HOW DOES CHARLOTTE EAT?



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Although this image depicts a different type of spider than Charlotte, it gives us a good view of how a spider captures (then eats) its prey. Here we see a Golden silk Spider (*Nephila clavipes*). An orb-weaving spider, like Charlotte, the Golden silk lives in warmer climates (not in Maine, like Charlotte). The photo, by Coveredinsevindust, is online via Wikimedia Commons. License: CC BY-SA 3.0

After a spider spins its web, insects will get trapped in it. Charlotte, for example, loves to eat flies. After flies (or other prey) get trapped in a web, the spider will wrap it up for later eating. The tasty morsel looks like it is tucked inside a cocoon.

How does the spider actually eat its prey? Years ago, when E.B. White wrote *Charlotte's Web*, people thought that spiders would drink the blood of their victims. Today, scientists know more about the process, and people can actually observe - for themselves - what happens.

Rod Crawford, a spider expert at the Burke Museum of Natural History and Culture, University of Washington - who will answer spider questions by email - describes what to look for. Spiders begin their dinner by (gasp!) vomiting on their food:

> *Spiders are not miniature vampires; all species, as far as we know, digest some solid parts of their prey. What makes it especially interesting is that the digestion process begins outside the spider, where anyone who wants to look can see how it works.*
>
> *Put a medium-sized insect in the web of a large orbweaving spider in the garden. You will see the spider bite the prey, wrap it in silk, wait for it to die, then begin to eat. As a first step in eating, the spider will literally vomit digestive fluid over the prey. Then the prey is chewed* [this link depicts some examples of chelicerae] *with the jaws (chelicerae), and the fluid is sucked back into the mouth together with some liquefied meat from the prey. The spider repeats this process as often as necessary to digest, and ingest, all but the inedible hard parts. What is discarded afterwards is a small ball of residue.*

Charlotte is an orb-weaving spider. We have just learned how she actually eats. Do other spiders, who do not weave Charlotte's type of web, eat in the same manner?

> *Spiders other than orbweavers may eat the prey's body but discard some of the wings, legs, etc. Spiders with very weak jaws (such as crab spiders and cobweb weavers) make small holes in the prey and vomit their digestive fluid into the prey's body, the end result being a hollow shell with all the muscles and internal organs digested and sucked out.*

Do baby spiders - called spiderlings - similarly digest their food? And ... can they move from place to place, on their own, after they are hatched?

See Alignments to State and Common Core standards for this story online at:
http://www.awesomestories.com/asset/AcademicAlignment/HOW-DOES-CHARLOTTE-EAT-Charlotte-s-Web

See Learning Tasks for this story online at:
http://www.awesomestories.com/asset/AcademicActivities/HOW-DOES-CHARLOTTE-EAT-Charlotte-s-Web

Media Stream



Spider Spinning a Web

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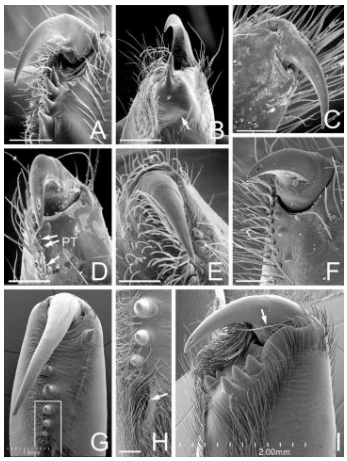
Spider Prey - A Fly Gets Wrapped

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Prey Inside a Spider's Cocoon

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Chelicerae - Spider Jaws

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Charlotte - An Orb-Weaving Spider

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Spider Disables and Wraps a Grub

Video clip online, courtesy YouTube.

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Barn Spider, like Charlotte, Captures and Wraps a Moth

Video clip online, courtesy YouTube.

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