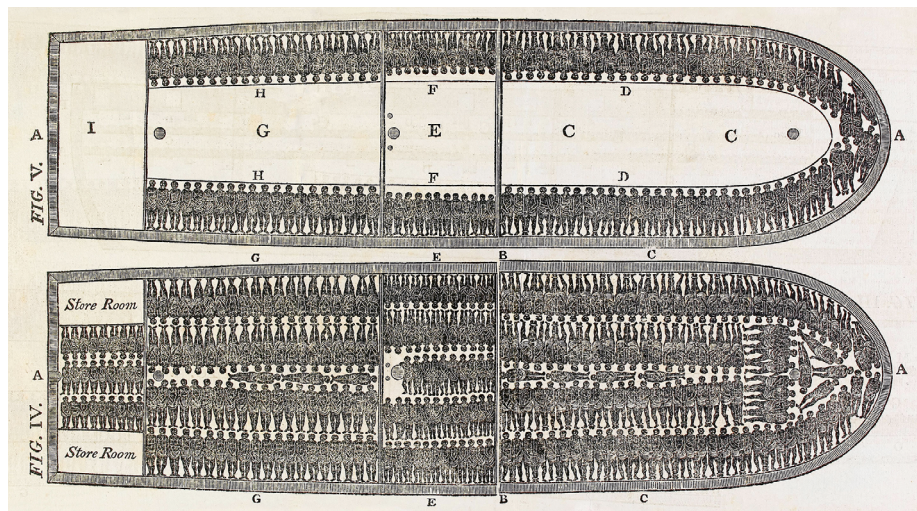


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An eighteenth-century engraving shows how a ship carried more than 600 enslaved people.

Enslaved people and the birth of epidemiology

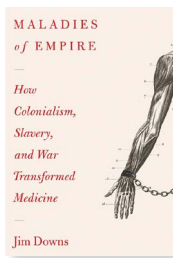
Data on disease were mined from the grisly records of the transatlantic trade in people. **By Mary T. Bassett**

History performs a social task," wrote George Rosen in his classic 1958 book *A History of Public Health*. "It may be regarded as the collective memory of the human group and for good or evil helps to mold its collective consciousness." Rosen's book grounded modern US public health in the experiences of European immigrants in urban areas. It scarcely mentioned ill health among enslaved or formerly enslaved people – but his words were prescient.

Historian Jim Downs has now given global context to nineteenth-century advances in medicine and public health, beyond the dominant histories rooted in Western Europe and the ancient world. In *Maladies of Empire*, he centres slave ships, people living in colonized countries, prisoners and wars in the narrative of medical discovery, at the foundation of epidemiology. He barely mentions what is often cited as the field's origin story, when British doctor John Snow removed the handle from a London water pump and ended a cholera outbreak in 1854.

"The study of ventilation emerged from the holds of slave ships and crowded prison cells."

Downs's first goal is to "make visible" how epidemiological thinking emerged from imperial conquest and the exploitation of enslaved people. He delves into archival records to recount how Western medical men – they were nearly always men – drew on the transatlantic slave trade. These researchers studied the health consequences of enslavement and thence began to understand disease



Maladies of Empire: How Colonialism, Slavery, and War Transformed Medicine

Jim Downs
Belknap (2021)

transmission. For example, the study of ventilation emerged from the holds of slave ships and crowded prison cells. British and other European doctors observed and discussed cholera outbreaks in the Caribbean and elsewhere before Snow stopped one in London.

The grisly record-keeping of the trade in enslaved people and colonial governments provided the infrastructure for epidemiological data collection. Downs shows how logs of sickness and death on slave ships, in prisons and at quarantine stations – unmentioned in standard histories – were central to the emergence of public health. A bureaucracy "established in the service of war, colonialism, and imperialism emerged as the foundation for the development of epidemiology". Downs provides history as truth-telling.

His second goal – to put marginalized people into the historical record as active creators of knowledge – is more vexed. He frequently notes how enslaved and other oppressed people "made visible" patterns of disease. For example, when ventilators pumped in fresh air, the cries from captured Africans packed below deck declined. Downs makes an argument that their moans served to create knowledge and ensured that they "were not simply passive objects". Perhaps he seeks to honour these enslaved individuals who advanced medical knowledge with their bodies but without their consent. But I struggle to see how deeming their experiences 'knowledge generation' restores dignity to people subjected to barbaric treatment.

Agency returned

Finally, Downs takes issue with how epidemiology strips data of human agency. This is a valuable point. He argues that knowledge should arise from the perspective of those most affected. How to achieve this in the field of epidemiology is less clear. For example, Downs notes how a nineteenth-century observation that washerwomen in Malta did not contract the plague, despite their presumed exposure, left the women unnamed. This omission would probably still happen today. Epidemiology concerns itself with gleaning population-health patterns expressed as numbers, not personal stories. The COVID-19 pandemic has shown how the public becomes inured to numbers. In the United States, people who were over 65 account for three-quarters of COVID-19 deaths. But this does not tell the full cost – for example, to Indigenous peoples who have lost precious native speakers of their languages.

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Storytelling must exist alongside, not within, epidemiological methods.

To bring a human dimension absent from the historical record, Downs offers fictionalized accounts. The book begins by recounting details of an enslaved man on board a ship. Originally from “Ghana”, he was sold in “revenge” when accused of “witchcraft” after quarrelling with a “chief”. In my view, these clichés detract from the purpose of imagining the real people who were subjected to brutality.

Erased histories

Maladies of Empire also adds to better-known histories. It reminds us that Florence Nightingale, the pioneering nineteenth-century British nurse, was an accomplished statistician. Her graphical representations of data on mortality presaged sociologist W. E. B. Du Bois’s equally striking visualizations of demographic characteristics of the newly freed Black population at the end of the nineteenth century. Downs also examines evidence that during the US Civil War, which ended legal slavery in the country, Southern physicians intentionally infected enslaved children to produce material for smallpox vaccinations.

“He recovers lost and untold stories and makes visible things that need to be seen.”

A chilling chapter tracks how the US Sanitary Commission (USSC), a private relief agency that supported Union soldiers – including Black soldiers – during the Civil War helped to solidify the idea that races were biologically distinct. For example, USSC physicians made “scientific” studies of alleged differences, dispatching doctors to monitor Black soldiers as they bathed, and score various physical characteristics. As a result, race, rather than the terrible living conditions of the newly freed Black population, was thought to explain poor health. The legacy of this history lives on in present-day public health and medicine – for example, in algorithms that propagate race-based decisions in the clinic.

As many institutions and disciplines attempt to resituate imperialism, slavery and colonization as central elements, not aberrations, of the modern era, Downs contributes to the studies showing that medicine and public health share these erased histories. He recovers lost and untold stories and makes visible things that need to be seen.

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How ancient DNA hit the headlines

The origins, politics and motivations of the people who sequence age-old genomes. **By Victoria L. Herridge**

In 1993, the day after the film *Jurassic Park* premiered in Washington DC, *Nature* reported the sequencing of DNA from a weevil encased in amber more than 120 million years ago. Then, in 2015, days before the global premiere of a sequel, *Jurassic World*, *Nature Communications* published evidence for the preservation of red blood cells and proteins in a 75-million-year-old dinosaur sample. Coincidence? The authors of the 1993 paper (R. J. Cano *et al. Nature* 363, 536–538; 1993) insisted it was, notes historian of science Elizabeth Jones. One of the co-authors of the 2015 paper (S. Bertazzo *et al. Nature Commun.* 6, 7352; 2015) told me theirs was, too: “100%”.

These tantalizing parallels between life and art open Jones’s book *Ancient DNA*, a fun and thought-provoking introduction to the origins, politics and motivations of research into age-old genomes. Through interviews with more than 50 scientists who work in ancient DNA or collaborate with people in the field, Jones builds a wry, often wise, study of science as a very human endeavour. She makes a powerful case that ancient-DNA research feeds off media attention as much as the media feeds off it: they are twin stars locked in a binary system, each with storytelling at its core.

This relationship is exemplified by what one of her interviewees calls the ‘Jurassic Park effect’. The blockbuster novel by Michael Crichton on which the film was based burst onto the scene in 1990 while the field was still young and testing its limits (the first ancient-DNA conference took place the following year), capturing the imaginations of scientists and the public alike. Jones’s participants report that early attempts to extract DNA from amber were inspired by the novel. The 1993 movie is credited with prompting £2 million (US\$2.6 million in today’s terms) in UK government funding for ancient-biomolecule



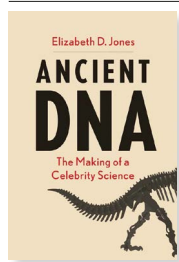
Ancient DNA has been extracted from insects trapped in amber.

research. But this is, as Jones shows, a more complex situation than science jumping onto a popular bandwagon.

In April 1984, seven months before the first ancient-DNA sequence was even published, she recounts, newspapers across the United States announced the genetic resurrection of a woolly mammoth. They had fallen for an April Fool’s Day prank in *MIT Technology Review*. People, it seems, were ready to believe. When, that November, a pioneering biomolecular group reported a 229-base-pair sequence of DNA extracted from the 140-year-old skin of a quagga (*Equus quagga quagga*), it was the hope of ‘bringing back’ the extinct subspecies of zebra that made the headlines – something not mentioned in the paper (R. Higuchi *et al. Nature* 312, 282–284; 1984).

De-extinction was part of the zeitgeist, attracting a disparate group of scientists, futurists and writers such as Crichton, Jones suggests, that formed the basis of both the *Jurassic Park* franchise and the research field now recognized as ancient DNA.

Despite many efforts, none of the early reports of dinosaur-era DNA have stood the test of time. The current record for oldest



Ancient DNA: The Making of a Celebrity Science
Elizabeth D. Jones
Yale Univ. Press (2022)