

Why the Mantis Shrimp



is my new favorite animal.

Written and drawn by The Oatmeal

Our eyes

contain millions of light sensitive cells,
called *rods* and *cones*.

Rods enable us to see  and *motion*.

Cones enable us to see *color*.

Dogs

have two types of
color-receptive cones:

Green & Blue



This enables dogs to see blue, green, and a little bit of yellow.

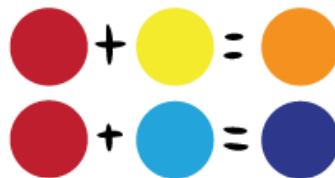
Humans have three types of color-receptive cones:



Green Blue & Red



Our additional **red cone** enables us to see not only red, but all the colors that are derived from red.



Butterflies have FIVE types of color-receptive cones:



So in addition to seeing two colors we don't have names for, butterflies can see a massive spectrum of color our brains aren't even capable of processing.

When it comes to color vision,
butterflies are *almost* at the top of the food chain.

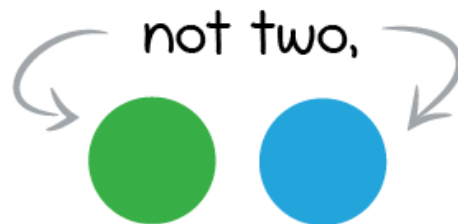
There is one other animal that has
better vision than the butterfly:

the mantis shrimp.

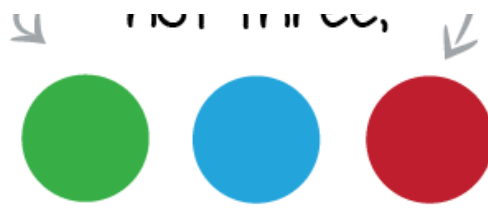


The mantis shrimp lives in warm, shallow
water, and typically grows to be
between 6 - 12 inches (15-30 cm) in length.

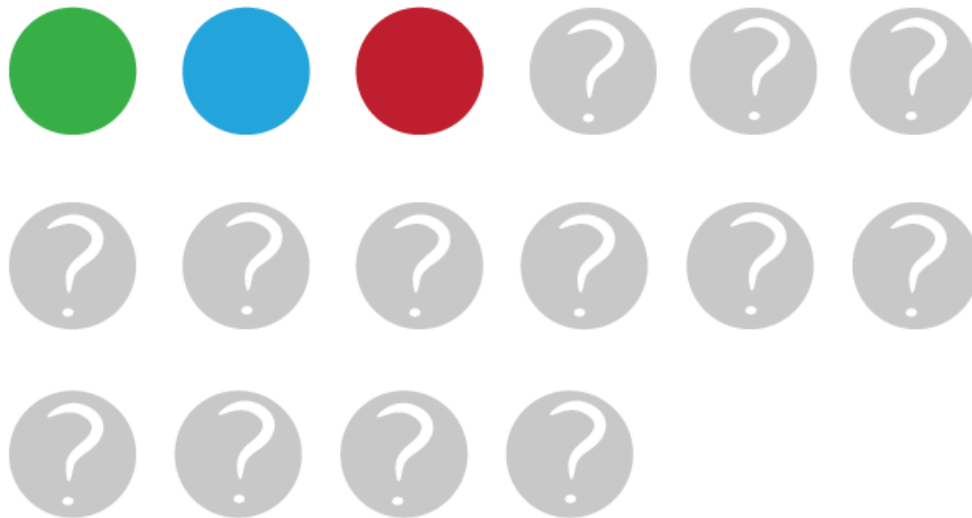
And this marvelous creature has



not three



but **SIXTEEN**
color-receptive cones.



The rainbow we see stems
from just **THREE** colors,



so try to imagine a mantis' rainbow
created from SIXTEEN colors.

Where we see a rainbow,
the mantis shrimp sees a

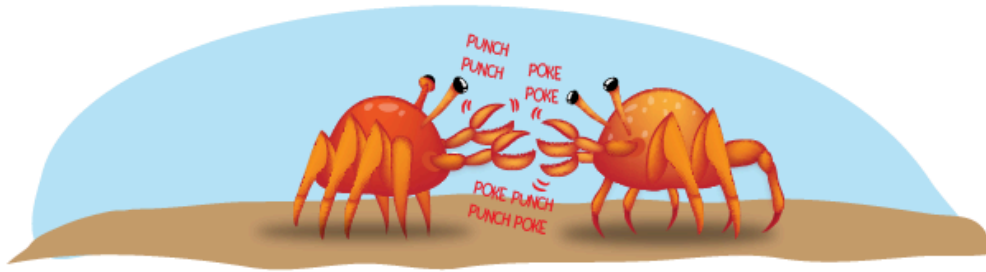


Perhaps this is why they're
so glorious to look at.



Photos via [PlanetAnimalZone](#)

Being a creature who perceives and presents such beauty, one would expect the mantis shrimp to be some kind of undersea holy man, gracefully floating along the sea floor, high-fiving lobsters and blessing babies.



Gentlemen!

Stop this fighting at once!
Your journey must be one of
peace and love,
not violence.

Now kiss each other on the mouth.





This, however,
couldn't be further from the truth.

The truth is,
the mantis shrimp is an

Undersea
Nightmare

and one of the most
creatively violent
animals on earth.

It has two raptorial
appendages on the
front of its body.



These accelerate with



These accelerate with the same velocity as a gunshot from a twenty-two caliber rifle,



and in less than three-thousandths of a second can strike prey with 1,500 Newtons of force.

To put this in perspective, if human beings could accelerate our arms at 1/10th that speed, we'd be able to throw a baseball into orbit.

Their limbs move so quickly the water around them boils in a process known as *supercavitation*.

When these cavitation bubbles collapse it produces an

undersea shockwave

that can kill prey even if the mantis shrimp misses its target.



The force of these collapsing bubbles also

produces temperatures in the range of several thousand Kelvins and emits
tiny bursts of light.

This effect is called *sonoluminescence*.

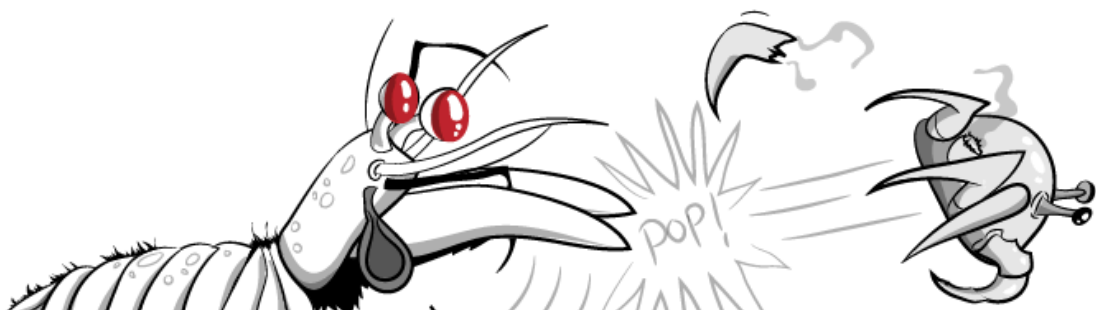
These are my
murder sticks.
There are many like it
but these ones are mine.



Using these "murder sticks,"
dismemberment

is primarily how the
mantis shrimp kills its prey.

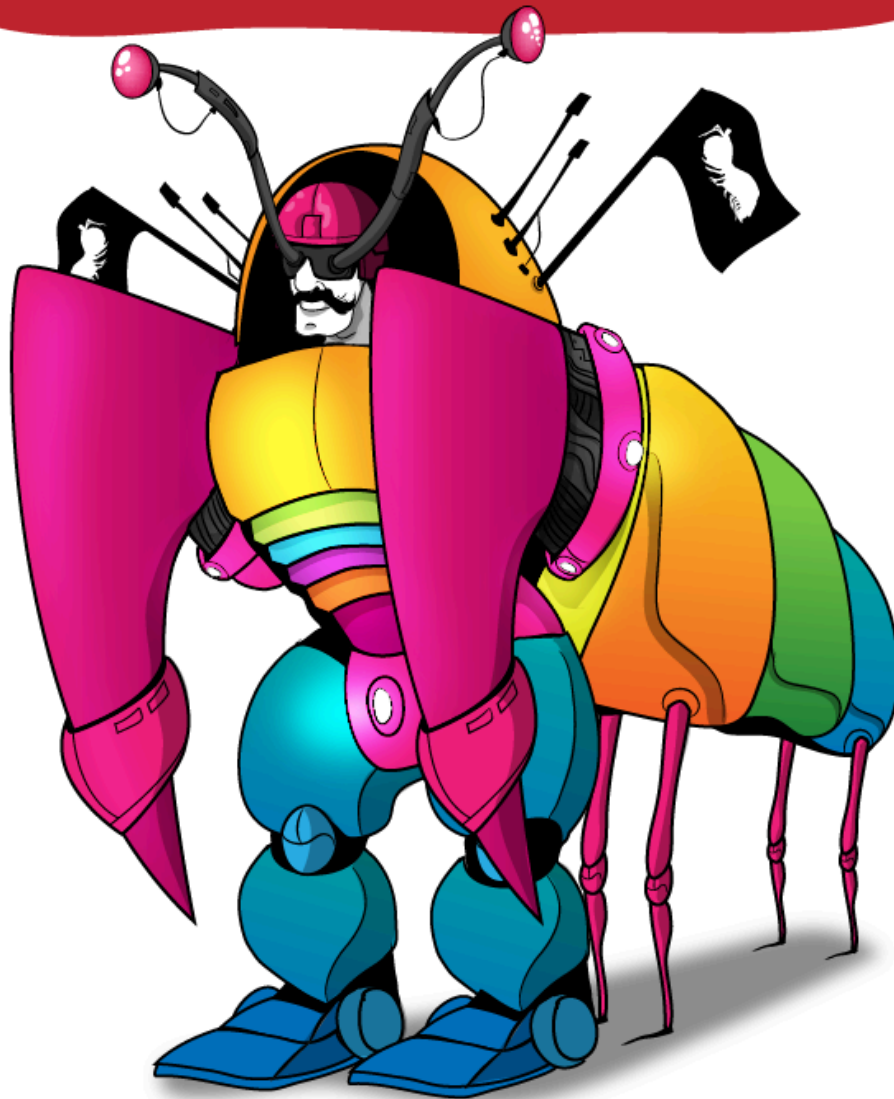
It bashes other animals to pieces,
smashing apart crabs, mollusks, oysters,
and octopi until deliciousness
starts squirting out.





Aaaaaaaaand
now you're dinner.

Their limbs are so resilient, researchers have been studying their cell structure for use in the development of advanced **body armor** for combat troops.



Aquariums don't typically house mantis shrimps because they tend to slaughter every other creature they share a tank with



and also because they can break aquarium glass.



This is why the mantis shrimp is my new favorite animal, because in the presence of such extraordinary light and beauty it embraces

DARKNESS.



It extols DEATH with the luminescent brilliance of a DYING STAR.

It is Genghis Khan bathed in sherbet ice cream.

The mantis shrimp is the harbinger of blood-soaked rainbows.



It is bright.
It is dark.



And it is beautiful.

Additional notes from the author

This comic was inspired by this [wonderful podcast about color](#) from [RadioLab](#). If you've never listened to RadioLab, today should be the day you start.

ABC News: [Tiny Shrimp Terrorizes Aquarium](#)

LA Times: [Claw of peacock mantis shrimp possible model for body armor](#)

Wired: [Mantis shrimp eyes might inspire new high-def devices](#)

Lastly, a big thank you to [Jane C. Daugherty](#) for proofreading this comic for me. If you want to learn things from the most awesome librarian this side of the North American tectonic plate, [follow her](#) on Twitter.

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