

Biologia

Intensivo

Frente 1

ZOOLOGIA DOS INVERTEBRADOS (AULA 4)

Anellida, Mollusca, Arthropoda e
Equinodermata e começo de Cordata

Jimmy
jsnikaido@gmail.com

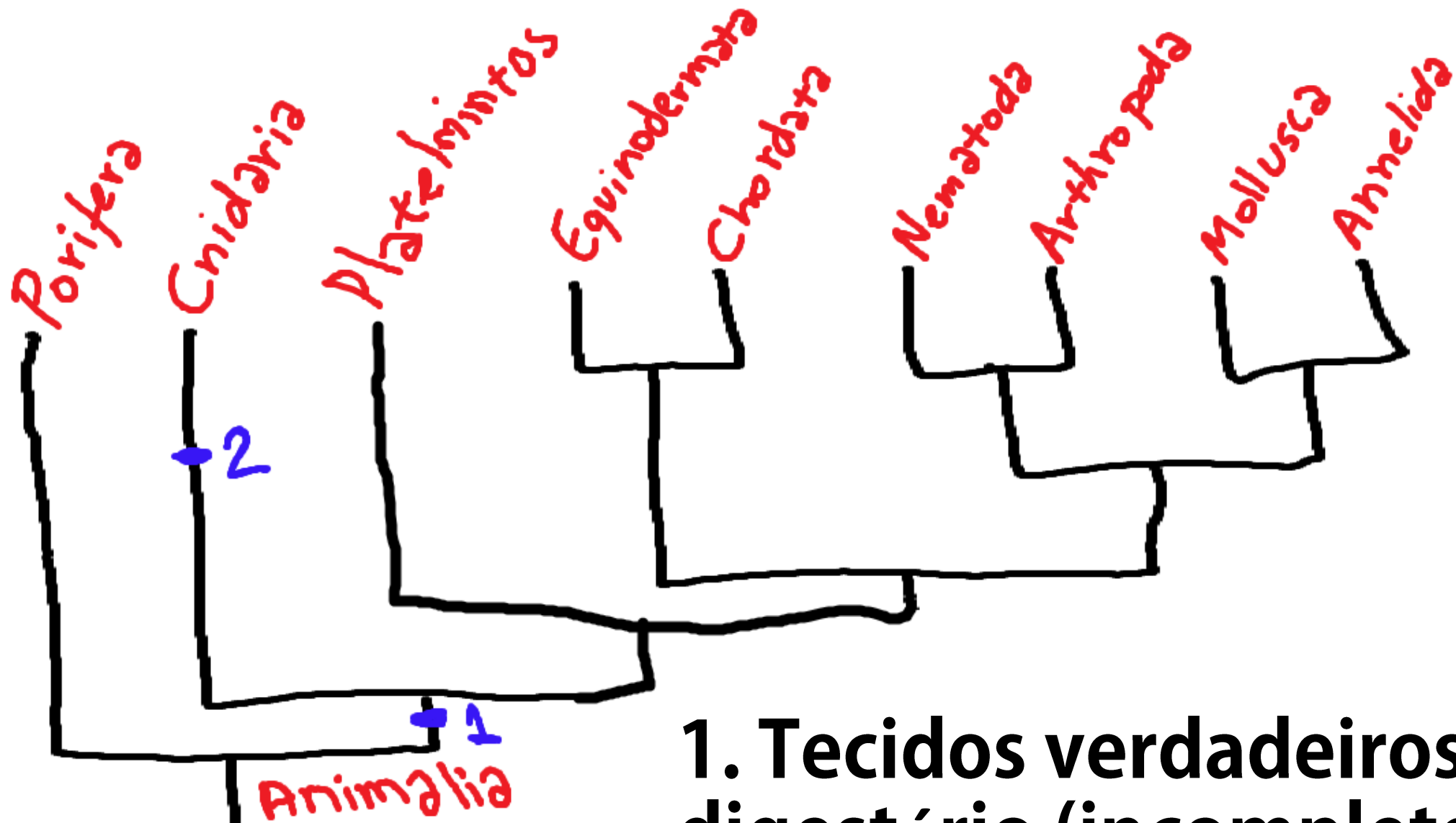
O QUE TEM PRA HOJE?



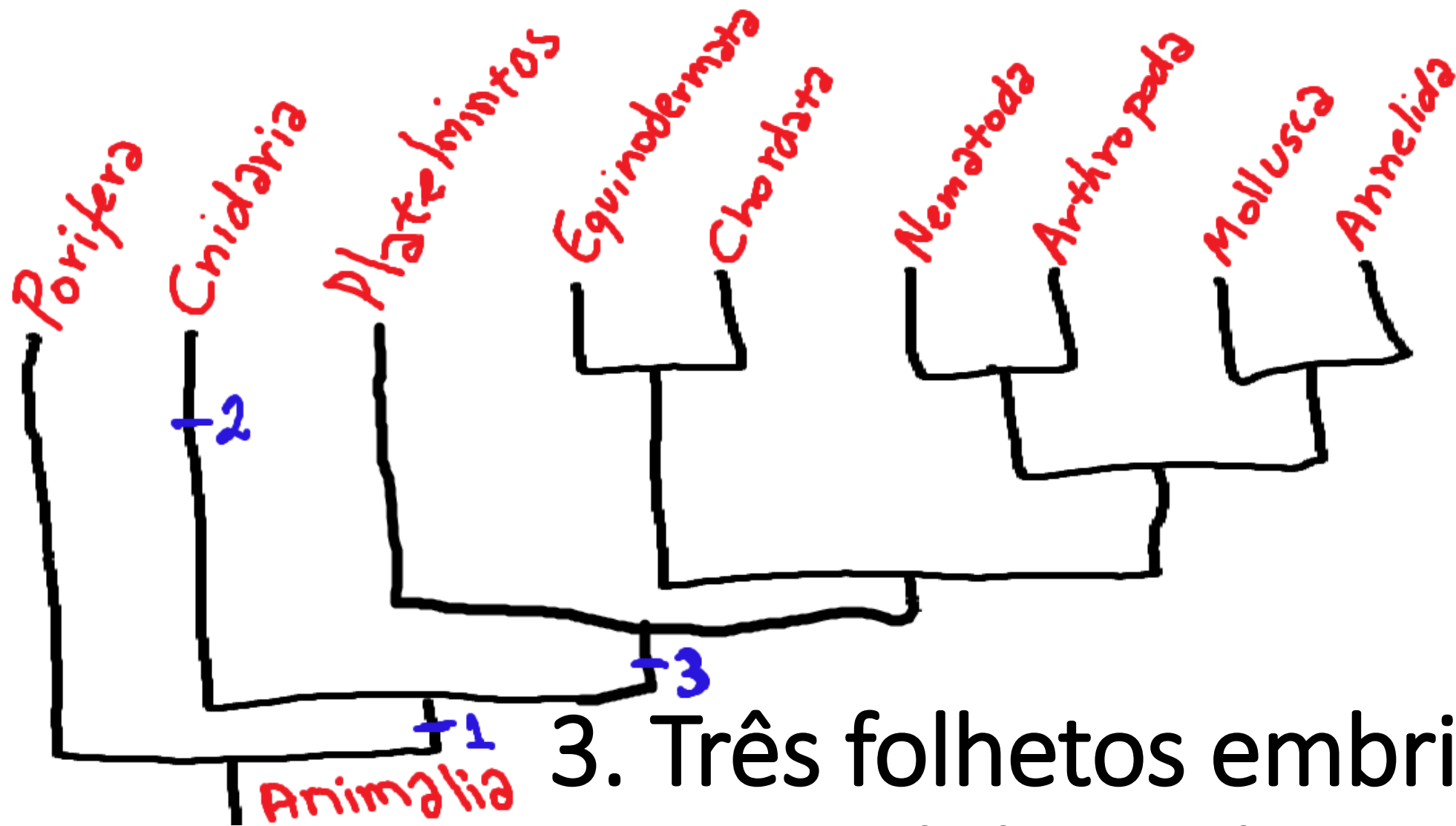
Menu

- ▶ Anellida
- ▶ Mollusca
- ▶ Arthropoda
- ▶ Equinodermata
- ▶ Começo de
Cordata

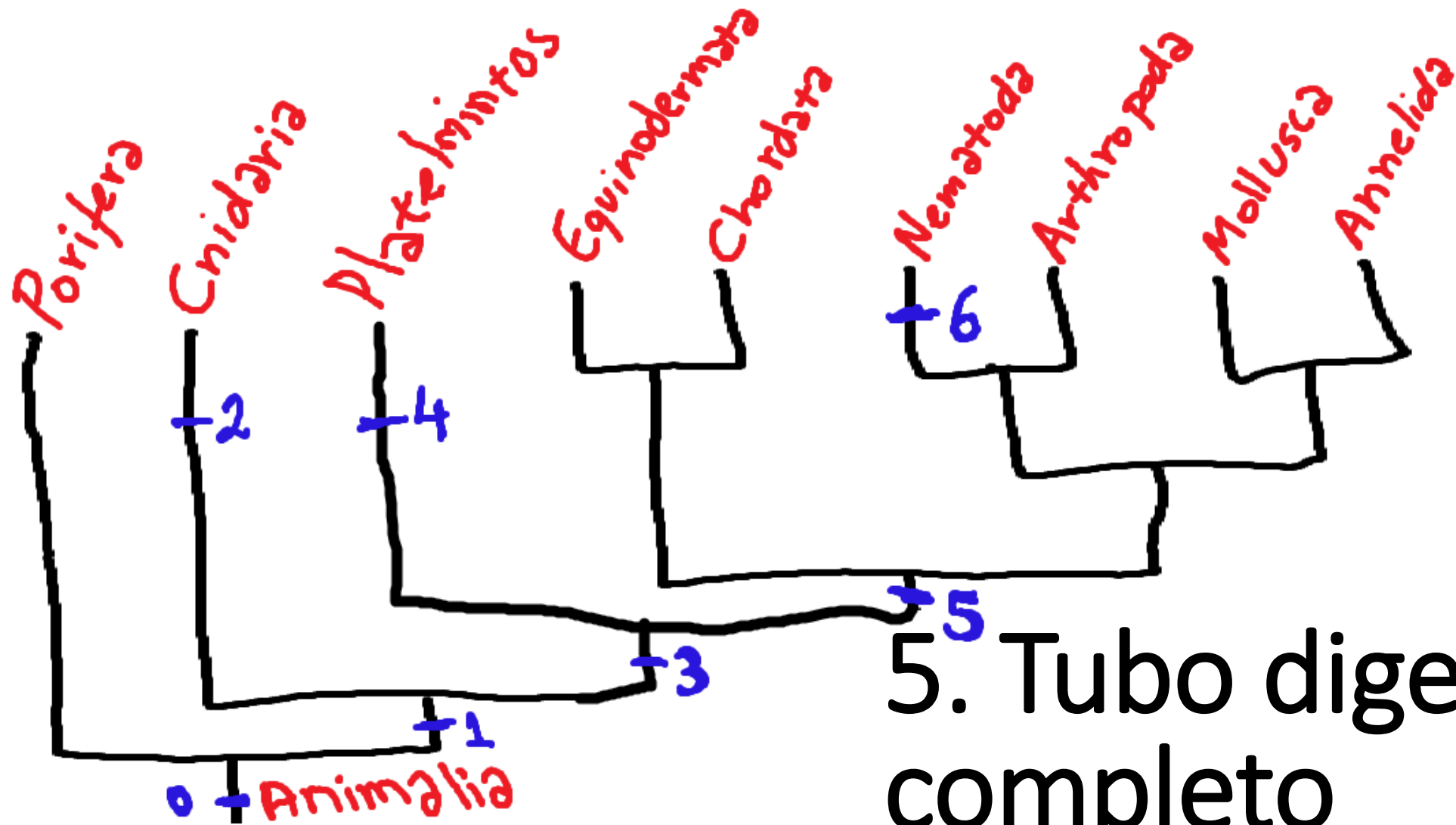
Zoology



1. Tecidos verdadeiros, tubo digestório (incompleto), dois folhetos embrionários



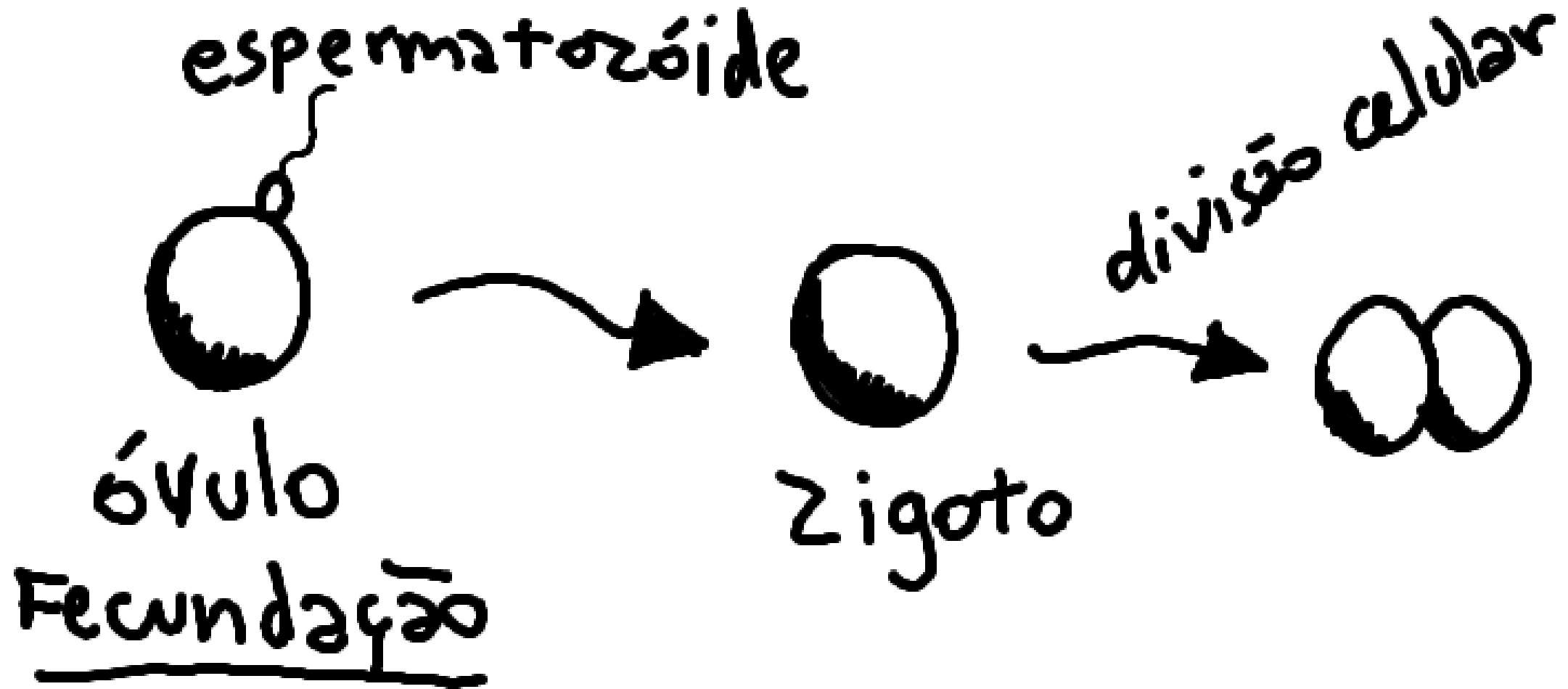
3. Três folhetos embrionários,
simetria bilateral e
sist. nervoso centralizado



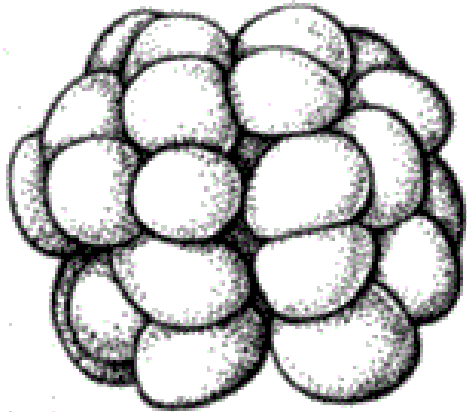
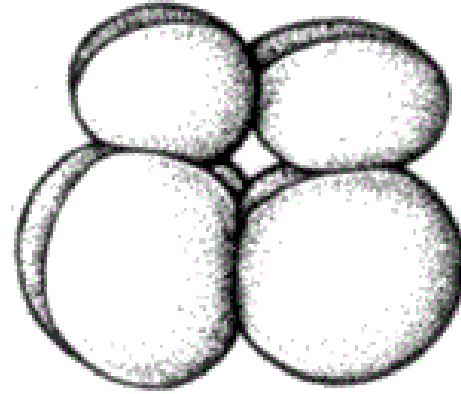
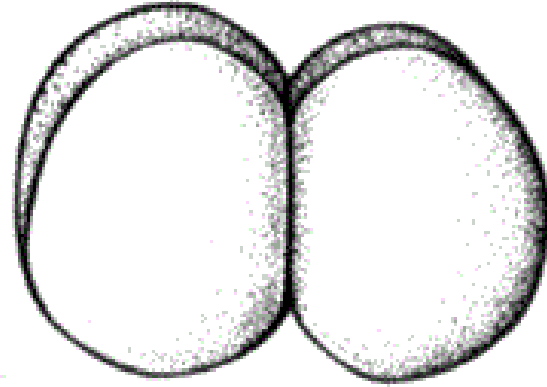
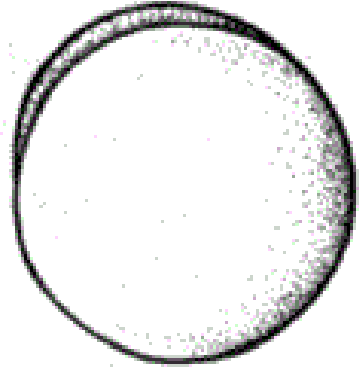
5. Tubo digestório completo

6. Pseudoceloma

Embriologia



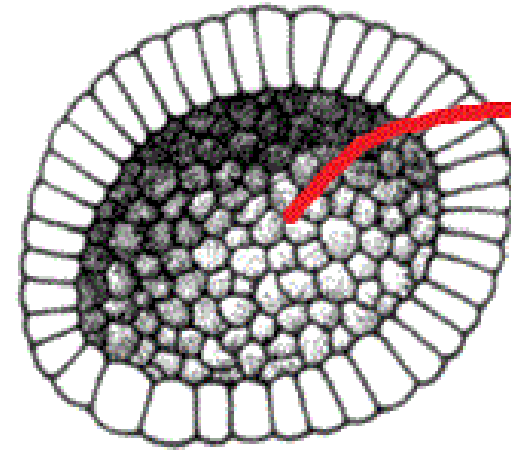
Embriologia



Mórula

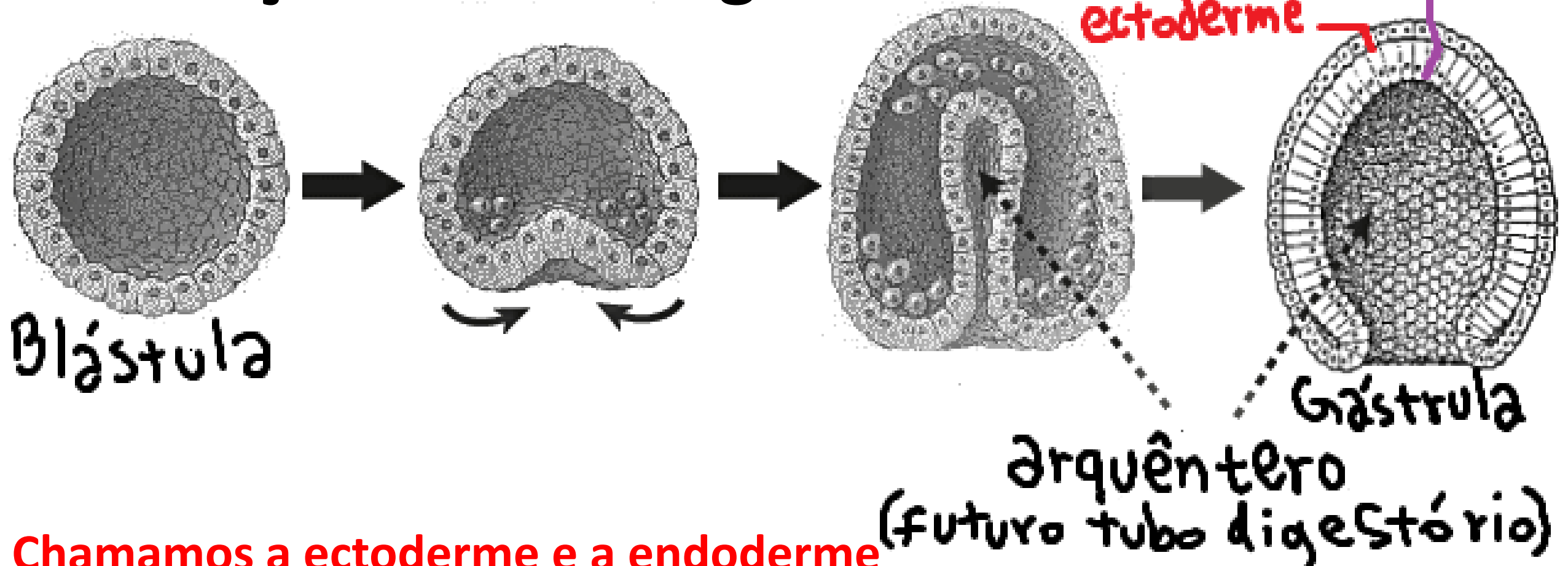


Blástula (oca!)

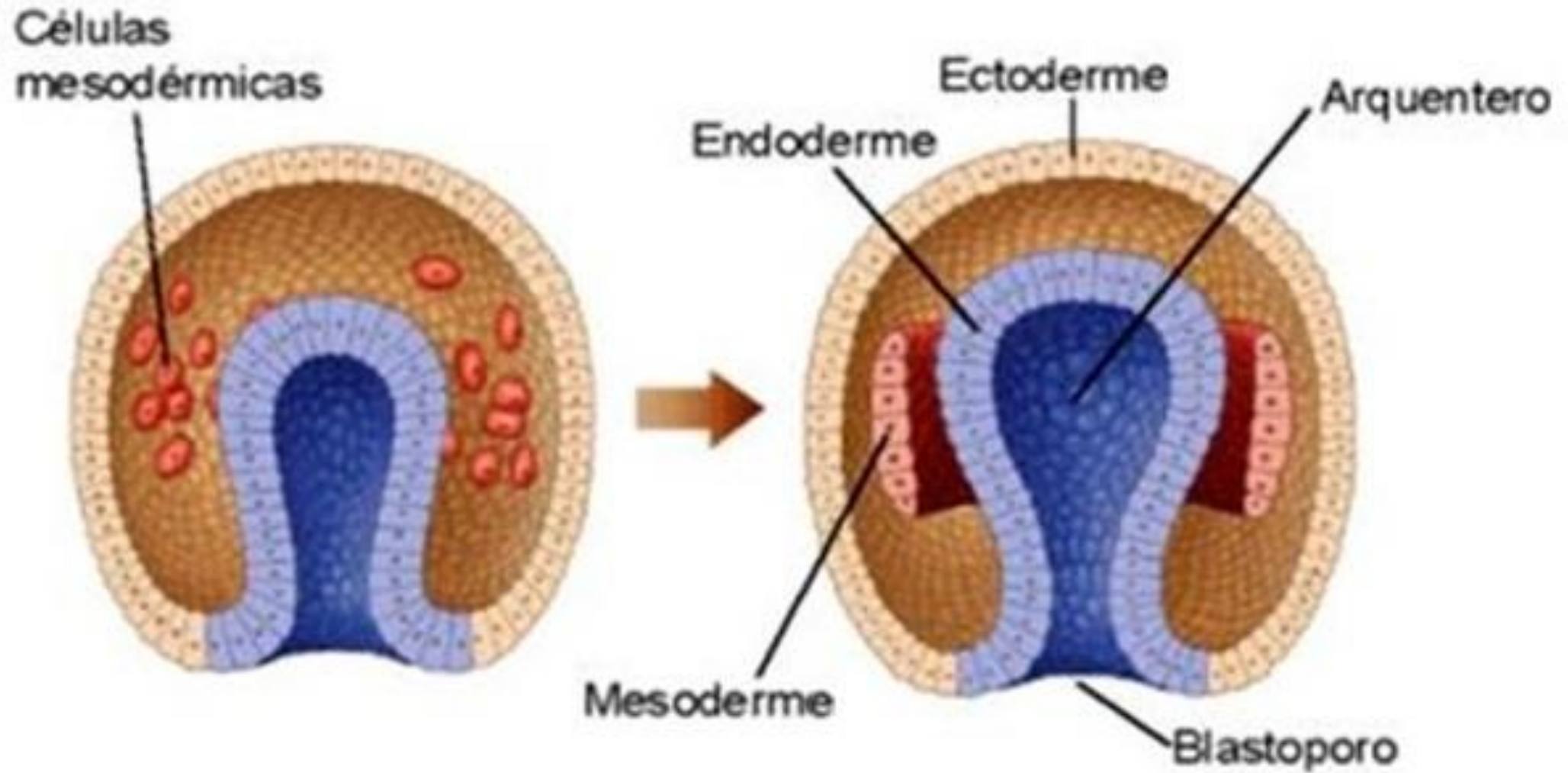


Blastocela

Diferenciação de tecidos e formação de tubo digestivo



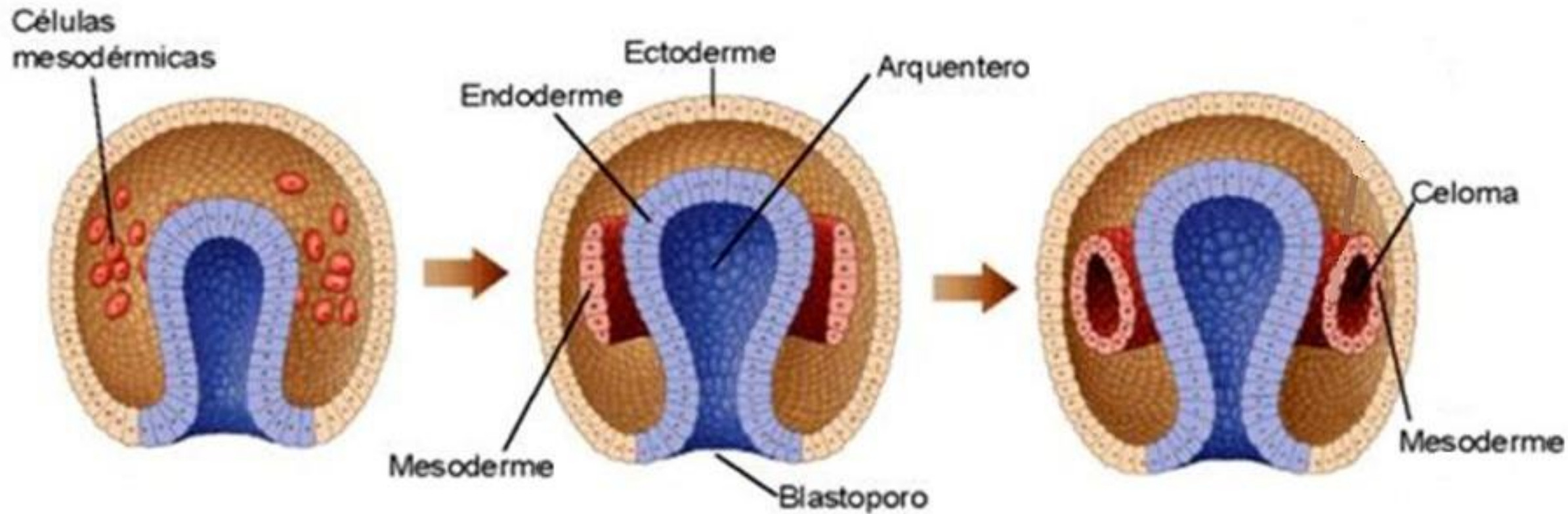
Chamamos a ectoderme e a endoderme de folhetos embrionários



3 Folhetos embrionários

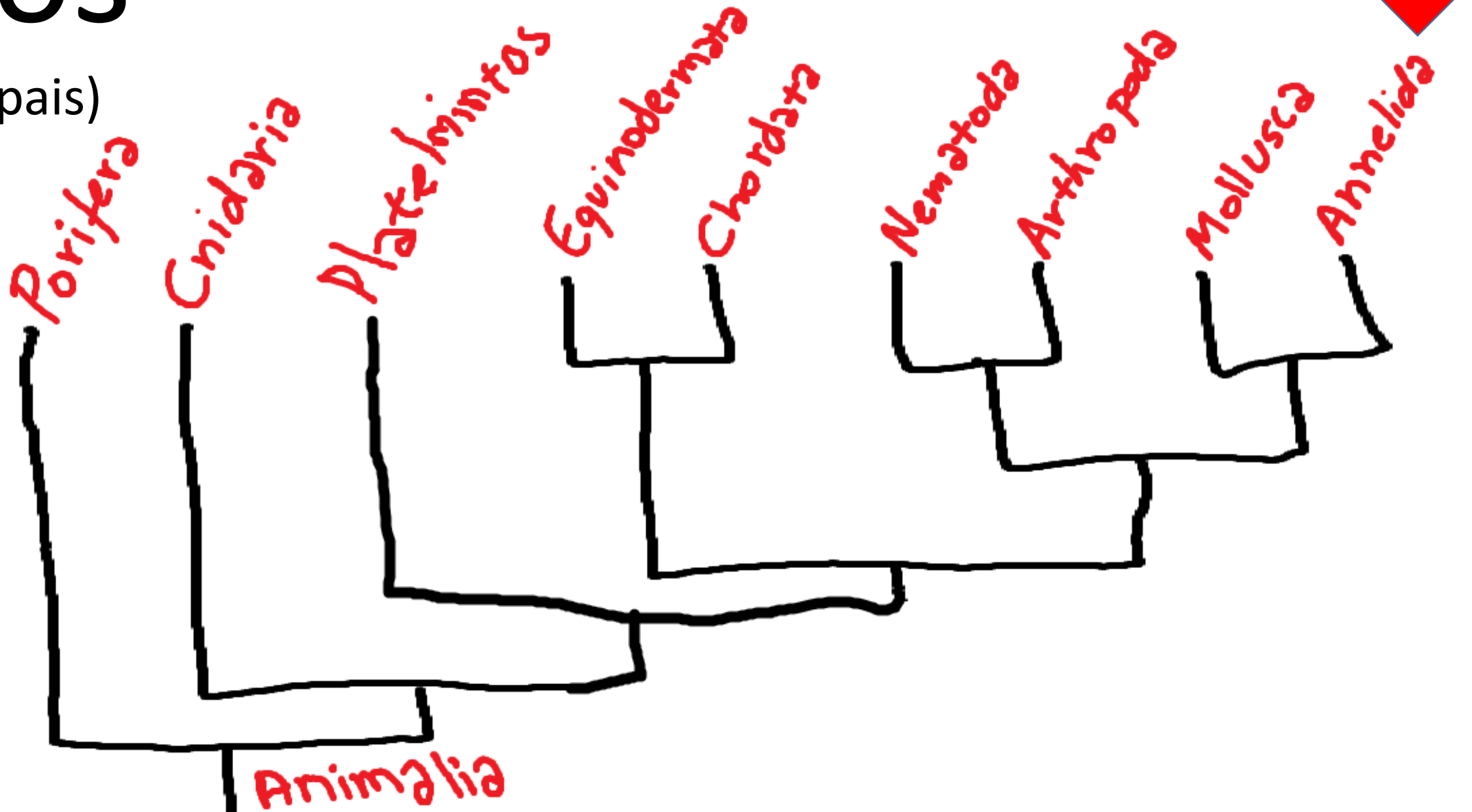
(ectoderme, mesoderme e endoderme)

Todos os grupos que veremos a partir de agora são celomados



Filos

(principais)



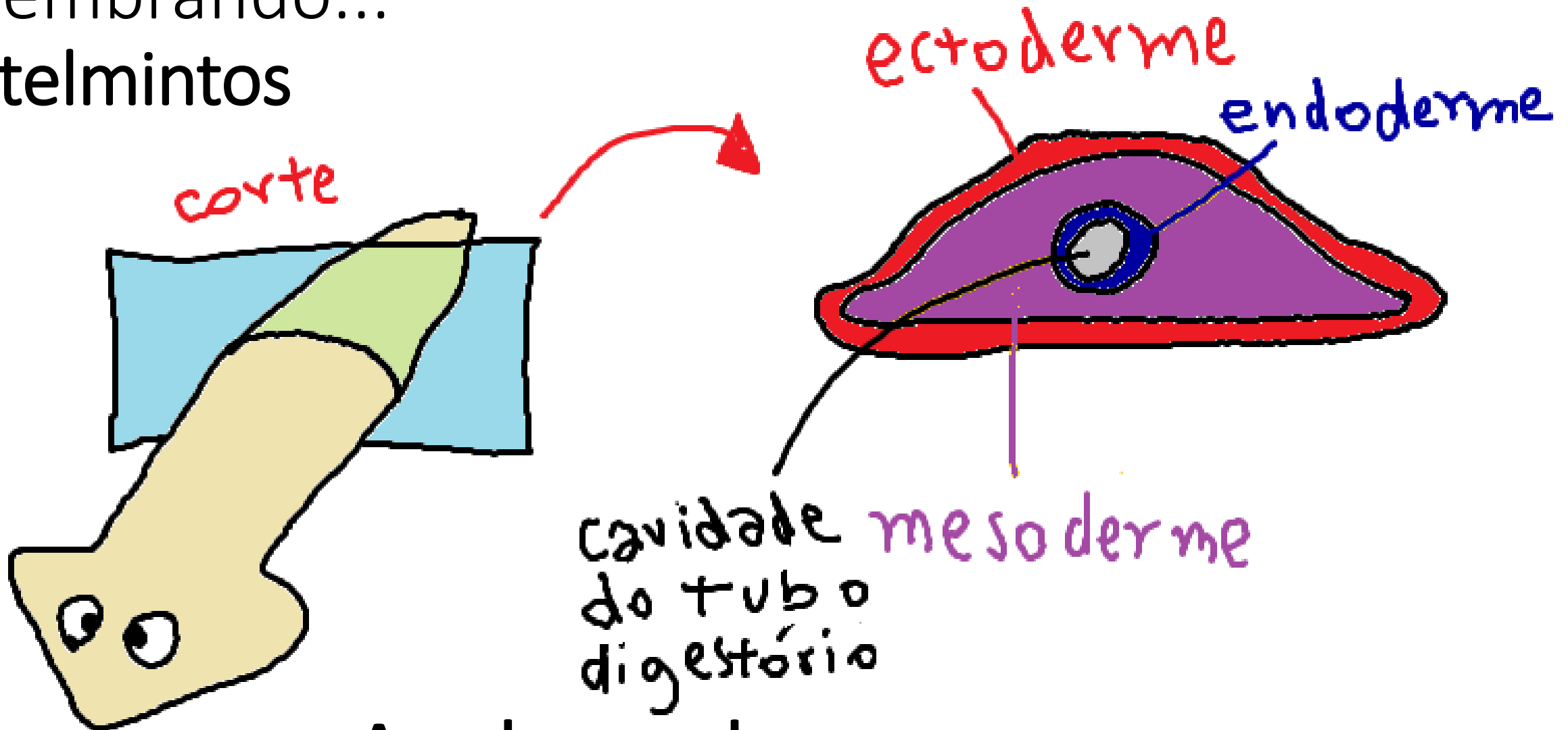
Anelídeos

vermes segmentados



Relembrando...

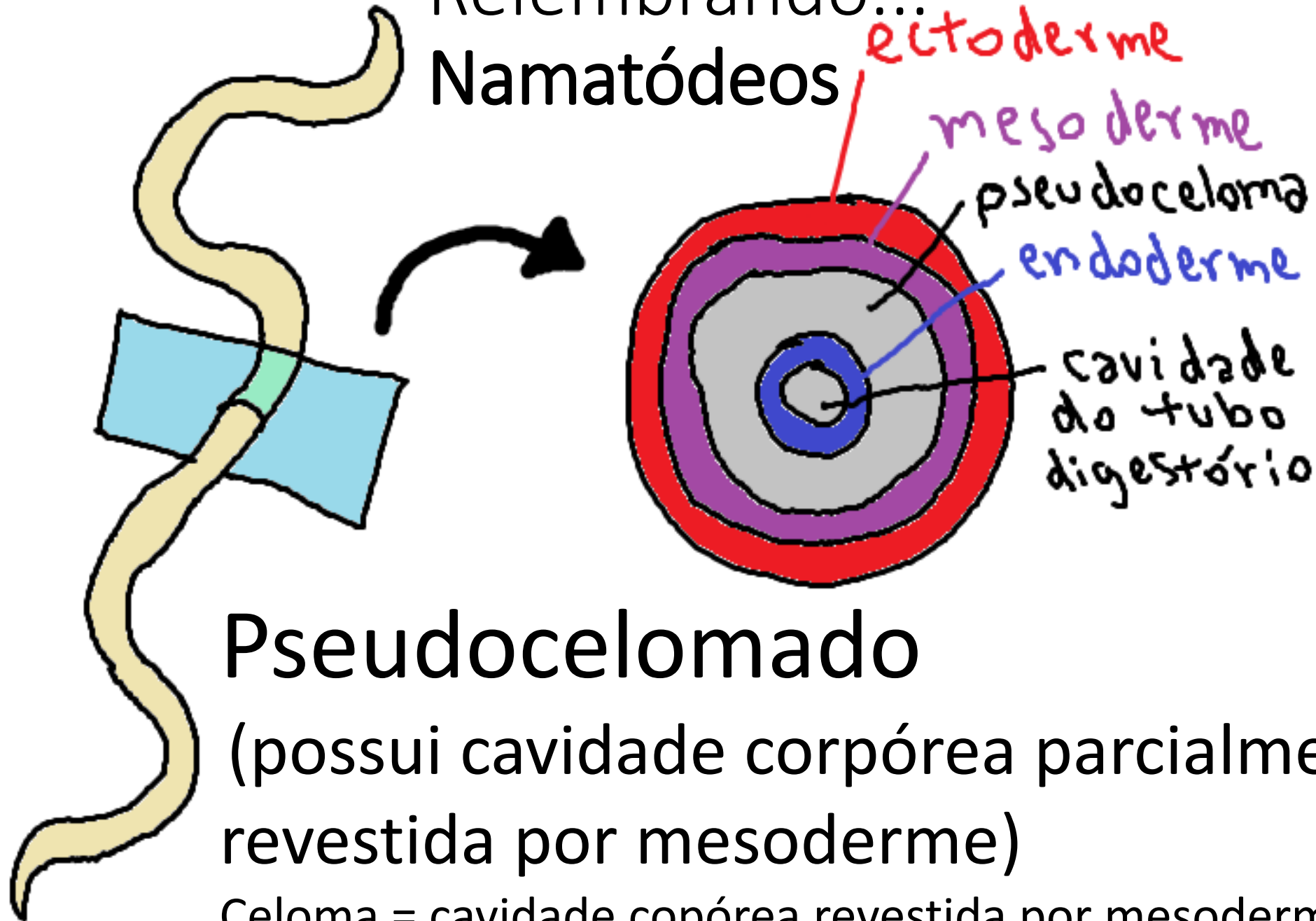
Platelmintos



Acelomado (não tem celoma)

Celoma = cavidade copórea revestida por mesoderme

Relembrando...
Nematódeos

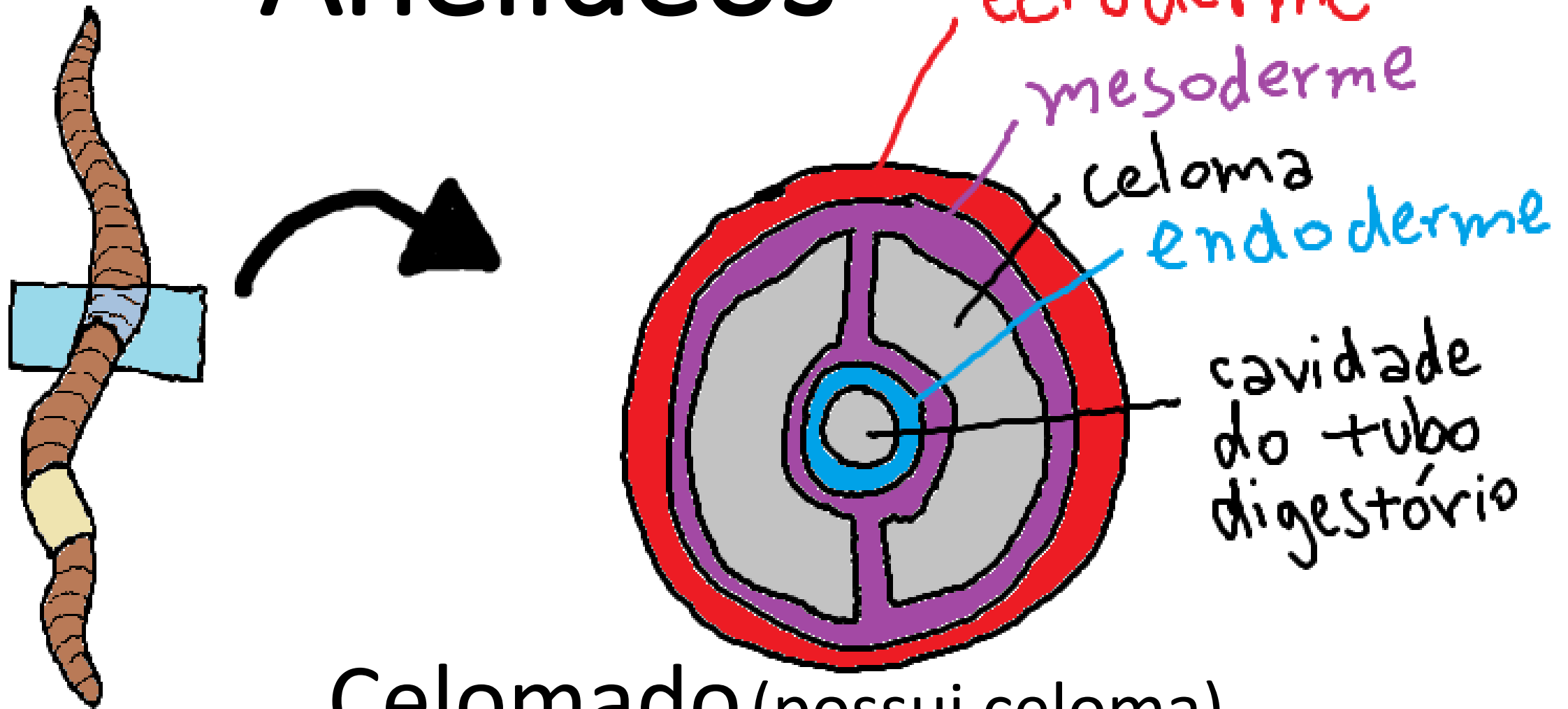


Pseudocelomado

(possui cavidade corpórea parcialmente revestida por mesoderme)

Celoma = cavidade corpórea revestida por mesoderme

Anelídeos

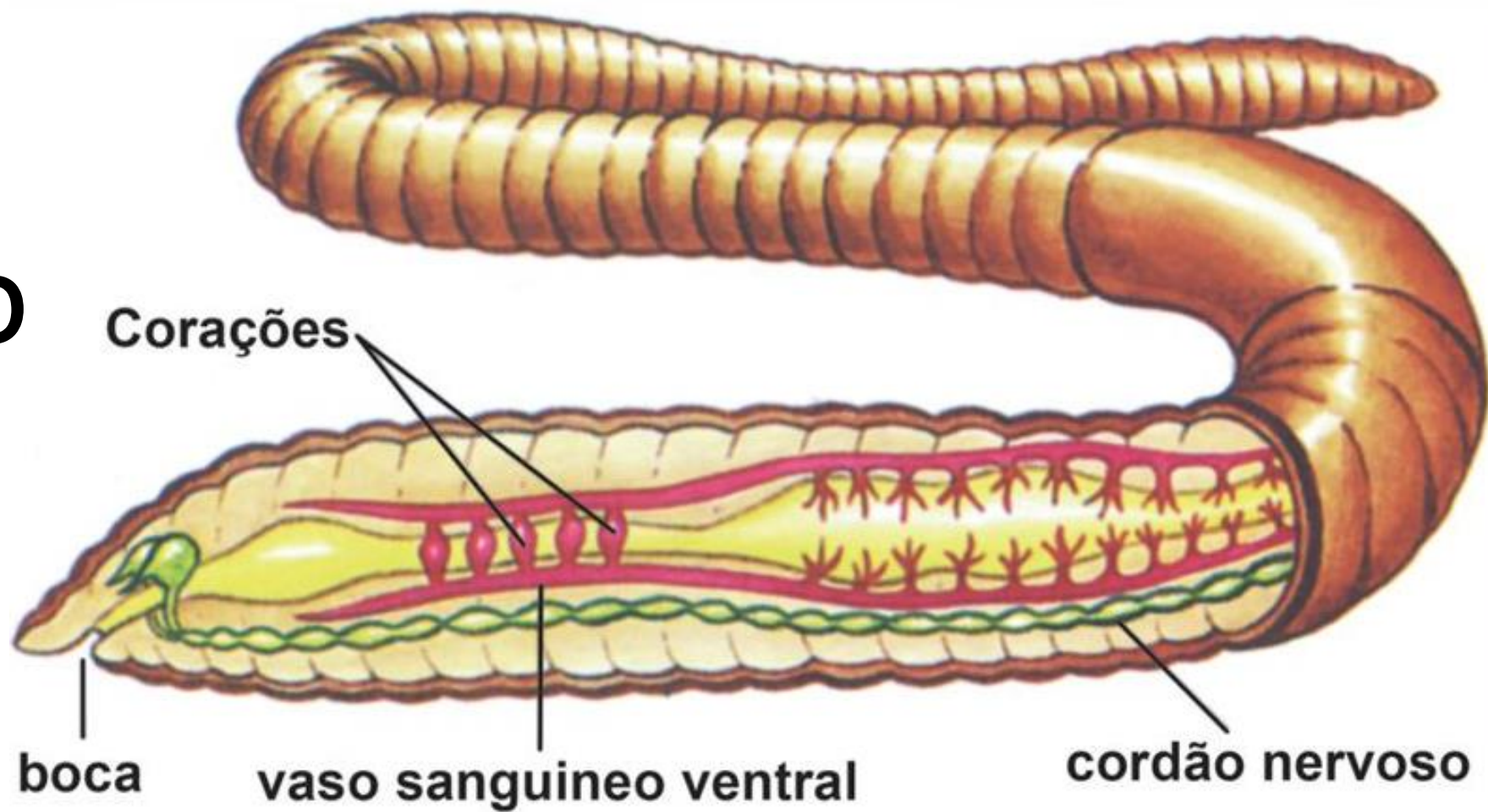


Celomado (possui celoma)

Celoma = cavidade copórea revestida por mesoderme

- Respiração cutânea

- Sistema
circulatório





Existe uma
grande
diversidade de
anelídeos.
A seguir alguns
exemplos...



Marinho



Ectoparasita



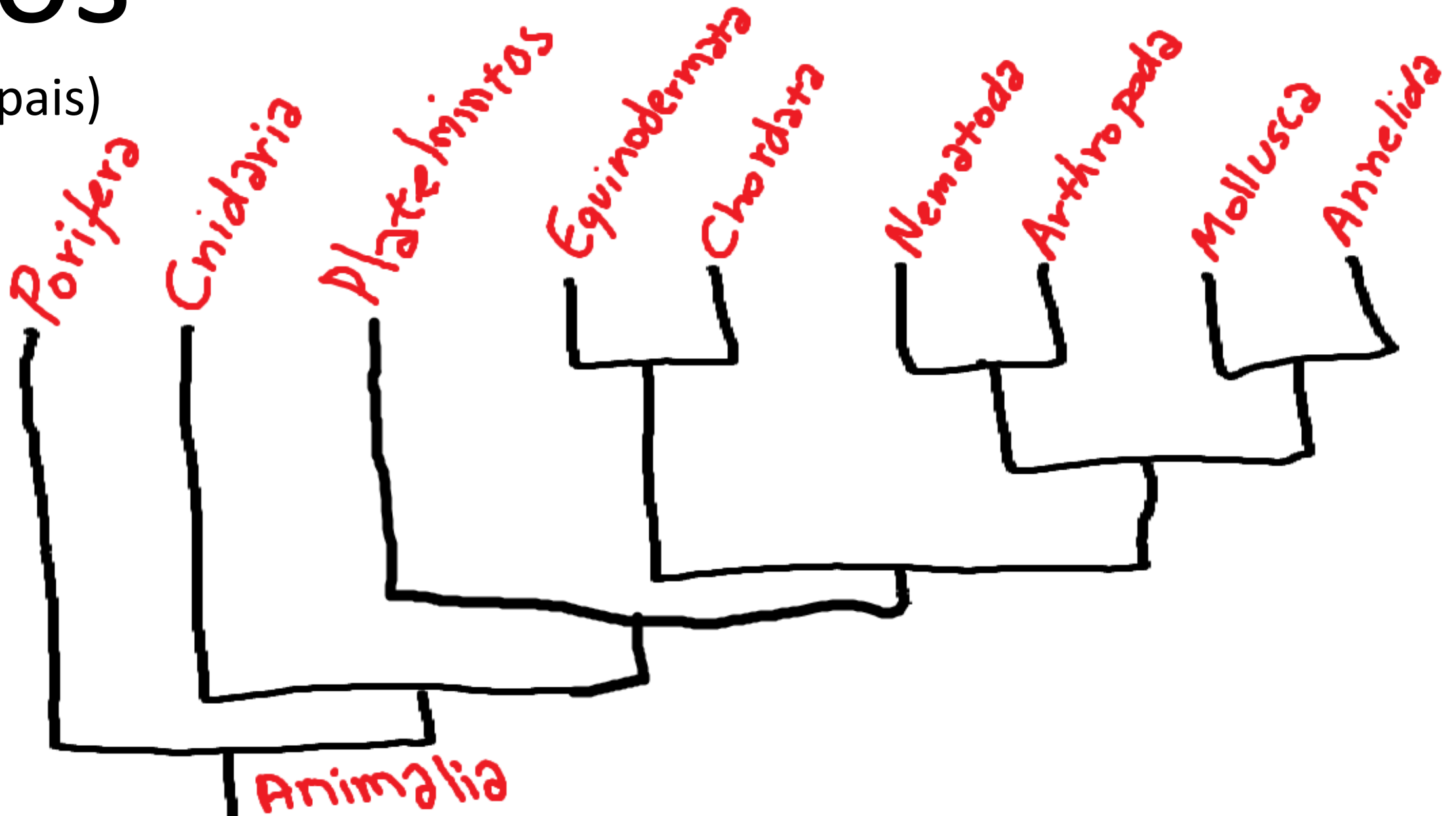
Detritívoro



Minhocas são muito importantes para as plantas, como as que comemos, pois cavam túneis no solo que

Filos

(principais)



Moluscos?

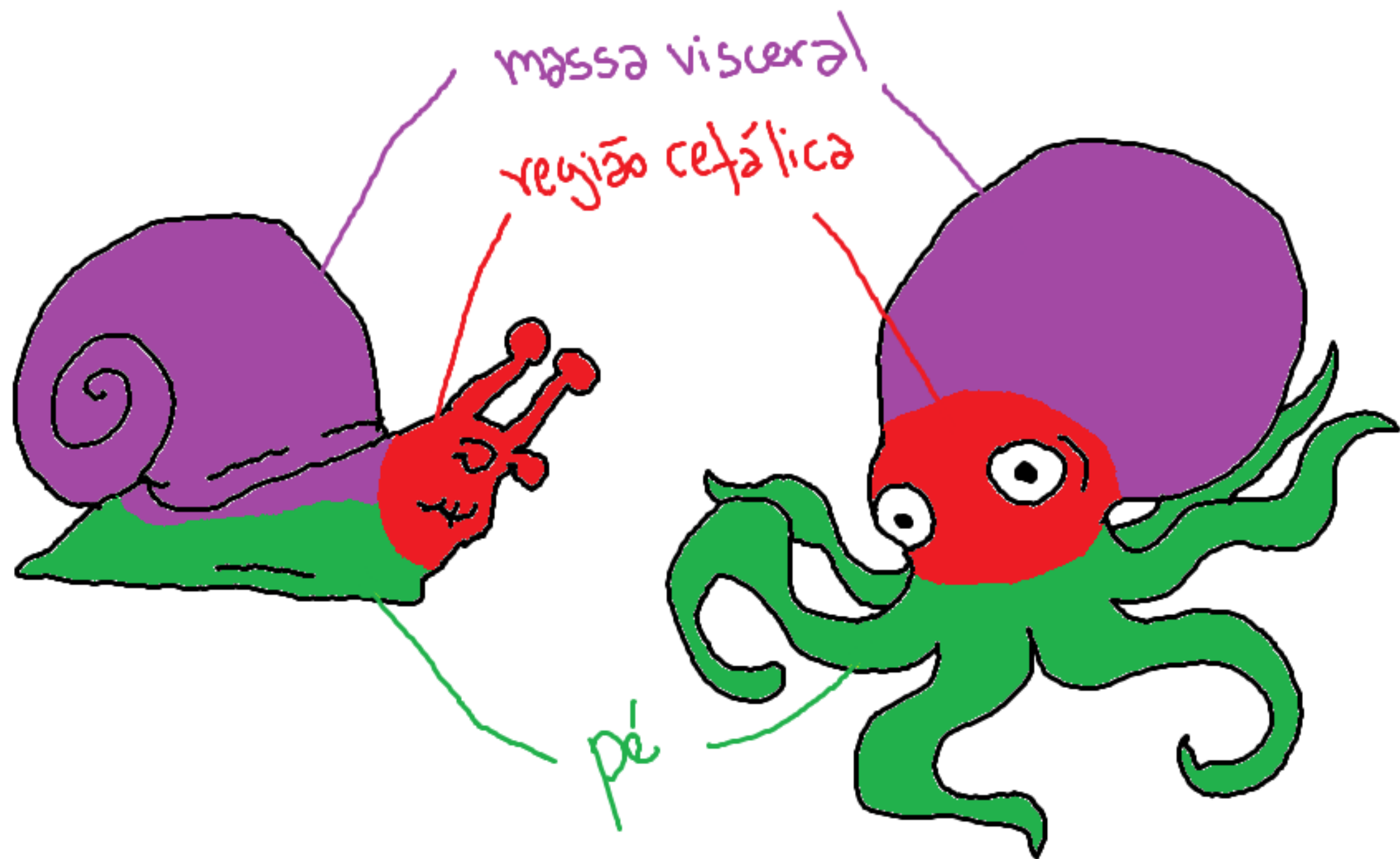




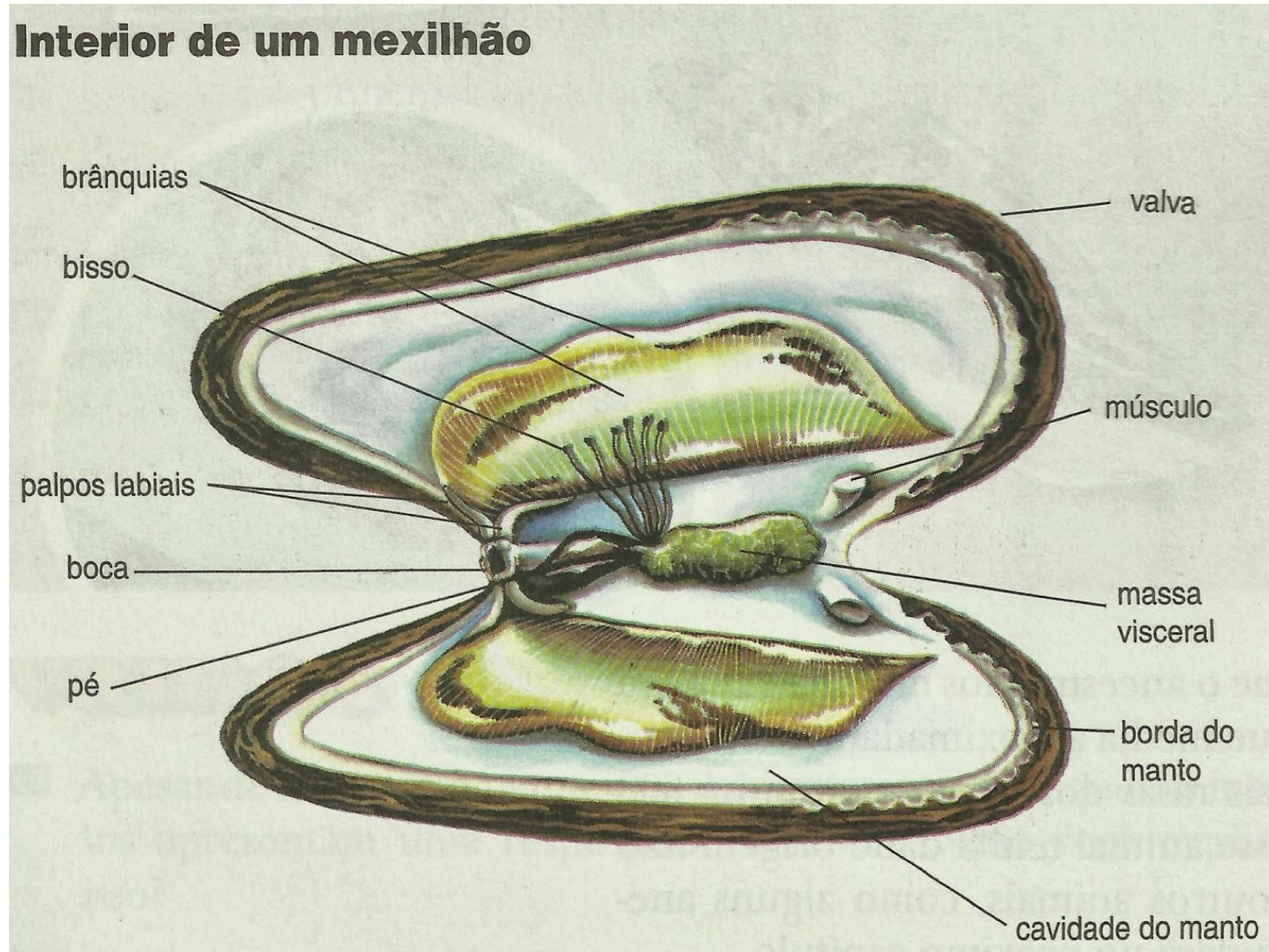




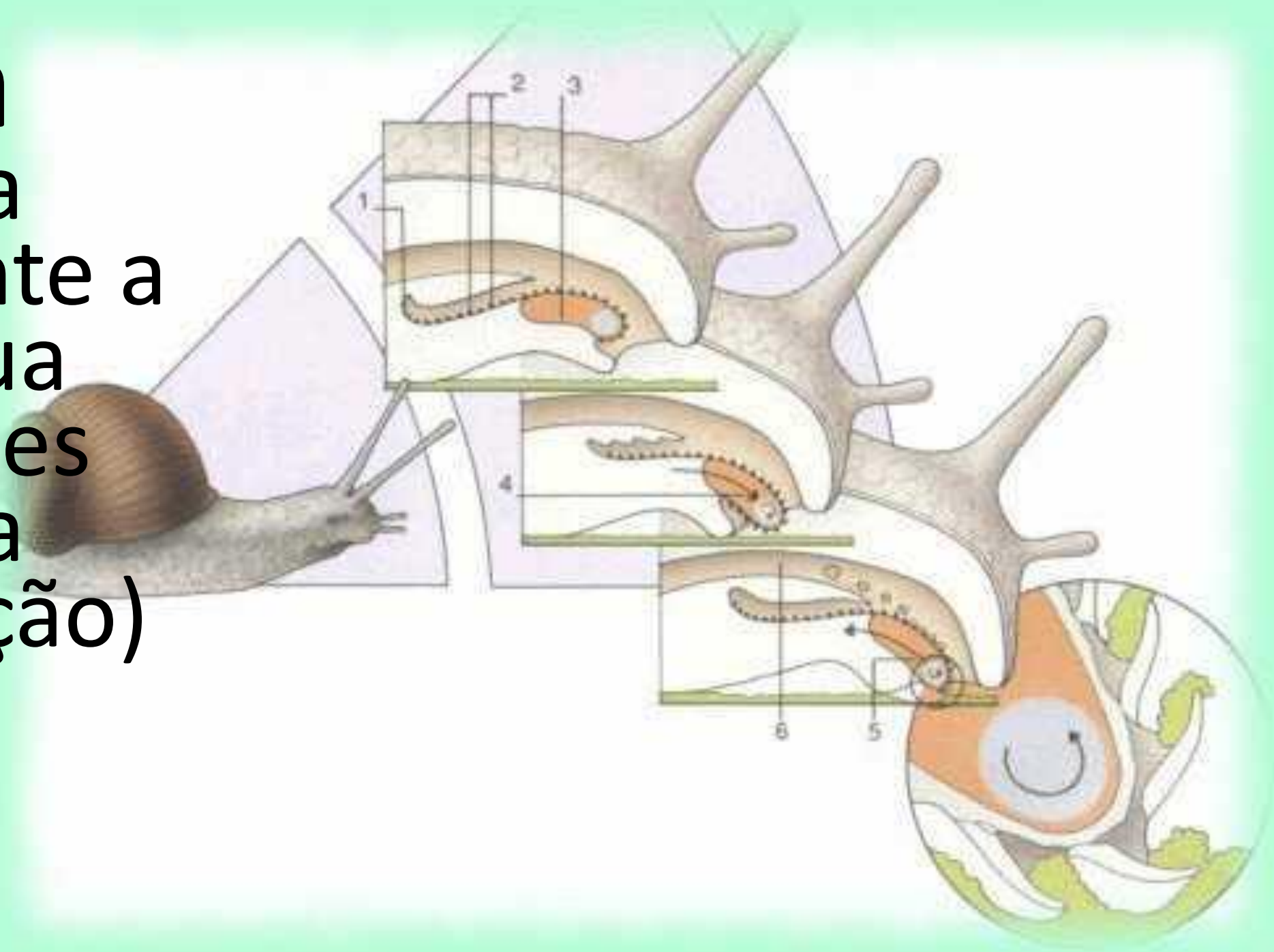


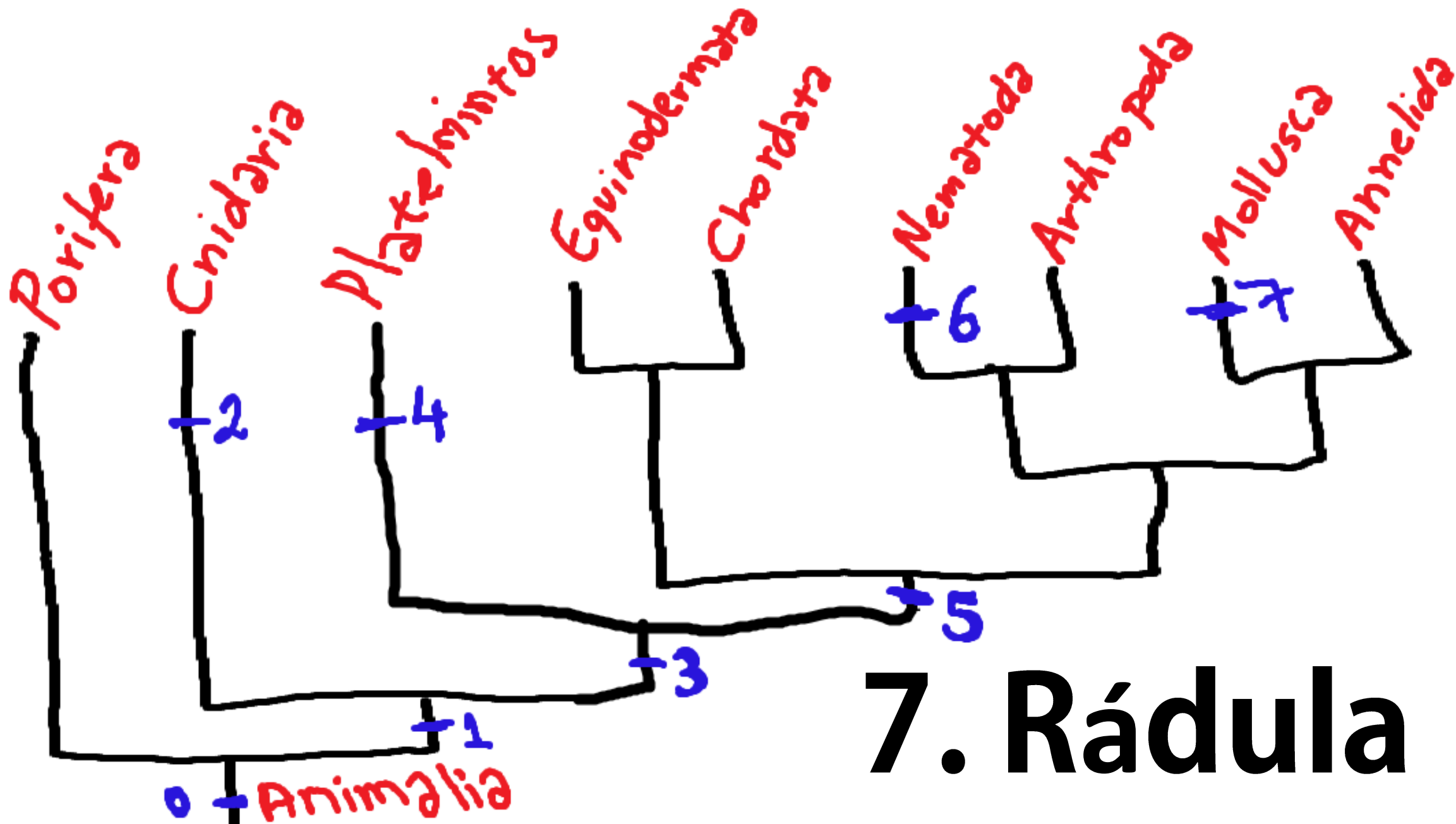


- **Sistema circulatório**
- **Respiração branquial**
(pulmonar em terrestres)



- **Rádula**
(estrutura semelhante a uma língua com dentes usados na alimentação)





7. Rádula

Artrópodes?



Insetos



Aracnídeos



Crustáceos

Quilópodes



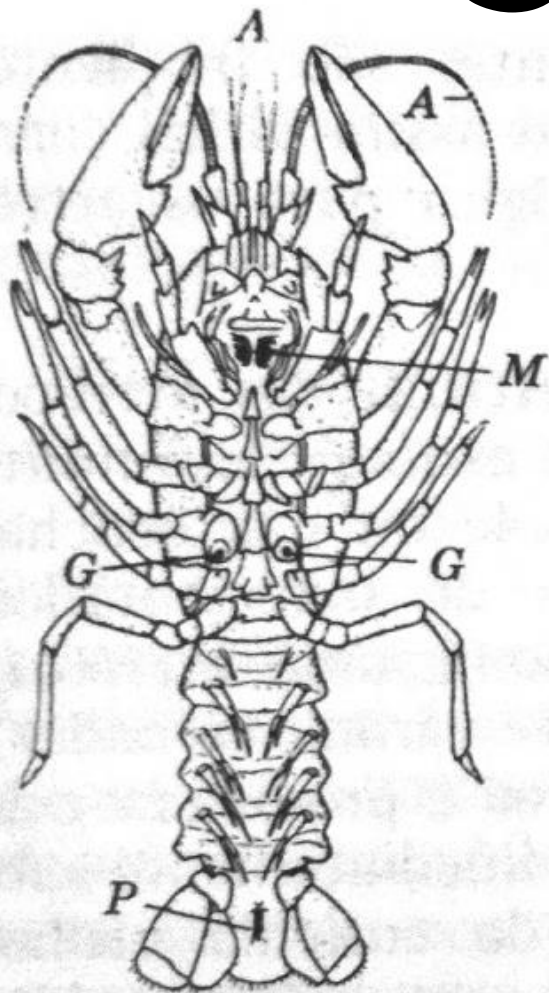
Diplópodes



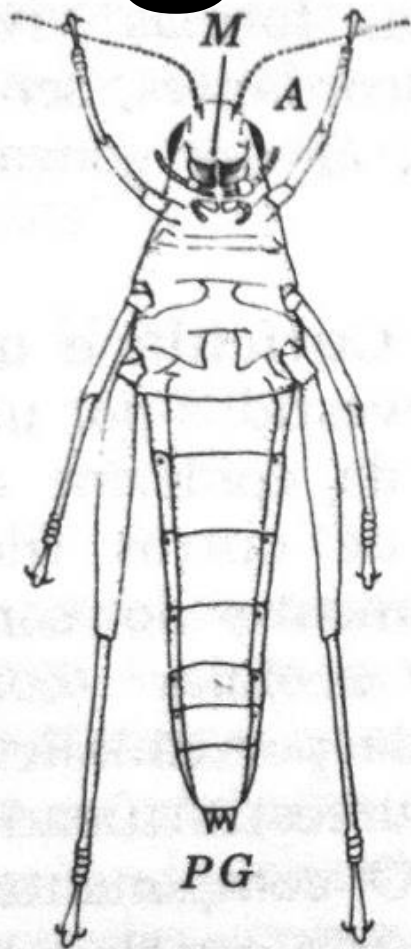


- Membros articulados
- Exoesqueleto (esqueleto externo)

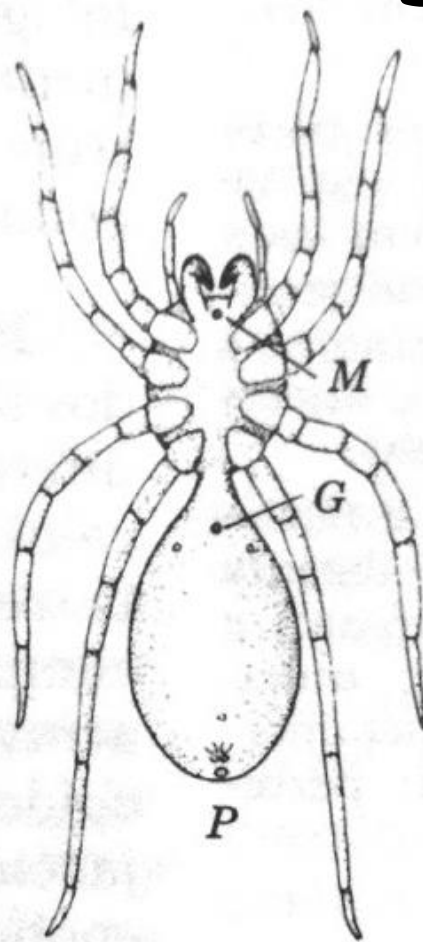
Segmentação



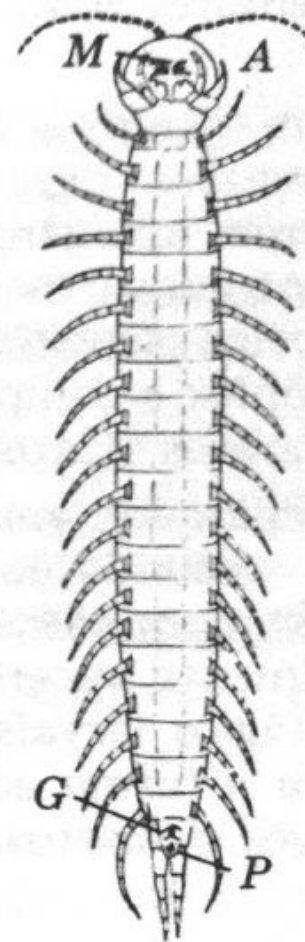
lagostim
CRUSTACEA



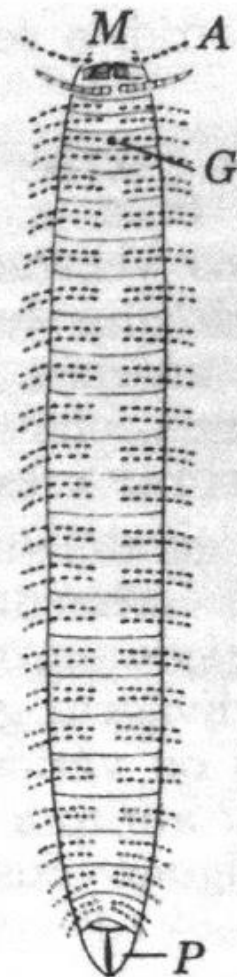
gafanhoto
INSECTA



aranha
ARACHNIDA



centopeia
CHILOPODA



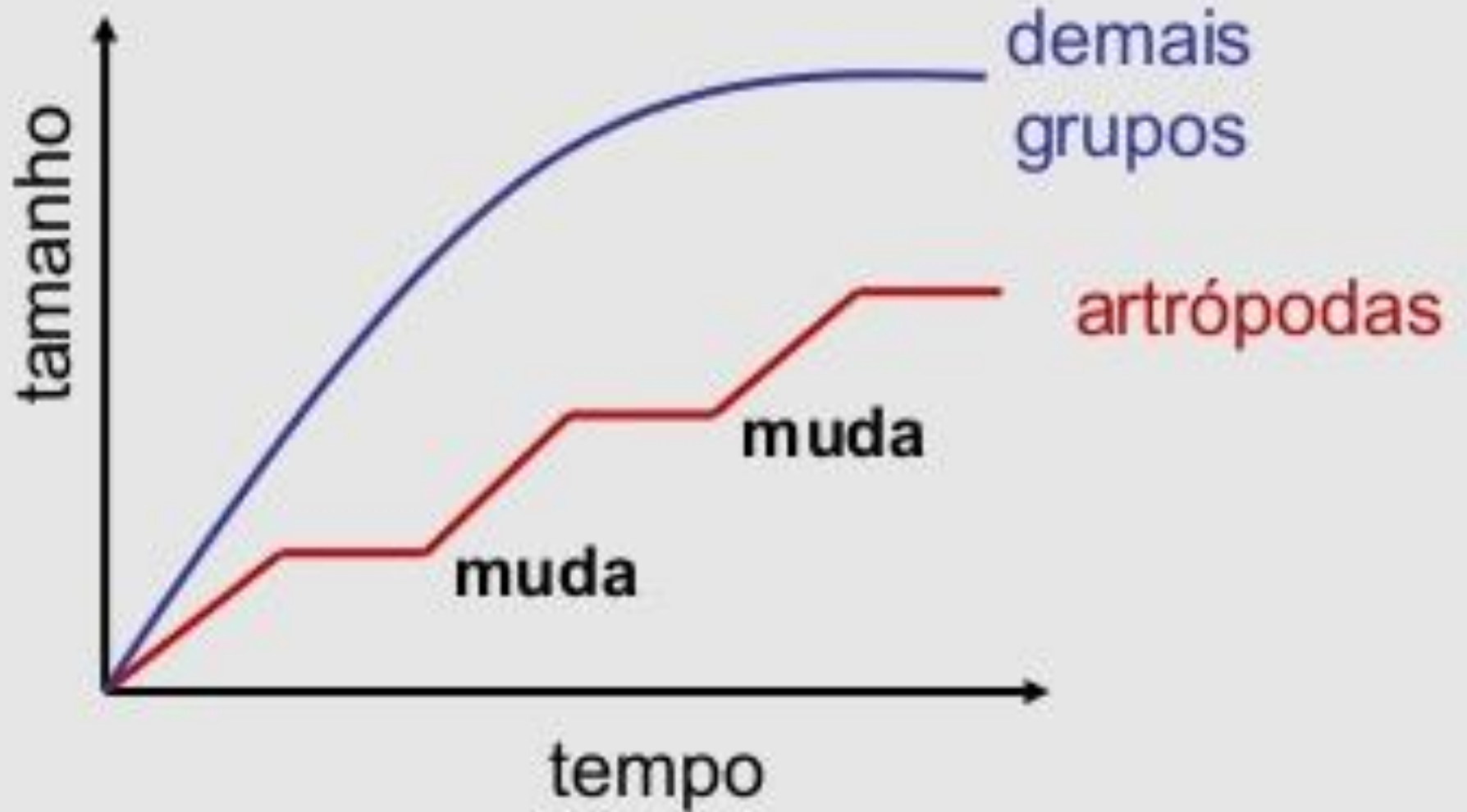
piolho-de-cobra
DIPLOPODA





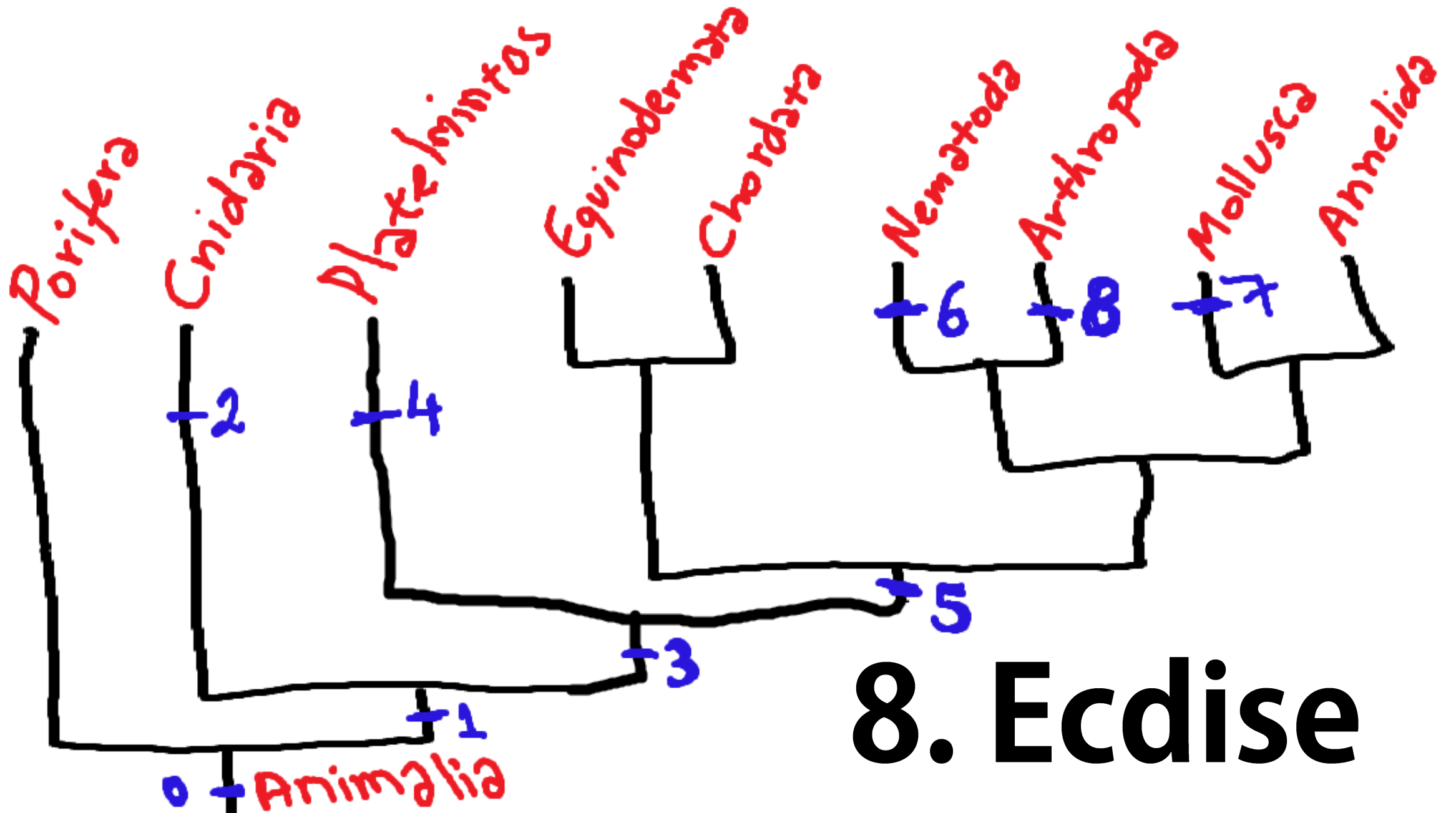
Ecdise

CURVAS DE CRESCIMENTO

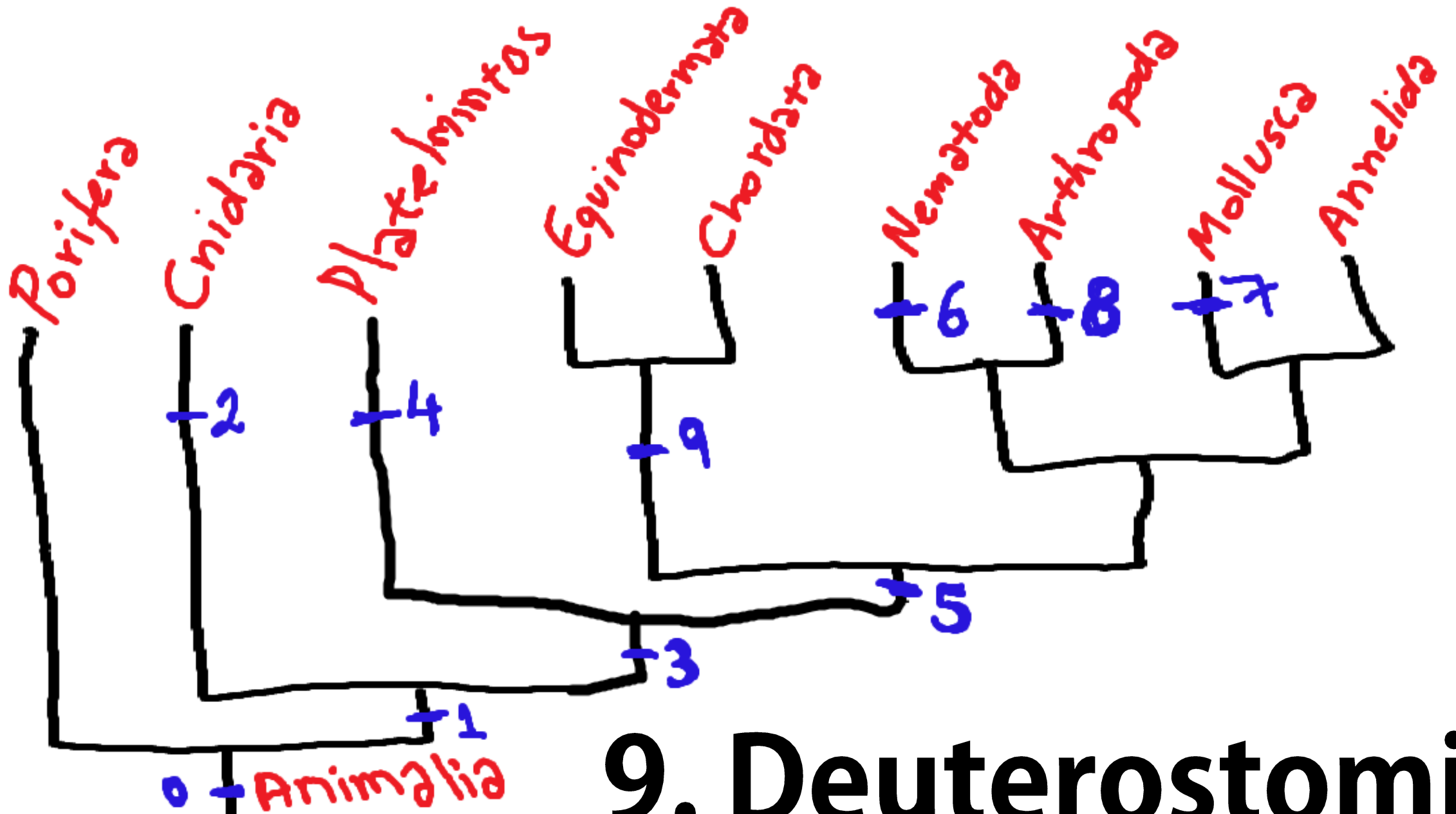




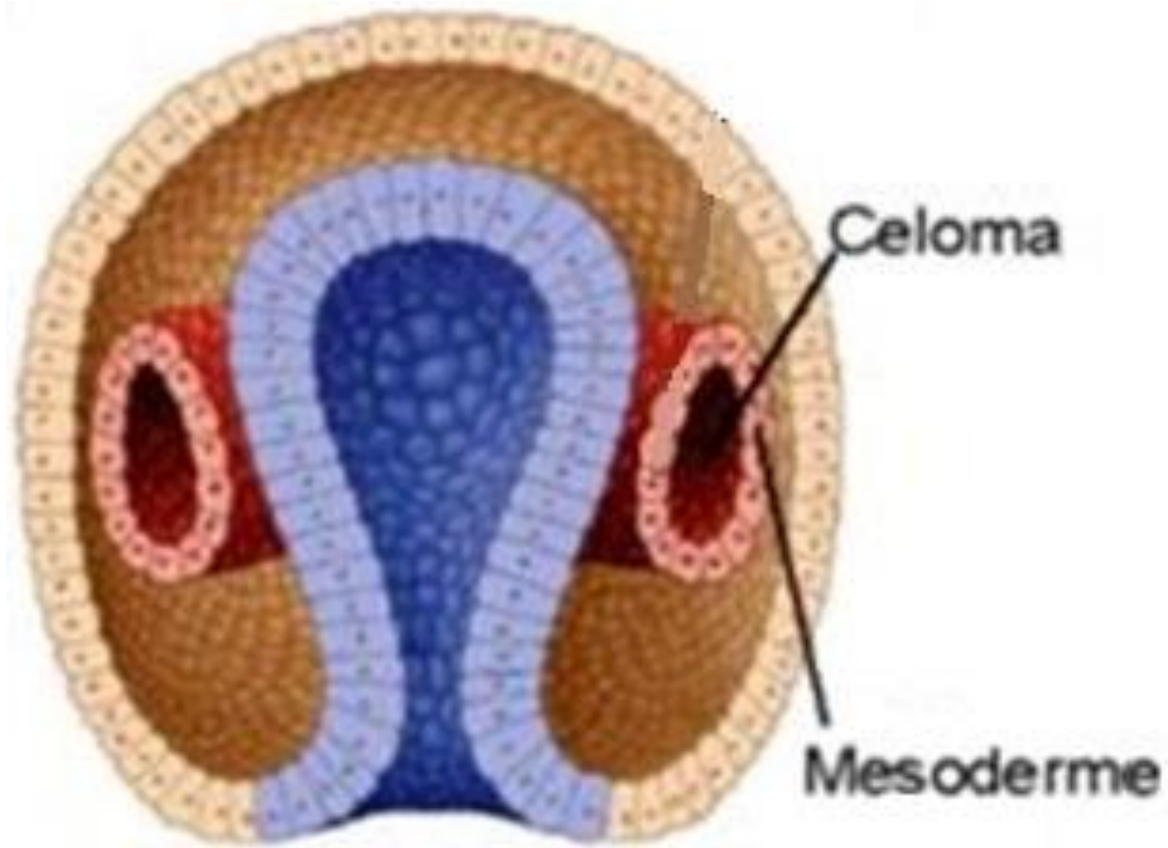
Importância para o ser humano: exemplos:
polinização (permite que muitas das
plantas que comemos possam dar frutos e
semente) e transmissão de doenças, como
a febre maculosa pelo carrapato estrela e
a dengue pelo aedes

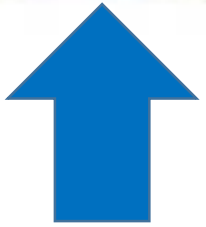


8. Ecdise



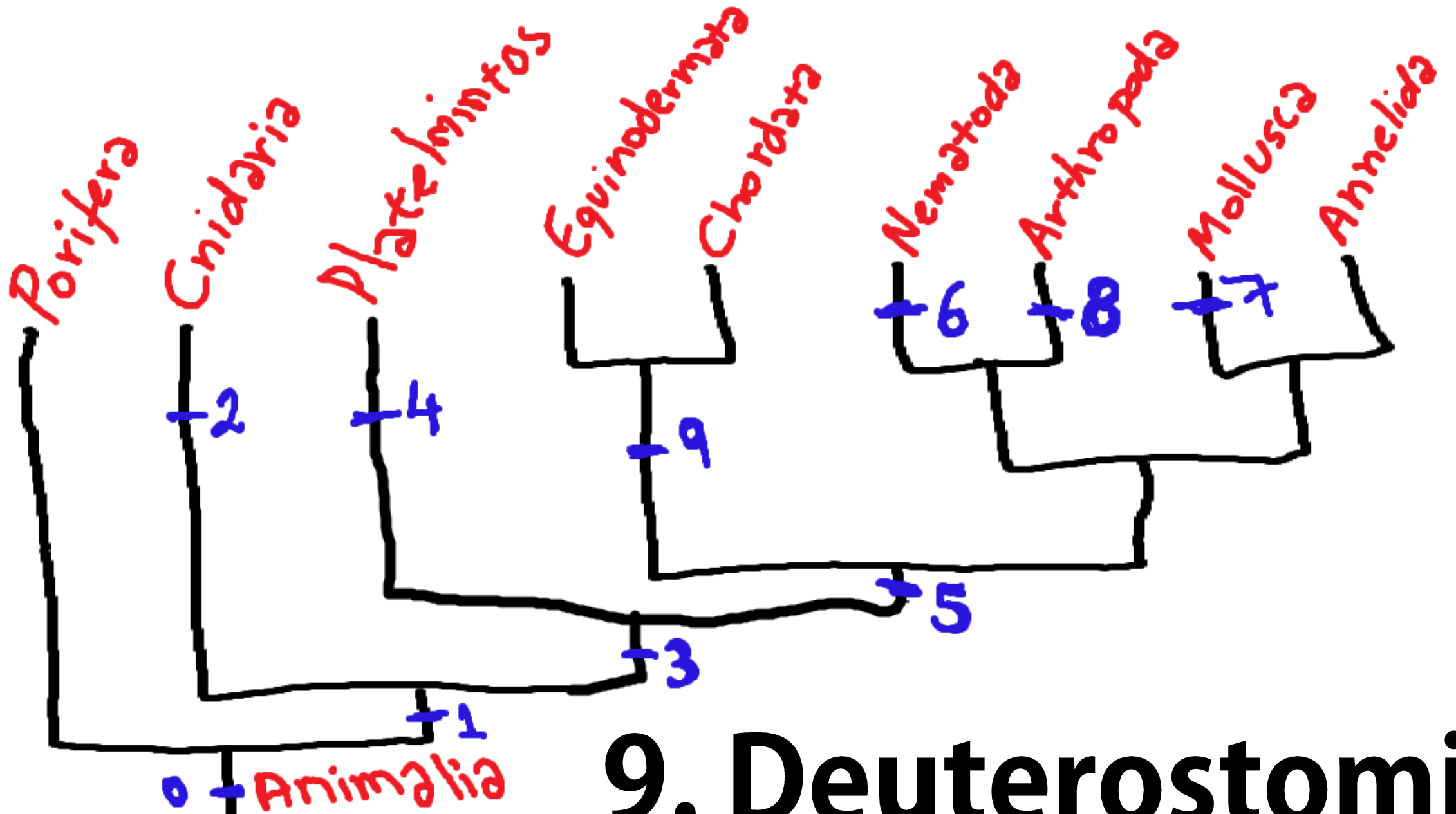
9. Deuterostomia




Blastóporo

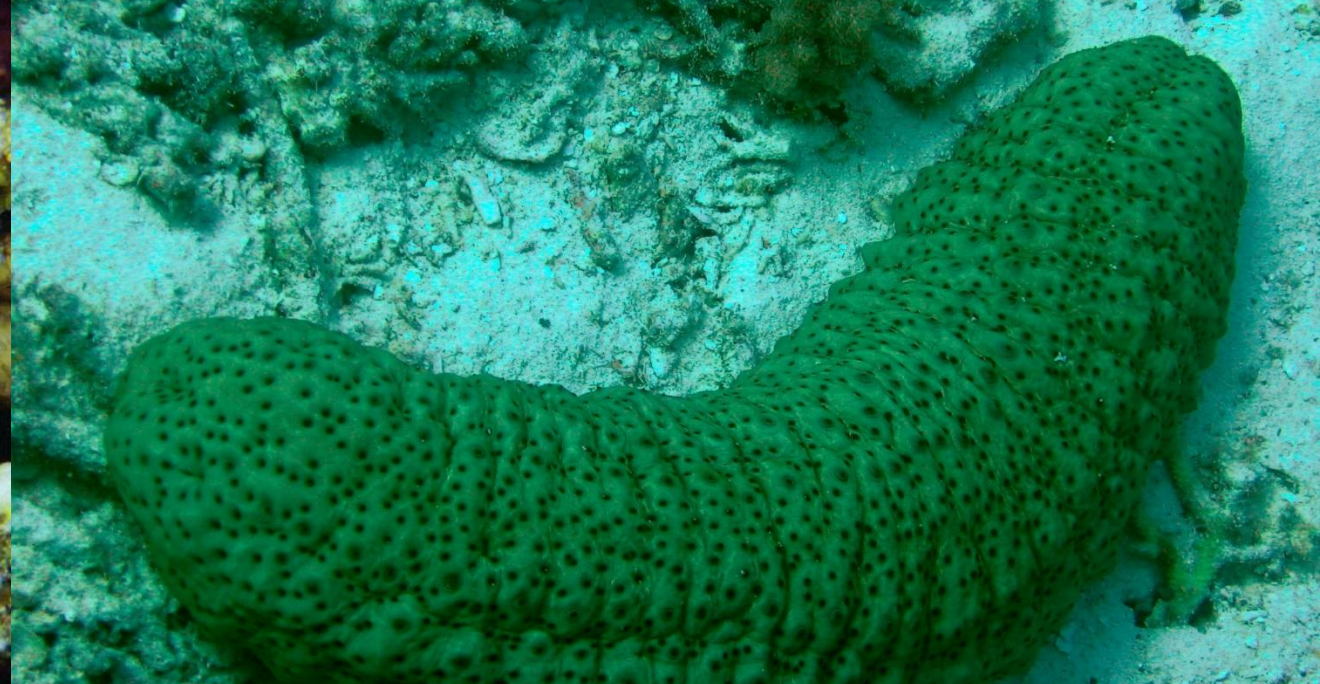
Todos os grupos que vimos até agora eram protostômios, ou seja, o blastóporo dá origem à boca nesses grupos.

Nos grupos que veremos a partir de agora o blastóporo dá origem ao ânus, sendo esses grupos deuterostômios.

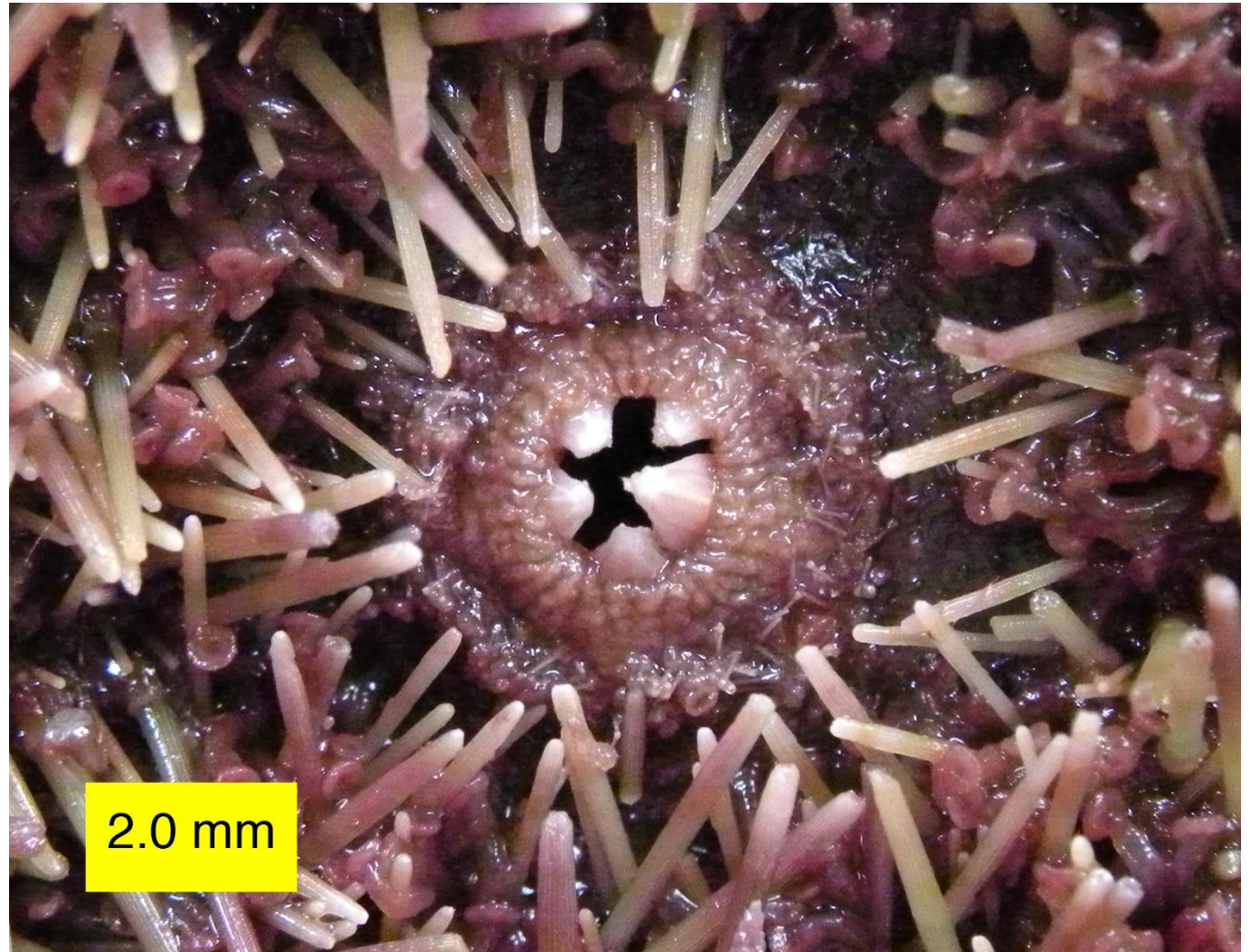


9. Deuterostomia

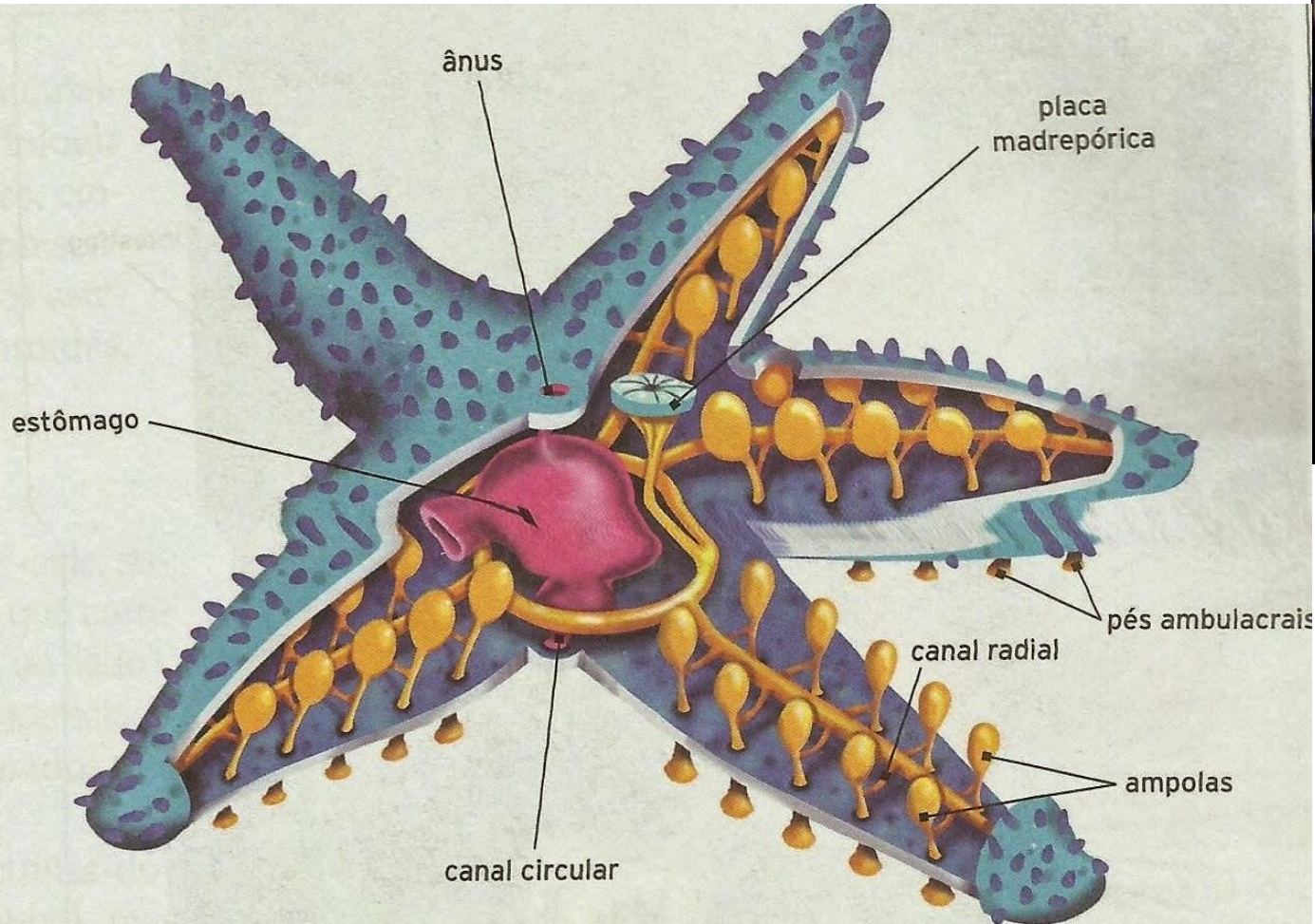
Equinodermos?



- Marinhos
- Respiração branquial
- Lanterna de Aristóteles



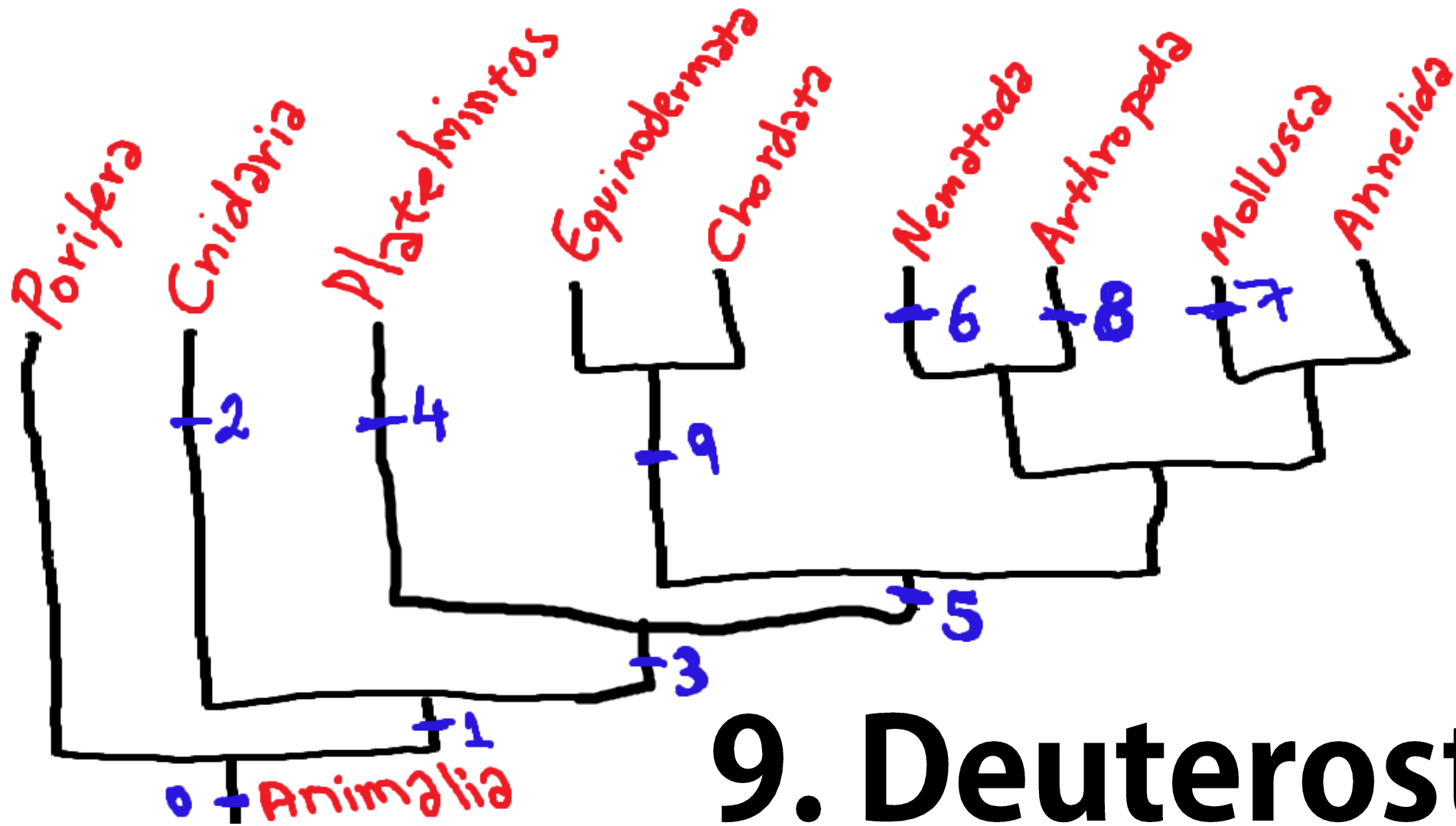
Sistema Ambulacrário



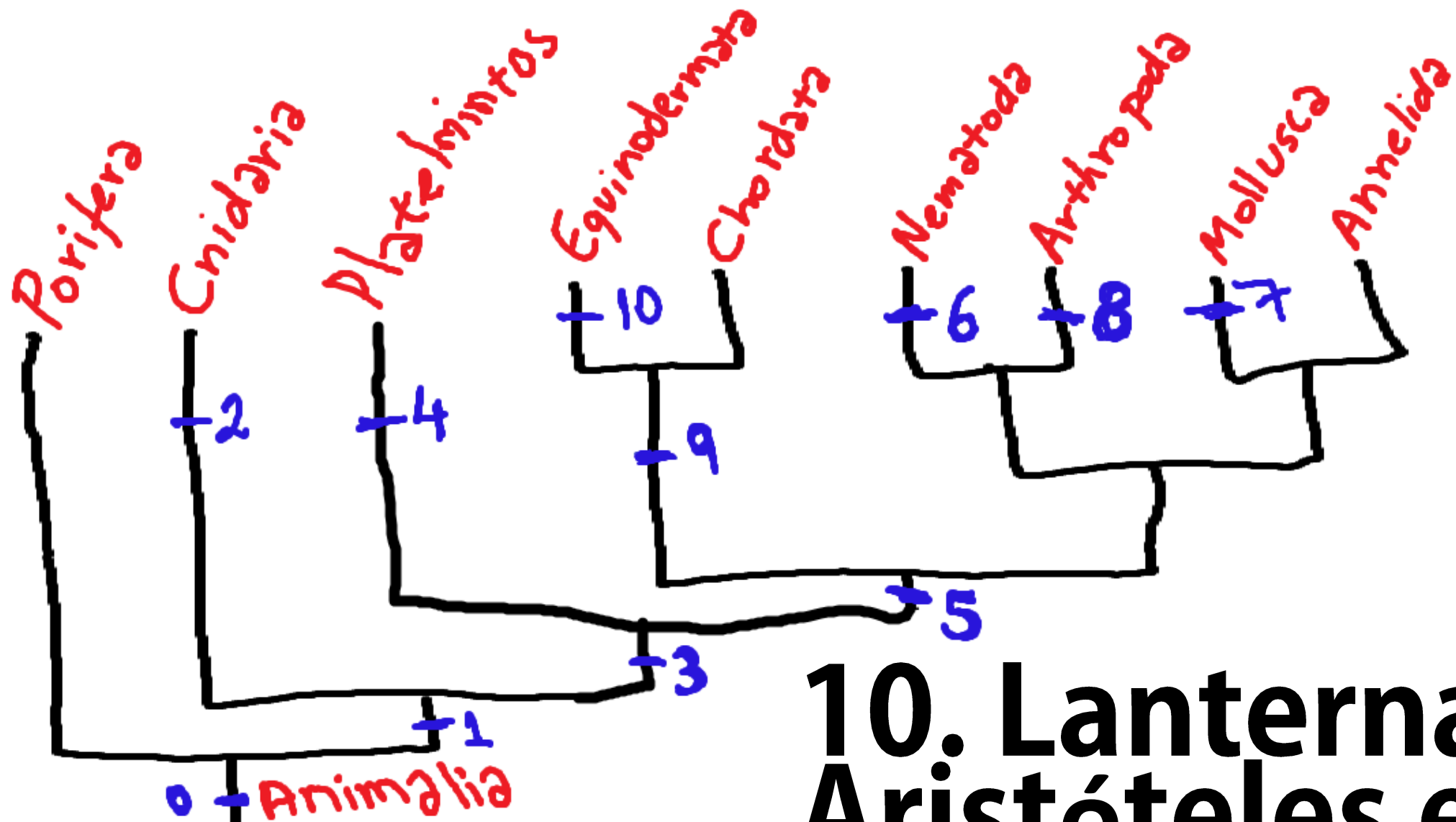
Pés ambulacrários

Endoesqueleto

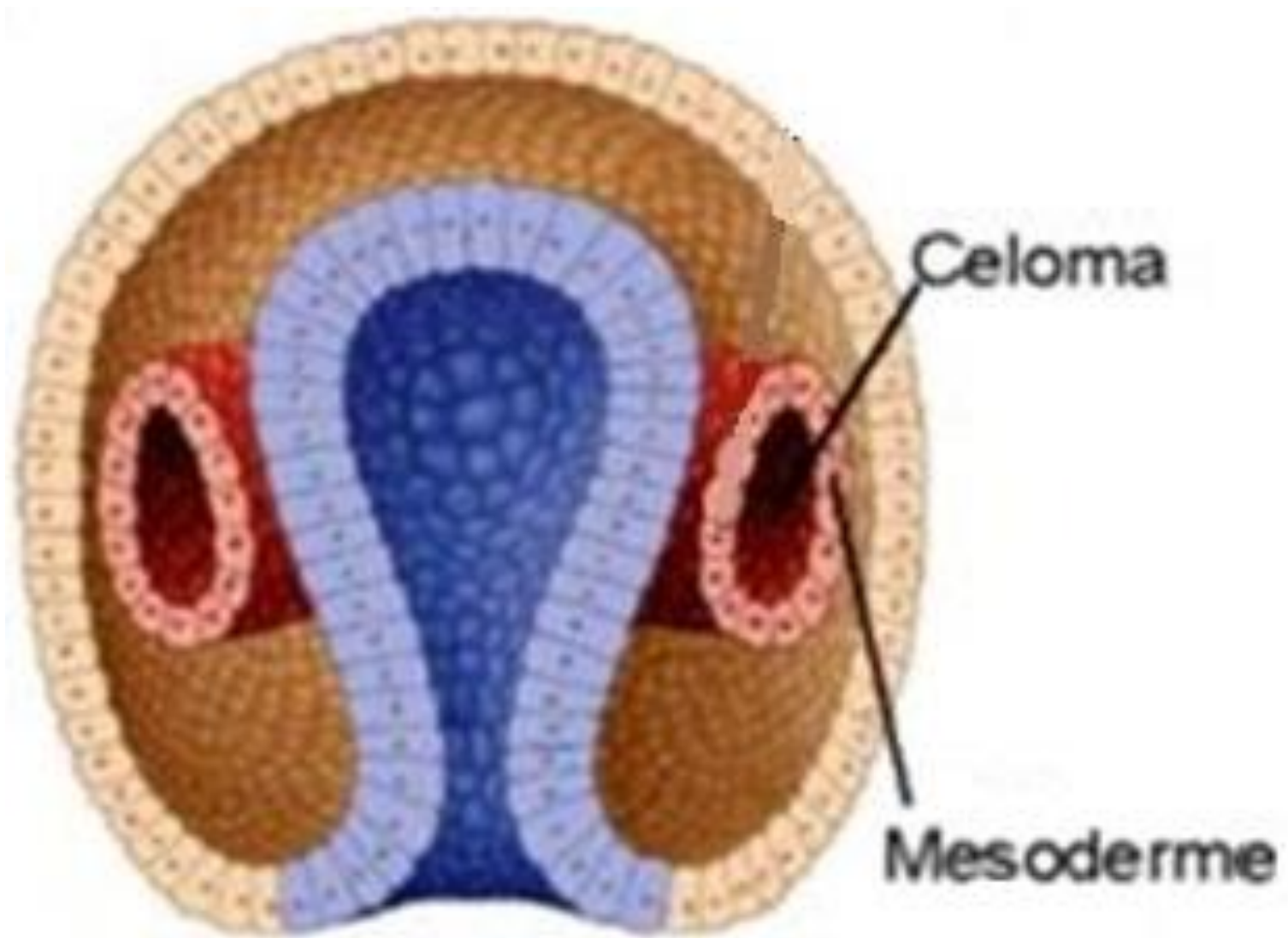




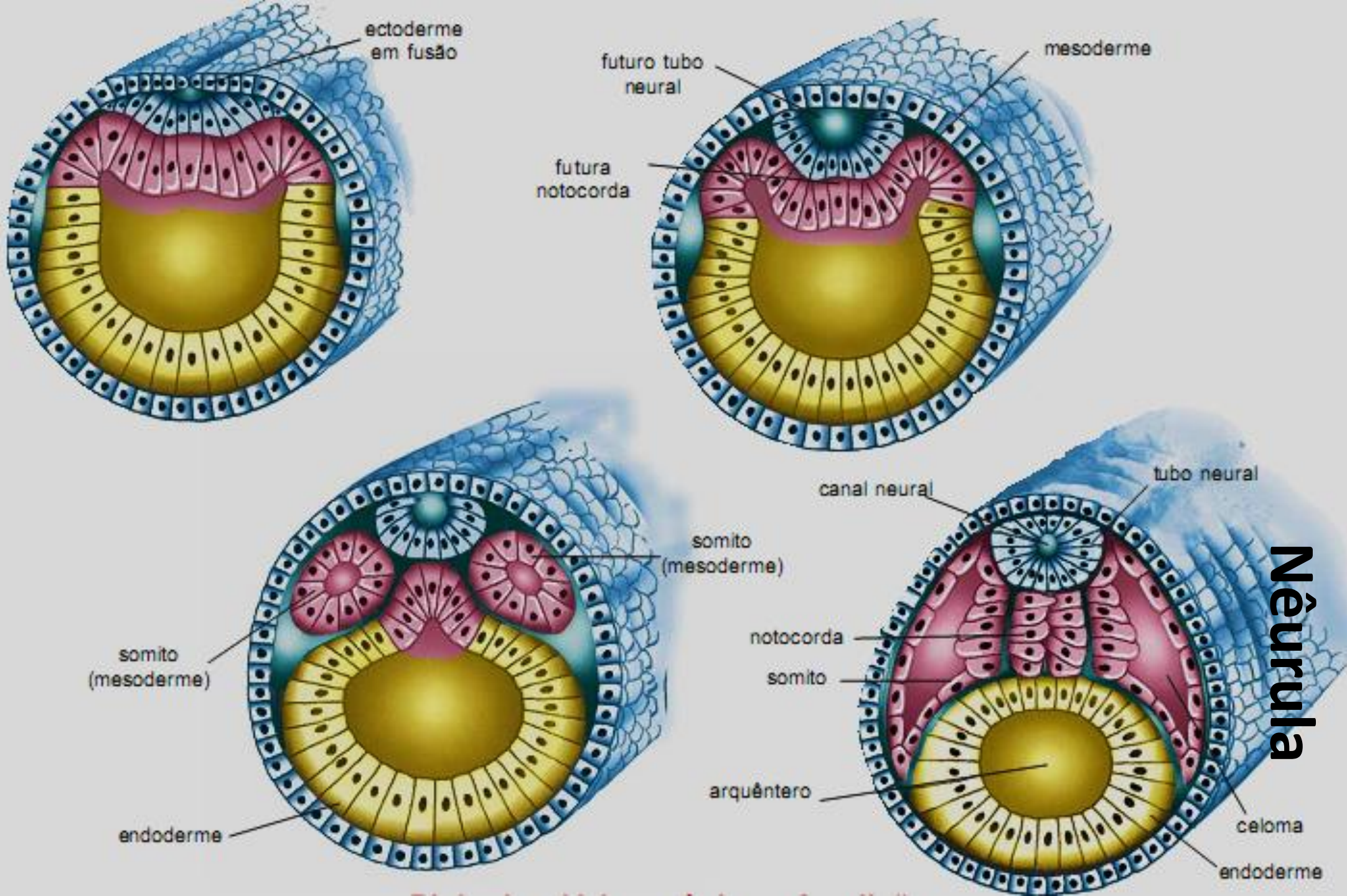
9. Deuterostomia e endoesqueleto



10. Lanterna de Aristóteles e sist. ambulacrário



Neurulação



Nêurula

CORDADOS

CEFALOCORDADOS

UROCORDADOS

AGNATOS

CONDRICTES

OSTEÍCTES

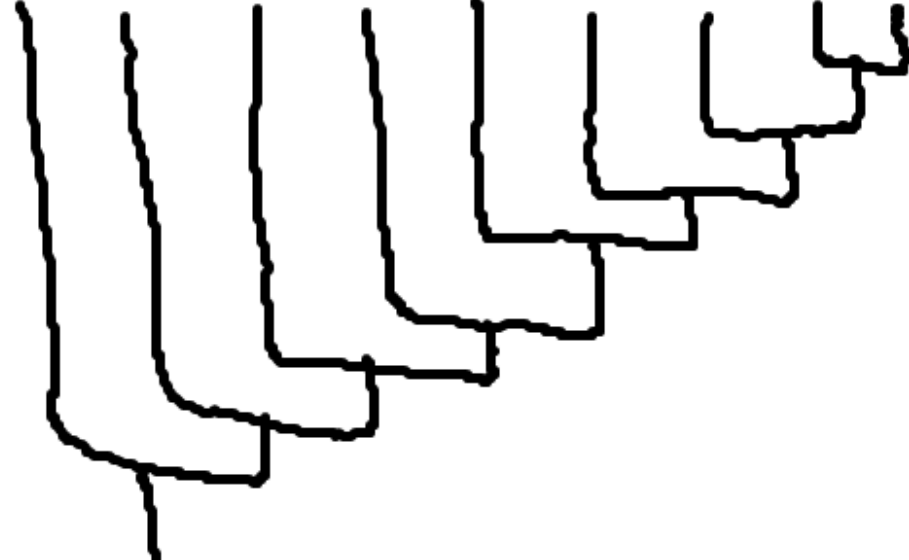
AMFIBIOS

RÉPTEIS

AVES

MAMÍFEROS

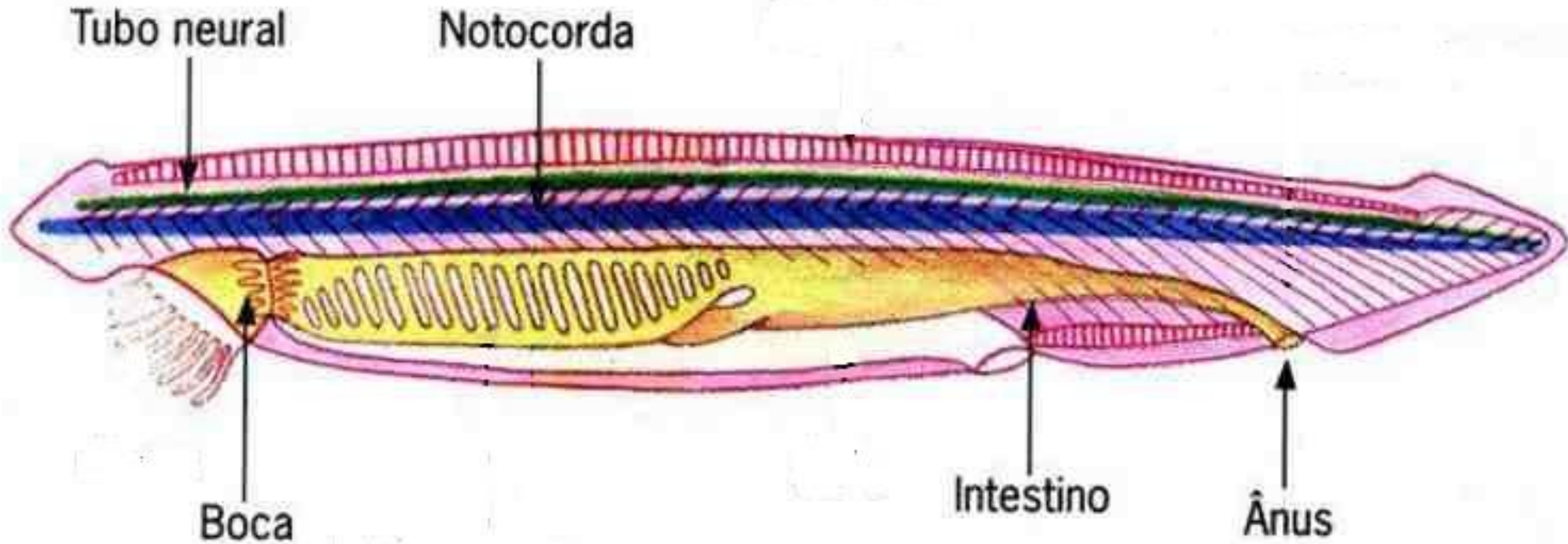
VERTEBRADOS



Representados pelo anfioxo:



Anfioxo em esqueminha



CORDADOS

CEFALOCORDADOS

UROCORDADOS

AGNATOS

CONDRICTES

OSTEÍCTES

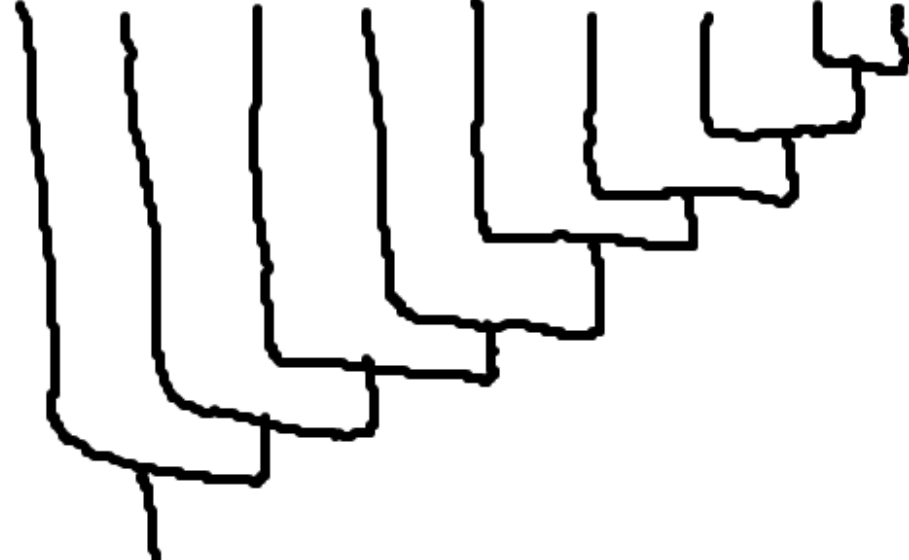
AMFIBIOS

RÉPTEIS

AVES

MAMÍFEROS

VERTEBRADOS

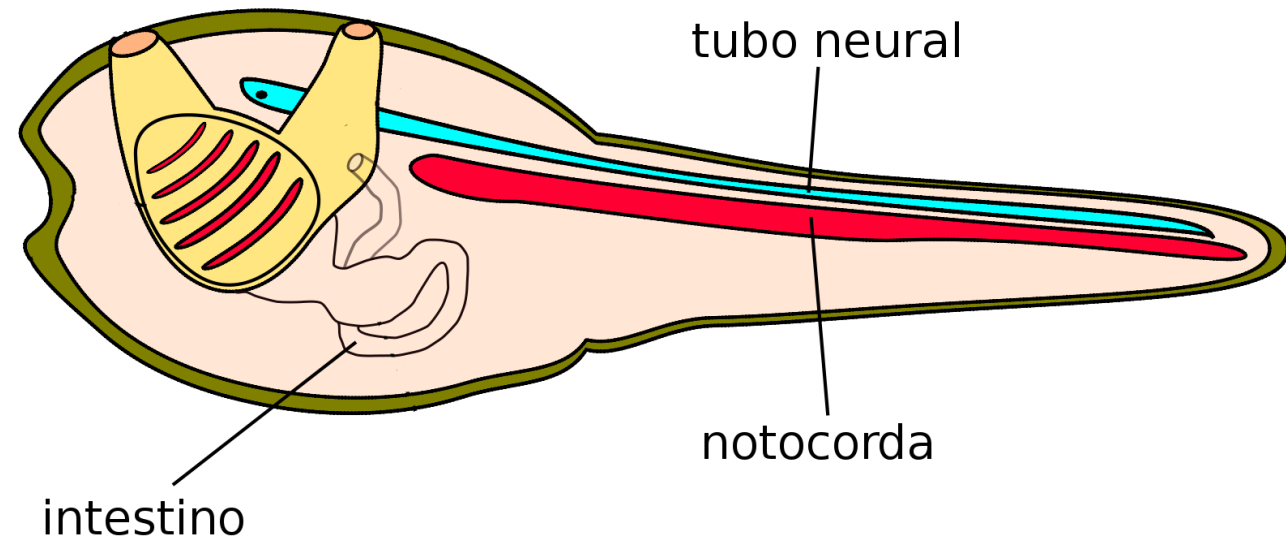


UROCORDADOS

representados pela ascídia:



Larva de ascídia



CORDADOS

CEFALOCORDADOS

UROCORDADOS

AGNATOS

CONDRICTES

OSTEÍCTES

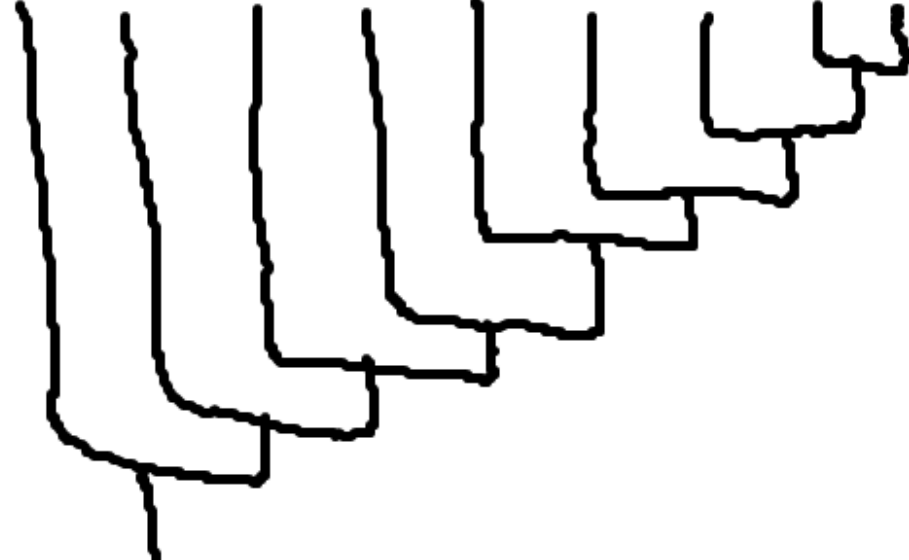
AMFIBIOS

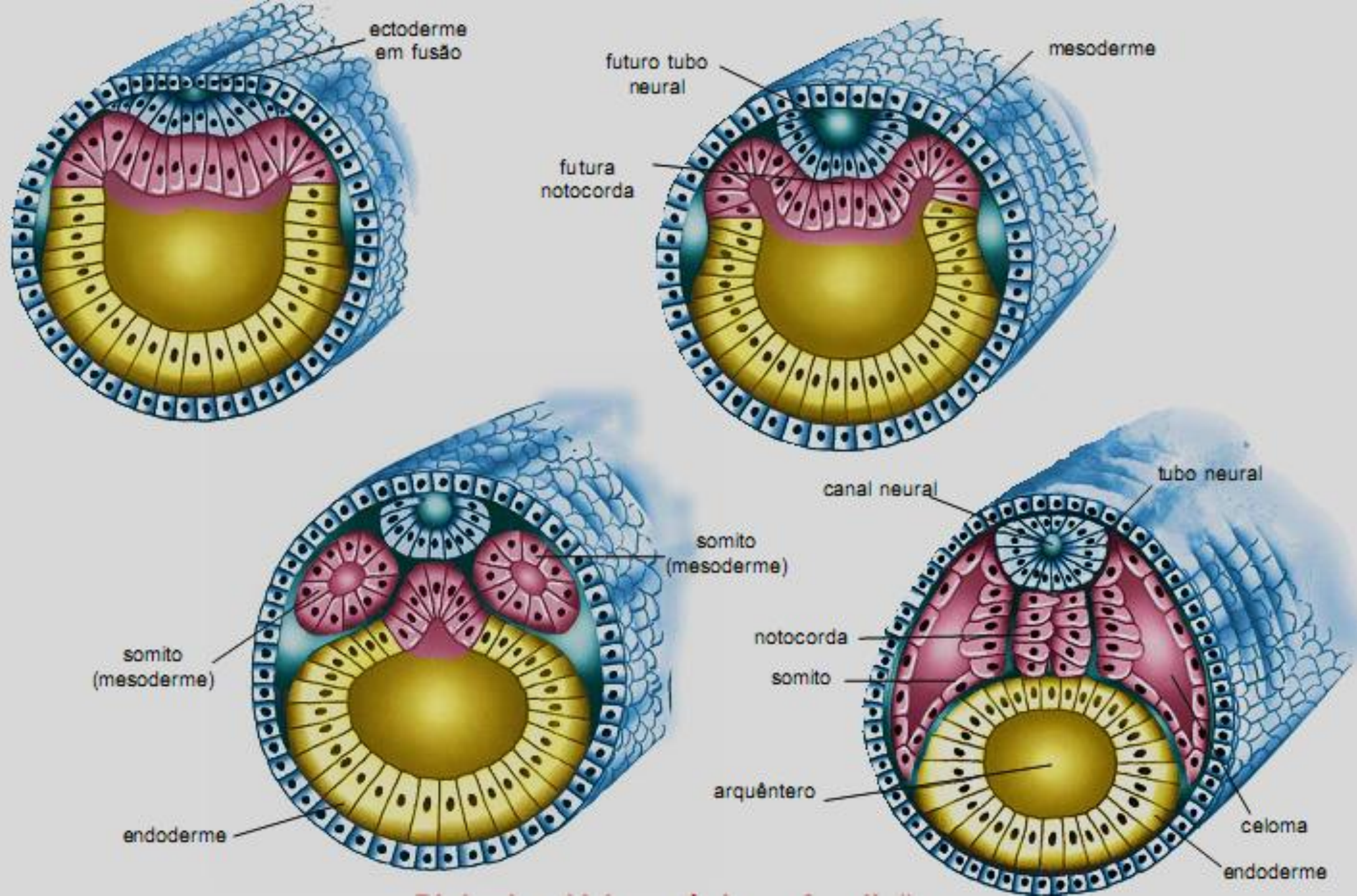
RÉPTEIS

AVES

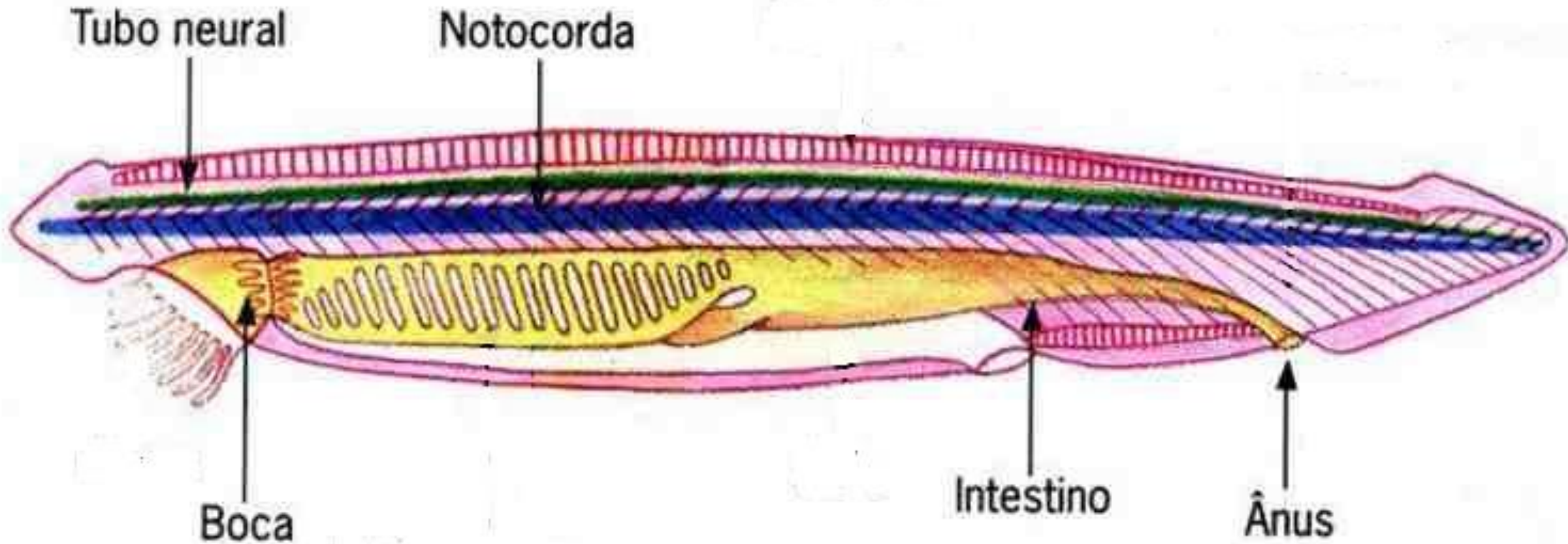
MAMÍFEROS

VERTEBRADOS

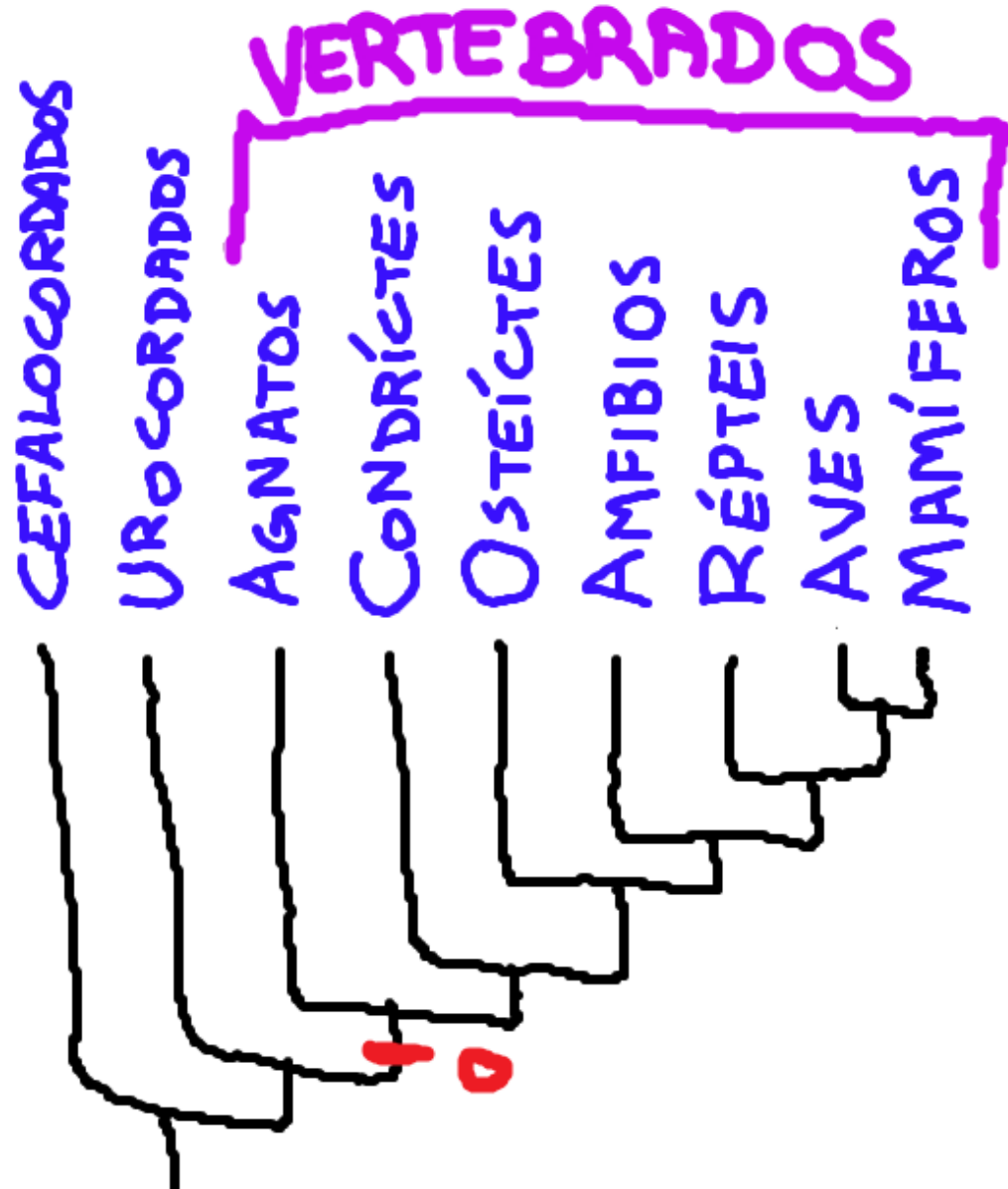




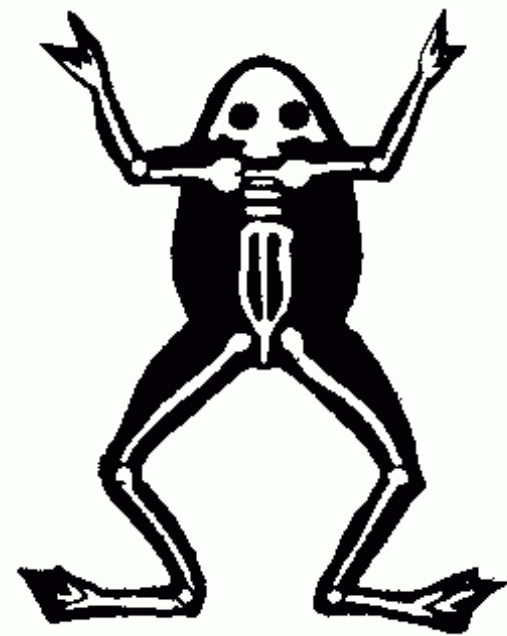
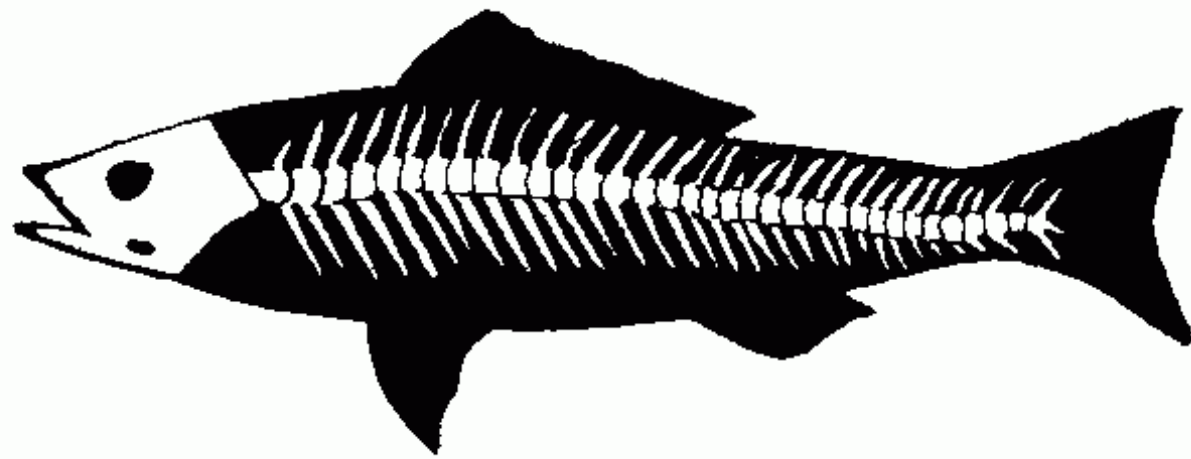
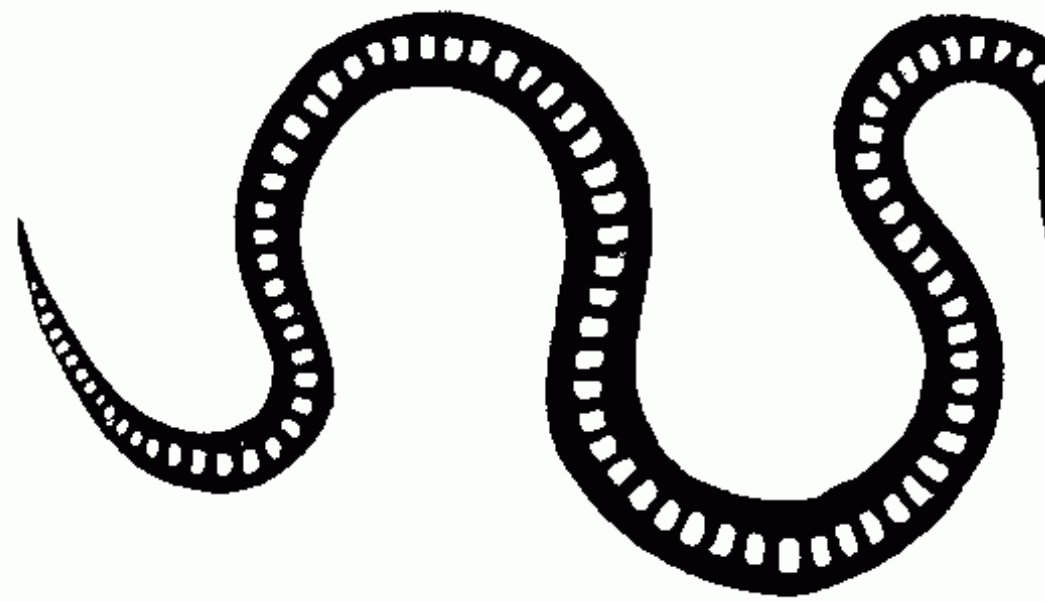
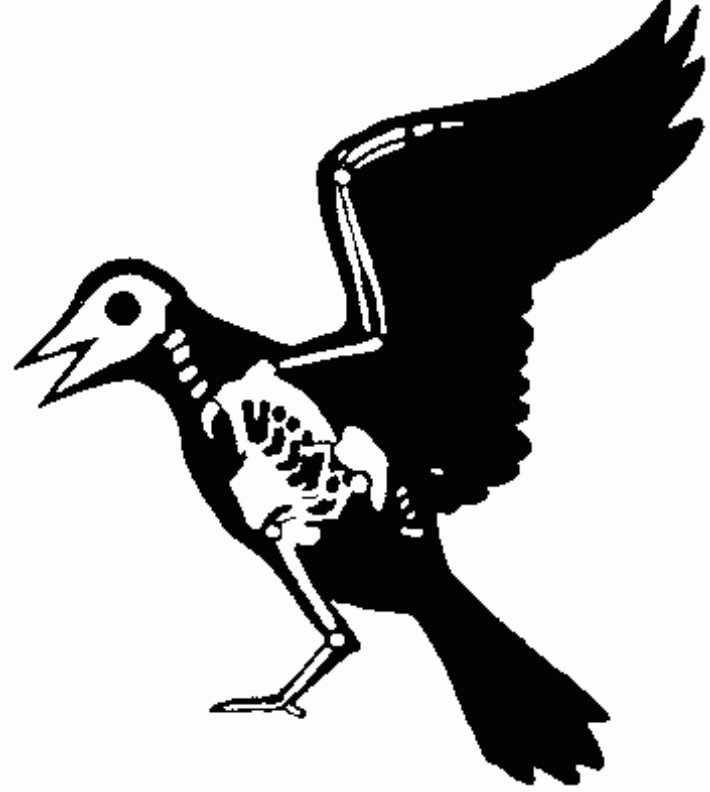
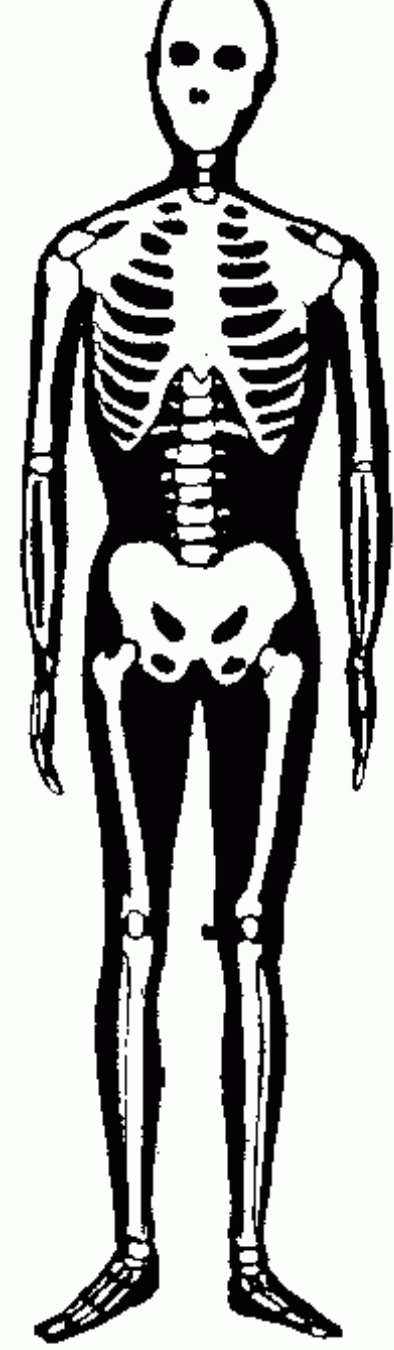
Anfioxo em esqueminha



CORDADOS



0. Coluna vertebral



Nos vertebrados a notocorda origina a coluna vertebral!



AGNATOS

Lampréia







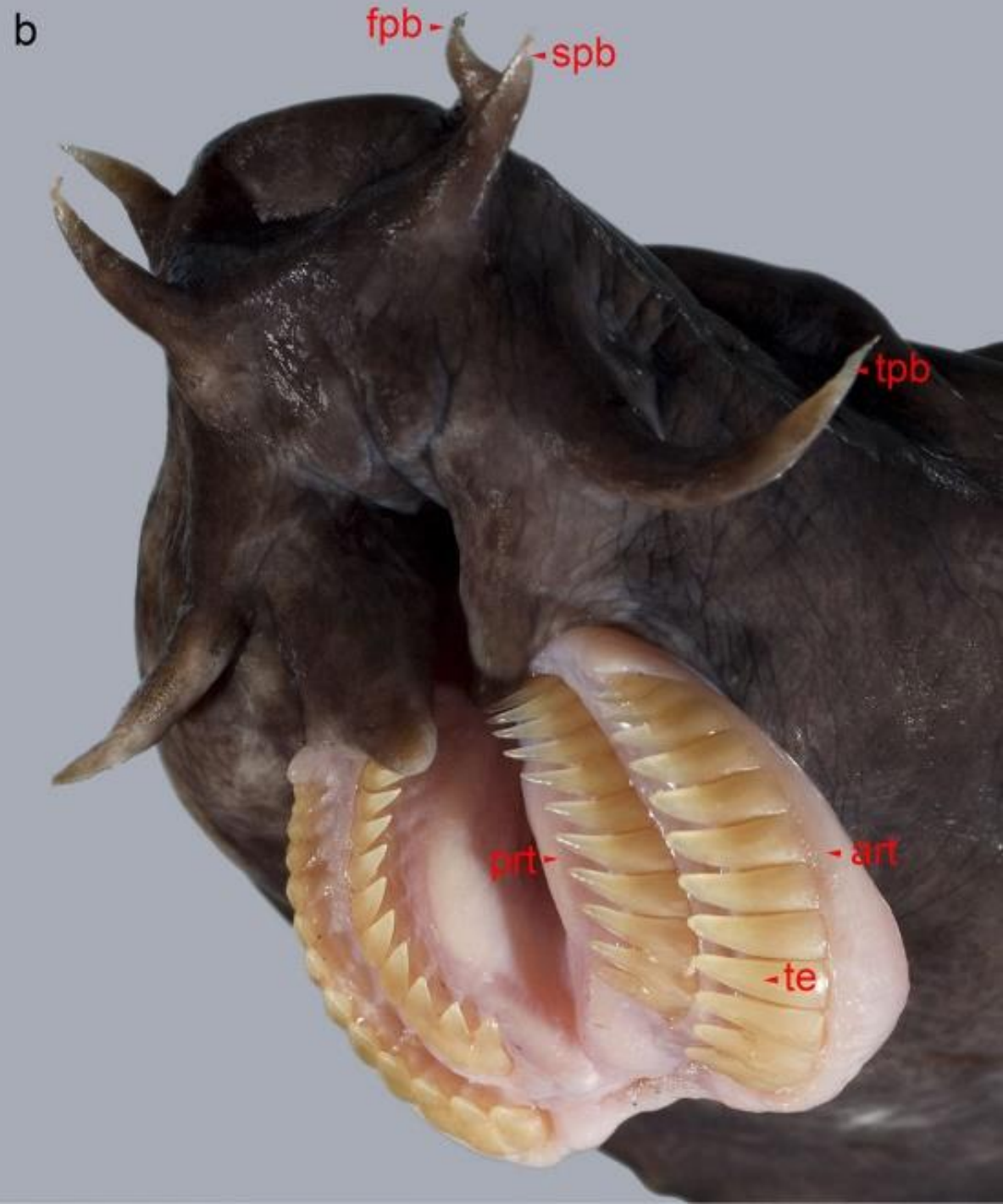
Ectoparasitas

AGNATOS

Feiticeira

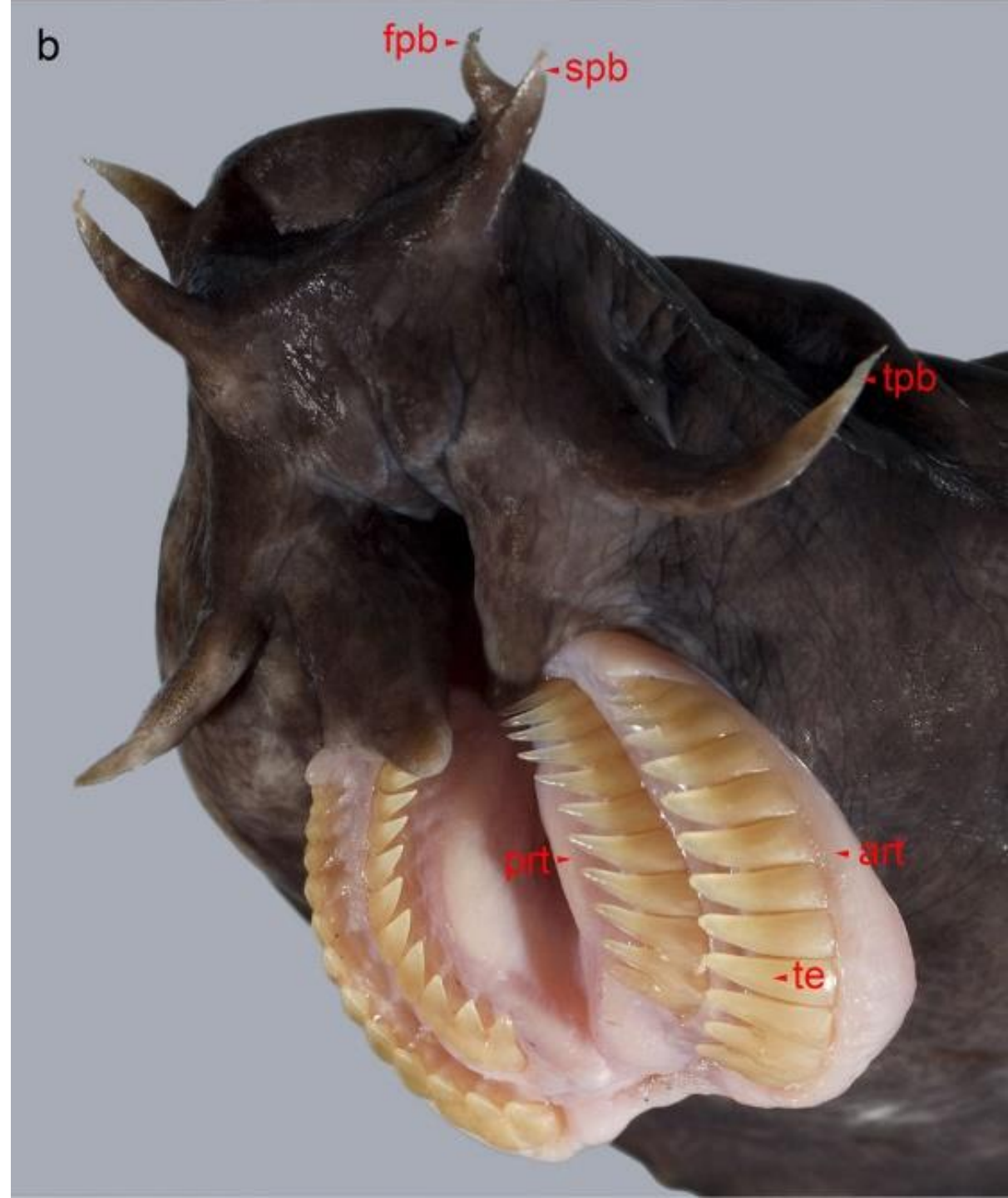


Gnato =
mandíbula

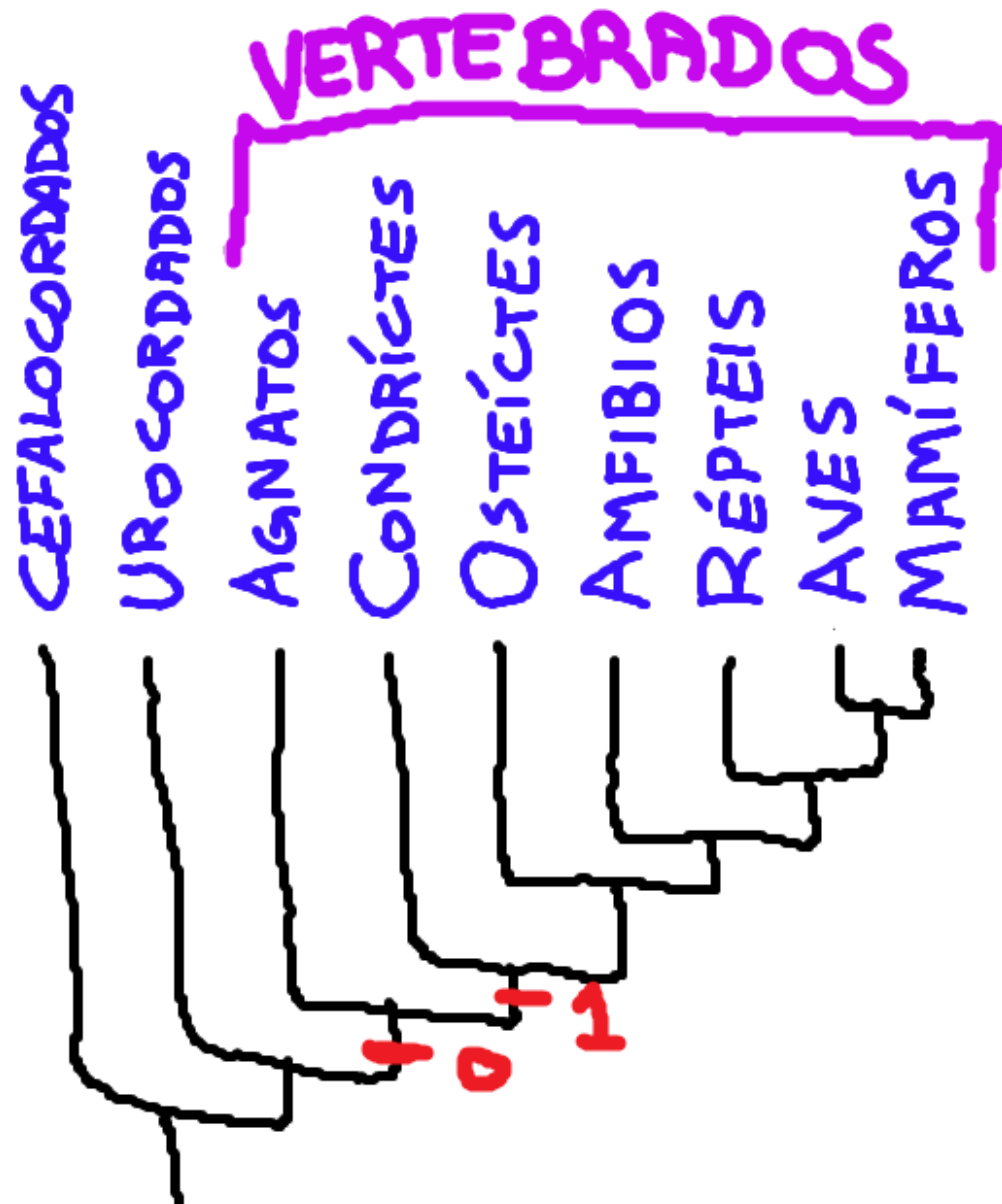


Gnato =
mandíbula

Agnato =
sem mandíbula!



CORDADOS



1. Mandíbula

Referências das imagens

- http://bio1152.nicerweb.com/Locked/media/ch49/49_02aNervousSystemsA-U.jpg
- <http://www.estudopratico.com.br/wp-content/uploads/2014/07/platelmintos.jpg>
- <https://macrocritters.files.wordpress.com/2012/10/planarian-small-vv-copyright-ernie-cooper-2012.jpg>
- http://2.bp.blogspot.com/-6TZlLn1pzAQ/UChW2AKT7oI/AAAAAAAAAHc/ZuRBMXvz2G8/s1600/G_vaginulodes_Carbayo1.jpg
- <https://upload.wikimedia.org/wikipedia/commons/7/7b/Pseudocerotidae - Pseudoceros ferrugineus.jpg>
- <https://userscontent2.emaze.com/images/b90d2893-60bf-4b77-988e-f4cda611bbb0/f5b3bd60c77accbe6433b778c6da81ab.jpeg>
- http://images.slideplayer.com.br/10/2907480/slides/slide_7.jpg
- <https://www.petjellyfish.co.uk/wp-content/uploads/2014/07/Moon-JellyFish.jpg>
- <http://beira.pt/coolkids/wp-content/uploads/sites/7/2014/08/caranguejo.png>
- http://1.bp.blogspot.com/_bLWjwM28CKc/SpFyPQ1sDLI/AAAAAAAAABb0/HAb0aQQTsJo/s320/solitaria.gif
- https://www.google.com.br/search?hl=pt&biw=1366&bih=633&tbs=isz%3A&tbm=isch&sa=1&q=teniase+ciclo&oq=teniase+ciclo&gs_l=img.3..0l2j0i30k1l2j0i8i30k1l6.641176.643427.0.643693.13.12.0.1.1.0.211.1322.7j4j1.12.0....0...1c.1.64.img..0.13.1320...0i67k1.ghuiUXfQgZc#imgsrc=8CF-lYqQAcsE7M%3A
- <https://alunosanalisesclinicas.files.wordpress.com/2014/11/teniase.jpg>
- <http://pediatriaorienta.med.uchile.cl/parasitologia/fotosP/images/ascaris.jpg>
- <http://static.tuasauade.com/img/posts/2013/03/ea2ab1297476f83d55f6e089c1795dc4.jpeg>
- http://static0.hln.be/static/photo/2012/8/12/10/20120629120110/media_xll_4947760.jpg
- <http://blogs.ucl.ac.uk/researchers-in-museums/files/2012/07/leech2.jpg>
- [https://upload.wikimedia.org/wikipedia/commons/5/5f/Alitta succinea \(epitoke\).jpg](https://upload.wikimedia.org/wikipedia/commons/5/5f/Alitta_succinea_(epitoke).jpg)
- <http://www.fossilmuseum.net/fossil-art/haeckel/chaetopoda/Chaetopoda-L.jpg>
- <http://nordeste rural.com.br/wp-content/uploads/2014/10/horta.jpg>