

Hoof-and-Mouth Disease: A Border Control Issue

by John H. Tanton

In 1347, the Kipchak army augmented its siege of a Genoese trading post in the Crimea by catapulting plague-infected corpses into the town.¹ Thus was the devastating bubonic plague transmitted to Europe. It killed between one-eighth and two-thirds of the population, depending on the district. An estimated 25,000,000 people died from this “black death.” European population numbers did not recover to pre-plague levels until the early 1700s.

Hoof-and-mouth disease is apparently a highly virulent and communicable disease for animals, if not quite as fatal as the human plague. The susceptible animals include not only domestic cattle, pigs, sheep and goats, but also wild deer, elk, antelope, bison, javelina, bears, wild boar and, in the north, possibly moose, caribou and musk ox. The introduction of the disease to North America — where an earlier outbreak was eradicated in 1929 — could end in a domestic and wildlife animal holocaust of enormous proportions, not to mention the effect on production of domestic meat, hides, milk, cheese and other animal products.

It has been posited that hoof-and-mouth disease needn't worry us too much as it does not infect humans. It can, however, have a major effect on our food supply and economy. About 40 percent of all arable land worldwide is pasture and range land. These lands generally cannot produce row or grain crops, whether by reason of poor soil, steep erosion-prone slopes, inadequate rainfall or low soil fertility. They can however grow cellulose forage crops, which can be converted to human food only through the agency of animals — mostly of the susceptible categories mentioned above. Production by infected animals, even though they don't necessarily die, falls to uneconomic levels. Farms and

ranches become animal hospitals rather than production units.

It is vital that this modern plague be excluded from our country and continent. We know of the current situation in Europe. The disease is endemic in Argentina, where it has now broken out into an acute problem.² It has now been detected in all South American countries except Chile and Uruguay. This includes Columbia, where it is posed to travel into Middle America, facilitated by the nearly completed Pan American highway. Once introduced into North America, the disease could spread like wildfire through our susceptible animal populations, since, unlike animals in endemic areas, ours have not acquired a resistance to the disease by living with it for many years.

The plans of the United States Department of Agriculture's Animal and Plant Health Inspection Service to deploy its 1800 inspectors “at major U.S. airports and other ports of entry”³ are completely inadequate. This ignores the traffic of tens and even hundreds of thousands of persons who illegally cross our borders between regular ports of entry. Even at official land border crossing points inspection is extremely difficult, with fully loaded semi-trucks passing through every few minutes. About 3 million trucks enter the United States each year. Only a small proportion of these vehicles are adequately examined, as drug and human smugglers have learned to their profit.

Those who wish the United States ill — there are such persons in the world — could with little trouble smuggle infected material across our southern border — right into our major cattle production areas. There is no need to use a catapult, as the Kipchak army did.

To protect against this “clear and present danger” the United States government should institute a virtual closure of our borders *between* the legal ports of entry. Even in normal times, no one is supposed to enter through these areas, though tens of thousands do. This may well require deployment of the individual states' national guard units or the federal military.

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Then at our legal ports of entry along the border, and at our air- and seaports (which together number more than 300), scrutiny of people and material must be raised to the highest possible level. This requires a marked increase in staffing levels, and inspection of virtually all cargo. Under the best of circumstances, this will mean border crossing delays. That is part of the price that must be paid in an attempt to exclude the virus from the U.S.

This *cordon sanitaire* should be maintained until the seriousness of the developing worldwide epidemic can be assessed and control measures for the U.S. other than this quarantine can be developed and put in place. When the threat moderates, controls can be relaxed.

If the hoof-and-mouth virus is let loose on our susceptible animals there will be no calling it back, especially for wild creatures. The risk is huge, and the consequences are potentially devastating, both environmentally and economically. If we wait until the malady shows up in the U.S. we will have been too timid and indecisive, and have waited too long.

Where no adequate remedies are available, the action required must be proportionate in severity and duration to the risk. •

NOTES

¹ *Encyclopedia Britannica* Vol. 2, 1975, p.253, Article on "Black Death"

² <http://www.smh.com.au/news/0103/19/world/world6.html>

³ Beltsie, Laurent, "How the US has avoided Europe's livestock problems," *Christian Science Monitor* (March 16, 2001) p.2

On a different tack, Dr. Tanton submitted this letter to the editor of a British newspaper:

Re: Francis Bacon and Foot-and-Mouth Disease

Francis Bacon admonished us in 1620 that "Nature, to be commanded, must be obeyed." The foot-and-mouth disease epidemic is but one symptom of many of our failure to obey, and hence to command.

One of nature's fundamental dicta is that borders are essential to contain most biological processes. We have instead decided on "globalization," the erasure of borders. We are learning to our sorrow that weeds and

diseases are among the things we are globalizing.

U.S. Secretary of Agriculture Ann M. Veneman says the U.S. government is trying to balance the forces of globalization and the need to protect the meat industry.¹ Translation: Having broken down the borders to disease and seen the consequences, we must now try to build them back up again to protect ourselves. Globalization sentences us to frequent recurrences of this scenario, for both plant and animal invasions – and for disease organisms preying on human beings.

Another of nature's maxims is that monocultures are invitations to outbreaks of disease. Huge hog, poultry and cattle operations with thousands of genetically similar animals are a disaster waiting to happen. Future outbreaks like this current one are perfectly predictable, even if we cannot foresee the specific organism, date or venue.

A third precept flows from the recent UN report that our globe now hosts 19 megacities with more than 10 million inhabitants, some of them ranging up to 15 or even 20 millions. By 2015, the number of these massive urbanizations is projected to increase to 23.² I'll let historian William McNeill deliver the biological caution by paraphrasing a passage from his seminal *Plagues and Peoples*: Urbanized humanity presents an enriched environment for the nutriment of disease organisms.³ In other words, rather than being at the top of the food chain as we arrogantly suppose, we are potential food supply for microorganisms, just as cattle and wildlife are food supply for the hoof-and-mouth disease virus. We humans are presenting ourselves in huge conglomerations that must look like a vast smorgasbord for those parasitic organisms that feed on us.

It is getting late, but there may still be time to change our ways. A good place to start would be reading Professor McNeill's still timely book and then rethinking our ill-advised efforts to abrogate biological borders.

¹ Elizabeth Becker and Christopher Marquis, "Some say U.S. Lags in Blocking Foot-and-Mouth Disease at the Border." *New York Times*, 26 March 2001.

² Joseph Chamie, "Viewing the new population order." *Washington Times*, March 4, 2001, p. B4.

³ McNeill, William H. *Plagues and Peoples*. Garden City, NY: Anchor Press; 1976 p. 57.