

An Exploding Paramecium

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Astronomy and microscopy are two popular fields among amateur scientists and hobbyists. Amateur astronomers observe the vastness and wonders of space, while microscopists explore the intricacies of the microscopic world, both biological and non-biological. Enthusiasts do not just derive satisfaction and recreation from engaging in related activities. They can also contribute to real science by monitoring and gathering data pertinent to scientific research. They can even pursue data analysis with proper training and guidance from professionals.

To start, I am both an amateur astronomer and an amateur microscopist - though I must admit I am a sky gazer longer than a microscope enthusiast. I enjoy observing the moon, the sun, planets, comets, and nebulae through my telescopes and binoculars. It gives me much pleasure seeing these jewels in the heavens. Protists and algae are my favorite specimens when viewed through a microscope. You can never get tired of looking at how paramecia swim.

I think most budding microscopists, amateur or professional, start out with examining what creatures can be seen inside a drop of water. In my case, I became hooked with microscopy while examining a drop of water from a flower vase. Textbook definition and illustrations are not enough to describe the awesomeness of being able to really look at these microscopic life forms.

November 9th of 2009, while browsing through photomicrographs I took of a paramecium from a water sample I got from a flower vase, I noticed a somewhat bizarre occurrence. A small pouch seemed to protrude out of the paramecium, and was gradually increasing in size. I never noticed the protrusion while examining the paramecium visually, maybe because I was busy taking the shots.

A series of six photomicrographs of the paramecium showed the reported bulging until the protist finally exploded (time lapse of 1 minute, 26 seconds). A Zeiss Standard Junior K microscope and Canon PowerShot SD400 were

used to obtain the image sequence at 500x magnification. Please see the photo sequence below, and continued to the next page. The last image was a bit blurry and out of focus.

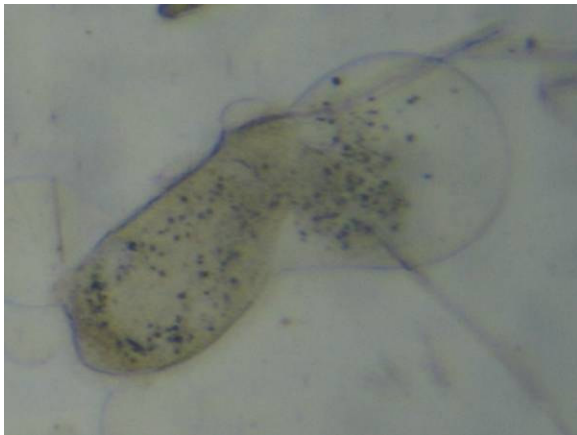




sign of dying. This very same bleb formation was documented in the photomicrographs. The increase in protrusion size was also observed, as with the researchers from Nara Women's University.

References

Takagi, Y., Kitsunezaki, S., Ohkido, T., & Komori, R. (2005). How paramecium cells die under a cover glass. *Japanese Journal of Protozoology*, 38(2), 153 - 161.



A possible explanation for the burst is that the water evaporated, allowing the cover slip to exert pressure onto the protist until it exploded. Takagi, Kitsunezaki, Ohkido, and Komori (2005) investigated the process of death of *Paramecium tetraurelia* by placing samples under a cover glass with no supporting pillars. The researchers noted a small bleb as the first