



## Cow tails and conviction

### Viruses, plagues, and history

Michael B.A. Oldstone

Oxford University Press, New York; 1998  
211 pp. Illus. \$37.00 ISBN 0-19-511723-9



**M**ichael Oldstone, a prominent American immunobiologist, has rubbed elbows with many of the giants of modern virology who feature in his *Viruses, plagues, and history*. The strength of his book lies in its engaging accounts of the nature and control of modern viral plagues. Although it suffers from some unevenness, it is a memorable and absorbing excursion into seldom visited areas of medical history.

The introductory chapters offer a fairly painless primer on the principles and vocabulary of virology and immunology. The strongest chapters deal with success stories of disease eradication: smallpox, yellow fever, measles and poliomyelitis. A chapter on influenza,

which Oldstone portrays as a plague that may return, also ranks with the best. In each of these chapters the nature and impact of the disease are made palpable through a lively narrative that weaves together disease statistics, historical accounts and well-chosen anecdotes. The impact of these diseases is sometimes measured in surprising terms. Did you know that smallpox accounted for more deaths since 1900 than did all the wars in this century? Or that Canada might well be part of the United States today had smallpox not ravaged the revolutionary army led by Benedict Arnold as it marched on Quebec City in 1776? Of 10 000 American troops involved in the attack, 5500 contracted smallpox. British troops were unaffected because of the routine practice of variolation, a precursor of vaccination.

In each of these chapters Oldstone describes the discovery of the disease agent, the development of a modern vaccine and the key players. Some characterizations are quite vivid, but most are sketchy. I kept hoping for the characters to come into sharper focus and speak, but that would require another genre altogether. Oldstone does have a keen ear for historical echoes, however. Lest we think that anti-immunization sentiment is a recent phenomenon, Oldstone reminds us that 200 years ago Edward Jenner's

smallpox vaccine encountered vigorous opposition from physicians as well as the public. His contemporaries feared the unfamiliar: rumour had it, for example, that some vaccinees grew a cow tail. The fear of immunization has persisted over these two centuries, but anti-vaccination rumours have become more sophisticated.

This book is not simply a celebration of successes and of champions, and Oldstone reveals human frailties and failings unflinchingly. More darkly, he cites evidence that smallpox was deliberately introduced into some aboriginal communities in North America, in full awareness of the likely consequences, long before the term biological warfare was coined. This is a chilling notion that should not be dismissed lightly; at the same time, it is likely that most epidemics of imported diseases among aboriginal peoples were ignited by accidental exposure to Europeans and fanned by a lack of understanding of how the illness spread. Oldstone also drives home the point that politics and goodwill are key elements in disease control. Even though a smallpox vaccine has been available for 200 years, the disease was not eradicated globally until 20 years ago. To take another example, will today's politicians see the value in pressing polio to its end? We are getting close to the global eradication of cases, but dealing with the remaining hotspots will undoubtedly be expensive and put conviction to the test. Will we measure in centuries the time it takes for expensive new vaccines to become available to the world's poorest countries and peoples?

The last section of the book gives Lassa fever, Ebola, hantavirus, HIV and the spongiform encephalopathies a briefer, more superficial treatment. Although these chapters are less engaging than the others, I would recommend Oldstone's account, particularly the historical chapters, to anyone involved in public health, immunization and infectious disease.

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### One thousand words



Canadian Tribune / National Archives of Canada / PA-038671

Poliomyelitis quarantine sign, "J" Block, Stanley Barracks, Toronto, August 1947. Reproduced by permission of the Communist Party of Canada.