Predator and Prey

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Microbes can be thugs. A bacterium that lives in our intestines is a particularly nasty fellow. Unable to reproduce on its own, the bacterium burrows into another microbe, killing it and using the remains to make offspring. The composite image below shows how the killer microbe, called *Bdellovibrio bacteriovorus*, reproduces.

The life cycle: Moving clockwise (from 1 o'clock), the microbe (yellow) swims toward prey (blue) and enters the cell. Once inside, the bacterium mends the hole and digests its prey, using the victim's remains as nutrients to reproduce. Finally, the bacterium and offspring leave the cell.

But even thugs have their good sides. Not only does the bacterium kill human pathogens, but it may ultimately teach scientists how to fight harmful microbes. The genome of the *Bdellovibrio bacteriovorus* bacterium has just been sequenced, and scientists hope to find genes involved in the thuggish behavior.

Detail showing *Bdellovibrio bacteriovorus* entering its prey.

The victim in the image is the bacterium *Pseudomonas pudita*, which is related to a bacterium that infects the lungs of people with cystic fibrosis.

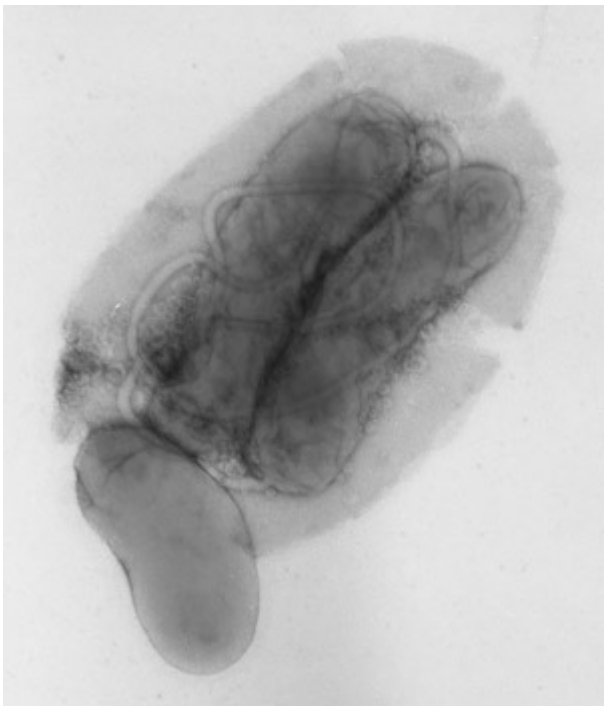

Image of the prey and predator together, called the bdelloblast.

All images courtesy Stephan Schuster.

— Edward R. Winstead

Rendulic, Snjezana *et al*. A Predator Unmasked: Life Cycle of *Bdellovibrio bacteriovorus* from a Genomic Perspective. *Science* **303**, 689-692 (January 30, 2004).

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