LESSONS FROM HISTORY

Olaf Larsell's "Medical Aspects of the Lewis and Clark Expedition"—A Commentary

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The bicentennial commemoration of the Lewis and Clark expedition (1803–6) has received, and will be receiving, considerable attention because it extends over nearly 3 years. The expedition has rightly been acclaimed as the greatest exploratory expedition within the United States. President Thomas Jefferson, who had been trying for many years to organize an expedition to explore the land west of the Mississippi, was the inspiration and driving force that made this effort possible.¹

Little attention was paid to the medical aspects of the expedition until Dr Eldon Chuinard² published a well-documented book, *Only One Man Died*, in 1980.² This paper by Dr Larsell of Portland and another by Stanley³ were some of the earliest papers written about the medical aspects. Recently, 3 books have been published that also describe the medical and nutritional problems faced by those of the expedition,^{4–6} resurrecting interest in the topic. The American College of Physicians has opened an exhibit in Philadelphia titled *Only One Man Died*, which some people believe is wrongly titled because 2 Blackfoot Indians also died in a brief encounter with Lewis and some of his men.

Larsell's paper is a straightforward, factual account of most of the problems; however, he devotes little or no space to discussing some of the questions, which are still—and always will be—matters for conjecture.

The death of Sgt Floyd was the most dramatic and unexpected severe medical incident during the expedition, but Larsell does not discuss its cause. Floyd had a respiratory infection about 2 weeks before his death, from which he seemed to make a complete recovery. The illness that caused his death started "all of a sudden" and was associated with severe, colicky abdominal pain, vomiting, and diarrhea. He died within 24 hours. He was "treated," but we do not know how, although purging, at least, was probably tried. He may also have been bled.

His death has usually been ascribed to a ruptured appendix, though the evidence and clinical course do not

fully fit with this diagnosis. The description of his illness was brief; there was no physical examination, and Floyd's temperature was not taken (taking a temperature was not common at that time). Did he die from an overwhelming gastrointestinal infection, a ruptured organ (other than the appendix), or a ruptured aneurysm? We do not know, but to ascribe the cause automatically to appendicitis is probably wrong.

About 1 year later, Sacagawea, the Indian wife of one of the interpreters who had a 5-month-old infant, developed abdominal pain and was treated by Clark with purgatives and bleeding. When Lewis saw Sacagawea a few days later, she was almost in extremis, with a weak, irregular pulse. Lewis gave her mineral spring water to drink. The combination of fluid and minerals may have restored her fluid balance. She recovered within a couple of days, and her symptoms did not return during the expedition.

Larsell does not mention several important questions. Were the boils and skin infections due to scurvy? Almost certainly not. Was the "ague," from which Lewis and others suffered, malaria? Probably not. Malaria, well known along the Mississippi Valley, was probably not yet prevalent along the Missouri Valley. Smallpox, which had previously been rampant among the tribes along the Missouri, was, fortunately, dormant at the time of the expedition. Venereal disease, as anticipated by Lewis and Clark, was a significant medical and disciplinary problem.

Indian treatments were seldom used except for sweat baths, and 2 men were surprisingly cured quickly after sweat bath treatment: Bratton, a soldier on the expedition who had been suffering from incapacitating back pain for many weeks, and an Indian chief with paraplegia. (Lewis made a very astute and knowledgeable observation that, despite years of paralysis, the chief had not lost any muscle mass.)

Both Lewis and Clark had qualms of conscience about giving minimal treatment to the Indians in return for services and gifts that were important to the expedition and sometimes out of proportion to the treatment given.

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They concluded that the benefits outweighed the ethical questions raised by the treatments. This question still faces travelers in Third World countries. Moving quickly from village to village on a trek, how much treatment should be given to patients whose problems cannot be diagnosed and who will have no follow-up?

The information about the health problems during the expedition comes from the journals kept by Lewis, Clark, and 4 other men. Larsell used the edition of the journals edited by Thwaites.⁷ Most modern scholars use the edition edited more recently by Moulton.⁸ Medical knowledge was primitive, by our standards, and making diagnoses on the basis of the descriptions in the journals will always be conjectural. Terms such as “ague” were applied to almost every fever. That most of the men recovered despite treatment with purging and bleeding is both a tribute to the health of the men and evidence that they were not suffering from severe diseases.

How did the men maintain such good health? The food was sometimes good, but often, it was inadequate and even rotting. For many weeks, they traveled without contact with Indians or other white men. After they passed the winter at the Mandan Fort (near Bismarck, ND), they traveled for hundreds of miles without encountering anyone. When they finally met the Shoshone Indians, they found people who were very short of food but who were not riddled with diseases—except venereal disease. During their winter stay on the West Coast, many men had colds and were infested with fleas, but they survived without loss and were strong enough to face the long journey home.

During the journey home, Lewis was lucky to come away unscathed from a skirmish with a party of Blackfoot Indians. Two of the Indians were killed. A short time later, while hunting for elk accompanied by Pierre Cruzatte, who was blind in one eye and had poor vision in the other, Lewis was accidentally shot through the buttocks, mistaken by Cruzatte for the wounded elk. Lewis made a good recovery before the end of the expedition.

Much has been written about Lewis’s mental state both during and after the expedition. He stopped writing in his journal for weeks at a time, and some authorities have thought that Lewis was bipolar. After the expedition ended, his life was unhappy. He never wrote a single word of the edited journals after the expedition ended. His job as governor of Louisiana was not suited to him, and he became an alcoholic. He committed suicide in October 1809 while on his way to Washington.

Larsell’s paper was a straightforward account, without analysis, of the medical problems of the expedition and probably generated interest in the expedition at a time when there was little public interest in it.

References

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Biographical Note

Dr Olof Larsell (1886–1964) was born in Ratvik, Sweden, and as a small child was brought to the United States, where his family settled in the Northwest. He obtained a BS at Linfield College in Tacoma, WA, and a PhD in anatomy at Northwestern University. After teaching at both Linfield College and Northwestern University, he was appointed Professor of Anatomy at the University of Oregon Medical School, where he remained for the rest of his career. He became a close friend of Dr Eldon “Frenchie” Chuinard and influenced him to write *Only One Man Died*, the first book about the medical aspects of the Lewis and Clark expedition. He was very interested in history and wrote frequently on the history of the Northwest, including a book, *The Doctor in Oregon: A Medical History*. This was a detailed account of medical practice in the Northwest and included a chapter on the Lewis and Clark expedition. This book was published in 1947, the same year as the article reviewed.