

Unterteilung des Tierreichs

Protostomia

„Urmundtiere“

z.B.
Plathelminthes
Nemathelminthes
Mollusca
Annelida
Arthropoda

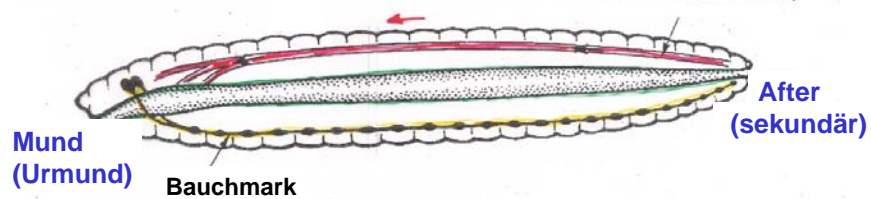
Deuterostomia

„Neumundtiere“

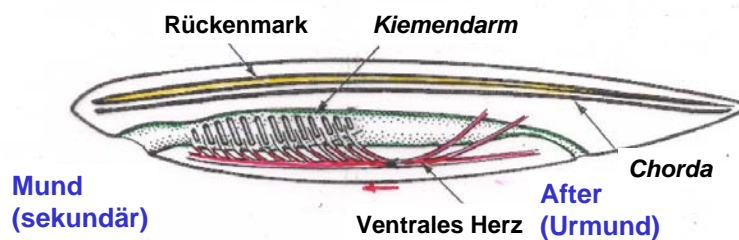
z.B.
Echinodermata
Chordata

Protostomia/Gastroneuralia

Kontraktils Rückengefäß (Herz)



Deuterostomia/Notoneuralia



Stamm: Chordata (Chordatiere)

U.st. **Tunicata** (Manteltiere)

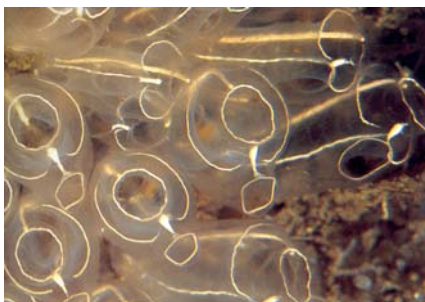
U.st. **Acrania** (Schädellose)

U.st. **Vertebrata** (Wirbeltiere)

Grundmerkmale:

1. Chorda dorsalis als Achsenskelett
2. Dorsales Neuralrohr
3. Kiemendarm (von Spalten durchbrochener Vorderdarmabschnitt)
4. Geschlossenes Blutgefäßsystem mit ventralem Antriebsorgan („Herz“)

Tunicata (Manteltiere)

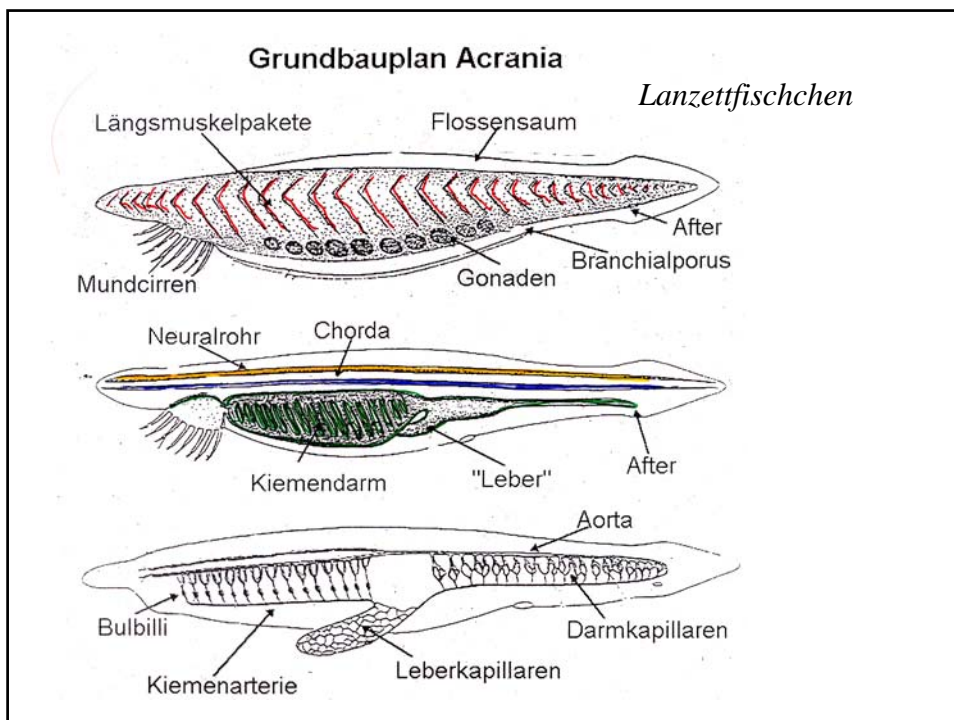
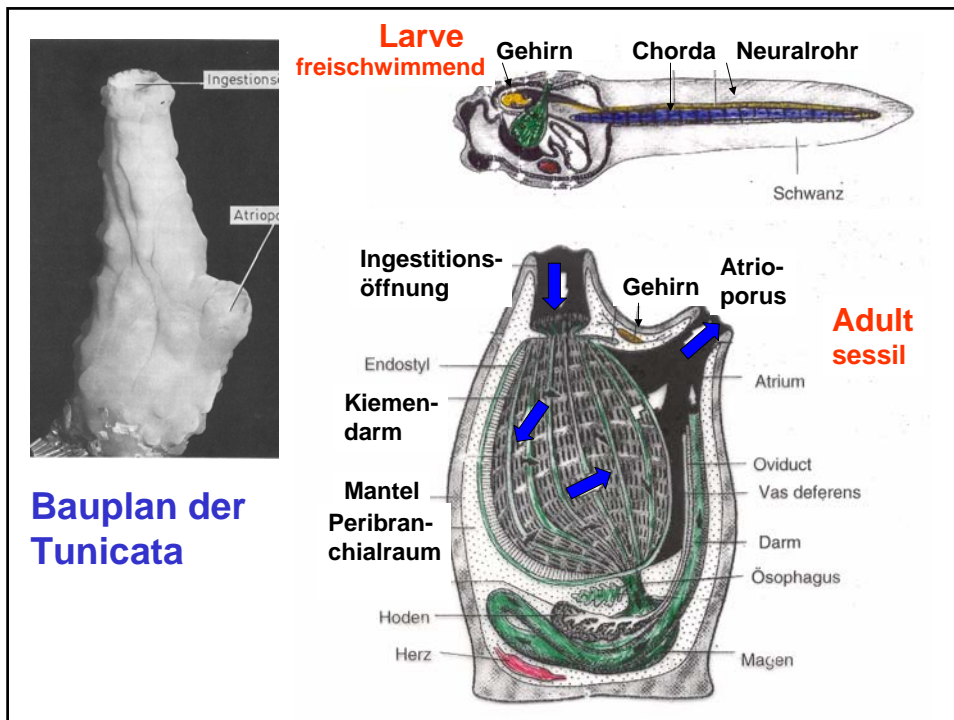


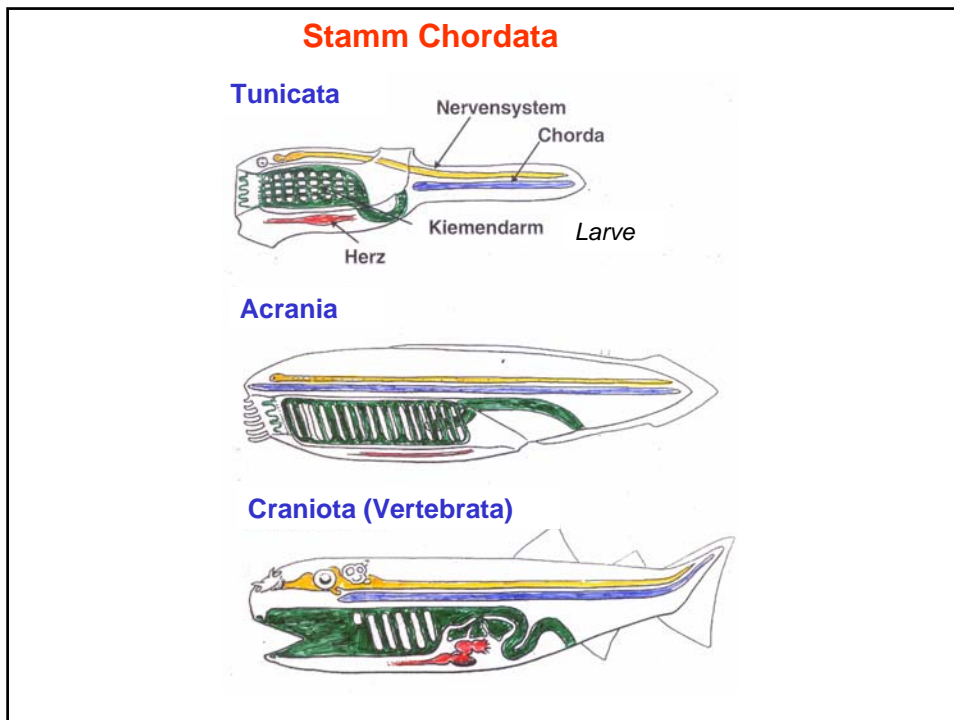
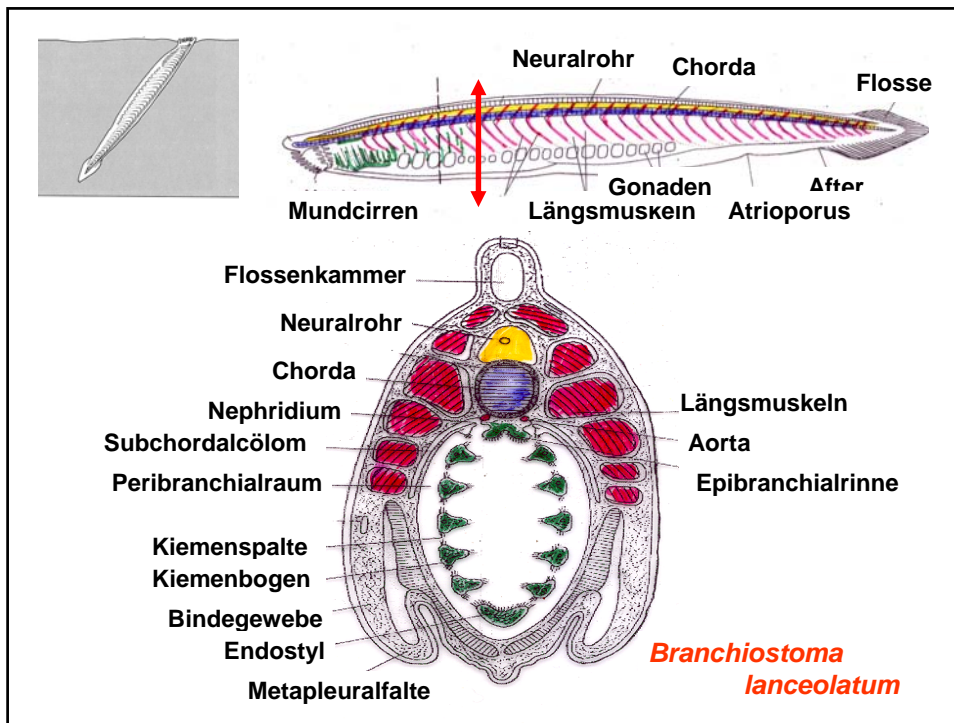
Acrania (Schädellose)



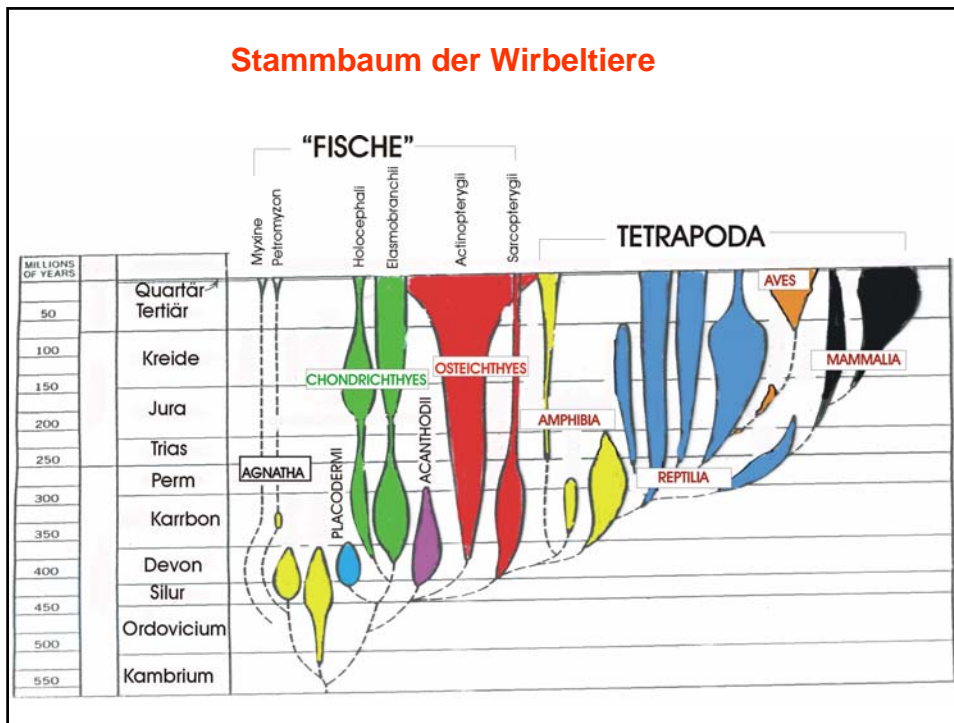
Vertebrata (Wirbeltiere)

„Fische“, Amphibien,
Reptilien, Vögel, Säugetiere

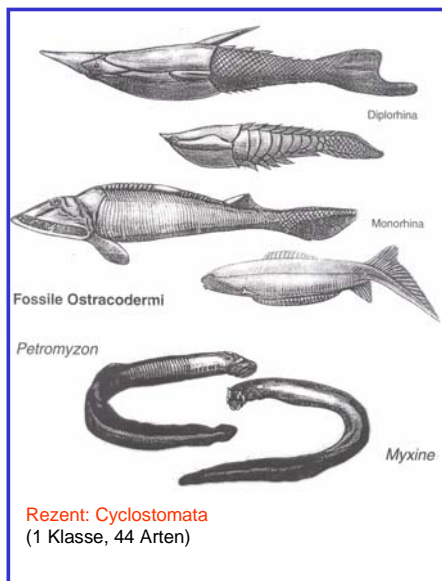




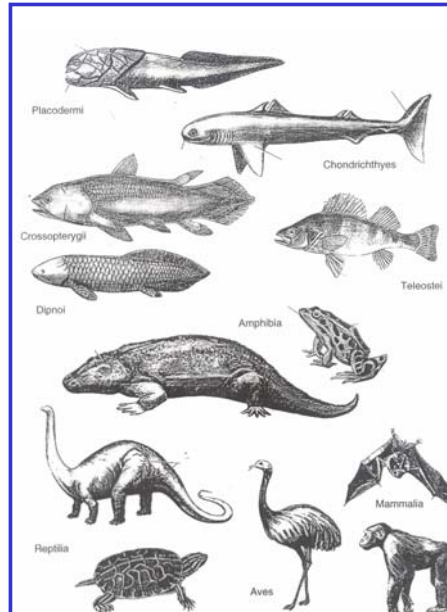
Stammbaum der Wirbeltiere



AGNATHA (Kieferlose)



GNATHOSTOMATA (Kiefermäuler)



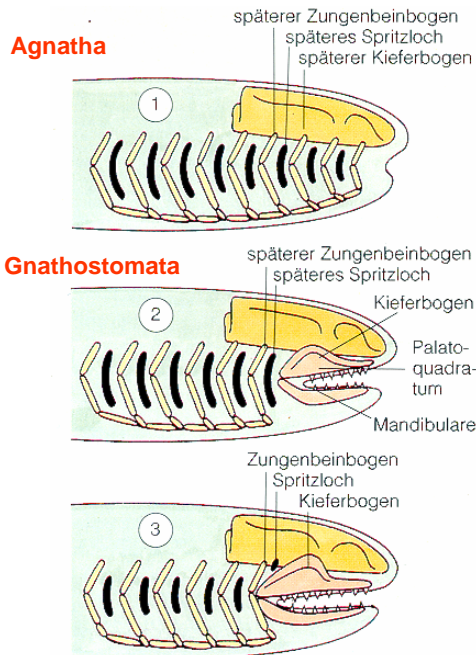
Evolution des Kiefers



Neunauge
Rezenter Agnath

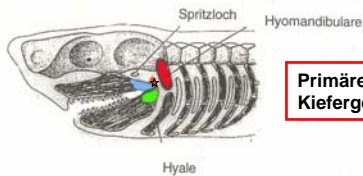


Typischer Kiefermäuler



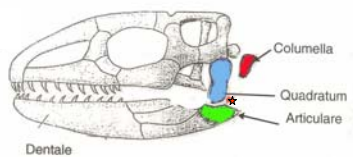
Evolution von Mittelohr und sekundärem Kiefergelenk

Hai



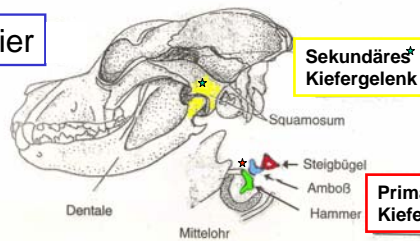
Primäres *
Kiefergelenk

Amphib,
Reptil,
Vogel



Primäres *
Kiefergelenk

Säugetier



Sekundäres *
Kiefergelenk

Primäres *
Kiefergelenk