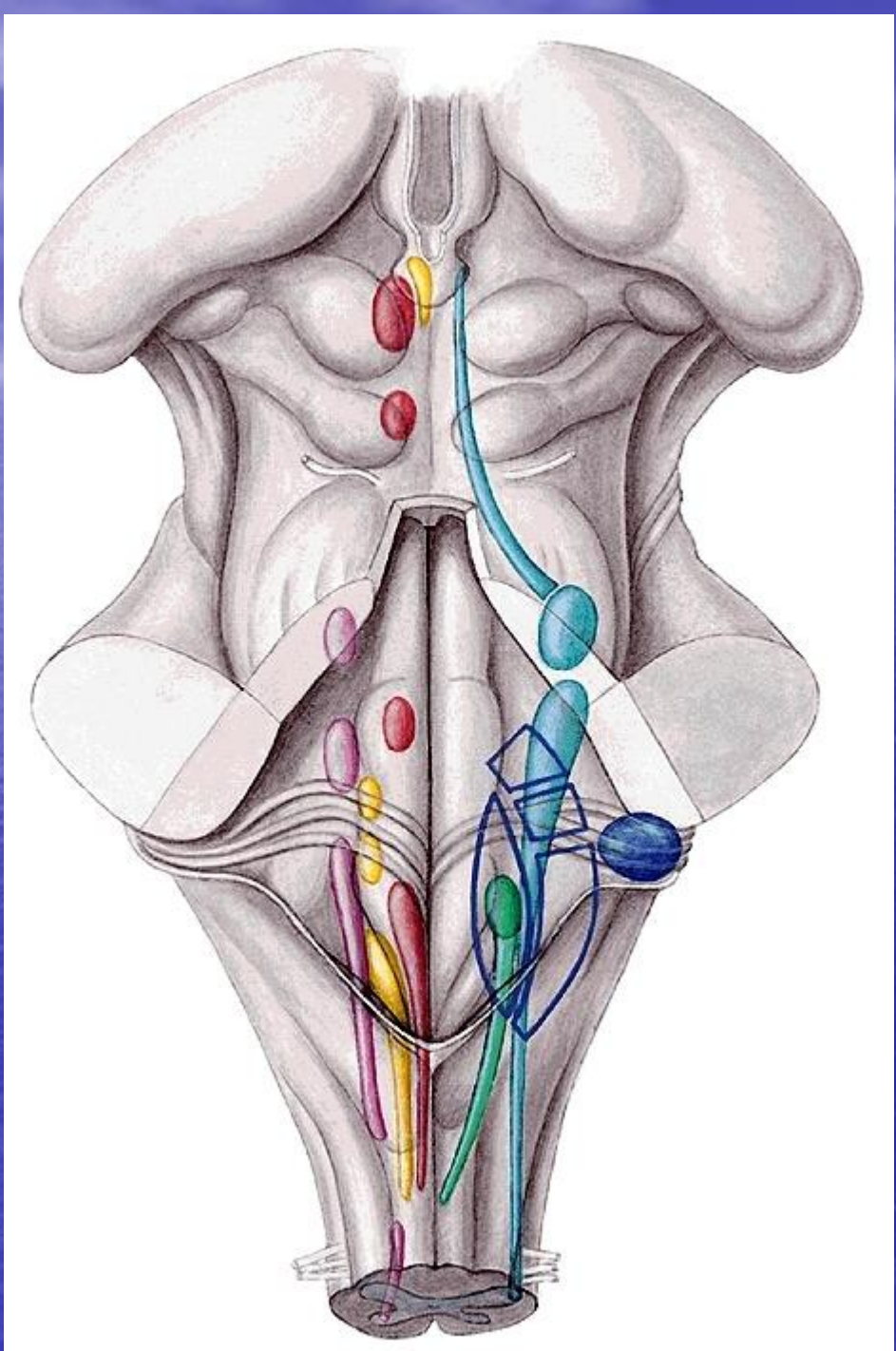


HEUDIA OBL. od. ponsulony: quibus od. lev.

**II. wiasne - feli' ca. usary No nucleus app'is: j. p'ap'lo we**  
 1-3 3-1

**II. wiasne -**  
 do dwulki do p'ap'lo  
 a w'ad'ca p'ost'ap'lo







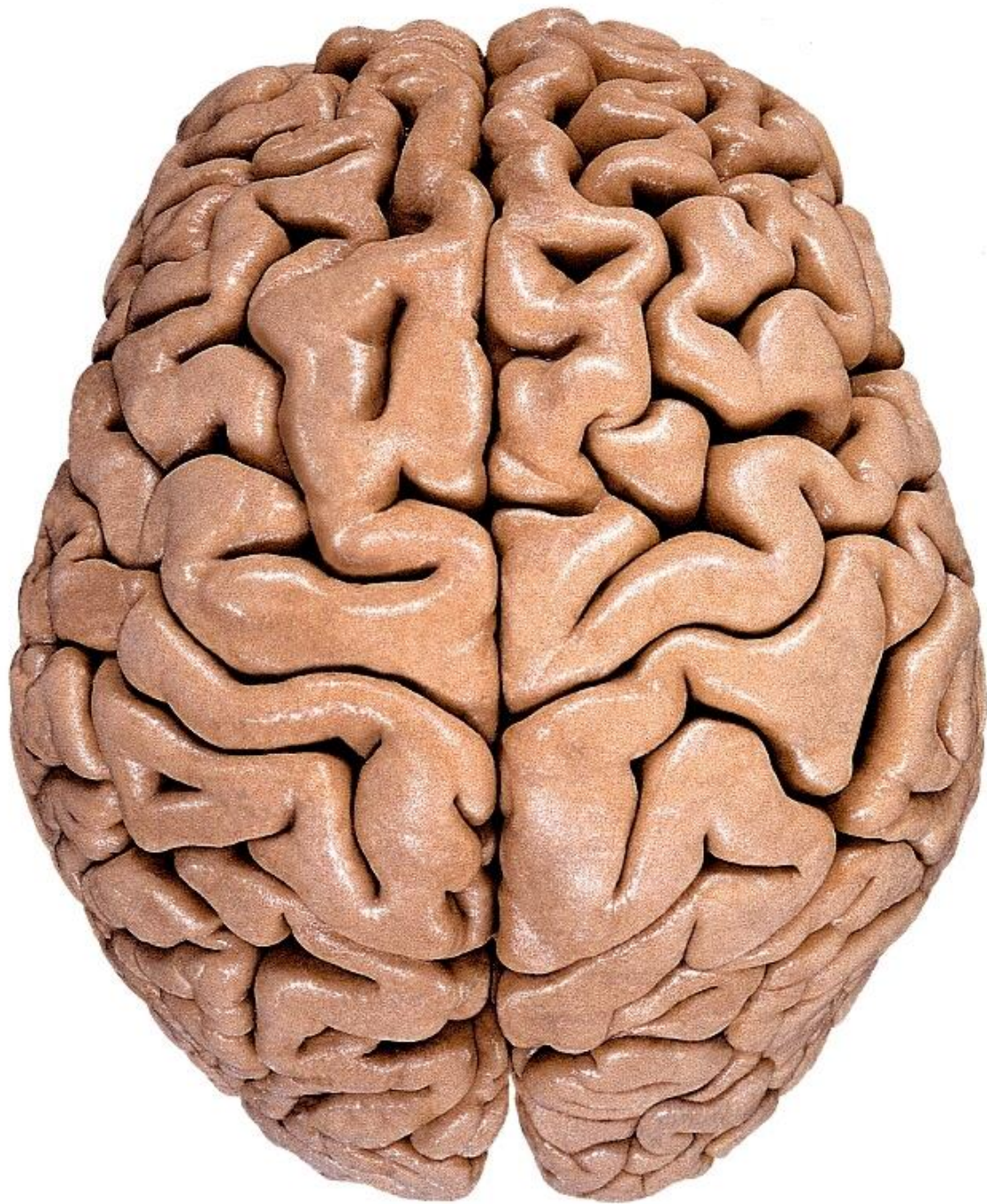
**Hierarchiczność ośrodków**

**Centralnego Systemu**

**Nerwowego**

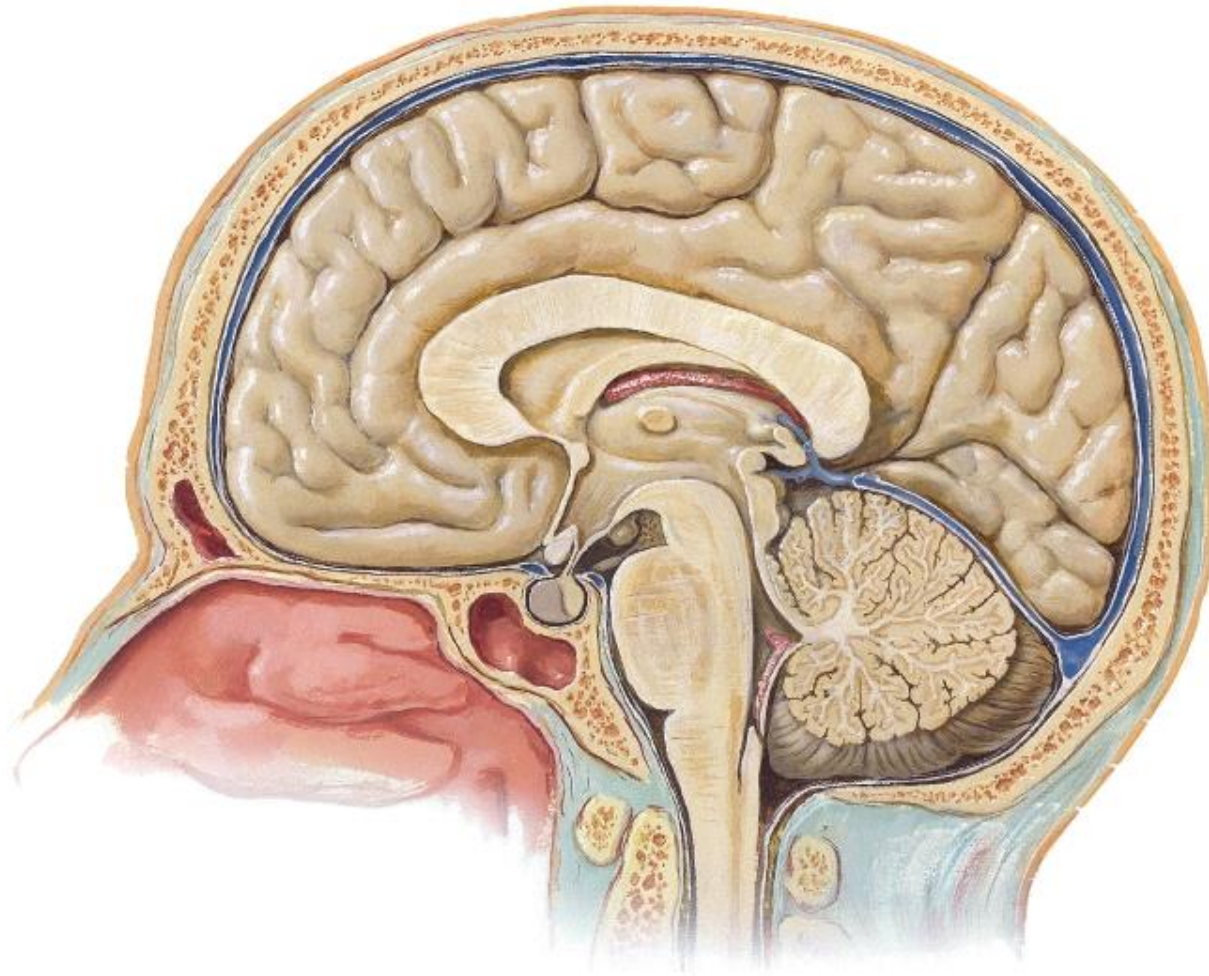
**Cerebrum**  
Lateral View



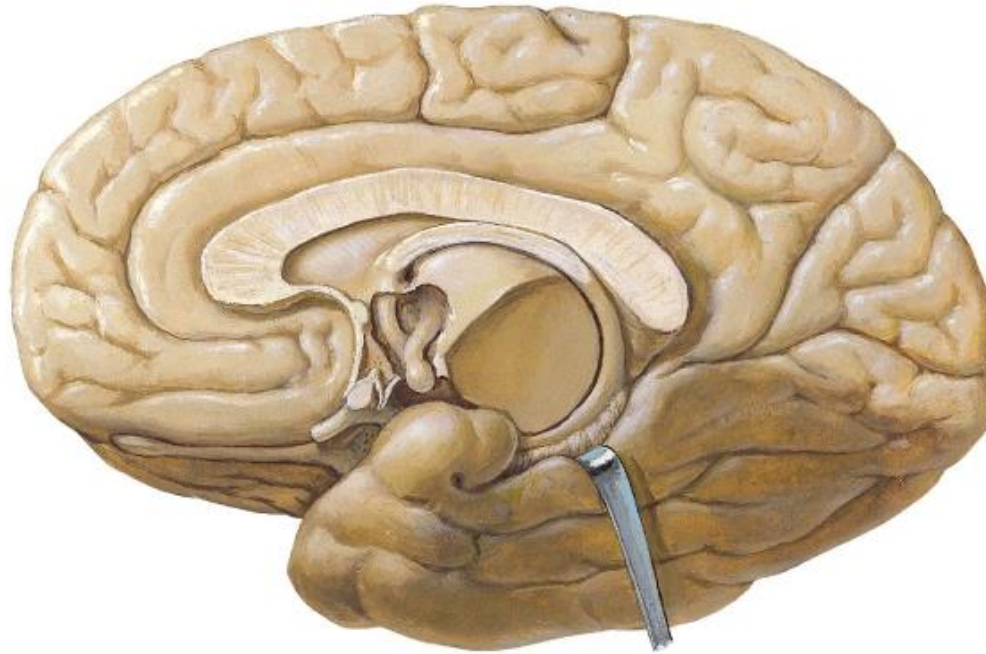


# Cerebrum - Brain In Situ

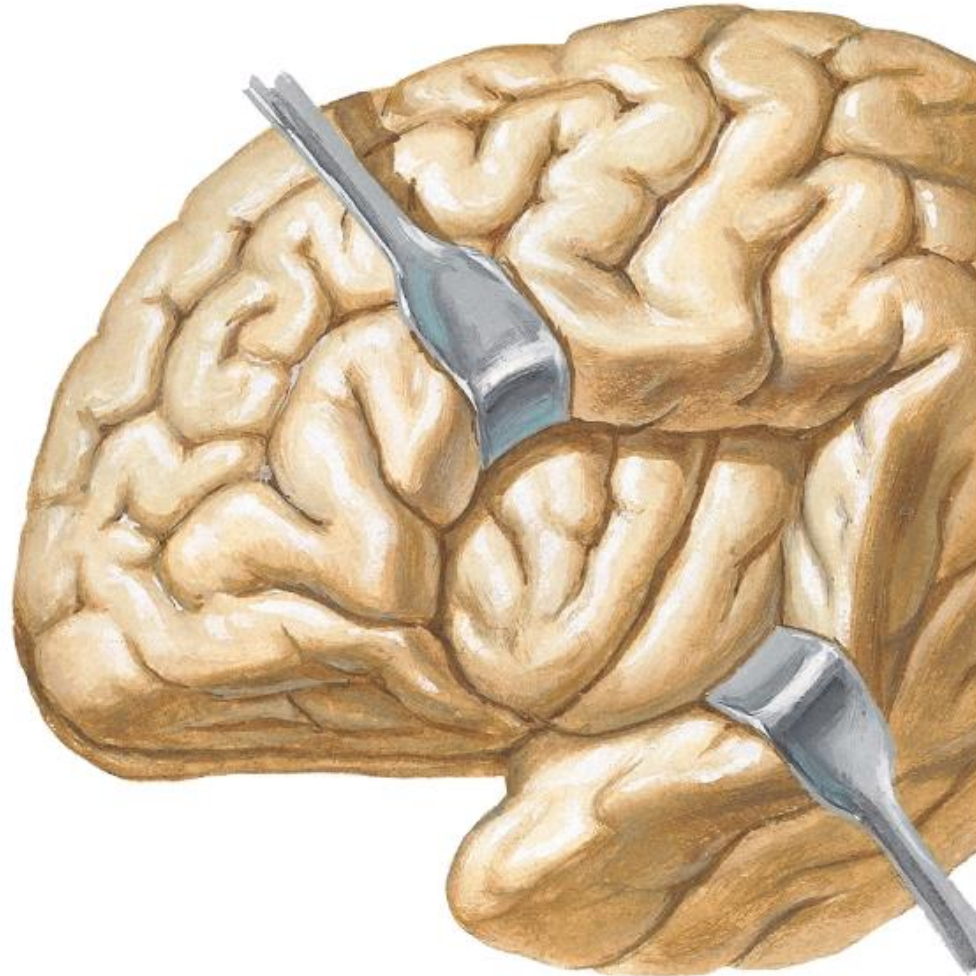
## Sagittal Section - Medial View



**Cerebrum - Hemisphere with Brainstem Excised**  
Medial View



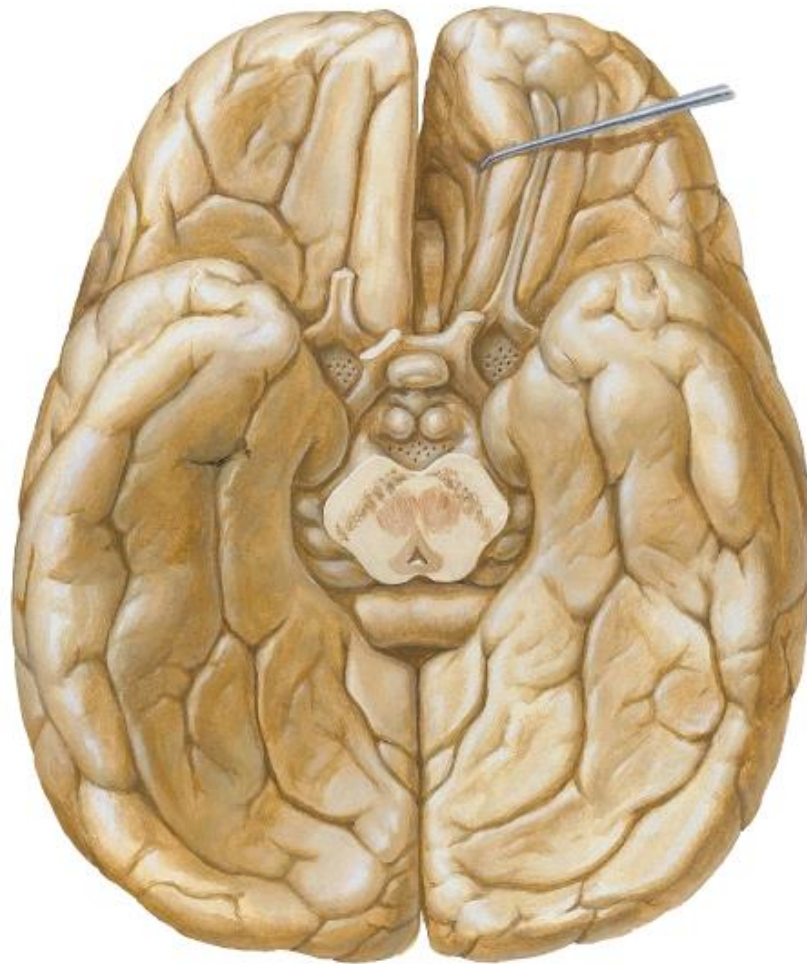
**Cerebrum - Insula (Island of Reil)**  
Lateral View



*F. Netter*  
M.D.  
© IEN



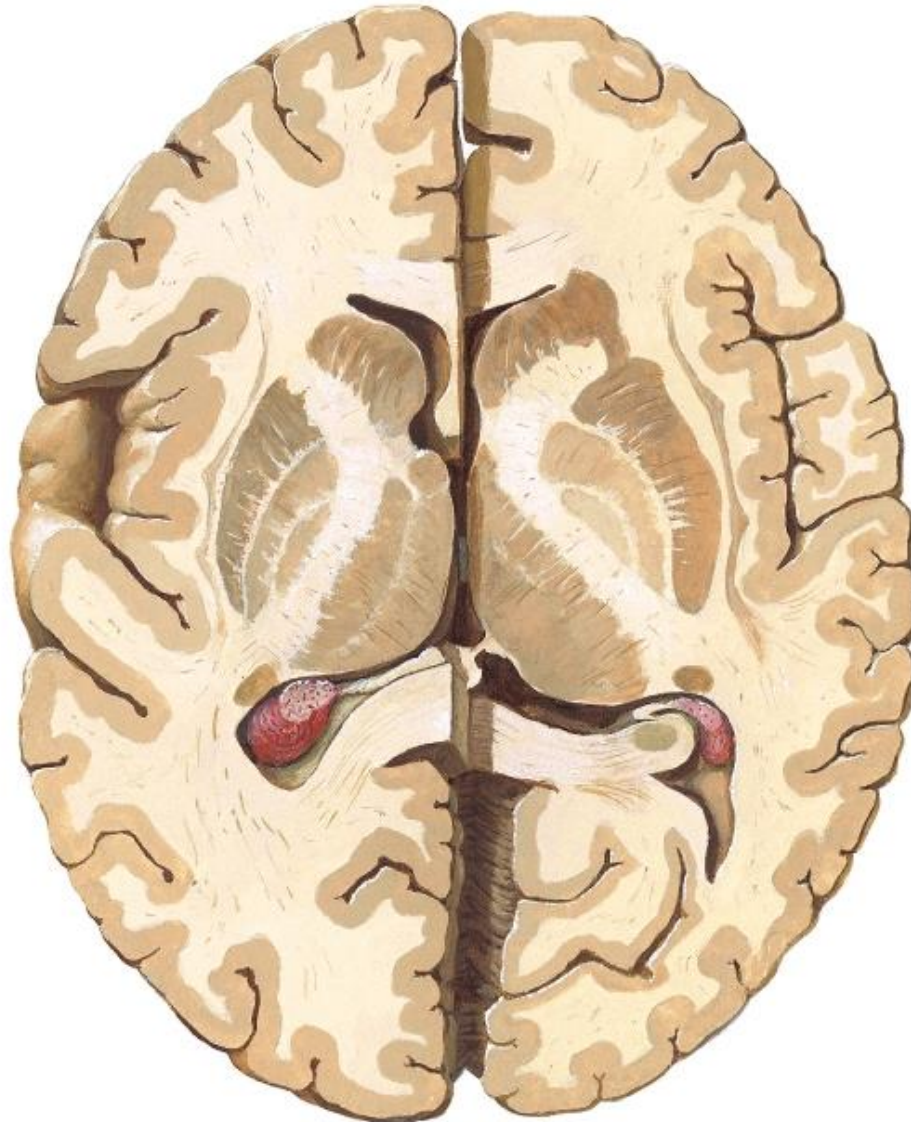
**Cerebrum**  
Inferior View



*F. Netter*  
M.D.  
© I&N

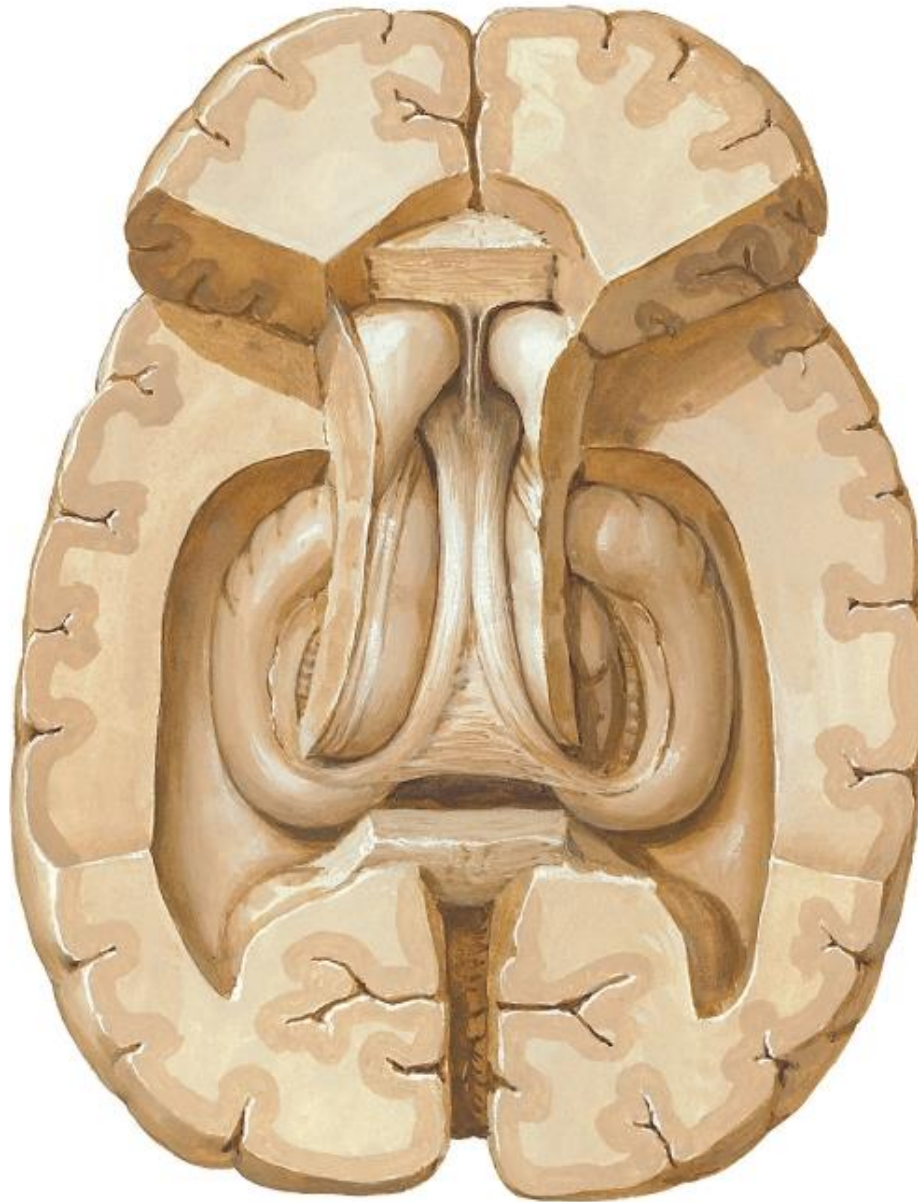
# Basal Nuclei (Ganglia)

## Horizontal Sections through Cerebrum



# Hippocampus and Fornix

## Superior Dissection



# Hippocampus and Fornix

Coronal Section: Posterior View



F. Netter  
M.D.  
© IGM

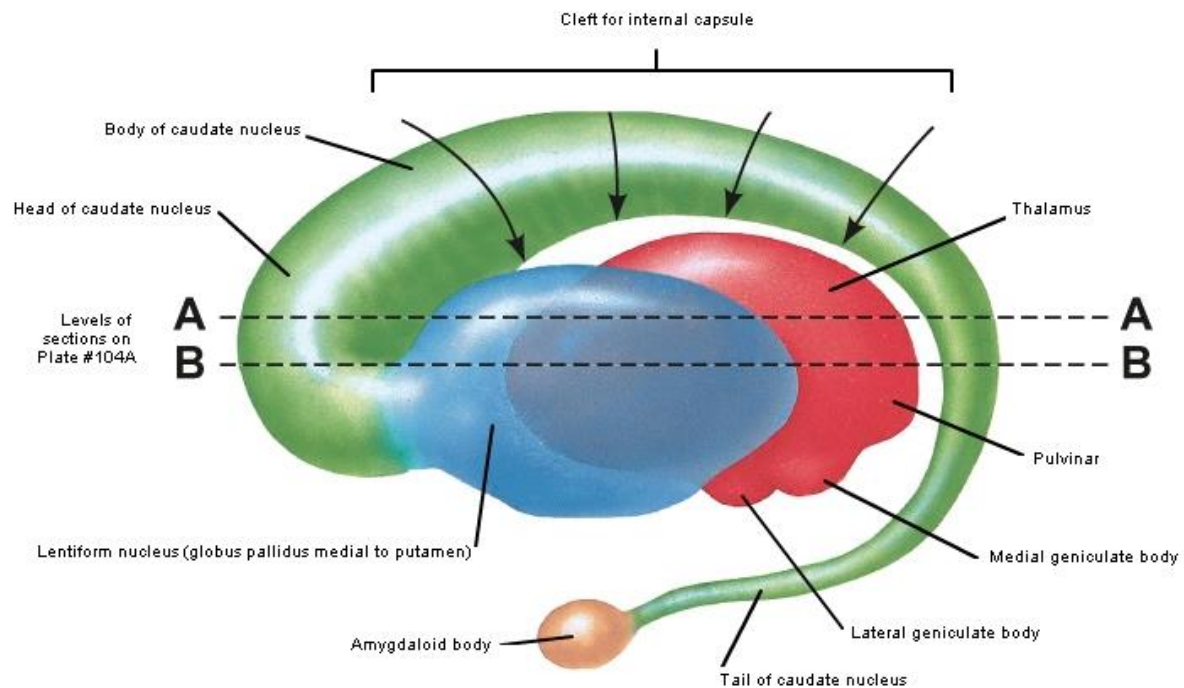
# Hippocampus and Fornix

## Schema of Fornix



# Basal Nuclei (Ganglia) - Schema

## Left Lateral View

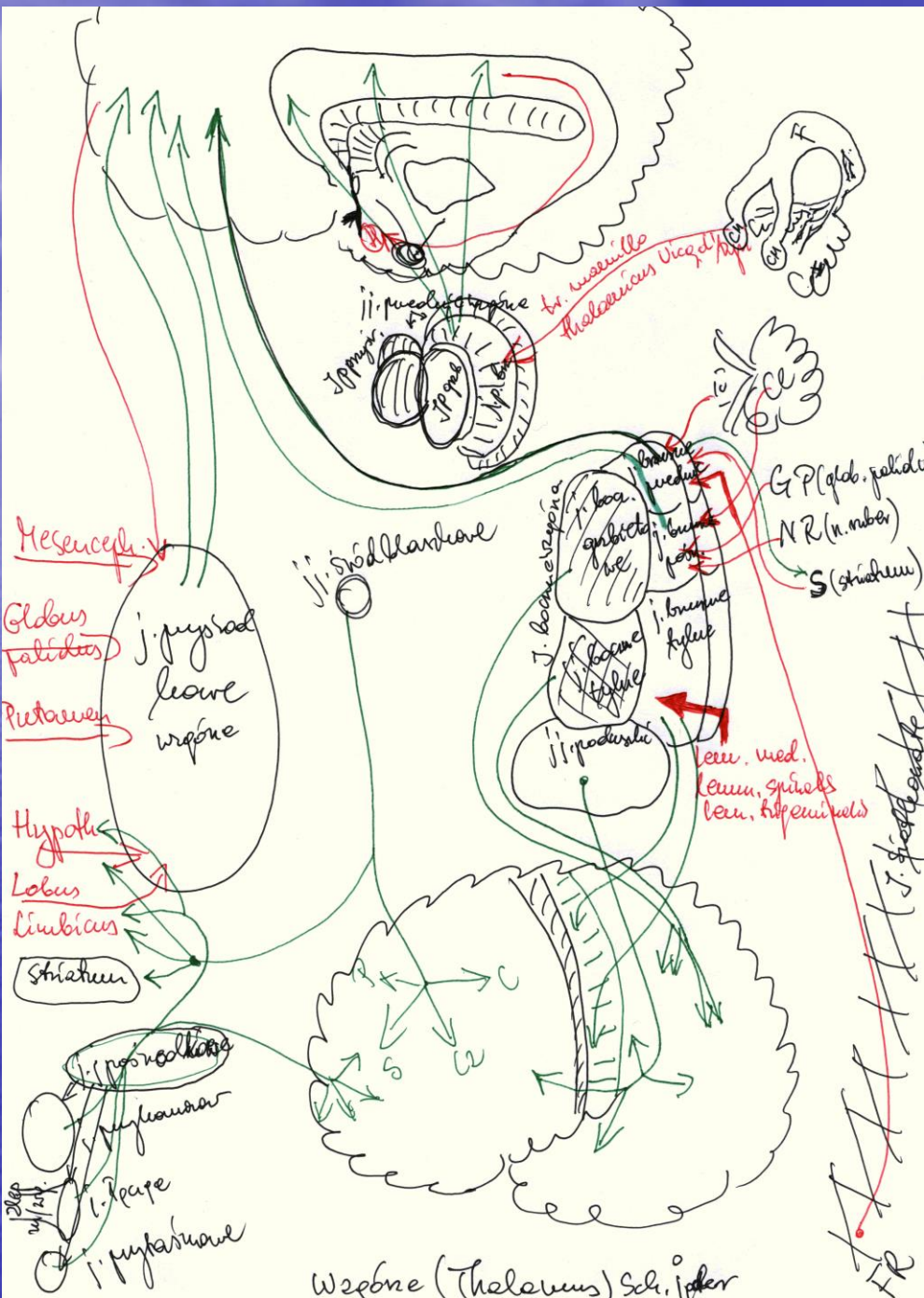


Interrelationship of thalamus, lentiform nucleus, caudate nucleus and amygdaloid body

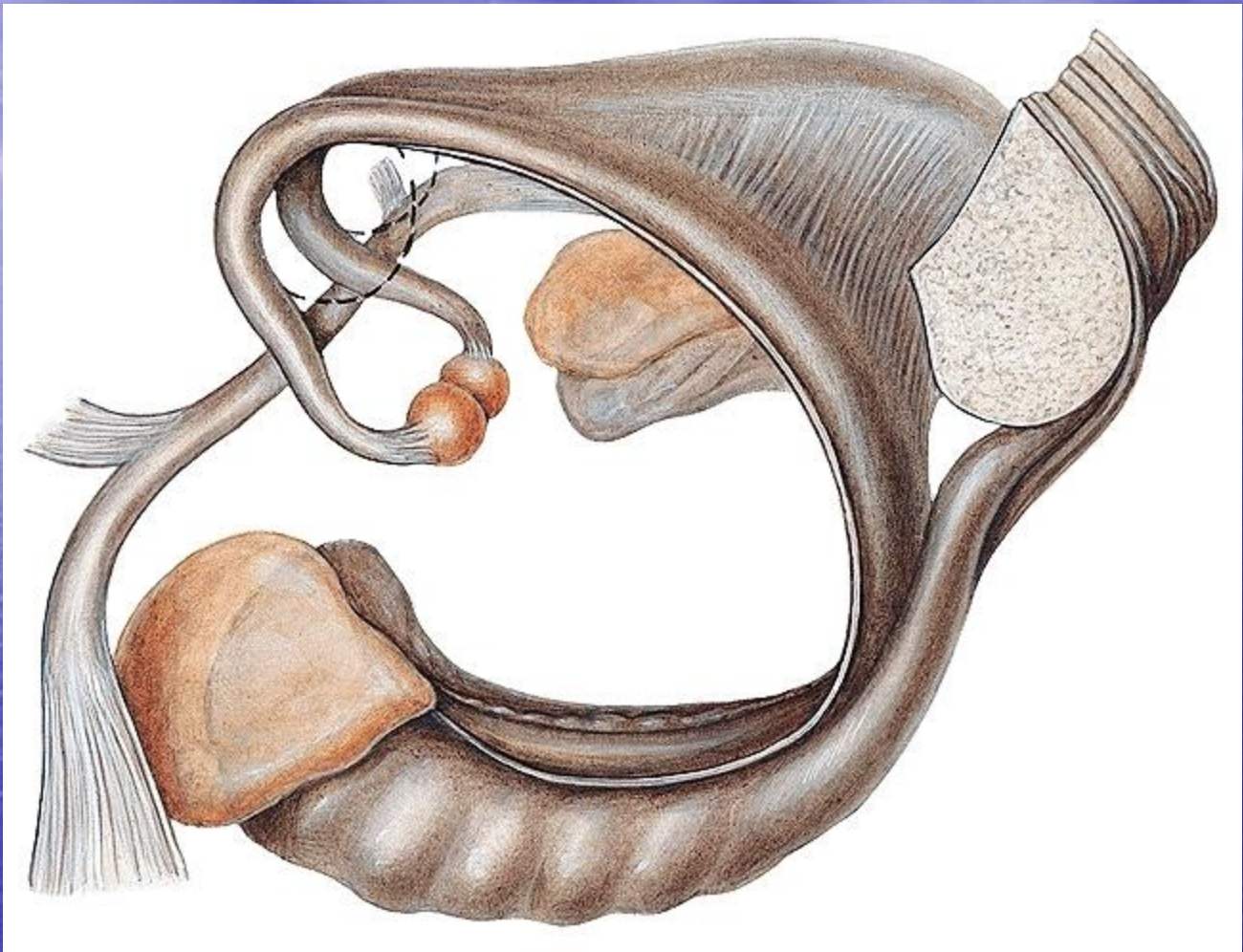
# Ventricles of Brain

## Coronal Section: Posterior View

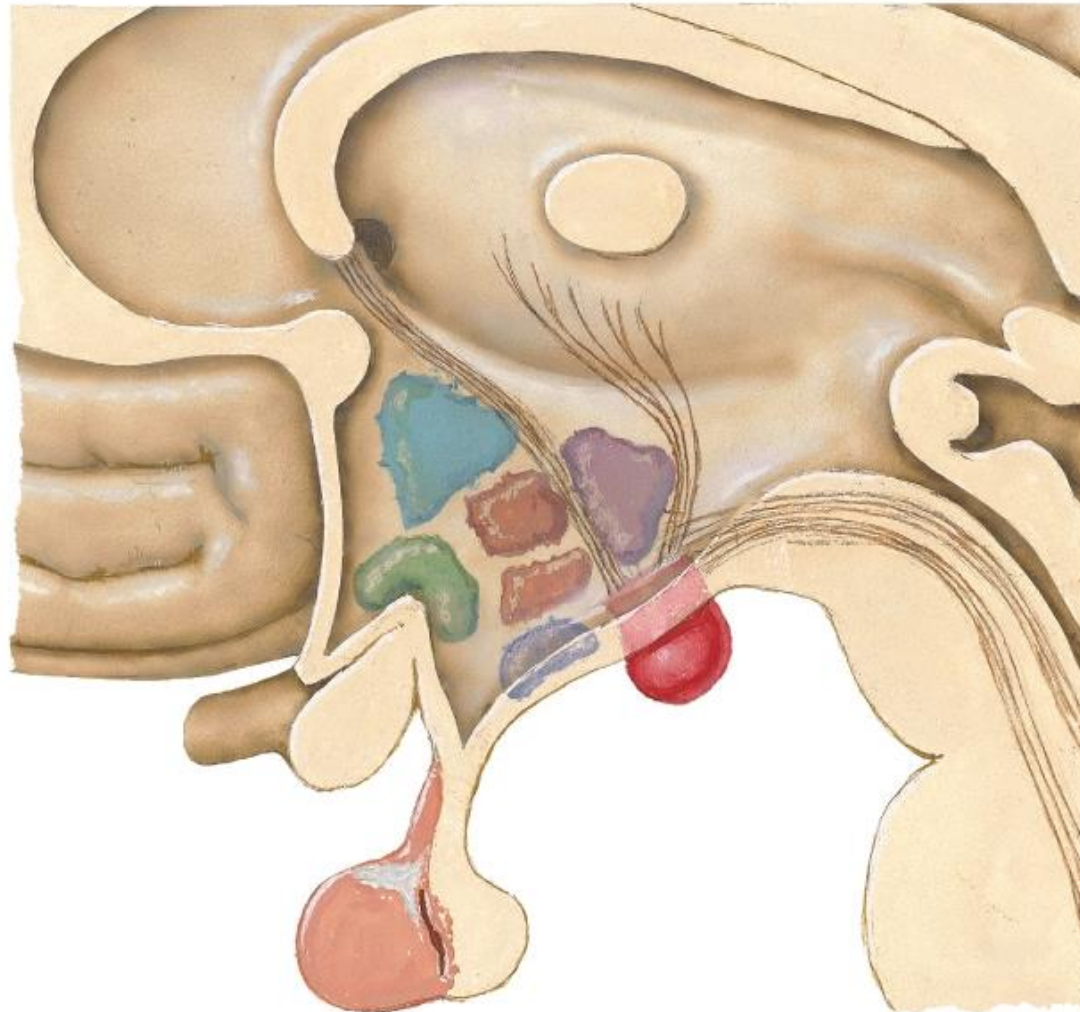




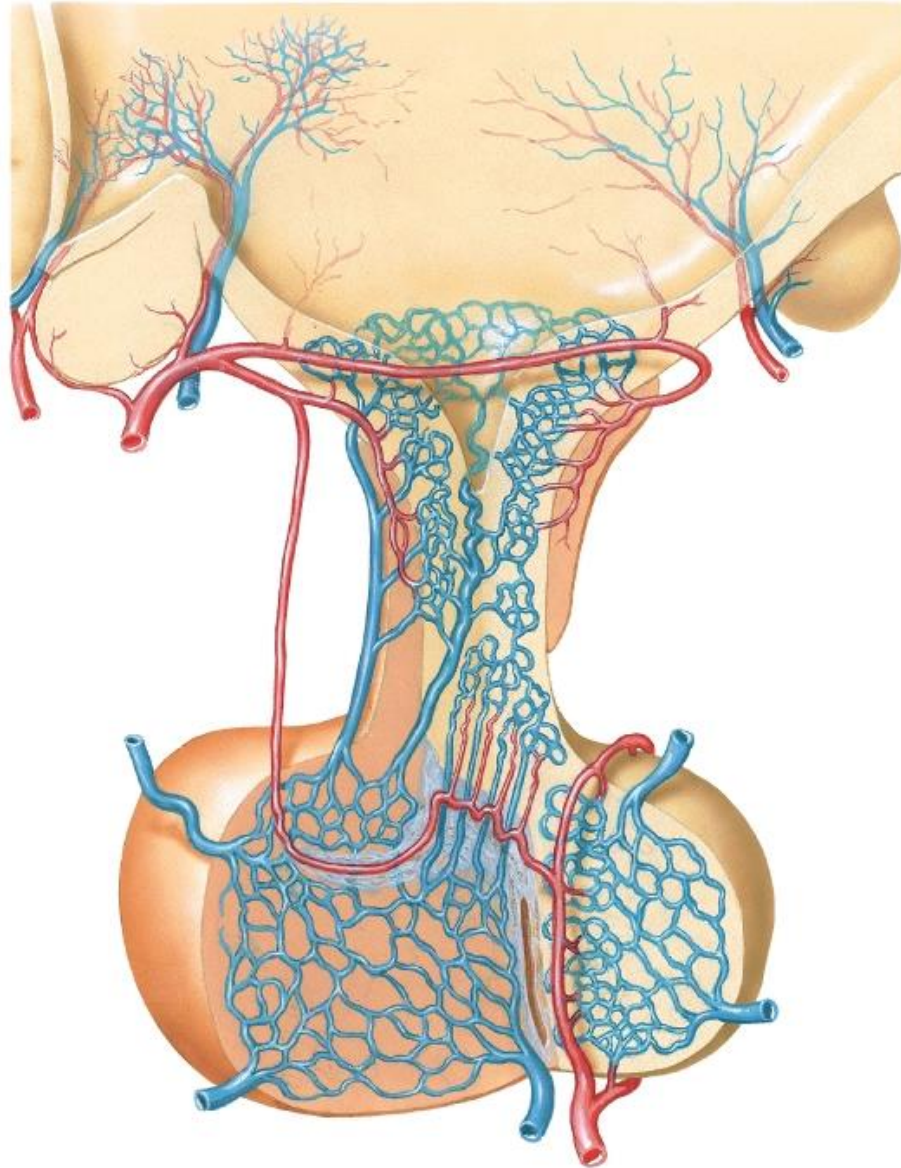




# Hypothalamus - Principal Nuclei

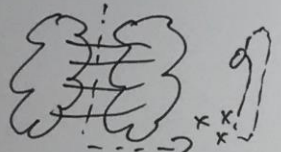


## Arteries and Veins of Hypothalamus and Hypophysis



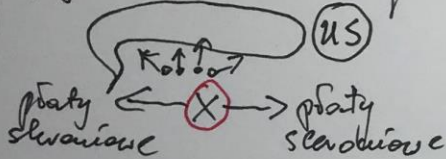
Włókna Nerwowe  
O u N

Wielkie projekcyjne = RZUTOWE =  
= DROGI NERWOWE

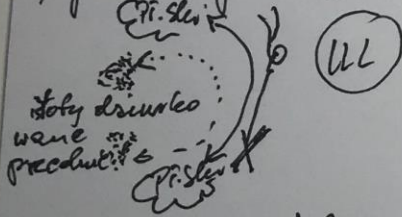


WŁ. SPÓDKOWE

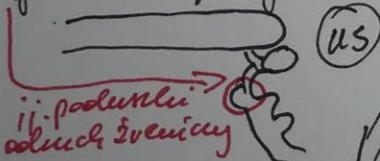
1) Spoidło wielkie mózgu



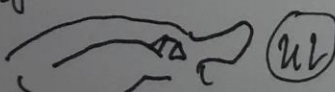
2) Spoidło przednie mózgu



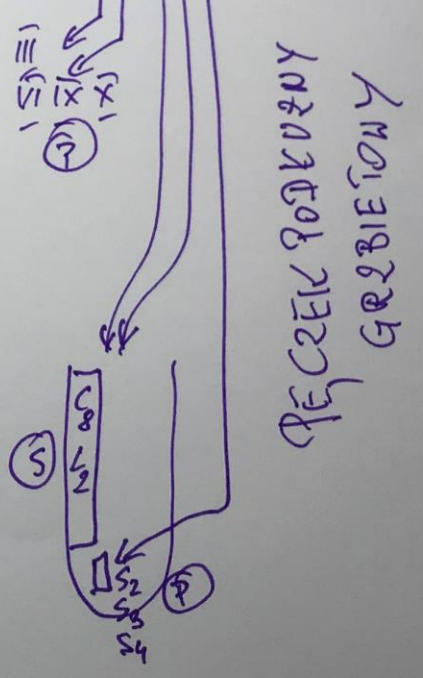
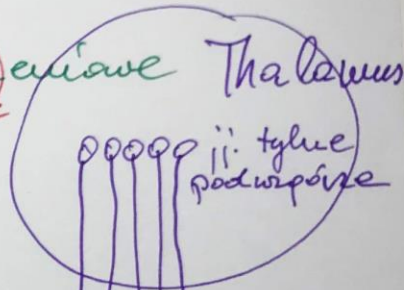
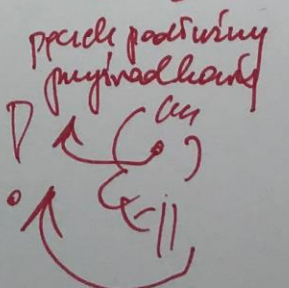
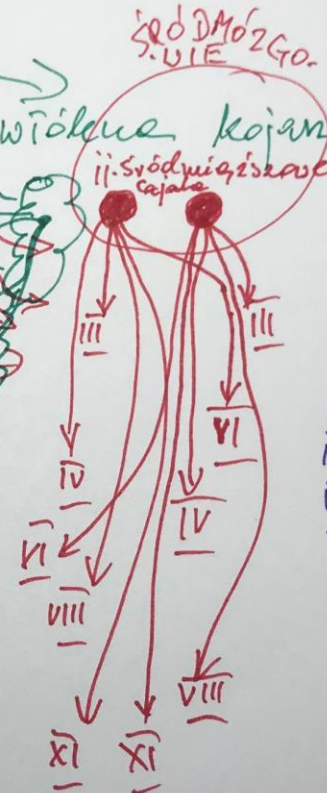
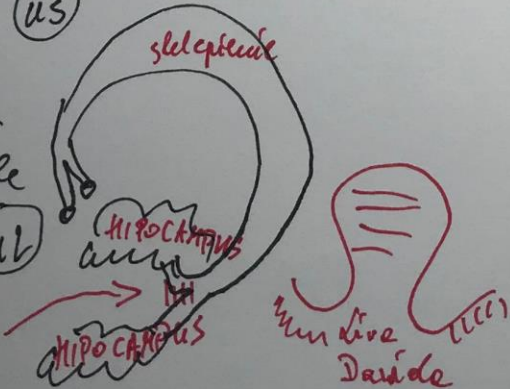
3) Spoidło mózgu tylne



4) Spoidło wodorode



5) Spoidło sklepienie  
hipokampów





# DROGI CZUCIOWE

## CZUCE GŁĘBOKIE

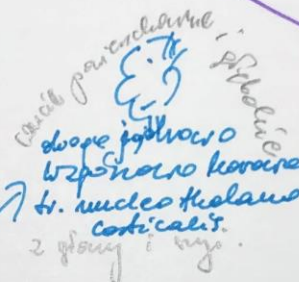
### Ścieżka dalszanie

- tractus spino cerebellaris ant.
- tr. spinocerebellaris post.
- (odceniwo mózdzikowe medulla i sylvia)

czucie z powięzi  
Marekko dionty  
ze skóry

### Ścieżka bliższanie

- tr. spino bulbo thalamo corticalis (odceniwo opunklowo wzpnowo korowe)
- Droga opunklowo wzpnowa tworzy Lemniscus medialis (wzppp puzrodleang)

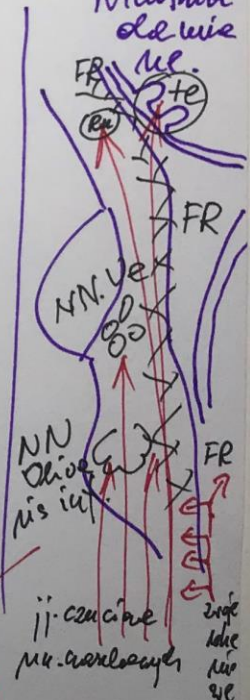


## Czucie powierzchni

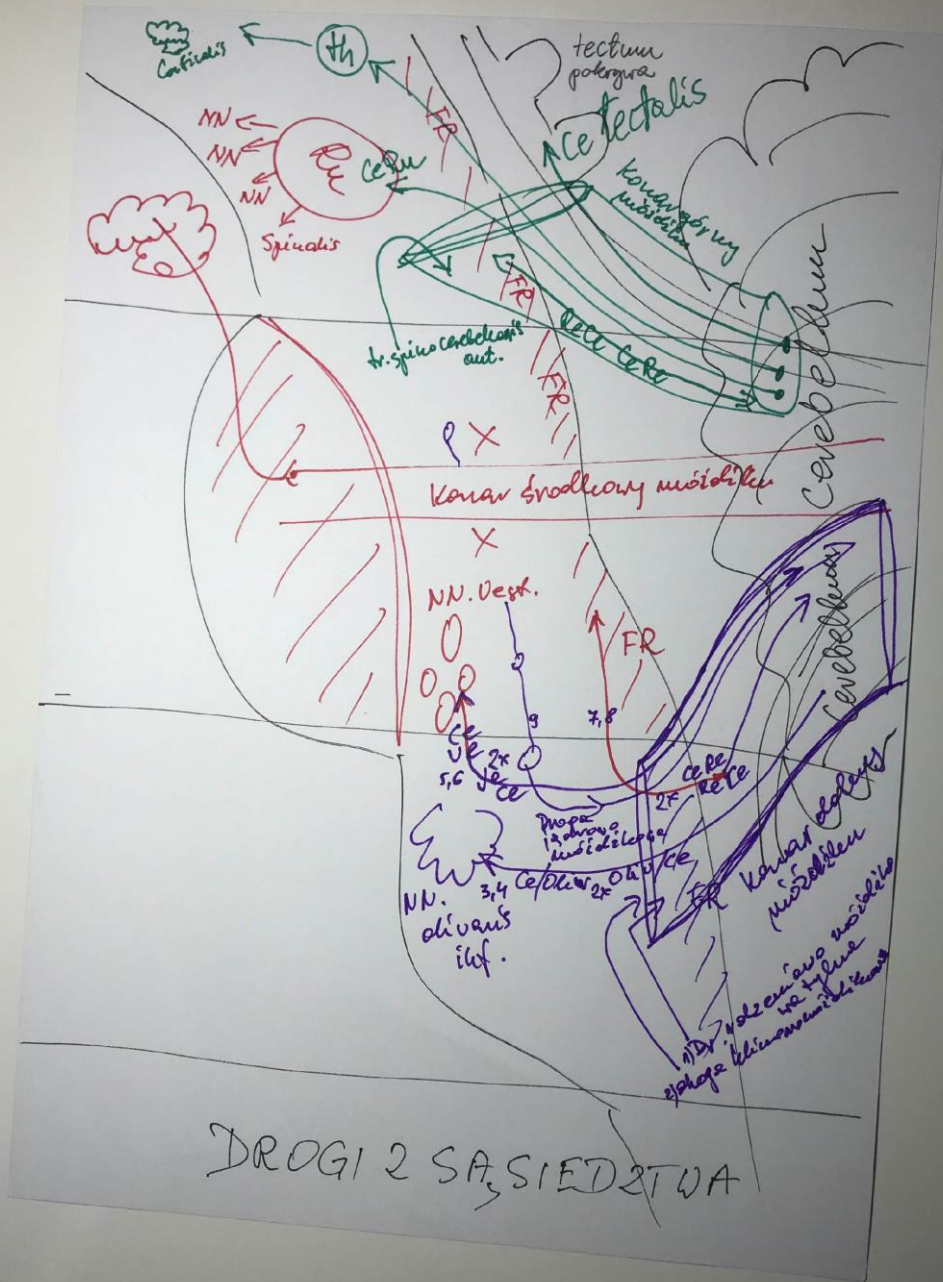
### Ścieżka bliższanie

- tr. spino thalamo corticalis (odceniwo wzpnowo korowe)
- rdz. wy. przednia obłyk kręte
- rdz. wy. boczna ból temperatur

### Nucieńia od wis



tr. nucleo vestibularis olivaris reticularis subpretectalis et tr. spino



DROGI 2 SAŚSIĘDŹTWA

Корона

W zoprowo

J. Pacine up.  
O2. Braunio  
tylko  
Podkorony osi.  
caucia somat group

# Lemniscus Medialis

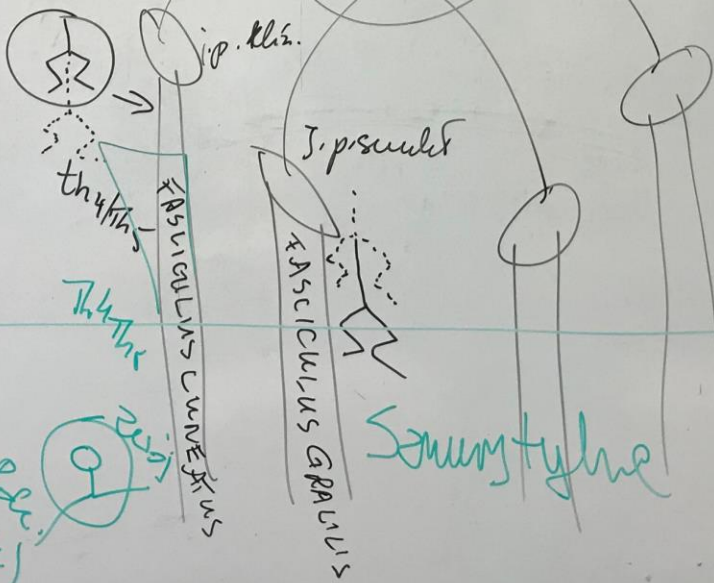
LM

L. Med.

Decussatio  
Lemniscorum

Most  
Opunkhe  
Pdkr.

Opuszkovo  
Rok.



Res.  
Mikr.

Somatyline

Rok.  
Kupe





Groszek struchony  
pub. a.c.

precizni notranne = struchave  
Striae medullares  
seu ACUSTICAE

Ciabo  
kolonko  
kate  
prizir  
strukone

stimulir  
j. prob.  
n. VIII  
ST.

Pretek Rasmussene

L. Med

Wstepa barasa = struchosa  
Lemniscus  
lat seu  
Acusticus

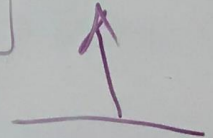
kanj  
st.  
vevni

stimulir  
j. struchona  
n. VIII  
ST.

o o j. diuki goine  
o j. cista o j. Astpa  
o curvul ocuapo o boaney

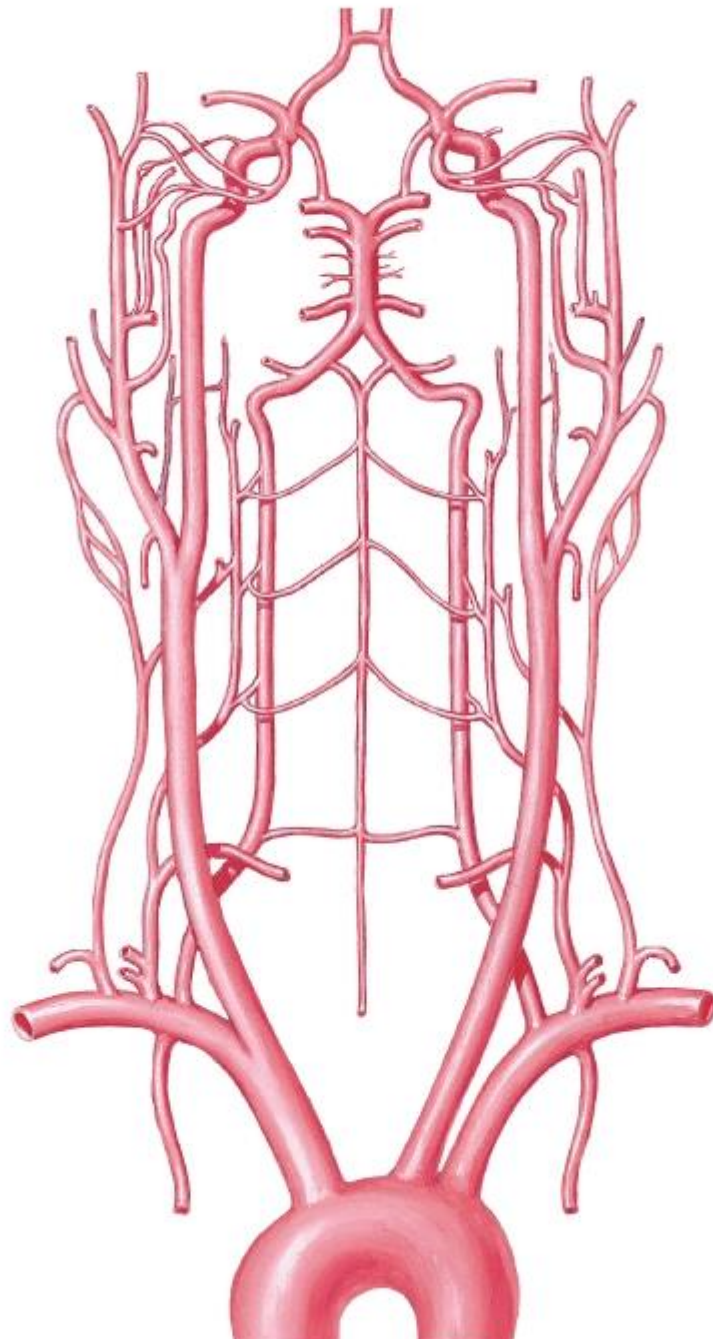
Corpus trapesoideum

VIII

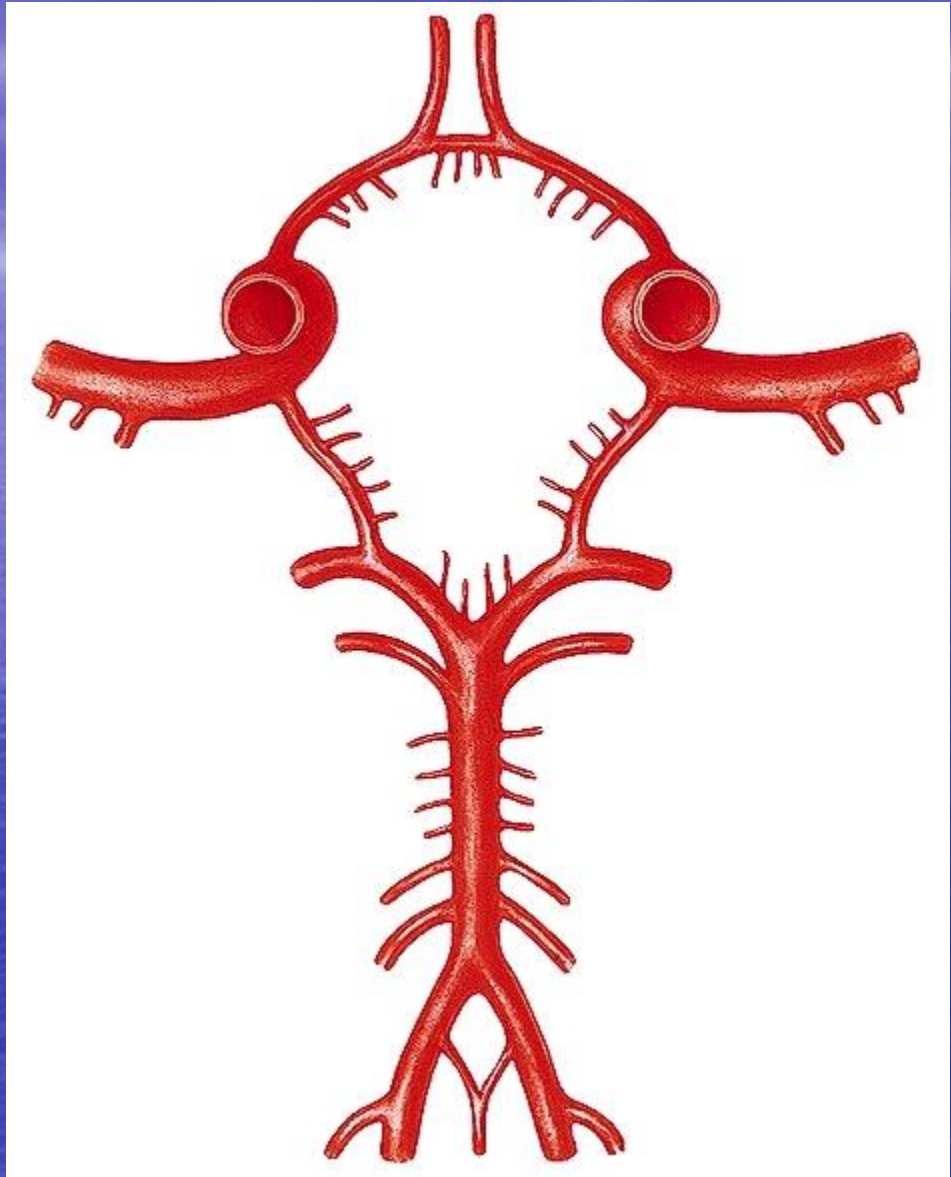


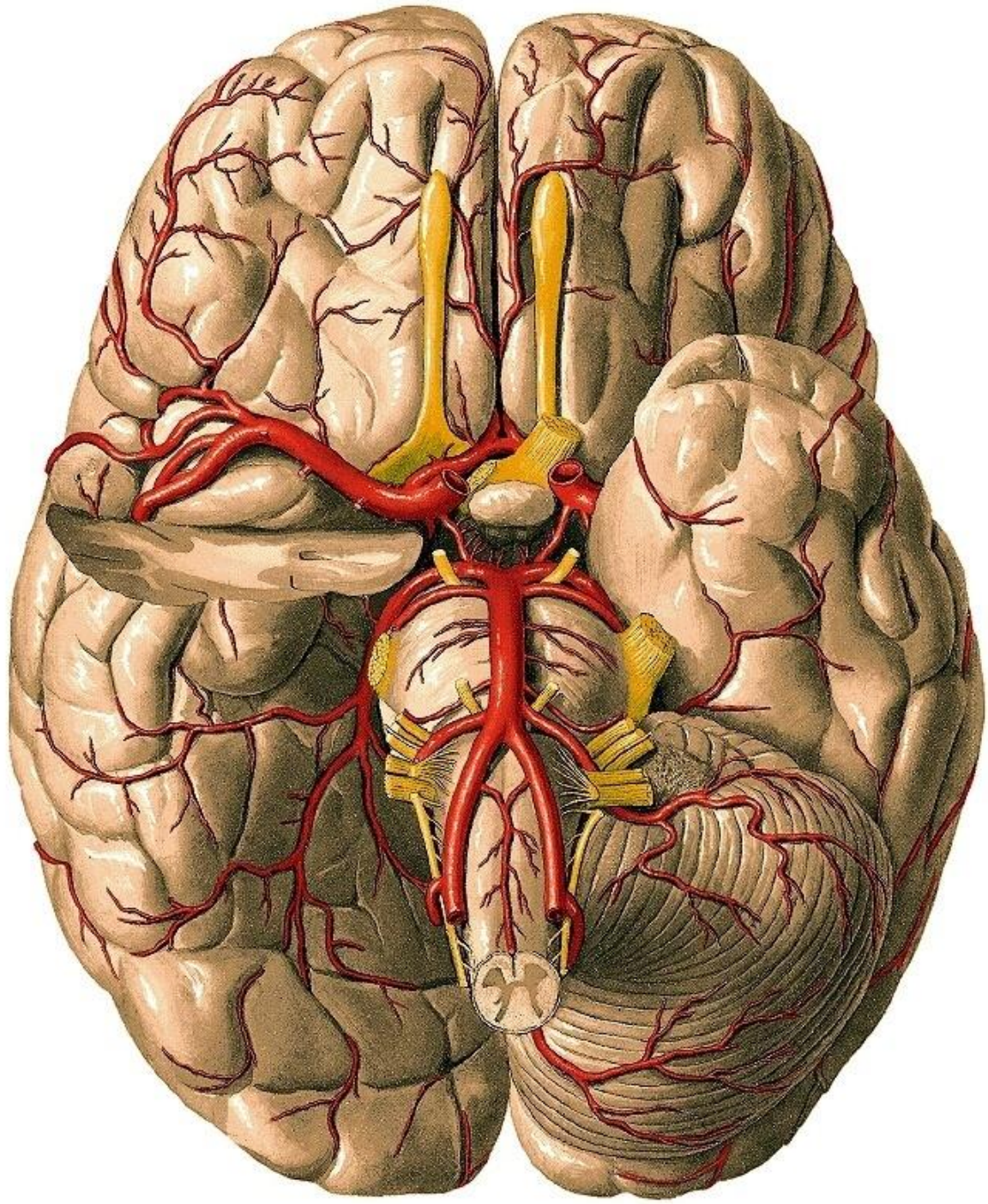
# **Naczynia Ośrodkowego Układu Nerwowego**

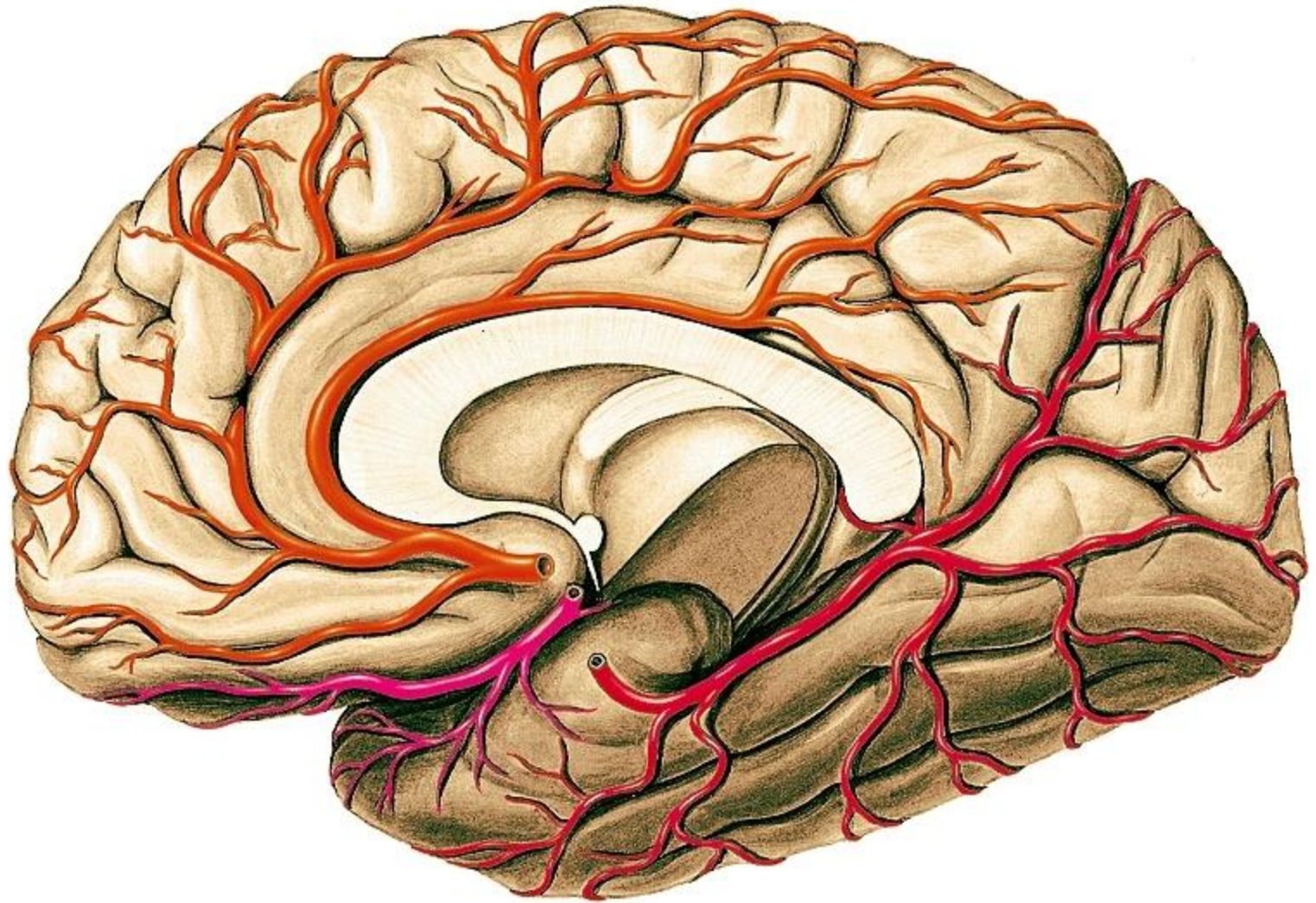
# Arteries to Brain: Schema



*F. Netter*  
M.D.  
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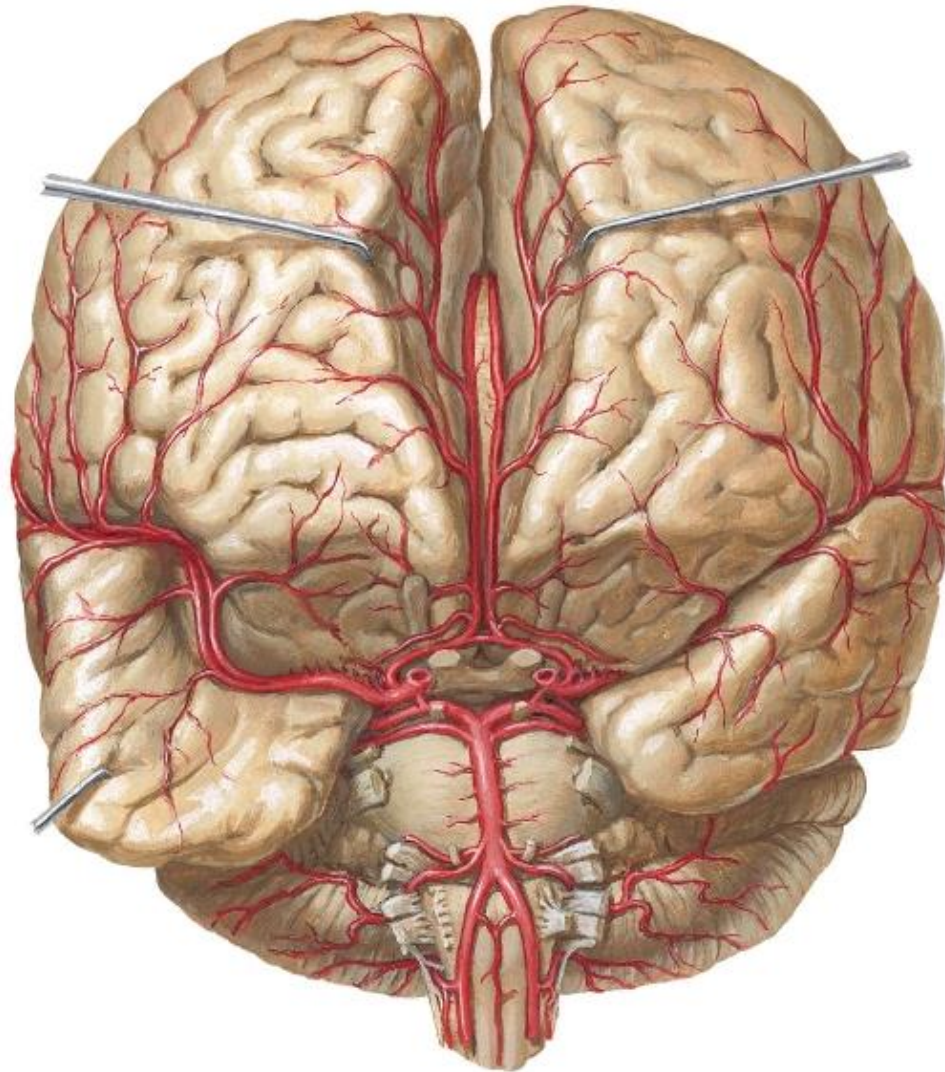






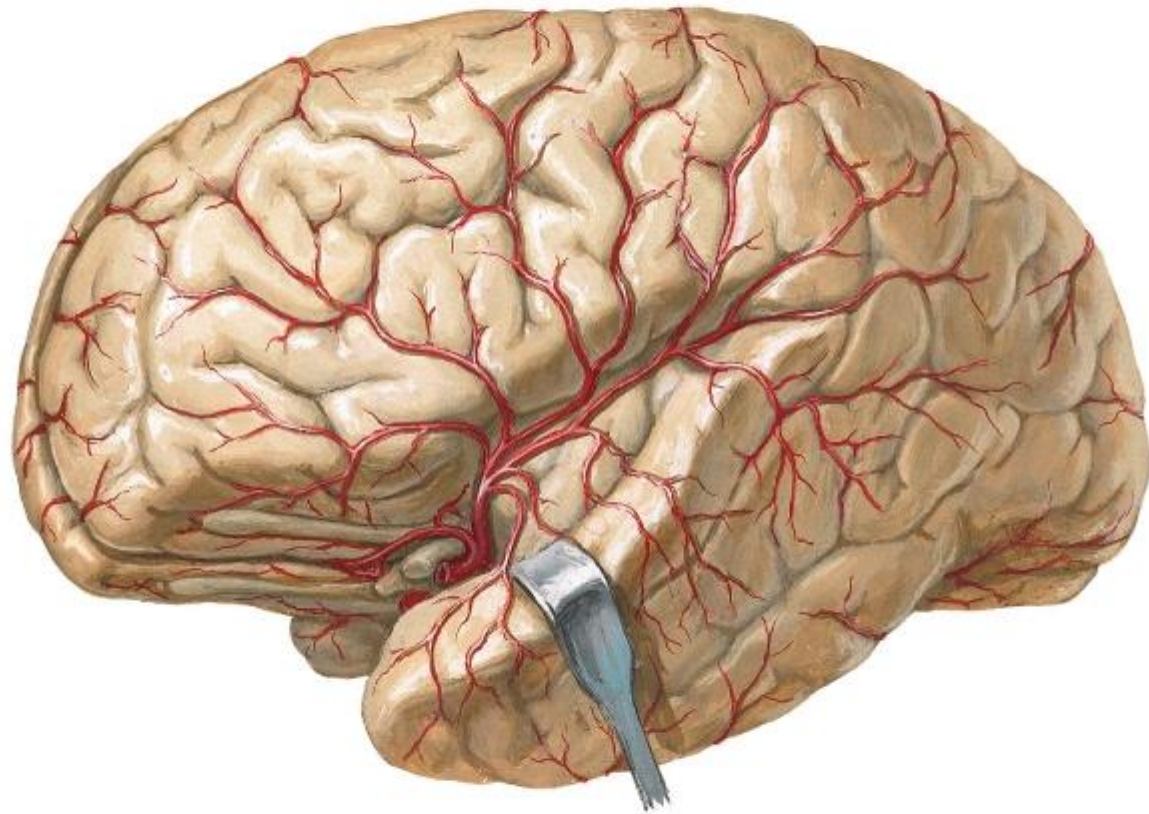
# Arteries of Brain

## Frontal View



# Arteries of Brain

## Lateral View

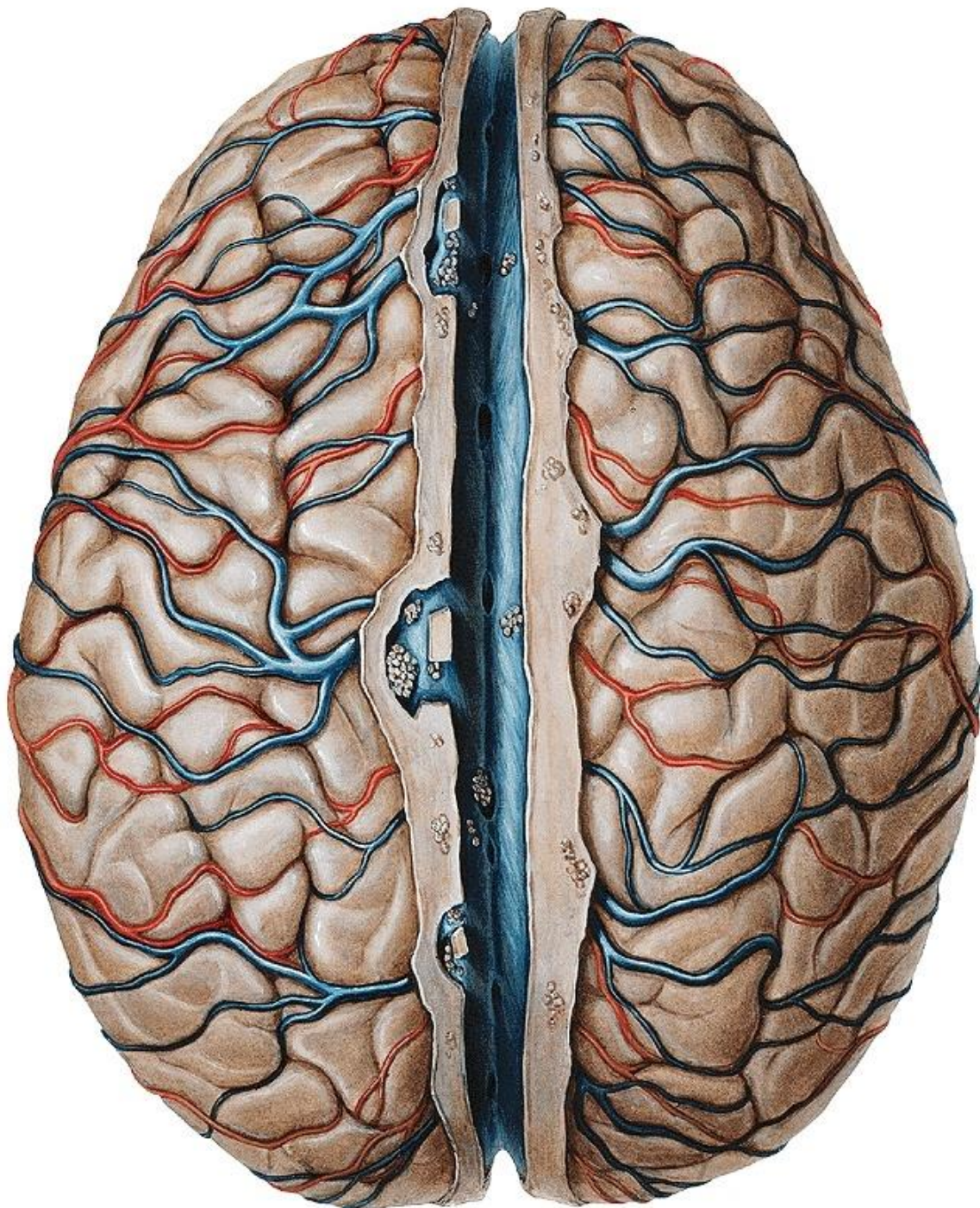




# Arteries of Brain

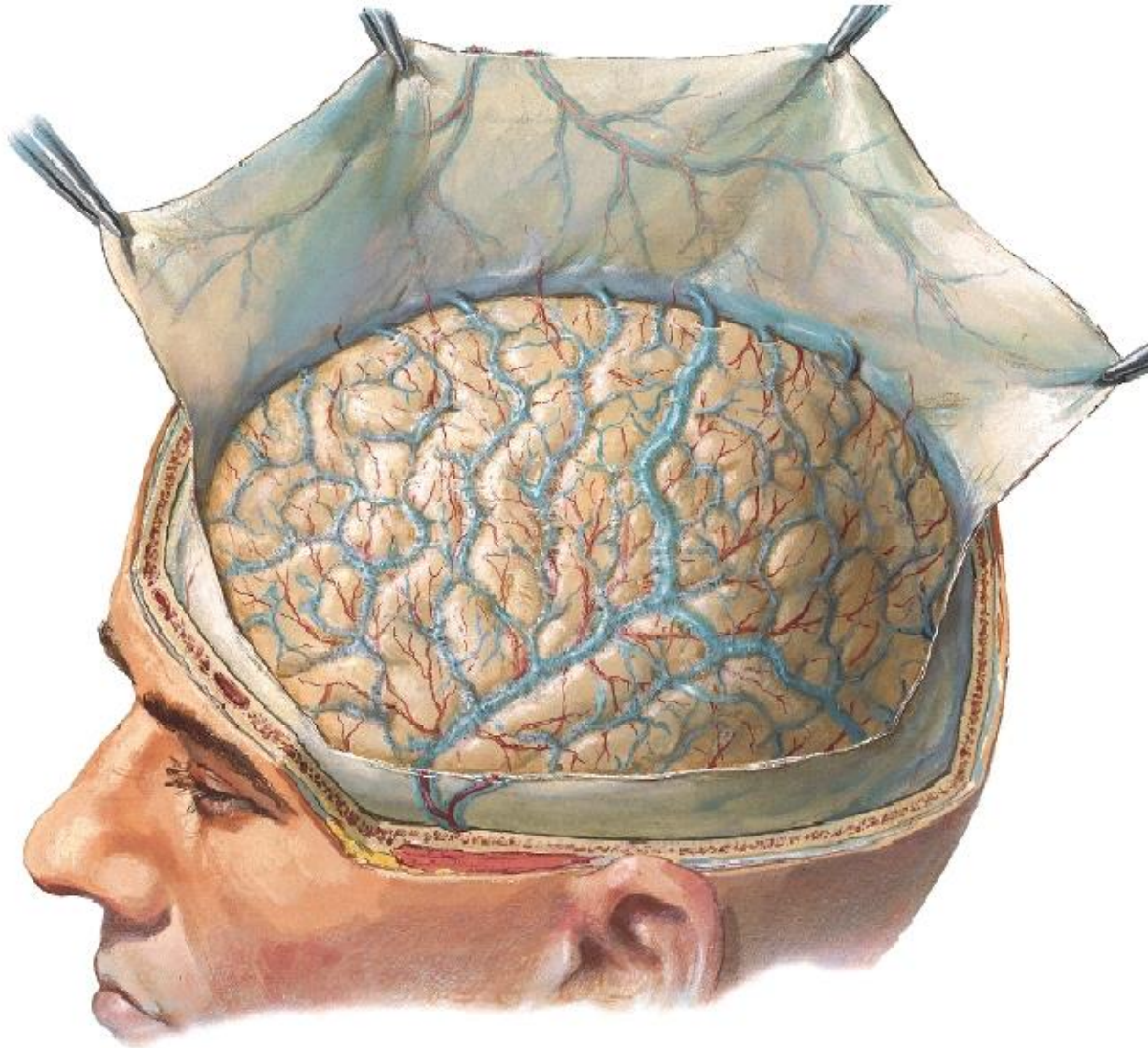
## Frontal Section



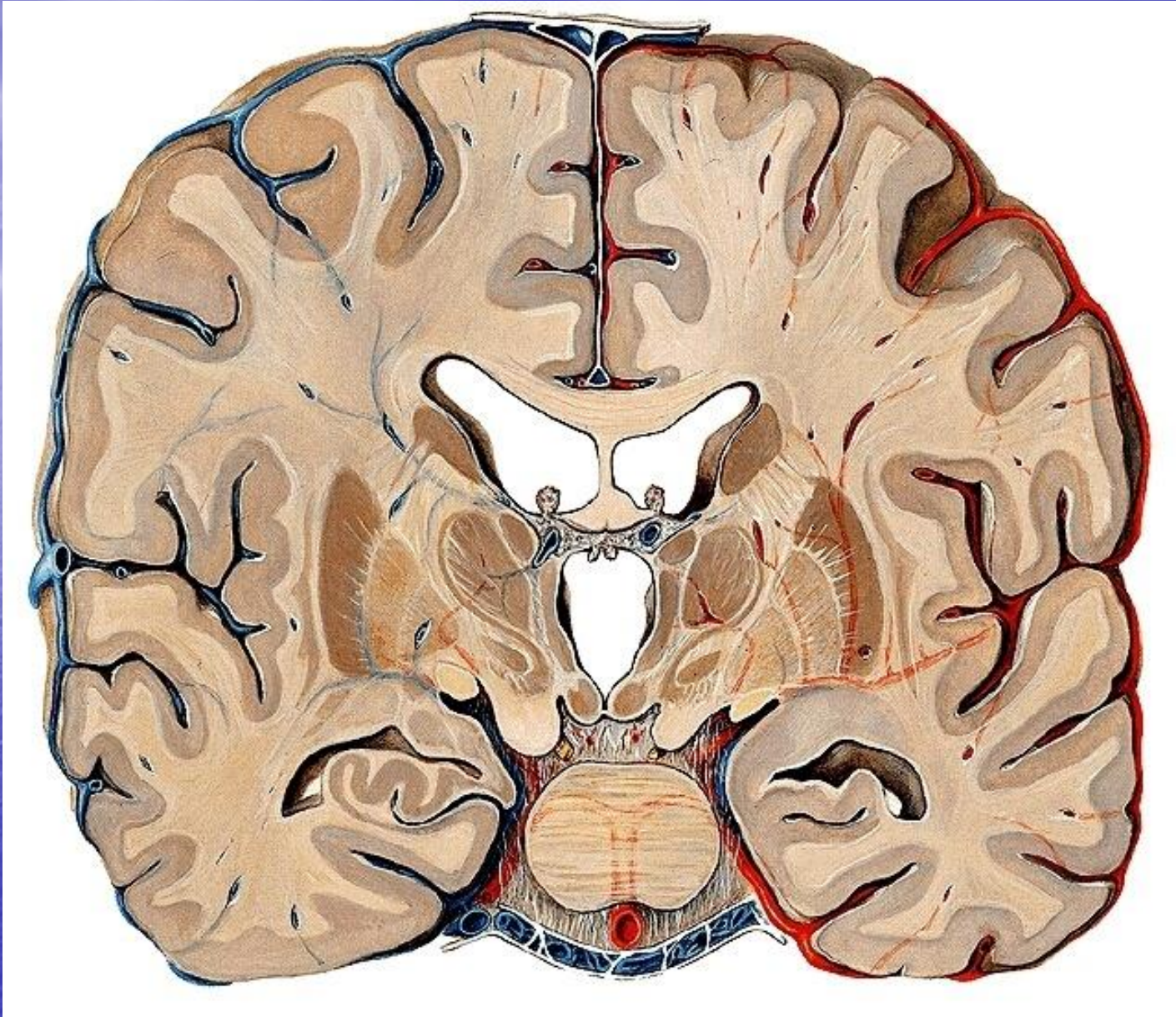


# Meninges and Superficial Cerebral Veins

Dura Mater Lifted

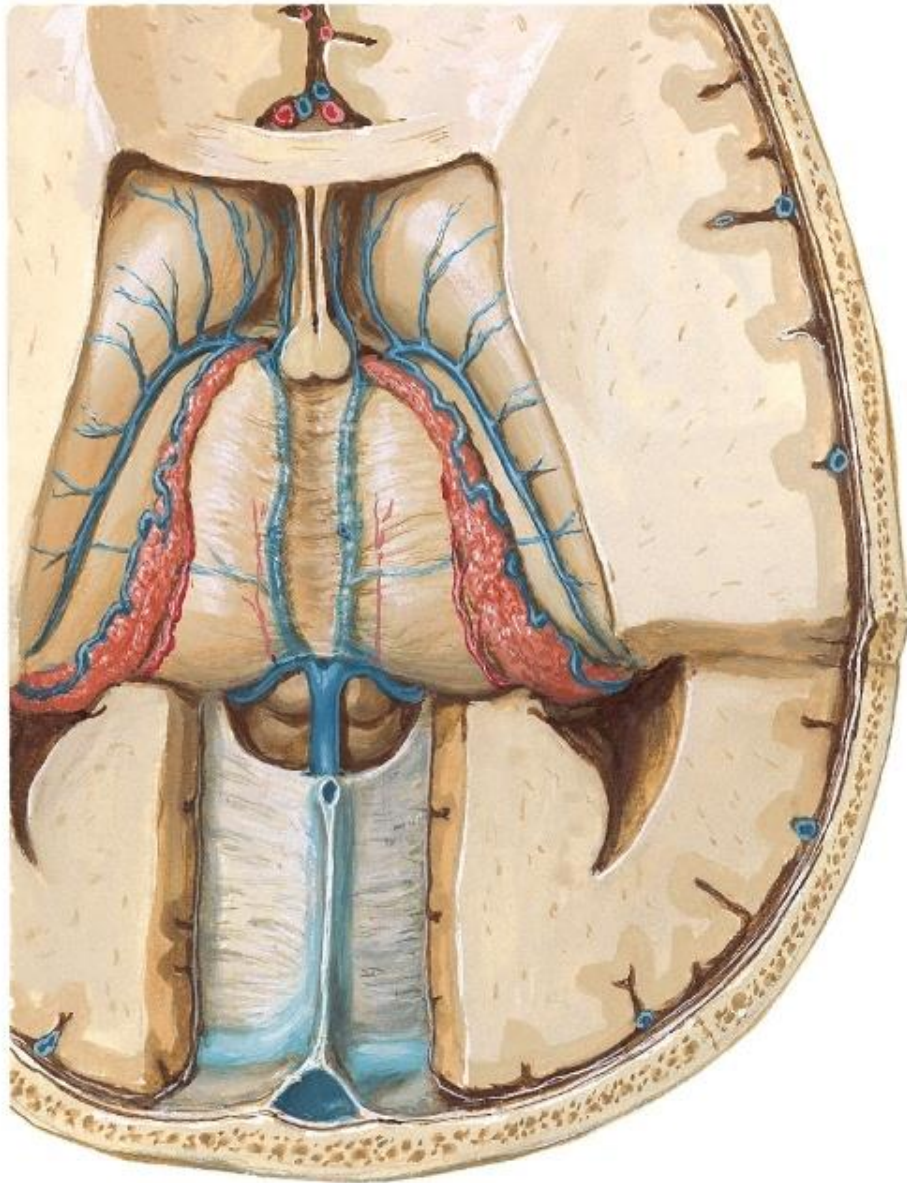


F. Netter  
M.D.  
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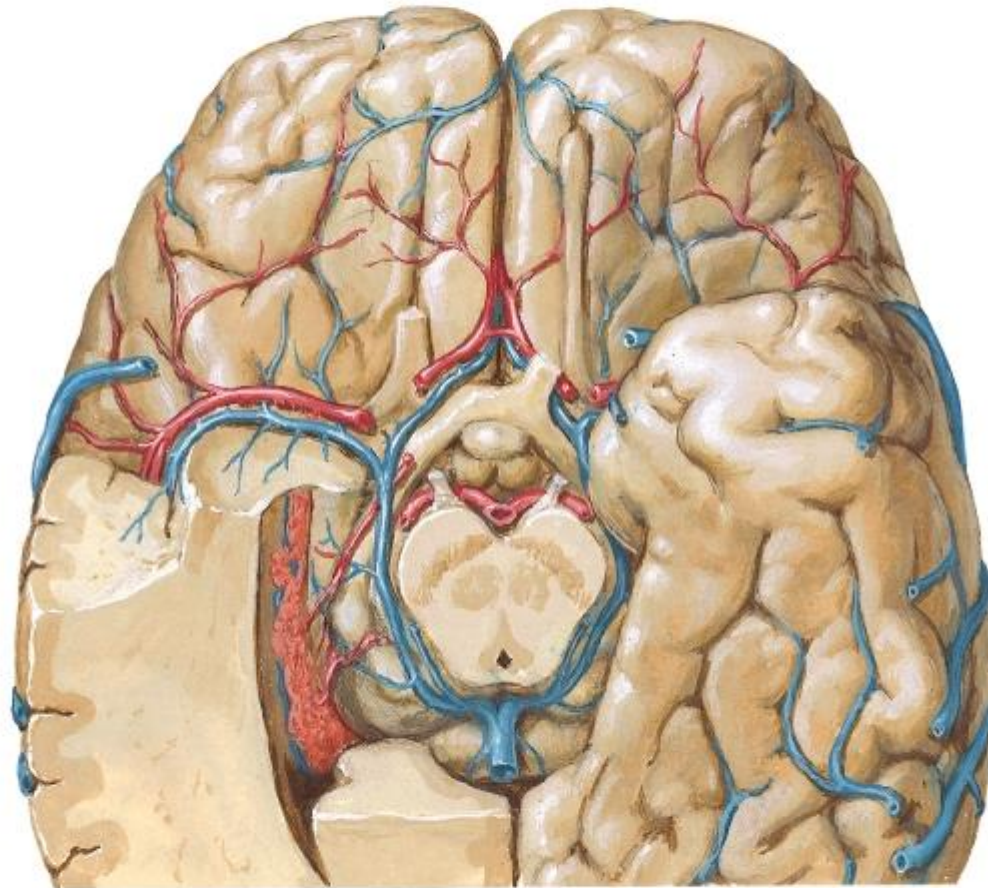
# Deep Veins of Brain - Dissection

## Superior View



# Deep veins of Brain - Dissection

## Inferior View



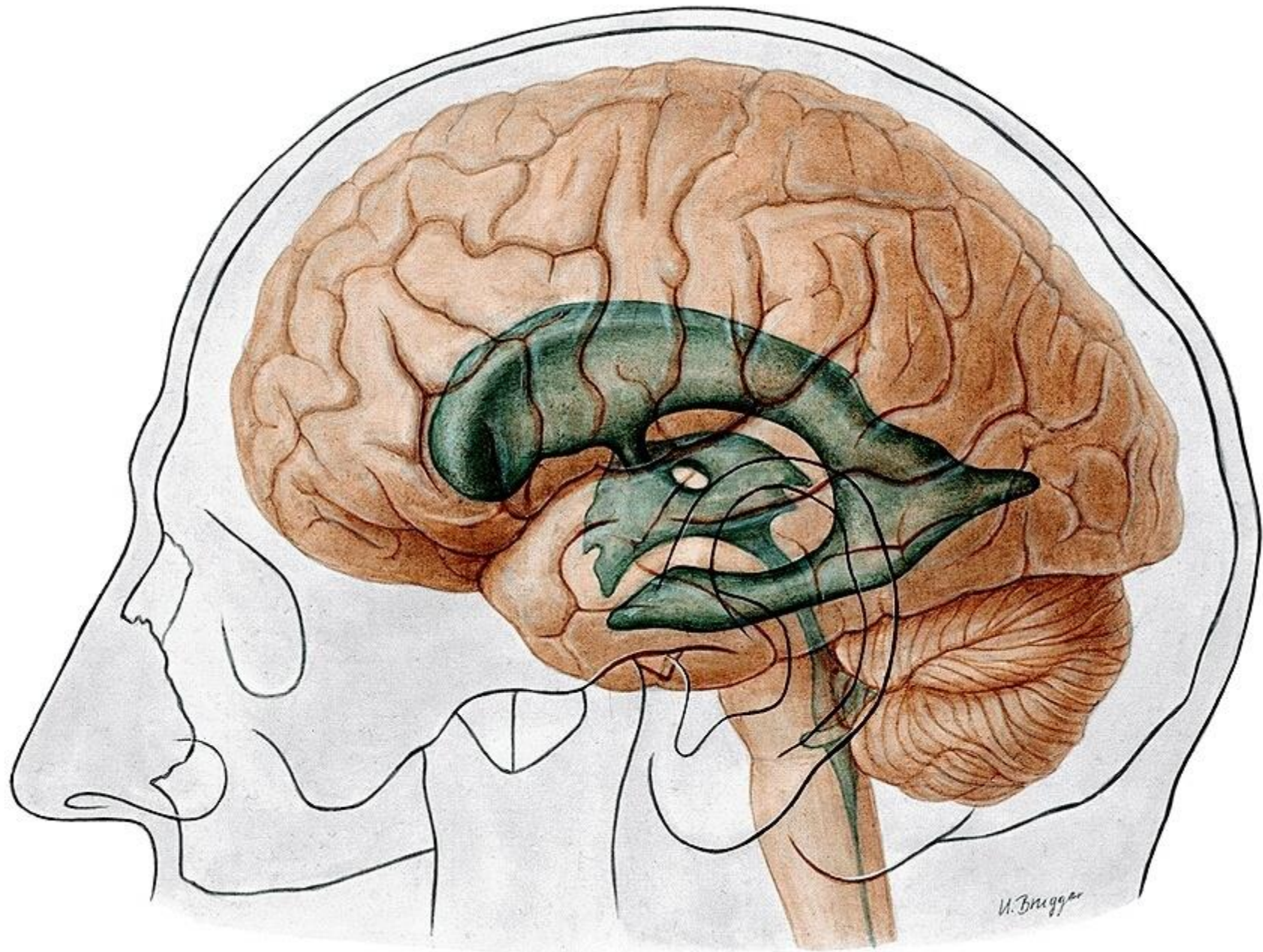
**Przestrzenie płynowe**

**układ komór mózgu**

**i zbiorniki**

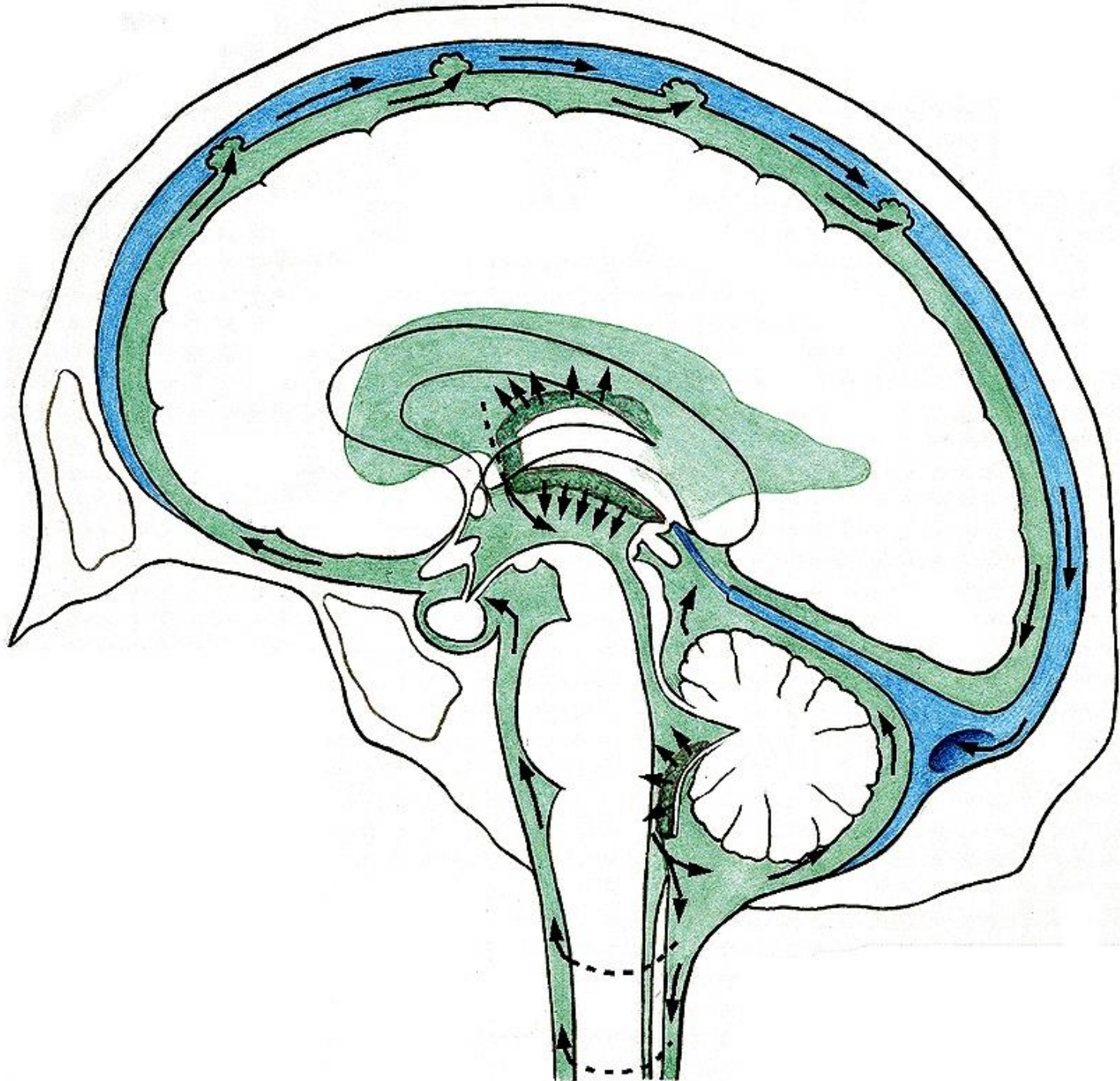
**podpajęczynówkowe**

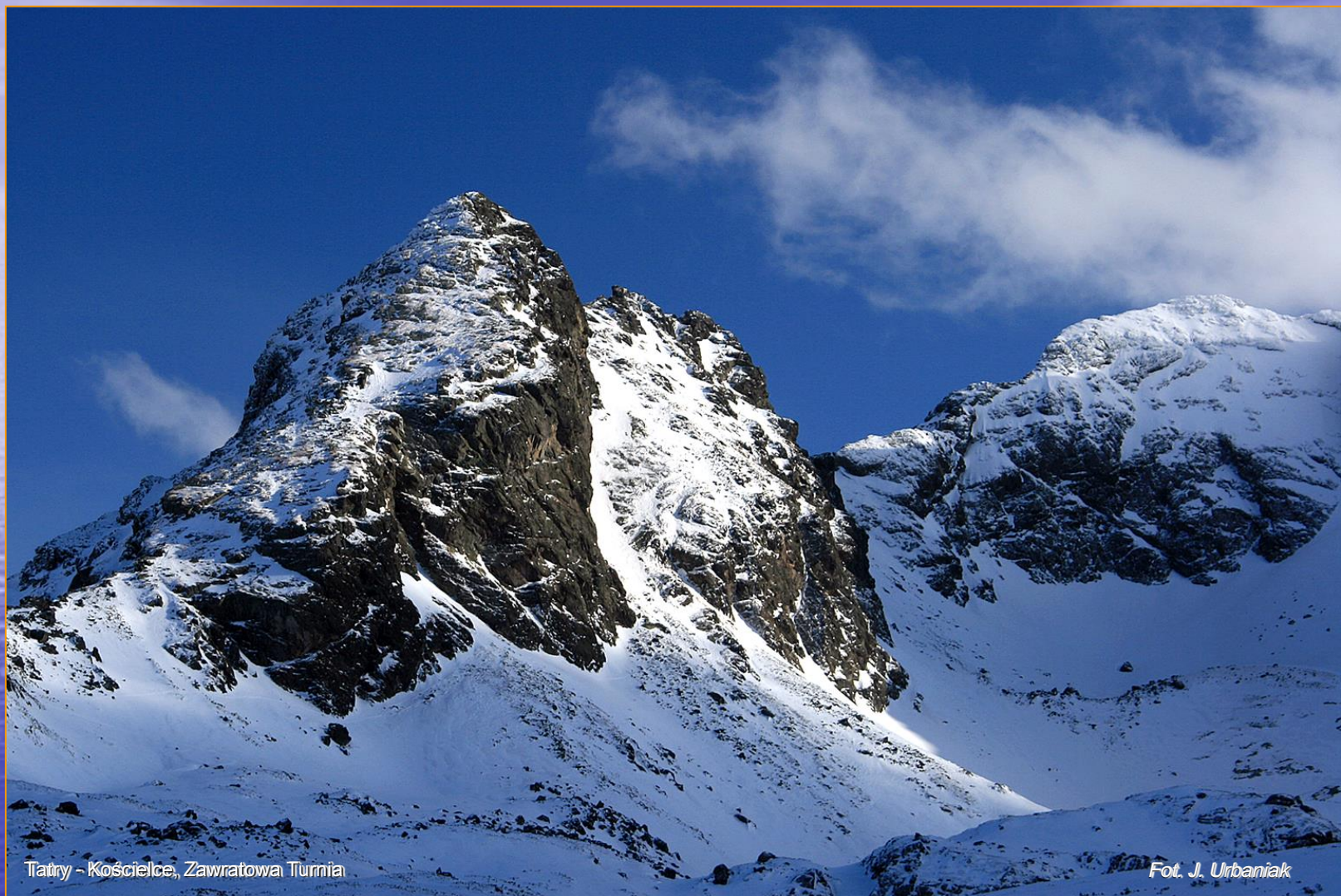
**płynu mózgowo rdzeniowego**











Tatry - Kościelce, Zawratowa Turmia

Fot. J. Urbaniak

*Dziękuję*