

Hot Science Cool Talks

UT Environmental Science Institute

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The Good, the Bad, and the Ugly: Texas' Amazing Insects

Dr. John C. Abbott

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The Good, the Bad, and the Ugly:



Texas' Amazing Insects

Dr. John C. Abbott
Section of Integrative Biology



Outreach Lecture Series

An Inordinate Fondness for Beetles



Butterflies & Moths
(Lepidoptera)
More than 165,000
Species Worldwide



**Wasps, Bees & Ants
(Hymenoptera)
More than 130,000
Species Worldwide**





Flies (Diptera)

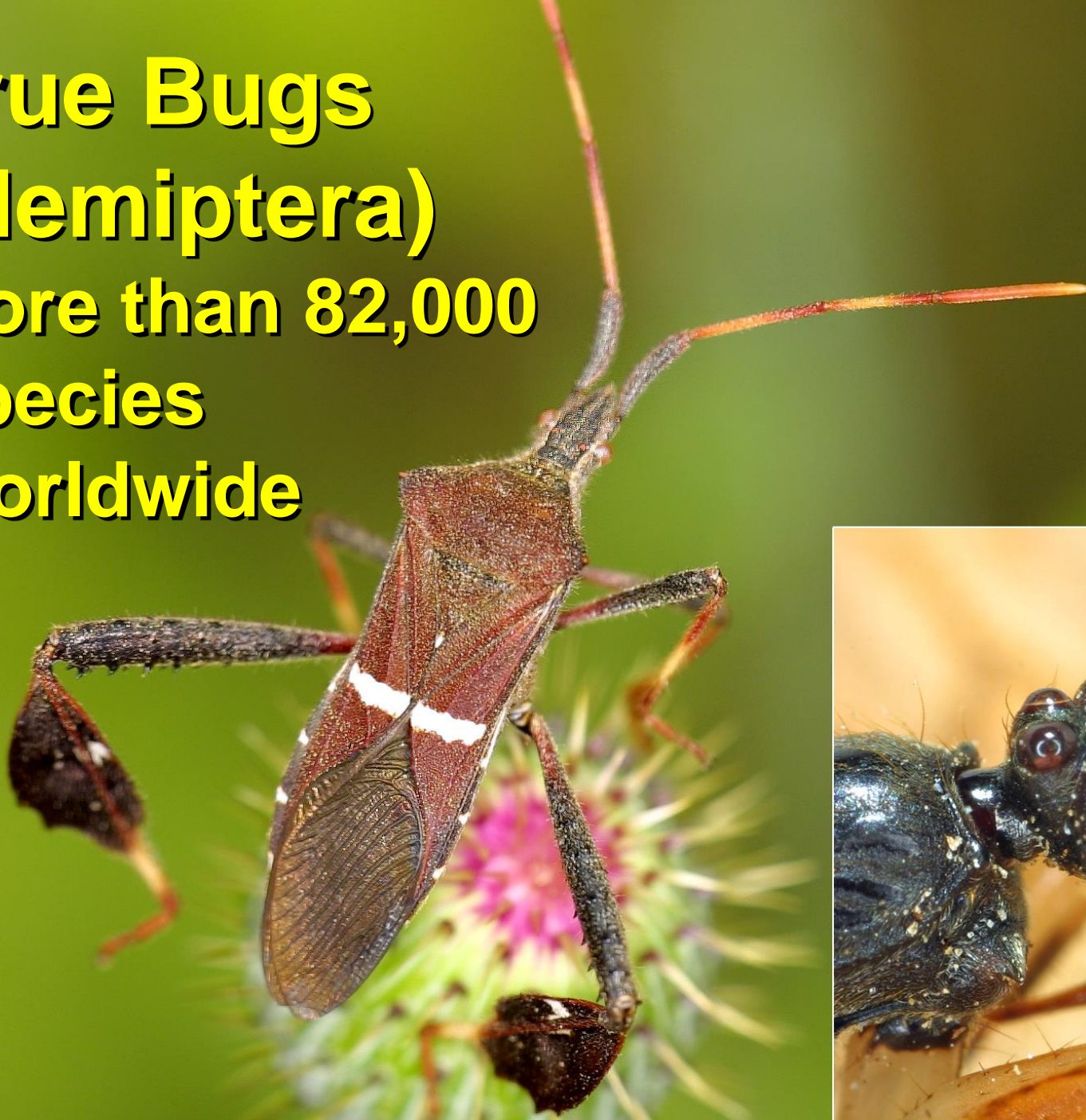
More than

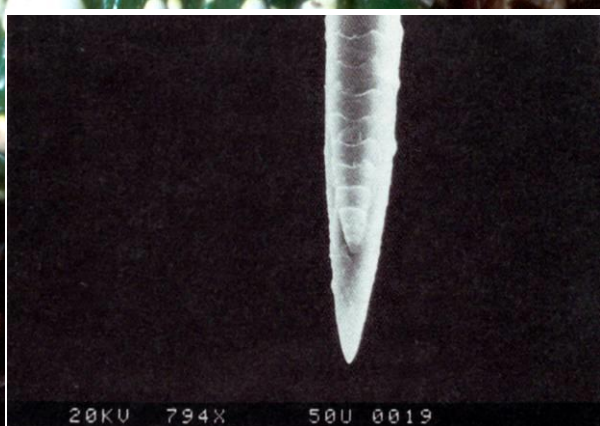
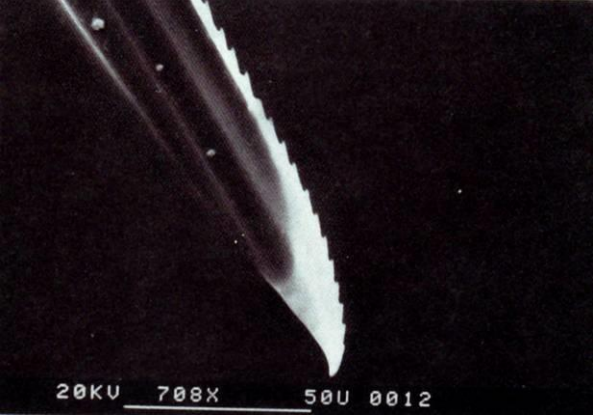
120,000

Species

Worldwide

**True Bugs
(Hemiptera)
More than 82,000
Species
Worldwide**

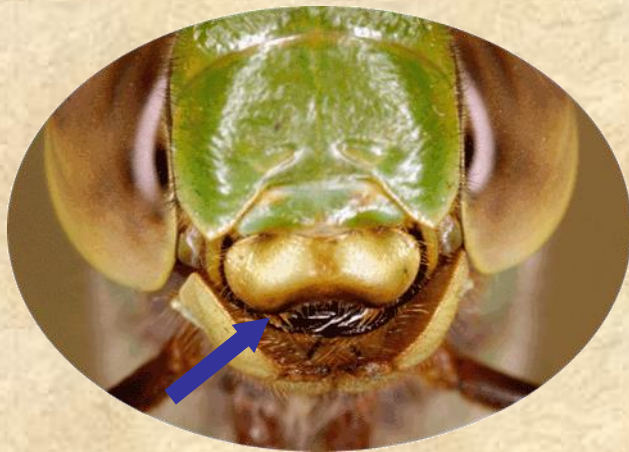




The Odonata



Zygoptera
Damselflies



Anisoptera
Dragonflies



From the Greek for “tooth”



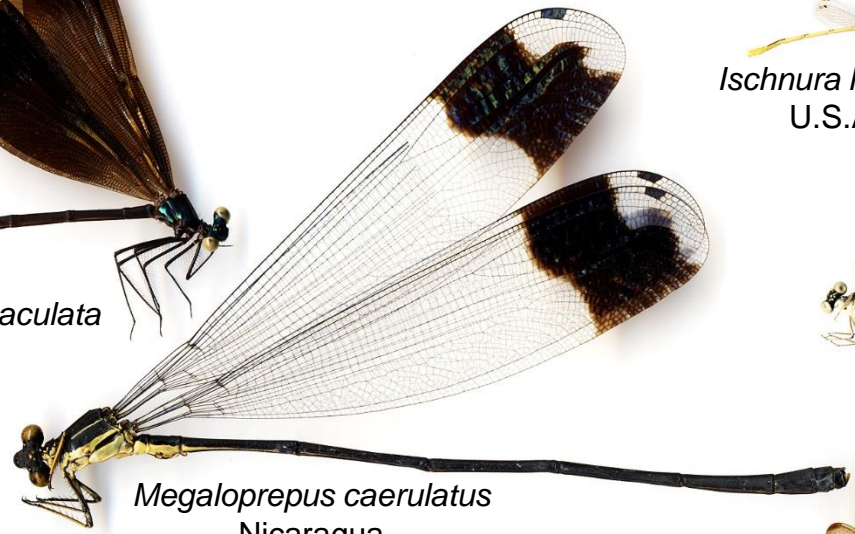
Calopteryx maculata
U.S.A.



Ischnura hastata
U.S.A.



Cora marina
Mexico



Megalopterus caeruleus
Nicaragua



Palaemnema gigantula
Nicaragua



Polythore derivata
Ecuador



Nehalennia integricollis
U.S.A.



Argia sedula
U.S.A.



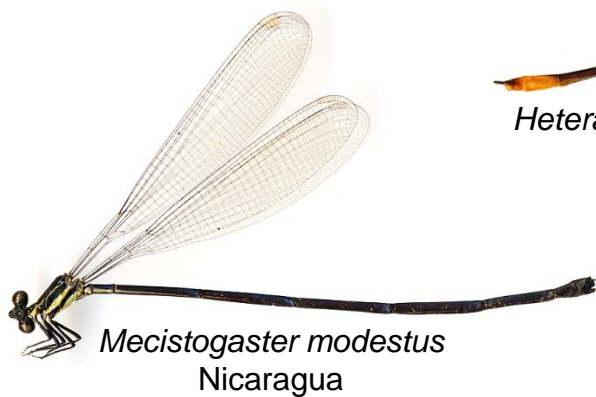
Hetaerina cruentata
Costa Rica



Archilestes grandis
U.S.A.



Heteragrion eboratum
Nicaragua



Mecistogaster modestus
Nicaragua



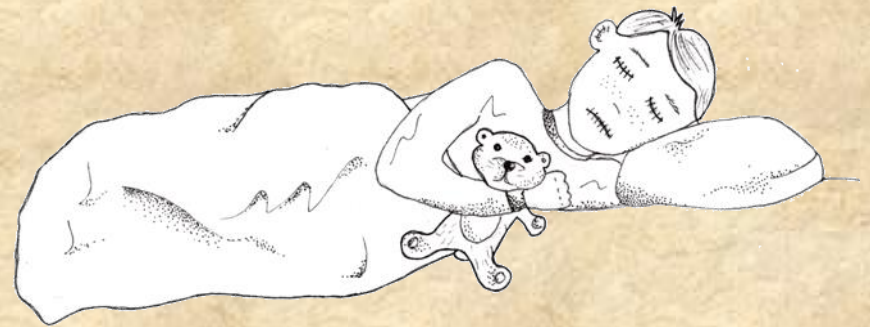
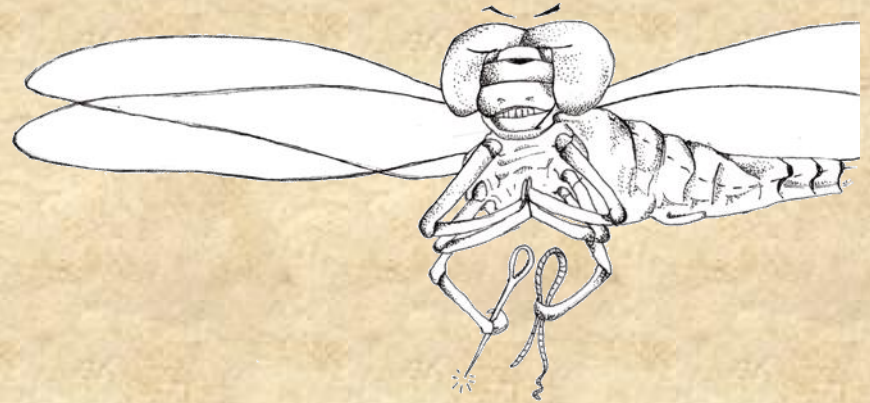
Protoneura cara
U.S.A.

1 cm



Myth and Folklore

- Snake Doctor
- Horse Stinger
- Devil's Darning Needle
- Eye Sticker
- Snake Stinger
- Demon's Pipe
- Devil's Needle
- Devil's Riding Horse
- Witch's Horse
- Adder's Servant
- Snake Feeder
- Adder Bolt





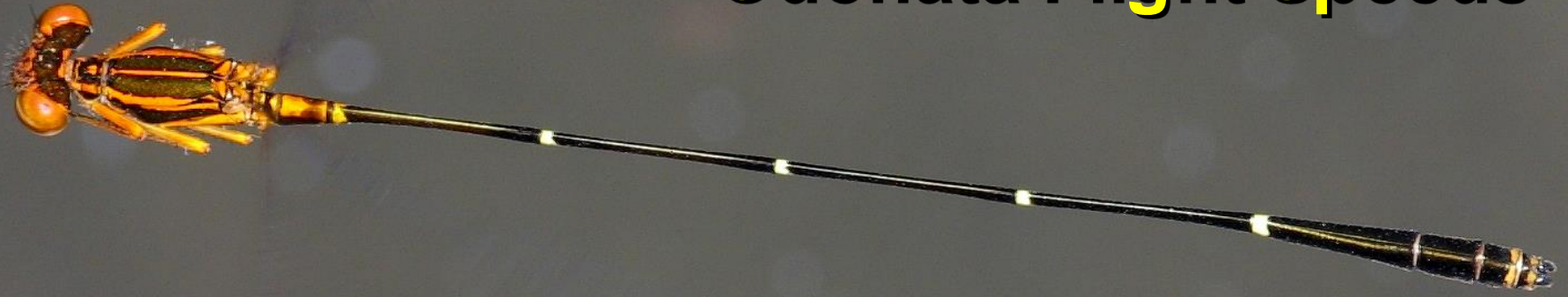








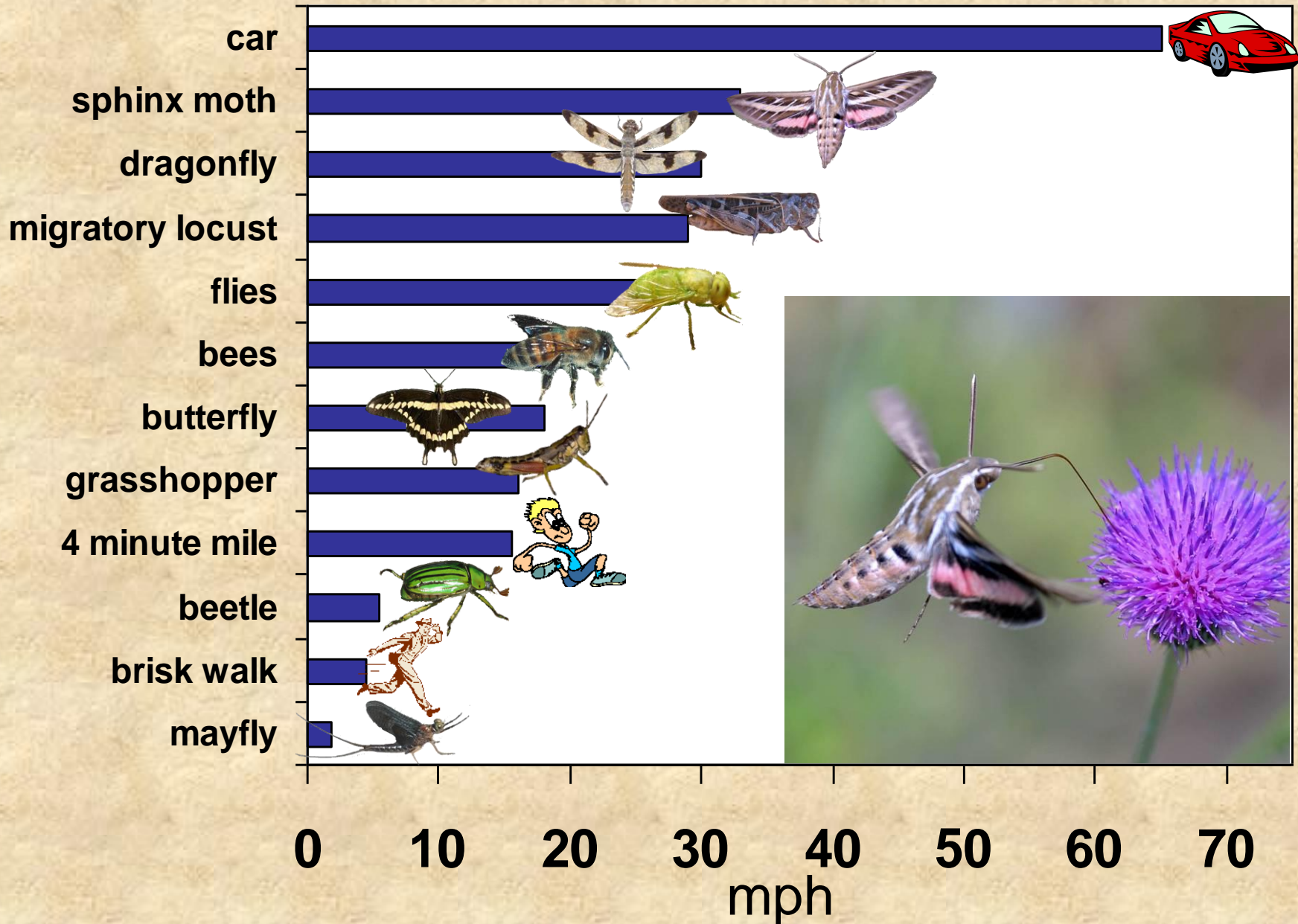
Odonata Flight Speeds



Foraging Flight, 3.9 mi/hr
Fast Direct Flight, 11 mi/hr
Maximum Flight, >30 mi/hr



How Fast Do Insects Fly?







**Common Green Darner
feeding on Roseate
Skimmer...
A meal to die for?**





Mating



Egg Laying In Tandem



Love Connection





**I fly among those of divine essence
I become in it Khepra
I am that which is in the bosom of the gods
The Great Beetle.
EGYPTIAN PRAYER FOR THE DEAD**



An elephant is standing in front of a wooden fence. The elephant is facing left and has its trunk hanging down. The fence is made of vertical wooden planks. The ground is dirt and there is some dark material, possibly manure, on the ground in the foreground.

On the Menu....

- **White-tailed Deer, 0.3 kg/day**
- **Sheep, 1.025 kg/day**
- **Horses, 9.7 kg/day**
- **Cattle, 11 kg/day (≈12 pats)**
- **Elephant, 50 kg/day**





**With 96,075,000 head of cattle in the U.S.,
allowing 0.08 m²/cowpat
x 10 defecations/day**

**→ dung covers 4,973 hectare pasture/day
(= 1,815,145 hectares/yr)**

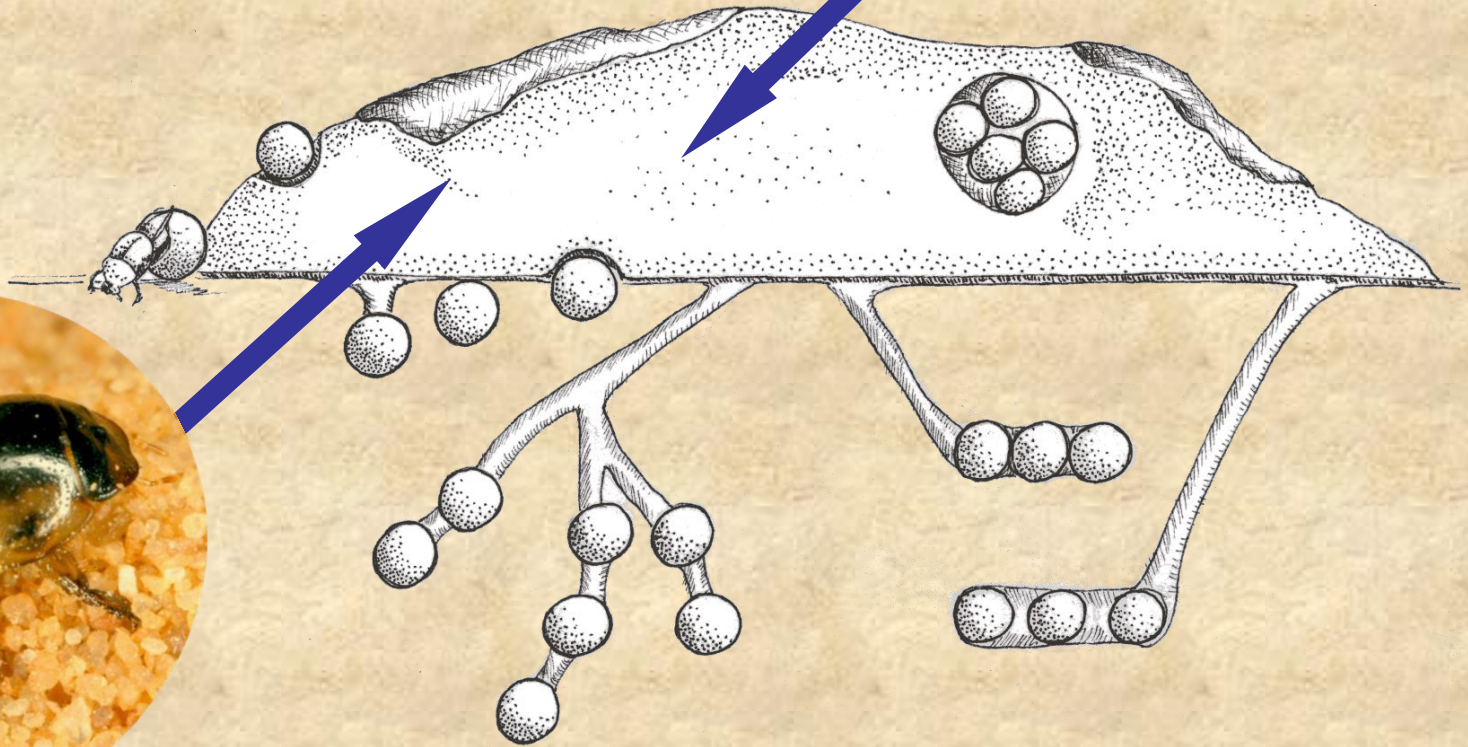
**Corrections still allow for 335,678
hectares/yr**

**Dung Beetles contribute an estimated
\$2,068,360,154 to the economy every year**

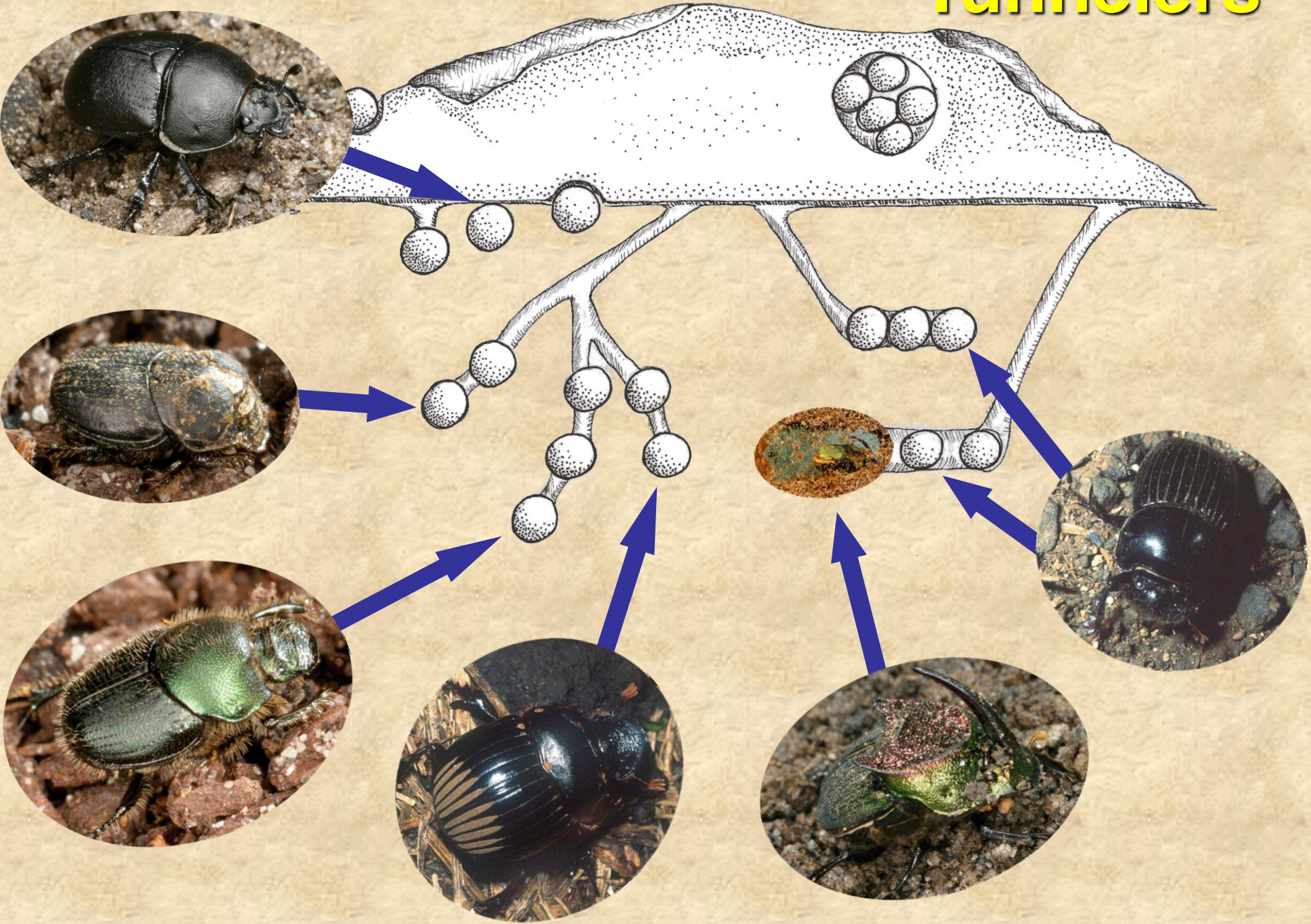


Dwellers

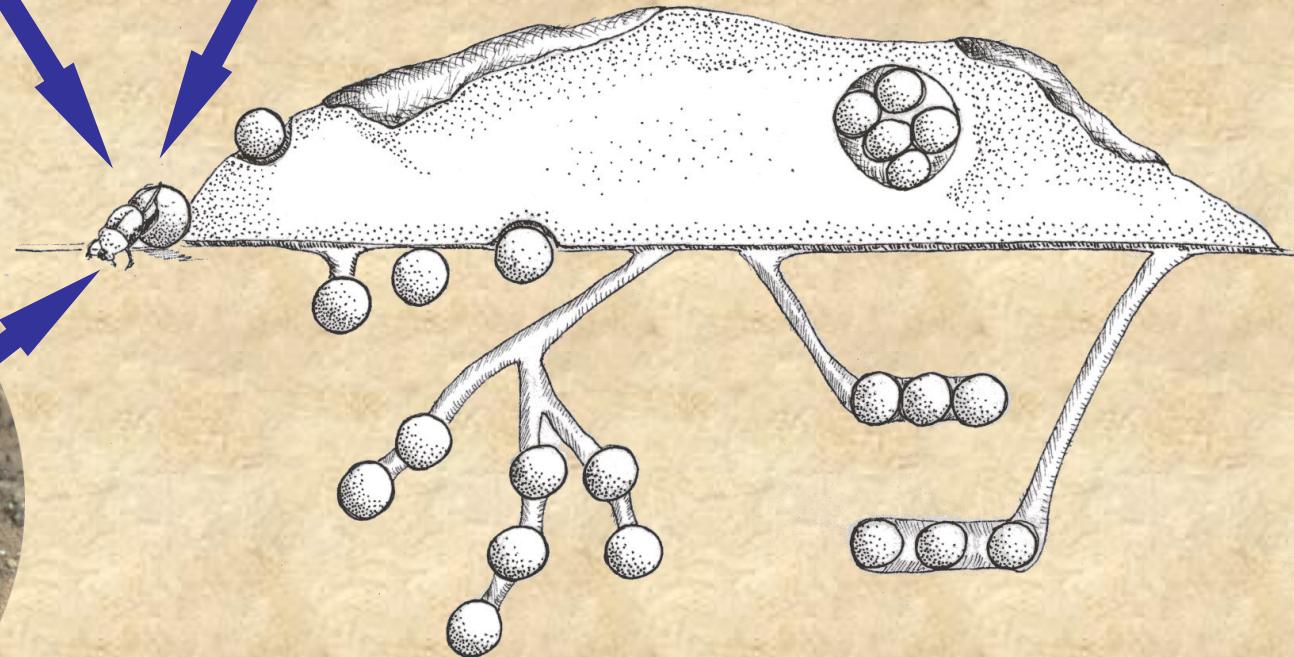
Aphodiinae Scarabs



Tunnelers



Rollers



Competition for Food & Space

Functional Group	Adults		Larvae	
	Food	Space	Food	Space
Dwellers	+	+	+	+
Tunnelers	+	+	—	—
Rollers	+	—	—	—



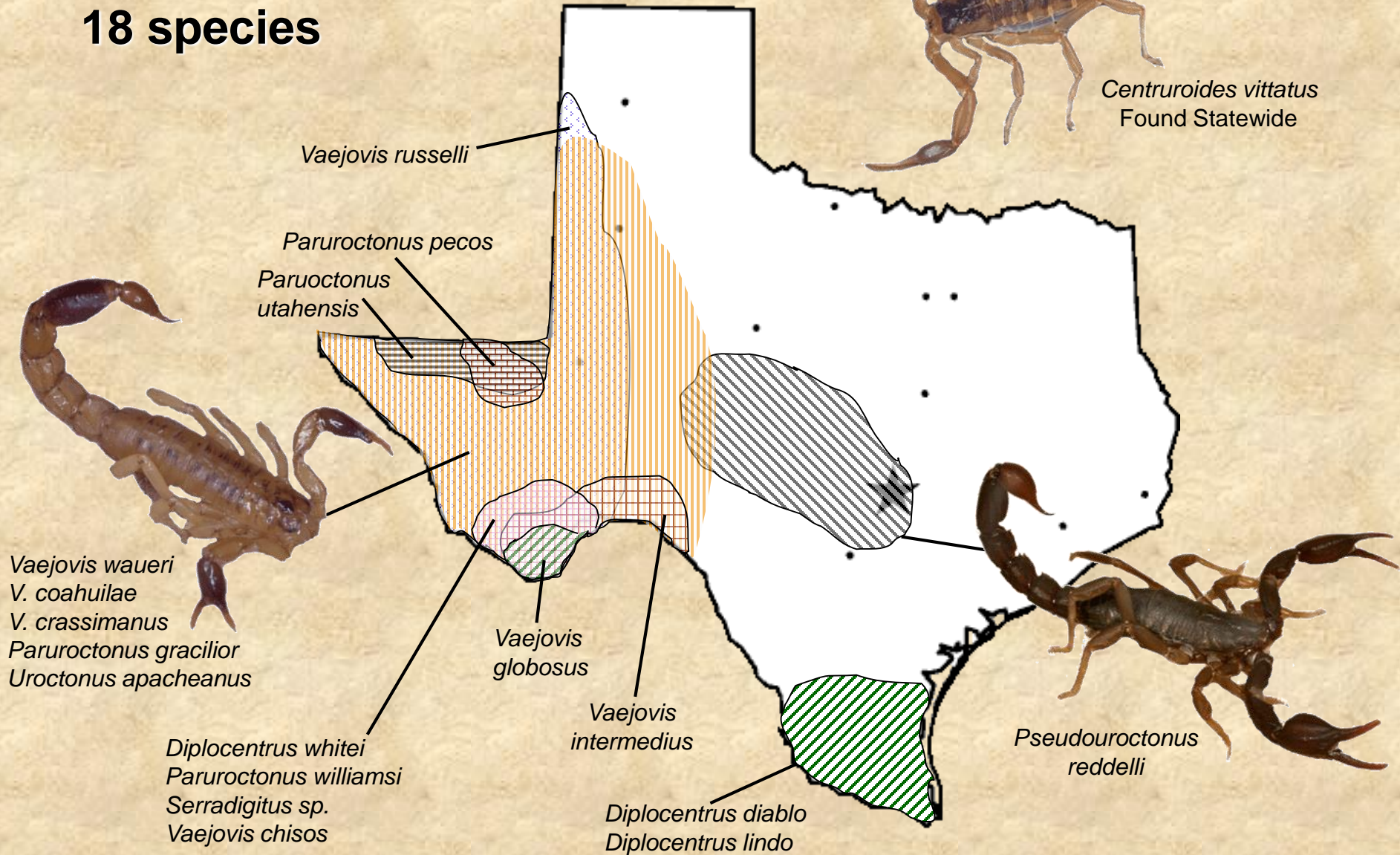


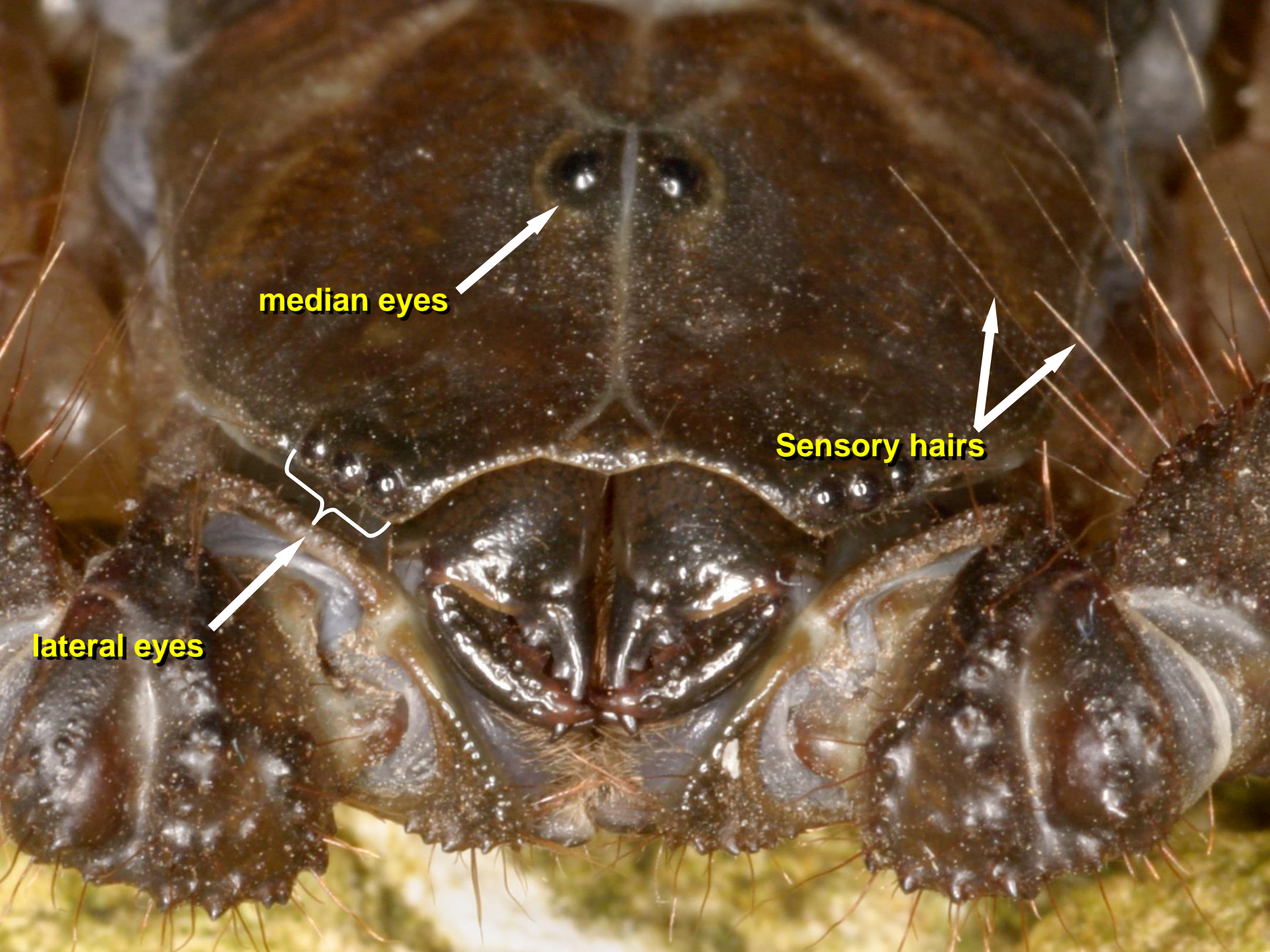




Scorpions in Texas

18 species





median eyes

Sensory hairs

lateral eyes





CHARTER 23833-5 | \$1.95



Violence erupted as the
Fire Ants swarmed over
the peaceful valley,
killing every living thing

The Fire Ants

Saul Wernick



Native & Imported Fire Ants



S. invicta
(Imported)

S. geminata
(Native)



Headlines

- **“Possibly lethal hordes of fire ants plague sadden Texas areas”** (*Washington Post*, 30 October 1981)
- **“But insects ‘are winning’: officials fighting to check fire ants march through Texas”** (*Los Angeles Times*, 5 December 1981)
- **“War on fire ants still suffers stinging losses”** (*Chicago Tribune*, 13 June 1982)
- **“Woman puts up tough fight before dying from fire ant stings”** (*Houston Chronicle*, 23 November 1990)



Fire ants swarm indoors, kill 2 people

Report documents nursing-home deaths

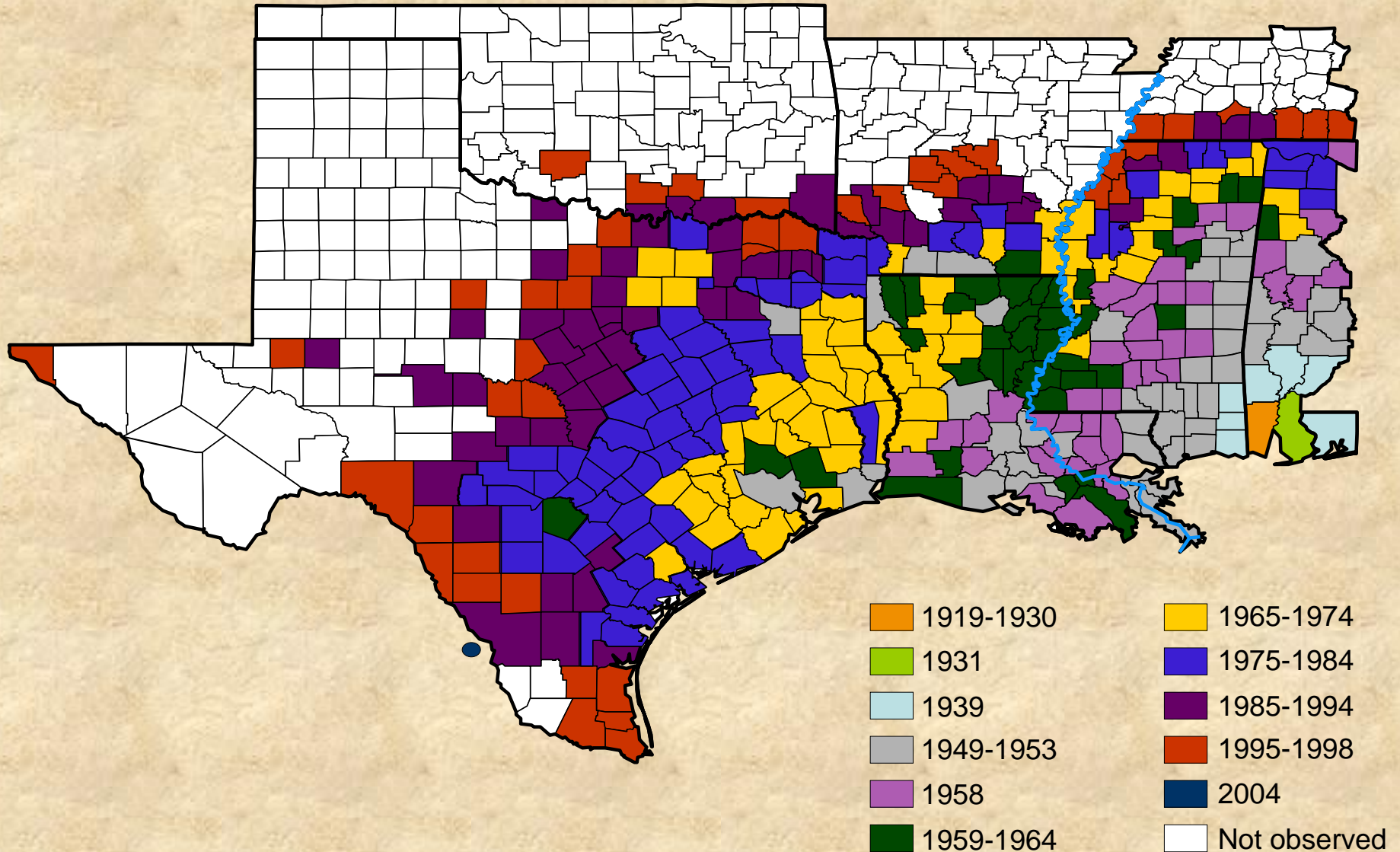
By Kathleen Fackelmann
USA TODAY

Fire ants have attacked and killed two elderly people in Mississippi nursing homes, raising fears that indoor attacks will become more common place in the Southeastern states and other parts of the USA.

"They will go after pets. They will go after people," deShazo says.

Most don't die of the attacks. Fire ants swarm up a victim's body within seconds, deShazo says. For most people, the venom causes a burning sensation and a welt. But for about 1% of the population, a fire ant sting

Movement of 'invicta' into Texas





Green Lacewings
Chrysopidae



Aphidlions



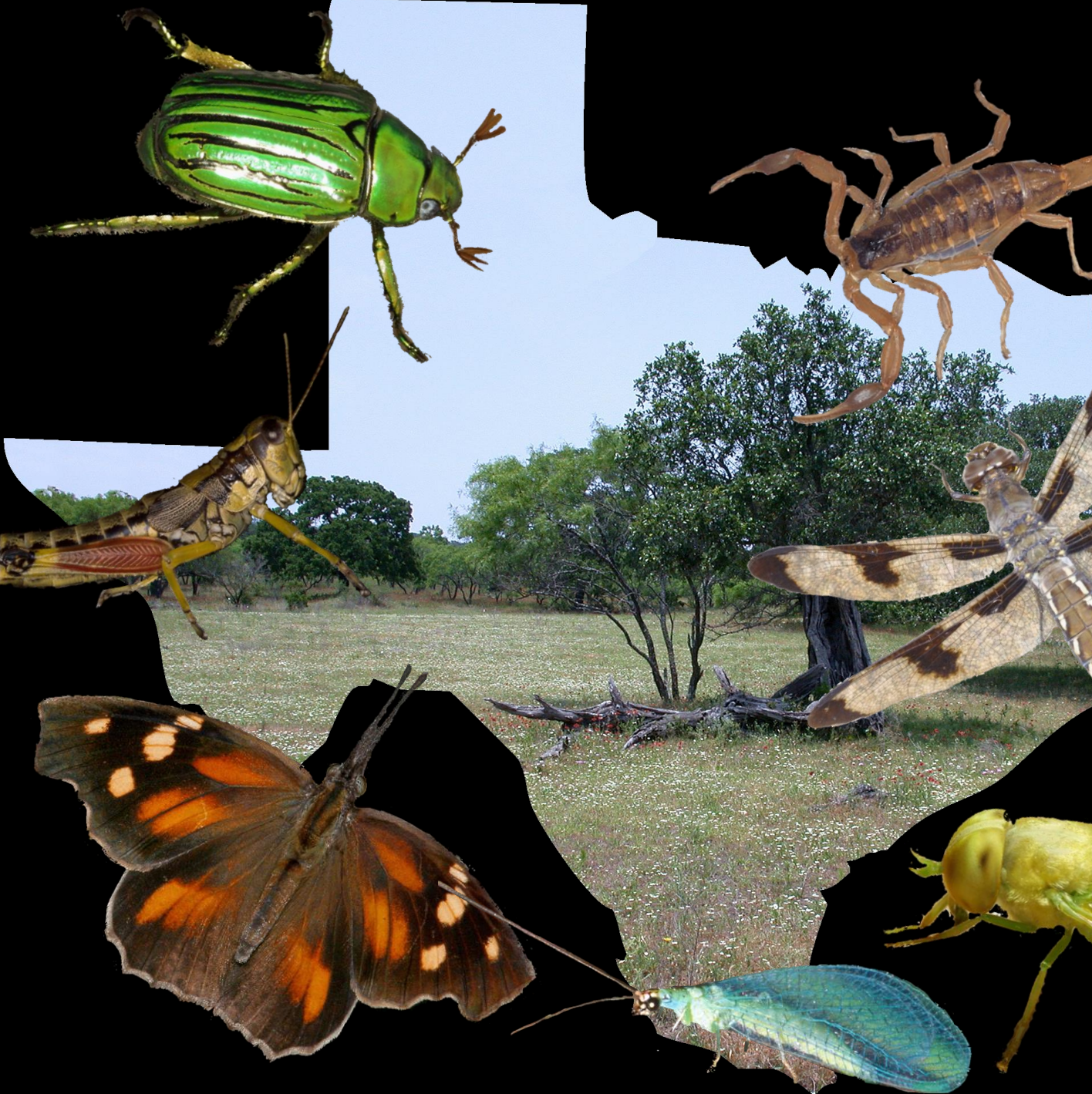


**Lion in
sheep's
clothing?**









Acknowledgements



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Dr. John C. Abbott

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Dr. John C. Abbott is an entomologist at the University of Texas at Austin. He teaches classes in general and aquatic entomology as well as ecology. His research interests revolve around the biodiversity and biology of Odonata. Dr. Abbott is also interested in the population and evolutionary ecology of aquatic insects and the biodiversity and evolutionary ecology of lamellicorn beetles.