From the lab to the pub
Café Scientifique explains science in simple terms; latest topic was syphilis

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Times Colonist

Friday, November 07, 2008

Low lights and the high brick walls of Swans heritage pub.

A free smorgasbord heaped with savories and sweets, hot coffee and iced tea.

Comfortable seats and Ella Fitzgerald singing Let’s Do It in the background.

It's time to talk syphilis at Café Scientifique, a regular gathering where scientists talk about their research in ways that ordinary, non-scientific people can understand.

Researcher Caroline Cameron has a lot to say on the topic, all of it perfectly understandable by anyone in the target audience.

Cameron, a Canada Research Chair in molecular pathogenesis, gives a chatty, informative rundown of the disease. She even brings colourful stuffed toys in the shape of sexually transmitted disease bacteria to toss at the audience. As in: "I'm giving you chlamydia!" or "I'm giving you syphilis!" The pink, plush syphilis toy is corkscrew-shaped -- something that boosts the boring power of the real thing.

Seriously, though, Cameron is the only basic researcher on syphilis in Canada. And only six institutions worldwide, other than the University of Victoria, work on the disease at the basic level.

If you think syphilis is something that went out with the Victorian era, she has news for you.

It's on the rise, it's virulent, it can lead to insanity if untreated, and B.C. has the highest rate in Canada: 7.7 cases per 100,000 people, double the national rate. The latest outbreak occurred in Vancouver and is associated with intravenous drug users and prostitutes.

"Syphilis has an incredible history associated with it," she adds. And given some of the famous figures who suffered or were suspected to suffer from it -- from Ivan the Terrible to Hitler -- it has changed the world, she suggests.

But less is known about syphilis than any other sexually transmitted disease, and it attracts the fewest researchers. Making progress is hard, and some scientists leave the field due to a dearth of publishable articles.

Cameron has been studying the syphilis bacterium since 1996, hoping to identify the proteins on its surface. The bacterium was discovered in 1905, but none of the proteins has yet been identified.

"It's the most invasive pathogen that there is," she says. It spreads to every organ and tissue in the body within hours. "It crosses the blood-brain barrier, which is very unusual." And is why, in one-third of late-stage cases, it can lead to insanity.
Cameron wants to figure out how the bacterium moves into the blood and prevent that spread, with the hope it will lead to a vaccine. There's already a cure, penicillin, which has worked since 1943.

"In my most optimistic moment, I think we're about 10 to 20 years away [from a vaccine]. It depends on how many more people go into the field. Within the next five years, another seven will retire."

Café Scientifique is sponsored by UVic's Centre for Biomedical Research and the Canadian Institute of Health Research.

Unfortunately, only one visitor not associated with the scientific community showed up the other night: archeologist Erin Willows. She already knew that syphilis left lesions on ancient bones, given her encounters with burial sites around town. Sipping an oatmeal stout, she thought it was a "fantastic" evening and plans to tell her friends not to miss the next one, on Dec. 8.

Centre director E. Paul Zehr was not deterred by the low turnout. "We're bloody but unbowed," he jokes, saying science has to take its important messages to the people. Which would be a downtown pub rather than a campus lab.

The previous café -- which covered hormones in the drinking water -- was jammed.

Back to syphilis.

A decade ago, scientists thought they could eliminate it from the planet. Now there are 12 million new infections every year, most in the developing world, including two million mother-to-child transmissions. Scientists don't really know why it's skyrocketing again. It might be relaxed sexual practices, or the idea that like HIV, it can be controlled with drug cocktails.

Cameron has visited syphilis patients in Africa and has witnessed the ravages it can cause.

"They do need to raise public awareness that this disease is out there because people just don't know it."

The next session of Café Scientifique is scheduled for Dec. 8 at 6 p.m. at Swans and will feature Prof. E. Paul Zehr, an expert in neural control, on the topic: Your arm bone's connected to your leg bone. Can being like a cat help you walk like a human?

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FACT SHEET: SYPHILIS

Famous figures who had syphilis: Gangster Al Capone, European rulers Ivan the Terrible, Catherine the Great, Napoleon and composer Franz Schubert

First sign: Painless lesion on the sex organs or elsewhere, usually disappearing in three weeks. Highly contagious stage.

Second sign: Rash on the palms of the hands and soles of the feet. Still contagious.

Next: Latency for decades, not spread through sexual contact but wreaking havoc, including heart damage.

Insanity: In about one-third of infected people, it re-emerges as insanity.

If untreated: Can be fatal.

Number of B.C. cases: 333 in 2006.

Animals afflicted by syphilis: Humans and rabbits.

First documented case: 1494. Columbus and his shipmates either gave it to the New World or took it back to the Old World. Sailors returning to Spain gave it to prostitutes who spread it to Spanish soldiers hired by the king of France to invade Naples. Italian soldiers fled when they saw the invaders dying in droves from the disease, which was then fast-moving -- no longer the case. Epidemics then swept through Europe, China, India, Japan and the Americas.