

WELCOME

INTRODUCTION TO CLASS - REPTILIA

Prof. Dr. Balasaheb Tapale

Assistant Professor

Department of Zoology

Adv. M. N. Deshmukh College, Rajur, Tal-Akole.

Dist.-Ahmednagar. (MS) PIN - 422 604

Contact: 7350528733

[E-Mail- dr.balasahebtpale@gmail.com](mailto:dr.balasahebtpale@gmail.com)

Introduction to Class Reptilia

1.1 Salient features of Class Reptilia with one example

- General Characters of Class Reptilia
- Classification
- Habit, Habitat and Distribution
- Animal Diversity in Reptiles

1.2 Venomous and Non-venomous Snakes

- Identification Characters
- Poisonous Snakes
- Grass Snakes
- Poison Apparatus

1.3 Snake Venom

1.4 Desert Adaptations

General Characters of Class Reptilia

1. The reptiles are predominantly terrestrial, creeping or borrowing animals, some are aquatic, tetrapodal vertebrates.
2. They are mostly carnivorous, air breathing and cold blooded animals.
3. Body is bilaterally symmetrical and divisible into four regions head, neck, trunk and tail.
4. Generally body is covered by exoskeleton of dry epidermal horny scales, shields, plates and scutes.
5. Endoskeleton is completely bony.
6. They possess two pairs of limbs, pentadactyle digits are provided with horny claws.
7. Skin is dry, cornified and without glands.
8. The position of mouth is terminal, jaws with simple conical teeth.
9. Reptiles usually show three chambered heart, but crocodiles are exception, which have four chambered heart.
10. Lungs are well developed for respiration.
11. Reptiles show metanephric kidney and excretion is uricotelic.
12. Nervous system is well developed and there are 12 cranial nerves.
13. Sexes are separate.
14. Fertilization is internal.
15. Reptiles are oviparous.
16. Typical cloaca is present.
17. Reptiles do not show parental care.

Classification:

Sub-class 1. Anapsida

1. Order – Chelonia

Sub-class 2. Diapsida

1. Order – Rhynchocephalia

2. Order – Squamata

1. Suborder – Lacertilia

2. Suborder – Ophidia

Sub-class 3. Archosauria

1. Order – Crocodilia

Sub-class 1. Anapsida

1. They are earliest, primitive reptiles arose in the carboniferous period.
2. Skull has complete bony roof.
3. The temporal region has no temporal vacuities or fossae.

Order – Chelonia:

1. Trunk is short and broad, it is enclosed in shields consisting of dorsal carapace and ventral plastron.
2. The carapace and plastron are made of outer epidermal scale and inner dermal bony plates.
3. Jaws are strong having no teeth but encased in horny sheaths.
4. In the aquatic forms, the limbs are modified into paddles.
5. There is a longitudinal cloaca, penis is single.
6. They are oviparous.
7. The marine forms are called turtles and hard shields fresh water forms as terrapins and terrestrial forms as tortoises.
8. Girdles lie within the ribs. Sternum is absent.
9. Eggs have firm, limy shell and are laid in holes on hand, dug and covered by females.

Examples: Testudo (Tortoise), Trionyx (Fresh water Turtle), Chelone (Marine Turtle)

Subclass 2. Diapsida:

1. The temporal region of skull has two fossae, one above and the other below, separated by process of post orbital and squamosal bones. Such skull is called diapsid.
2. Skin is covered by horny scales.

Order 1. Rhynchocephalia

1. Lizard like animals.
2. Limbs are weak, teeth are acrodont.
3. Vertebrae are amphicoelous types.
4. Copulatory organs lacking.
5. Tail is well developed but laterally compressed.
6. All are extinct except Sphenodon.

Example: Sphenodon

Order 2. Squamata

1. Body is elongated, cylindrical and tail is long.
2. Skin is covered by horny epidermal scales.
3. Quadrate is movable, teeth are acrodont or pleurodont.
4. Vertebrae are usually procoelous.
5. Ribs are single headed and are reduced or absent in the abdominal region.
6. Skull has lost one or both the temporal vacuities.

Suborder 1. Lacertilia:

1. Temporal fossae are reduced secondarily to one.
2. They have elongated, usually depressed body.
3. Two pairs of limbs, pentadactyle, used for running, climbing or burrowing.
4. Girdles are always present through reduced in limbless forms.
5. Eyes generally have movable eyelids.
6. Sternum has a T-shaped episternum.
7. Tail breaks off by reflex action and is regenerated.
8. Most of them are oviparous but some are ovoviviparous.

Example: Calotes, Draco, Uromastix, Varanus, Chamaeleon, Anguis

Suborder 2. Ophidia:

1. The snakes have a long, slender, cylindrical body. Limbs and girdles are absent.
2. Eyelids are not movable, ear opening and tympanum is absent.
3. Mouth is very expansible, upper jaw has movable bones.
4. Teeth are fused to the jaws. Tongue is slender and forked or bifid.
5. Ten pairs of cranial nerves are present. Cloaca is transverse having double spiny penis in males.
6. Majority of snakes are oviparous, some are viviparous.
7. They periodically cast off the horny layer of the skin.

Example: Python, Naja, Vipera, Bungarus, Hydras, Eryx

Subclass 3. Archosauria:

1. Skull is diapsid, interparietal bone and parietal foramen are absent.
2. Teeth usually occur only on jaw margins are set in sockets.
3. They tend towards a bipedal locomotion with accompanying changes in pelvic girdle and hind limbs.
4. Acetabulum is cap shaped and open below.
5. Hind limbs are vertical below the body, tibia is long and strong.

Order 1. Crocodilia:

1. Body is large, heavy and lizard like.
2. Skin is thick and leathery. It is covered by horny scales and bony plates.
3. Eyes, external nares and ears lie in a straight line on the top of the head.
4. Snout is elongated with external nares at the tip, they can be closed by valves.
5. Jaws are beset with blunty conical teeth all the margins and are thecodont.
6. Toes are webbed, cloacal aperture is a longitudinal slit with single penis.
7. Tail is large, powerful, laterally compressed organ for swimming.
8. Heart is four chambered. Urinary bladder is absent.
9. They are amphibious reptiles and carnivorous. They are oviparous.

Example: Crocodiles, Gavialis, Alligator

Habit, Habitat and Distribution:



Thank
you

