

*Dear Shipmates:*

As a way to carry on with our mission under present circumstances in showing how the sea connects all things, including ourselves with our past, these updates will continue to include an installment of the story begun in the last entry. So, if you don't like stories, then no need to read further.

But if you do like stories, you may recall from my last message how clinical medicine, now the focus of daily news, was founded in a sea story more than two and a half centuries ago when naval surgeon James Lind tried to determine an effective treatment for his scorbutic sailors in the man-of-war-HMS *Salisbury*. Simple as his protocol seems to us today, and certainly flawed by modern standards, his actions set in motion events that would ultimately provoke vast changes in the study of human physiology, the nature and practice of medical research, the management of epidemic disease, the nature of sea power as a tool of nation states, and the politics of all of them. As in the current case of the San Diego based aircraft carrier USS THEODORE ROOSEVELT CVN 71, this wouldn't be the last time that naval power and epidemic disease would be linked but it was also not the first. Thus, before we return to 1747 and James Lind, it may be useful to review some of the historical knowledge of maritime related epidemics he had at his disposal.



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### **The Plague of Athens**

The sword, famine, and plague figure as three of the four riders of the apocalypse described in the New Testament book of *Revelation*, but James Lind would have had more than biblical references to draw upon in his understanding of how these factors sometimes combined to generate catastrophe. He would have had eye witness testimony from the Athenian general Thucydides, who not only wrote of what he saw and experienced first-hand, but in doing so applied standards of evidence and impartiality which have informed the discipline of history ever since.

According to Thucydides, when the militarized city states of Attica and the Peloponnese repelled the massive Persian invasions of 492-490 BC and 480-479 BC, the Greek world was left secure from outside invasion but dominated by the two foremost military powers responsible for this success. One of them, Sparta, possessed the most formidable army of its time while the other, Athens, relied upon control of the sea for sustaining and projecting its economic and political power. So much was this the case with Athens, that its nature as an early *democracy* was essentially a politically efficient expedient to address the larger strategic objective of *thalassocracy* (seaborne empire) in which larger and more effective fleets could be deployed if manned by free mariners, with each man pulling an oar having citizenship, a vote, and a vested interest in the outcome of events.

With the two superpowers competing for regional dominance but each unwilling to confront its opposite in the realm of the other's expertise, both city states began to extend influence and defend their side of the balance of power through interlocked and opposing alliances of lesser city states, also amplifying their rivalry thereby. Sparta's allies were principally land based

entities while those of Athens tended to be the island states strewn across the Aegean and Ionian seas. As is always the problem with such arrangements, any localized squabble between client states threatened to erupt into a superpower confrontation, which is just what occurred in 431 BC when Megara (Delian league – Athenian) and Corinth (Peloponnesian league – Spartan) embroiled themselves in violent conflict. Soon both superpowers with all their respective allies were at war.

Athens could not match the Spartan army, which roamed at will over Attica plundering Athenian territory while the populace remained safe behind city walls. In turn, Sparta could not counter Athenian fleets which could attack the coast of their enemy anywhere and without warning, laying waste to a dispersed Spartan population and then escaping to sea where pursuit was not possible. Thus, the increasingly destructive hot war between Athens and Sparta seemed as perfectly balanced and irresolvable as the cold war preceding it had been. According to Thucydides the tide may have been running ever so slightly in favor of Athens until the second year of the war.

The Athenian position was buttressed by two powerful attributes. First, the Athenian economy could continue to thrive through seaborne trade with its client island city states, providing limitless resources to sustain itself and prosecute the war. Secondly, the city of Athens was invulnerable to overland attack due to extensive fortifications which not only surrounded the urban center itself, but connected via a corridor of two long walls to its port of Piraeus, which was similarly fortified and invulnerable to assault or siege. Through seaborne trade *anything* in the Mediterranean world could and did enter freely into Piraeus and thence to Athens.

But because the Athenian countryside elsewhere was indefensible to roaming Spartan armies, the entire population of the hinterlands surrounding the city had to be evacuated within its walls creating an unprecedented and extremely dense concentration of people, tripling the normal size of the city's already teeming population and imposing enormous demands for food and supplies that made its maritime artery even more essential.

Then, in 430 BC, among the flood of goods streaming into Athens from across the sea came a previously unknown and horrifically lethal pathogen. We still don't know what it was, but candidates include bubonic plague, typhus, measles, smallpox, Ebola, or possibly some virus which has since mutated over the centuries to a more benign form and is with us still as a cold or flu.

Historically, outbreaks of epidemic disease were managed and defeated by what we are today calling "social distancing," and elsewhere in the Eastern Mediterranean where this epidemic took hold, that is exactly how it was managed. Sparta, with few seaborne connections and a population dispersed across the countryside rather than concentrated within fortifications, was already much better equipped to deal with an epidemic. But for the capital

of the Athenian maritime empire whose entire crowded population was besieged within its walls, viable social distancing measures were impossible. Thucydides gives us a sobering look at what happens during an epidemic to a big and crowded city that can't or won't lock itself down, for once the disease got loose among the packed mass of people inside the walls, it spread like wildfire.

Within a matter of weeks, the plague is estimated to have killed between 75,000 and 100,000 within the city, about 25% of its population. No classes or categories of people were spared. Physicians and health care workers died in greatest numbers as they were in more frequent contact with ill patients. The famed orator and leader of Athens, Pericles, was one of its victims as were many of Athens' other political leaders, its wealthiest citizens, and its most experienced admirals and mariners. The historian himself caught the illness and recovered from it, recording some symptoms which now sound eerily familiar: fever, cough, redness of the eyes, sore throat, nausea, and diarrhea, with symptoms in most patients climaxing, frequently in death, about eight days after first onset. According to Thucydides, social order broke down because fear of the law evaporated once everybody believed themselves already under a death sentence.

Likewise did religious faith, trust in medical expertise, and a belief in political process lose all credibility as nothing seemed to offer protection. With so much destruction and so many mariners lost, the entire Athenian system built upon oceanic supply chains shut down and famine began to take its toll. Without further intervention from Sparta, which withdrew its armies to a safe distance, Athens collapsed. Ultimately the epidemic burned out, probably once levels of population immunity made further spread of the disease within the city unsustainable, but Athens never did recover to its former prominence.

The plague brought the war itself to a near standstill with Sparta ascendant, until, fifteen years later, Athens had revived sufficiently to contemplate mounting one more great military expedition, ill-advised though it was, in an effort to recover its lost strategic advantages. This campaign, which had the seaborne invasion of Syracuse and the conquest of Sicily as its objective, ended in catastrophic defeat, causing Athens to lose the war and bring to an end forever its status as the first great democratic sea power of history.

That much would have been known to James Lind more than two thousand years later when he struggled with a different kind of epidemic, but one which likewise challenged the potential reach and magnitude of thalassocracy.

Stay below and stay safe!

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