CLASSIFICATION OF

AMPHIBIA

By
Dr. Mridula Renu Sinha
Associate Professor,
Depth of Zoology,
Magadh Mahila College,
Patna University

Amphibian Characteristics

- Most undergo metamorphosis (going from aquatic larval stage to terrestrial adult stage)
- No scales
- Combination of gills, lungs, skin breathing
- Most have external fertilization
- Eggs without shell

Class Amphibia

- Smooth moist skin
- Mucus secreting- Chemical defense
- Three chambered heart
- Some skin breathing
- Two life stages: water and land
  - Born with gills
  - Develop lungs later in life
- External fertilization

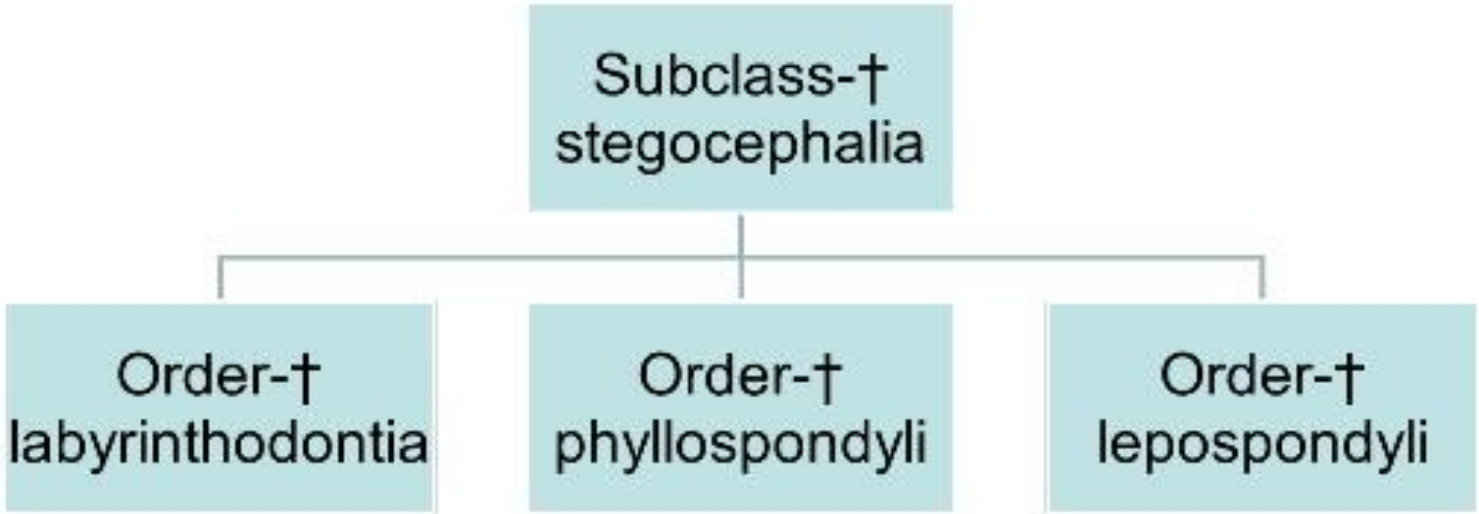
Amphibians

-Amphibians are animals that are born in water and grow to live on land.
-They have smooth, wet skin.
-Amphibians are cold-blooded.
-Amphibians lay eggs in water, they are oviparous.
-Amphibians breathe with gills when they are small, and then with lungs when they are adults.
-Frogs, toads, and salamanders are all examples of amphibians.

It is divided into two Subclass

A) Stegocephalia –Extinct

B) Lissamphibia -Living Amphibians


Subclass-†
stegocephalia
Order-†
labyrinthodontia
Order-†
phyllospondyli
Order-†
lepospondyli

A) Subclass Stegocephalia --Extinct

a.Order Labyrinthodontia – Paleozoic and early Mesozoic period.eg.Eryops .Extinct.

b.Order Phyllospondyli – Paleozoic period ,ancestors of urodeles and anurans.eg. Ichthyostega. Extinct.

c.Order Lepospondyli – Paleozoic period. Ancestors of caecilians. eg.Diplocaulus.Extinct.

B) Subclass Lissamphibia – frogs, toads, salamanders, newts, etc. Living groups which have smooth scaleless skin. Modern amphibians.

C.Subclass Lissamphibia – frogs, toads, salamanders, newts, etc. Living groups which have smooth scale less skin. Modern amphibians.

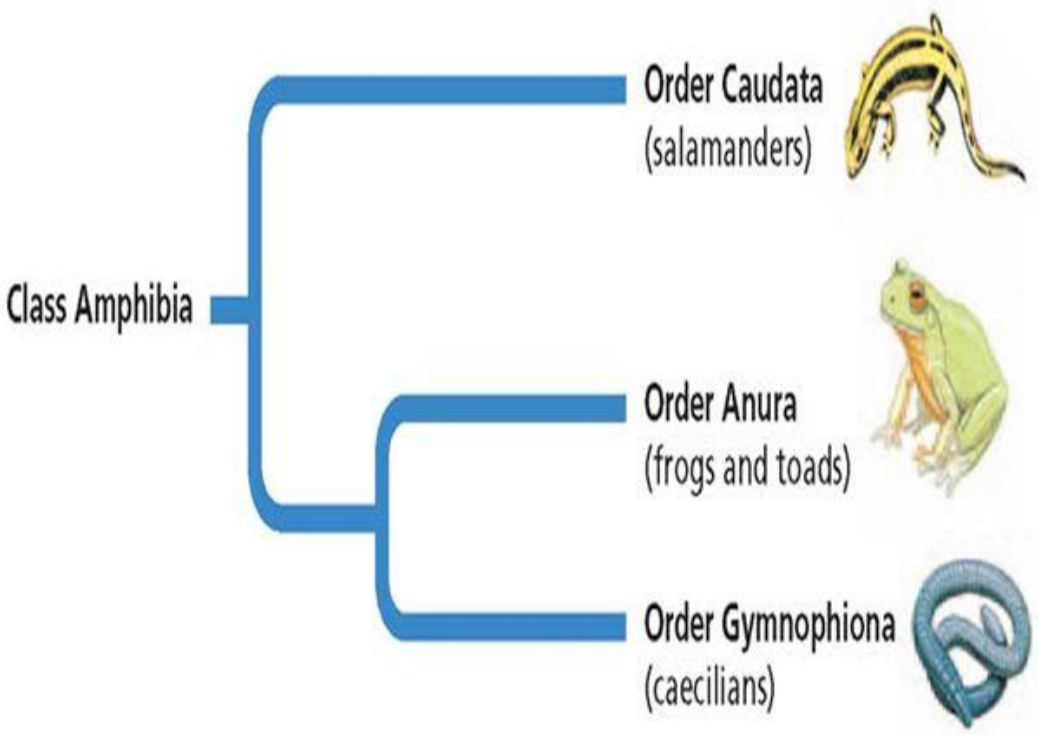
C. 3 Orders of Modern Amphibians

(about 4,500 species)

1. Anura - includes frogs and toads

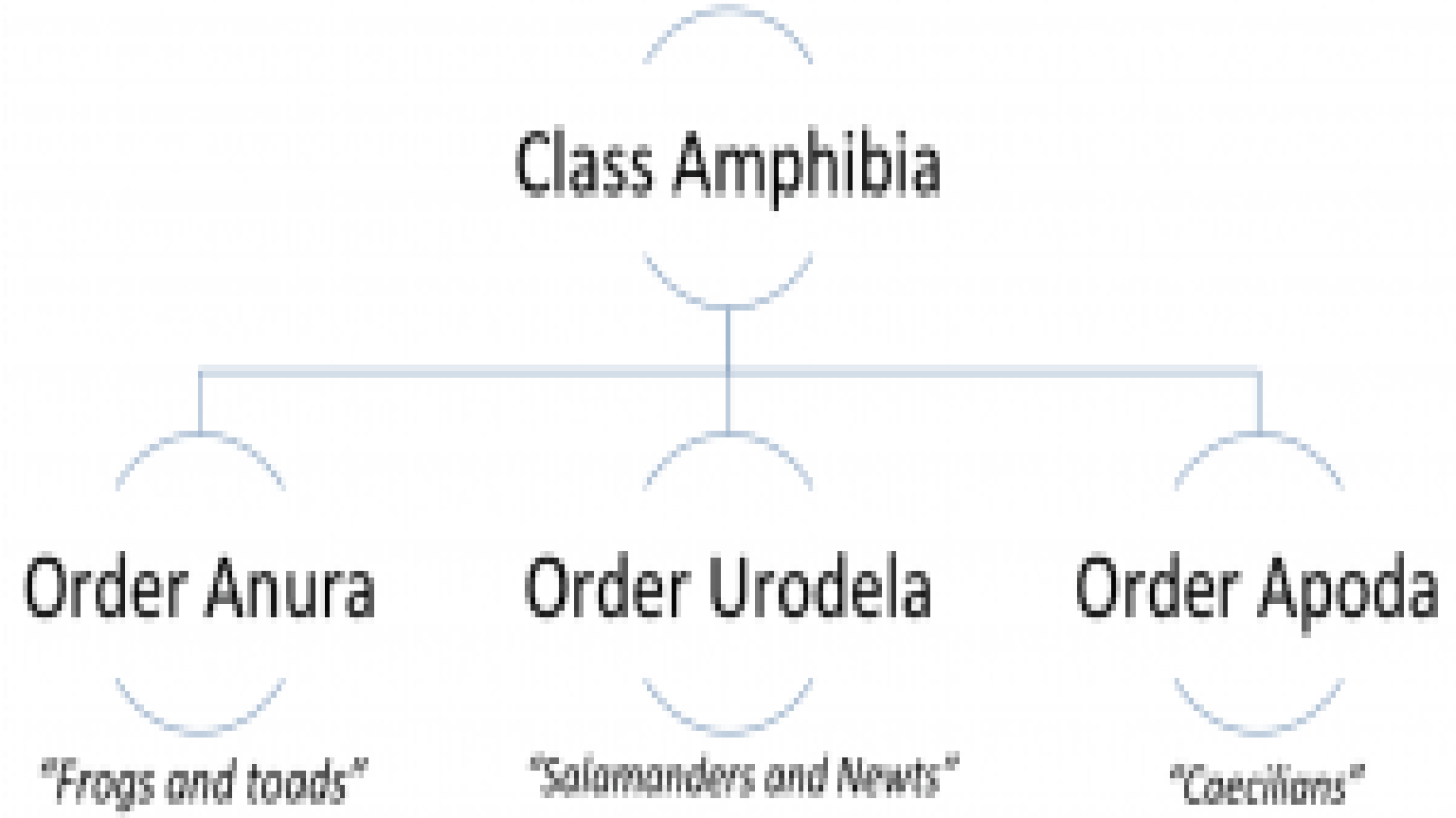
2. Caudata - salamanders and newts

3. Gymnophiona includes caecilians (legless tropical amphibians) (worm-like)



3 Orders of Amphibians

- 1. Urodela
  - "tailed ones"
  - salamanders
- 2. Anura
  - "tail-less ones"
  - frogs & toads
- 3. Apoda
  - "leg-less ones"
  - caecilians


Class Amphibia
Order Anura
"Frogs and toads"
Order Urodela
"Salamanders and Newts"
Order Apoda
"Caecilians"

Anura order (Salientia)

Anura is also called as Salientia. The species that belong to this order are --

Frogs

Toads

The word "Anura" means "absence of tails". As the word implies frogs and toads do not have tails. Among the three orders that make up the amphibian class Anura is the biggest order. It has about 4500 species. These species are different from other two species since they have four legs and reproduce through external fertilization. Though frogs and toads belong to the same order they have different characteristics.

Gymnophiona order (Apoda)

Gymnophiona is also called as **Apoda**. This typical amphibian specie resembles large worms and lack limbs. About 50 species of amphibians belong to this order. They are mostly found in the tropical forest and fresh water sediments. These are aquatic in nature and are found in Africa and south Asia and America. Gymnophiona species have short tails but lack the appendages.

Order-Apoda

- Also called gymnophiona or caecilians
- Burrowing forms
- Snake like
- Without limbs
- Blind
- Tail absent
- Limb girdles present
- Example- Ichthyophis

Apoda: Caecilians

- No limbs, short or no tail
- Tropical
- Look like worms
- Small eyes and often blind when eyes are covered by skin
- Eat earthworms and other invertebrates in soil

Caudate order (Urodela)

Caudate is also called as **Urodela**. The species that belong to this order are -

Salamander

Newts

About 500 species belong to this order. The species salamanders and newts are unique. The term **Caudata** means "**tail**". The species in this category have tails and four limbs. The presence of tail helps to easily identify the species of Caudata and Anura.

Order-Urodela

- Also called caudata
- Lizard like with tail
- Larva aquatic
- Neoteny may found
- Larva breaths through gills which lost in adults
- Example- Ambystoma(tiger salamander)

THANKS