Biological Warfare –
Perspectives from Premodern History

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Abstract

The phenomenon of “biological warfare” has gained new attention in public, politics and science since September 11, 2001. The scope of the present paper is to outline the history of biological warfare in premodern history, i.e. the time from antiquity to around 1800. “Biological warfare” is meant here as (modern) term for all attempts to cause and spread epidemic diseases by artificial means to accomplish strategic or tactic aims. Of special interest is the question if medicine and physicians took part in such attempts or commented on them.

Zusammenfassung


According to ancient sources (e.g. HERODOTUS, THUCYDIDES) “poisoning of wells” has been the earliest attempt of “biological warfare”. In ancient medical texts the possibility of a “pestilencia manfacta” is mentioned only, there are neither theoretical discussions nor practical hints regarding such measures (with one single exception relating to the legend of HIPPOCRATES). The reluctance of physicians towards “biological warfare” had epistemological and ethical reasons.

During the “Black Death” (1347/48), the devastating plague epidemic of the late Middle Ages, the charge of poisoning the wells was directed by city authorities and the public—but not by physicians—against the European Jews, especially in southern France, Switzerland and Germany. Most Jewish communities were exterminated. A similar mass reaction, this time targeted at individuals, can be found in 17th century Italy when during plague “plague smearers” (ital. “untori”) were found guilty of spreading plague.

Compared to present scenarios of biological warfare the premodern evidence shows characteristic analogies and differences which shall be analyzed in its cultural context.
Biological warfare is—after the events of September 11, 2001, of new actuality, see letter to Senator DASCHLE or some headlines in newspapers.¹

The aim of my paper is to look at historical evidence concerning biological warfare in premodern times, that means from Antiquity to around the year 1800. The term “biological warfare” is used here in the sense of generating epidemics by artificial means to achieve tactical or strategic aims in war. In ancient sources it is called “handmade plague”, Latin: *pestitentia manu facta* or with the synonyme “poisoning of wells”.

Especially interesting is the question if medicine or medical authors in premodern times were involved in any form of biological warfare.

In the following remarks I shall try to give a typology of instances of biological warfare, with special regard to the sources which talk about it.

1. Poisoning of Wells as Military Device and Part of Tactics in War

One of the earliest accounts concerning poisoning the wells can be found in the “History of the Peloponnesian War”, written by the Athenian THUCYDIDES. A terrible plague spread at Athens in the summer of 430 B. C. and he states (THUCYDIDES 2, 48, 2): “It struck the city of Athens suddenly. People in Piraeus [harbor] caught it first, and so, since there were not yet any fountains there, they actually alleged [Greek: *elechthe*] that the Peloponnesians [Spartans and allies] had put poison in the wells [Greek: *pharmaka esbeblekoien es ta phreata*].”²

The short notice of THUCYDIDES, an ancient author held to be absolutely trustworthy, is a pivotal point for our subject in some respects:

(i) Poisoning the wells is presented as a military device to beat a town under siege.

(ii) THUCYDIDES presents the passage about poisoning the wells not as a fact, but as a rumor, a rumor one might add that he himself certainly did not believe in. This specific blending of fact and rumor accompanies the history of biological warfare through the centuries until the present time.

(iii) Finally, THUCYDIDES’ account about poisoning the wells has at least a semantic connection to medicine: we read of *pharmaka* that are thought to be thrown into the drinking water. We hear nothing about the kind of *pharmaka* used—we shall return to this point.

Poisoning the wells as a military device was mentioned for the first time by the Greek historian HERODOTUS, one generation prior to THUCYDIDES. HERODOTUS (Hdt. 9, 49, 2; Plut. Arist. 16, 8) writes, that the Persians before the decisive battle of Plataea, lost by them, spoiled the fountain that the Greeks used as drinking water.

Ancient manuals of military tactics mention as substances apt to poison wells carcasses, excrements, poisonous plants and lime (App. BC 2, 44; Lucan. 4, 318; Nic. Chon. 179 v. D.). A general facing the danger of poisoned wells should test the water quality on prisoner of war (Maur. Strat. 9, 3, 124).


² Translation LLOYD 2003, p. 137.
Nowhere is mentioned that physicians should be asked in cases of poisoning the wells. It seems as if poisoning of wells belonged to the basic tactical knowledge of any officer. The plague that reached Western Europe in 1348, to come to a historical example of a kind of biological warfare, had its origin in the Black Sea: Italian chronicles report the siege of Caffa, a Genuese town at the peninsula Krim, by Tartaric forces. When a plague broke out, the tartars, who were not able to conquer the town, threw the corpses of their own men over the walls of Caffa. Genuese ships brought men first to Constantinople and then to Italian and French sea harbors which were infected with this new devastating plague (BERGDOLT 1994).

It is well known that European infectious diseases were transferred to the Americas since the end of the 15th century. Smallpox and measles devastated Caribbean islands and the whole continent with the result that the Indian civilization, Aztecs, Incas and North American, could not resist the small expeditions of Spanish and later English adventurers.

STANNARD coined the term “American Holocaust” for this disease transfer of historical dimension. But this transfer, although caused by Europeans, is no example of biological warfare, because there was no intention to infect America.

This kind of intention can be found some two centuries later, in 1763, on a local scene: Sir Jeffery AMHERST, Commander-in-Chief of the British forces in North America, and Colonel Henry BOUQUET, exchanged letters at the time of the Pontiac rebellion. (AMHERST: “Could it not be contrived to send smallpox among these disaffected tribes of Indians? We must on this occasion use every stratagem in our power to reduce them.”—BOUQUET: “I will try to inoculate the [Names of tribes] with some blankets that may fall in their hands, and take care not to get the disease myself.”)

2. Poisoning of Wells and Medical Theory Concerning the Spread of Epidemics

In ancient medical texts and in non-medical texts too, there are no hints that physicians took part in poisoning the wells for military aims. Why did physicians with their competence concerning venom not take part? There are two main reasons, one technical, another depending on the self-image and social standing of the ancient physician:

(i) It was only theoretically possible to generate an epidemic by artificial means. Ancient medical theory thought that epidemics were caused by pollution in the air, in Greek miasma, a kind of poison, which should arise from swamps in hot climate, or in putrid corpses of men and animals. The individual case of plague was viewed as putrefaction (in Greek: sepsis) within the living body, and by way of analogy medical theory held putrefaction in the environment responsible for generating the miasma of plague. Thus, plague as a whole was a kind of mass-poisoning, the element poisoned being the air. Ancient physicians never gained a concrete idea about the nature of these miasmata. So it was practically not possible to produce this poison artificially.

3 MAYOR 1995, pp. 57f.
(ii) Now the second reason why physicians did not partake in poisoning of wells. The social standing of the physician was precarious. His prestige, in Greek *doxa*, also meaning “fame”, depended on his skills in diagnostics, therapeutics and especially prognostics, and on trust in his virtue: as there was no state regulation of medicine, no official control of quality whatsoever, and at the same time popular prejudices against physicians, physicians were anxious to display in public the virtue of philanthropy, in Greek: *philanthropia*. Physicians partaking in poisoning the wells would have damaged the fame of the whole profession. The physician Galen of Pergamon, who lived in the 2nd century A. D., court physician of emperor Marc Aurel, called warfare which tried to poison wells or food a “villainy” (Greek: *panourgia*). (Ther. Pis. 5. K 14, 231)

3. Poisoning of Wells and Worldwide Conspiracy: Plague and Persecution of Jews in the Late Middle Ages

In the course of the Black Death in the 14th century, the worst catastrophe that Europe ever encountered in recorded history, we find the rumor of poisoning the wells playing a fatal role. This rumor rushed ahead of the plague, spreading from southern France to the North.

Popular resentment targeted the Jews, living in communities in the trade cities along the way in Switzerland and Germany. The Jews were found guilty of poisoning the wells—before the plague’s arrival. Under torture they confessed—and most communities were exterminated, in Freiburg in January 1349, in Würzburg at the end of April 1349. 

Partly, this was a sort of mass hysteria, but the persecution and murder of the Jews was no spontaneous action, it was planned and directed—the motives of the hate were social, economic and religious. Impartial witnesses of these events, such as the Pope's personal physician, Guy de Chauliac, acknowledged the crime with dismay. Physicians were not involved in spreading the rumor or in accusing the Jews. It was too obvious that the Jewish conspiracy against Christians did not exist.

In contrast to examples of military action to poison wells, either practical or theoretical, the charge against the Jews had a demonic aspect. They were accused of a worldwide conspiracy, not a local action; since new testamental times the Jews were regarded as enemies of the Christians, the fight was between good and evil. The Jews thus were held responsible because admittedly there were clever and able to take such a world-wide action, but moreover they were regarded to be united with demons and the devil himself.

But how could such nonsense of murderous dimension gain acceptance? We have to look again at the opinions about the origin of epidemics:

(i) The medical theory of the *miasmata* was neutral, because there was no human responsibility.

(ii) It was an everyday experience of medical laymen that plague was contagious, for the first time mentioned explicitly by the Athenian Thucydides, the same who also mentioned the popular rumor of poisoning the wells. Contagion meant and means that someone is the cause of another one’s illness. There is something, a substance of poisonous kind on men and goods, transmitting the disease.
(iii) Finally, a third concept was religious: epidemics are divine punishments for sin and hybris, of individuals such as David in the Old Testament or Oedipus in Greek mythology, or Agamemnon in the homeric epic of the Trojan war, or of whole peoples such as the Philistines in the Old Testament.

This same view is to be found in the Christian religion and was relevant especially in the Middle Ages.

These three different ways of explaining epidemics created in combination a kind of illegitimate offspring: the idea of poisoning the wells. When God from time to time would send a plague it was only too natural to believe that his adversary, devil himself, or his creatures, e.g. the hated Jews, would do the same. And how did the devil do this? He had—so to say—studied medicine and used poison. All this was only a rumor, but a rumor with some probability, a probability which in parts was founded in contemporary medicine. We have seen that academic medicine regarded plague as a kind of mass-poisoning. For people outside medicine it seemed possible that such poisons could be produced and distributed artificially, in the sense of a *pestis manu facta*.

4. “Plague-smearers” and Administration in Early Modern Times

The rumor of poisoning the wells stayed active in early modern times. In 1630 a terrible plague struck Milan in Italy. Alessandro Manzoni in his novel “I promessi sposi”, published in 1827, and his “Storia della colonna infame”, a chronicle, has given a vivid picture of it. This time public rumor held “plague smearsers”, Italian: “untori” responsible for distributing the epidemic by smearing a yellow liquid on walls. The public reacted in a hysterical manner: any suspicious movements, any suspicious substance, liquids or powder, visible in public were held to be material of artificial contagion. There were several cases of lynching.

The authorities of Milan took two men, one of them member of the city’s Sanitarian administration, and by torture extorted their confession that they had worked as *untori*. By executing them the authorities tried to calm the public hysteria. We find here a new and important trace in the history of poisoning the wells: the rumor, formerly directed against minorities, especially Jews, in early modern Europe turned against the authorities. At the same time that cities tried to fight against plague epidemics by Sanitarian measures, people were suspicious that these authorities in reality tried to spread plague, especially among the poor. The rumor thus got a social and political aspect.

Whereas in the Middle Ages demonic powers were held to be the real cause behind the *pestilentia manu facta*, the rumor now was kind of secularized. Evidence for the alleged conspiracy of authorities was the fact that some epidemics, e.g. Cholera, were spread especially among the poor. In this connection we see public riots against the authorities and pharmacies, in the course of cholera epidemics in the early 19th century, from St. Petersburg to Paris, again including lynching of alleged poisoners.
5. Summary and Prospects

The idea of poisoning the wells in Antiquity originally was part of military tactics. This idea had some plausibility as medicine itself compared a plague to an air-born mass-poisoning.

The concept of poisoning the wells won its impact in history by rumor. Not artificial plague but the popular believe in it was decisive.

In the Middle Ages, the poisoners of wells were seen as demonic creatures, inspired by devil himself. Since the early modern time, the poisoner lost this demonic feature. The popular rumour now focused on a conspiracy of hated authorities.

Compared to the present threat of biological warfare there are analogies and differences to the poisoning the wells of premodern times:

(i) Infectious diseases in scientific medicine are interpreted and conceptualized almost exclusively by microbiology. The idea to use medical knowledge to prepare a biological war was born during the First World War and nourished since then, although in practice never performed. As it appears, technical and logistical reason let abstain military men from using bacteria or viruses.

(ii) Present popular believe concerning the artificial spread of infectious diseases revolves around the image of secret military laboratories. The present day “plague smearer” until recently was seen as an unscrupulous scientist, which under his white coat wore a uniform, especially the uniform of the US-army.

(iii) Since September 11, 2001, the figure of the demonic poisoner of wells, known from the Middle Ages, has returned as terrorist, this time equipped with modern scientific knowledge. This threat generates atavistic fears of being poisoned, which are hidden under a thin layer of rationality.

(iv) We are thus facing two effects: the actual danger of biological weapons in the hands of men who see themselves acting in an eschatological fight between good and evil, and the fear generated by this danger in western societies.

I conclude with an image of the rumour, found so important in the history of biological warfare:

Rumour, latin “Fama”, is, as the Roman poet VERGIL put in his Aeneis (4, 173–188), “faster than any other evil, […] she causes large cities to fear, she sticks to fiction and lies and at the same time is messenger of truth (Latin: nuntia veri).”

References


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