

Fresh input to theory on Legionnaires' disease

September 19 2011



Contrary to some scientific beliefs, Flinders University PhD candidate Michael Taylor has literally grown his own evidence to suggest the bacterium which causes the potentially-fatal Legionnaires' disease is more than just a parasite.

Using water tanks, Mr Taylor has created a lab-scale air-conditioning cooling tower – an ideal breeding ground for the legionella bacteria – and cultivated the aquatic organism in ideal temperatures to see whether it only ever feeds off a host, as parasites do, or if it can exist outside the environment and gain nutrients from multiple sources.

“There are two mechanisms of survival for legionella,” Mr. Taylor, 26, said.

“One argues that legionella can only ever exist in a host, such as an amoeba, and the other group suggests it does that when the opportunity

arises but it can quite happily live in other environments.”

According to his microscopic-based research, Mr. Taylor said he had sided with the belief that the organism can actually live without being a parasite.

“I took samples of bacterial slime that the legionella was growing in and found clusters that weren’t growing in an amoeba; they actually looked like they had multiplied by themselves outside of a host.

“The conclusion I’ve therefore come to is that the organism has multiple survival strategies and doesn’t just live inside a host, there are other ways it can survive and exist.”

Discovered in 1976, Mr Taylor said [legionella](#) was a relatively new bacteria yet one that has not been the subject of much scientific research.

“It doesn’t cause a whole lot of deaths in the realm of disease but the thing that makes it scary is that if you walk into a supermarket and they haven’t cleaned their cooling tower you can breathe it in and get sick – it’s not something you can avoid just by cleaning out your pantry.

“It’s also a relatively untouched area of research but if you know specifically how it lives you can understand how to get rid of it more effectively.”

A presentation on Mr. Taylor’s research was a finalist in Flinders University’s inaugural Three Minute Thesis, a competition which encourages PhD students to explain their research project in plain English, both on paper and in person.

Provided by Flinders University

Citation: Fresh input to theory on Legionnaires' disease (2011, September 19) retrieved 25 April 2024 from <https://phys.org/news/2011-09-fresh-theory-legionnaires-disease.html>

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