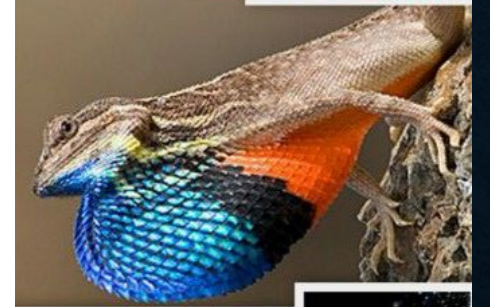
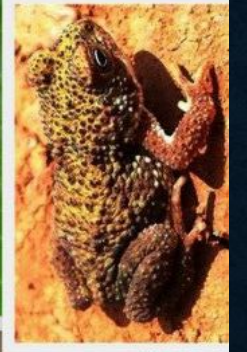
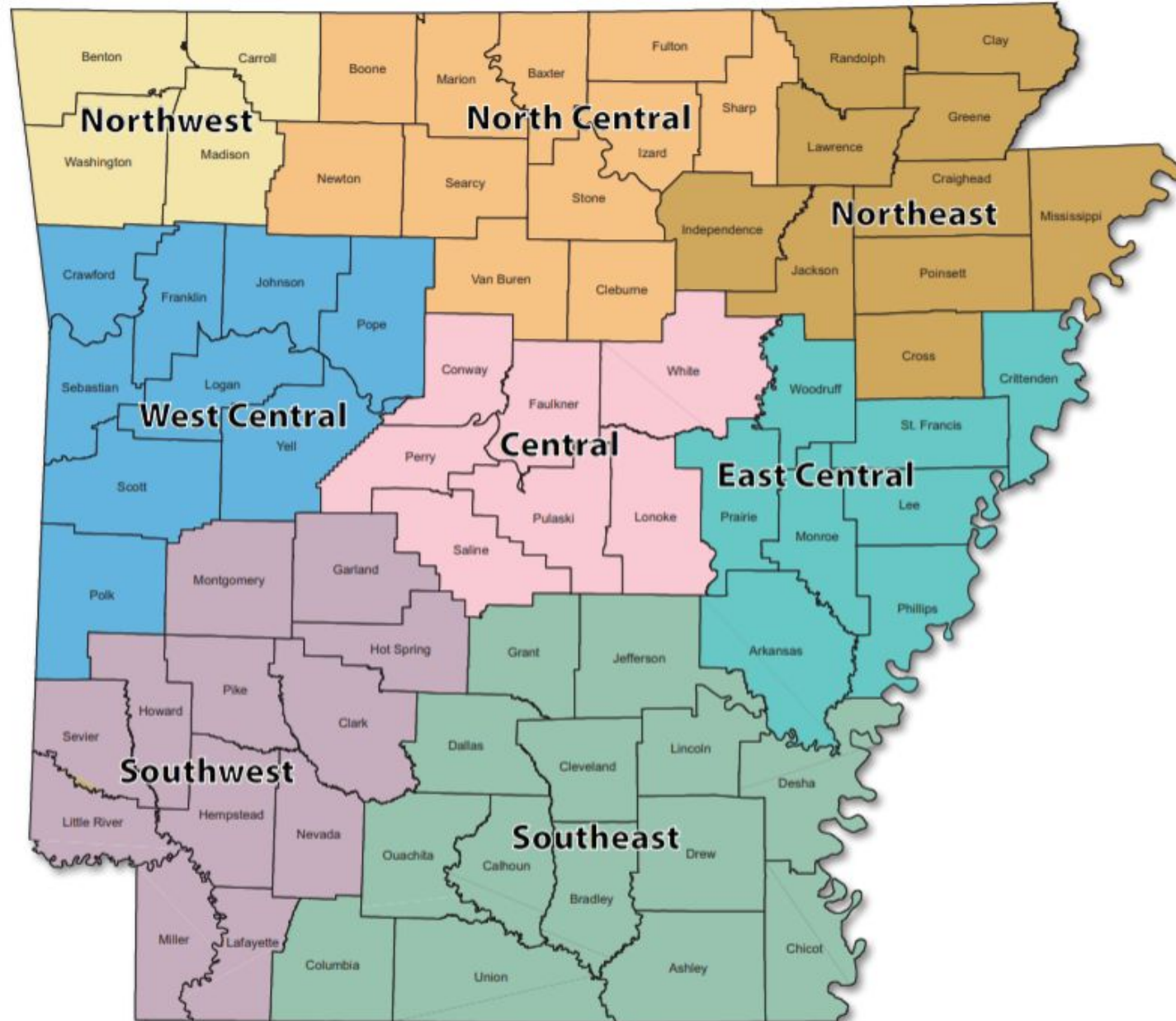


SNAKES: FRIEND OR FOE?



LORI MONDAY
ARKANSAS GAME AND FISH COMMISSION

Regional Educator District Map

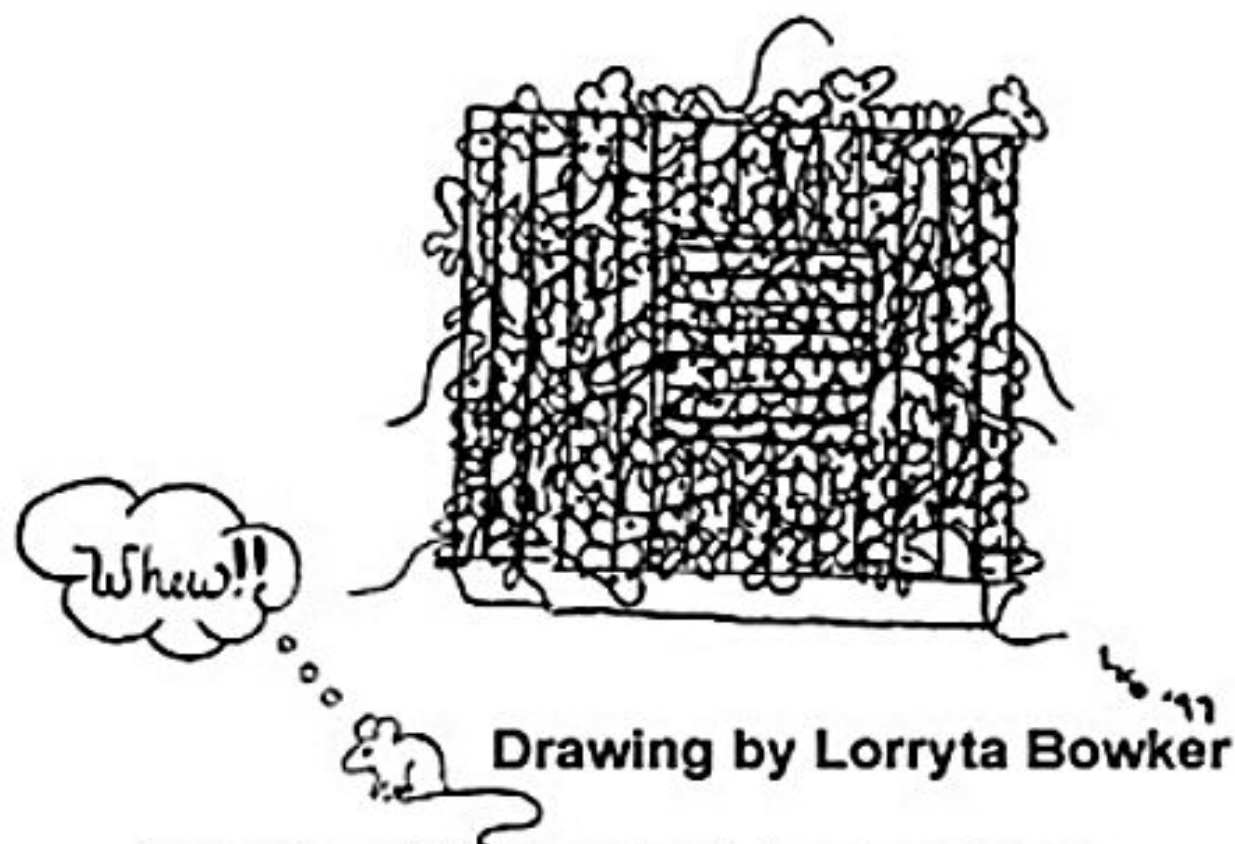






Kory Roberts

How fast can mice multiply? Start with 2 baby mice, one of each sex. At 6 weeks old the female can become pregnant. Gestation is 3 weeks, and under optimal conditions the female can become pregnant again immediately after giving birth. Assume a litter of eight, four male and four female, which are paired and bred when they are 6 weeks old. Theoretically you could get:



Week	Females X	Males =	Babies	Total Mice
3	1	1	0	2
6	1	1	0	2
9	1	1	8	10
12	1	1	8	18
15	1	1	8	26
18	5	5	40	66
21	9	9	72	138
24	13	13	104	242
27	33	33	264	506
30	69	69	552	1058
33	121	121	968	2026
36	253	253	2024	4050
39	529	529	4232	8282
42	1013	1013	8104	16386
45	2025	2025	16200	32586
48	4141	4141	33128	65714
51	8193	8193	65544	131258



- Monarch Butterfly
- American Hellbender
- Honey Bee
- Polar Bear
- Black Rhino





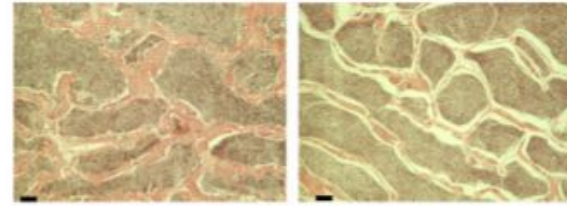
- Louis Guillette
- High levels of agricultural runoff
- DDT, endocrine disruptors, atrazine



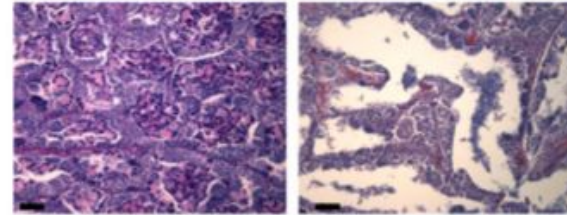
Figure 3

Control Atrazine

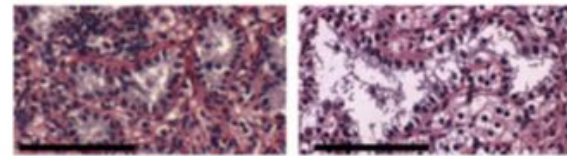
Fish
(Kestemont *et al.*)



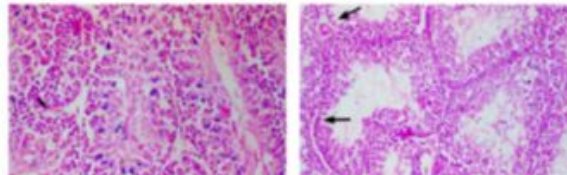
Amphibians
(Hayes *et al.*)



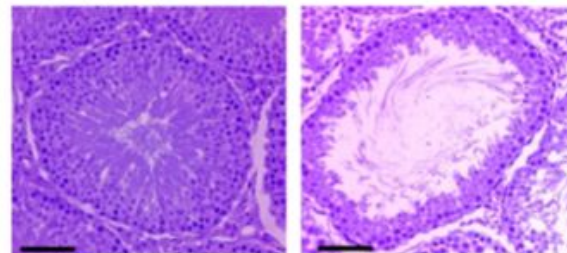
Reptiles
(Muñoz-de-Toro *et al.*)



Birds
(Hussain *et al.*)



Mammals
(Victor-Costa *et al.*;
Kniewald *et al.*)



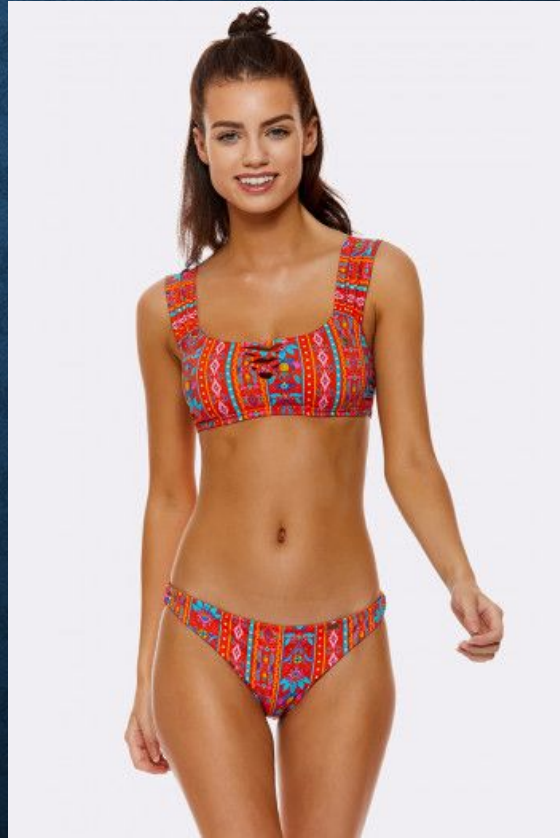
Testes of multiple species exhibited egg production after atrazine exposure. Slide image courtesy Tyrone Hayes, Ph.D.



Endocrine Disrupting Chemicals

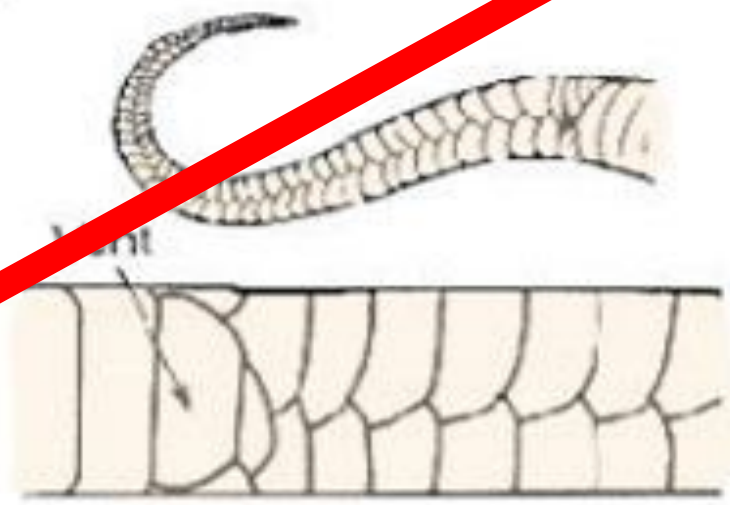
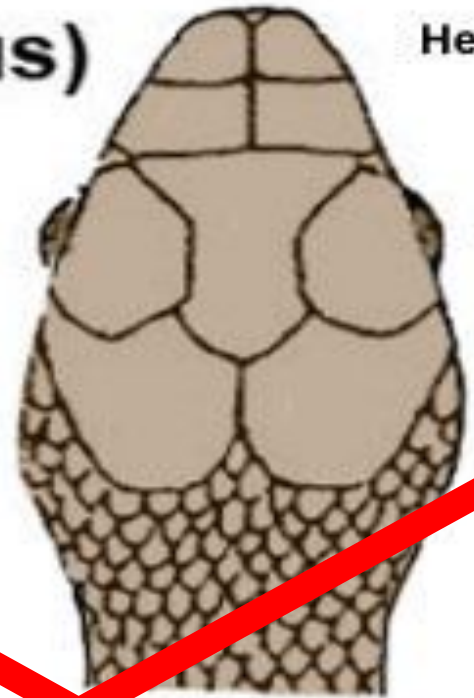
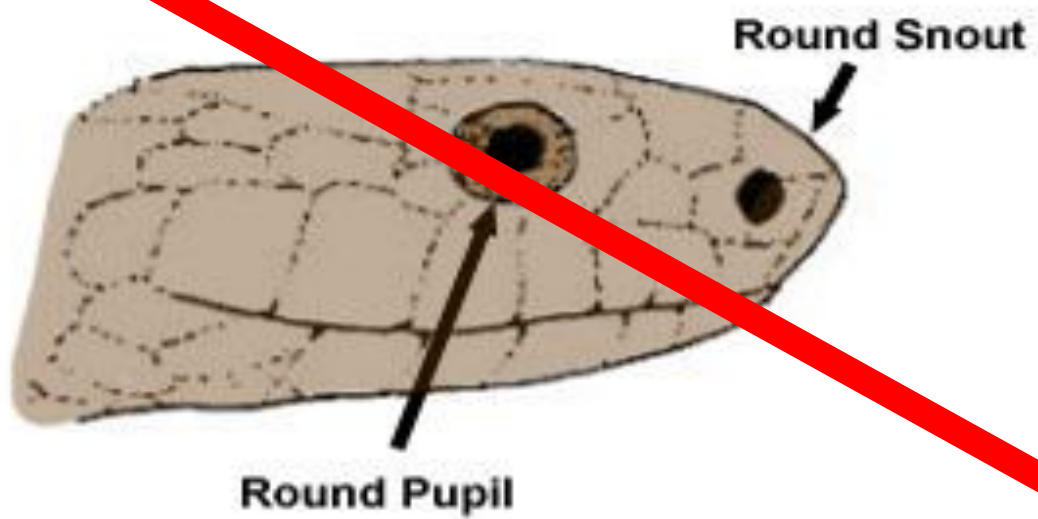


Posing in my tennis outfit
at fourteen! 1980.

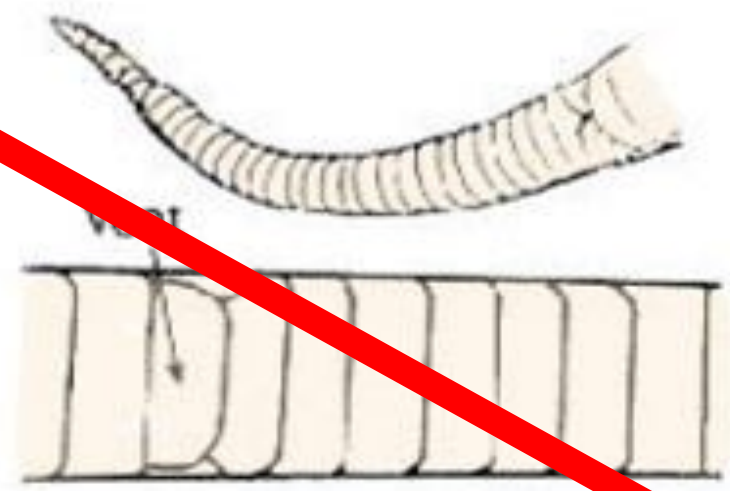
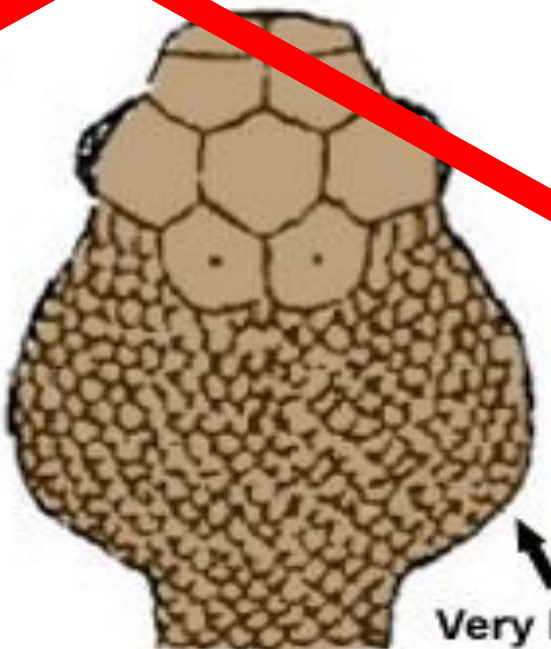
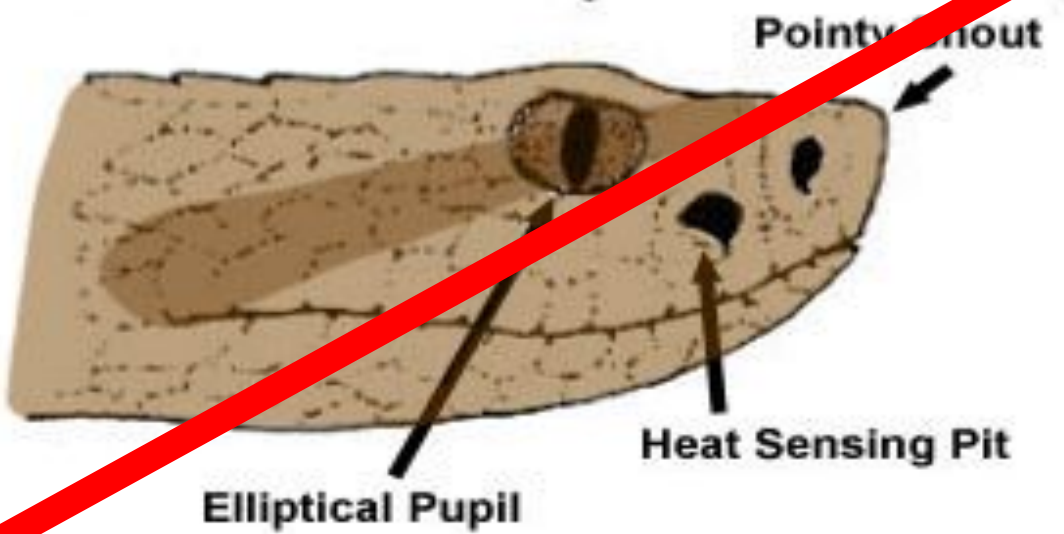


THE POINT IS...

Watersnake (Non-venomous)



Cottonmouth (Venomous)







1. Pit vipers (5)

- **Mostly hemotoxic**
- **Hinged fangs**

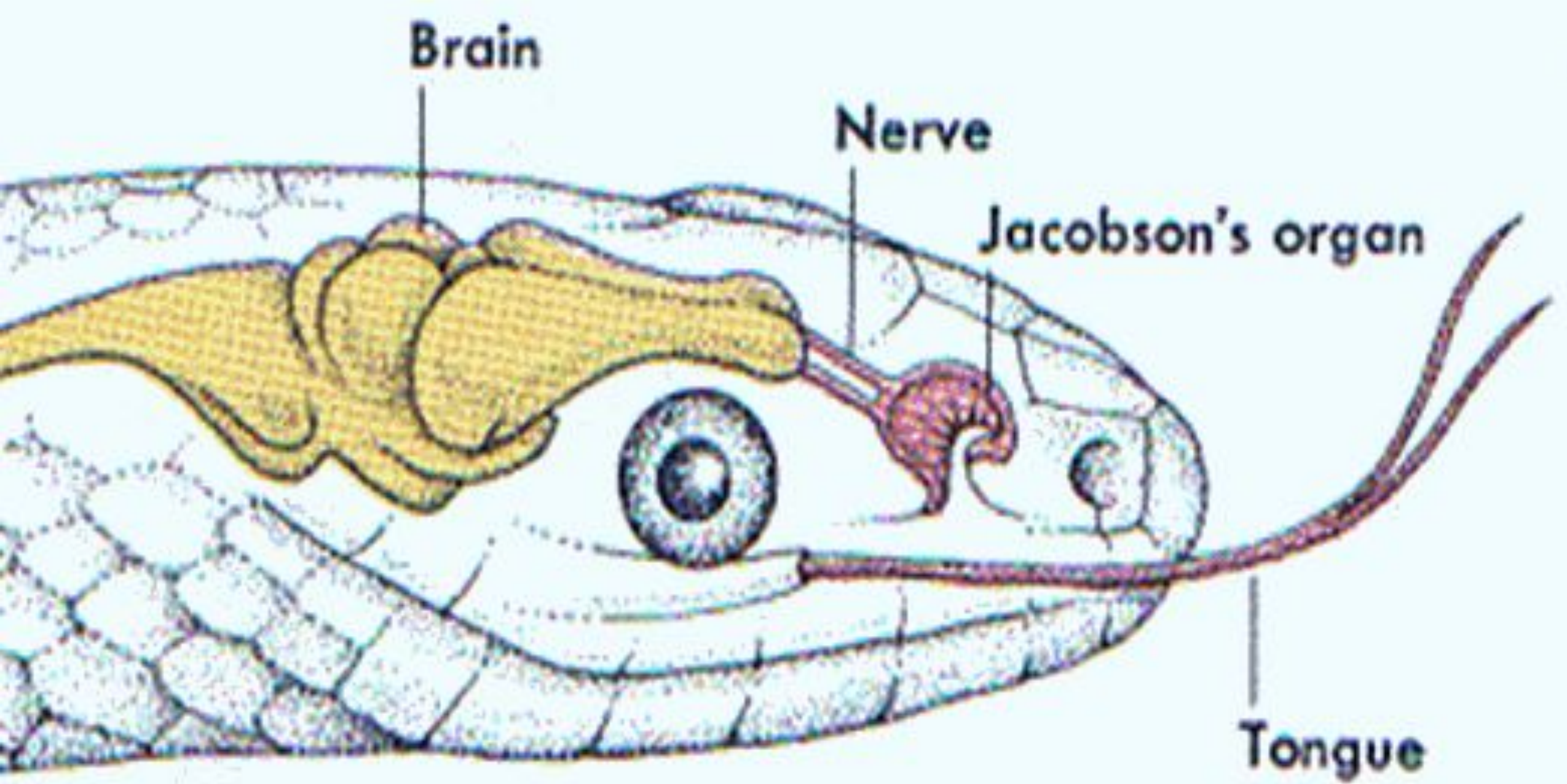


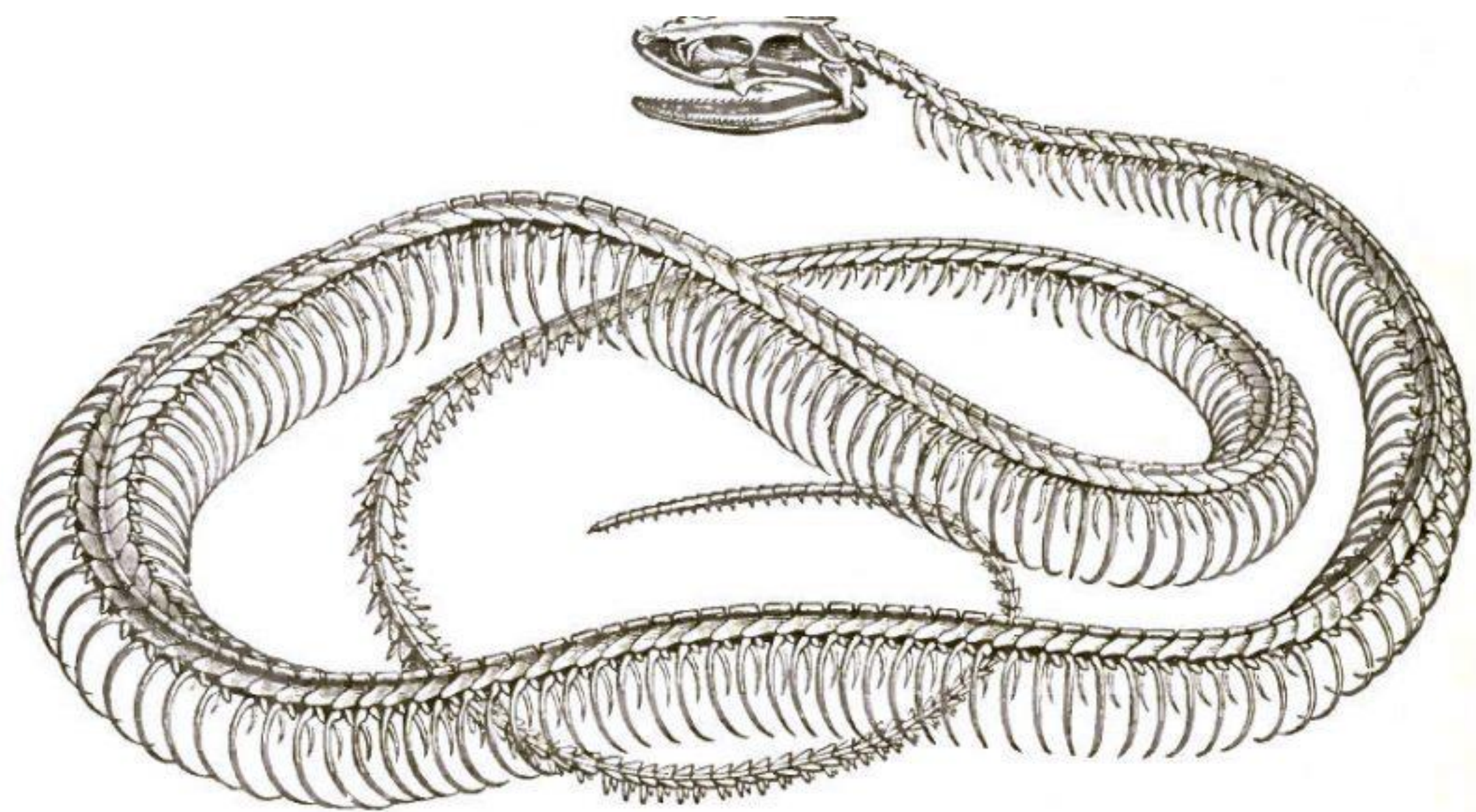
Venomous Snakes of Arkansas

2. Elapid (1)

- **Neurotoxic**
- **Fixed fangs**









venom-conducting tube
venom gland
venom canal
fang

DESIGNED FOR THE CURSE

The fangs of vipers are elegantly designed to inject venom in prey. Since animals were originally vegetarian (Genesis 1:30), these deadly features must have been specifically designed to help snakes survive in a fallen world.

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Snake venom is stored in special glands that are typically located behind each eye. When required, the venom flows down a tube to the fang, where it is ejected. The snake carefully controls how much venom it releases based on the size of the intended prey.



Kory Roberts





Kory Roberts





Kory Roberts



Kory Roberts



Kory Roberts





Kory Roberts





Kory Roberts



Kory Roberts



Kory Roberts



Southern Copperhead
(*Agkistrodon contortrix caryocrotalis*)



Western Cottonmouth
(*Agkistrodon piscivorus leucostoma*)



Green and black Rattlesnake
(*Crotalus cerastes*)

Venomous Snakes of Arkansas



Timber Rattlesnake
(*Crotalus horridus*)



Western Pygmy Rattlesnake
(*Sistrurus miniatus aureus*)



Texas Coralsnake
(*Micrurus tener tener*)

**IF YOU SEE A
SNAKE, AND IT
IS NOT
VENOMOUS
SNAKE, WHAT
IS IT?**









Southern Copperhead
(*Agkistrodon contortrix contortrix*)



Western Cottonmouth
(*Agkistrodon piscivorus leucostoma*)



Diamond-backed Rattlesnake
(*Crotalus durissus*)

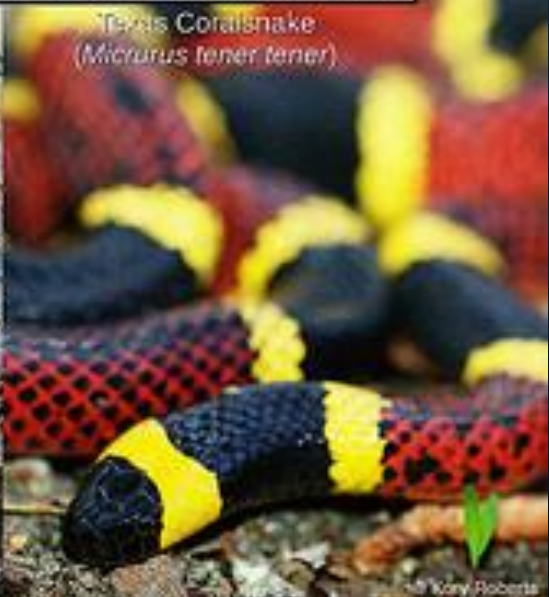
Venomous Snakes of Arkansas



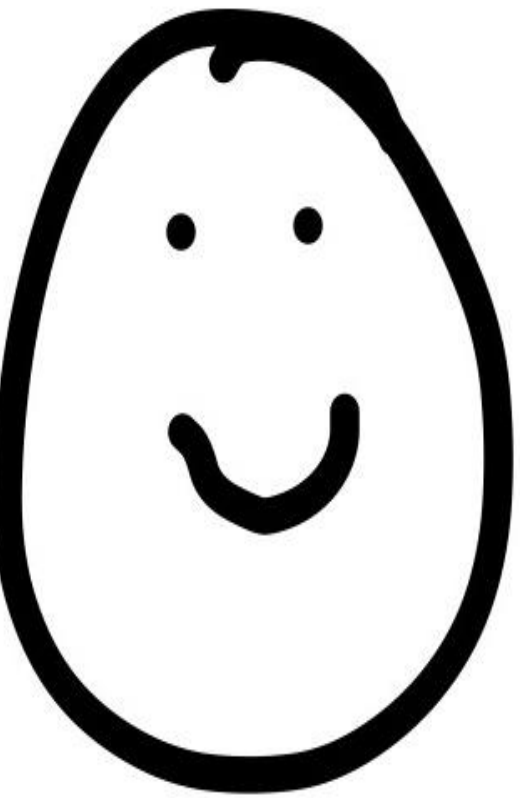
Timber Rattlesnake
(*Crotalus horridus*)



Western Pygmy Rattlesnake
(*Sistrurus amabilis areolaris*)



Texas Coralsnake
(*Micrurus tener tener*)



Do you have

any

Questions?

