

Mosquito-borne diseases stymied Ming Dynasty attempts to invade southern neighbor

January 16 2015, by Matt Swayne



A map of modern China shows the approximate region near Vietnam's northern border where malaria is still a concern. During the Ming Dynasty (mid-1300s to

mid-1600s), malaria and other mosquito-borne diseases helped protect Vietnam from invasion by Chinese forces. The diseases also prompted extensive efforts by medical practitioners to develop treatments using local plants and animals.

Credit: NHS National Services Scotland

Chinese rulers spent hundreds of years and sacrificed countless lives building a meandering 5,500-mile earth, stone, and brick wall along the country's northern border, designed to keep invaders from attacking the empire.

Meanwhile, tiny germs and bugs were one brick in a wall that restrained China's own ambitions to conquer and incorporate parts of what is now called Vietnam and the empire's other southern neighbors.

Chinese officials during the Ming Dynasty—roughly between the mid-14th century to the mid-17th century—often blamed a disease for the endless problems that Chinese generals encountered while campaigning in the south, according to Kathlene Baldanza, assistant professor of history and Asian studies. These officials documented that the disease, which they referred to as miasma, sapped troop strength by weakening and killing large percentages of their soldiers. Commanders also altered invasion timetables to avoid attacking in the spring and summer when miasma seemed to be at its most virulent.

This connection between disease and conquest, which was enough to subtly alter the course of Chinese expansion in the south, shows that factors other than human behavior, including disease and geography, often direct the flow of history.

"Humans are not always the main force in their own history," Baldanza says.

While disease was a considerable hurdle for the military, it was only one challenge the Chinese empire faced in expanding its territory.

"Miasma was a significant factor, but it was really just part of the buffer between China and the south," says Baldanza. "There were also ecological, cultural, climatological and geographical barriers."

For the Chinese government, facing internal population pressures, the south made a tempting target for expansion. The Chinese had ruled Vietnam, particularly the agriculturally rich area near present day Hanoi, off and on for centuries and the area's people retained strong cultural connections with the north.

However, the mountains that ring the area near China's southern border with Vietnam hold a significant population of non-ethnic Chinese, who were often at odds with their northern neighbors, says Baldanza. The tough terrain and steamy jungles were also populated with swarms of mosquitoes that were armed with microscopic killers.

Most Chinese and Vietnamese at the time believed that inhaling the area's thick fog, which they called the miasmatic mist, caused the disease's high fever, chills, vomiting, diarrhea, and, often, death, says Baldanza.

The mist, as modern scientists would recognize, was not the cause. Mosquitoes that carry disease thrive in the hot and damp rainy-season environments when foggy, misty weather was also most obvious.

Causes and Cures



The title page of "A Quick and Easy Guide for Miraculous Remedies," an early 18th-century text from central Vietnam that historian Kathlene Baldanza consulted during her research. Credit: private collection, Ho Chi Minh City, Vietnam

Ironically, the disease also drove more military incursions into the south as the Chinese sought a cure rumored to be among the plants and animals in Vietnam's lush, exotic territory.

Chinese doctors and scholars included most malaria-like symptoms in their descriptions of the suffering brought on by miasma; however, there were probably other diseases affecting the victims as well.

"In my work, I usually refer to it as these scholars did—as miasma—because there may have been other diseases that they were referring to," says Baldanza. "Many of the symptoms mentioned in the text, such as aches, fever, chills, weakness, and diarrhea, are closely associated with malaria."

Dysentery, for example, may have affected some of the victims of miasma, says Baldanza, who first discovered her love of Chinese history while working as an intern at the Metropolitan Museum of Art in New York City, a museum known for its extensive collection of Chinese art.

Baldanza relied on original documents from the era—including memoirs, government documents, military treatises, and medical manuals—for this research. She adds that while Chinese documents are often readily available, she was required to visit archives in Vietnam to gain access to those historical documents.

She found that miasma became so equated with the south that it served as a way to talk about the border region and to identify southerners and especially Vietnamese. When two officials—one from Korea and one from Vietnam—met in Beijing, they both wrote poems to commemorate the occasion, a common practice at the time. The Korean official starts his poem: "You have traveled ten thousand miles from your homeland of miasmatic pestilence, using many postal stations to visit the ruler from a great distance."

The Vietnamese official did not appear to be offended, says Baldanza, who is currently working on a book on miasma and history, tentatively called "Malarial Rain and Barbarian Mist: Miasma in Chinese Imperial History." In fact, the notoriety may have been welcomed.

"What's even more remarkable is that when the people in the south found out that this poem was being circulated in China and as far away

as Korea, they were sort of proud of this," says Baldanza. "They were interested in it."

Other Headaches



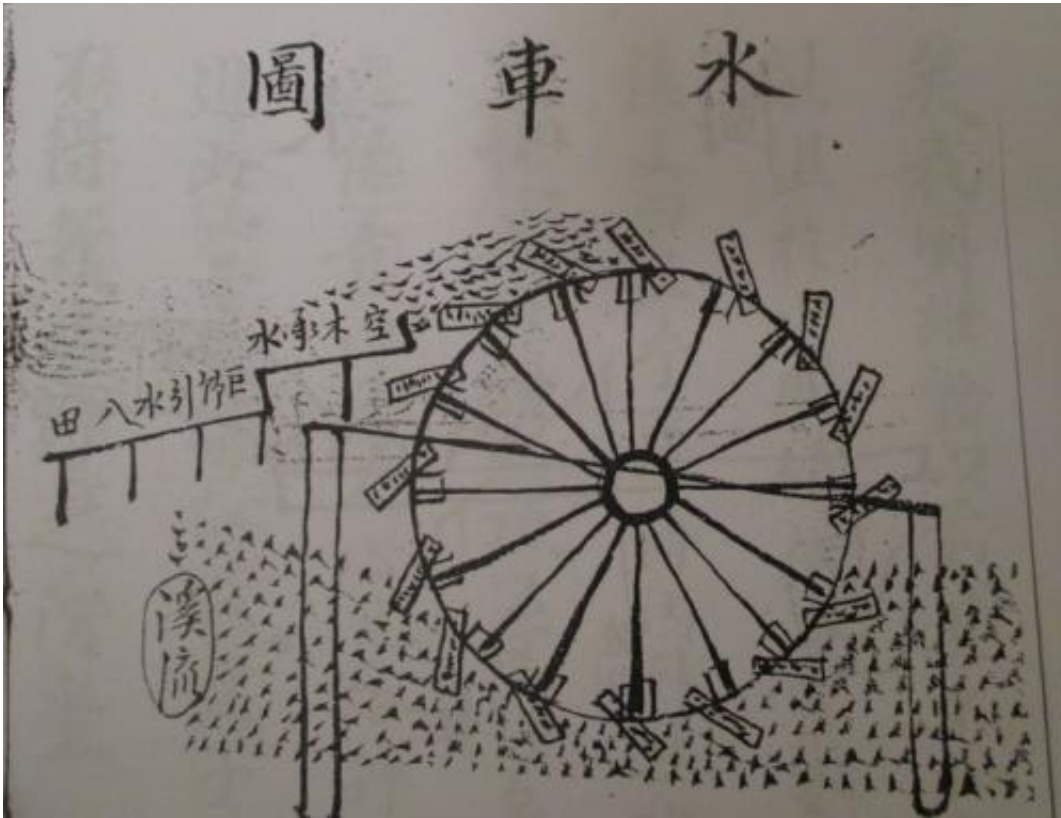
Drawing of a tattooed man from "Hung Hoa Gazetteer," a book about the local customs of a miasmatic area in the Sino-Viet borderlands. It was written in the mid-18th century by Pham Than Duat, who was an official of the Nguyen dynasty of Vietnam. Pham extensively cited the Bencao Gangmu, a Chinese medical text published in 1596. Credit: Institute of Han-Nom Studies Archives

Fighting miasma did not end when military campaigns were over. Government administrators were forced to contend with the seasonal pestilence long after the soldiers went home. Attracting talent to the region was a constant chore.

Despite the central government's best—and, in some cases, underhanded—efforts to attract good administrators to the area, southern officials found a way to avoid living in the malaria-prone area. In perhaps the earliest example of a work-from-home scheme, some administrators simply lived and worked in nearby, but less disease-ridden areas, while sending back reports as if they were writing from their outpost in the miasmatic region.

"Both the Chinese and Vietnamese governments tried to send administrators to the Sino-Viet borderlands as a type of punishment, and when that didn't work—and it frequently did not—they tried to reward people to serve in the area," says Baldanza.

History's Ripples



Drawing of a water wheel used for agriculture in the Sino-Viet borderlands. This drawing appeared in the "Hung Hoa Gazetteer" written by Vietnamese official Pham Than Duat in the mid-18th century. Hung Hoa corresponds to the area in northern Vietnam now known as Lao Cai. While stationed in this miasmatic region, Pham contracted malaria. Credit: Institute of Han-Nom Studies Archives

The Chinese government built medical schools in the area to help find a cure for miasma. Their faculties scoured the region for plants and herbs, and even products from animals, such as apes and monkeys, that might be cures. They documented many of their findings.

Centuries later, the North Vietnamese military sought help from the Chinese government during the Vietnam War to ease its own struggles against malaria, which was depleting troop strength during the war with the Americans. The U.S. troops took medicines such as quinine for the

disease, but North Vietnamese and Viet Cong troops did not have ready access to those medicines.

Chinese doctors reviewed ancient medical texts and discovered that some cures compiled by earlier doctors in the miasmatic region were effective against the [disease](#). They used one such cure, based on sweet wormwood, *Artemisia annua*, to develop a treatment for use by their North Vietnamese allies. An anti-malaria medicine made of the same ingredients is still marketed in the region today.

Provided by Pennsylvania State University

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