

AMPHIBIAN CLASSIFICATION

Extinct Amphibians are placed under three orders

order-1 Labrynthodontia

1. Distributed from Carboniferous to Triassic period.
2. These were cloacile or salamander like.
3. The skull is completely roofed over with bones.
4. The teeth were enlarged with greatly folded dentine in both jaws.
5. All vertebrae consist of neural arches. ex- Capitosaurus

order-2 Phyllospindyl

1. They were distributed in Carboniferous to Permian.
 2. They were small salamander like.
 3. The vertebrae were tubular with notochord and spinal chord lying in one cavity.
 4. The centrum was represented by thick floor of each vertebral ring.
 5. Transverse processes were well marked with short ribs.
 6. Cartilaginous pubis and coracoid.
- ex - Ichthyostega.

order 3 Lepospondyli

1. They were distributed from Carboniferous & Permian.
2. Each vertebrae was composed of a single piece.
3. The ribs articulating with column intervertebrally.

Living Amphibiaorder 4 Gymnophiona or Apoda

1. The animals are aberrant blind, worm like, limbless.
2. The body is grooved transversely and in groove are often series of minute scales.
3. The eyes are lidless and sometime covered with cranial bones.
4. Males possess a protrusible copulatory organ.
5. Fertilization is internal.

ex - Typhlonectes, Ichthyophis

order 5 Caudata or urodela

1. Body with distinct head, trunk & tail.
2. Paired limbs are present.
3. The skull is very much reduced.

4. there is no metamorphosis
four sub-orders -

sub-order I Cryptobranchidae

1. Body is depressed, the skin is soft and flabby.
 2. Gills are absent in adult.
 3. Eyelids are absent.
 4. The spine of premaxillary is short and does not separate the nasal.
 5. fertilization is external.
- ex - Cryptobranchus

Sub-order II Ambystomatoidea

1. The angular is fused with pre-articular in lower jaw.
2. The second epibranchial is lost.
3. The premaxillary spine is elongated.
4. Vertebrae are amphicoelous.
5. internal fertilization ex - Ambystoma.

Sub-order III Salamandroidea

1. Teeth are present on roof of palate.
2. fronto - squamosal arch is present.
3. Eye-lids are present or absent.
4. vertebrae are amphicoelous.
5. viviparous. ex - Salamandra

Sub-order IV Proteida

1. Eyelids are absent.
2. permanent larval form with external gills.
3. Costal process of skull.
4. Tail is provided with fin

ex - Proteus

Sub-order V Mesobatrachia

1. Body is eel like
2. Adult is permanent larval.
3. only fore limb are present.
4. fertilization external

ex - Siren

Order - 6 Anura

1. The body is short, broad comprising head and trunk.
2. Eyes are with eyelids.
3. Middle ear usually present.
4. Hind limb are much larger than fore limbs.
5. Feet are webbed.
6. Vocal cords are present.
7. Oviparous. fertilization is external.
8. Development is indirect through a larval stage.

Sub-order I Amphicoela

1. vertebrae amphicoelous.
2. Tail is absent but tail muscle present.
3. fertilization internal

ex- Ascaphus

Sub-order II Apisthocaela

1. vertebrae are apisthocelous
2. free ribs are present.
3. Tongue & Tympanum are absent.

ex- Pipa, Alytes

Sub-order III Anomocoela

1. vertebrae are procoelous
2. free ribs are absent.
3. eight presacral vertebrae fused with urostyle.

ex- Pelobates

Sub-order IV Procoela

1. vertebrae are procoelous
2. Ribs are absent.
3. Urostyle articulated with last vertebrae with two condyles
4. maxillary teeth are absent.

ex- Bufo, Hyla.

Sub-order V Diapysicoela

1. first seven vertebrae are procoelous.
2. Eighth vertebra is amphicoelous.
3. The Sacral vertebra is acoelous bearing two condyles
4. Ribs are absent & pectoral are fused with sternum.

ex- Rana, Rhacophorus