

Humanities, medicine combine to reveal secrets of scurvy

April 10 2013, by Michael Brown



Jane Samson's research into sailors' historical accounts of scurvy helped reveal a link between vitamin C deficiency and brain chemistry. Credit: Richard Siemens

In 1850, a group of seven British missionaries set sail for the southern tip of Argentina with hopes of bringing Christianity to the indigenous people of what was then Patagonia.

Unfortunately, the voyage would end in disaster a year later as all seven would eventually succumb to some combination of scurvy and starvation. The ill-fated mission was chalked up as a classic study in poorly planned trips that were doomed from the outset, and for more than 150 years, accounts of the expedition were passed over in favour of outwardly more

juicy subject matter.

But now, thanks to a University of Alberta historian and medical questions being raised in the humanities, the group's efforts will not be in vain after all.

Jane Samson, a U of A historian of Victorian exploration, empire and missionary movements, was contacted in 2011 by Jonathan Lamb, who works in the area of 17th- and 18th-century exploration literature at Vanderbilt University.

Lamb had become curious about a neglected dimension of the historical literature on scurvy, namely the evidence of [neurological symptoms](#). He wondered whether historical accounts of these symptoms raised questions about a relationship between vitamin C deficiency and brain chemistry.

With no medical research funding available to pursue a humanities-generated research question, Lamb funded the preliminary medical research out of his humanities research grant, and contacted collaborators abroad, like Samson, to join the project.

The scurvy diaries

Serendipitously, Samson, while researching another topic, came across the diary of one of the ill-fated missionaries, Richard Williams.

A surgeon and the trip's catechist, Williams documented his battle with scurvy like few in history ever have.

"Williams was concerned with the psychological and neurological side of the story, rather than the well-known stuff about scurvy going back centuries—sailors' accounts of how their gums would swell up and bleed,

old wounds would open up and they would suffer from deep bruising," said Samson.

According to his diary, Williams noticed his first symptoms of scurvy in March 1851.

"He talks a lot about his fears of the psychological and spiritual impact of the disease, that it is a debilitating disease and how he is very afraid," said Samson, noting the devout Williams wrote he was often too tired to pray or read the Bible. "He knows about the effect scurvy has on a person's morale or energy levels. He becomes preoccupied with what was happening to his mind."

Samson says other accounts from sailors suffering from [scurvy](#) document how they would sit down on the deck, consumed with nostalgia going back to their childhood, and hallucinate. "Williams' accounts were consumed with the brain and his inability to fulfil his devotion to his religious duties, which was way more important to him than the physical symptoms."

Samson's work helped fill in the fuller picture, and the subsequent medical research helped confirm what Lamb had suspected: vitamin C deficiency changes brain chemistry.

"Preliminary medical research found that vitamin C deficiency produced neurological changes that are related to conditions like depression," said Samson. "The research proved there were [brain chemistry](#) changes with implications for the effectiveness of antidepressants in people who are vitamin C deficient."

Collaboration born of curiosity

Samson says this research has far-reaching implications and may yet

bear fruit in the areas of effectiveness of antidepressants in the face of the increasingly common problem of [vitamin C deficiency](#).

"More research is needed, of course, and happily this will now be forthcoming," said Samson, whose paper is about to be published as part of this study in the humanities-focused *Journal of Maritime Research*.

"We wanted readers to see how this interdisciplinary group came together around the original research question in such an innovative way."

Samson says she is proud that the U of A played a part in this important international, interdisciplinary discovery and notes that curiosity-driven inquiries—whether in the humanities, the sciences, engineering or medicine—are the lifeblood of innovation and discovery at the U of A.

"The university is a very broad-minded place to work—if you want to talk with someone from another discipline it is quite easy to do that and increasingly so," she said, adding that this research shows questions being asked in the arts are just as important as questions being asked anywhere.

"We need each other, and we need each other to keep asking those curiosity-driven questions, because you can't predict where innovation comes from."

Provided by University of Alberta

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