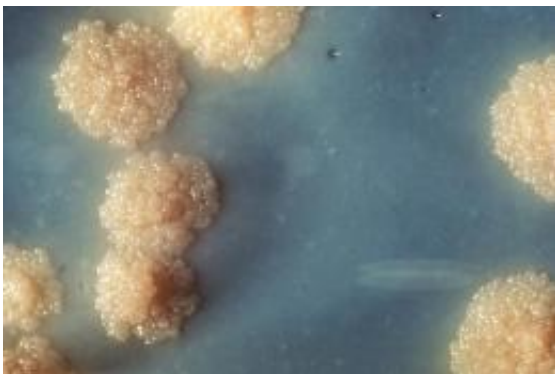


Research on early fur trade sheds new light on how tuberculosis persists in populations

April 5 2011, by Bob Yirka



M. tuberculosis bacterial colonies. Credit: Centers for Disease Control and Prevention.

(PhysOrg.com) -- Caitlin Pepperell and her colleagues at Stanford University in Palo Alto, California have been studying how tuberculosis (TB), the deadly lung disease, is able to persist, or hide, in sparse populations for years, only to become rampant once the right conditions emerge.

In one such study, published in the [Proceedings of the National Academy of Sciences](#), Pepperell and her colleagues studied one unique strain of the [disease](#) as it traveled with French fur traders from Europe to the Canadian province of Quebec where the [indigenous peoples](#) became infected. But it wasn't until the buffalo ran out and those indigenous peoples were put on reservations that TB began killing massive amounts

of people.

To follow the strain, the researchers analyzed the genetic makeup of the bacterium from inhabitants of both the mostly European ancestral people in and around Quebec and those from mostly indigenous population areas. Then using statistical analysis and mathematical modeling, they were able to trace the path of the disease as it spread across parts of Canada. It was then that they were able to clearly see how the disease remained mostly latent (asymptomatic) in the early years after its spread, but then, as populations grew and people were put under stress, most notably by being forced onto reservations, they began to progress to the active disease, which can kill as many as half of those infected.

Pepperell notes in the paper that the key part of the research; the part that people should pay attention to, is the fact that TB can persist for very long periods of time (in the Canadian study for 100 years) without causing much harm, but can suddenly become more active when those infected people are exposed to hardships such as physical or emotional stress, malnutrition or even overcrowding.

Currently, up to a third of the world's population is believed to be infected with TB, with the largest proportion in the poorer parts of Asia, and even after nearly a century of study, the disease still kills almost 2 million people every year. And while this particular bit of research likely won't do much if anything to reduce those numbers, it will, as Pepperell notes, point out how tenacious the disease actually is and how it can behave in different populations.

More information: Dispersal of Mycobacterium tuberculosis via the Canadian fur trade, *PNAS*, Published online before print April 4, 2011, [doi:10.1073/pnas.1016708108](https://doi.org/10.1073/pnas.1016708108)

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Citation: Research on early fur trade sheds new light on how tuberculosis persists in populations (2011, April 5) retrieved 13 May 2024 from <https://medicalxpress.com/news/2011-04-early-fur-tuberculosis-persists-populations.html>

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