The Striking Behavior of Rattlesnakes

Dr. Travis LaDuc
November 18, 2005
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Dr. Travis J. LaDuc
Texas Memorial Museum
Venomous snakes
Four types of venomous snakes:

- Coral Snake
- Copperhead
- Rattlesnake
- Cottonmouth
What are your chances of dying from a snakebite?

2002 U.S. Deaths

- Roughly 8000 people are bitten by venomous snakes in the United States each year
- 8-12 people die from snakebites/year

<table>
<thead>
<tr>
<th>Death Cause</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Snake</td>
<td>3</td>
</tr>
<tr>
<td>Dog</td>
<td>18</td>
</tr>
<tr>
<td>Bee, Wasp, or Hornet</td>
<td>54</td>
</tr>
<tr>
<td>Lightning</td>
<td>66</td>
</tr>
<tr>
<td>Car Accident</td>
<td>16,337</td>
</tr>
</tbody>
</table>
Anatomy of a Human Snakebite

- 75% of people aged 19-30 yrs
- 1-2% are women
- 40% are people playing with snake
- 40% are people with blood alcohol of 0.1
- 65% bites are to hands or fingers
- 24% bites are to feet or ankles

- Average person bit by rattlesnake: drunk, unemployed male in 20’s free-handling pet snake at night!
Rattlesnakes have become part of our culture.
Rattlesnakes are part of our surroundings.
How did I get involved with reptiles/rattlesnakes?

Travis at 3 yrs old with Desert Tortoises

Travis at 7 yrs old with non-venomous Gopher Snake
Laurence M. Klauber

Photo courtesy San Diego Natural History Museum.
Western Diamondback Rattlesnake
Western Diamondback Rattlesnake (Crotalus atrox) rattles
High-speed video footage of a Western Diamondback Rattlesnake.
Western diamondback rattlesnake heat pits nostrils
Pit vipers"True" viper

Pit viper
Diagram of a Heat Pit

Thermal Perception of Prey

Air temperature 15° C

Air temperature 30° C

Air temperature 25° C
Rattlesnakes and high temperatures
Thermal Perception Experiment
Rattlesnakes eat a variety of prey
How big do rattlesnakes really get?

Texas Size Rattle Snake! Found Near Erath County.
Radio Transmitter

PIT Tag
Trans-Pecos desert in far west Texas
Tracking blacktail rattlesnakes
Rattlesnakes give birth to live young.
Variation in Snake Size
Acceleration vs. Velocity

**Acceleration**: the rate at which an object changes its velocity.

**Velocity**: the rate at which an object changes its position.

Would smaller or larger snakes strike with faster accelerations?
Ridgenose Rattlesnake
Pikachu as a scary predator
Types of venom: neurotoxic & proteolytic/hemotoxic

Venom is for:
- immobilizing and killing prey
- in vipers: pre-ingestion digestion

Medical advances with venom
Steps to prevent being bitten by a snake!

– Always watch where you put your hands/feet

– Snakes around homes for two reasons: food and shelter
  • Keep snake food away from house
    – Mice: clear brush and mouse food
    – Birds: remove bird feeders?
  • Reduce openings to garage/attic
    – Remove excess brush
Rattlesnake Conservation
Rattlesnake Roundup
Rattlesnakes are used as entertainment.
Myths to bust!

- Do other snakes make rattling sounds?
- Can venomous snakes breed with non-venomous ones?
- Do snakes travel in groups or in pairs?
- Can snakes bite underwater?
- Is the venom of young snakes more dangerous than that of adult snakes?
- Do snakes chase people?
Texas Herpetological Society
2005 Fall Symposium

"Building Partnerships Between Academics and Enthusiasts"

Keynote Address by Travis LaDuc, PhD

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Acknowledgements

ESI
Texas Herpetological Society

George S. Bakken
Brendan Borrell
Joseph E. Forks
David W. Hall
John Hardison
David L. Hardy, Sr.
Christopher R. Harrison
Terry Hibbitts

Troy Hibbitts
Jason Jones
Jay Kelso
Aaron R. Krochmal
Sandra Y. LaDuc
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Bob Tipton
Dr. Travis J. LaDuc is a herpetologist at the University of Texas at Austin. His job at the University includes curation of the natural history collections as well as conducting outreach programs to a wide variety of educational and civic organizations throughout Texas. His research interests focus on the biodiversity and natural history of Texas reptiles and amphibians. Travis is also interested in all aspects of pit viper biology, including variation in venoms, population ecology, and systematics.