

**WASSUP  
PEOPLE**

# Aves II

Eduardo S.A. Santos

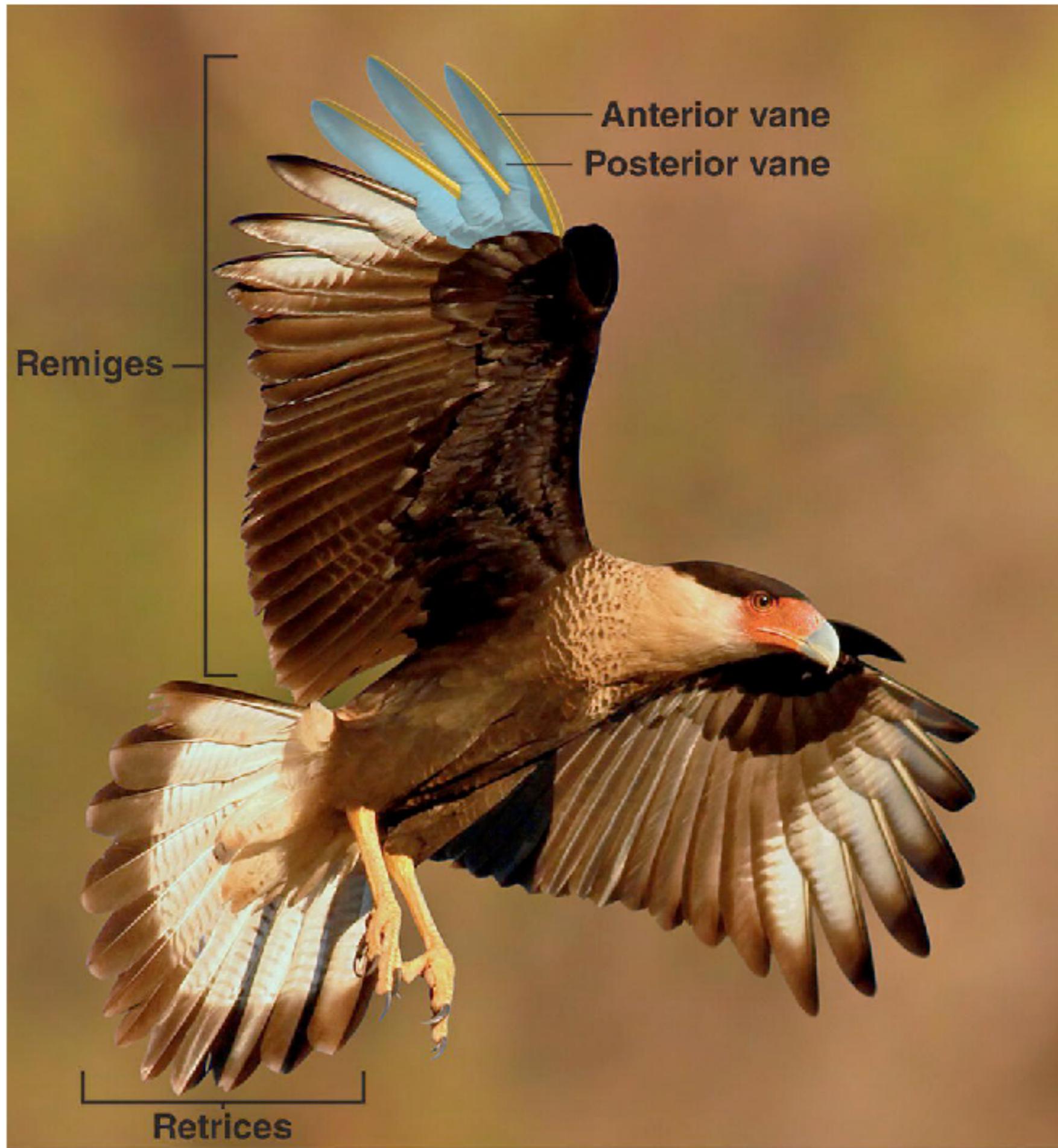
[eduardosantos-lab.weebly.com](http://eduardosantos-lab.weebly.com)

20/09/2018



**I AM A BIRD**

Voo

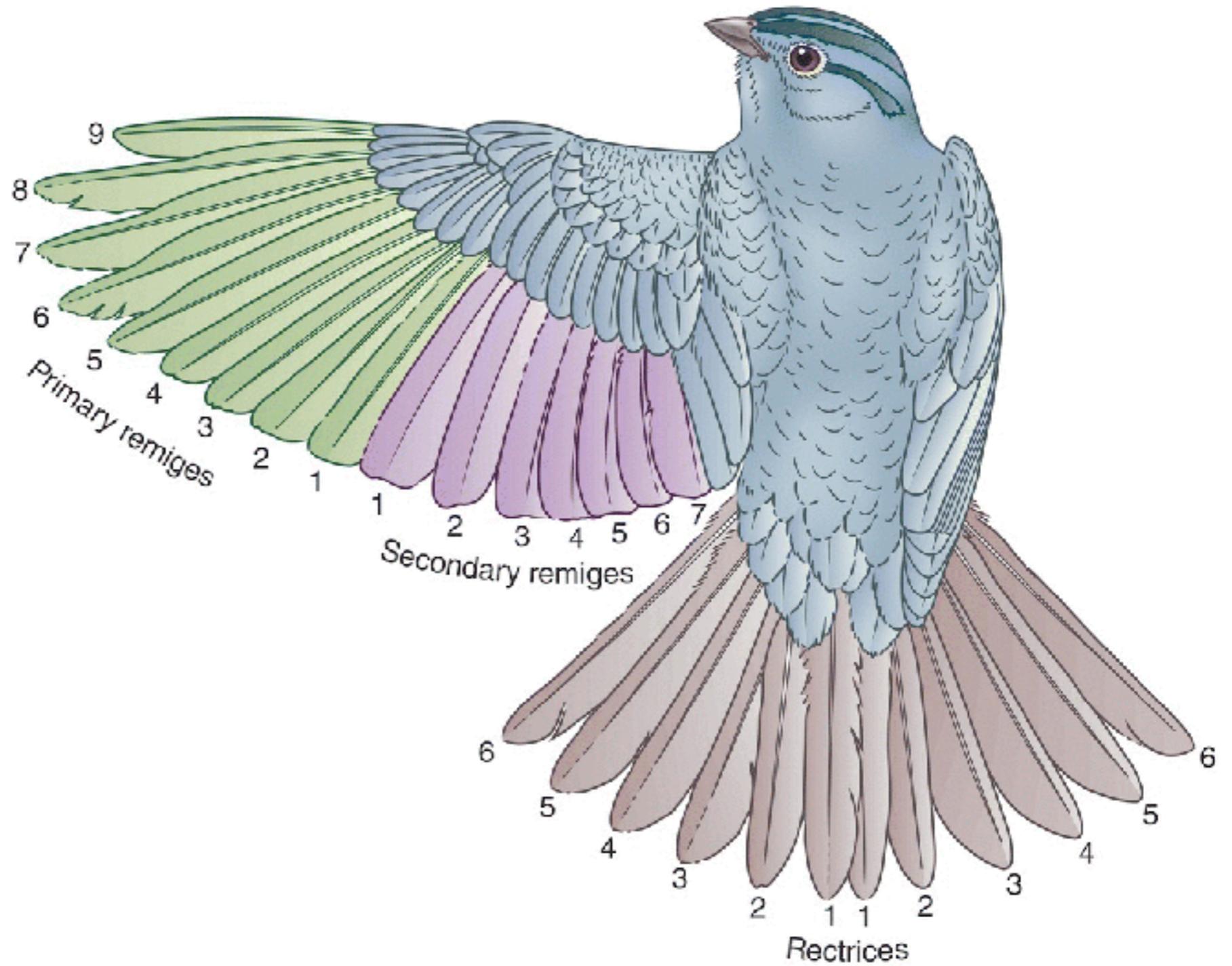
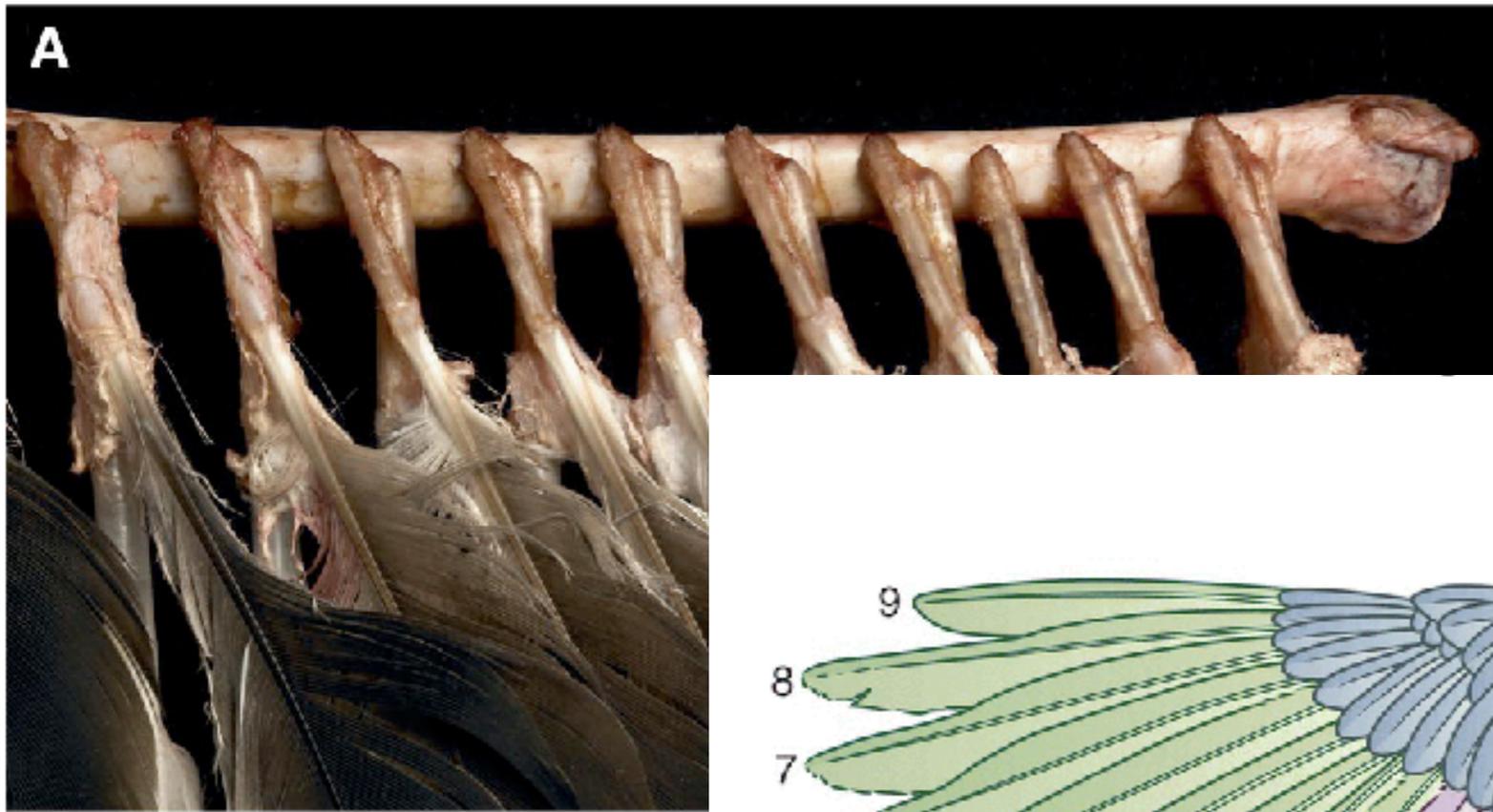


Caracara cheriway

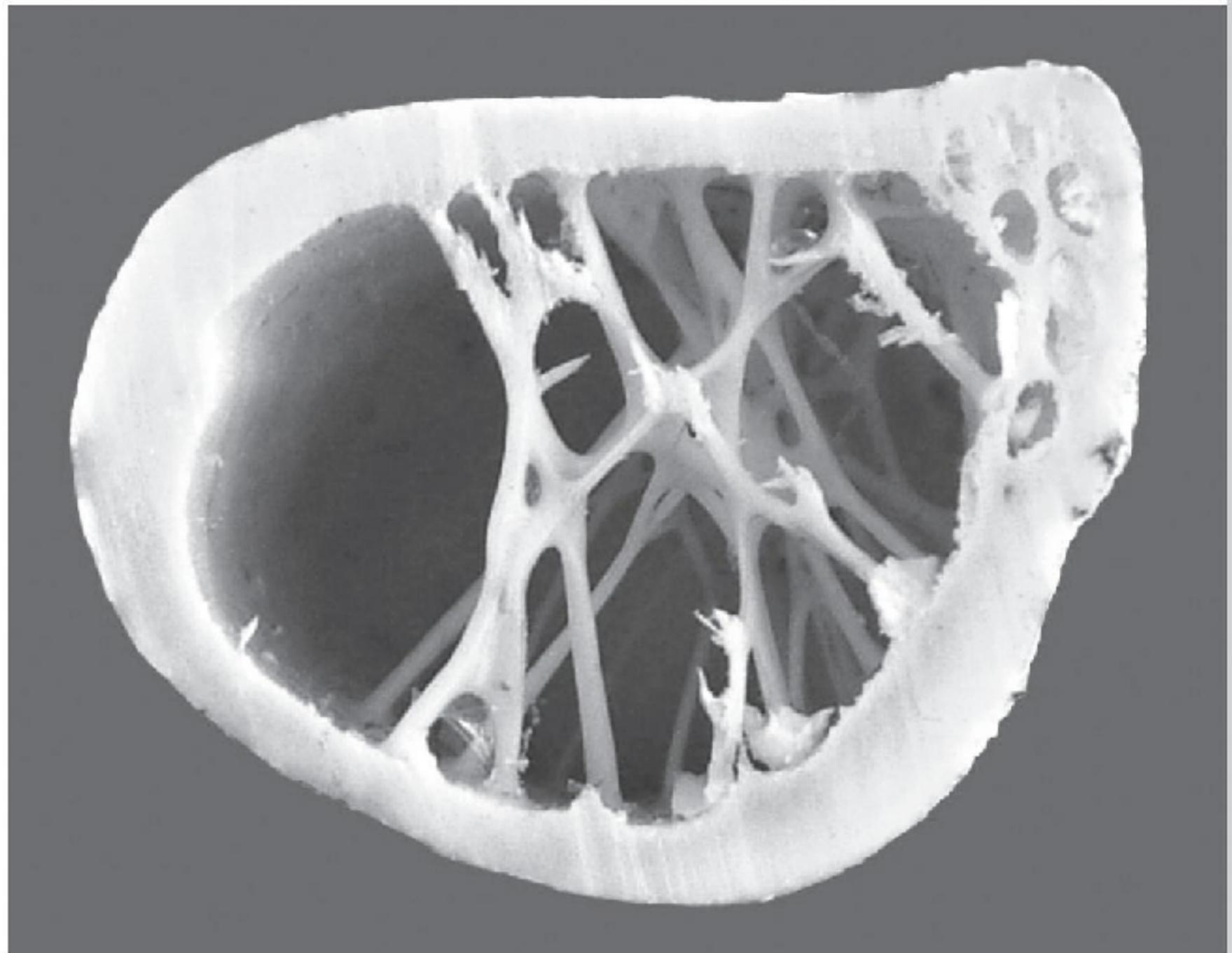
Voo



# Voo/função penas

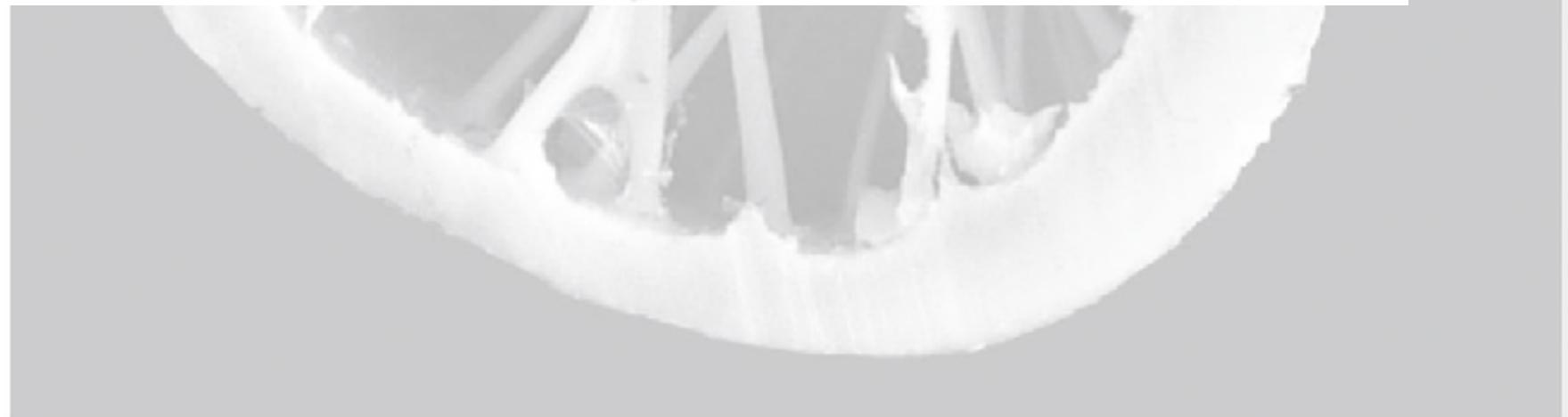
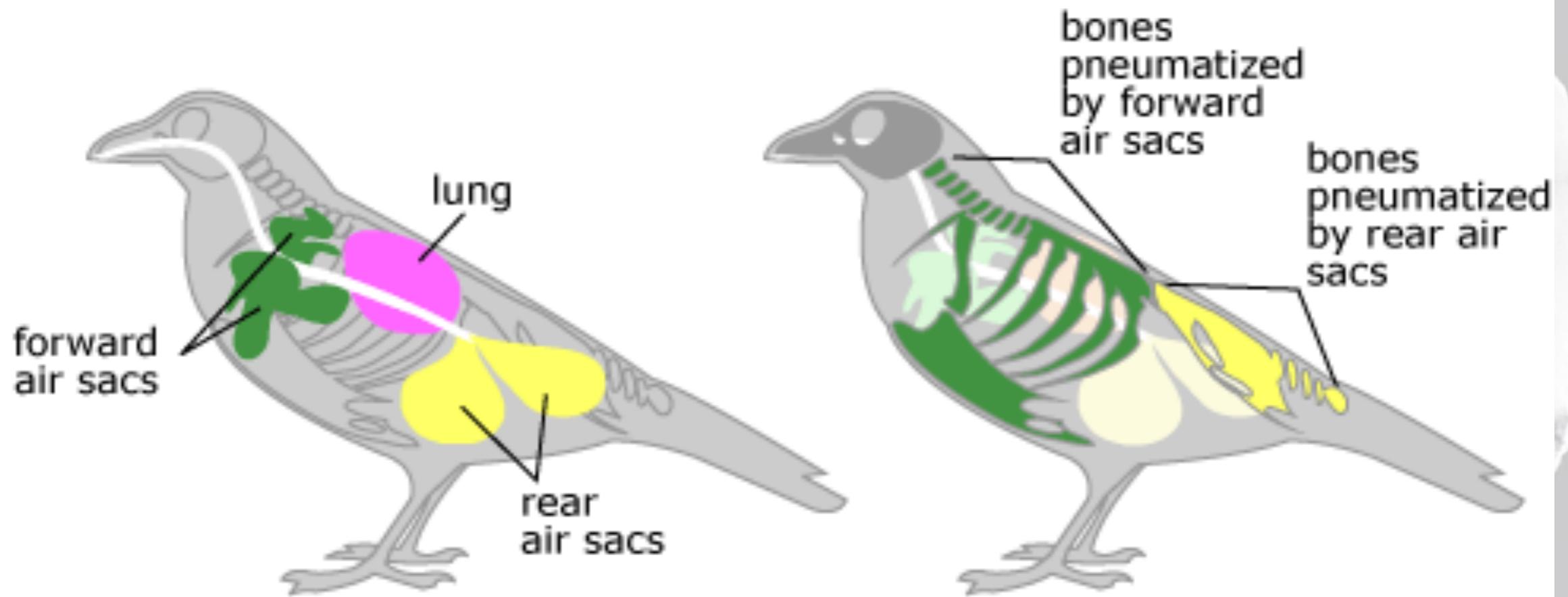


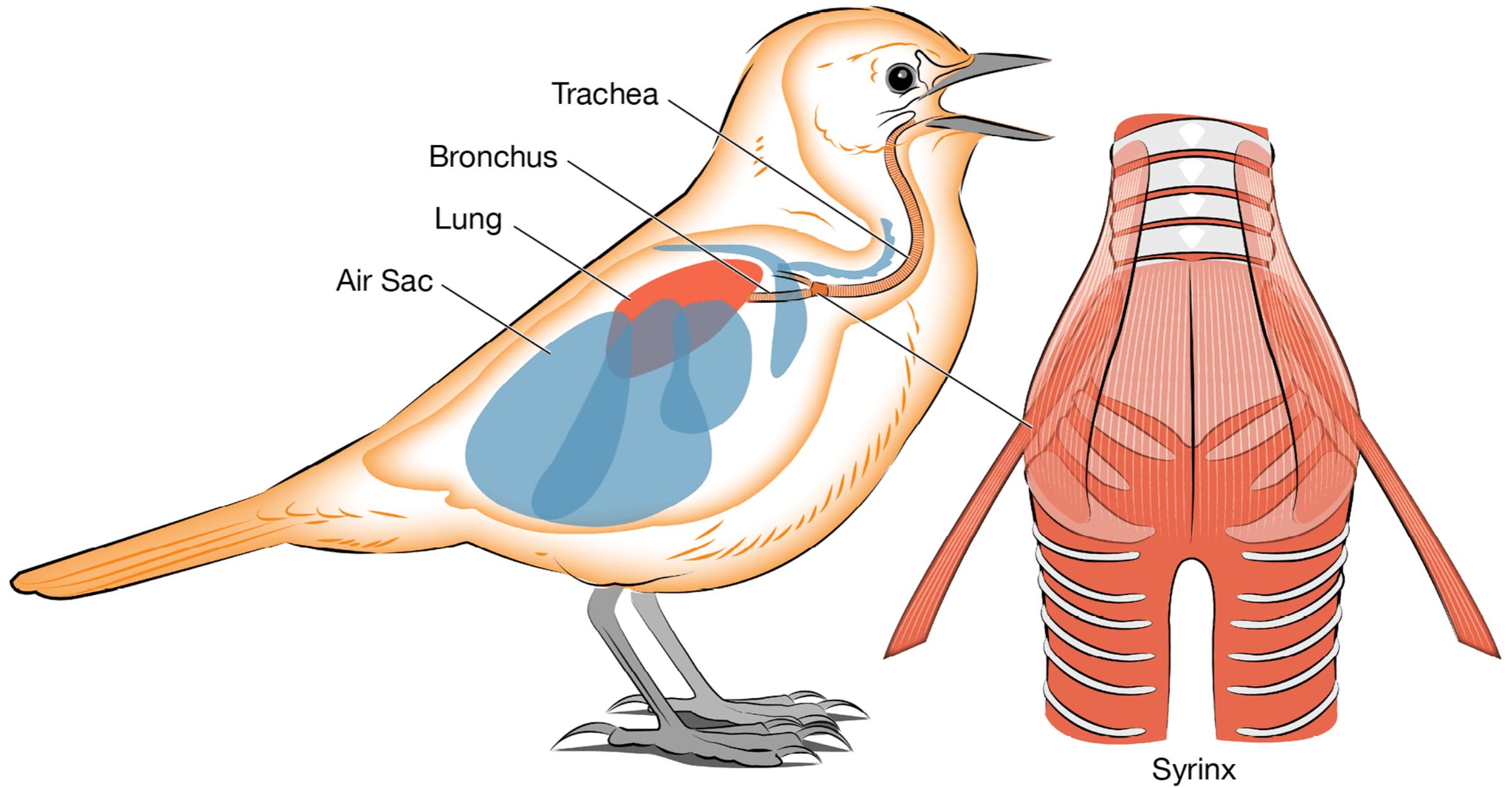
# Adaptações para o voo: menor peso

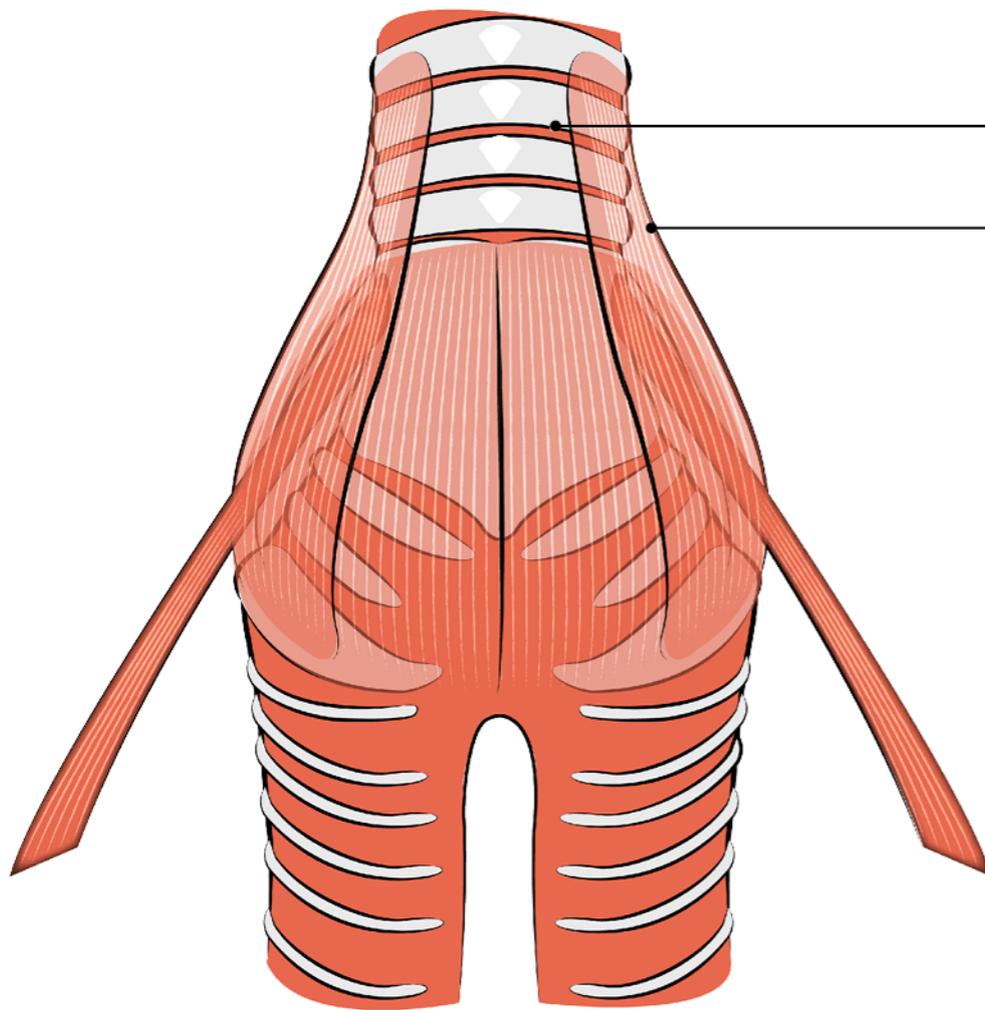


Ossos pneumáticos

# Adaptações para o voo: menor peso

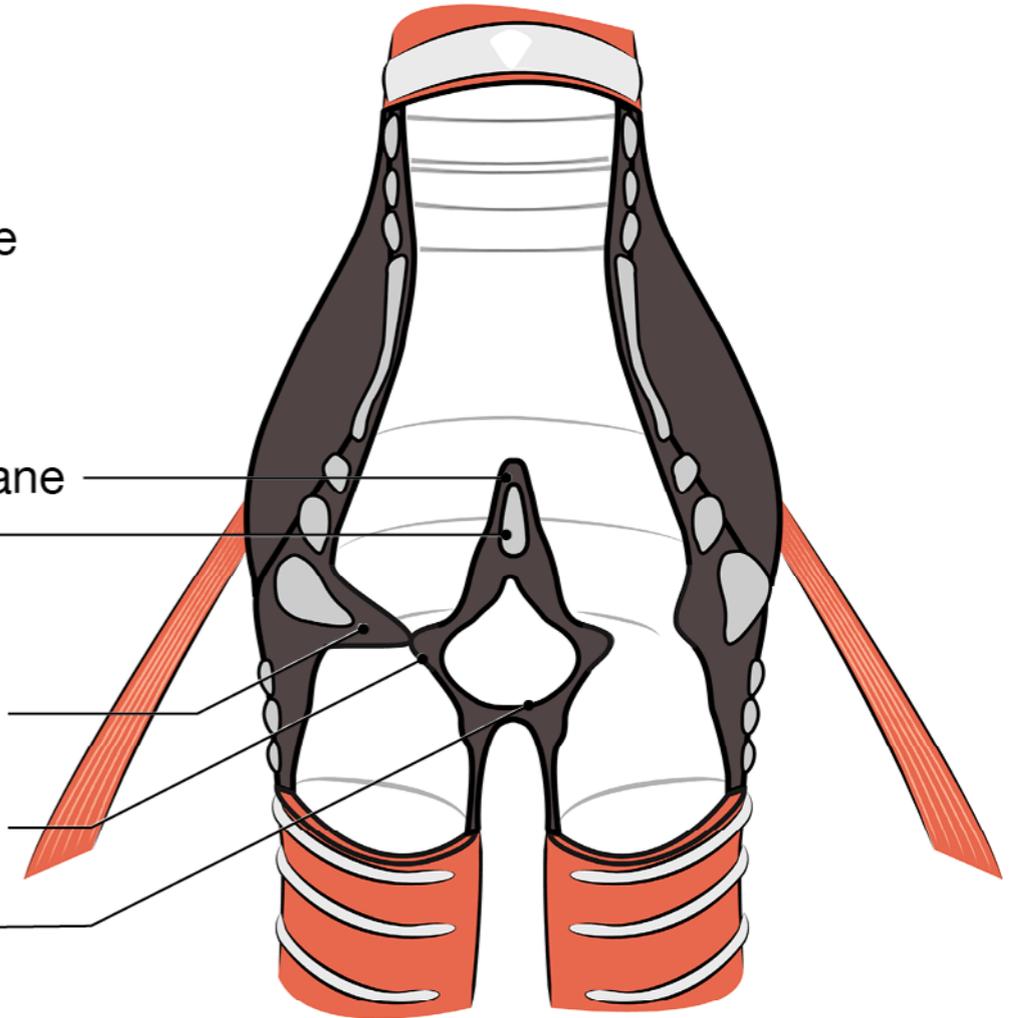






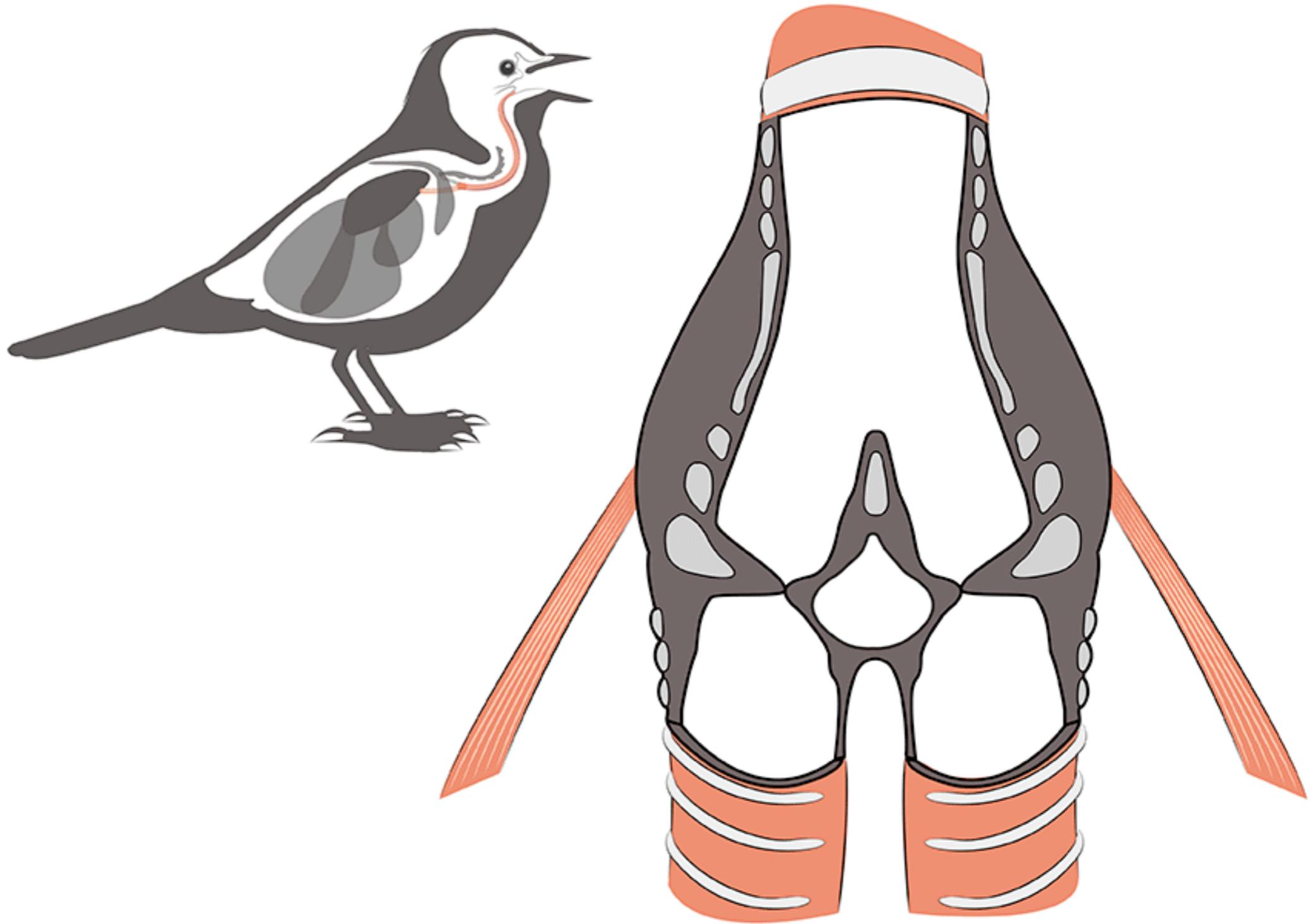
External View

Tracheal Rings  
Syringeal Muscle

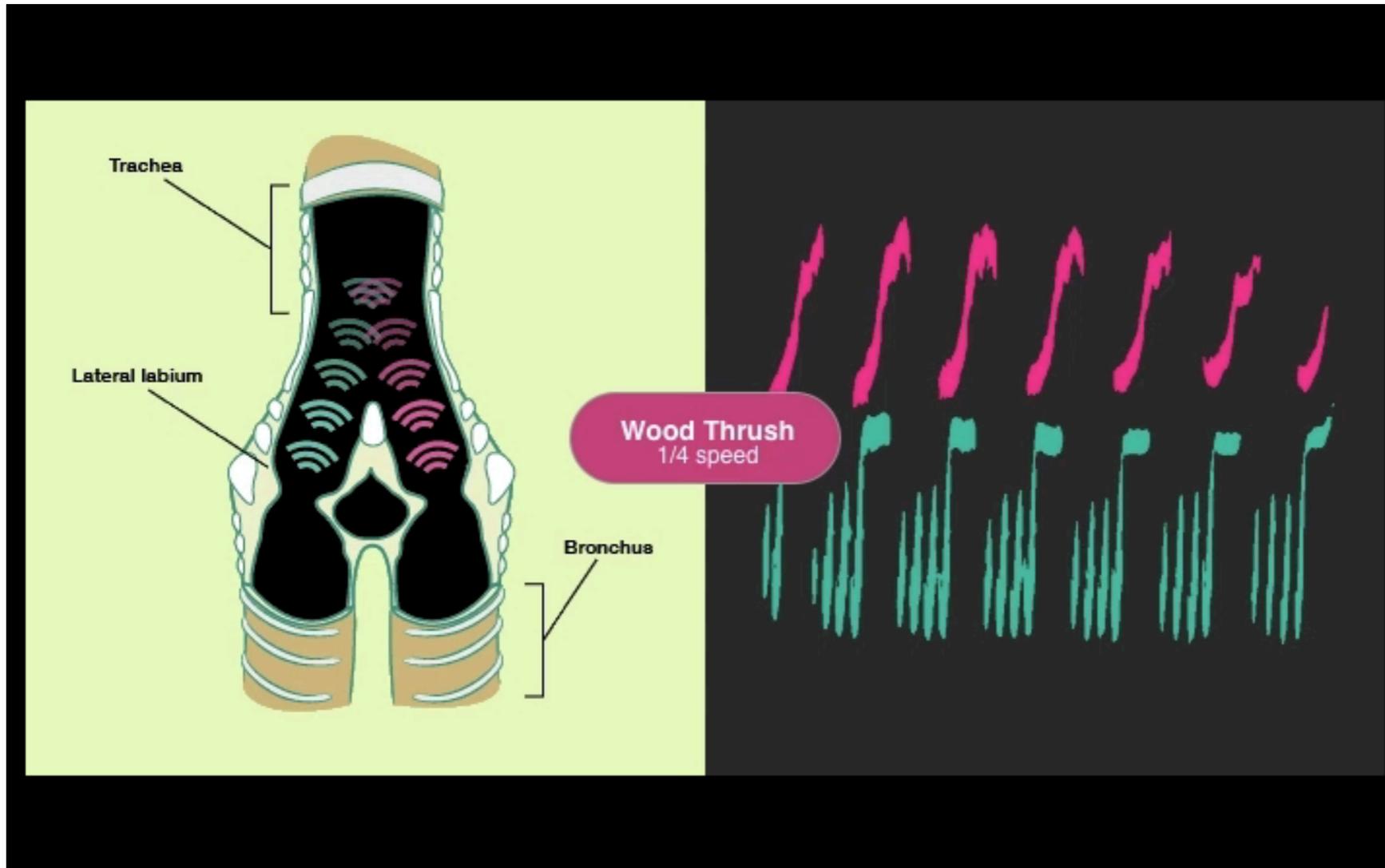


Semilunar Membrane  
Pessulus  
Lateral Labium  
Medial Labium  
Tympaniform Membrane

Internal Section

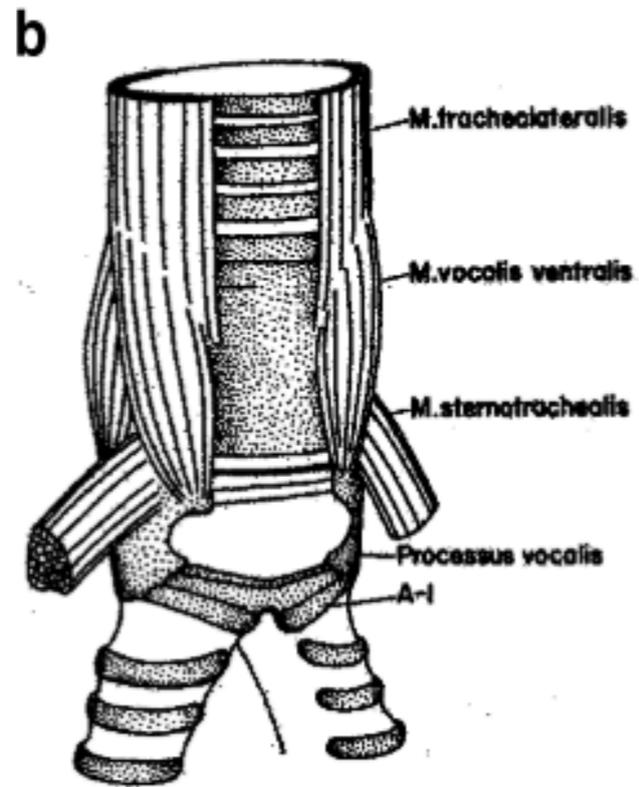


*Advance to play*



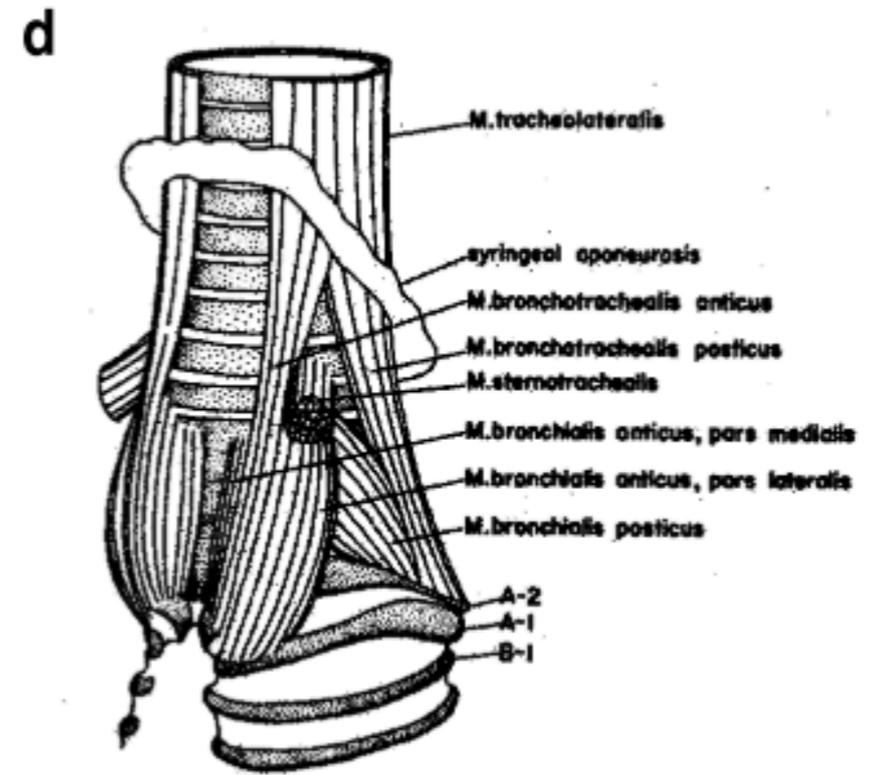
Advance to play

# Suboscine



**Campylorhamphus**

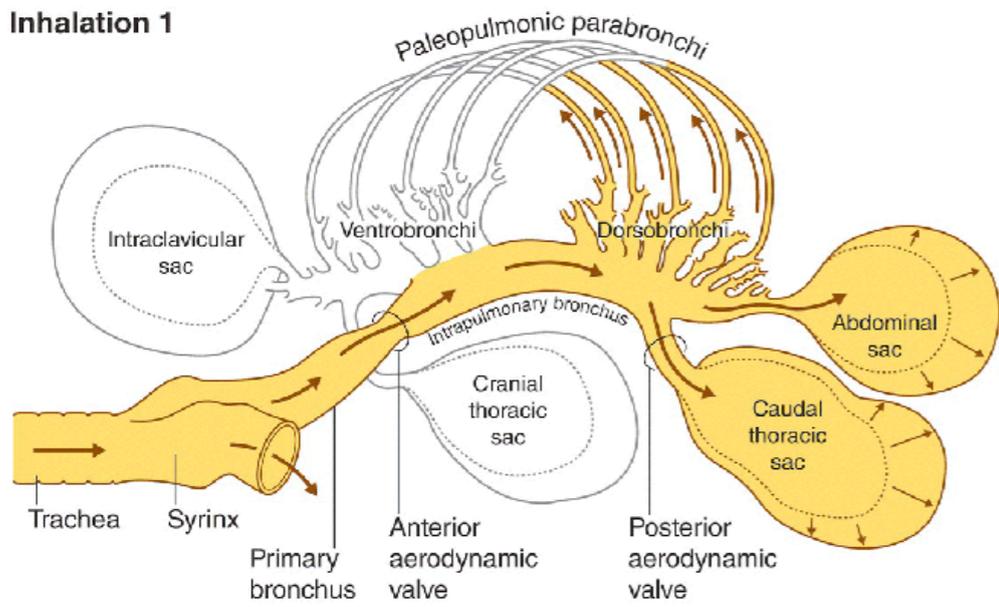
# Oscine



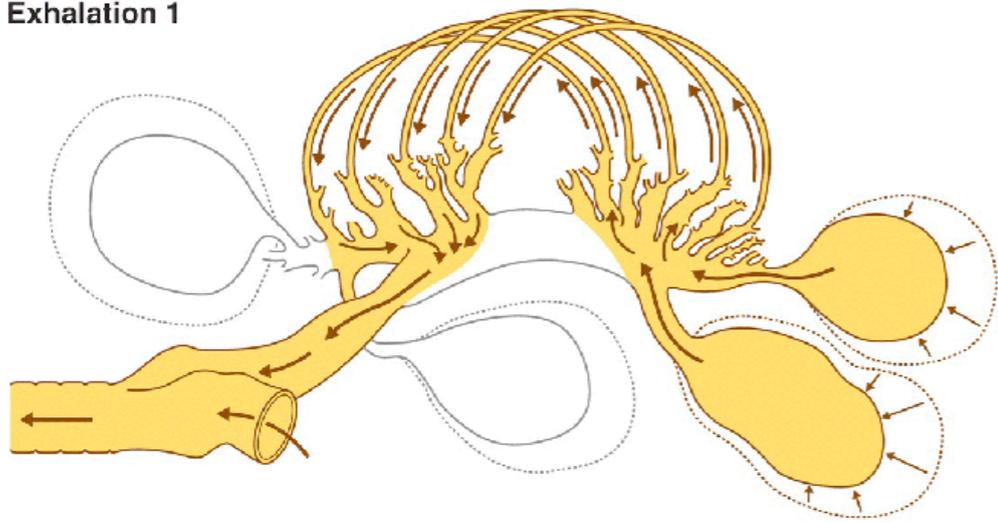
**Corvus**

# Adaptações para o voo: maior atividade muscular

**A Inhalation 1**

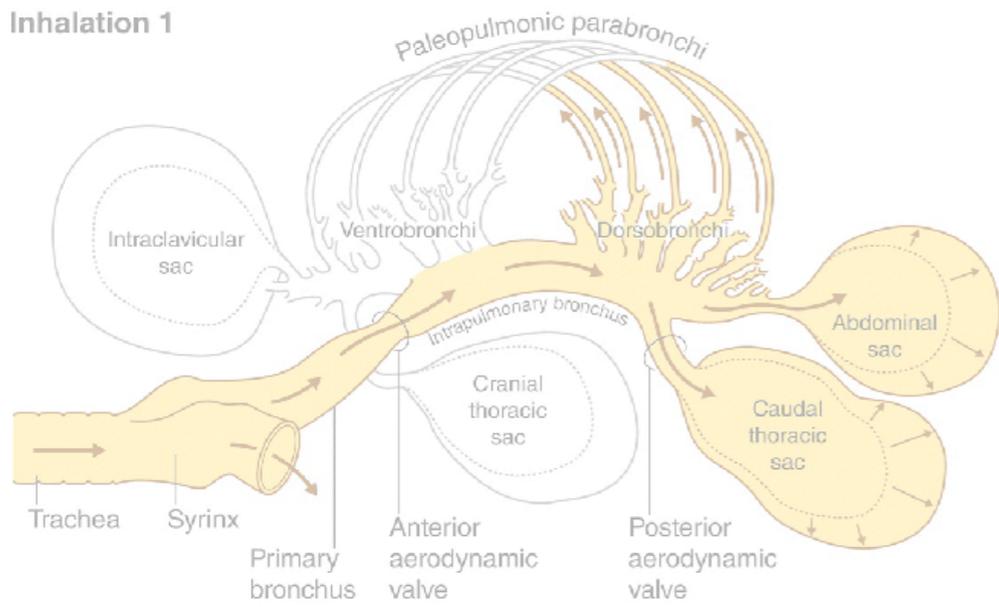


**B Exhalation 1**

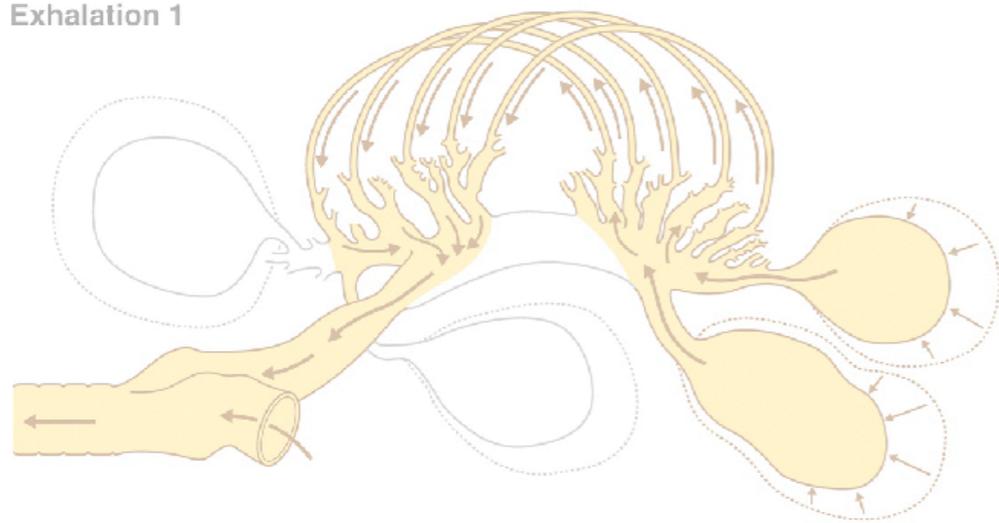


# Adaptações para o voo: maior atividade muscular

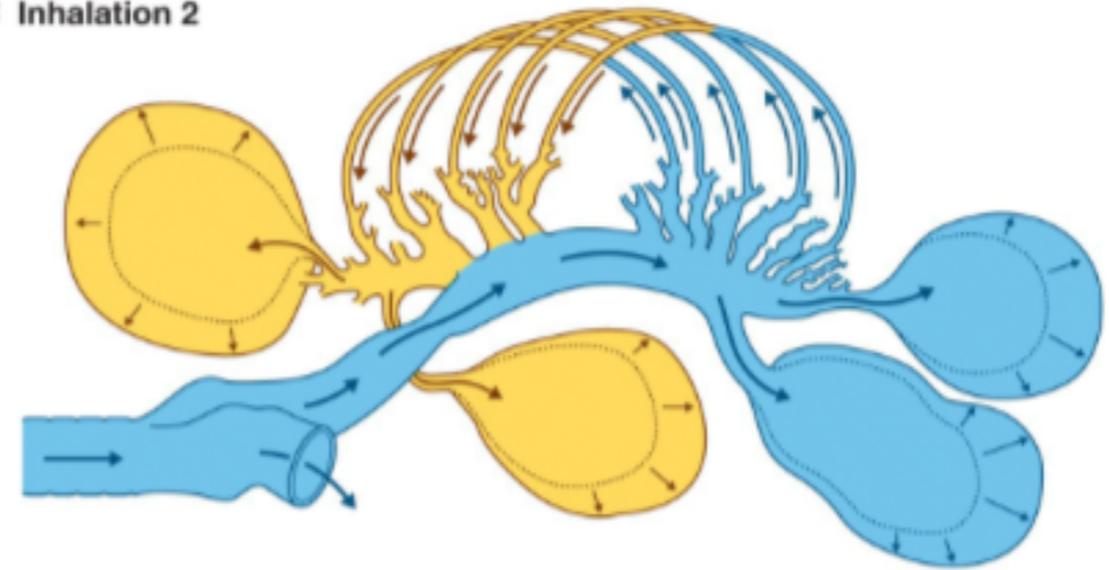
**A Inhalation 1**



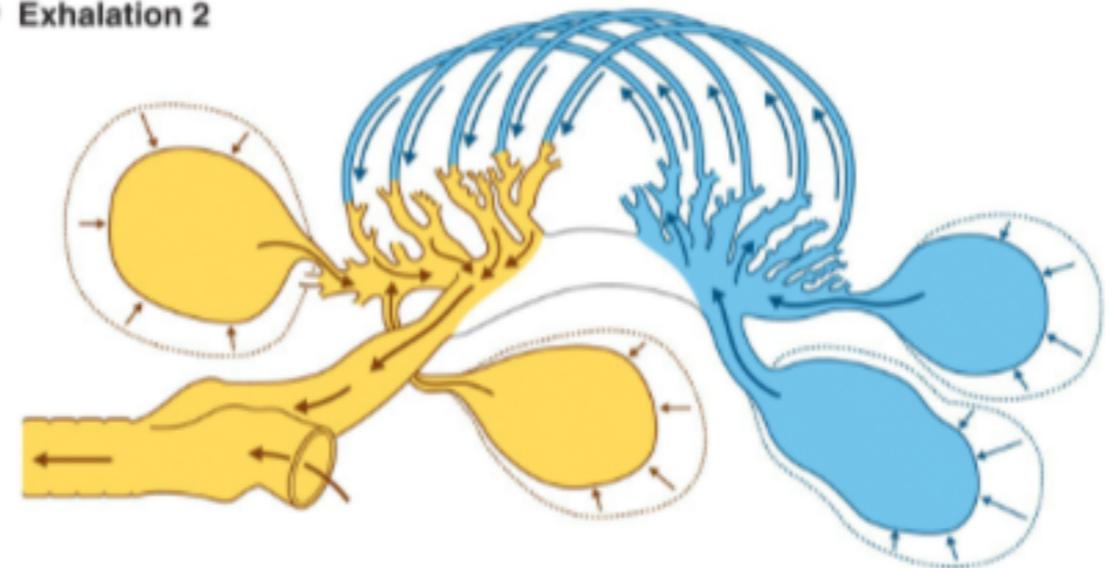
**B Exhalation 1**



**C Inhalation 2**



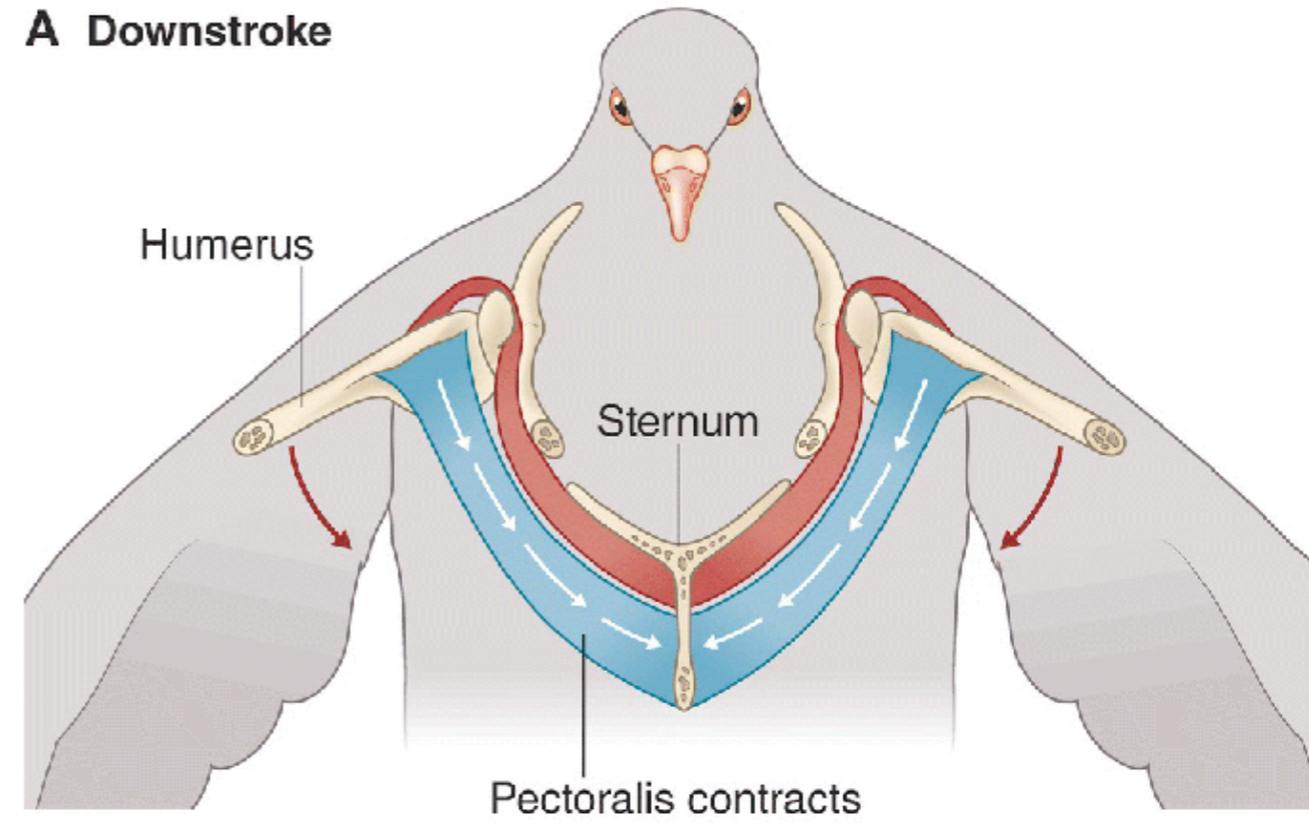
**D Exhalation 2**



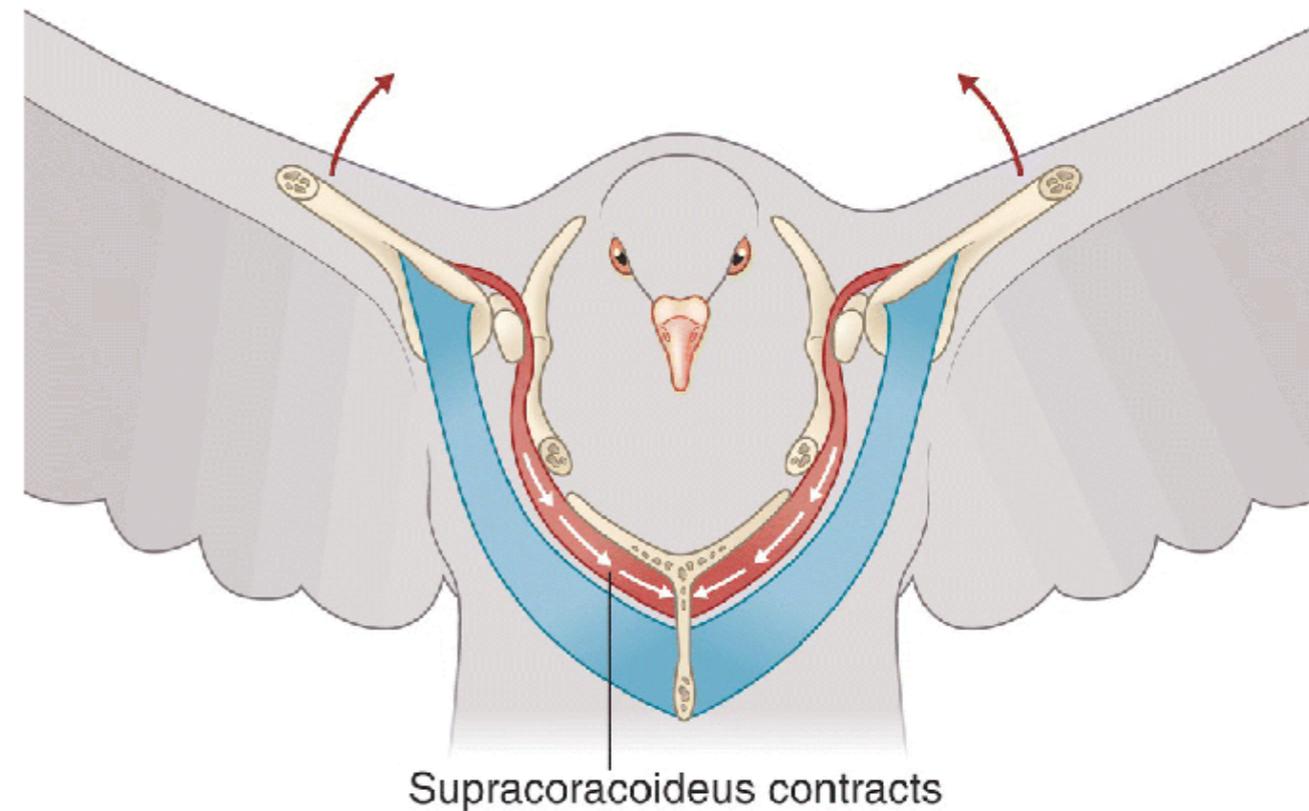
# Adaptações para o voo: maior atividade muscular



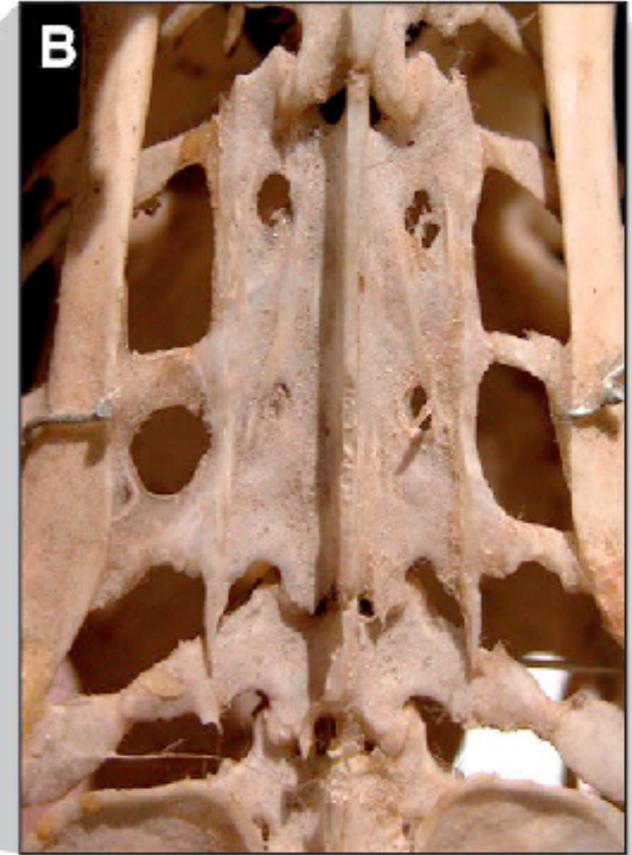
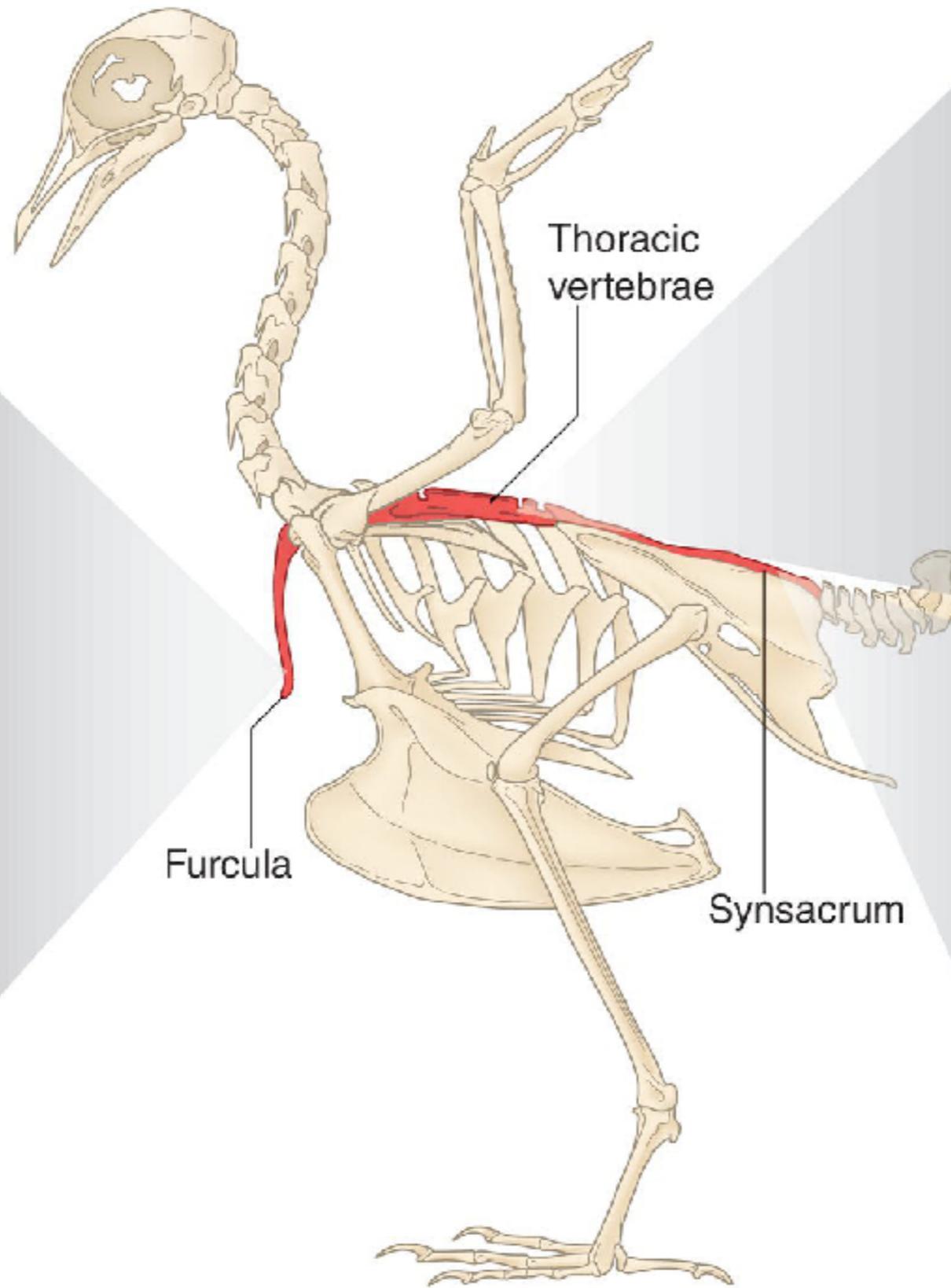
**A Downstroke**



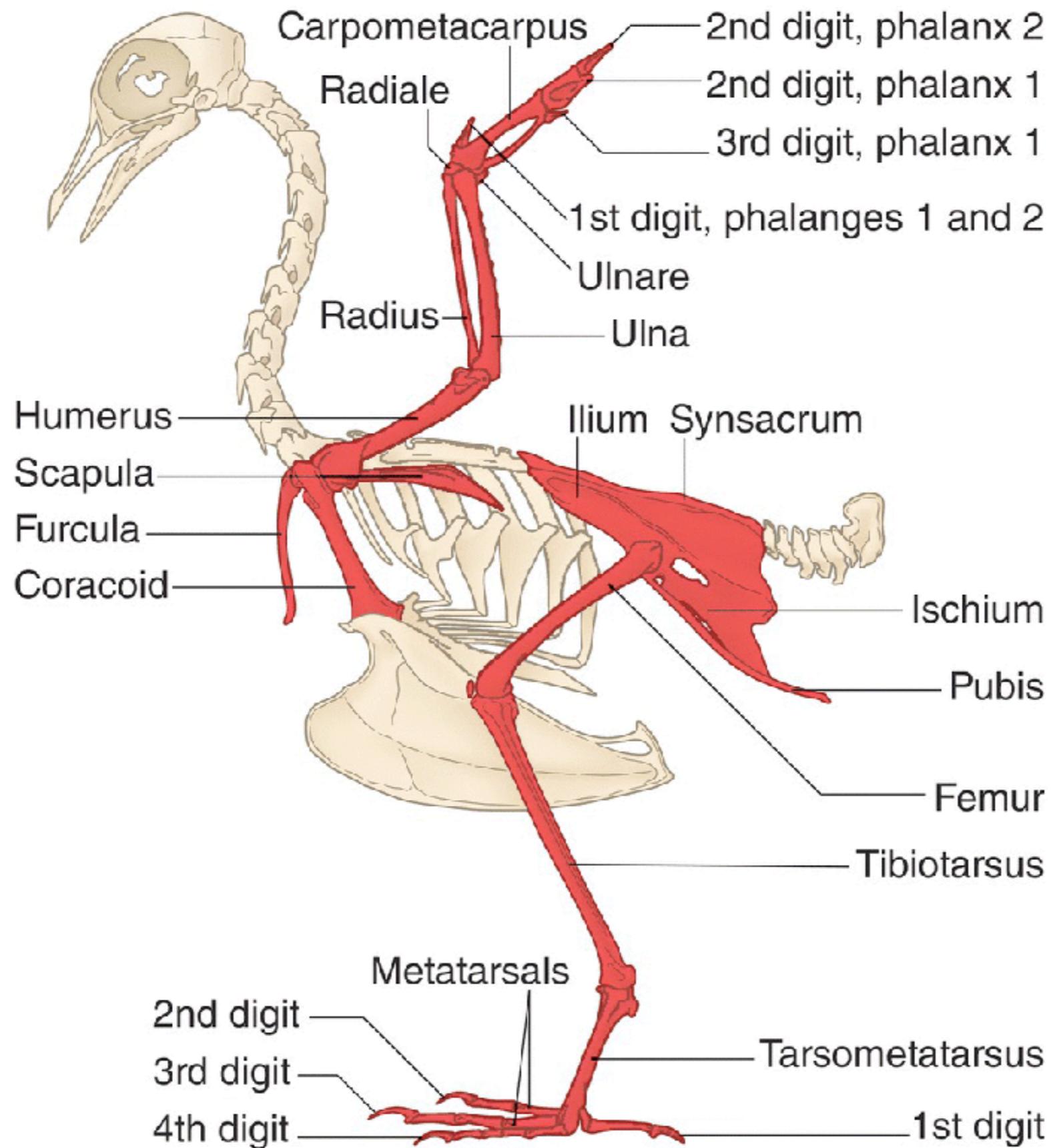
**B Upstroke**



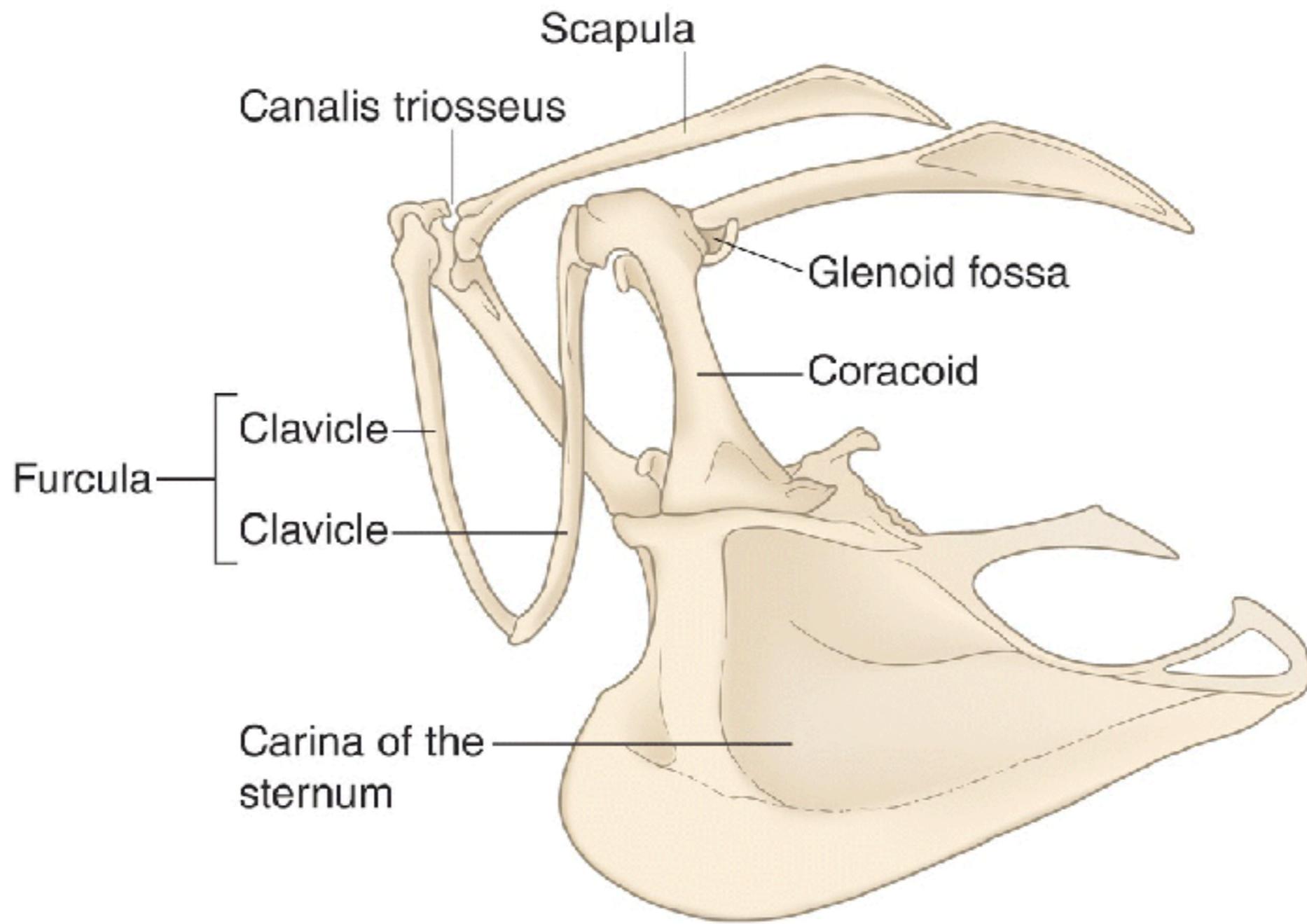
# Esqueleto



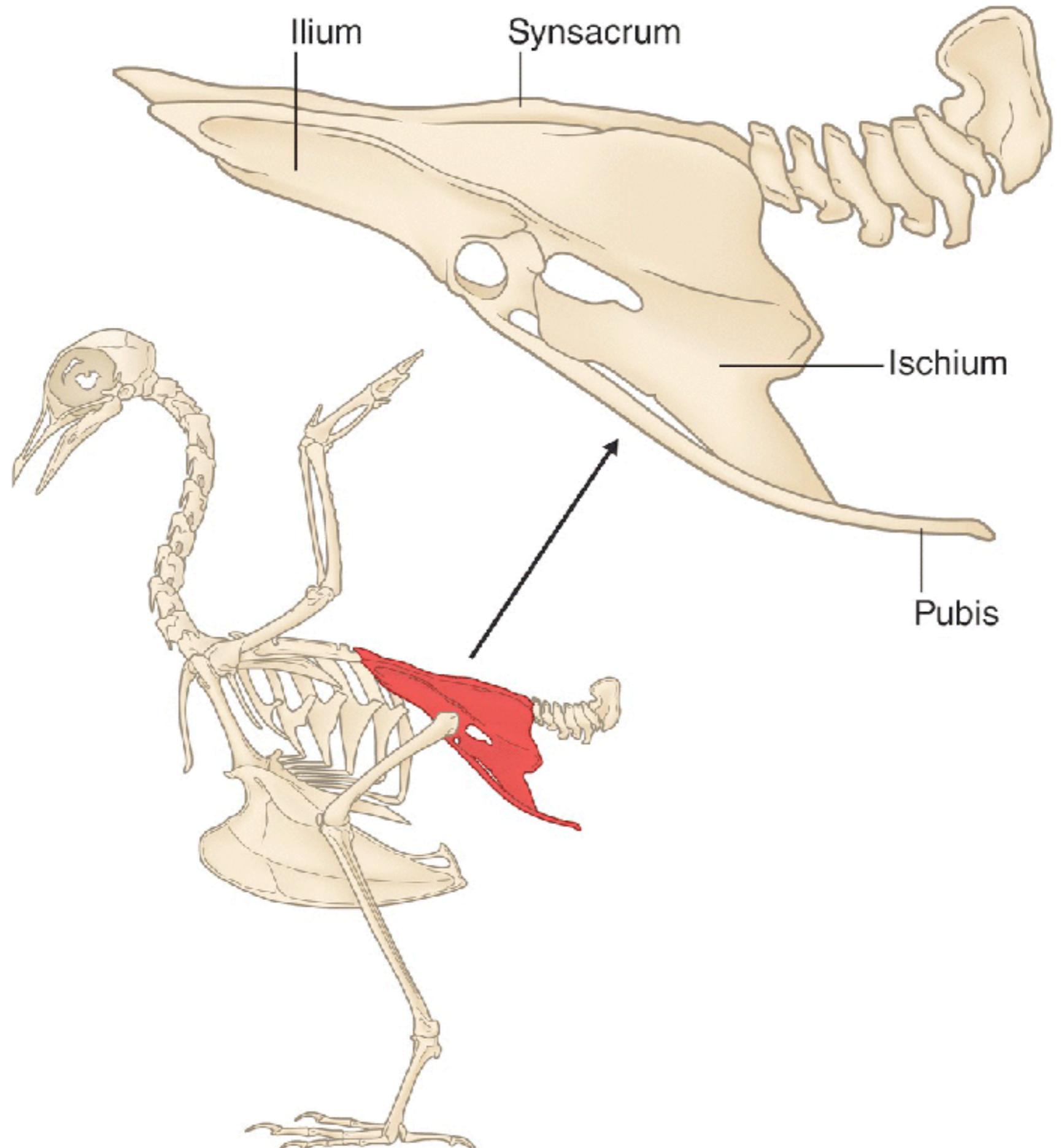
# Esqueleto: Tórax e abdome



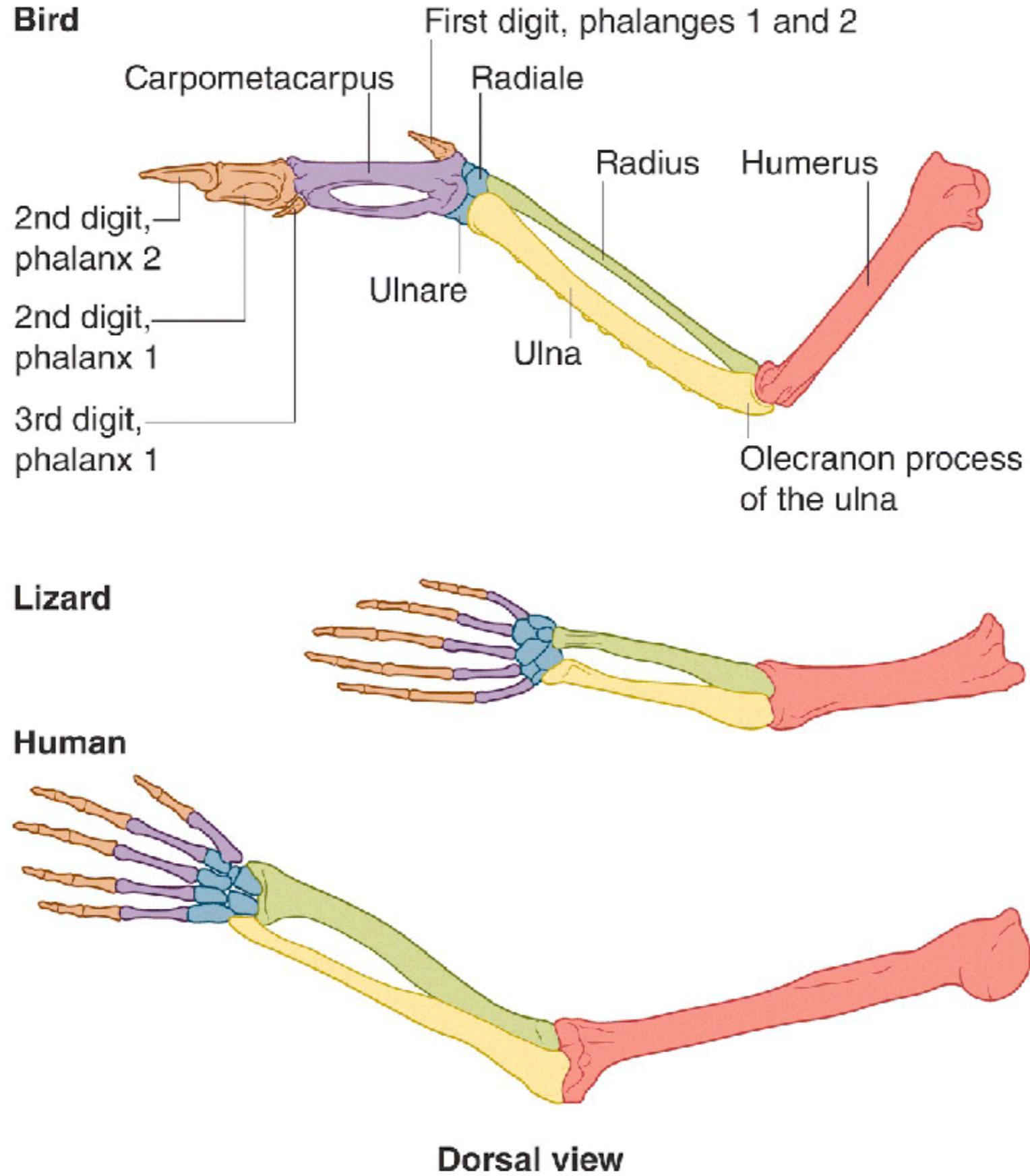
# Esqueleto: Tórax e abdome



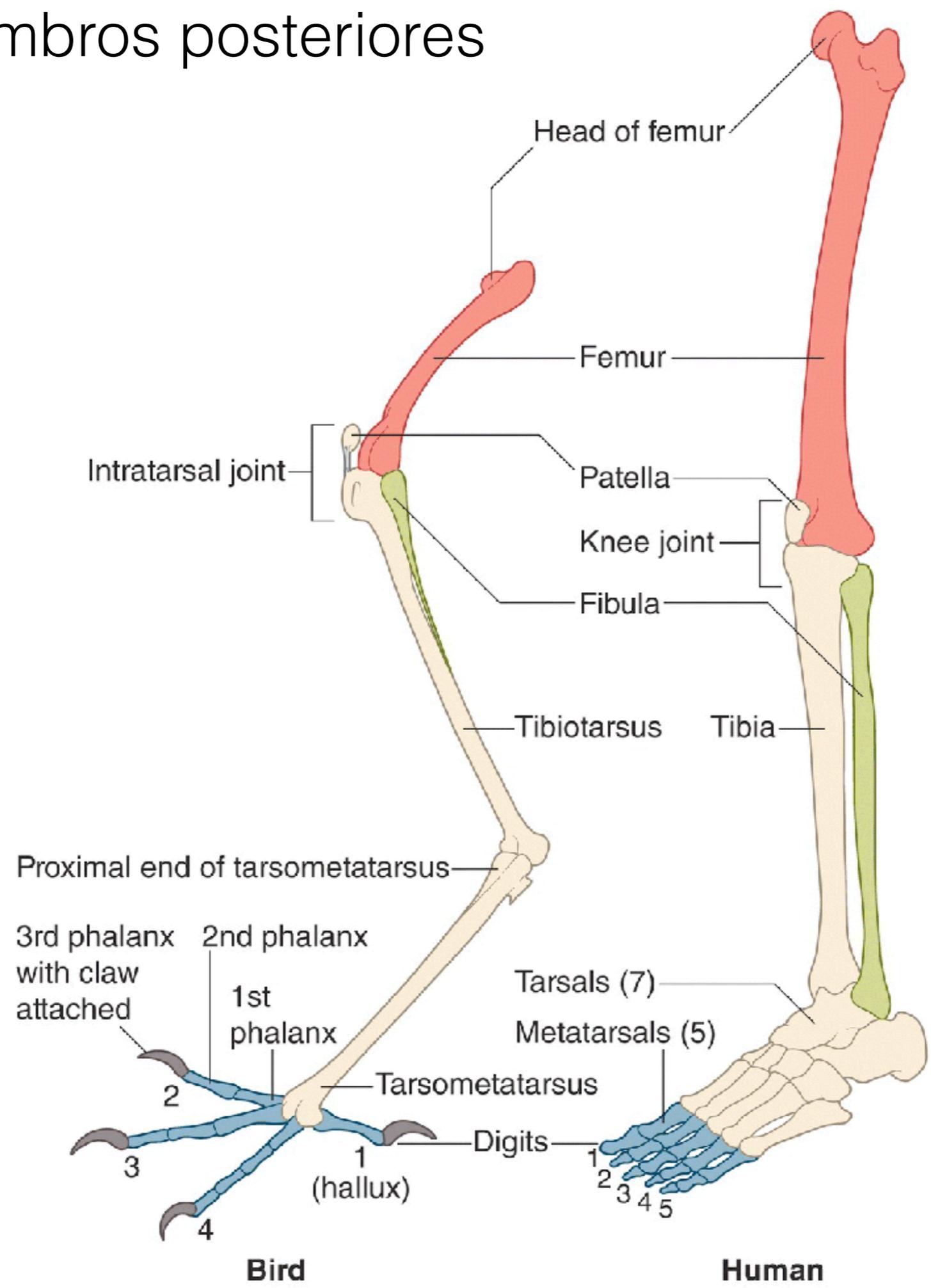
# Esqueleto: Tórax e abdome



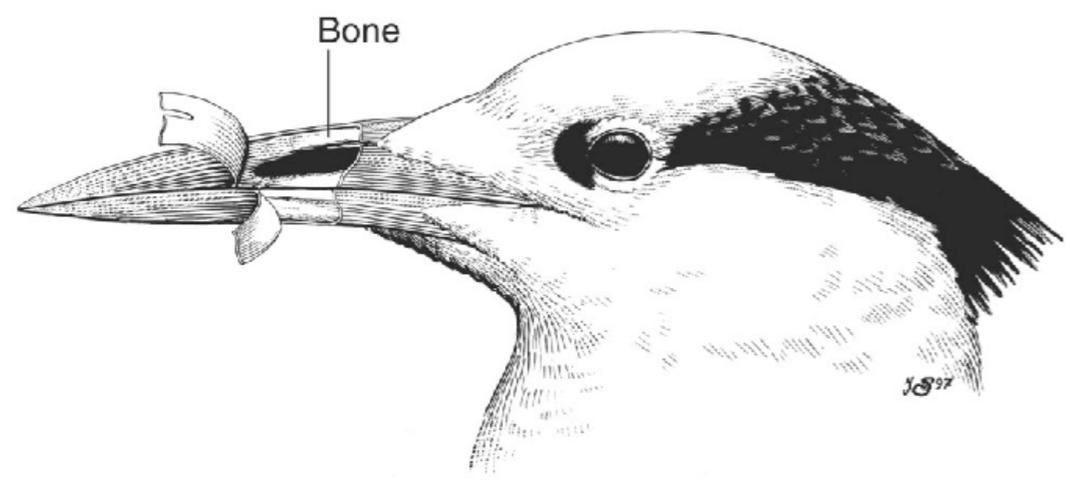
# Esqueleto: Asas



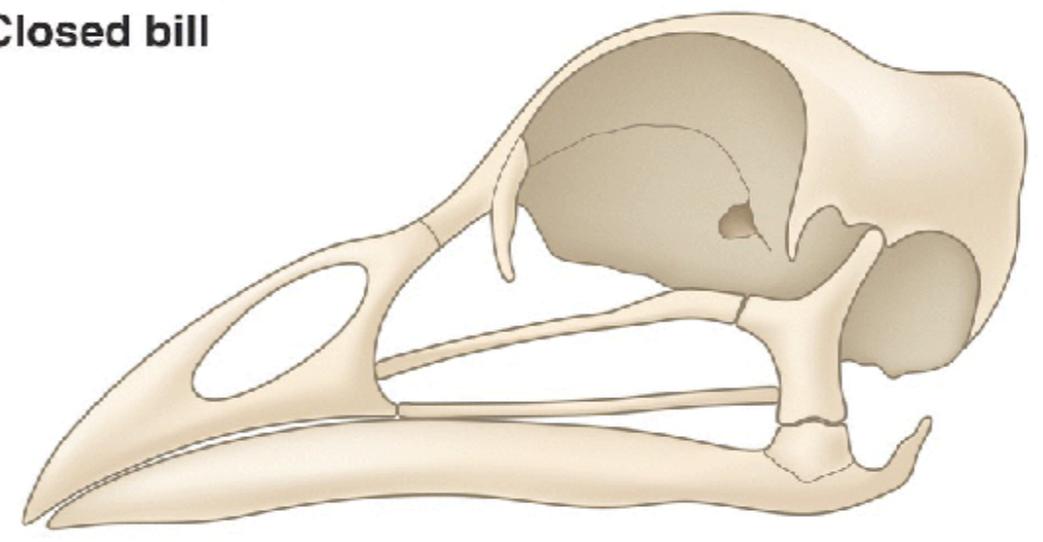
# Esqueleto: Miembros posteriores



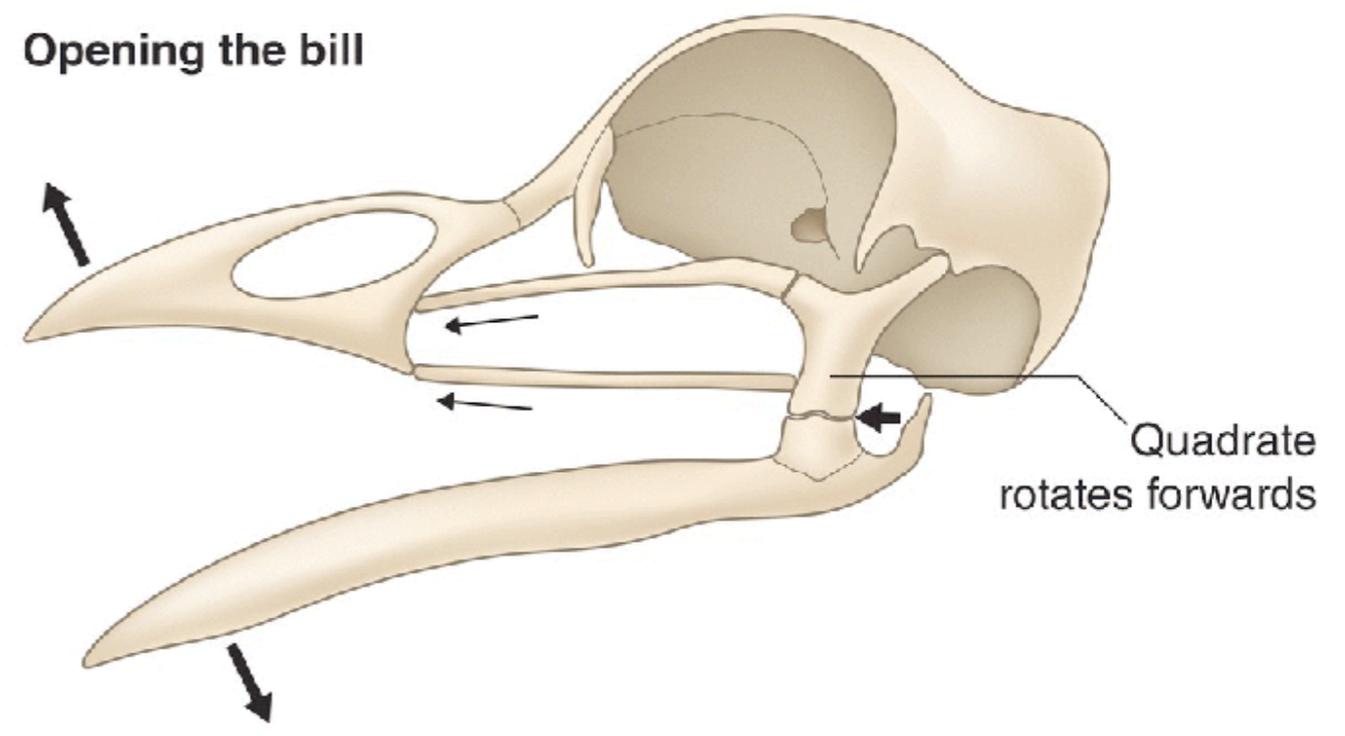
# Esqueleto: Crânio



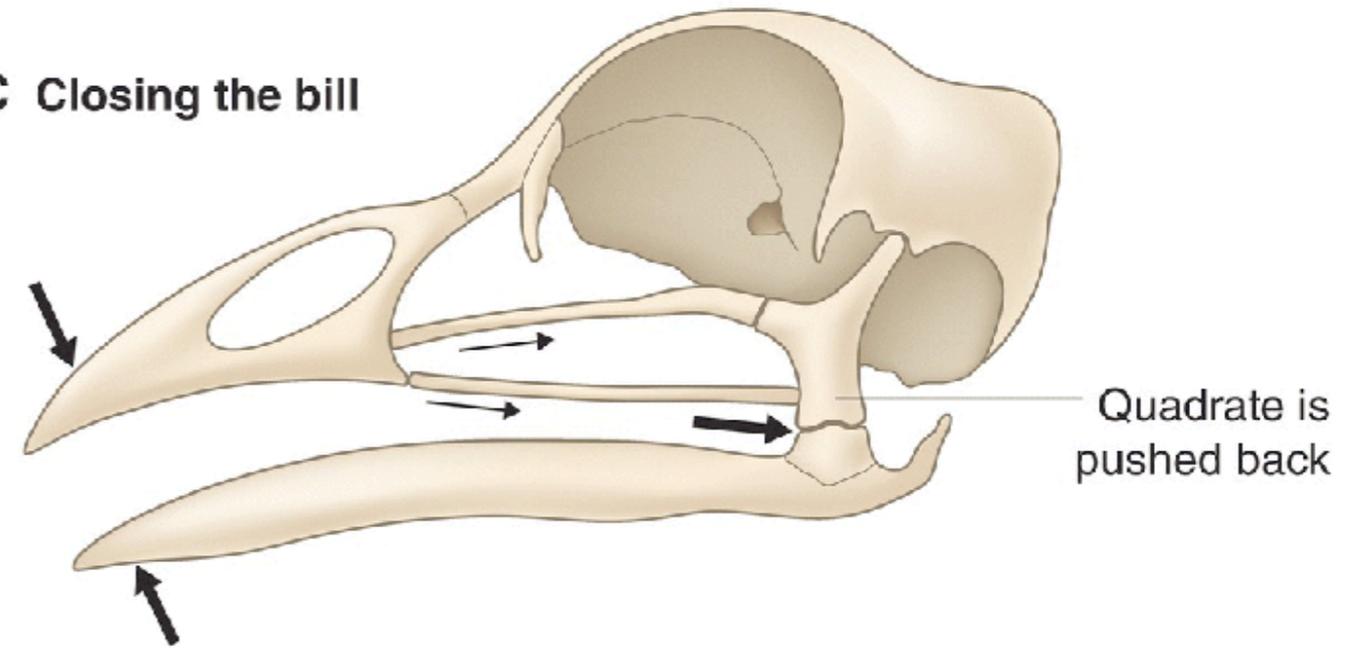
**A Closed bill**



**B Opening the bill**



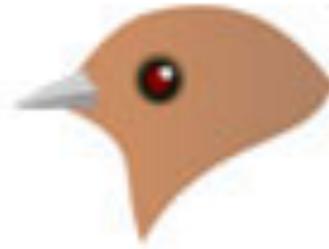
**C Closing the bill**



# Tipos de bicos



Generalist



Insect catching



Surface skimming



Scything



Grain eating



Coniferous-seed eating



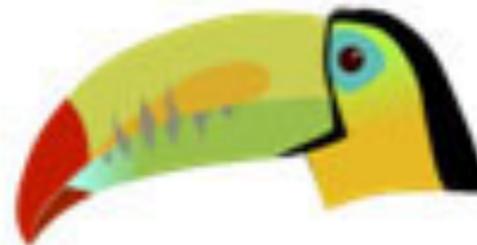
Probing



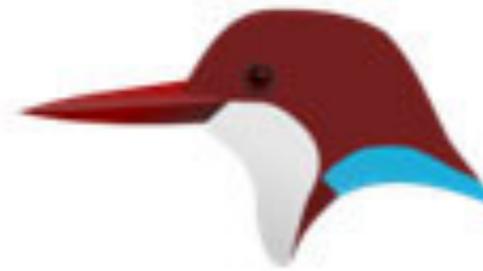
Filter feeding



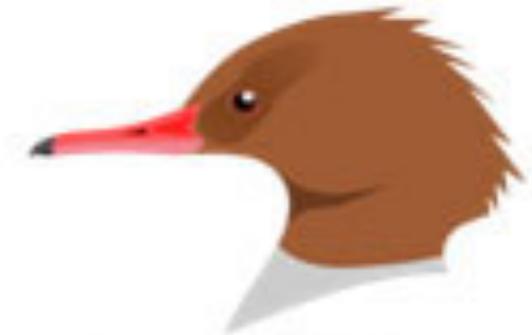
Nectar feeding



Fruit eating



Aerial fishing



Pursuit fishing



Chiseling



Dip netting



Scavenging



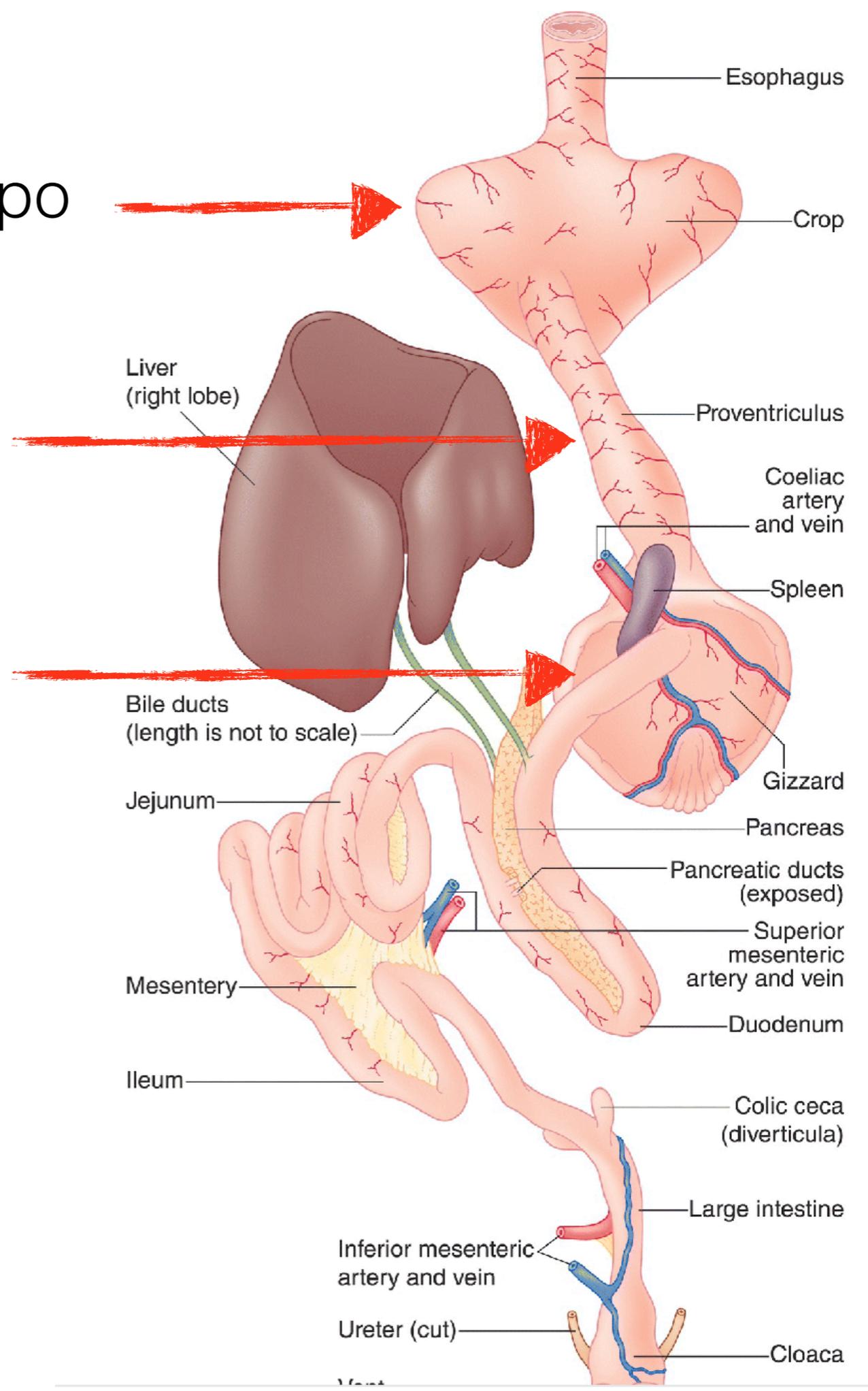
Raptorial

# Sistema digestivo

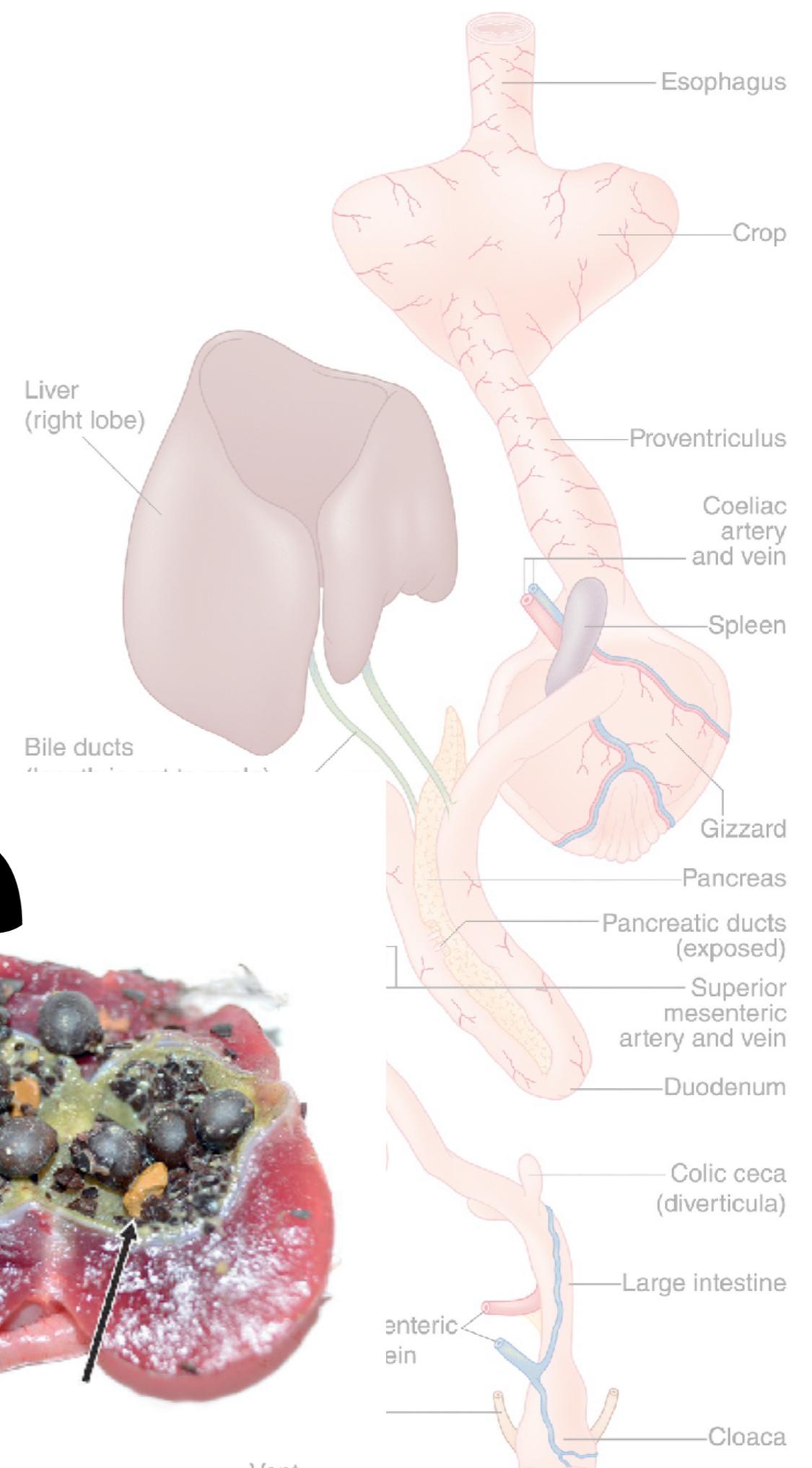
Papo

Proventrículo

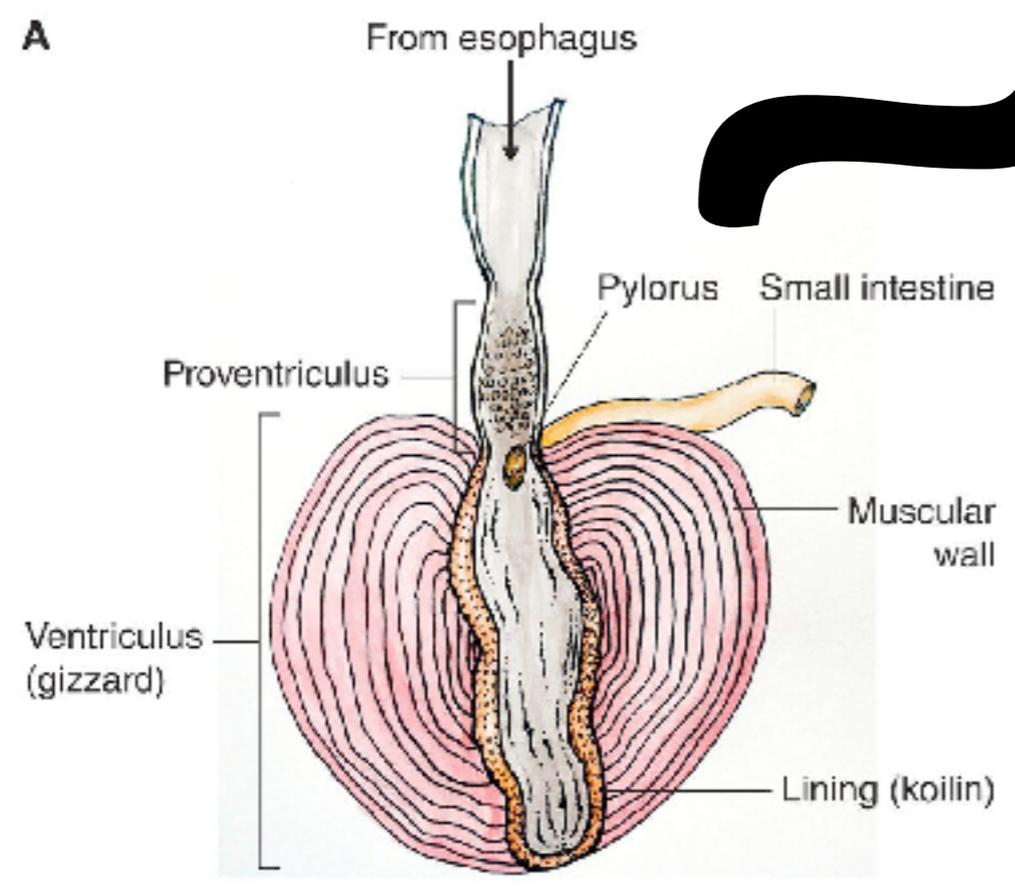
Moela



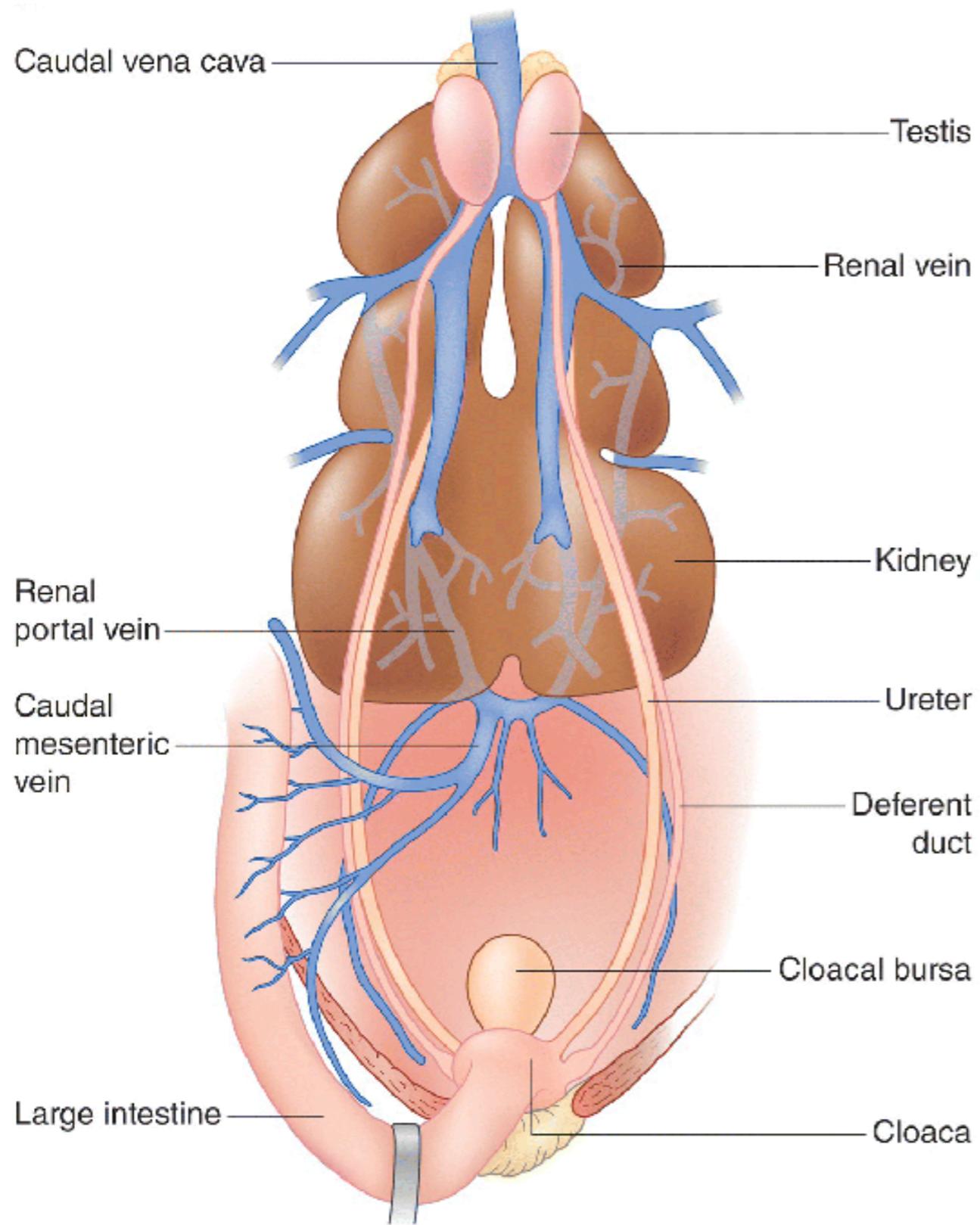
# Sistema digestivo



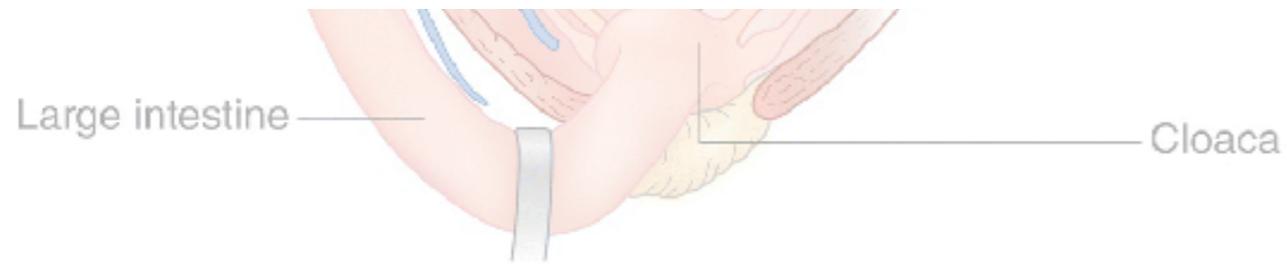
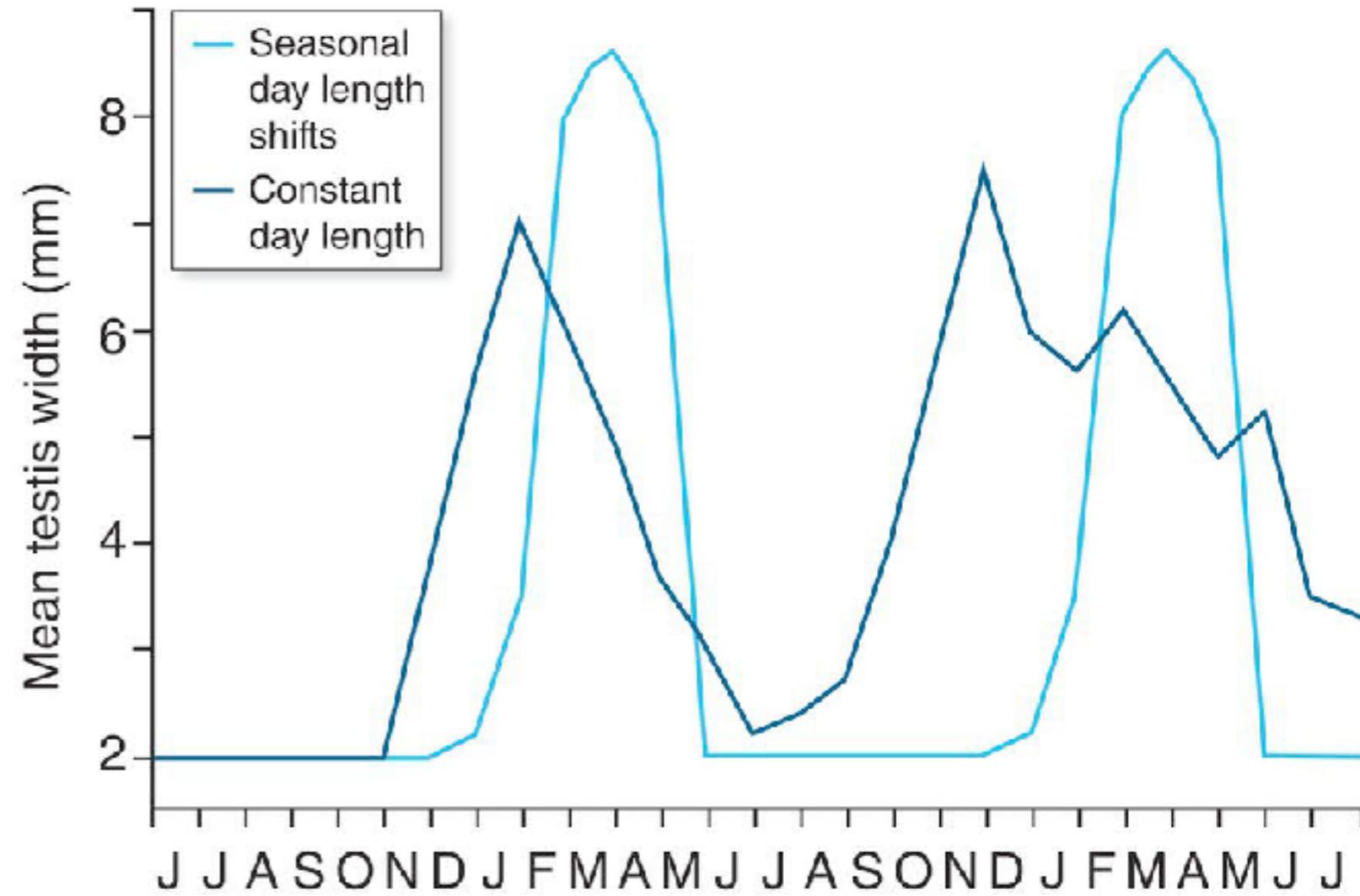
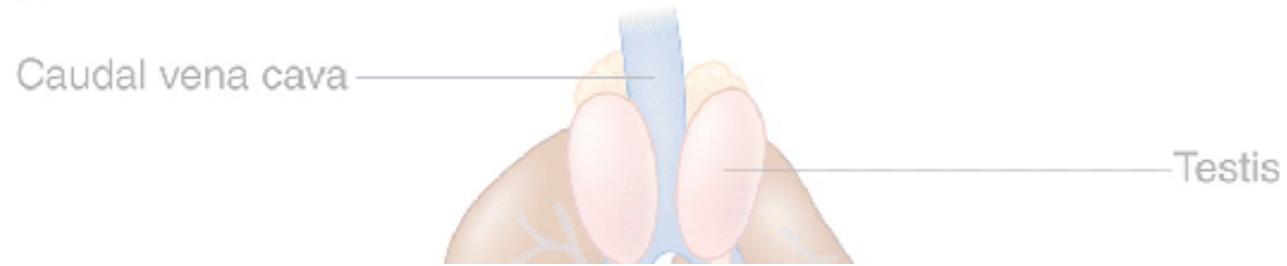
## Moela



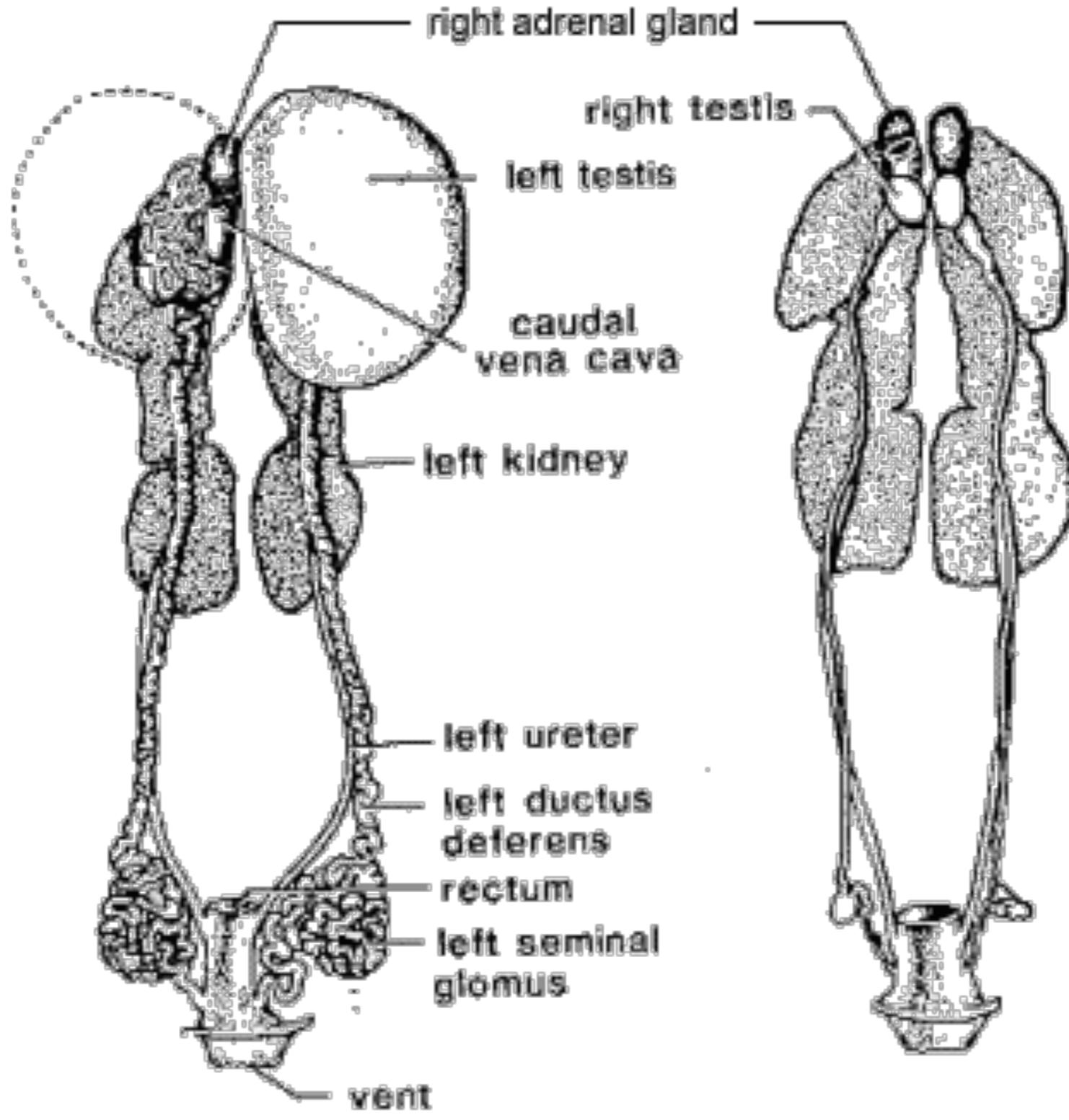
# Sistema reprodutor: machos



# Sistema reproductor: machos

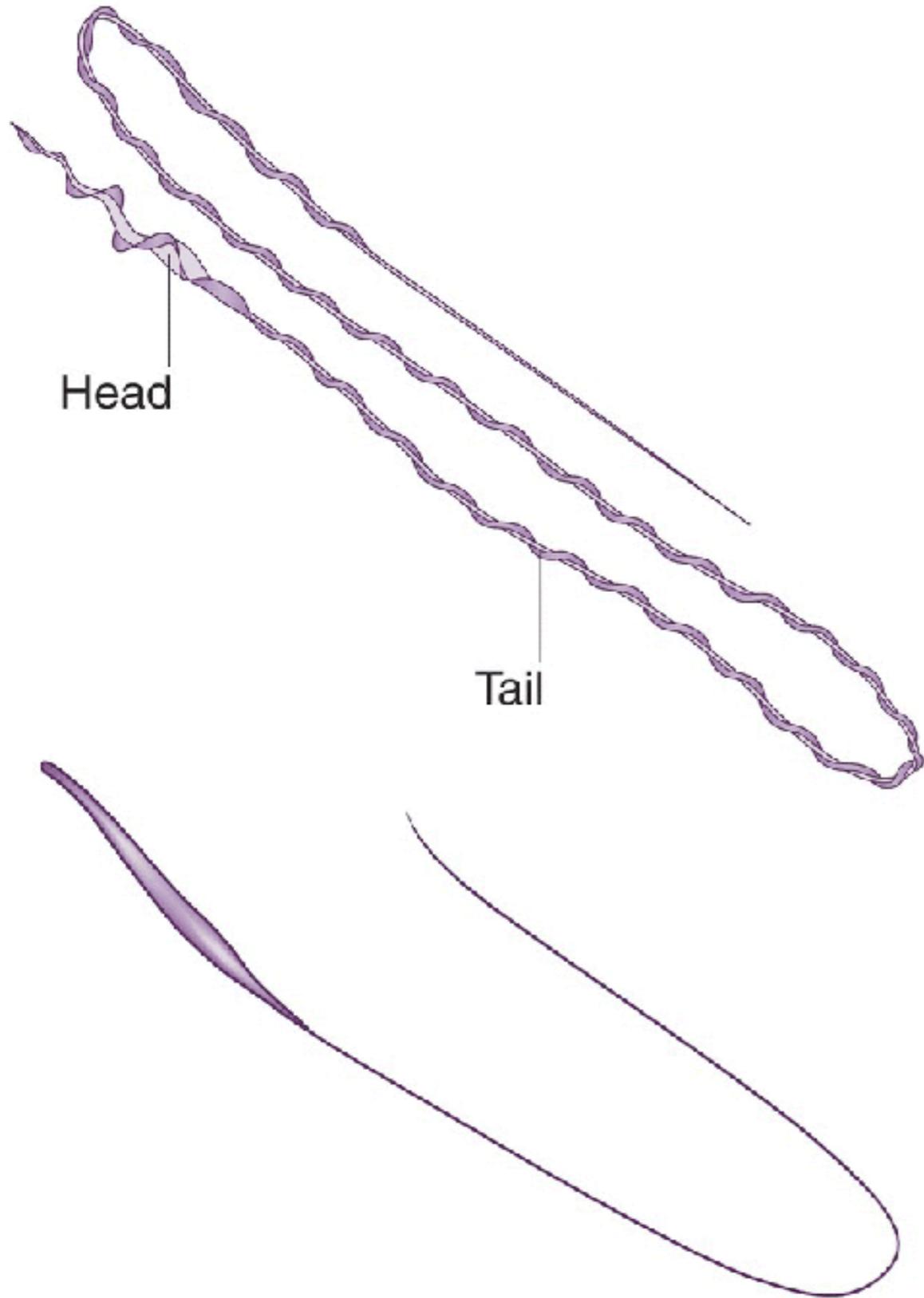


# Sistema reproductor: machos



# Sistema reproductor: machos

**A**



**B**



Sistema reprodutor: machos



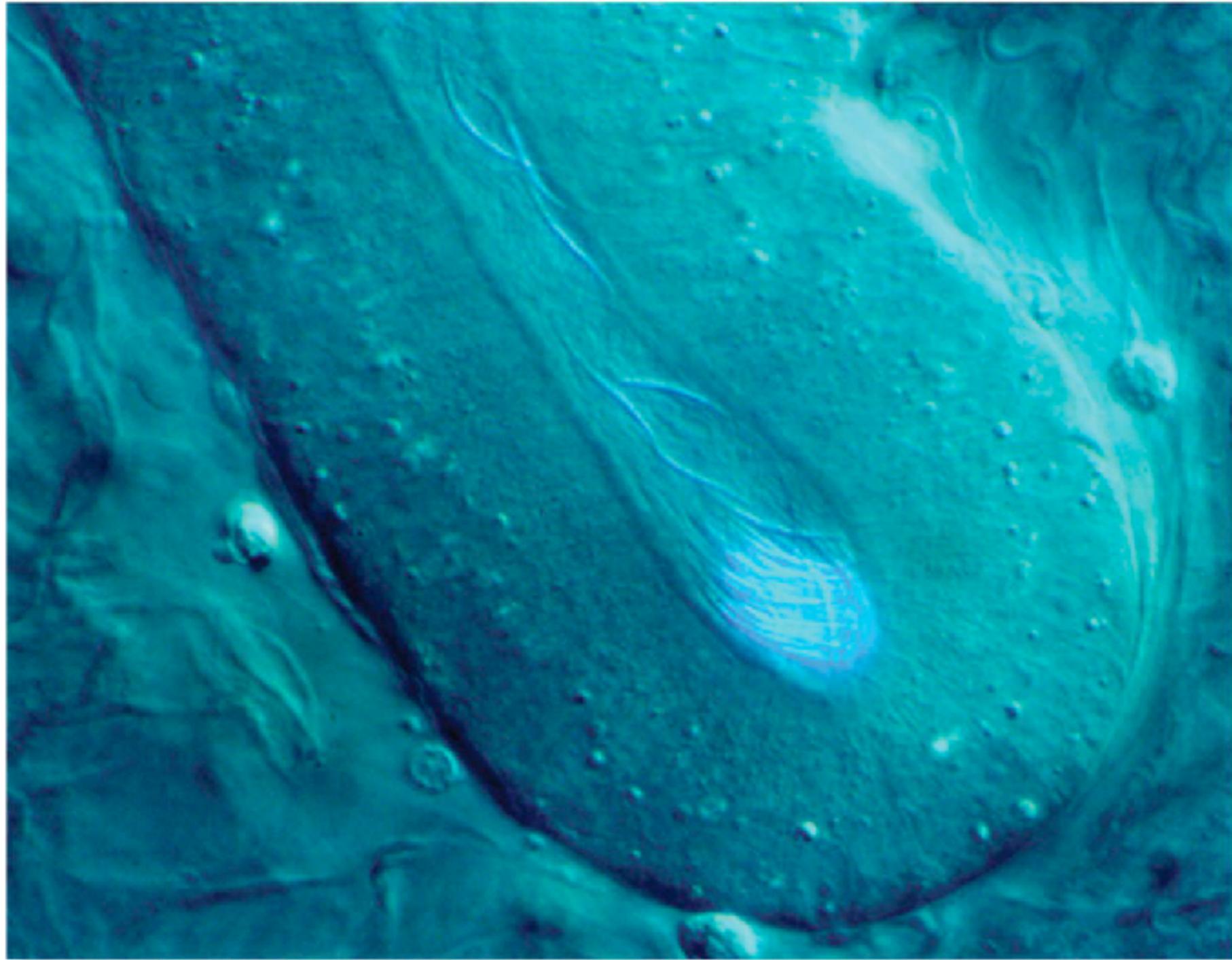
# Sistema reprodutor: machos



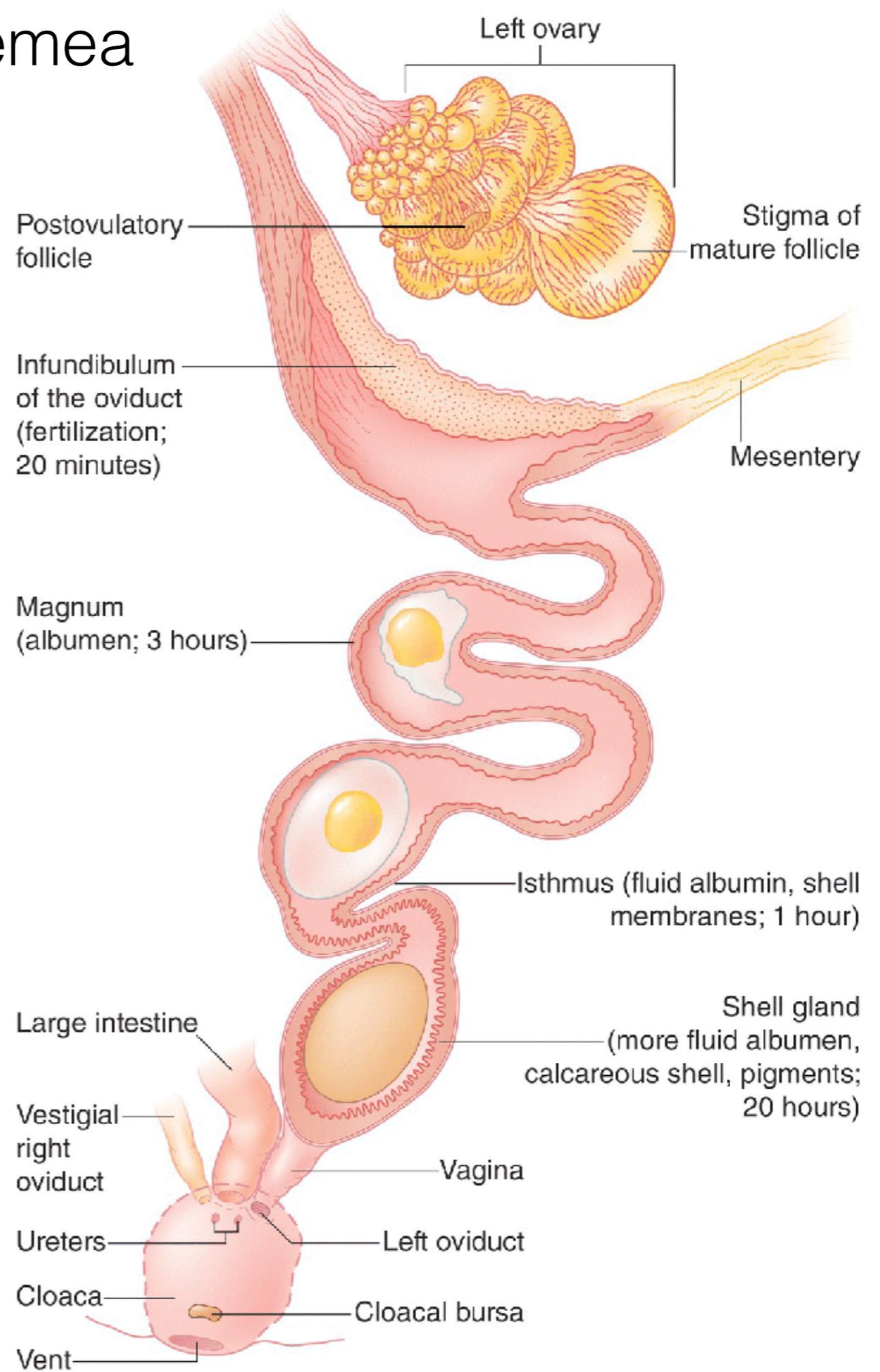
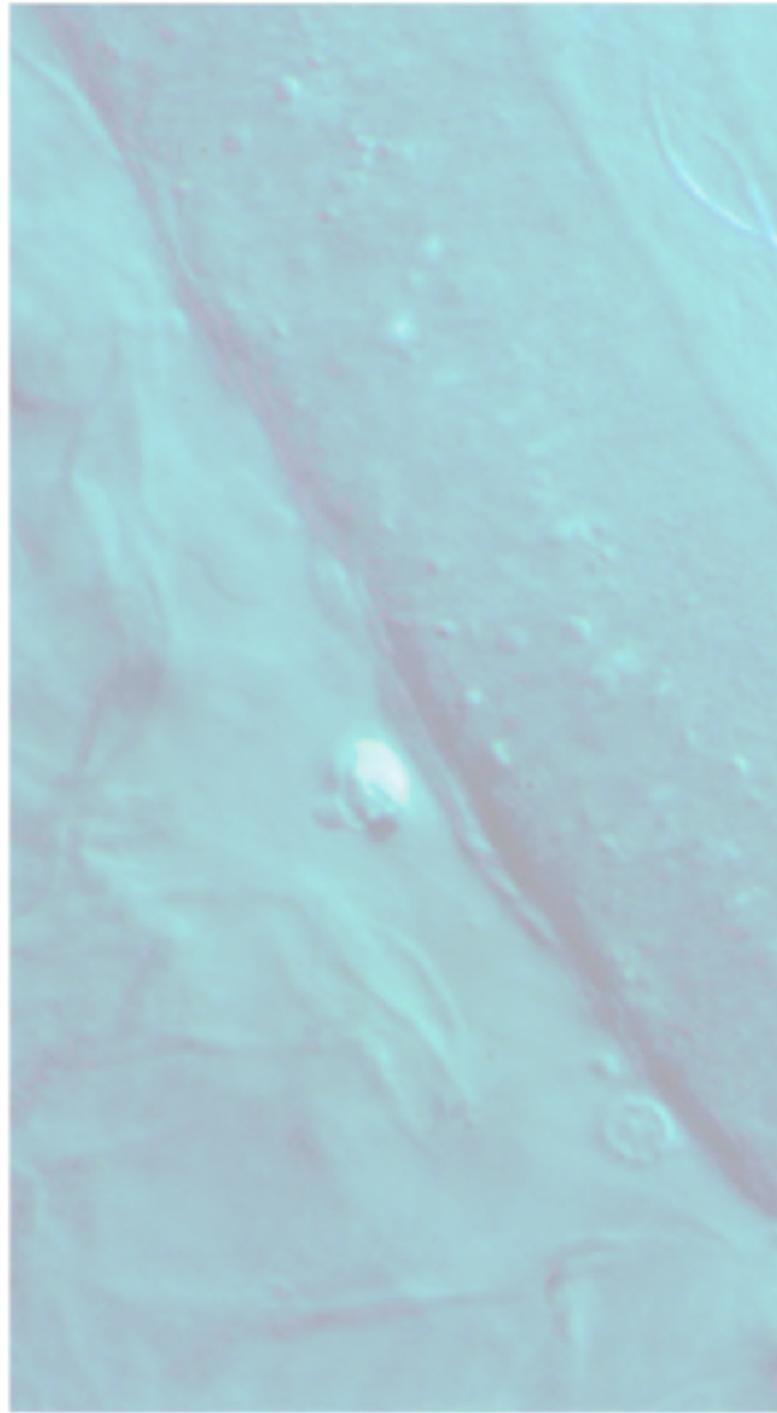
# Sistema reprodutor: cópula



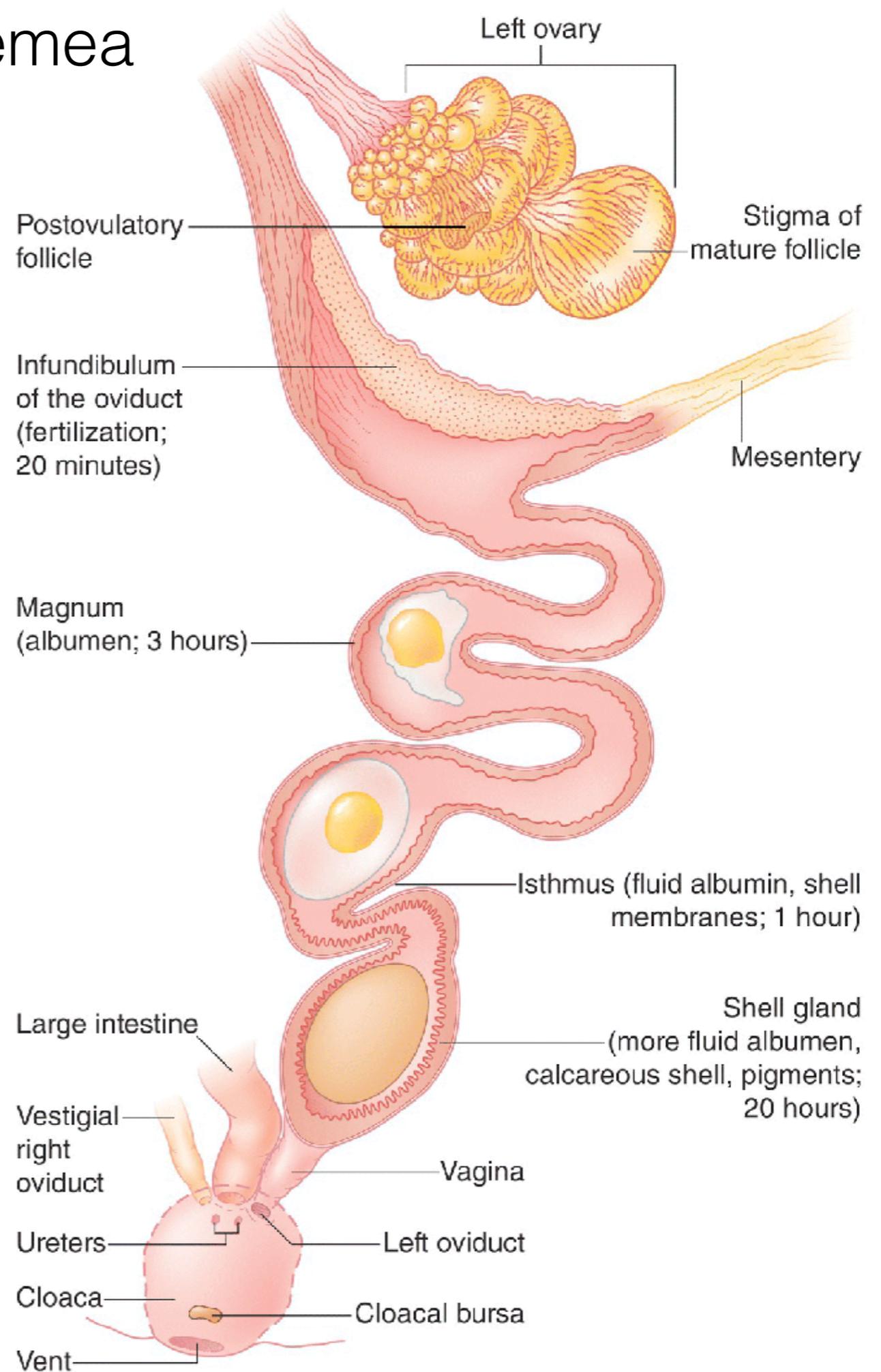
# Sistema reprodutor: cópula



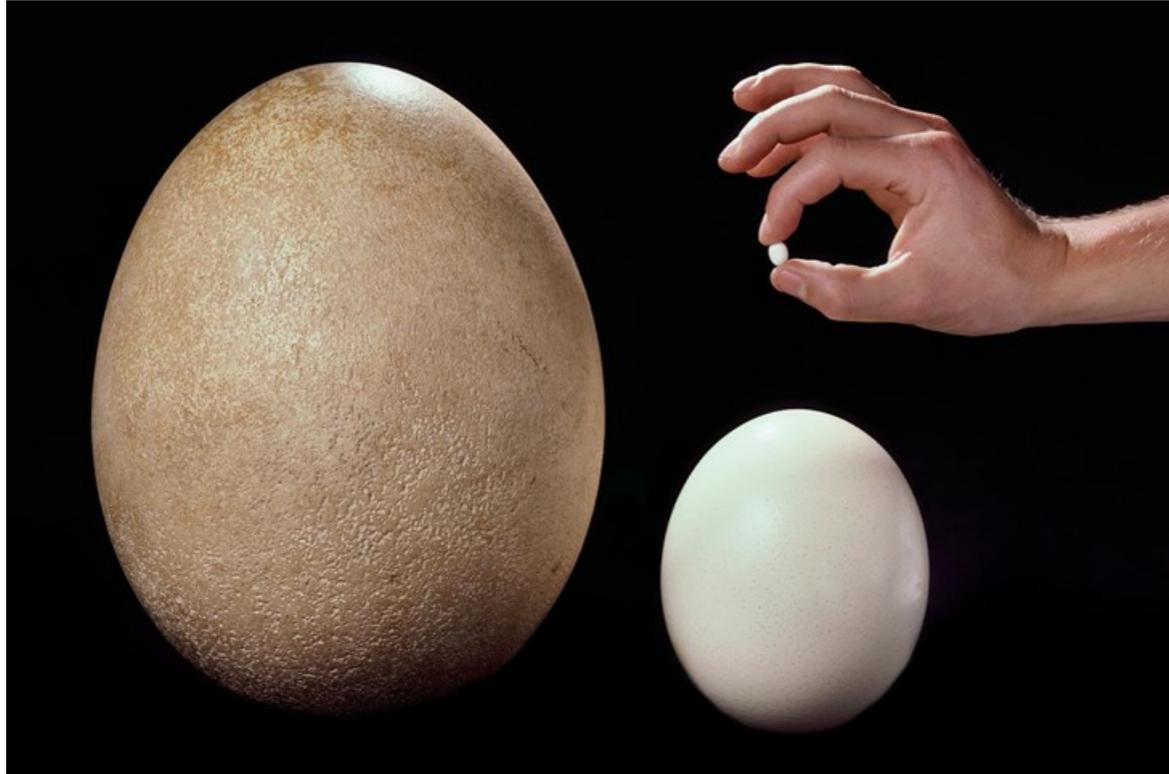
# Sistema reprodutor: cópula/fêmea



# Sistema reprodutor: cópula/fêmea



# Sistema reprodutor: ovos



# Sistema reprodutor: ovos



A dinosaur hunter who  
races the bulldozers p. 1224

Taking your best step  
forward pp. 1230 & 1280

Not enough neuroscience  
in addiction policies p. 1237

# Science

\$15  
23 JUNE 2017  
sciencemag.org

AAAS

## THE SHAPING OF EGGS

Form reflects the needs  
of flight pp. 1234 & 1249



# Sistema reprodutor: ovos



**Spherical**

Owl



**Elliptical**

Maleo



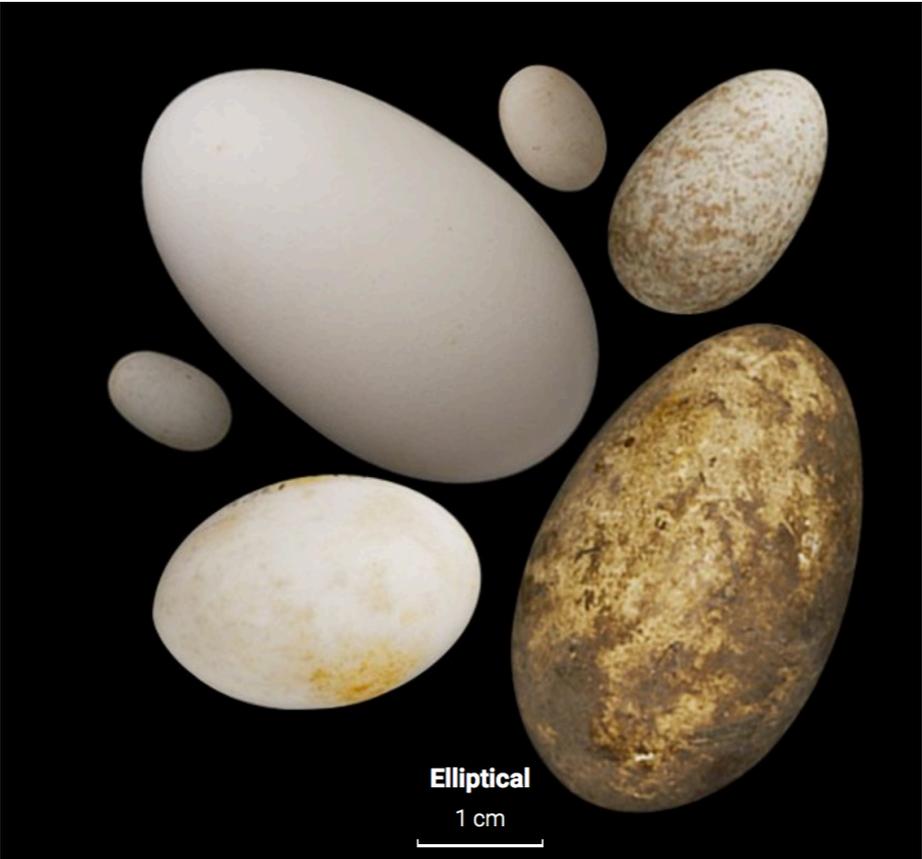
**Conical**

Murre



**Spherical**

1 cm



**Elliptical**

1 cm



**Conical**

1 cm

# Ausência de cuidado parental



# Cuidado parental



**Figure 1 | Variation in parental provisioning.** In every species of bird with parental care, chicks appear to have evolved signals designed to maximize their chance of being fed, such as vocalizations, begging postures and bright mouths. However, the way parents respond to information about their offspring differs markedly across species. Tree swallows *Tachycineta bicolor* feed the chick begging the most (a). Others sometimes neglect begging offspring, such as the blue-footed booby *Sula nebouxii* (b) and the hoopoe *Upupa epops* (c) which instead preferentially feed larger chicks. Gouldian finch *Erythrura gouldiae* parents (d) may preferentially feed offspring with elaborate structural ornaments around their mouths. (Photos courtesy of (a) M. Sodicoff. (b) This figure is not covered by the CC BY licence ©Damschen/ARCO/naturepl.com. All rights reserved, used with permission. (c) This figure is not covered by the CC BY licence © L.M.R. Gordón. All rights reserved, used with permission; and (d) This figure is not covered by the CC BY licence (c) G. Grall, National Aquarium, Baltimore. All rights reserved, used with permission.

Filhotes altriciais



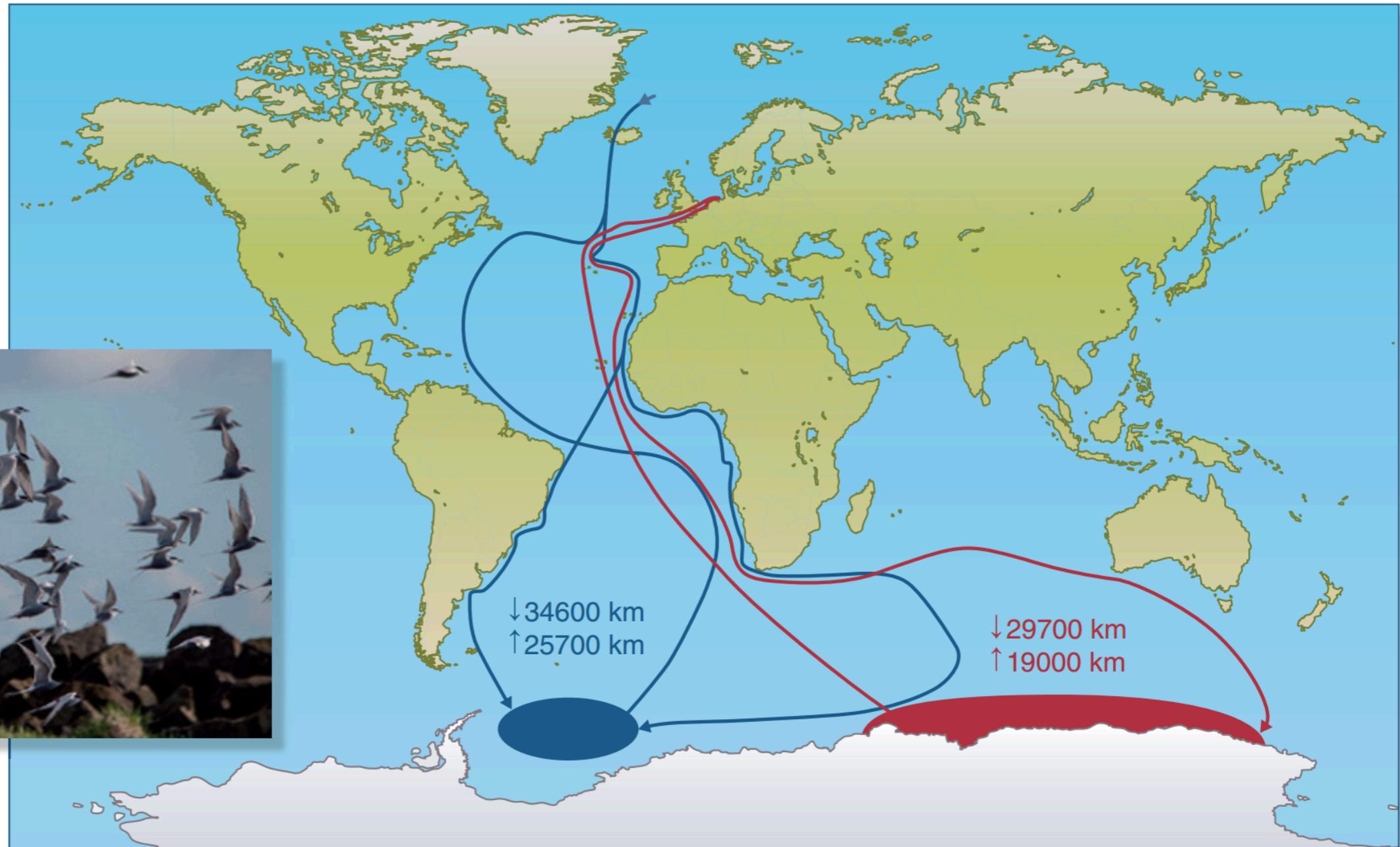
# Filhotes precoces

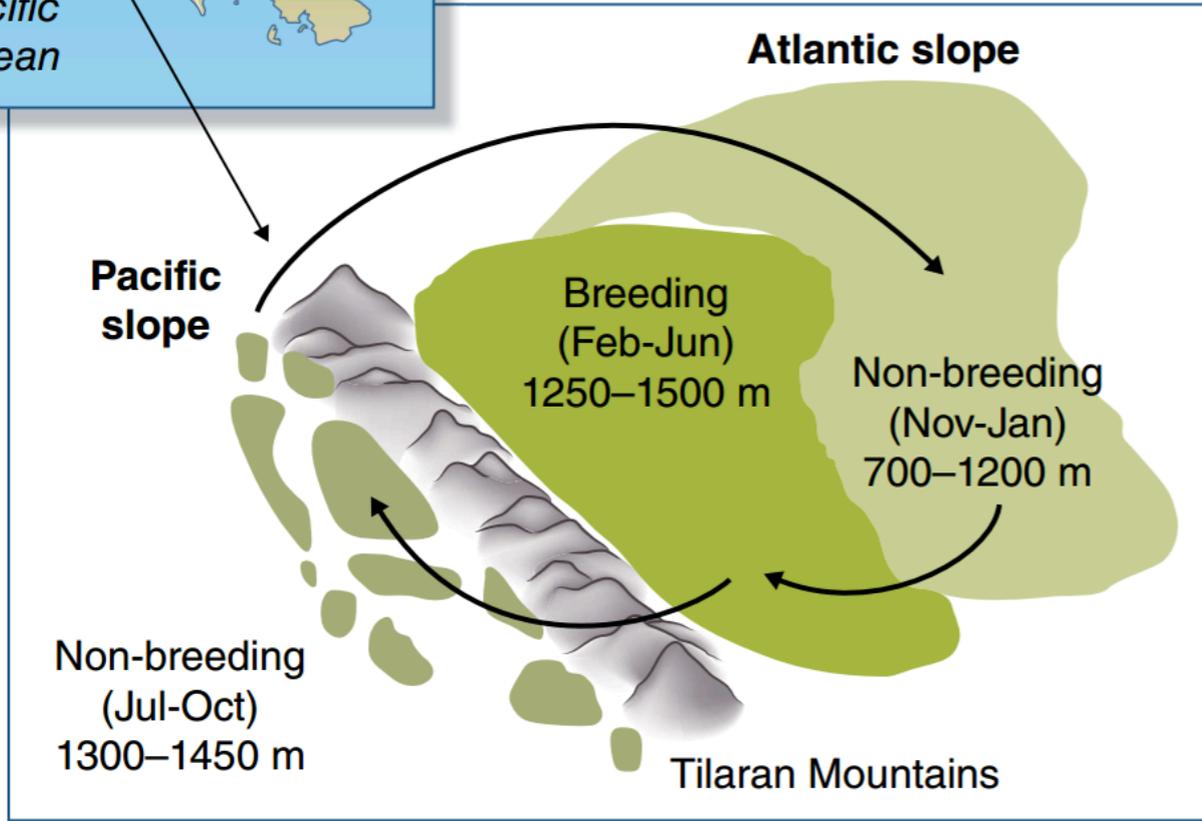


# Filhotes altriciais & precoces

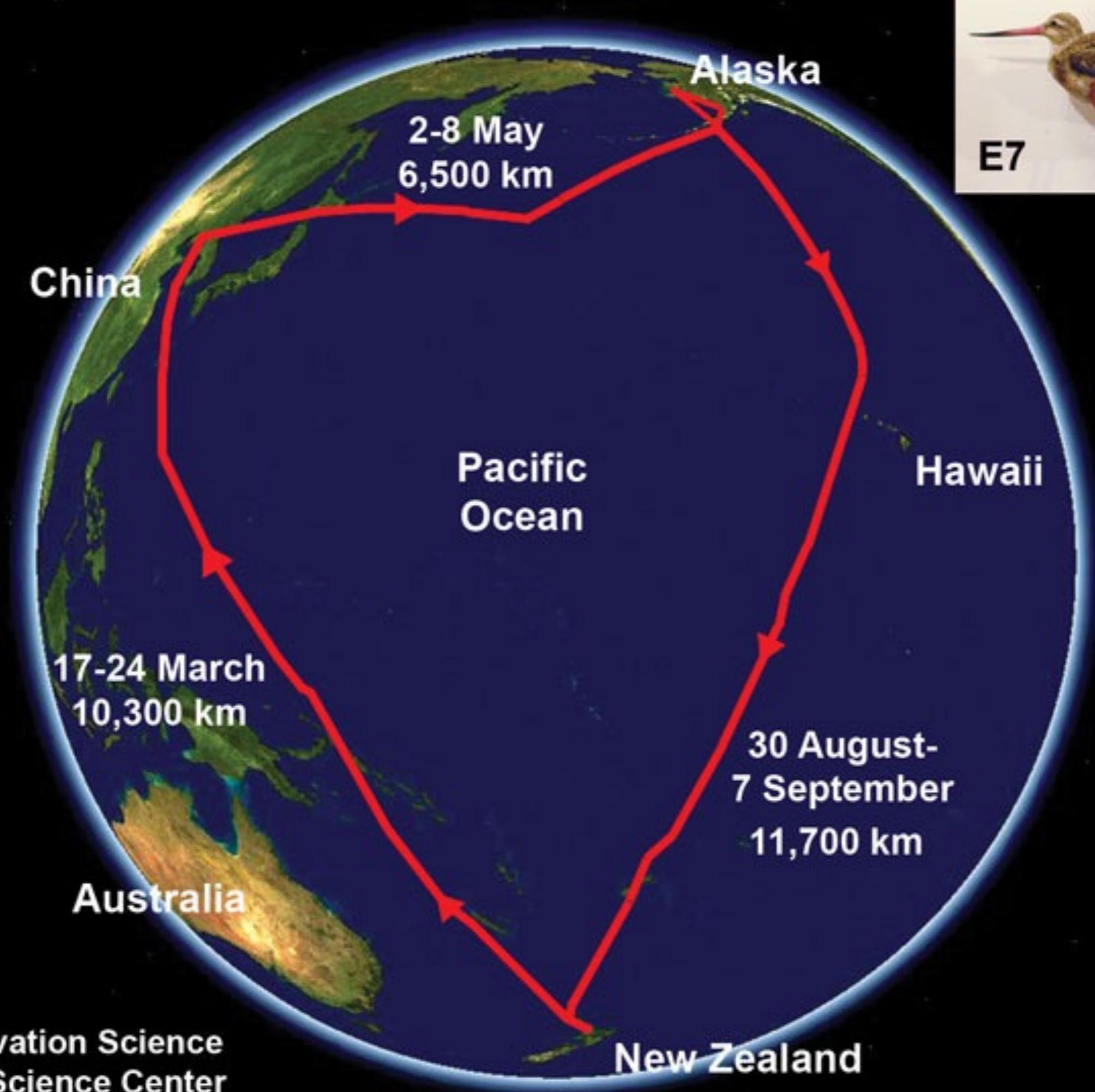


# Migração





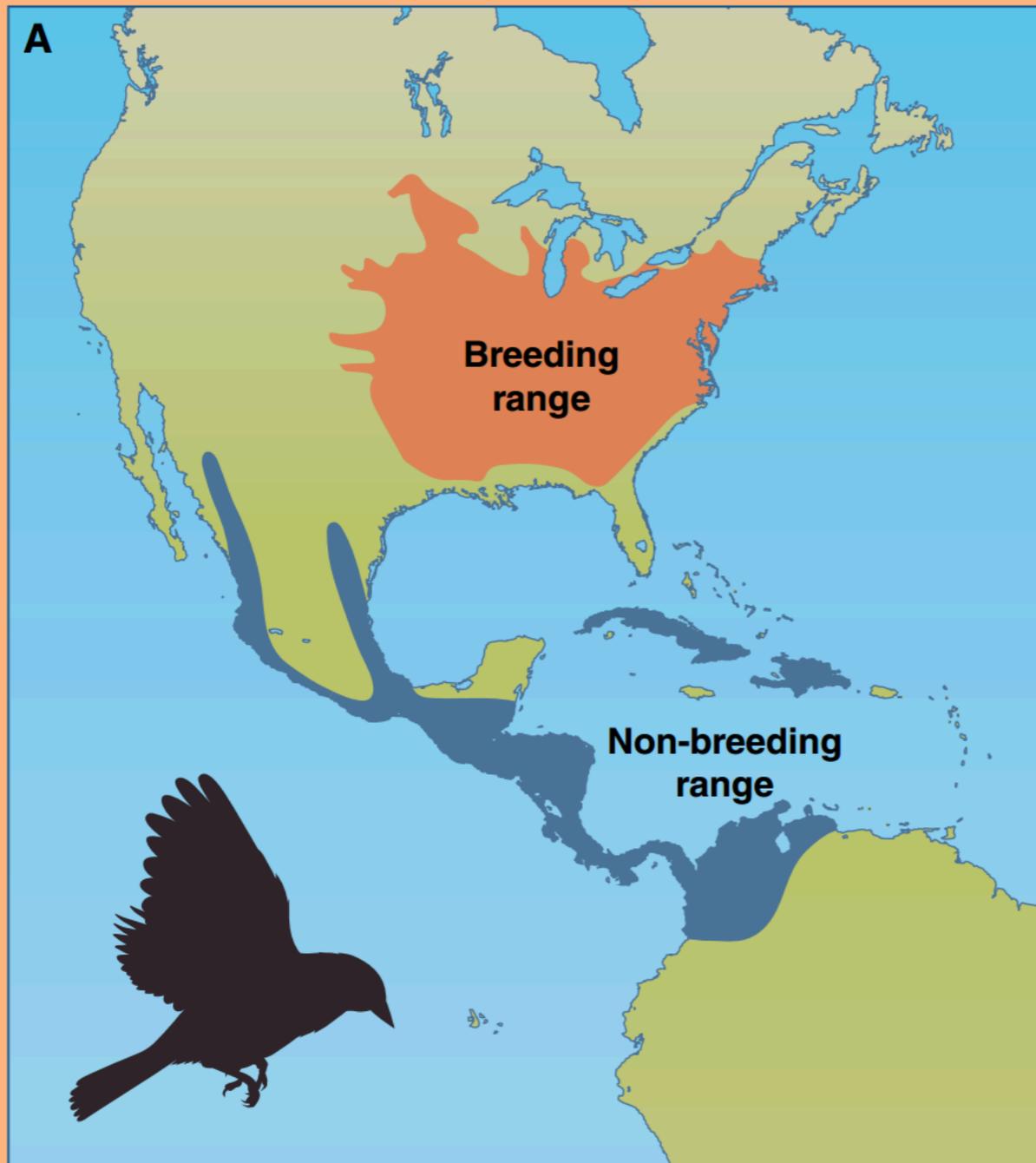




# Influência antropológica muda trajetória migratória







Present-day breeding and non-breeding distributions of a hypothetical long-distance migrant bird species

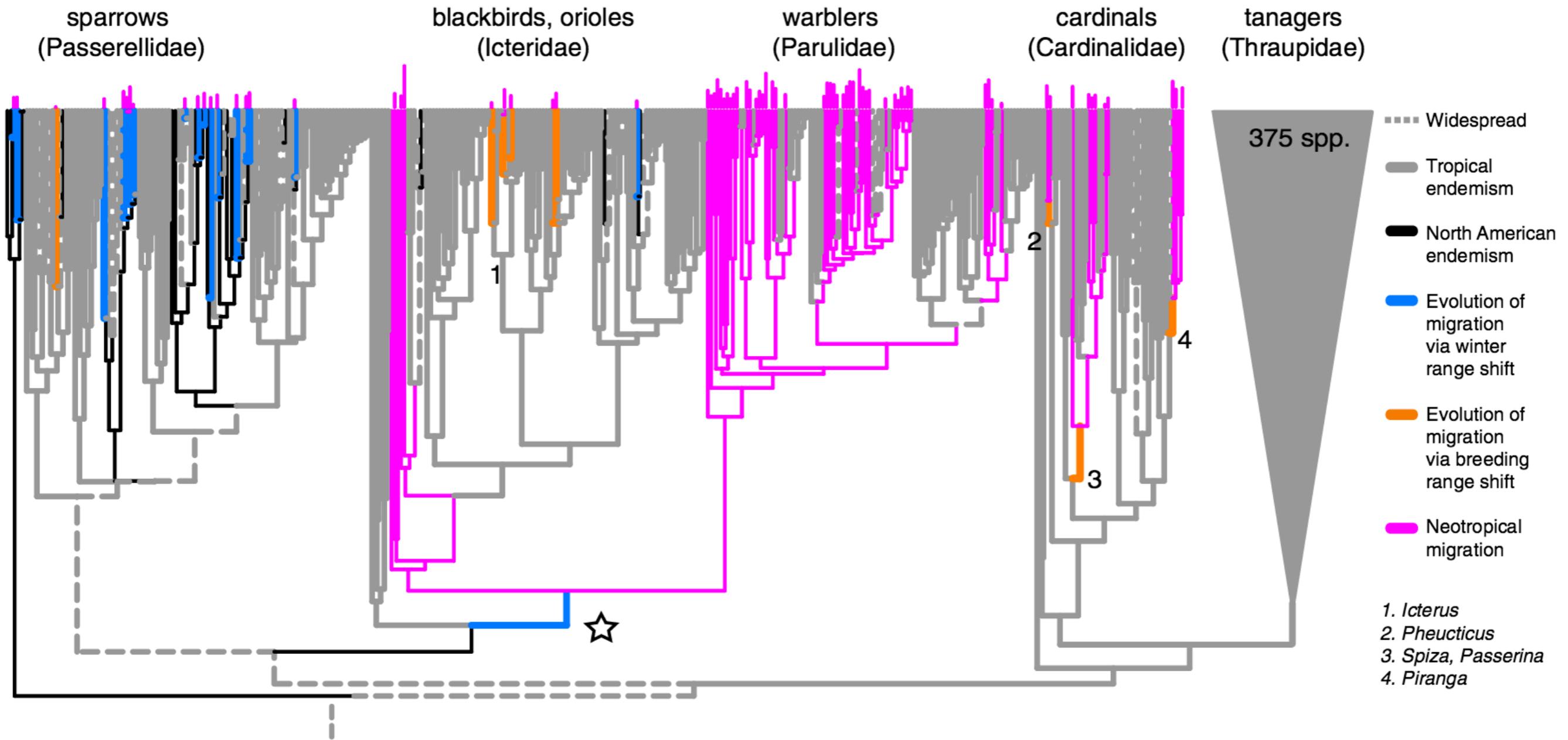


Shift of non-breeding range to tropics (northern home hypothesis)



Shift of breeding range to temperate region (southern home hypothesis)

# Modelo filogenético para inferir história biogeográfica



# Modelo filogenético para inferir história biogeográfica

