

CLASAS AMPHIBIA (Ch. 28)

1. 'HERPTILES'

ectothermic tetrapods - 2 classes (Amphibia & Reptilia)

invasion of land - evolved to survive drought

advantages - more oxygen than water
- new foods & less competition

disadvantages - more temperature fluctuation
- more difficult to move (against gravity)
- dehydration (need mucus or scales)

ectothermy - much behavioral control (avoid temp extremes, seek sun/shade, burrow, nocturnal)

2. CLASS AMPHIBIA

diversity - 2500 species, size cm to 1.5m
- mucus but no scales

ecology - predators (mainly arthropods)
- restricted to freshwater & moist land
(due to mucoid skin & gelatinous eggs)

evolution - first vertebrate to invade land
- evolved from coelacanth, led to reptiles

3. ORDERS

1. salamanders - incl. newts, elongate, distinct neck & tail
- front & hind legs equal length (each 4 digits)
- larva resembles adult with gills

2. frogs & toads - broad, no neck or tail
- hind legs longer than front, larval tadpole
• frogs - smooth, long & slim, wetter habitats
• toads - warty, short & wide, dryer habitats

(3. caecilians) - rare, worm-like, blind

4. LOCOMOTION

stance - legs positioned from side

salamanders - walk (crouch horizontal, undulate lateral)
- swim (flattened tail, no fins)

frogs - jump & swim (long hind legs, finned toes)
- climb (adhesive toes in tree frogs)

5. REPRODUCTION

sexual - dioecious, external fertilization
- oviparous (gelatinous, no hard shell)

indirect development
- gills in larva, metamorphosis to lungs
- neoteny (aquatic adults retain gills)

6. OTHER SYSTEMS

integument - mucous & toxic glands

skeleton - true bone (fused against gravity)

nervous - Jacobson's organ (olfaction in palate)

digestion - sticky tongue

circulatory system - closed, 3-chamber heart
- partial double pathway

respiration - pair of external gills
- skin, pair of lungs (positive pressure)

excretion - pair of kidneys
- urea (less toxic/water than ammonia)