

Lecture 5 – Anamniotes (*Additional notes*)

Embryo: An organism in its early development stage.

Amnion: A thin transparent fluid in which the embryo is enclosed and suspended whilst being cushioned by its surroundings.

Anamniotes are a group composed of fish and amphibians whose embryos are **not** enclosed by an amnion.

As a consequence, anamniotes must lay their eggs in water, otherwise their eggs would dry out.

5.1 Fish

Characteristics of fish,

- Water Habitat.
- Breathe underwater using their **gills** by a method of gas exchange with water to extract oxygen atoms.
- Fins at the **top and sides** for assistance in motion and stability.
- Some fish are equipped with a **air bladder** which helps them remain afloat and maintain a stable buoyancy

The three main classes of fish are,

- Agnatha.
- Chondrichthyes
- Osteopathy's.

5.2 Amphibians

Characteristics of amphibians,

- Young/larval stages in water, adult stages in land.
- *Mostly* fertilize externally (Eggs fertilized by sperm cells).
- Must undergo a process of **metamorphosis** in order to develop organs to enable the transition to a terrestrial environment. Necessary organs include,
 - Limbs, to allow manoeuvrability.
 - Eyes to enable vision on land.
 - Lungs to enable breathing methods on terrestrial land. (Gas exchange with air not water) (They also breathe through their skin)
- Must keep their bodies moist/wet and hence occupy near to a water source.
- Hibernate in colder months.

Main groups of amphibians,

- Ochthystegalia.
- Anura.
- Urodela.
- Apoda.