



Arachnid Biology

MARCH 30, 2021 – VIA ZOOM

MELANIE HOLLENSHEAD, CRADLE OF TEXAS CHAPTER – TEXAS MASTER NATURALISTS™

Basic Spider Biology – Student Notes

Taxonomy

King Phillip Cried OH For Great Spaghetti

Kingdom - Animalia

Phylum - Arthropoda

Class - Arachnida

Order - Araneae

Family/Genus/Specie ==> Actual Spider Identification

Family

Genus

Specie

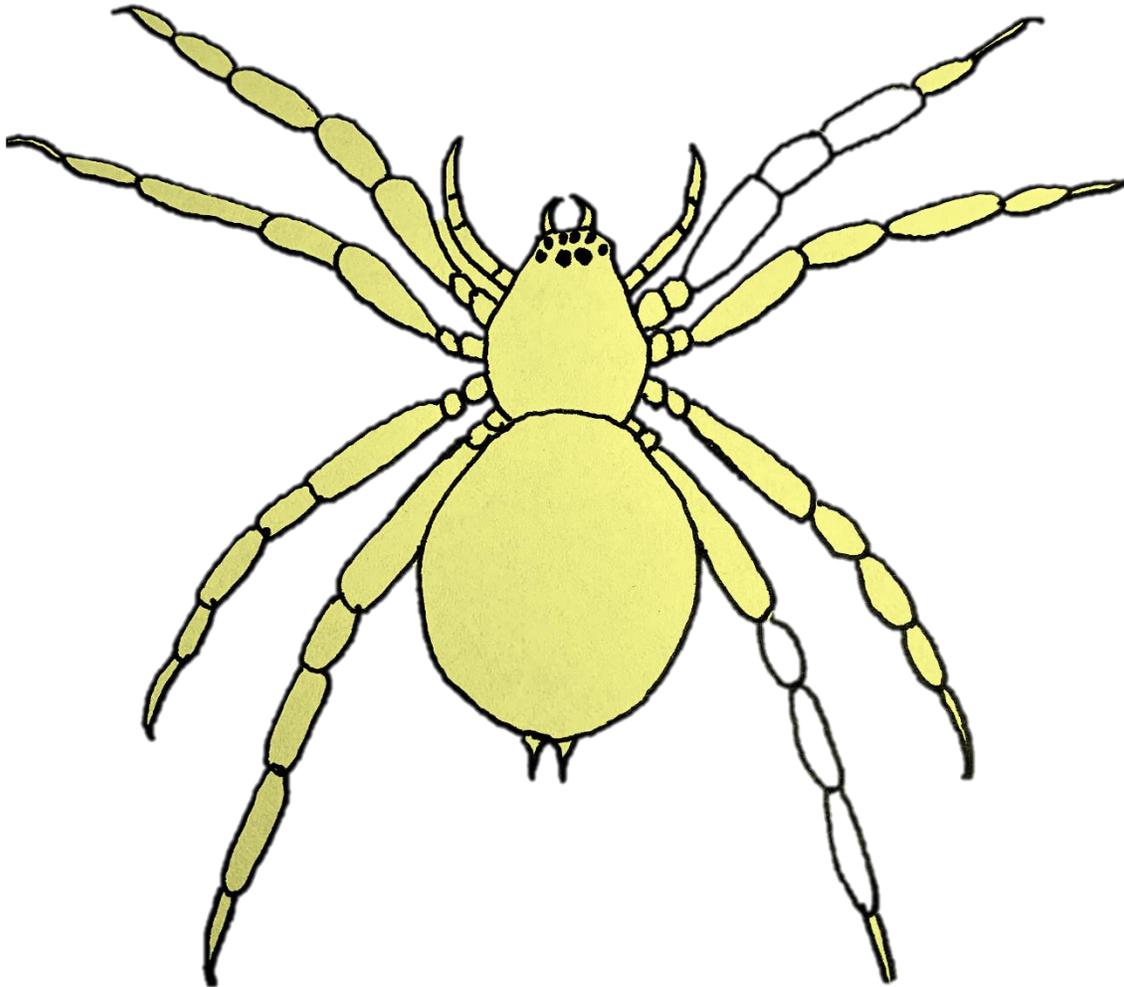
Key Identifying Characteristics of Spiders:

- Exoskeleton
- 2 Body Parts
- 8 Legs
- 2 Modified Legs – Pedipalps
- Chelicerae with Hollow Fangs to Inject Venom
- 8 Eyes usually
- Spinnerets

Anatomy Vocabulary:

Exoskeleton	Eyes	Book Lungs and/or Tracheae
Cephalothorax	Chelicera	Diffusion
Carapace	Pedipalp (Palp)	Hemolymph
Sternum	Spinnerets	Poison Gland
Abdomen	Fangs	Digestive Gland
Pedicele	Mouth	Heart

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Diffusion in the Spider's Book Lungs:

Oxygen diffuses from (HIGHER or LOWER) concentrations in Air to (HIGHER or LOWER) concentrations in Hemolymph.

Carbon Dioxide diffuses from (HIGHER or LOWER) concentrations in Hemolymph to (HIGHER or LOWER) concentrations in Air.

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	Salticidae	Araneidae	Theridiidae	Lycosidae
Common Name				
Special Ability				
Body Shape				
Activity (Day/Night)				
Vision				
Primary Sense				
Habitat				
Size Range				

Survey of the Spiders of Texas

Observe	Make SAFE observations of Spiders. Look in your home, yard, parks, beach, etc
Document	CLEAR photographs of top of spider and front, if possible. Do NOT handle the Spiders.
Describe	Describe Location, Habitat, Weather, Time of day, Spider’s Total Body Length, What it was doing
Record	Enter Observation in i-Naturalist (www.inaturalist.org)
Identify	If you can. The AI in i-Naturalist gives pretty good identifications to Family and Genus levels. I can help you get the Specie ID.

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References:

1. **Spider Identification Guides:** Both of these can be purchased through Amazon

“**Spiders of Texas – A Guide to Common and Notable Species**” by Valerie G. Bugh, ©2017, www.quickreferencepublishing.com, ISBN #978-1-936913-88-6

This is a laminated booklet that identifies the most common spider species found in Texas. It has nice photos and information such as Body Length in inches, Habitat(s), Web Type. It was written for the casual observations of spiders.

“**Common Spiders of North America**”, by Richard A. Bradley, ©2013, University of California Press, ISBN #978-0-520-31531-0

This is an excellent book for general identifications of Spiders in North America, north of Mexico. It has an excellent introduction explaining the biology of spiders, taxonomic classifications, and how to identify families of Spiders. The illustrations and the descriptions of 469 species representing 311 genera. I highly recommend this book for anyone that wants to actively participate in the Brazoria County Spider Survey.

2. **Internet Sites of Interest**

www.inaturalist.org This site will be used to document all Spider Observations. If you are not familiar with this program, explore the information available through the HELP functions at: www.inaturalist.org/pages/help

www.bugguide.net This site has some advanced information for identifying Spiders and Insects. I am still learning to use this site.

3. **Videos**

Peacock Spider Mating Dance:

www.youtube.com/watch?v=v3HlwwJG85c

Tarantula Mating Videos:

www.youtube.com/watch?v=OvGoXHHTUq8

www.youtube.com/watch?v=4JHkhhbXOz5U

Spider Molting Videos:

www.bing.com/videos/search?q=spider+molting+video&docid=608053334101197200&mid=9FE6EEB4AF564B2A55EF9FE6EEB4AF564B2A55EF&view=detail&FORM=VIRE

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About the presenter

Melanie Hollenshead is a Certified Master Naturalist from the Cradle of Texas Chapter in Brazoria County, Texas. She is a retired Chemical Engineer from the Hoechst Celanese Corporation who specialized in long-term employee health and safety. She has always loved creatures of all kinds. She was a Texas Permitted Wildlife Rehabilitator specializing in Bats, Opossums, Squirrels and small mammals for a decade. At this time, she is happily studying Spiders and leading the Citizen's Science project "A Comprehensive Survey of the Spiders of Brazoria County, Texas".