

# What is Virovore?

January 6, 2023

**In news**— Researchers have claimed that they have found the first known “virovore”- an organism that eats viruses.

## **About virovore-**

- Viruses, often thought to be predators that feed and kill their hosts, are nutrition for another group of microscopic, often unicellular organisms, called protists.
- Scientists have now identified an actual species of protist that feasts on viruses – Halteria, a ciliate that was observed consuming viruses in samples of pond water.
- The breakthrough has been made by John DeLong and his team at the University of Nebraska-Lincoln in the United State.
- The laboratory experiments showed that these **organisms can sustain themselves with viruses, consuming many and growing in size.**
- It was only two years ago that scientists found viral genes in the genomes of marine protists, indicating that **protists likely ingested viral matter.** But direct consumption was not observed, until now.
- **These virus-eating species of protists – which are their own kingdom on the tree of life and are not an animal, plant, or fungi – are now classified as virovores.**
- Microbiologists noticed that **both ciliate protists Halteria and Paramecium bursaria grew in quantity** and multiplied while the quantity of viruses in the sample decreased, compared to control samples that were cleared of the virus.
- To confirm their theory that the organisms were feeding on viruses (more accurately, virions), the team stained the DNA of chloroviruses with a fluorescent dye and

allowed protists like *Paramecium caudatum* and *Euplotes* to “graze” on the viruses, along with *Halteria*.

- **They found that *Halteria* consumed 10,000 to 10,00,000 viruses per day, growing in size.** The new *Halteria* cells also glowed, indicating that the dye in the virus particles had been ingested.
- Overall, with no other food sources, *Halteria* population increased by about 15 times in two days, while the level of chlorovirus which was used in the experiment dropped by 100 times. In control samples without the virus, *Halteria* did not grow.
- **The experiments show that *Halteria* is the first known virovore,** and that ciliate protists might play a major role in nature in allowing viruses to thrive.