Class Reptilia.

Reptiles evolved from amphibians about 310 to 320 million years ago, when the world was entering a long, dry period. They dominated animal life during the Mesozoic era, They live in a wide range of habitats, including forests, swamps, grasslands, deserts, oceans, and mountains. The ability of reptiles to colonise land is supported by efficient lungs at the adult stage, which enhance respiration as against the use of gills and moist skin as obtains in many amphibians. Although many reptile species survived to the present day, many others are known only from fossils. The extinct groups include the marine ichthyosaurs and plesiosaurs, the flying pterosaurs, and the terrestrial dinosaurs. Reptiles are animals we see quite often – the most common being the lizards. Others include wall geckos, crocodiles, snakes and tortoises.

Characteristics of the Class Reptilia

Reptiles are characterised by the following features:

• **Dry skin with keratinised epidermal scales**. Scales help protect the animal's skin from desiccation and abrasion.

• Bony endoskeleton.

• Two pairs of pentadactyl (five digits) limbs with true claws (if limbs are present).

• No external ear

• Fertilization is internal and fertilized eggs laid (oviparous) on land or eggs retained internally until hatching (ovoviviparous)

• **Amniotic egg with leathery shell** that prevents rapid water loss.

• **Cold blooded (poikilothermic/exothermic).** Reptiles must regulate their body temperature by behaviour, either by basking in the sun to keep warm or by hiding under cover to keep cool.

• Gut and the ducts of the urinary and reproductive system open into a posterior chamber called the cloacae.

The Class Reptilia is composed of four orders namely

Order 1. Testudinata or Chelonia (turtles)

Order 2. Rhynchocephalia (Tuataras).

Order 3. Squamata (lizards and snakes).

Order 4. Crocodilia (crocodiles and alligators),

Order1. Characteristics of Order Testudinata (Turtles and tortoises)

The order is characterised by the following features:

• Shell or carapace formed from the fusion of vertebrae and ribs with dermal bones.

• No teeth but have a sharp-edged beak, called a tomium used as cutting edges to bite off chunks of food

• Oviparous, fertilization is internal and accomplished by a penis which is an outgrowth of the cloacal wall. Eggs are buried in a nest and left to incubate and hatch.

• No temporal opening in the skull behind the eye, a condition known as anapsis. This feature is unique among living reptiles.

The shell of turtle/tortoise consists of two basic parts, the top shell which is referred to as a carapace, and a bottom shell that is known as a plastron. The two parts of the shell are connected on each side by a portion of the shell known as the bridge. The ribs and vertebrae of turtle/tortoise, with the exception of the neck and tail, are fused to form the carapace. The shell is not an exoskeleton but a modified ribcage and part of the vertebral column. It cannot be "taken off". Because of the shell, the pectoral and pelvic girdles are uniquely located within the ribcage. The limb bones are also modified to accommodate the shell. Turtles/tortoises are long-lived animals. Some live from 20 to over 100 years, depending on species. Some species only eat animal matter while others eat both plants and animals.

Order2. Characteristics of the Order Rhynchocephalia (Tuatara)

Members of this order are characterised by the following features:

• A scaly loose skin which may be soft to touch.

• A spiny back

• A third primitive, light-sensitive eye above the brain.

• Live in burrows and are nocturnal, hunting at night just outside their burrow entrance.

• They feed on worms, lizards, millipedes and small seabirds.

Tuatara means "spiny back". Tuataras are reptiles but they are very different from lizards, snakes, and crocodiles. The order has only two living species in New Zealand. They are solitary, nocturnal hunters of insects and small vertebrates. Tuataras grow to 60 centimeters

(24 inches) in length. They may live more than 50 years; their eggs must incubate for 15 months before hatching—longer than for any other reptile.

Order3. Characteristics of the Order Squamata (Lizards and snakes)

The order is characterised by the following features:

• Transverse vent or cloacal opening.

• Skull that is more moveable (or kinetic) than other reptile orders.

• Paired copulatory organs called hemipenes.

• Body covered in scales.

• Periodically shed their skin (a process known as ecdysis / moulting).

• Carnivorous or omnivorous

• Lay eggs; others bear live young (ovoviviparous).

The Order Squamata (meaning scaled reptiles) is the largest order of reptiles. It is the most diverse of the reptile orders, containing 96% of the reptile species. They are represented by the Lacertilia (lizards) and the Serpentes (snakes). Members of this huge order are found worldwide, except in Antarctica and on a few very remote islands. Snakes (Serpentes) lack limbs; however, some species have vestigial (degenerate or functionless) limbs in the form of small spurs (e.g. the rubber boa). All snakes lack eyelids and external ear opening (some burrowing lizards lack ear openings as well). Snakes have an elongate body (some lizard species are limbless and have long slender bodies). On the other hand, lizards (Lacertilia) are characterised by four limbs (some lizards species that lack limbs), visible ear openings, and movable eyelids. These three characters alone readily distinguish lizards from snakes.

Order4. Characteristics of Order Crocodilia (Crocodiles and alligators)

Members of this order are characterised by the following features:

* Large-sized, carnivorous and aquatic reptiles.

* Skin thick with scales and bony plates.

* Skull diapsid. Quadrate immovable.

* Ribs bicephalous. Abdominal ribs present.

* Heart completely 4-chambered.

* Teeth numerous, thecodont, lodged in sockets.

* Limbs 'short but powerful, clawed and webbed.

* Tail long, strong and laterally compressed.

* Cloacal aperture is a longitudinal slit.* Male with a median, erectile, grooved penis.