Wonderful Wasps

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Story time! Have you been stung before?
### The Schmidt Sting Pain Index

<table>
<thead>
<tr>
<th>Level</th>
<th>Species</th>
<th>Description</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fire ant</td>
<td>&quot;Light, ephemeral, almost fruity. A tiny spark has singed a single hair on your arm.&quot;</td>
<td>Dr Justin Schmidt on the Sweat bee</td>
</tr>
<tr>
<td></td>
<td>Fire ant</td>
<td><img src="http://example.com/fire_ant.jpg" alt="Fire ant" /> Several Solenopsis species</td>
<td>Justin Schmidt/author provided</td>
</tr>
<tr>
<td>2</td>
<td>Sweat bee</td>
<td>&quot;The oven mitt had a hole in it when you pulled the cookies out of the oven.&quot;</td>
<td>Dr Justin Schmidt on the Jack jumper ant</td>
</tr>
<tr>
<td></td>
<td>Sweat bee</td>
<td><img src="http://example.com/sweat_bee.jpg" alt="Sweat bee" /> Halictus tarinosus</td>
<td>Jillian Cowles/author provided</td>
</tr>
<tr>
<td></td>
<td>Honeybee</td>
<td><img src="http://example.com/honeybee.jpg" alt="Honeybee" /> Apis species</td>
<td>Orangeauresco/Flickr</td>
</tr>
<tr>
<td>2</td>
<td>Honeybee</td>
<td>&quot;The oven mitt had a hole in it when you pulled the cookies out of the oven.&quot;</td>
<td>Steve Shatuck/Flickr</td>
</tr>
<tr>
<td></td>
<td>Jack jumper ant</td>
<td><img src="http://example.com/jack_jumper_ant.jpg" alt="Jack jumper ant" /> Myrmecia pilosula</td>
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Schmidt sting pain index
Schmidt sting pain index – wasps occupy several top slots!
People hate wasps.

“Hornets and wasps ... are devoid of the extraordinary features which characterize bees; this we should expect, for they have nothing divine about them as the bees have.”
~ Aristotle, ca 300 BC
People hate wasps.

- The most popular words that participants used to describe bees included, honey, flowers, pollen, and pollination, while the most popular words for wasps included sting, annoying, dangerous, and angry, according to the study.
“Good bug” vs “Bad bug”
Insects in the ecosystem

- Foundational!
Wasps are beneficial to us

- Controlling ‘pests’ of our garden plants
Wasps are beneficial to us

- Controlling ‘pests’ of our garden plants
Wasps are beneficial to the ecosystem

- Controlling all sort of arthropod populations!
Wasps are beneficial to the ecosystem
A wasp-eating moth...
Sooty-winged Chalcoela
Wasps as pollinators
Natural selection for things that look waspy
Clear-wing moths
Hoverflies – “eastern hornet fly”
Mantisflies
What is a “wasp?”

- Insect order: Hymenoptera
Structures on a wasp
Wasp ovipositor - stinger
Eyes of a wasp – compound eyes and ocelli
How many wasps are there? Lots.
Some examples of wasps (groups or individuals)
Potter wasps – subfamily Eumeninae
Spider wasps – family Pompilidae
Mud dauber (Sceliphron caementarium)
Cicada killer (*Sphecius speciosus*)
Cuckoo wasp – family Chrysididae

- Hyperparasitism!
Emerald wasps (Ampulex sp.)
Velvet ants – family Mutillidae
Ichneumon/Braconid wasps
Gall-forming wasps – family Cynipidae
Social wasps – what’s a “yellow jacket?”
Ground hornets – *Vespula* sp.
Paper wasps – *Polistes* sp.
Making a nest
Colony life cycle
Aggressive vs defensive

It was foolish for Russell to approach the hornets' nest in the first place, but his timing was particularly bad.

The action suddenly stopped while both sides waited patiently for the hornet to calm down.
Managing wasps...
Observing wasps... from a distance!
Wasp resources - online

www.bugguide.net
Wasp resources - online

- www.iNaturalist.org
Good wasps books
Challenge for the week!

- Go outside
- Try to find at least 5 different kinds of wasps
- If you’re able to, take a photo
- Upload it to iNaturalist
- Tag @sambiology on your 5th kind of wasp!
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