

Comparative Anatomy

Changes in vertebrate body with the passage of time

SIGNIFICANCE OF THOSE CHANGES

a) Functional Significance
Water → Land

Biomechanics

Comparative Anatomy

Changes in vertebrate body with the passage of time

SIGNIFICANCE OF THOSE CHANGES

a) Functional Significance

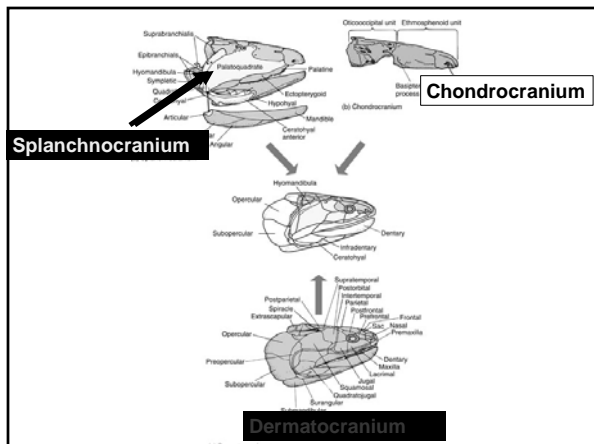
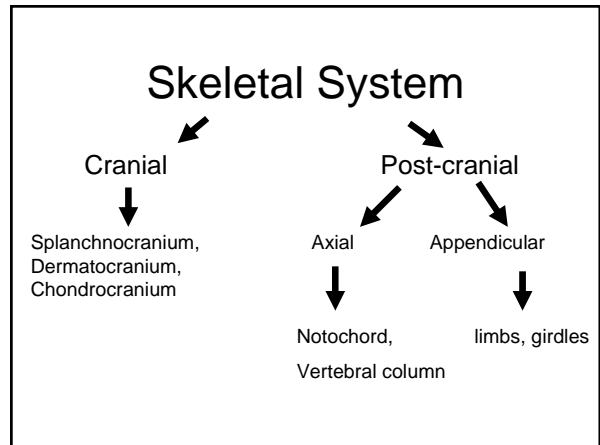
Comparative Anatomy

Changes in vertebrate body with the passage of time

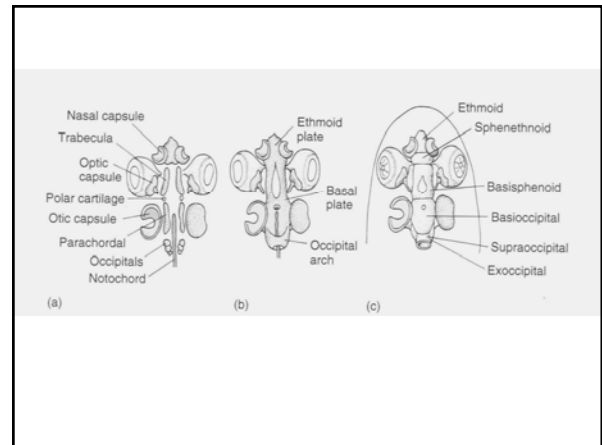
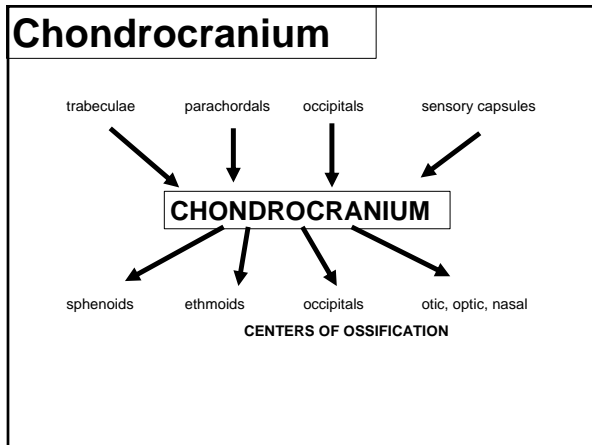
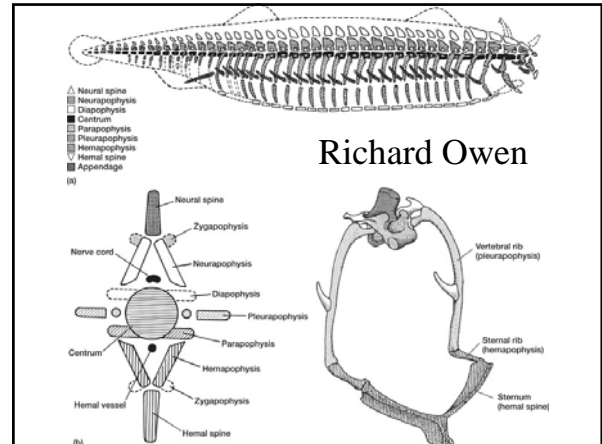
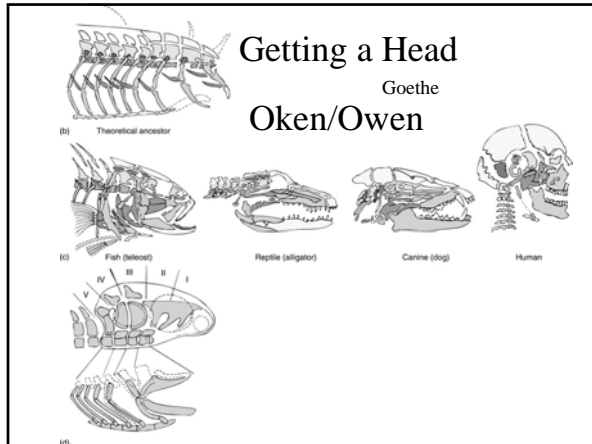
SIGNIFICANCE OF THOSE CHANGES

b) Evolutionary significance

Remodel Preadaptation



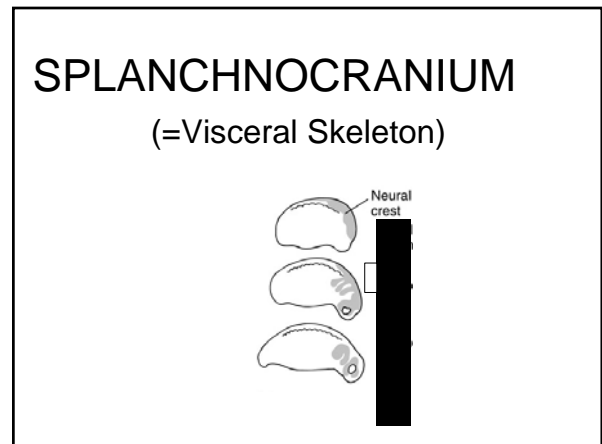
Remodeling Triple evolutionary sources



CHONDROCRANIUM

General Functions

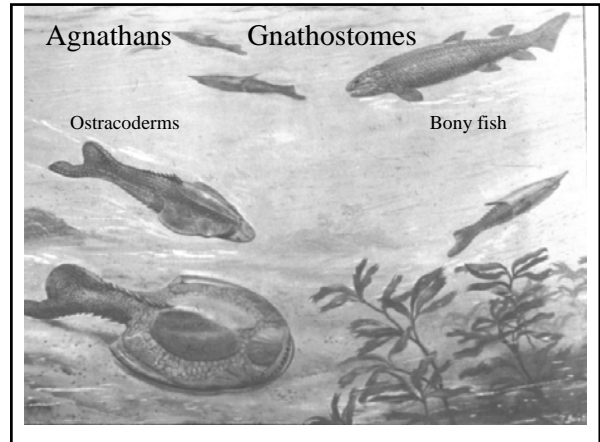
- 1) Adult braincase
(chondrichthyes)
- 2) Scaffold
→ Neurocranium



SPLANCHNOCRANIUM

(=Visceral Skeleton)

- 1) support respiration
- 2) support feeding apparatus
- 3) later, jaws

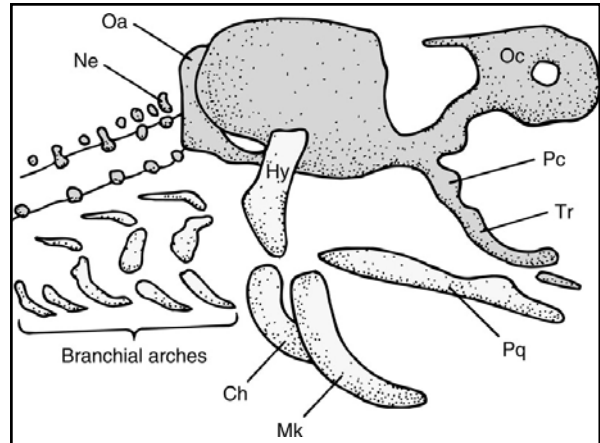


SPLANCHNOCRANIUM

➔ JAWS

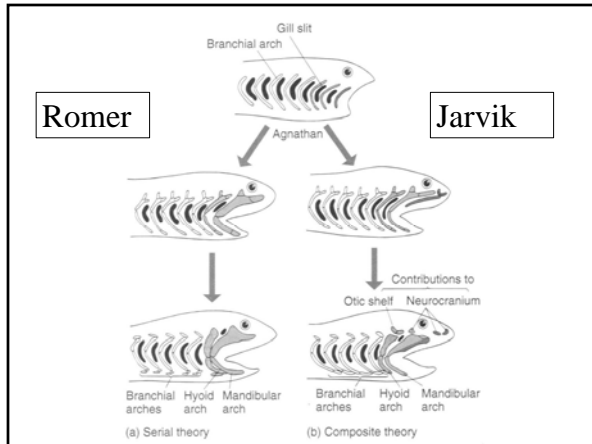
General Functions

- 1) Prey Traps
- 2) Crushing

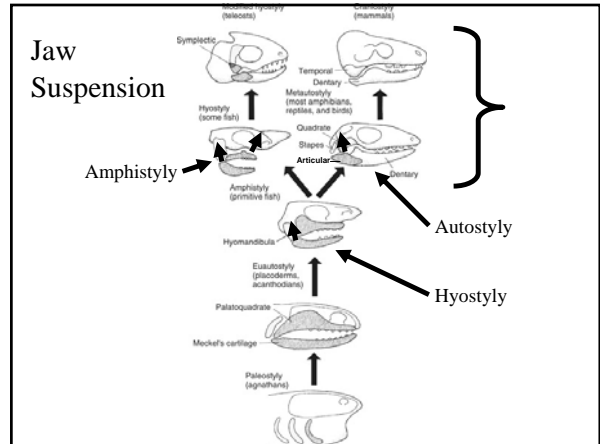


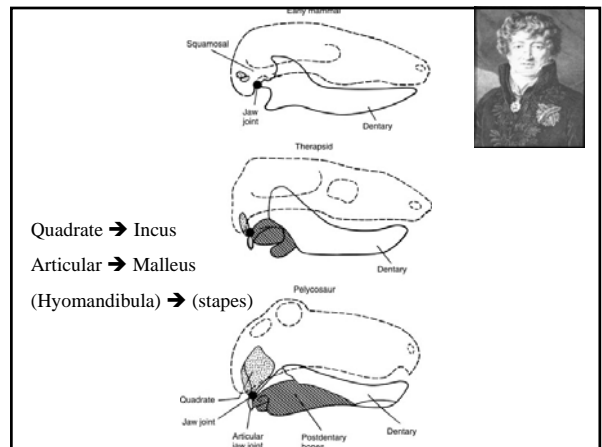
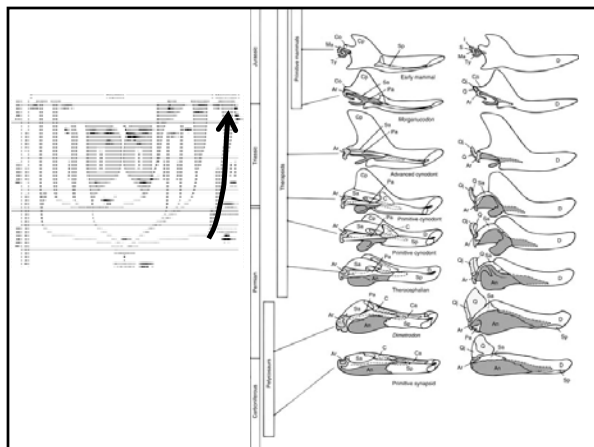
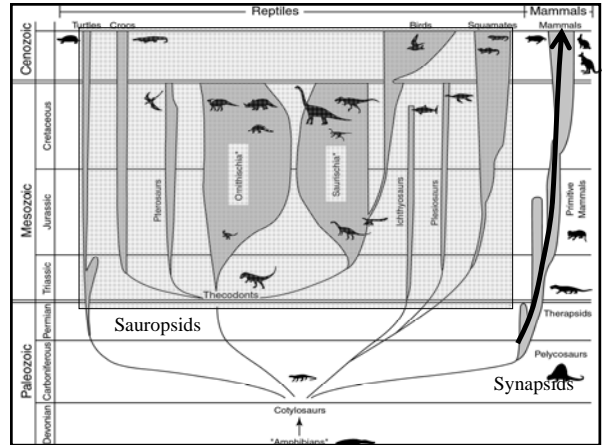
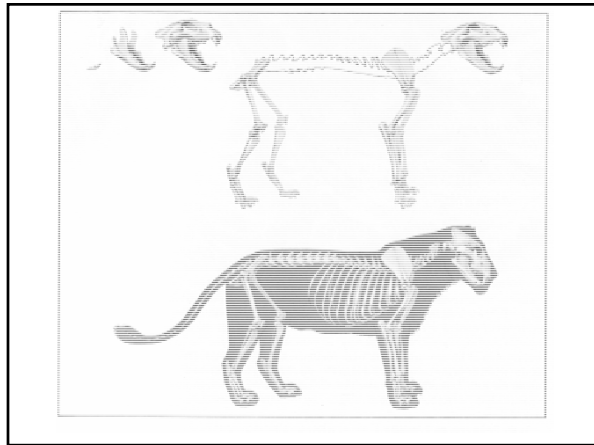
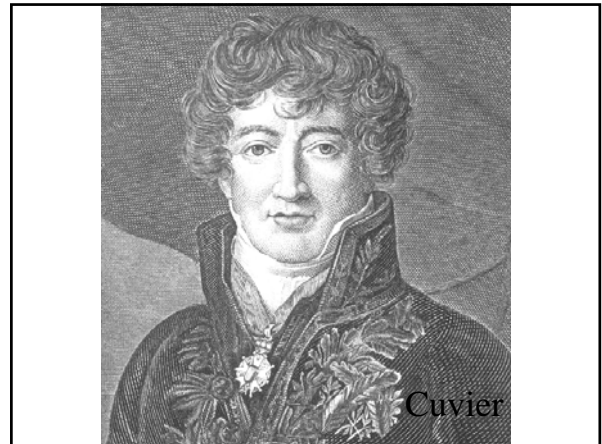
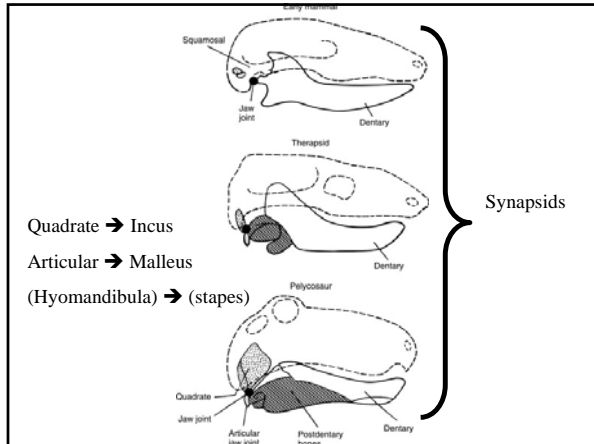
Romer

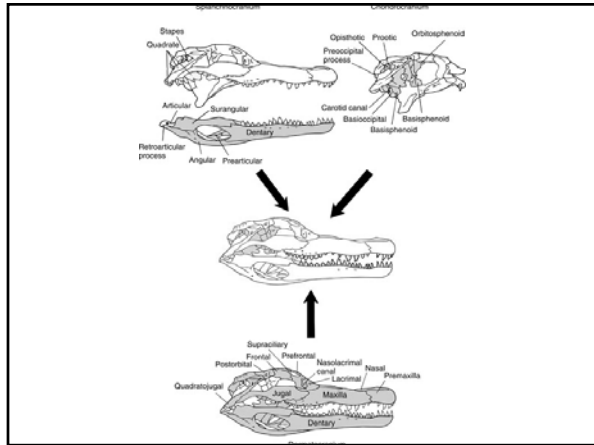
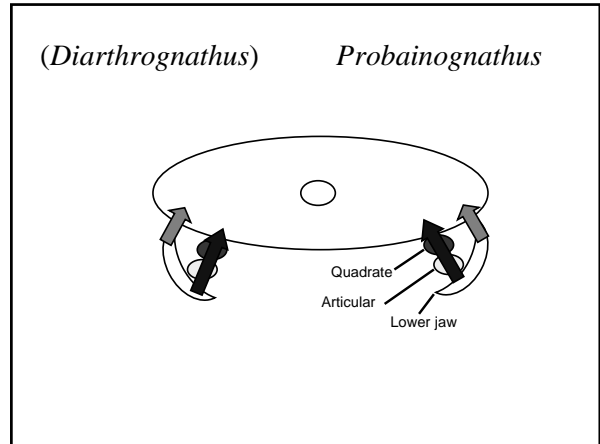
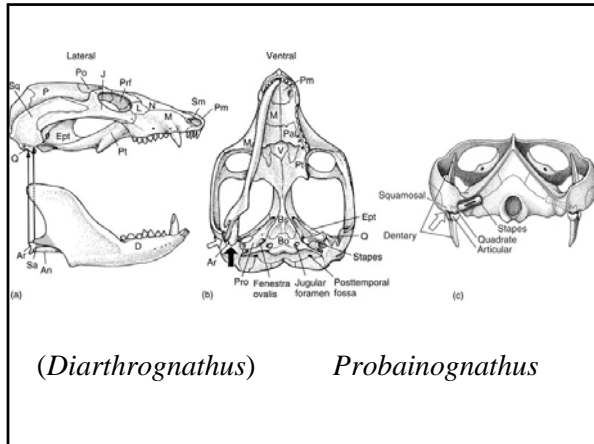
Jarvik



Jaw Suspension

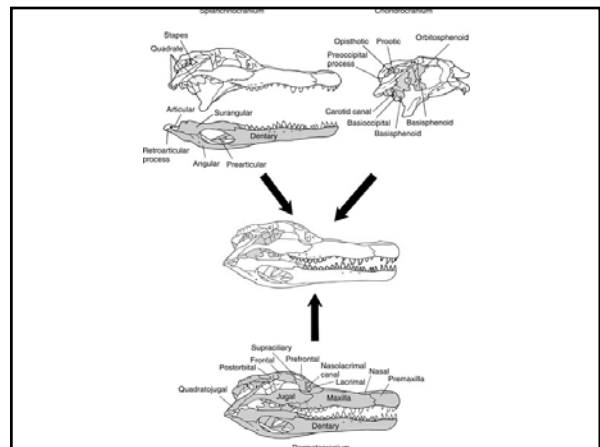
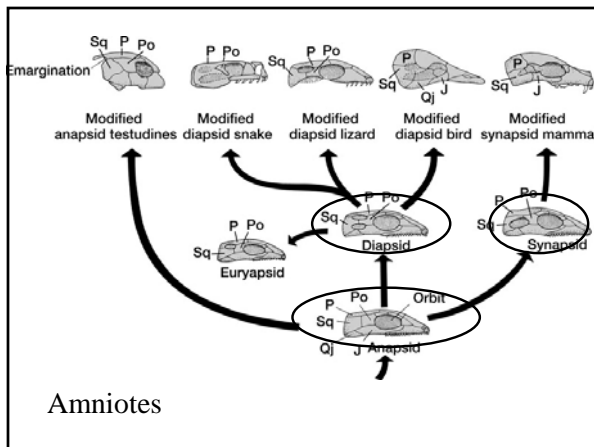






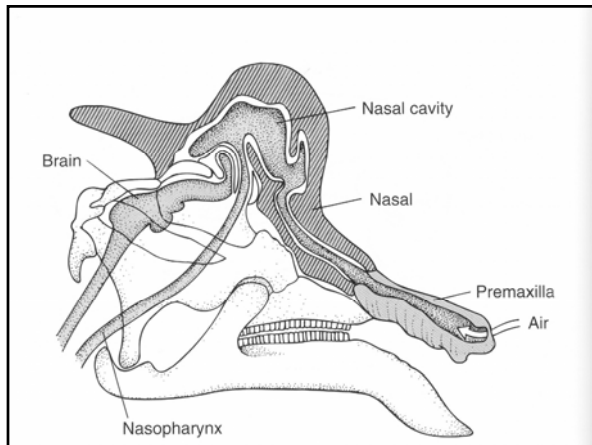
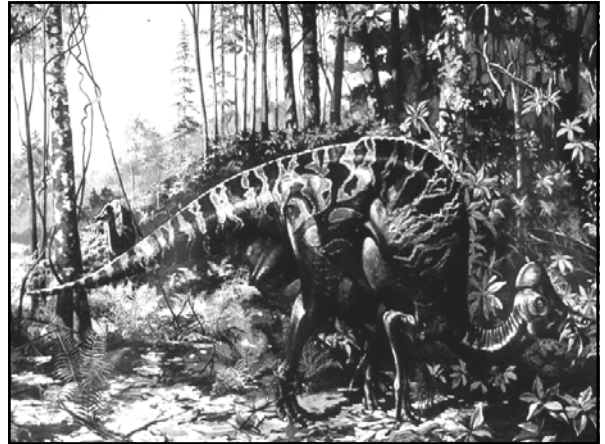
Dermatocranium

Derived from dermal Armour
Function
protect the brain



FUNCTION

1) Secondary



FUNCTION

1) Secondary

2) Primary

respiration

feeding

prey traps

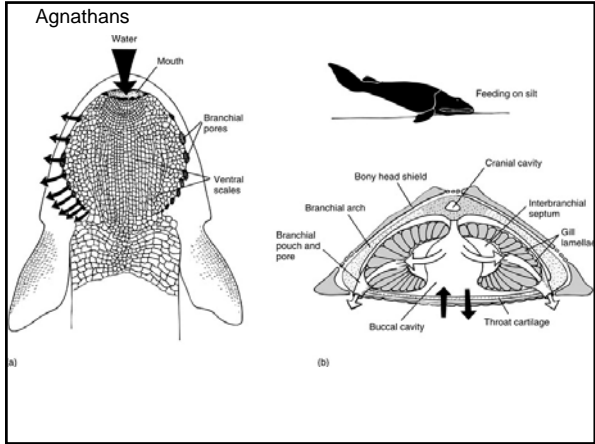
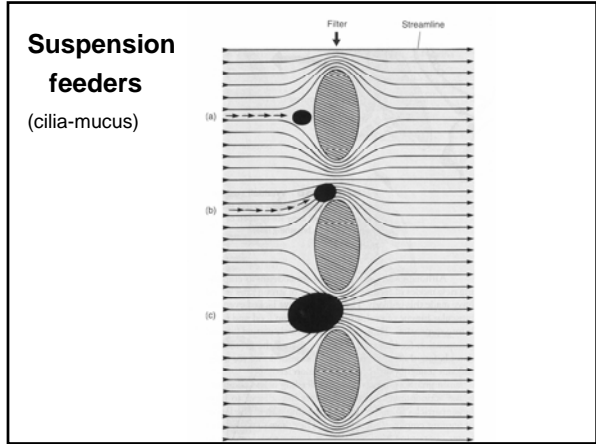
swallowing

Water vs. Land

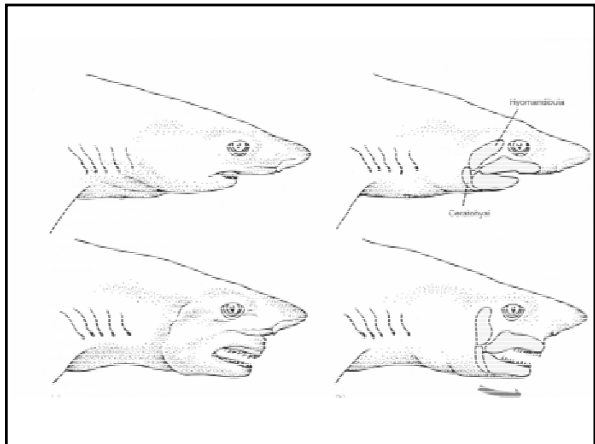
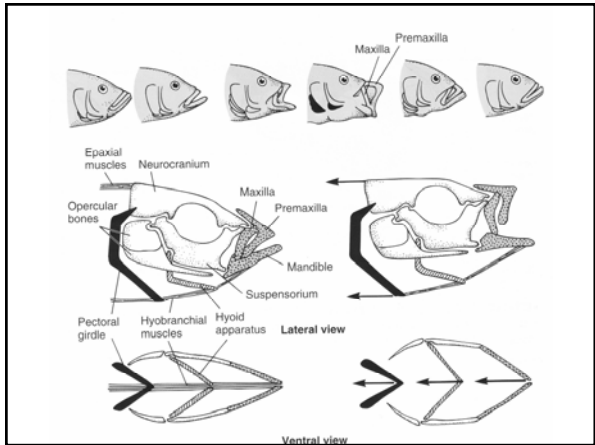
FUNCTION

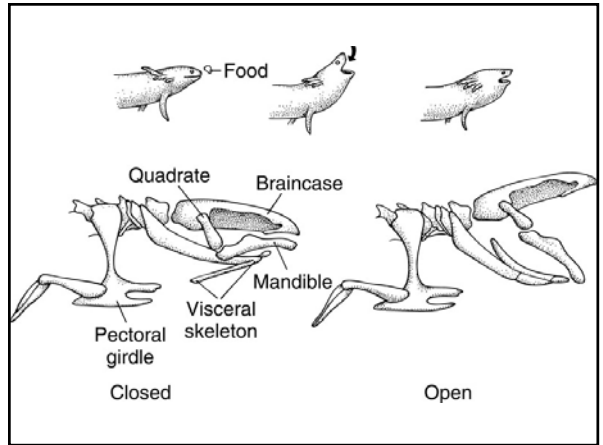
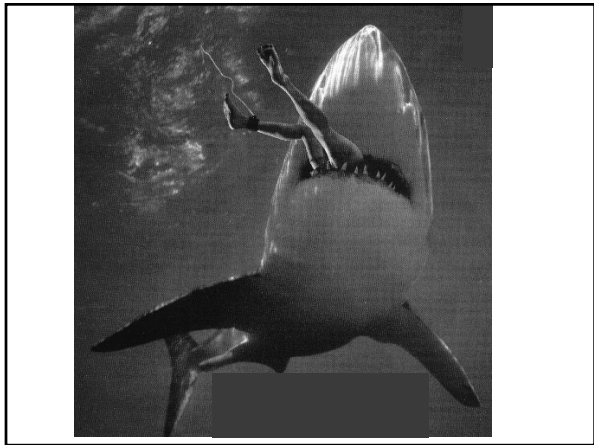
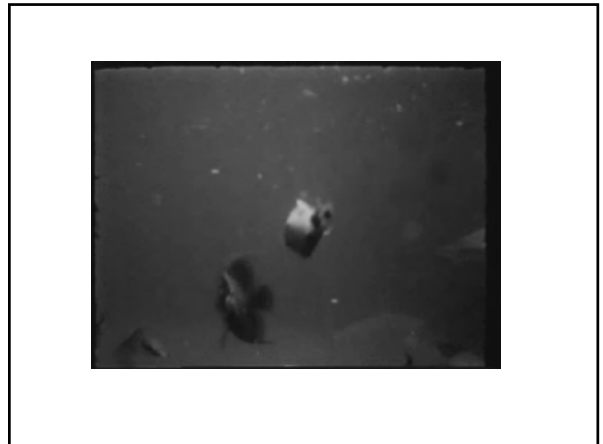
(feeding)

Aquatic

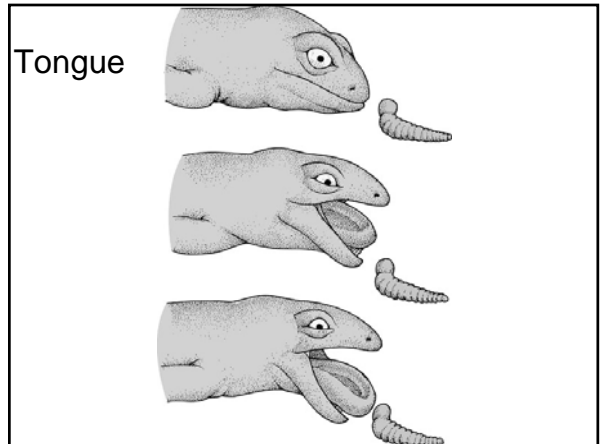


Suction Feeders
(gape 'n suck; inertial)
aquatic

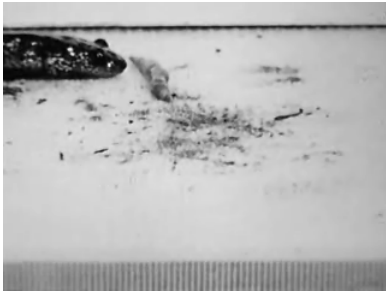




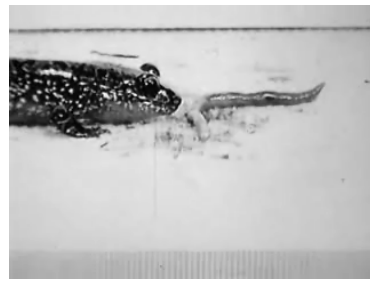
FUNCTION
 (feeding)
 Air



Salamander



Salamander



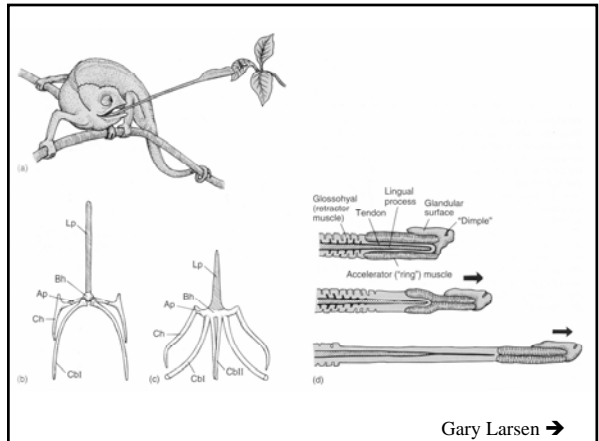
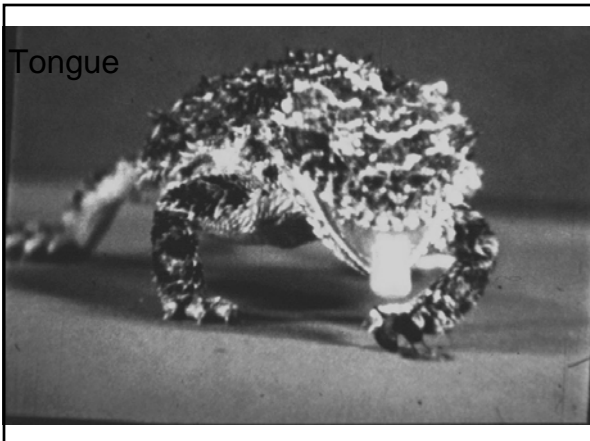
Salamander

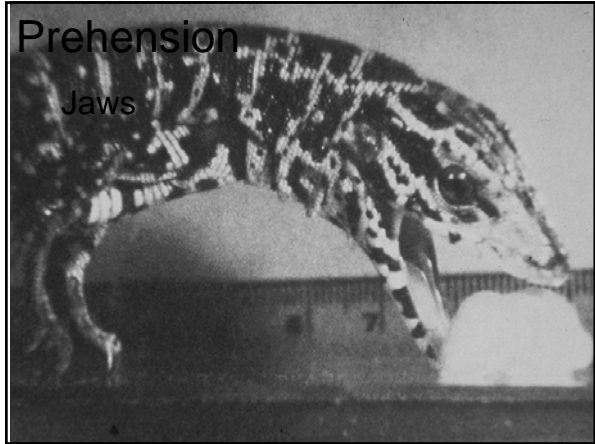
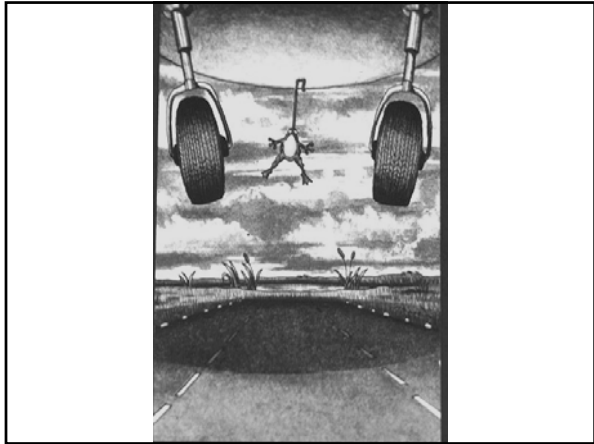


Lizard



Tongue





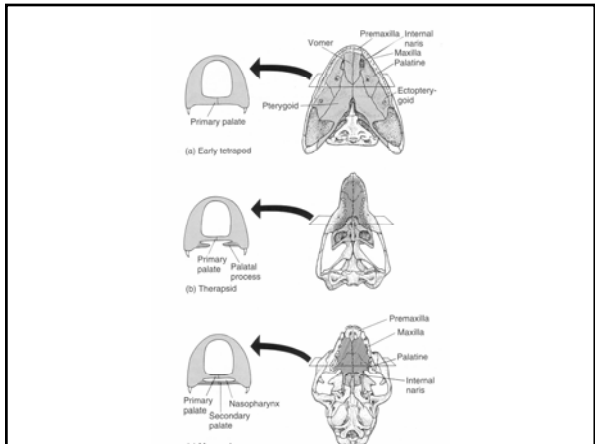
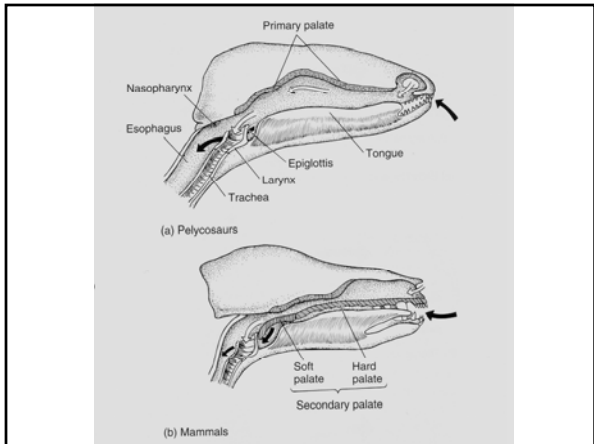
FUNCTION

Swallowing

- suspension
- whole (gizzard)
- mastication

Swallowing

Mastication



Swallowing Mastication

precise occlusion
specialized teeth
diphyodont
(polyphyodont)

akinetic

CRANIAL KINESIS

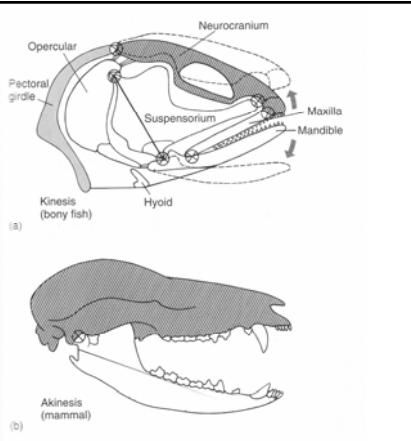
Relative motion of two or more parts of the skull room.

(joint through skull roof)

Cranial kinesis

Kinetic

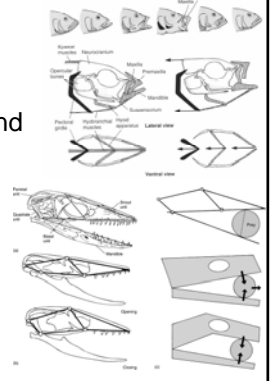
Akinetic



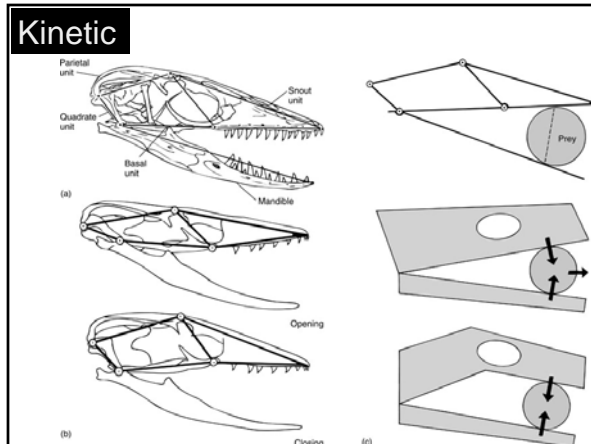
CRANIAL KINESIS

Rapid change in size and configuration of buccal cavity.

Tooth position



Kinetic



Kinetic

