

# Amphibians (Amphibia) & Reptiles (Reptilia)



Zoology




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## Herpetofauna ar

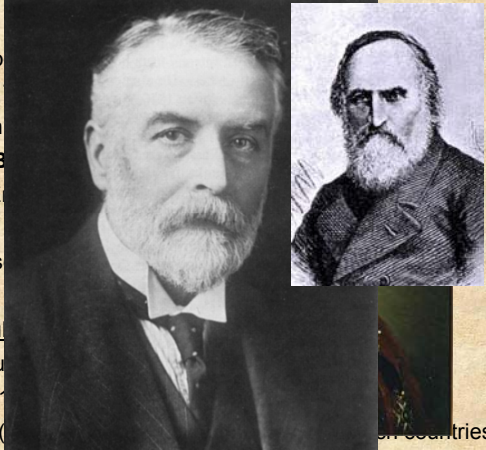
Antiquity

- Greece – Tyfón, Pythón – Gáia  
cult of Aesculapion
- Egypt – Vec  
Cleopatra
- fledged sna

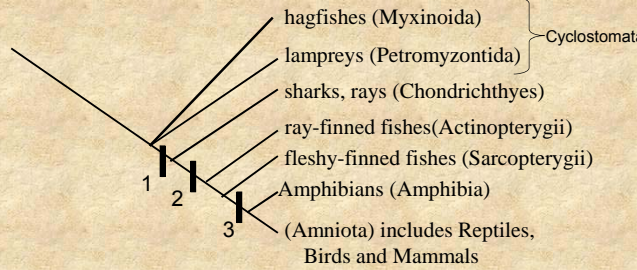


History

- batracholo
- Linneus 1
- together in
- count de B
- (1854) – E
- Catalogue
- Royal Mus
- (1882)
- Czech Repu
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## Origin and Evolution



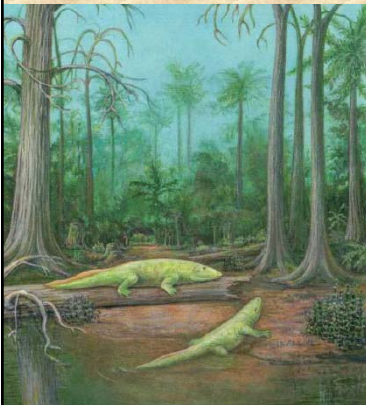
hagfishes (Myxinoidea)  
lampreys (Petromyzontida) } Cyclostomata  
sharks, rays (Chondrichthyes)  
ray-finned fishes (Actinopterygii)  
fleshy-finned fishes (Sarcopterygii)  
Amphibians (Amphibia)  
(Amniota) includes Reptiles,  
Birds and Mammals

1. Gnathostomata – jawbone
2. Osteognathostoma – skeleton is osificated
3. Tetrapoda – walking on land on four limbs

## Origin and Evolution

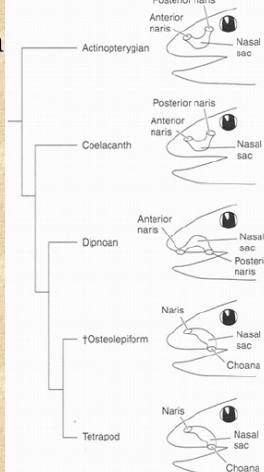
### Conquer of land

- during Devonian period (before 417- 354 mil. year)
- on land were plants and insect
- in atmosphere was about 35 % O<sub>2</sub>



## Origin and Evolution

- ancestor of Tetrapods belong to Sarcopterygii, probably to group Rhipidista
- fish living in fresh and shallow water
- predator hunting by ambush – smell analyzing of water without moving by choans

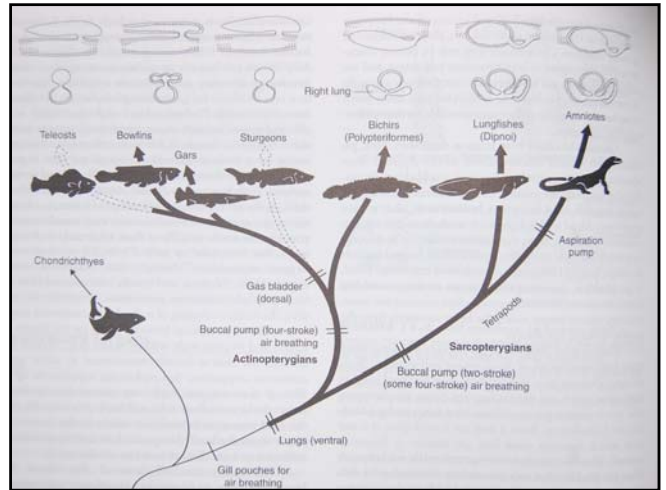


### Origin and Evolution

*Eusthenopteron* (380 mil.let)

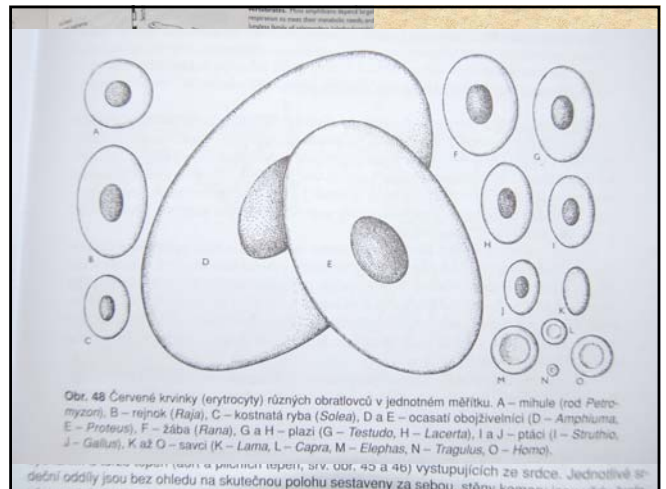
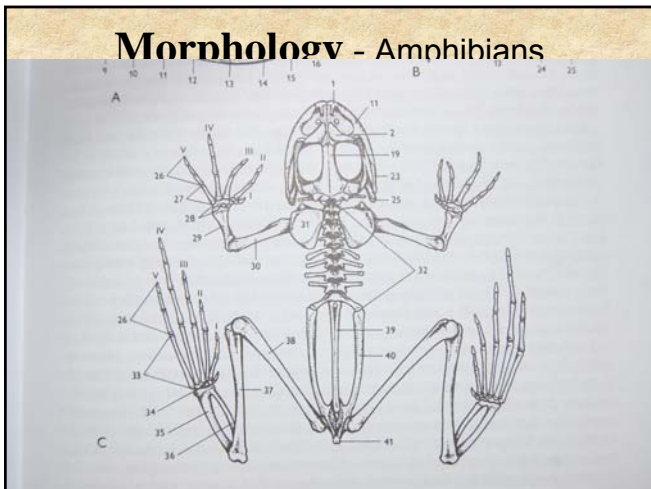
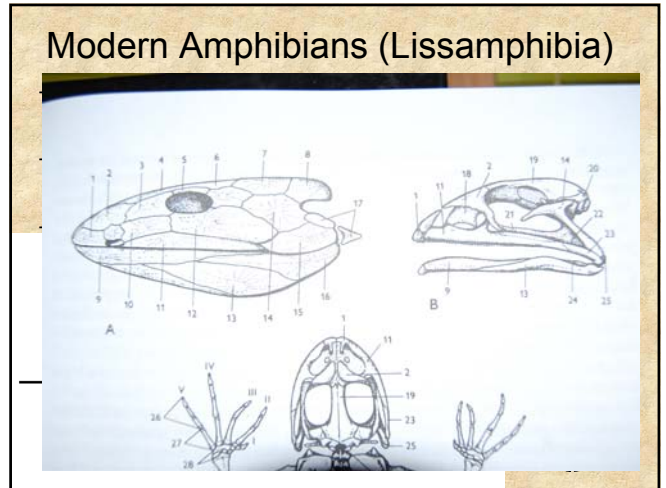
*Ichtyostega* (363 mil.let)

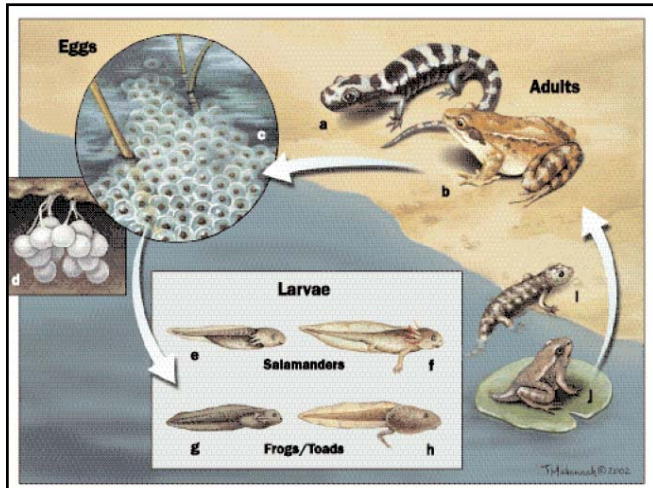
*Tiktaalik* (375 mil.let)



### Origin - Amphibians

- Amniota
- Anthracosauria
- Lepospondyli
- Temnospondyli
- Lissamphibia
- Ichtyostegalia





### Caecilian (Apoda, Gymnophiona)

- 3 families, 140 species
- distributed in tropical regions

The slide features a map of South America with a green highlight on the continent. To the right is a photograph of a caecilian, a limbless amphibian with a dark body and a prominent yellow stripe running down its side. 
   
**Fig. 9.** A closeup of *Ichthyophis kohtaoensis* showing nuchal collars and grooves immediately behind the head. ©2004 Henk Wallays



### Salamanders

- 9 families, cca 600 species
- distribution mainly on temperate and tropical regions
- fully aquatic, changing to terrestrial

The slide includes a map of North America with a green highlight on the continent. To the right is a diagram illustrating various behaviors of salamanders during the spermatophore transfer phase. 
   
- **ORIENTATION:** Includes 'sniff', 'follow', 'move to the front', and 'fan'. 
   
- **STATIC DISPLAY:** Includes 'whip wave'. 
   
- **RETREAT DISPLAY:** Includes 'retreat & whip'. 
   
- **SPERMATOPHORE TRANSFER PHASE:** Includes 'creep & follow', 'quiver', 'touch tail', 'deposition', 'creep on', 'brake & touch tail', 'wiggle tail bent', and 'push back'.





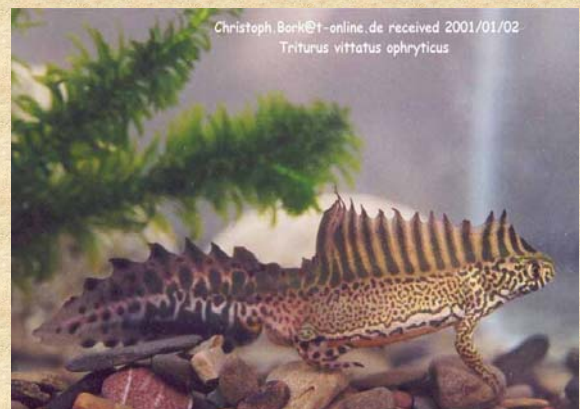
*Siren lacertina*



*Proteus anguinus*



*Ambystoma mexicanum*



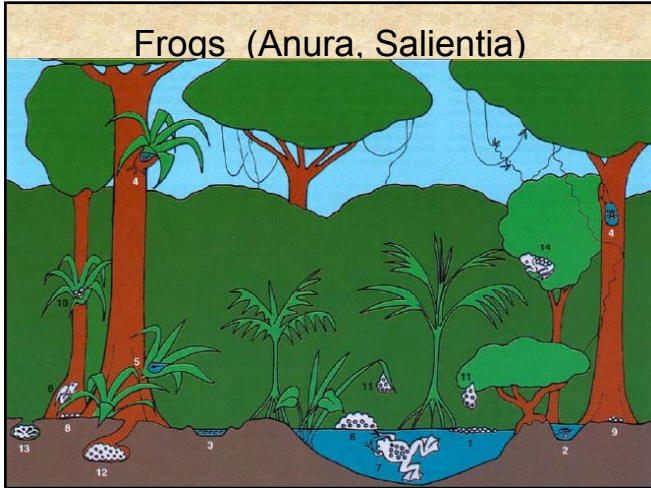
*Omatriton vittatus*



*Taricha torosa*



*Hydromantes italicus*



*Ascaphus truei*



*Alytes obstetricans*



*Pipa pipa*



*Pelobates fuscus*



*Ceratophrys ornata*



*Telmatobius culeus*



*Rheobatrachus silus*



*Rhinoderma darwini*



*Bufo marinus*



*Dendrobates azureus*



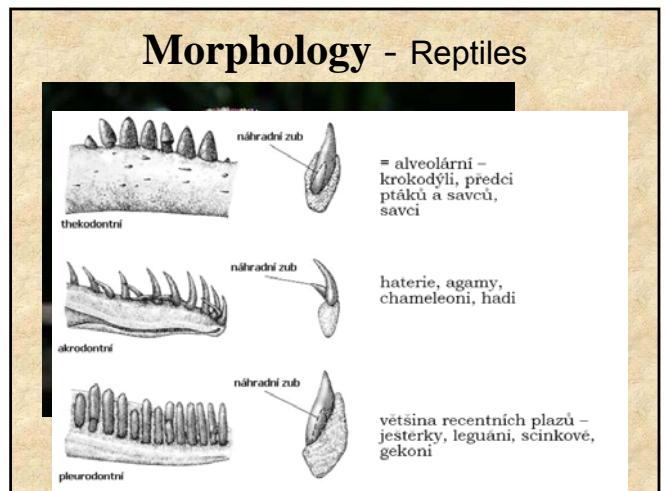
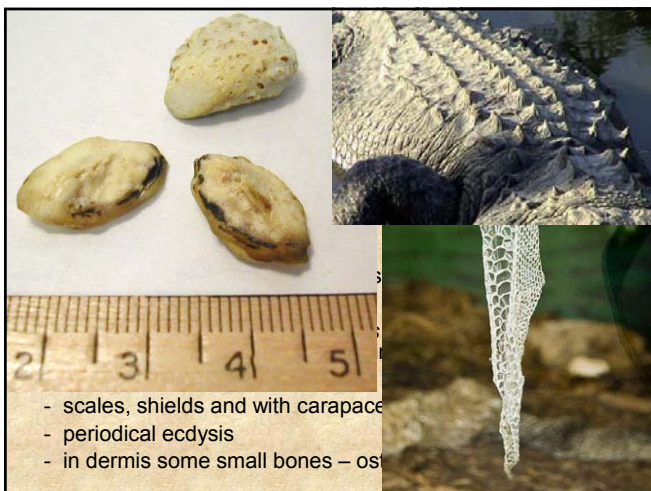
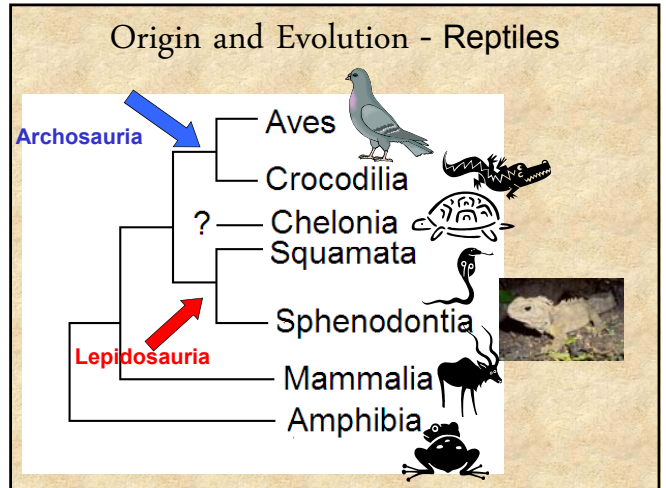
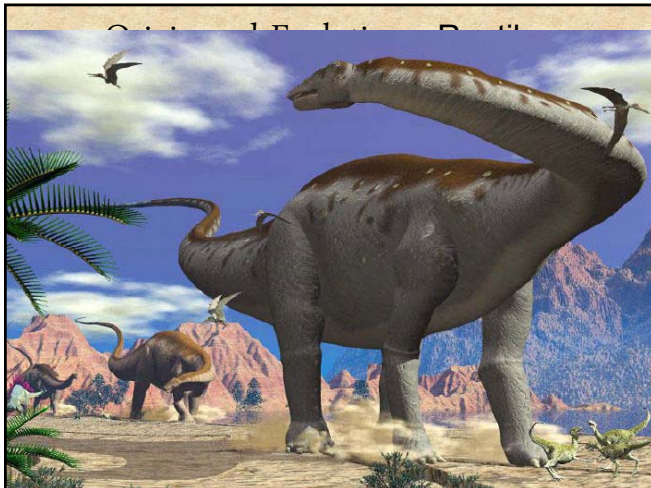
*Agalychnis callidryas*



*Conraua goliath*



*Rhacophorus reinwardtii*



## Morphology

### NERVOUS SYSTEM

- **brain** – cerebrum, *telencephalon*  
– *cerebellum* developed
- 12 pairs of head nerves

### UROGENITAL SYSTEM

- **kidney** – metanephros
- **cloaca**, in turtles and lizards has osmoregulatory function
- **copulatory organs** – turtles and crocodiles have penis  
lizards and snakes have hemipenis
- mainly laid eggs but some of them also viviparous



## Turtles (Testudines, Chelonia)

- 13 families, 250 species
- from tropics to temperate zone
- terrestrial, fresh water and salt water habitats
- carapace – side-necked (Pleurodira) vs. Hidden-necked (Cryptodira)



*Chelus fimbriatus*



*Podocnemis expansa*



*Caretta caretta*



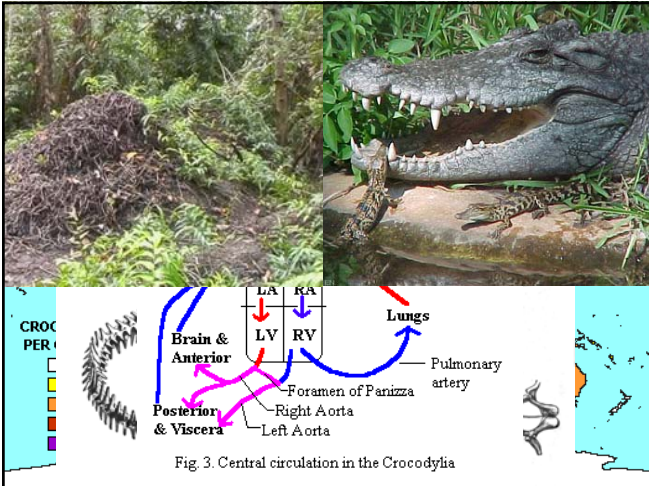
*Macrolemys temmincki*



*Geochelone gigantea*



*Trachemys scripta*



*Alligator mississippiensis*



© Jan Ševčík

*Caiman crocodylus*



*Crocodylus porosus*



*Gavia gangetica*

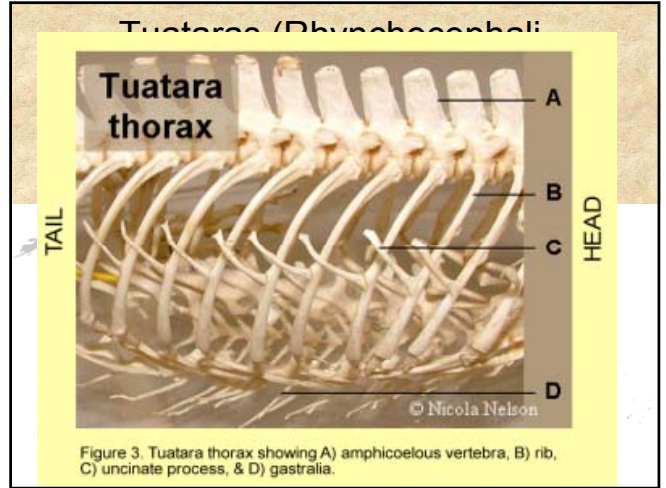
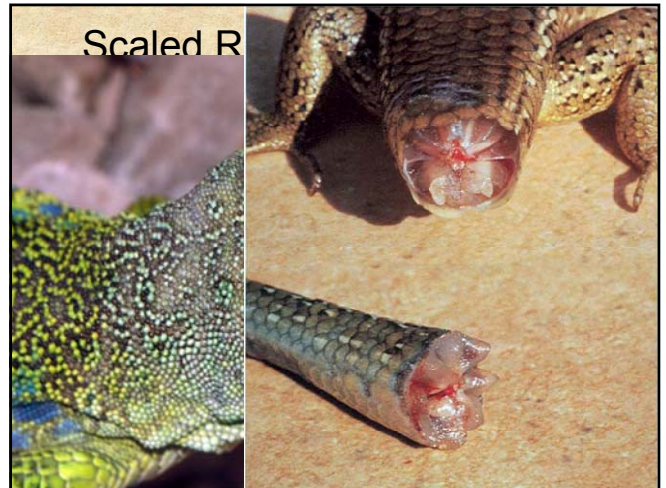


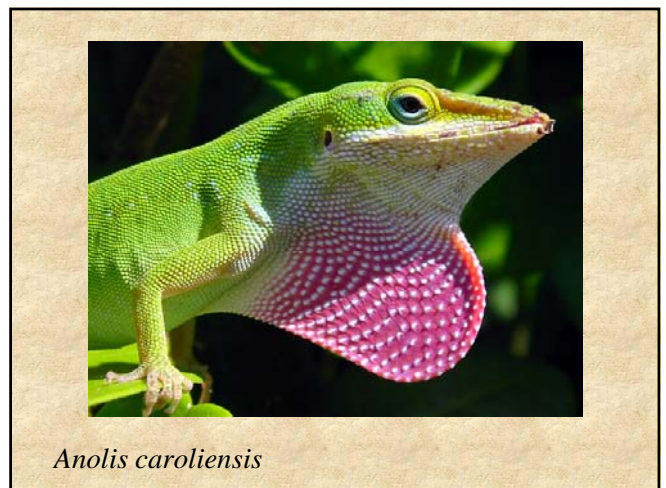
Figure 3. Tuatara thorax showing A) amphicoelous vertebra, B) rib, C) uncinate process, & D) gastralia.



*Sphenodon punctatus*



*Iguana iguana*



*Anolis caroliensis*



© - lubomir hlasek  
www.hlasek.com  
Chamaeleo chamaeleon 8195

*Chamaeleo chamaeleon*



*Scincus scincus*



Credit: © Jeff Servoss

*Heloderma suspectum*



*Lacerta lepida*



*Ameiva ameiva*



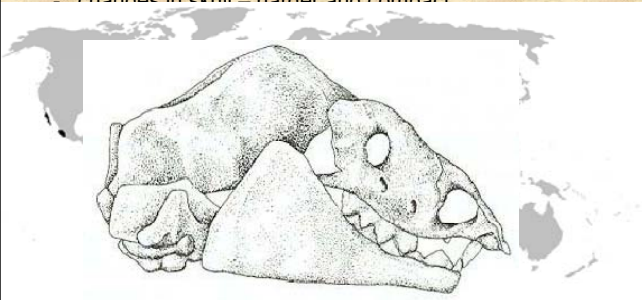
*Ophiosaurus apodus*



*Varanus komodoensis*

**Suborder Worm lizards (Amphisbeania)**

- 4 families, 150 species
- tropics and subtropics, except Australia
- subterranean animals
- changes in skull – harder and compact

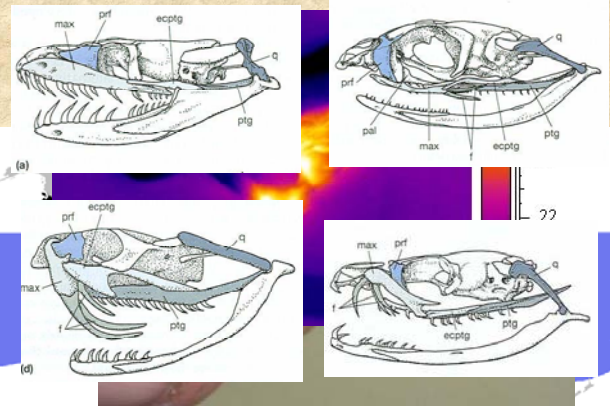


*Bipes biporus*



*Blanus cinereus*

**Suborder Snakes (Serpentes)**





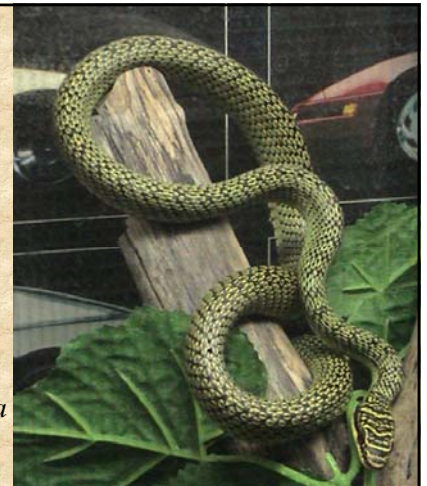
*Leptotyphlos dulcis*



*Boa constrictor*



*Python reticulatus*



*Chrysopelea ornata*



*Natrix natrix*



r. *Micrurus*

