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U of G prof's technology fights disease

THANA DHARMARAJAH
Mercury Staff

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University of Guelph professor Paul Hebert's DNA bar-coding technology is being used for the first time in a medical fight to eradicate mosquitoes spreading elephantiasis.

The University of Ghana is using the technology to identify and map mosquito species.

"I'm rather pleased that it has happened so quickly," said Hebert. "It's nice to see applications advancing."

Hebert said bar-coding has been used to identify mosquitoes before, but this is a first for a scientific team to use it to attack a disease.

Elephantiasis affects millions around the world, causing extreme enlargement of the limbs and other body parts. It results from microscopic, threadlike worms that spread to humans through a mosquito's bite. Within human blood, the worm larvae grow into adults, which mate and produce larvae, called microfilariae.

James Edwards, president of the JRS Biodiversity Foundation, which is providing about $200,000 US in funding to the Ghana project, said the worms block the lymph vessels and cause the body to swell.

"Your legs look like an elephant and your arms get giant-like," he said.

The Anopheles Gambiae mosquito is the main spreader of the disease, but bar-coding would allow scientists to determine whether there are other species also carrying the disease.

"They are notoriously difficult to tell apart," Edwards said of the various mosquito species.

So far, through bar-coding it has been learned that there are different degrees of infectivity among the Anopheles Gambiae, he said, and researchers can now determine where the species reside.

"We can find out where they are so we can treat them with insecticide," Edwards said. "We don't have to go spraying willy-nilly."

Daniel Boakye, a University of Ghana professor leading the project, said though the disease is treatable, it has been found to shorten a person's life span and it comes with a social stigma as "it's very disfiguring."

Boakye said now with the bar-coding technology they will be able to eradicate the infectious mosquitoes before they bite humans.

tdharmarajah@guelphmercury.com

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