

DISEASE IN HISTORY

Bruno Leone.



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IMPORTANT EVENTS IN THE HISTORY OF DISEASE

430 BCE

Typhus epidemic breaks out in the city-state of Athens. Athens loses its war with Sparta.

165 CE

Lucius Verus, Marcus Aurelius's adoptive brother and coemperor, dies in Rome during a smallpox epidemic.

542

The bubonic plague, which occurred during the reign of the eastern emperor Justinian I, ends all hopes of reuniting the Roman Empire.

1879

Louis Pasteur develops a vaccine to prevent anthrax.



250

250

The Plague of Cyprian kills tens of thousands as Rome's borders begin to weaken.

500

476

Its population depleted by disease and warfare, the Western Roman Empire falls.

1000

1500

1665

The bubonic plague unleashes its final major assault upon Europe with the Great Plague of London.

1674

Using his microscope, Antoni van Leeuwenhoek discovers what he terms *animalcules* (germs).

1348

The second bout of bubonic plague hits western Europe and keeps surfacing for three hundred years.



INTRODUCTION

The Importance of Disease in History

Famed psychiatrist Carl Jung once exclaimed, “Man has come to be man’s worst enemy.”¹ When he uttered those words, Jung was referring to humanity’s propensity for warfare and the horrific consequences war may one day generate in an age of nuclear weapons. Ever since the dawn of world civilization in the ancient Near East, armed conflict has played an unquestionable and frequent role in the death of people, the destruction of nations, and the shattering of the human mind and spirit. Historians Will and Ariel Durant note in their book *The Lessons of History* that “in the last 3,421 years of recorded history only 268 have seen no war.”²

Yet in reality, another enemy is lurking beyond the boundaries of warfare—an enemy which in almost every respect is more grim, pervasive, menacing, and invasive than armed conflict has been thus far. Indeed, it repeatedly surpasses war in the number of casualties it claims. Moreover, unlike war, this enemy awaits mindless and unseen, wreaking its havoc while unaware of moral concepts like mercy and peace and totally without fear of reprisal. And although visually unnoticed, it openly resides in all corners and habitats of the planet Earth, constituting nearly twenty-five times the total biomass of all animal life. In a word, it is virtually omnipresent. This adversary of humankind is collectively referred to as microorganisms, microbes, or—most commonly—germs.

It is remarkable, however, that despite their numbers and prevalence, the overwhelming majority of microbes inhabiting

the planet are harmless. Indeed, many make distinctively positive contributions to the environment and to the well-being of the human organism. For instance, a significant number of soil-dwelling microbes are responsible for decomposing the ground they occupy and in so doing create nitrates necessary for plant growth. Furthermore, there are microorganisms that inhabit the human intestinal tract and whose colonies collectively total over 100 trillion organisms. Sometimes referred to as gut flora, these species play an essential and beneficial part in aiding in the digestion and eventual elimination of food consumed by their human host.

Disease-Bearing Microbes

Unfortunately, a highly effective minority of microbes do trigger varying degrees of illness in Earth's human and nonhuman animal populations. The numbers of microbial species represented by this minority are clearly disproportionate to the impact they sometimes wield upon the health and well-being of the hosts they inhabit. They can be responsible for conditions ranging from the common cold, which passes in almost all cases in one to two weeks and usually requires no medical treatment, to conditions like rabies, which, if untreated, is almost always terminal. Furthermore, they are also accountable for epidemic disorders such as influenza, bubonic plague, smallpox, and cholera, which, at varying periods in history, have been responsible for an extraordinarily high number of fatalities—at times well into the tens of millions.

Almost all disease-bearing microbes appear to have one thing in common: they are opportunistic. That is, they enter and thrive in their human hosts whenever the opportunity presents itself. Many are long-term occupants in or on the human body and stand ready to attack with the force and stealth of an invading army whenever they encounter weaknesses in the body's defense systems. Once established, they multiply, develop into colonies, and weaken their host organism to a greater or lesser degree depending upon their numbers and virulence.



Yersinia pestis (pictured) is the bacterium responsible for bubonic plague. Disease-carrying microbes such as this have killed tens of millions of people throughout recorded history.

Research and the Historical Record

There is a broad range of disagreement as to the total number of helpful, harmful, and harmless microbial species inhabiting Earth's land, sea, and air. Estimates range from hundreds of thousands to millions. The reason for this great disparity is generally twofold. First, scientists frequently differ over what characterizes a species or specific classification of microorganism. The determination of a species is based upon genetic similarities. Since microbes undergo frequent mutation or genetic alteration, it therefore is difficult at times to pinpoint the precise relationship between or among species. Second, locating and identifying different microbes can be complex and extremely costly. Ferreting out specific organisms, whether within or outside of the human body, can involve an expensive and formidable amount of equipment, research, and personnel. Historically, government and industry do not release funds for such projects with either ease or frequency.

When investigating the history of disease, historians and medical specialists regularly find it difficult to determine what organisms

One of History's Deadliest Killers

Mary Dobson is a research associate for the Department of History and Philosophy of Science at the University of Cambridge in England. An expert in the history of infectious diseases and the relationship between disease and environment, she presents below a brief overview of one of history's deadliest killers, typhus:

Typhus is an acute infectious disease that is transmitted by *Pediculus humanus corporis*—or, as is more commonly known, the body louse. For centuries typhus was especially prevalent where there was overcrowding and poor standards of hygiene, causing horrible suffering and innumerable deaths. There are many graphic descriptions of epidemics during wars and famines, and on a number of occasions the disease has even changed the course of human history. However, by the end of the Second World War a combination of vaccination, insecticides and antibiotics had led to a decline in the incidence of typhus. It is now relatively uncommon, but does still occur in parts of Asia, Africa and central and South America.

Mary Dobson, *Disease: The Extraordinary Stories Behind History's Deadliest Killers*. London: Quercus, 2007, p. 36.

cy and perhaps even before the rise of civilizations. It becomes rife during times of warfare and famine, both of which have plagued society for several millennia and each of which tend to nurture conditions under which the disease can arise and flourish with relative ease. There are specific situations that are known to contribute to outbreaks of typhus. These include overcrowded living conditions; decline in agricultural production due to insect infestation; drought or worker shortages during wartime; close proximity of healthy and diseased persons; overall decline in sanitation

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