

Arthropod Presentation

February, 2022

Outline

I. Introduction

A. Self

1. life-long amateur interest in bugs
2. BS Biology
3. engineer by training and temperament

B. Names

1. common
 - a. sometimes applied to more than one species
 - b. not universal
2. scientific
 - a. individual names for every species
 - b. still can be confusing as species are split apart, synonymized, or perceived relationships between species change

II. Energy threads

III. Arthropods

- A. animals with exoskeletons which are more or less segmented
- B. discovered fight long before reptiles, birds, or mammals
- C. developed dramatic post-embryo transformations unmatched among chordates
- D. conclusion: most probably shouldn't be thought of as primitive life forms

IV. Taxonomic overview

A. Arthropods

B. Insects

V. Album of non-insects

VI. Album of insects

Energy threads

Two kinds of life:

Inorganic specialists can make a living out of inorganic compounds ranging from sulfides to carbon dioxide and water. Energy is derived from chemical reactions or light. They include things from certain kinds of bacteria to most plants. Without them, other forms of life could not exist.

Organic opportunists make their living off of other forms of life. They eat everything that grows, moves or dies, and range from ameoba to mountain lion. They are the recyclers, and without them the inorganic specialists would eventually run out of raw materials.

Nature is full of exceptions, so life is never simple. The threads that bind the ecosystem together cross, join, and split. However, as you observe nature you will be able to pick out some of the dominant threads.

The prairie is a sometimes soundless place. It seems peaceful when the wind dies down and all wildness is hidden. In actuality, it's a very wild place where life is fast and dangerous for most of what lives there. Arthropods abound in great variety and each has a part to play.

Here is one thread I observed: Grass and forbs feed grasshoppers which are eaten by wolf spiders; wolf spiders are collected by spiders wasps to feed their young; the wasps die as winter approaches; and cockroaches come along to clean up the bodies. The stage is swept clean for the next year. Of course, the prairie doesn't ever sleep and many species are active year-round. What this does show is that if you don't pay attention to Arthropods, you'll miss a lot of the action.

Arthropod Taxonomy

<u>Phylum</u>	<u>Subphylum</u>	<u>Class</u>	<u>Subclass</u>	<u>Example</u>
Arthropoda	Chelicerata	Euchelicerata		
		“	Arachnida	spiders, etc.
		“	Xyphosura	
	“	Pycnogonida		
	Crustacea	Branchiopoda		water-fleas
		Cephalocarida		
		Malacostraca		crayfish, sowbugs
		Maxillopoda		
		Ostracoda		seed shrimp
	“	Remipedia		
	Hexapoda	Collembola		springtails
		Diplura		bristletails
		Insecta		insects
		Protura		
	Myriapoda	Chilopoda		centipedes
		Diploda		millipedes
		Pauropoda		
		Symphyla		small soil organisms

Insect Taxonomy

<u>Class</u>	<u>Subclass</u>	<u>Infraclass</u>	<u>Superorder</u>	<u>Order</u>	<u>Example</u>
Insecta	none	none	none	Archaeognatha	bristletails
	Dicondylia	none	none	Zygentoma	silverfish
	Pterygota	Neoptera	Holometabola	Coleoptera	beetles
			“	Diptera	flies
			“	Hymenoptera	bees, wasps
			“	Lepidoptera	butterflies
			“	Mecoptera	scorpionflies
			“	Siphonaptera	fleas
			“	Strepsiptera	twisted-wing
			“	Trichoptera	caddisflies
			Neuropterida	Megaloptera	alderflies
			“	Neuroptera	antlions
			“	Raphidioptera	snake flies
			Paraneoptera	Hemiptera	stinkbugs
			“	Psocodea	barklouse
			“	Thysanoptera	thrips

Insect Taxonomy cont'd

Insecta continued	Pterygota	Neoptera	Polyneoptera	Blattodea	cockroaches
				“	
				“	
				“	
				“	
				“	
				“	
				“	
				“	
				“	
				“	
				“	
				“	
				“	
		Palaeoptera	none	Ephemeroptera	mayflies
		“	“	Odonata	dragonflies

Arachnida

Amblyomma maculatum (Gulf Coast Tick)



Eumesosoma roweri (Harvestman)



Schizocosa perplexa (Wolf Spider)



Centruroides vittatus (Striped Bark Scorpion)



Crustacea

Procambarus simulans (Southern Plains Crayfish)



Armadillidium vulgare (Common Pill Woodlouse)



Myriapoda

Lithobiomorpha (Stone Centipedes)



Parajulidae (Parajulid Millipedes)



Insecta - Coleoptera

Carabidae (Ground Beetle - larva)



Zopherus nodulosus (Ironclad Beetle)



Epicauta callosa (Blister Beetle)



Chrysolina auripennis (Leaf Beetle)



Diptera

Poecilanthrax lucifer (Bright Bee-fly)



Allograpta obliqua (Oblique Streaktail)



Scathophaga stercoraria (Common Dung Fly)



Trichopoda pennipes (Swift Feather-legged Fly)

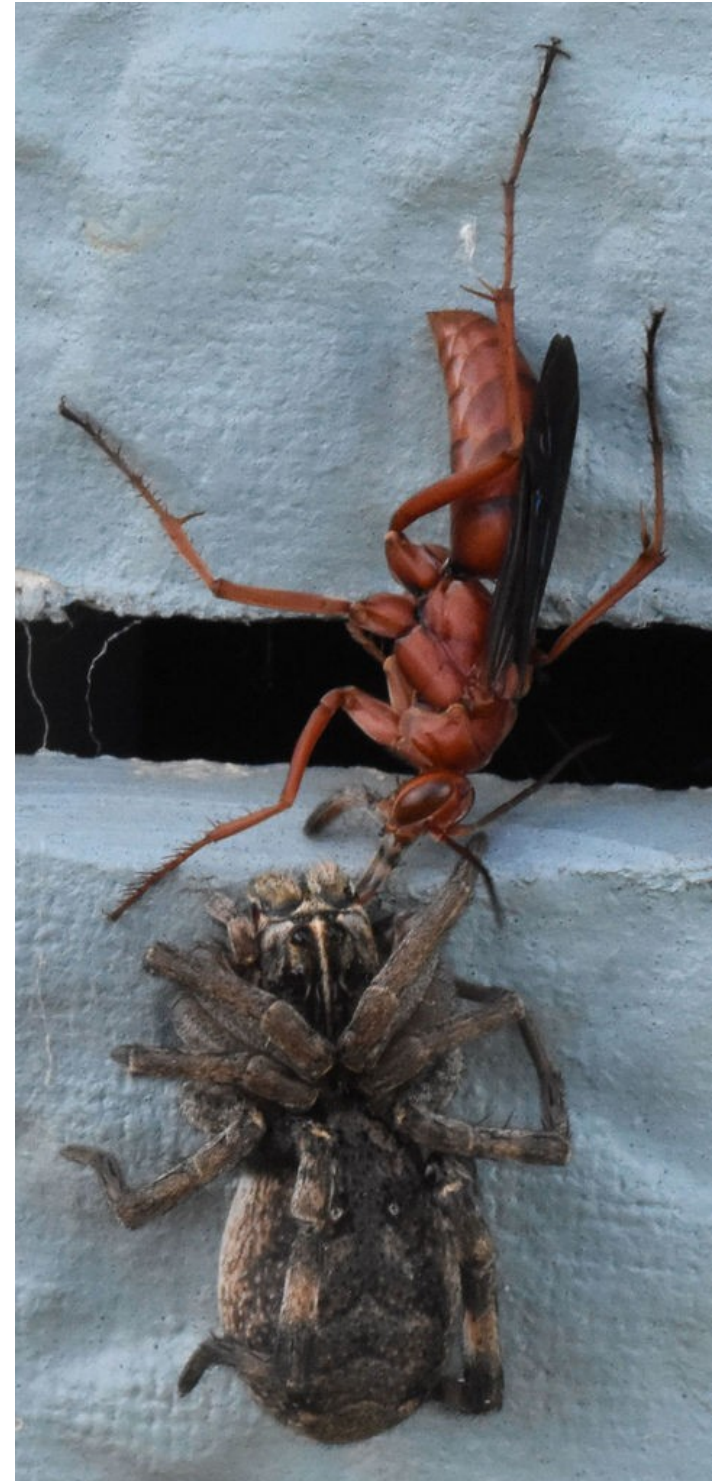


Hymenoptera

Polistes apachus (Apache Paper Wasp)



Tachypompilus ferrugineus (Rusty Spider Wasp)



Dasymutilla creon (Velvet Ant)



Pogonomyrmex barbatus (Red Harvester Ant)



Lepidoptera

Asterocampa celtis (Hackberry Emperor)



Lerema accius (Clouded Skipper)



Hypena scabra (Green Cloverworm Moth)



Estigmene acrea (Salt Marsh Moth)



Mecoptera

Panorpa nuptialis (Nuptial Scorpionfly)



Neuroptera

Ululodes macleayanus
(Macleay's Owlfly)



Euptilion sinuatum (Antlion)



Chrysoperla (Common Green Lacewing)



Hemiptera

Jadera haematoloma (Red-shouldered Bug)



Acanthocephala declivis (Giant Leaf-footed Bug)



Brochymena quadripustulata (Four-humped Stink Bug)



Melanoliaris aridus (Planthopper)



Thysanoptera

Thysanoptera (Thrips)



Blattodea

Shelfordella lateralis (Turkestan Cockroach)



Reticulitermes (Termites)



Dermaptera

Euborellia annulipes (Ring-legged Earwig)



Mantodea

Stagmomantis carolina (Carolina Mantis)



Orthoptera

Melanoplus femurrubrum (Red-legged G'hopper)



Paratettix (Pygmy Grasshopper)



Pediodectes (Shieldback Katydid)



Gryllus texensis (Texas Trilling Cricket)



Phasmida

Megaphasma denticrus (Giant Walkingstick)



Odonata

Libellula luctuosa (Widow Skimmer)



Hetaerina americana (American Rubyspot)

