

What's in a Name? A Lot if You're a Little-Known Microbe

DAVID ROY SMITH AND ERICK R. JAMES

Science can be sexy. Stories about Neanderthal genomes and “God particles” easily climb their way to the front pages of major news publications. But most scientific studies get buried in academic journals and never have an opportunity to penetrate the public’s interest. This is especially true for research on microbes, which is often perceived to be boring and inaccessible. The eighth-grade son of a colleague said it best: “Polar bears are cool; microbes are what we have to read about in school.” Recently, however, an investigation on the microbial symbionts of termites garnered a surprisingly large amount of attention among social media and leading news organizations.

The study (James et al. 2013), which was published in *PLOS ONE*, describes new genera of unicellular eukaryotes living inside termite guts. Termites can harbor within their hindguts diverse symbiotic microbes, which help break down wood and other plant material, and this recent paper emphasized just how diverse these microbes can be. As interesting as this is, stories on termite gut microbes are not usually picked up by international news agencies. So why all the media attention? It is because the authors named one of the newly identified symbionts *Cthulhu macrofasciculumque*. To some, this name will look like typical tongue-twisting binomial nomenclature, but any fan of the cosmic horror writer H. P. Lovecraft will recognize it for much more.

In his 1928 short story “The Call of Cthulhu,” Lovecraft describes a prodigious creature, called Cthulhu (pronounced *kuh-THOO-loo*), with an octopus-like head, a mass of feelers, and large claws. Over the years, this monster has become a science fiction

icon, inspiring TV shows, movies, and video games. Termite gut symbionts are neither giant nor evil, but they can be creepy looking and heavily flagellated. In the case of *C. macrofasciculumque*, the flagella are arranged in a way that gives the microbe the appearance of a tentacled head reminiscent of Lovecraft’s demon’s—hence the name.

Species names are governed by internationally recognized rules, and there is some debate as to whether the nomenclature *Cthulhu macrofasciculumque* is acceptable. But there is no debate about the success this name has had in promoting the study to a wide audience. Lovecraft fans have embraced the microbial symbiont as one of their own and helped stimulate public interest in termite gut microbes—and in microbes in general.

Since its publication on 18 March 2013, the *Cthulhu* research paper has been accessed on the journal Web site more than 15,000 times and has amassed over 17,000 social shares through online networking services, such as Facebook and Twitter. Much of the commentary about the article revolves around Lovecraft’s monster. “He’s a lot smaller than I thought he’d be.... Like A LOT smaller,” tweeted one person. “When termites start turning on us,” wrote another, “we’ll know that the Great Old One has awoken.” Others were pleased to see scientists reaching out to the general public: “I pretty much adore the fact [that] scientists are so open-minded: great selection of names,” read one online post.

The enthusiasm for the study on social media led to major news agencies’ picking up the story, including NBC News and the *Los Angeles Times*,

most of which played on the Lovecraft theme. msnNOW wrote, “Real-life Cthulhu won’t scare anyone but your house,” and Fox News ran the title “Tiny ‘Cthulhu’ monsters discovered in termite guts.” The media coverage was relatively long lived, lasting for around 10 days, from 2 to 12 April, and was widespread, appearing in countries such as Russia, India, and South Korea, to name but a few. Interest in the article was also spurred on by a press release from the Public Affairs office at the University of British Columbia (UBC; the institute where the research took place), which included a video posted on YouTube showing *C. macrofasciculumque* swimming under the microscope.

When asked about the press release, Silvia Moreno-Garcia, communications coordinator at UBC, said, “I used a different strategy for the *Cthulhu* release. Rather than pitching to newspapers, like I normally do, I targeted blogs on science and Lovecraft and also employed social media, hoping that if the story got lots of attention, the newspapers would follow suit.” She was right. The YouTube video of *Cthulhu*, which was made at UBC and is also found in the supplementary materials of the research paper (James et al. 2013), has over 12,000 hits (and 45,000 when hits to reposts of the video are included) and probably provided many people their first experience of seeing a microbe in action. “It is the most popular science video ever posted by UBC Science Media Relations,” said Moreno-Garcia. “The most hits before this was 1200.”

Studies on microorganisms can give people a glimpse into a hidden world—one that thrives in every known ecosystem, encompasses most of the planet’s biodiversity, and helps sustain

life on Earth. However, despite their ubiquity and importance, microbes are underappreciated and poorly understood by much of the general public. The widespread interest in *C. macrofasciculumque* is encouraging and suggests that people are keen to learn about microbial diversity. It also suggests that, with a bit of clever marketing, researchers can make their work attractive to a broad audience, including nonscientists.

One cannot ignore the possibility, however, that the news and social media are focusing on the name rather than the science. Erick James, first author of the termite study (and coauthor of this Viewpoint), was the one who chose the name *Cthulhu*. He thinks that all the attention and hype around the Lovecraft theme has ultimately increased interest in microbes. But some of his peers have accused him of trivializing science. When asked about the name, Juan Saldarriaga, a UBC lecturer in protistology and a colleague of Erick's, said, "The media interest will subside, but the name *Cthulhu* will stay and plague the biologists who deal with this organism, tomorrow and 200 years from now. It's difficult to spell and pronounce and utterly mysterious in meaning for people who don't know Lovecraft. And for what? People saw the name on their Twitter account, smiled, said 'Cool,' and then went on with their lives. Maybe they were reminded that termites have

symbionts, but I don't think it's worth the trouble this name will cause biologists in the future."

Researchers are sometimes reluctant to promote their work, wanting, instead, to let the data speak for themselves. But in an age of online science and citizen journalism, when thousands of academic papers and commentaries are published each day and new journals and blogs pop up every week, it can be challenging for scientists to be heard over all the other voices. However, when they are heard, the message can reach millions of people in a few hours.

In some countries, public funding for basic research is waning. In Canada, for example, Minister of State for Science and Technology Gary Goodyear recently announced in a press conference that the National Research Council is shifting its focus away from basic science toward business-driven, industry-relevant research. Scientists need to think of creative ways to communicate and promote their work and its significance to a broad audience—the future of their research programs may depend on it. The success of the *Cthulhu* paper is largely the result of good public relations, publication in an open-access journal, an effective university press release, and a YouTube video. In the years to come, as thousands of species and symbionts are uncovered, this study may prove to be a real name changer.

Ten weeks after the *Cthulhu* publication, another paper describing a newly identified species generated significant media attention (Head et al. 2013). This time, the species was a giant herbivorous lizard that roamed Southeast Asian jungles millions of years ago. It was named *Barbaturex morrisoni*, after the rock star Jim Morrison, also known as the Lizard King. Researchers who discover new species and welcome publicity might want to consider what famous names from fiction or history could benefit their case.

References cited

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David Roy Smith (dsmit242@uwo.ca) is an assistant professor at the University of Western Ontario, London, Canada, where he studies the genomic architecture of microbial eukaryotes. Erick R. James is a researcher in the Botany Department at the University of British Columbia, Vancouver, Canada, studying termite gut microbes.

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