

Squamates of Connecticut

May 11th 2017



Announcements

- Should have everyone's hypotheses in my inbox
 - Did anyone else not receive my feedback?
- Assignment #3, Project Proposal, due tomorrow at 5pm
- Next week:
 - Preserved specimens will be available in class to examine
 - You should *definitely* look at specimens we haven't found yet in the field / specimens we likely won't find in the field
 - Tentative night trip date: Tuesday May 16th, 7pm
- Today: I need a team of 3 to suit up in waders to hunt for *Glyptemys insculpta*

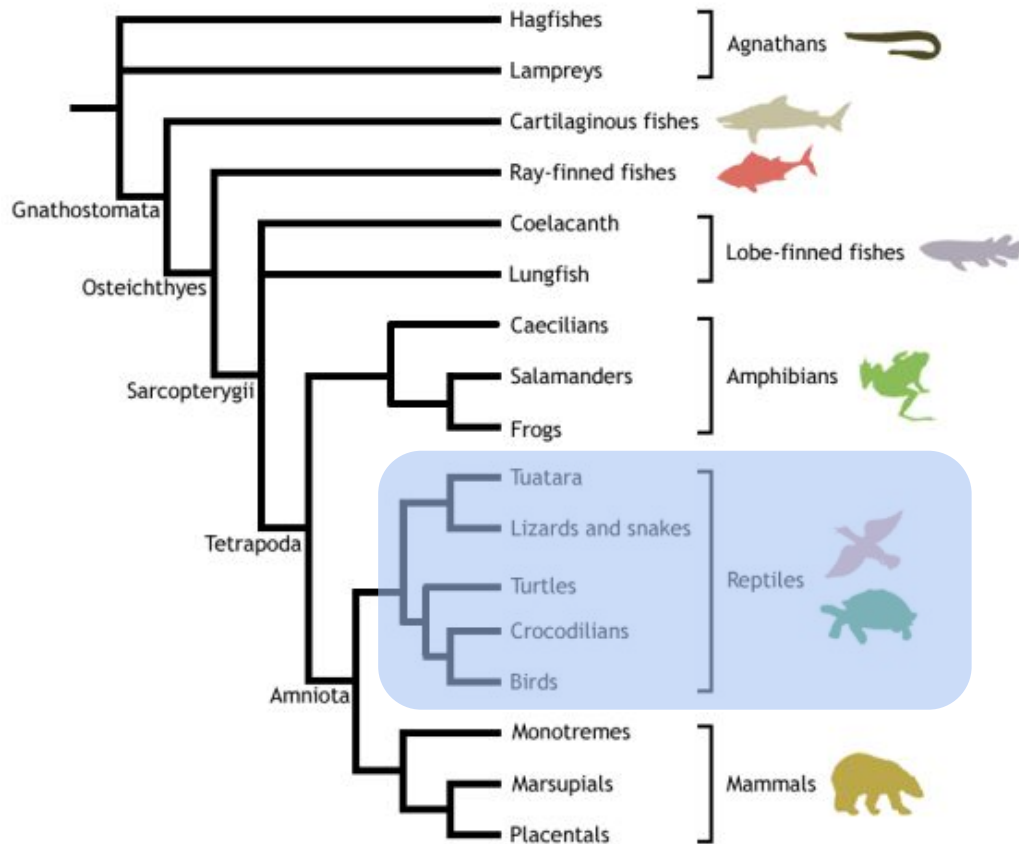
Assignment #3: Project Proposals

Now that you've gotten feedback on your 5 research questions and their corresponding hypotheses, it's time to pick the one you'll pursue.

You'll need to include...

1. Your partner's name (only if you choose to work in as a pair)
 2. What species you'll be working on (or if you'll be surveying/comparing multiple species)
 3. The final version of the research question and your hypothesis you want to pursue
 4. A brief write up (less than 1 page double spaced) of the field methods you plan on using
 - a. How will you sample / take data?
 - i. Hand catching? Nets? Boards?
 - b. What sites will you sample / take data from?
 - c. How many animals do you plan on collecting OR how long you will spend surveying OR how many boards you'll place in the field
 - i. Hint: for surveys you'll need **at least** 1 hour per site for adequate sample sizes
- Name your file: LastName_ProjectProposal.docx
 - Email it to me with subject line: Field Herpetology Project Proposal
 - Due by 5pm on Friday May 12th
 - Expect feedback over the weekend

Class Reptilia: **Extant Reptiles**



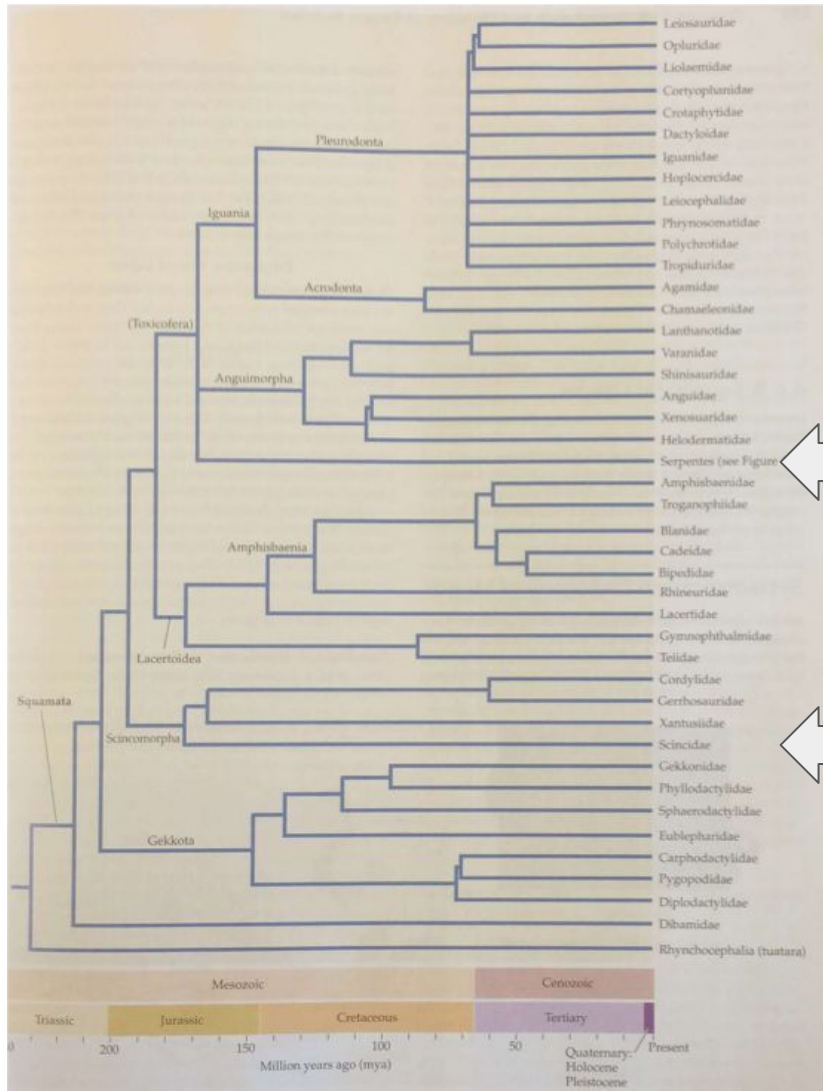
- Turtles are sisters to crocodiles and birds
 - Yeah, birds are reptiles, haven't you watched Jurassic Park yet?
- Lizards and snakes are part of one clade called the squamates (squamata)
 - Squamates are sister to a "living fossil" clade, made up of one species, the Tuatara of New Zealand

Order Squamata: **Lizards and Snakes**

- One of the most incredibly diverse group of vertebrates (not just reptiles!)
 - Includes the snakes - really just a highly derived lizard!
- Herbivores, carnivores
- Four limbs or none
- Live bearers and egg-layers
- 42 “families” of squamates worldwide, > 10000 species
 - 1 species of lizard in CT
 - 14 species of snake in CT



Order Squamata: **Lizards and Snakes**

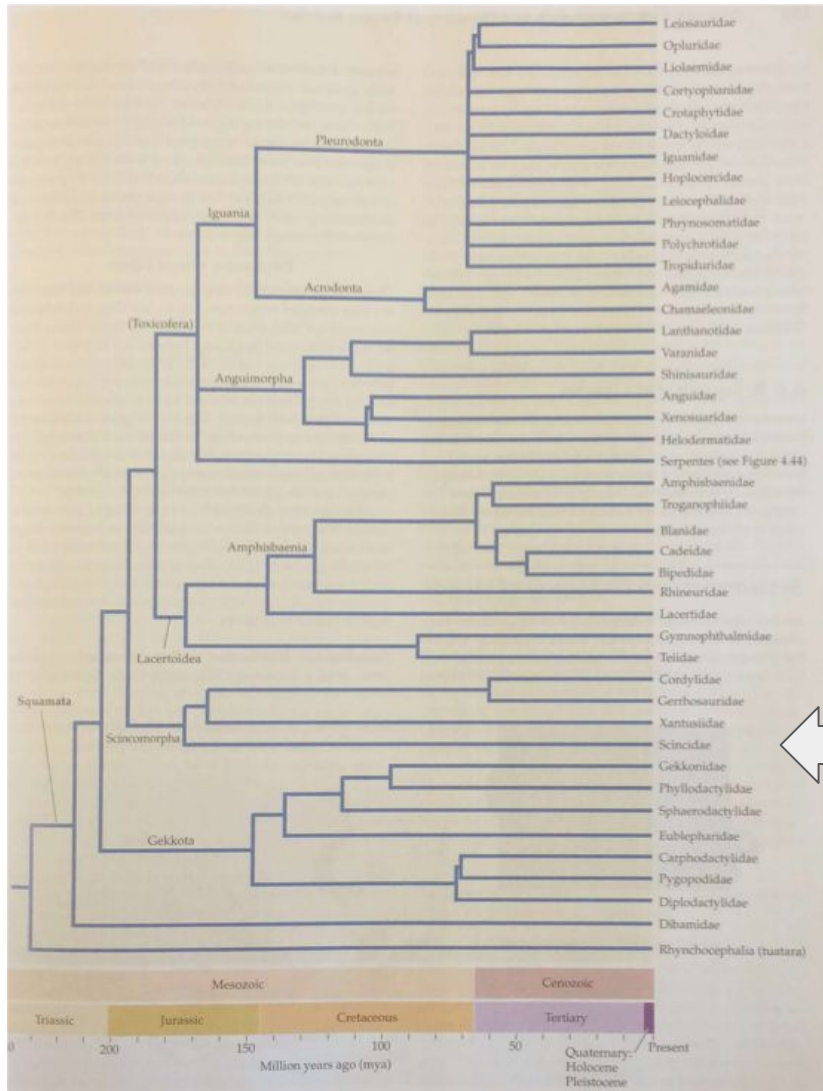


Serpentes
(actually a
“suborder”)

Scincidae

Connecticut
groups

Order Squamata: **Lizards and Snakes**



Scincidae

Family Scincidae: **Skinks**



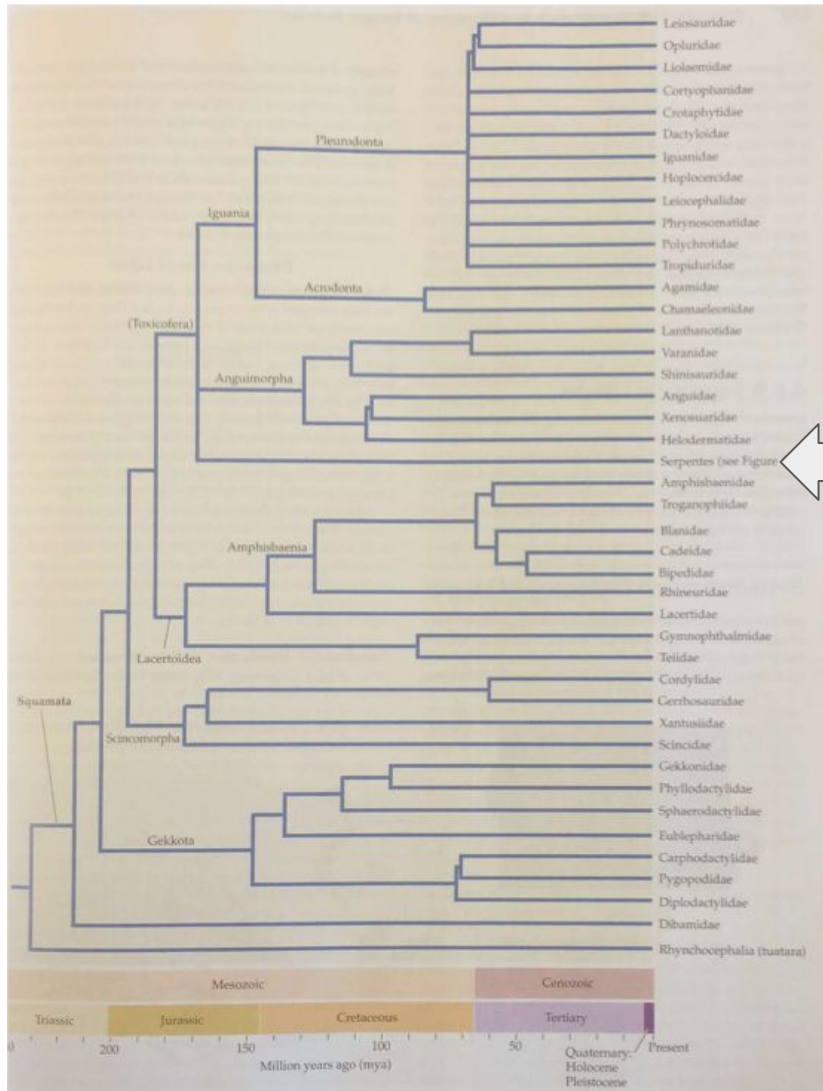
- Of the squamates, this family has the most species (> 1600 species) - considered an explosive radiation
- Most are fossorial (skitter under cover objects or under dirt), some are "sand-swimmers"
- Have bones in their scales, giving them a shiny appearance
- Many species in this family have evolved viviparity (live birth)

Plestiodon (Eumeces) fasciatus: Five Lined Skink

- DEEP Status: **THREATENED**
- Completed terrestrial, mostly found under rocks
- Bright blue tail as juveniles
- Found in rocky habitat along the Housatonic river (sometimes spotted by rock climbers in western CT)
- Sexing
 - **Males:** have a broad, red head, during mating season and turn olive
 - **Females:** retain juvenile stripes but lose tail color



Order Squamata: **Lizards and Snakes**



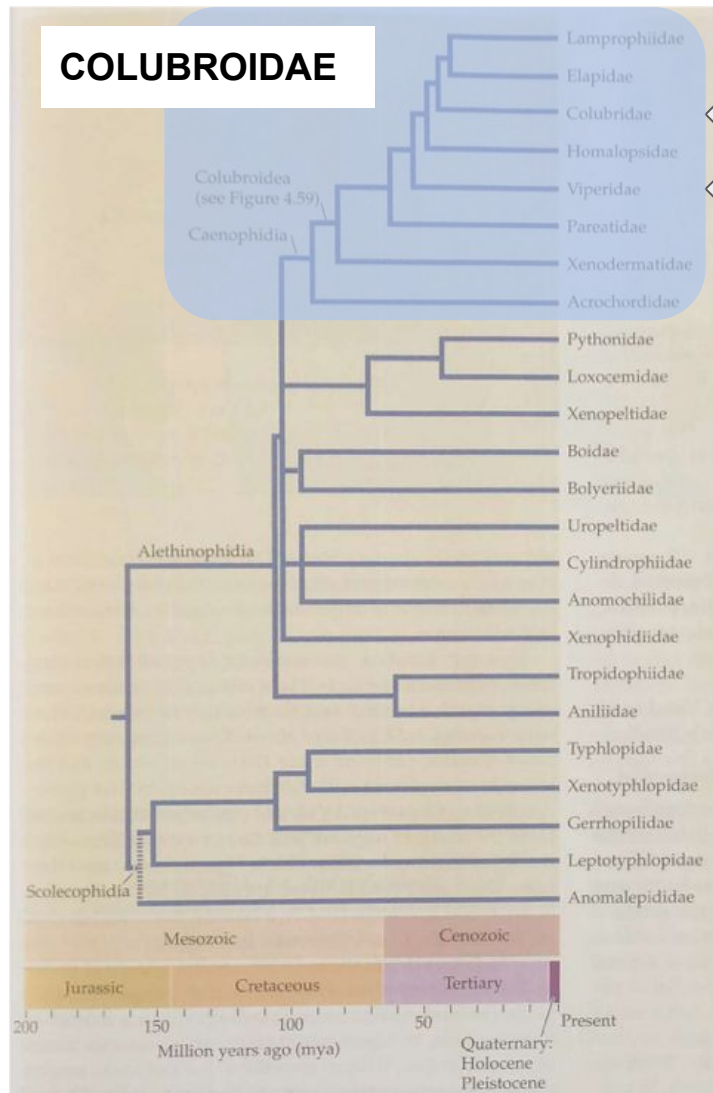
Serpentes
(actually a
“suborder”)

Suborder Serpentes: **Snakes**

- An extremely derived group of legless lizards
 - Snake ancestor was probably a fossorial legless lizard
 - Unlike other legless lizards, they extended their abdomen, not their tail
- United by specializations to obligate carnivory
 - Extreme skull modification
 - Multiplication of vertebrae
- 5000 species worldwide
 - 14 species in CT
 - **2 VENOMOUS**



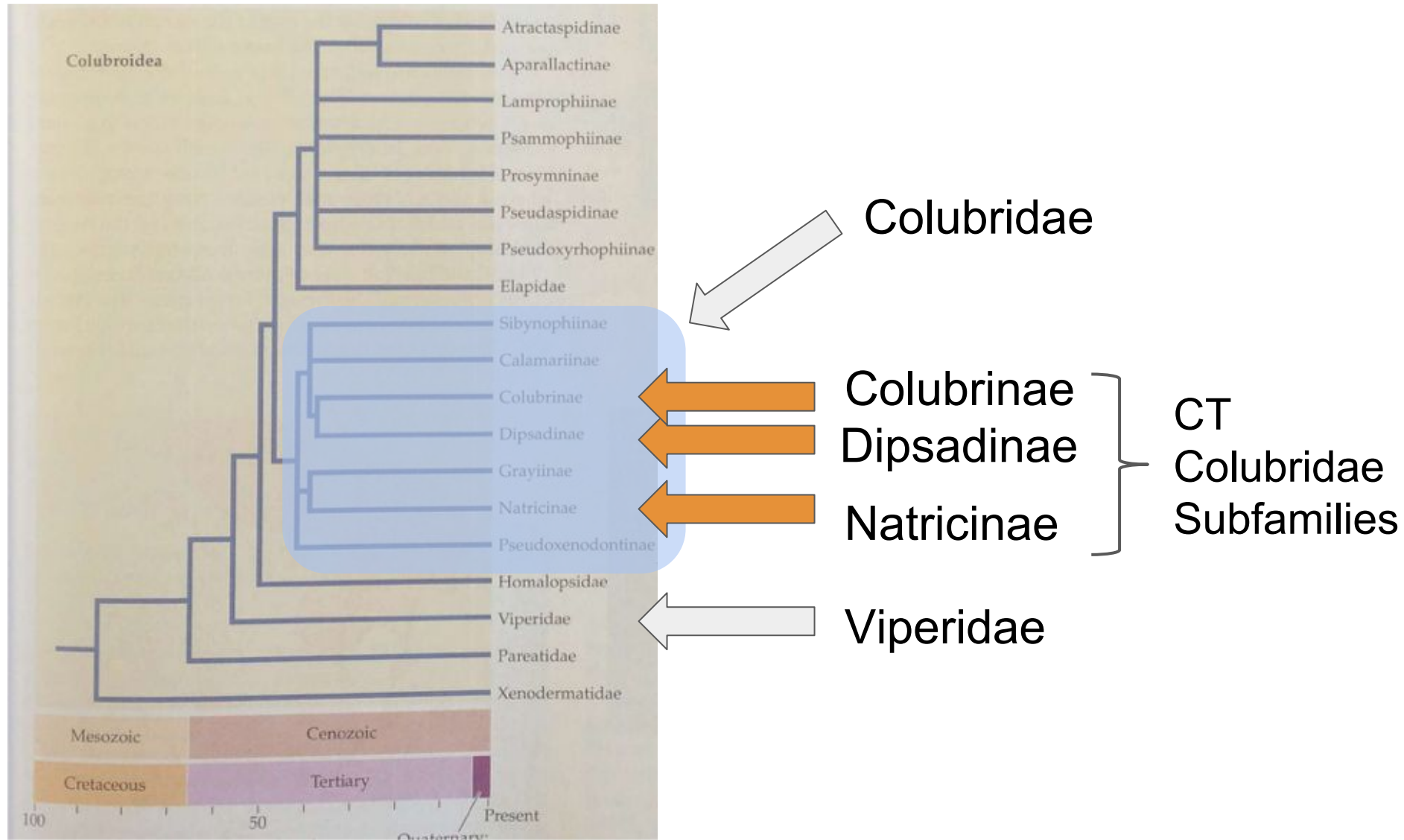
Suborder Serpentes: Snakes



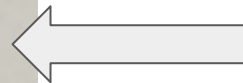
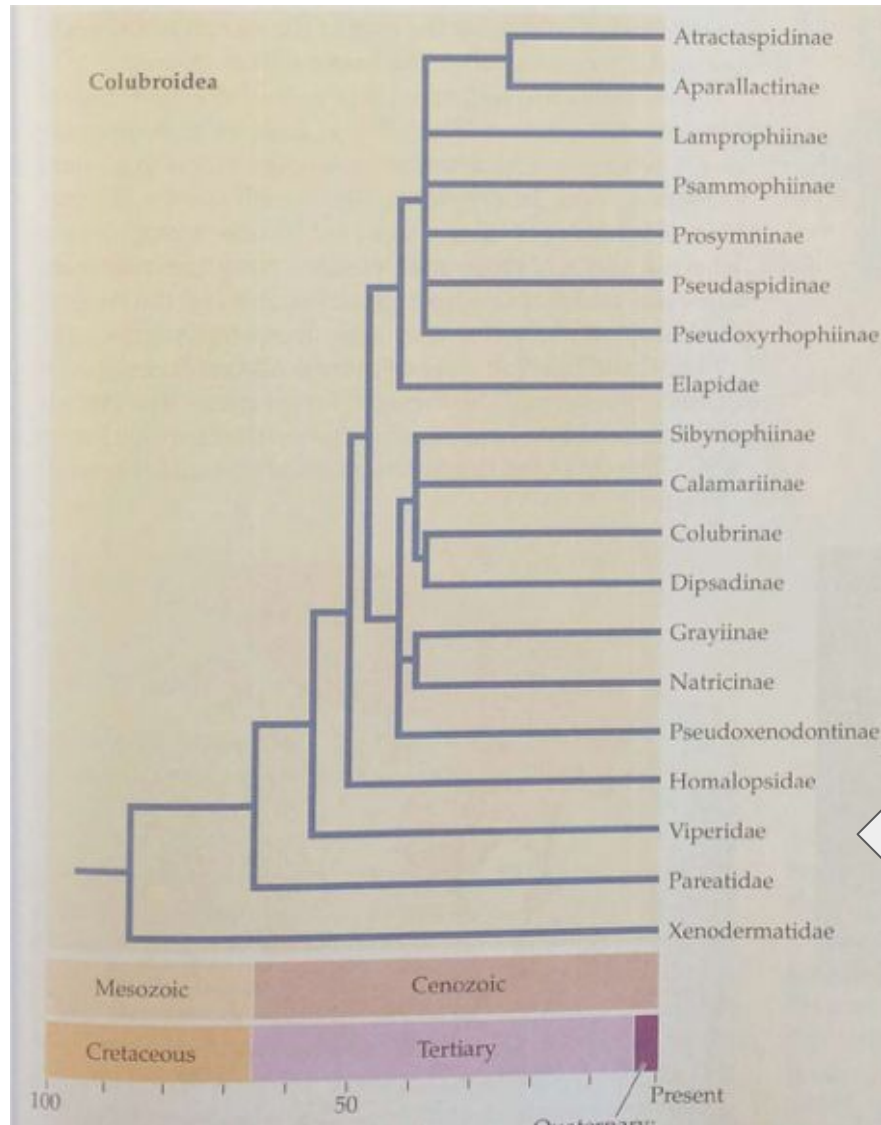
Colubridae
Viperidae

Connecticut
families

Superfamily Colubroidea: **Colubrid Snakes & Allies**

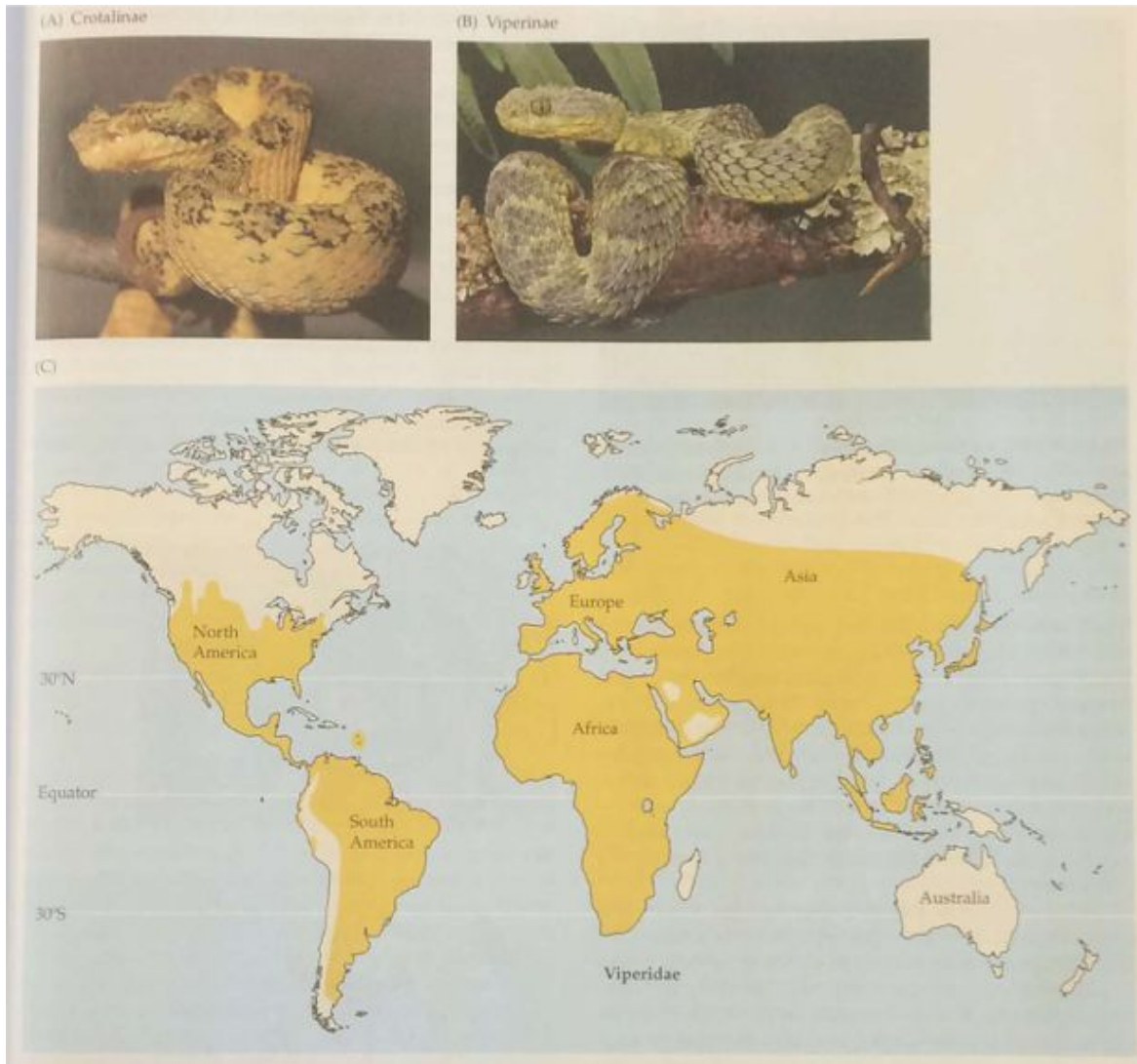


Superfamily Colubroidea: **Colubrid Snakes & Allies**



Viperidae

Family Viperidae: **Vipers**



- Heavy bodied snakes famous for their sit and wait predation strategy
 - Typically consume mammals, hence why their venom is so dangerous to humans, and why they have IR vision
- All viperidae vibrate their tails, although only select crotaline vipers have rattles
 - The largest group of crotaline vipers are the rattlesnakes

Agkistrodon contortrix: Northern Copperhead

- DEEP Status: **DECLINING**
- Limited distribution in CT
 - Talus slopes along the CT river
- Tan, with patterns matching leaf litter
- IR vision
- **VENOMOUS**
- Sexing:
 - **Males:** slightly smaller than females, but comparatively longer tails



Agkistrodon contortix: **Northern Copperhead**



Agkistrodon contortrix: **Northern Copperhead**

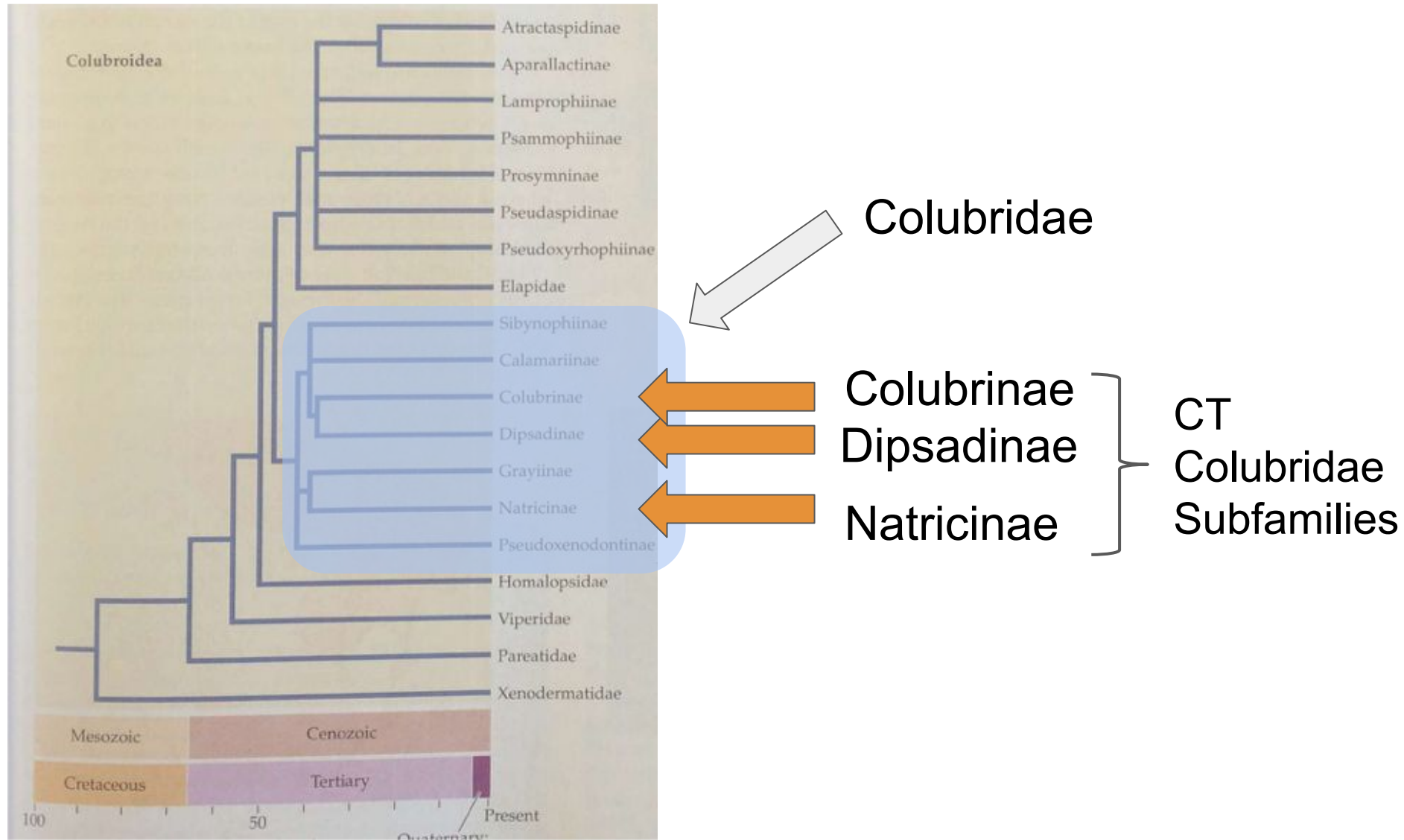


Crotalus horridus: Timber Rattlesnake



- A snake with a deep and rich history in New England
- DEEP Status: **HIGHLY ENDANGERED**
 - Protected by the state, only one or two populations
- Only rattlesnake in CT
- IR Vision
- Feeds entirely on small mammals
- **VENOMOUS**
- Sexing:
 - **Males:** comparatively longer tails

Superfamily Colubroidea: **Colubrid Snakes & Allies**

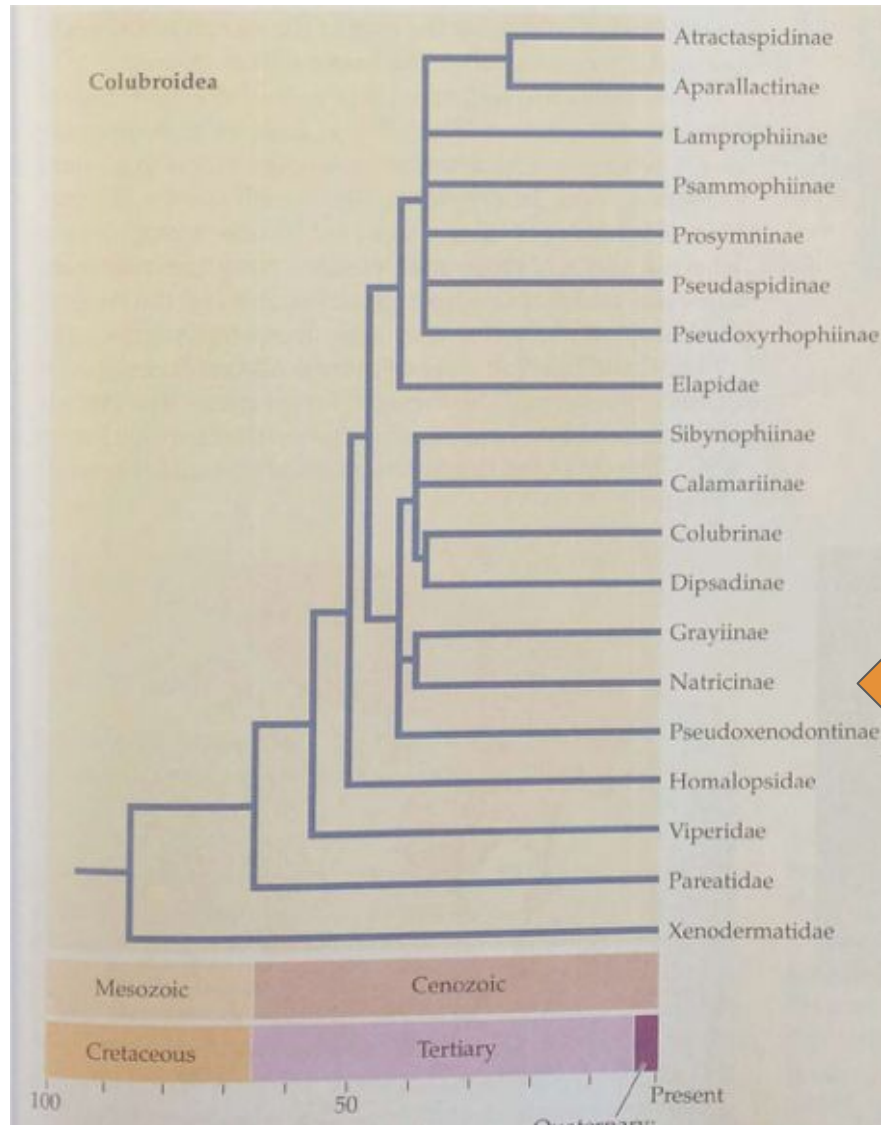


Family Colubridae: **Colubrid Snakes**



- A hugely diverse snake family, making up most of the North American snake fauna
- A variety of lifestyles, but most are terrestrial
- Divided into 7 subfamilies, 3 of which are in CT

Superfamily Colubroidea: **Colubrid Snakes & Allies**



Natricinae

Thamnophis sirtalis: **Eastern Garter Snake**



- Most common snake in CT and the US
 - Except for this year, apparently...
- Model snake for most of what we know about snakes
- One dorsal stripe, two lateral stripes, checkerboard pattern in CT, but really variable across the US
- Sexing:
 - **Males:** smaller, comparatively longer tails
 - **Females:** substantially larger

Thamnophis sauritis: Eastern Ribbon Snake

- DEEP Status: **SPECIAL CONCERN**
- Closely resembles the garter snake
 - Long tail gives it away, can be 1/3 of total body length
 - Several rows of colored scaled between lateral stripes and belly scales, little/no checkering
- More aquatic than the garter snake
 - Found around streams, bogs, swamps, pond edges
- Feeds on fish and aquatic amphibians



- Sexing:
 - **Males:** smaller, comparatively even longer tails
 - **Females:** substantially larger

Nerodia sipedon: Northern Water Snakes

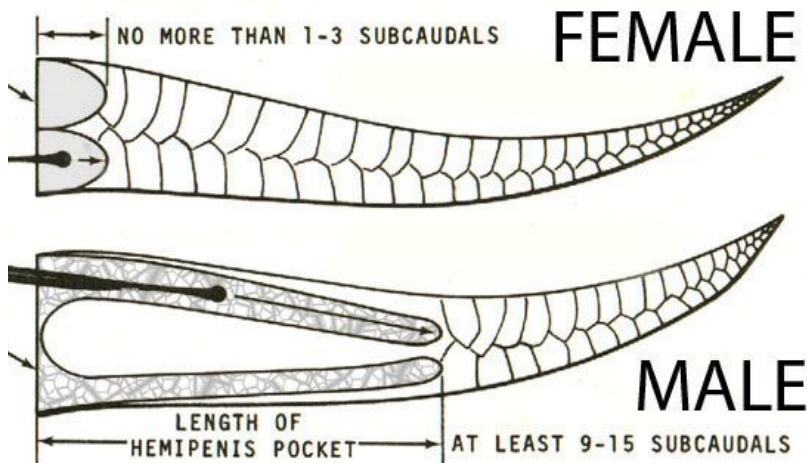
- If you're around freshwater, you can bet on finding these snakes
 - Often confused with cottonmouths and copperheads
 - Large, heavy-bodied
 - Triangular head
 - Keeled scales
- Juveniles have an obvious banding pattern
- Eat fish and frogs
- They WILL attempt to bite you
- Sexing:
 - **Males:** smaller, comparatively longer tails
 - **Females:** substantially larger



Storeria dekayi: DeKay's Brown Snake



- Another common and small snake
 - Yet it has managed to elude me for 4 years
- Mostly found in stone walls, rock rubble, and under junk
- Brown with regular black dots down the back
- Sexing:
 - Requires cloacal probe
 - **Males:** much longer cavity (the hemipenis pocket)

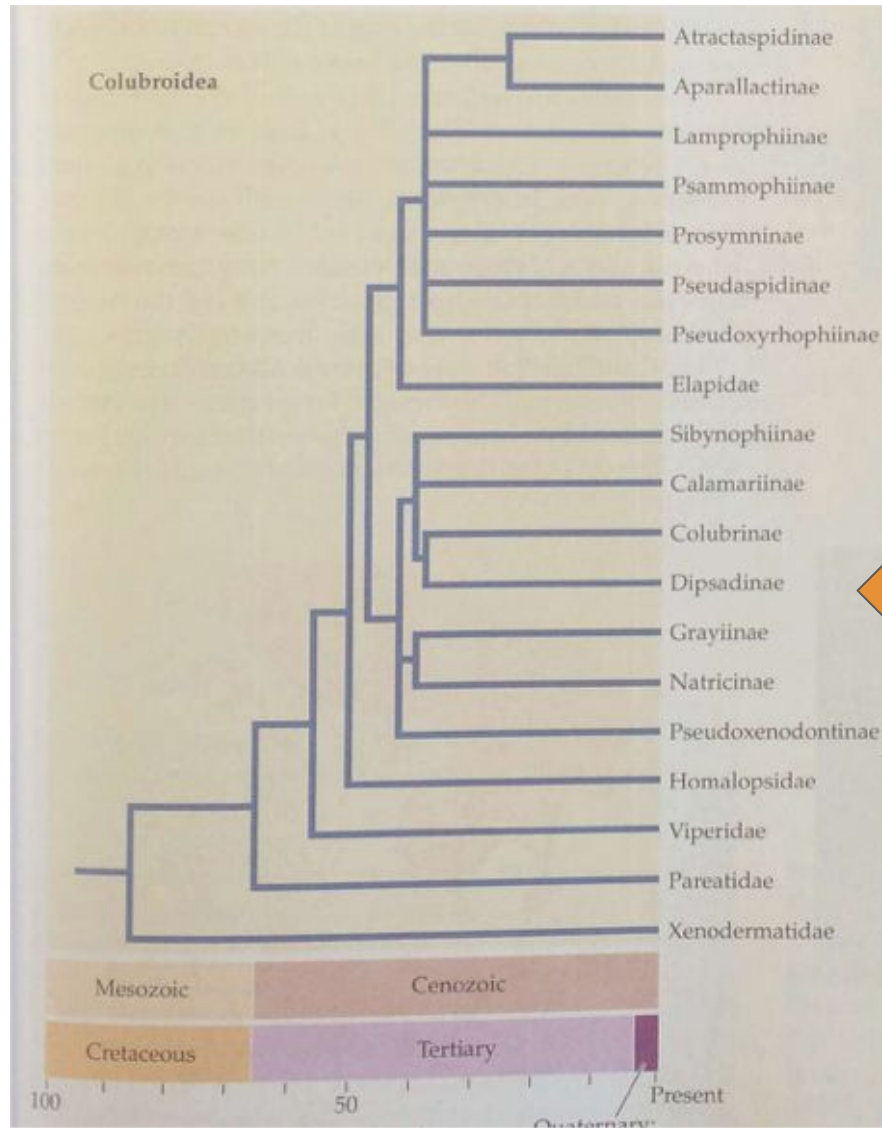


Storeria occipitomaculata: Northern Redbelly Snake

- Mostly found in the northern regions in the state
- Prefers hilly habitat
- Can also be found under rock rubble and under junk
- Sexing:
 - Requires cloacal probe
 - **Males:** much longer cavity (the hemipenis pocket)



Superfamily Colubroidea: **Colubrid Snakes & Allies**



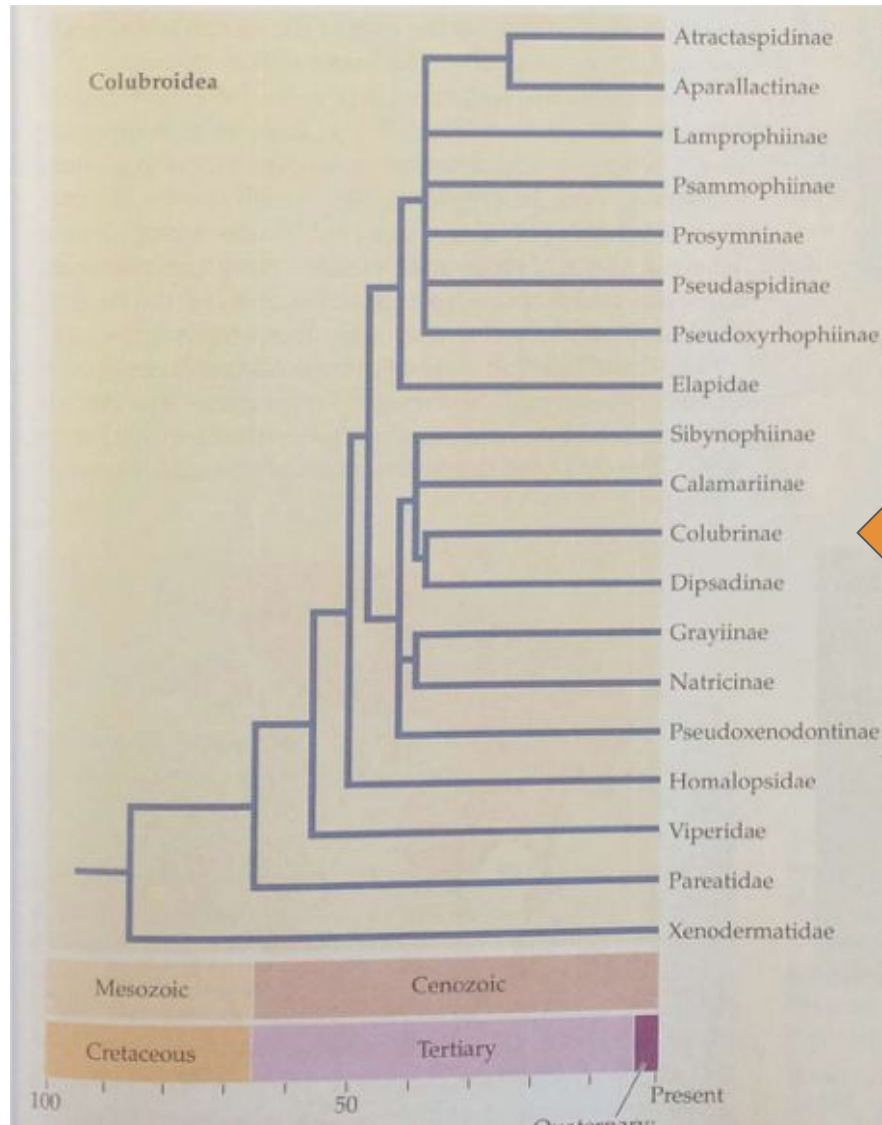
Dipsadinae

Diadophis punctatus: Northern Ringneck Snake

- Another very common CT snake, found in a variety of habitats
- Small snake (about the size of juveniles of other species)
- Specializes on insects
- When disturbed...
 - Emits a powerful musk
 - Corkscrews its tail to advertise its poisonous skin
- Sexing:
 - **Males:** smaller, comparatively longer tails
 - **Females:** slightly larger



Superfamily Colubroidea: **Colubrid Snakes & Allies**



Colubrinae

Coluber constrictor: Northern Black Racer

- All black, with a white chin
 - Young are grey with black blotches
- Smooth scales
- Common in meadows and woods, but found in many different habitats
- Sexing:
 - **Males:** smaller, comparatively longer tails
 - **Females:** moderately larger



Pantherophis (Elaphe) obsoletus: **Black Rat Snake**

- Largest snake in CT
 - More common in southern CT, largely absent from NE corner
- Similar to the black racer, but with important differences:
 - Keeled scales, some color pattern
 - White chin extends down the body
- Eats rodents (duh), birds, and sometimes frogs
- Sexing:
 - Requires cloacal probe
 - **Males:** much longer cavity (the hemipenis pocket)



Heterodon platirhinos: **Eastern Hognose Snake**



- Specializes on toads (large teeth “pop” toads)
- Rear-fanged, large teeth “pops” toads
- Resembles the northern water snake, but its nose gives it away
- Well known for a variety of defensive mechanisms
 - Cobra hooding
 - Plays dead
- Sexing:
 - **Males:** comparatively longer tails

Heterodon platirhinos: **Eastern Hognose Snake**



Lampropeltis triangulum: Eastern Milk Snake



- A very common and harmless snake
- Common name comes from frequent sightings in barns
- Young are often bright red
- Probably a coral snake mimic, but adults lack the red color, since there are no native coral snakes in New England
- Sexing:
 - Requires cloacal probe
 - **Males:** much longer cavity (the hemipenis pocket)

Opheodrys (Liochlorophis) vernalis: Smooth Green Snake



- Difficult to find in CT, though supposedly common in eastern CT
- Terrestrial, found in grassy fields and meadows
- Scales are smooth, no keels
- Sexing:
 - **Males:** smaller, comparatively longer tails
 - **Females:** moderately larger

Carphophis amoenus: Eastern Worm Snake

- Smally burrowing snake with reduced eyes and narrow head
- Found in log habitat similar to *Plethodon cinereus*
- Largely limited to the SE corner of CT and other lowland areas
- Sexing:
 - Requires cloacal probe
 - **Males:** much longer cavity (the hemipenis pocket)



Mansfield Hollow State Park

Mansfield & Windham, Connecticut

Map donated by Friends of Mansfield Hollow, Inc.

Thanks to donations from -
Senior Girl Scout Troop 5471
Thread City Cyclers

