

Still no alternative to the theory that Columbus brought syphilis across the Atlantic

December 12 2014, by Rob Knell



So what have we got? Credit: Davepape/Painting by John Vanderlyn

In 1495 a horrific new disease appeared in Europe. Acquired by sexual contact and initially spread through Europe by mercenary soldiers from the army of King Charles VIII of France returning from a successful invasion of Italy, this new disease was extraordinarily unpleasant. [Commentators at the time described](#) dark green "boils that stood out like

acorns," accompanied by a stench so vile that if you smelt it you would imagine yourself infected, and by pains so severe that it was "as if the sick had laid upon a fire".

This new [disease](#) went by a variety of names, including The Great Pox, but most people preferred to blame it on the neighbours: the British called it the "French disease," the French called it the "Italian" or "Neapolitan disease" and the Italians called it the "Spanish disease". Today it is more widely known now as [syphilis](#), an infection caused by the *Treponema pallidum* bacteria.

The most widely accepted theory is that [syphilis](#) was brought to Europe from the New World following Columbus's voyage in 1492. But ideas about the origin of the infection still cause controversy. Most recent [is the claim](#) that bones found in Croatia that appear to show signs of syphilitic infection and which pre-date Columbus' expedition suggest the disease was around since Roman times. But a look at the wider evidence we have suggests otherwise.

A surprising evolution

There are four possible explanations as to where the Great Pox originated: that it was always [present in Europe but misdiagnosed](#) as something like leprosy before 1495; it evolved from a less [virulent disease](#) that wasn't transmitted through sex; or it was [introduced from Africa](#). The Columbus theory, however, is the most convincing.

Significant evidence in its favour has been building up, especially over the last few years. [An important 2008 study](#) of the DNA sequence of the bacterium that causes syphilis – and the sequences of its close relatives – pointed to an origin in the Americas several thousand years ago. [A second study](#) using DNA sequence and palaeo-pathological material also pointed to a New World origin sometime between 16,000 and 5,000

years ago.

Rampage through Europe



Credit: AI-generated image ([disclaimer](#))

Remarkably, following its initial rampage through Renaissance Europe the disease seems to have evolved into a somewhat less virulent (although still very severe) disease, and by the middle of the 16th century some commentators were (wrongly) predicting that the disease would soon dissipate entirely. Others, perhaps with more of an eye on their own health, bemoaned the fact that because the boils and the stench had become so rare it was hard to tell who was infected and who wasn't.

This surprising evolutionary change in the virulence of syphilis is

consistent with it being introduced to [a naive and unprotected host population](#) in 1495. If the disease had been evolving to overcome the immune defences of people in the New World for a few thousand years, and the people in the New World had simultaneously been evolving better immune responses, then when the disease suddenly found itself infecting Europeans with no such defences it explains why it appeared to spread like wildfire – with such eye-watering symptoms.

The rapid decline in virulence after the initial rampage is likely to have happened because the main route of spread is through [sexual contact](#), meaning that strains of the disease that didn't cause a vile smell and giant green pustules would have had a much better chance of transmission and supplanted the original highly virulent strains in short order.

Third line of investigation

If the DNA evidence and other more circumstantial arguments about the evolution of virulence are all consistent with a New World origin of the disease, why is there still controversy? There is in fact a third line of evidence available about the origins of syphilis: the damage it sometimes causes to the bones of infected people. We can often see this in archaeological material: the bones of the skull have characteristic pitting, and long bones can also be pitted and deformed.

Every few years, it seems, someone finds a skeleton from an earlier period somewhere in Europe that seems to have syphilitic changes, and we get a new story in the news claiming that syphilis must have been present in Europe before Columbus. There is the well-known [pair of twins from Pompeii](#), and more recently the skeleton found in Split, Croatia, which has a deformed femur. If these were unquestionably syphilitic changes they would indeed challenge the Columbian hypothesis – but how easy is it to distinguish syphilis from other skeletal pathology?



Earliest known medical illustration of syphilis, Vienna, 1498. Credit: Wuselig

One part of the problem is that other diseases caused by the bacteria closely related to *T. pallidum*, [such as Bejel and Yaws](#), can also cause similar changes and it is extremely hard to distinguish between them. A [review of all of the claims](#) for changes caused by the treponema bacterium in pre-Columbian skeletal material from Europe found no cases that could conclusively disprove the hypothesis – either the claims of treponemal changes were not well supported, or the dating of the material was questionable. In the case of the latest skeleton from Split, it seems that [only the femur was affected](#). I'm no expert on palaeopathology but [several commentators have suggested](#) that the femur could

well have been affected by a disease [called fibrous dysplasia](#) rather than syphilis.

A deadly exchange

We all know that when Europeans arrived in the New World after 1492 they [took many horrific diseases with them](#), and that infections like measles and smallpox killed huge numbers of native Americans. Some people seem to find it hard to cope with the idea that maybe some diseases also came back across the Atlantic, despite all the good evidence that suggests this is the case.

Looking to the pre-Columbian New World there is extensive evidence from many skeletons, which contrasts with the occasional claims of individual syphilitic-like bones from pre-Columbian Europe. Given the molecular and other evidence supporting the Columbian hypothesis, it will take more than a bent femur to overturn it.

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