# GREEK MEDICINE

From the Heroic to the Hellenistic Age

*A Source Book*

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of diseases brought about in this way by *plêthôra*, he mentions ailments of the liver, spleen, stomach, coughing of blood, phrenitis, pleuritis, and pneumonia.

As treatment for *plêthôra* Erasistratus, who, unlike many of his contemporaries, did not freely resort to phlebotomy, recommended primarily starvation on the grounds that the veins, when emptied of superfluous blood, would more easily receive back the blood that had been discharged into the arteries [IX.22].

[1] This aspect of Alcmaeon's theory of health seems to be overlooked by medical historians.

[2] See Longrigg, 1993, p. 110ff.



# X

# Epidemic disease

## SUPERNATURAL CAUSATION

Homer preserves our earliest surviving literary account of epidemic disease when he describes the plague sent by Apollo upon the Greek army investing Troy [see I.8]. In similar fashion Hesiod describes a plague sent by Zeus [I.13]. In both these epic accounts those stricken are afflicted en masse by the action of an angry god. This belief in the supernatural causation of epidemic disease continued to be held by some even during the Fifth-Century Enlightenment – as may be inferred from Thucydides's account of the Athenian Plague [X.6] and even from Sophocles's portrayal of the plague at Thebes [X.1 & 2], which, although fictitious, doubtless reflects common beliefs regarding the causation of disease current at the time.

### X.1. Sophocles, *Oedipus Tyrannus* 22-30

The Priest of Zeus at Thebes describes the impact of plague upon the stricken city.

Thebes, as you yourself see, already is excessively tempest-tossed and is able no more to lift up her head from the depths of the bloody surge. She perishes in the budding fruits of her soil; she perishes in the herds at pasture and in the unfruitful travail of her women. And moreover, the fire-bearing god, most hateful god of plague, has swooped upon the city and harasses it. By him the house of Cadmus is made empty and black Hades grows rich with groans and lamentations.

### X.2. Sophocles, *Oedipus Tyrannus* 169-83

The Chorus of Theban Elders echoes his lament.

Woe, for countless are the ills we endure. Our whole host sickens and there is no spiritual resource with which to defend oneself. For neither do crops grow from our glorious soil nor do women with offspring cease from grievous pangs of childbirth. You might see one after another speeding like a well-winged bird faster than irresistible fire to the shore of the god of darkness.

The city perishes by the loss of countless hosts of them. Unpitied, children lie upon the plain pitilessly spreading death. Our wives and grey-haired mothers, from this place and that, raise beside the altar a shriek as suppliants from bitter pangs.

There are some points of resemblance between Sophocles's description here of the

mythical plague at Thebes and Thucydides's account of the Great Plague of Athens [see X.6], which have prompted the speculation that the tragedian's portrayal was coloured by his experiences in plague-ridden Athens.

## RATIONAL CAUSATION

### X.3. [Hippocrates], *Nature of man* 9 (VI.52,11-54,20L = *CMG* I.1,3, pp. 188-90 Jou.)

Within the Hippocratic *Corpus* explanations of epidemic disease are sought in terms of physical and natural causes. The epic concept of causation with its religious and moral connotations is implicitly rejected. Here air is held to be the cause of epidemic disease.

Some diseases arise from regimen, others from air which we inspire to live. We should distinguish between the two in the following way. Whenever many are contemporaneously affected by a single disease, the cause must be attributed to that which is most common and which we all use most. This is what we breathe in. For it is clear that the regimen of each of us is not responsible, since the disease attacks all in turn, both younger and older, men and women alike, drinkers and teetotallers, eaters of barley and eaters of wheat, those who undertake much strenuous toil and those who undertake little. Regimen, then, could not be the cause when people following all manner of diets are afflicted by the same disease. But when all sorts of diseases occur at the same time, it is clear that in each case the particular regimen is responsible .... But whenever an epidemic of a single disease is prevalent, it is clear that regimen is not responsible, but what we breathe and that this causes †trouble†[1] through some unhealthy exhalation (*apokrisis*).

The last phrase, where the text appears to be defective, has been interpreted by some to entail some idea of infectious transmission. But there is no suggestion that the air in question has been exhaled by someone already affected by the disease, nor do the remedies subsequently recommended include advice to avoid those afflicted. The more likely implication is that the air itself contains some noxious quality. In that case *apokrisis* here would be synonymous with *miasma* in the next passage [X.4]. See, too, Hankinson, 1995, pp. 43ff.

[1] Reading ἀνίᾳ.

### X.4. [Hippocrates], *Breaths* 6 (VI.96,23-98,13L = *CMG* I.1, p. 94 Heib.)

This Hippocratic author similarly attributes epidemic disease to air 'corrupted by some pollution'.

There are two sorts of fever: the one which is common to all is called plague (*loimos*), the other, due to bad regimen, is specific and attacks those who follow a poor regimen. Air is the cause of both. The common <i.e. epidemic> fever has this characteristic because everyone inhales the same air, and





when similar air is mingled in similar fashion with the body, similar fevers occur. But perhaps someone will say, 'Why, then, do not such diseases attack all animals, but only a particular species?' I would reply that is because one body differs from another, one type of air from another, one nature from another and one form of nutriment from another. For the same things are not well- or ill-suited to all species of animals, but different things are beneficial or harmful to different sorts. So, whenever the air has been defiled with such pollutions (*miasmasin*)[1] which are hostile to human nature, then people fall sick, but whenever the air has become ill-suited to some other species of animals, then these fall sick.

[1] For sources of such pollution see Didorus Siculus at X.7.

### X.5. [Hippocrates], *Nature of man* 9 (VI.54,20-56,12L = *CMG* I.1,3, pp. 190-2 Jou.)

How to avoid epidemic disease.

This is the advice that should be given to people <whenever an epidemic is prevalent>. They should not change their regimen, because it is not the cause of their disease, but rather see that the body is as thin and weak as possible by depriving it of its accustomed food and drink little by little ... then ensure that they inspire the least possible amount of air and from as far away as possible and by changes of place as far as is possible from the regions in which the disease is established and by reducing the body, for thus they would have the least need of deep and frequent respiration.

It is noteworthy that the concept of *miasma* in the three Hippocratic passages above differs from that found in the mythical account of plague described by Homer [I.8] and by Sophocles [X.1] in that there is no implication of religious pollution due to divine displeasure, nor is the disease transmitted by contagion to those in close proximity. The concept has been taken over and thoroughly rationalised so that it merely entails a general environmental condition productive of epidemic disease. The air serves as the general vector of the disease which is not directly communicated from one patient to another.

## THE ATHENIAN PLAGUE

In the early summer of the second year of the Peloponnesian War (430 BC) the Lacedaimonians again invaded Attica and laid waste to the countryside, whose inhabitants had taken refuge within the Long Walls. Athens had consequently become seriously overcrowded. A few days after the invasion the Plague broke out -killing, it would appear, about one third of the population of the city. The impact of the disease upon Athens is described by the historian Thucydides in the second book of his *History of the Peloponnesian War*. He provides our only contemporary account, which has become a literary model for descriptions of plague by many subsequent authors [see, for example, X.7]. He himself fell victim to the disease. His rational detailed account of its symptoms is unparalleled outside the writings of the Hippocratic *Corpus* and there seems to be no good reason to doubt that

Thucydides was familiar with contemporary medical literature and had been influenced by the spirit of Hippocratic medicine. But, notwithstanding this influence, it would be unwise to conclude that his rationality of approach was itself derived from contemporary medicine. Thucydides is himself a child of the Enlightenment and the writing of History had itself, in any case, felt at an earlier date the influence of Ionian Natural Philosophy. Despite numerous attempts on the part of modern scholars to identify the disease, none can be regarded as convincing. For in each and every case there remains at least one vital factor irreconcilable with Thucydides's evidence.[1] The historian has recently been given credit for making two important observations not previously recognised in medical history. He has been held to be the 'first of extant writers to enunciate clearly the doctrine of contagion' and the first to have described the phenomenon of acquired immunity.[2] But, while Thucydides manifestly deserves praise for his accurate observation and detailed description of these particular effects of the plague, both of these claims overpress the evidence. Thucydides certainly observes and records the *fact* of contagion. However, this is not to say that he clearly enunciated the *doctrine* of contagion or possessed an '*understanding* of contagion and immunity' or had any conception at all of its true cause. In any case, by his own evidence Thucydides reveals that he was not unique in recognising the *phenomenon* of contagion. At 51.5 he states explicitly that a number of his contemporaries were afraid to visit one another and that those whose sense of moral obligation transcended their fear and drove them to nurse their friends were especially vulnerable to the disease. Although Thucydides may have been the first to describe in writing the phenomena of acquired immunity and of contagion, his own evidence reveals that the realisation that one could contract the disease from someone already affected by it and that it did not attack the same person twice – at least, not fatally – was a matter of general knowledge within the Athenian populace. Nor should it be overlooked that this standpoint is also not without affinity with traditional religious beliefs in the contagious transmission of pollution.

[1] See Longrigg, 1980, pp. 209-25.
[2] See Poole & Holladay, 1979, pp. 282-300.

## X.6. Thucydides, *History of the Peloponnesian War* II.47-54, 58; III.87

[47] In the first days of summer in the second year of the war the Lacedaimonians and their allies, with two thirds of their forces as before, invaded Attica. (Their commander was Archidamus, king of the Lacedaimonians, son of Zeuxidamus.) They settled down in their positions and laid waste to the country. They had not been many days in Attica when the plague first began to appear among the Athenians. It was said to have struck even before this in many places, both in the vicinity of Lemnos and elsewhere. However, nowhere was a pestilence remembered as being so virulent or so destructive of life as it was in Athens. For neither were the doctors, who were the first to offer treatment in ignorance of the disease, able to ward it off; (their own mortality indeed was especially heavy inasmuch as they approached the afflicted most frequently). Nor was any other human skill of avail. Equally useless were prayers in the temples,





consultations of oracles and so forth. Finally, overcome by their sufferings, the sick ceased to resort to such practices.

[48] The plague first originated, so it is said, in Ethiopia above Egypt and then descended into Egypt and Libya and much of the Persian Empire. It fell suddenly upon Athens and attacked in the first instance the population of the Piraeus; giving rise to the allegation that the Peloponnesians had put poison into the reservoirs (there were not yet any wells there). Later it also arrived in the upper city and by this time the number of deaths was greatly increasing. The question of the probable origin of the plague and the nature of the causes capable of creating so great an upheaval, I leave to other writers, with or without medical experience. I, for my part, shall merely describe its nature and set down its symptoms by which it might be recognised if it should ever break out again. I caught the disease myself and observed others suffering from it.

[49] It is generally agreed that the year in question was particularly free from other kinds of disease. If anyone had an illness prior to the onset of the plague all its symptoms were resolved into it. Others, from no prior observable cause, but in good health, were suddenly attacked in the first instance by violent heats in the head; their eyes became red and inflamed; the inner parts, such as the throat and the tongue, immediately became blood-red and the breath unnatural and malodorous. These symptoms were followed by sneezing and hoarseness and in a short time the pain descended into the chest, producing a severe cough. Whenever it settled in the region of the heart, it upset it and there ensued evacuations of every kind of bile named by the doctors accompanied by great distress. Most patients then suffered an attack of empty retching, producing violent spasms; in some cases soon after the abatement of the previous symptoms, in others much later. Externally the body was neither excessively hot to the touch, nor pale in appearance, but flushed and livid with an efflorescence of small blisters and sores. Internally the heat of the body was such that the victims could not endure even the lightest coverings or linens; they preferred to go naked and would have liked best to throw themselves into cold water. Many of the sick who were not cared for actually did so, plunging into the water-tanks driven by their unquenchable thirst. It made no difference whether they drank little or much. They continually suffered distress through sleeplessness and their inability to rest. At the height of the disease the body did not waste away, but surprisingly withstood its ravages. Consequently the majority succumbed to the internal heat on the seventh or the ninth day before their strength was totally exhausted. Or, if they survived this critical period, the disease would descend to the bowels, where a severe ulceration occurred coupled with an attack of uncompounded diarrhoea, which in many cases ended in death from exhaustion. For the disease, seated at first in the head, began from above and passed throughout the whole body; if the patient survived its worst effects, it left its mark upon his extremities; it attacked the genitals, fingers and toes; many escaped with the loss of these, some also lost their

eyes. Some rose from their beds seized momentarily by a total loss of memory and failed to recognise themselves and their friends.

[50] The nature of the disease was beyond description: in general its individual attacks were more grievous than human nature could endure, and in the following particular respect, especially, it revealed that it was something out of the ordinary. Though there were many unburied corpses lying around, the birds and beasts that prey upon human bodies either did not go near them, or died after tasting them. As evidence for this: there was a conspicuous disappearance of such birds; they were not seen about the bodies, or indeed at all. But it was the dogs rather, being domestic animals, that provided an opportunity to observe this effect.

[51] If we pass over many other peculiarities as it manifested itself differently in individual cases, such was the general nature of the disease. Throughout the duration of the plague none of the ordinary diseases attacked the population as well: or, if any did, it ended in this. Some died in neglect, others in spite of being given every care. No single 'cure', as it were, established itself as the one which had to be applied to benefit the sick (for what helped one, harmed another). No bodily constitution, whether strong or weak, was conspicuously capable of resistance; but the disease carried off all alike, even those treated with every medical care. The most terrible aspect of the malady was the despondency of the afflicted when they realised that they were falling sick (for their minds immediately turned to despair and in the majority of cases they gave themselves up for lost instead of resisting). Most terrible, too, was the fact that having caught the infection through caring for one another they died like sheep. This was the cause of the greatest mortality. For, if they were afraid to visit one another, they expired with no one to look after them. (Many houses were emptied through lack of anyone to do the nursing.) Alternatively, if they did visit the sick, they also perished – especially those who made any claim to goodness. For their shame did not allow them to spare themselves from entering the houses of their friends at a time when even their relatives, overcome by the size of the disaster, were wearied of the funeral dirges for their dead. But still, it was those who had survived the disease who showed the more pity to the dying and the suffering because they themselves had previous experience of it and were themselves by this time confident of their immunity. For the disease did not attack the same person twice, at least not fatally. Such people both received the congratulations of the others and they themselves in the elation of the moment also entertained to some extent a vain hope that for the rest of their lives they would never die of any other disease.

[52] In addition to their existing distress, the crowding into the city of people from the country also caused the Athenians further hardship, and this especially affected the newcomers. Since there were no houses available for them and they had to live in stifling cabins in the hot season of the year, they perished in utter disorder: corpses and the dying lay one upon the other and half-dead people reeled about in the streets and around all





the fountains in their desire for water. The sacred places, too, where they had camped, were full of corpses of those who had died there. As the disaster pressed so overpoweringly upon them, men, not knowing what was to become of them, became contemptuous of everything, both sacred and profane. Burial customs, which had previously been observed, were all thrown into confusion and they buried their dead each as they could. Many, through lack of the necessary materials due to the fact that many members of their household had already died previously, resorted to shameful modes of burial; some would hurl their own dead upon another's pyre and set fire to it, forestalling those who had raised it; others would throw the corpse they were carrying on top of another that was already burning and depart.

[53] In other respects, too, the plague was responsible for first introducing a greater degree of lawlessness at Athens. Men ventured more readily upon acts of self-indulgence which had formerly been concealed. They saw rapid changes of fortune when the prosperous suddenly died and those who previously had nothing in a moment inherited their wealth. Regarding life and wealth alike as transitory they thought it right to live for pleasure and to enjoy themselves quickly. No one was eager to persevere in what was esteemed as honour, considering it uncertain whether he would live to attain it. But it was generally agreed that the pleasure of the moment and all that contributed to it was honourable and expedient. No fear of the gods or law of men restrained them. For, on the one hand, seeing that all perished alike, they judged that piety and impiety came to the same thing; and, on the other, no one expected that he would live to be brought to trial and punished. They believed the penalty that had already been passed upon them and was hanging over their heads to be far greater and that it was reasonable, before it fell, to get some enjoyment out of life.

[54] Such was the calamity that befell the Athenians and caused them great distress, with their people dying within the walls and their land ravaged without. In their distress they naturally recalled, among other things, this verse which the elders said had been uttered long ago: 'A Dorian war shall come and with it death.' There was controversy, however, whether the word used by the ancients had been 'dearth' and not 'death'. At the present time the view that the word was 'death' naturally prevailed. For people made their recollection fit their experience. But, I imagine, if ever another Dorian war should come upon us after the present one and a dearth should ensue, people will, in all probability, recite the verse accordingly. Those who knew of it, recalled, too, the oracle given to the Lacedaimonians in answer to their enquiry whether they should go to war; the god answered if they made war with all their might victory would be theirs and said that he himself would assist them. So they surmised that what was happening tallied with the oracle: the plague began immediately after the Peloponnesians had invaded; it did not enter the Peloponnese to any extent worth mentioning; it ravaged Athens most of all, then the other most populous places. Such was the history of the plague.

In chapter 58 Thucydides describes how this deadly disease was carried from the stricken city to infect the Athenian forces investing Potidaea:

[58] In the course of the same summer, Hagnon, son of Nicias, and Cleopompus, son of Cleinias, colleagues of Pericles, taking the forces which the latter had employed against the Peloponnese, immediately set out on an expedition against the Chalcidians in Thrace and against Potidaea. On their arrival they brought siege-engines to bear against Potidaea and tried every way to take it. But, in their attempts to take the city and in other respects, their success was incommensurate with the scale of their preparations. For the plague broke out there and sorely distressed the Athenians. It so ravaged the army that even the soldiers of the earlier expedition, who had previously been in good health, caught the disease from Hagnon's troops .... Hagnon, therefore, withdrew with his fleet to Athens, having lost by plague in about forty days one thousand and fifty hoplites from a total of four thousand. The soldiers of the previous expedition remained in position and continued the siege of Potidaea.

And in the following book [III.87] he records the return of the plague and estimates the military losses caused by it:

[87] During the following winter the Athenians suffered a second attack of the plague. It had never completely abated, but there had been some remission in its virulence. The second outbreak lasted no less than a year, the first lasted two. Nothing did more harm to Athenian power than this. For no less than four thousand four hundred heavy infantry in the ranks and three hundred cavalry died of it, as well as an indeterminable number of common folk.

For a discussion of the social impact of the disease upon Athenian society see Longrigg, 1992, pp. 21-44.

## X.7. Diodorus Siculus, *World History* XII.45 and 58

In this later account of the of the Athenian Plague Diodorus attributes its cause to breathing polluted air.

[45] The Lacedaimonians together with the Peloponnesians and their other allies invaded Attica for a second time <i.e. in 430 BC> .... The Athenians did not venture to draw themselves up against them, but, confined within the walls, became involved in a crisis caused by plague. For a great multitude of all sorts of people had streamed together into the city and on account of the lack of space, as one might reasonably expect, fell victim to diseases as they breathed in polluted air.

Some chapters later on Diodorus takes up again his account of the plague and sets out what he conceives to have been its causes.





[58] At this time <i.e. 426 BC> the Athenians, who had enjoyed some period of relief from the plague, fell once again into the same misfortune. For they were so afflicted by the disease that, of their soldiers, they lost more than four thousand infantry and four hundred cavalry and, of the rest of their population, both free and slave, more than ten thousand. Since history seeks to ascertain the cause of the terrible nature of this disease, it is necessary to set them forth.

As a result of heavy rains the previous winter, the ground had become waterlogged and, having received a huge amount of water, many of the hollows had become lakes and contained stagnant water, as marshy areas do. When these waters became warm and putrefied in the summer, thick foul vapours formed which rose and corrupted the neighbouring air. (This phenomenon is also seen in marshes which have a pestilential nature.) The bad quality of the food-supply also aggravated the disease. For the crops throughout that year were completely watery and their natural qualities were corrupted. The failure of the Etesian winds by which most of the heat is constantly cooled throughout the summer proved to be a third cause of the disease. When the heat intensified and the air grew fiery, the bodies of the inhabitants, without anything to cool them, wasted away. Consequently it transpired that all the diseases at the time were accompanied by fever on account of the excessive heat. For this reason most of the sick threw themselves into the cisterns and springs in their desire to cool their bodies. The Athenians, because of the extreme severity of the disease, attributed the causes of the disaster to the deity. Consequently, in accordance with a certain oracle, they purified the island of Delos, which was sacred to Apollo but had seemingly been defiled by the burial of the dead there. They dug up, therefore, all the graves on Delos and transferred the remains to the neighbouring island called Rheneia. They also passed a law forbidding birth or burial on Delos. They celebrated, too, the festal assembly of the Delians,[1] which though held in former times, had been discontinued for a long time.

[1] The ancient festival of the Ionian Amphictiony held in honour of Apollo and Artemis (cf. Thucydides, *History of the Peloponnesian War* III.104).

## X.8. Diodorus Siculus, *World History* XIV.70.4-71

Diodorus also used Thucydides's description of the Athenian plague as a model for his own description of a different epidemic that afflicted the Carthaginians investing Syracuse in 397 BC. It is illuminating to compare the two authors' accounts.

After the Carthaginians had captured the suburb and plundered the temple of Demeter and Core, a disease fell upon their army. This god-sent calamity was increased by the crowding of tens of thousands into the same place; by the fact that the time of year was very conducive to disease, and, in addition, by the extraordinary heats prevailing that summer. It seems probable that the place, too, had something to do with the intensity of the

trouble; for when the Athenians had earlier occupied the same camp, many of them had perished from disease, the place being marshy and low-lying. At first, before sunrise, owing to the coldness of the air from the marshes, shivering was produced in the body, while the heat of mid-day naturally had a stifling effect upon such a crowd gathered together in such a confined space.

This malady, then, first attacked the Libyans, many of whom died; the dead were buried at first, but afterwards, when their numbers increased and those attending the sick were seized by the disease, none dared to approach the sufferers. Thus, aid being withdrawn, there was no more help against the trouble. Owing to the stench of unburied corpses and the putridity arising from the marshes, the disease began with catarrhs; later swellings supervened about the throat, succeeded shortly afterwards by fevers, muscular pains in the back, and heaviness of the legs. Thereafter followed dysenteries and small blisters over the whole surface of the body.

Such was the experience in the majority of cases. Others were afflicted by madness and a complete loss of memory; they would walk about the camp out of their minds striking anyone they met. In general, as it turned out medical assistance was of no avail, both because of the intensity of the disease and the suddenness with which death arrived; for the victims died on the fifth day, or on the sixth, at the latest, enduring terrible tortures so that those who had fallen in the war were universally regarded as blessed. For in fact those who attended upon the suffering fell victims to the disease; consequently the plight of the sick was terrible, since none would help them in their trouble. For not only did strangers desert one another, but brothers were compelled to abandon brothers and friends friends through fear for themselves.

The extent to which Diodorus models his account upon that of Thucydides is plain for all to see – notwithstanding his adoption of the miasmatic theory as evidenced above [X.7]. But, in sharp contrast to the rationality of Thucydides's account, which makes no attempt to account for the onset of the Plague in terms of the anger of affronted deities, Diodorus regards the Syracusan epidemic as a 'god-sent calamity' in retribution for the plundering of the temple of Demeter and Core.

**X.9.** [Hippocrates], *Epidemics* I.1 (II.598-604,2L)

Another contagious disease? Our Hippocratic author certainly seems to suggest that the epidemic he describes here was contagious.

In Thasos, during Autumn, about the time of the equinox, towards the setting of the Pleiades, there was abundant rain, soft and continuous, with southerly winds. The winter southerly, light north winds, droughts; on the whole the winter was spring-like. Spring was southerly, cool with light showers. Summer for the most part cloudy, no rain. Etesian winds were few, light and irregular.

All atmospheric conditions had been southerly with drought, but early





in the spring conditions changed to their opposite and became northerly and a few people were stricken with remittent fevers which were very mild. A few had haemorrhages which were not fatal. Many had swellings around the ears, some on the one side, some on both; in most cases without fever and the patient was not confined to bed. Some also experienced a slight fever. In all cases the swellings subsided harmlessly. In no case was there suppuration such as is common with swellings from other causes. The character of the swellings was spongy, large and spread widely, without inflammation or pain. In all cases they disappeared without a sign. Boys, young men and men in their prime were afflicted – mainly those who frequented the wrestling-school and the gymnasia. (Few women were attacked.) Many had dry coughs without expectoration; their voices were hoarse. Soon after the onset of the disease, but in some cases after an interval, painful inflammations developed sometimes in one, sometimes in both testicles, sometimes with fever, sometimes not, causing much suffering to the majority of patients. But, in other respects, people were free from the sort of ailments that require medical assistance.

The symptoms described above, which include swellings in the regions of the ears and which, in the case of some males, were coupled with the added complication of a painful orchitis, strongly suggest that the disease was mumps. Our author tells us that few women were affected; its main victims were youths, young men and men in their prime – for the most part those who frequented the wrestling-school and the gymnasia. Despite the scepticism of Poole and Holladay (p. 298), it is very hard to believe that there is not, at least, an implicit recognition here of the fact of contagion. As has been seen above, the traditional Hippocratic view was that epidemics were 'miasmatic' in origin, i.e. were caused by air polluted by some unhealthy exhalation [see **X.3 & 4**] – a widespread belief which still survives in the term 'malaria' (bad air). But, to explain this disease upon such a miasmatic basis, it would be necessary to assume either that the gymnasia and wrestling school were all located in an insalubrious area or badly ventilated, and set apart from private dwellings. In the present instance the medical writer has evidently realised some males, who came into contact while taking exercise, picked up the infection from one another; whereas the women, who stayed at home, were less prone to catch the disease. It may be of some significance that the epidemic is described as having occurred at Thasos, the island where Thucydides was himself stationed in 424 BC. But, in view of the controversy regarding the dating of Hippocratic works – not to mention the difficulty in determining when the different parts of Thucydides's *History* were written, it would not be wise to go further and draw any firm conclusions regarding influence between medicine and history here.

## Hippocrates and the Athenian plague

**X.10.** Galen, *On theriac to Piso* 16 (XIV.280-1K)

Galen records the legend that Hippocrates eradicated the Athenian Plague by purifying the air, (see, too, **IV.5**).

On this account I also commend Hippocrates, who deserves great admira-

tion for curing the famous epidemic that first came upon the Greeks from Ethiopia, merely by altering the air so that it would no longer be inhaled in the same condition. He ordered fires to be kindled throughout the whole city, not simply composed of kindling wood, but also of the sweetest garlands and flowers. These, he advised, were to be fuel for the fire, and he urged that richest of sweet-scented unguents should be burned so that men might inhale for relief the air purified in this way.

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Our earliest surviving literary description of epidemic disease is the account of the impact of plague[1] (*loimos*) upon the Greek army besieging Troy in the first book of the *Iliad* **[I.8]**. The disease is represented as being supernatural in origin, sent by Apollo in punishment for Agamemnon's arrogant treatment of his priest, Chryses, who had come to the Greek camp in an endeavour to ransom his captive daughter. Eventually, the Greeks, on the suggestion of Achilles, consulted the soothsayer, Calchas. He revealed to them that Apollo had sent the disease to avenge his priest and that the god would not lift the pestilence until the girl had been returned to her father, without a ransom and with a hecatomb of oxen for sacrifice. The Greeks concurred, purified themselves, cast the 'defilements' into the sea and sacrificed to Apollo. The god was appeased and the plague abated. In similar fashion, Hesiod describes in *Works and Days* 238-45 a plague, sent this time by Zeus, which killed the men and rendered the women barren **[I.13]**.

In both of these epic accounts, it may be noted, the disease is not regarded as communicable from one victim to another. The stricken are represented as having been afflicted *en masse* by the action of a vengeful god. They do not infect one another by contact. While both of these accounts are, presumably, fictitious, their authors are doubtless reflecting common beliefs regarding the origins and operations of diseases current at their own time. This belief in the supernatural causation of disease was persistent [see, for example, **X.8**]. It was held by some even during the Fifth-Century Enlightenment – as may be inferred, for example, from Thucydides's account of the Athenian plague in *History of the Peloponnesian War* II.47 **[X.6]**. At the beginning of his tragedy *Oedipus Tyrannus* Sophocles puts into the mouth of the priest of Zeus a dramatic description of the impact of plague (*loimos*) upon Thebes **[X.1]** that is echoed a little later in the words of the Choir of Elders **[X.2]**. Petitioned to take action, Oedipus sends his brother-in-law, Creon, to consult the oracle at Delphi for advice as to what should be done. Creon returns to announce that Apollo commands that a *miasma* (source of pollution), which is defiling the city, must be expelled. Oedipus himself, polluted by the killing of his own father, Laius, is the source of that *miasma* which he is transmitting by contagion to those in proximity (see, too, *Oedipus Coloneus* 226-36, 1132-6).

Within the Hippocratic *Corpus* **[X.3 & 4]**, however, although the term *miasma* is retained, the concept of religious contagion is now stripped of all moral and religious connotations and thoroughly rationalised. Here one finds no suggestion of individual culpability. No appeals are made to gods or oracles. Physical and natural explanations are sought upon which therapy is based **[X.5]**. Although Thucydides displays the same rational standpoint found in the Hippocratic writings, he does not himself, unlike Diodorus in his later description **[X.7]**, resort to this miasmatic theory of disease in his account of the great Plague of Athens **[X.6]**; but subscribes to the belief that the disease was transmitted by contagion and thus has seemingly reverted to a highly rationalised version of the religious belief





revealed by Sophocles in the *Oedipus Tyrannus*. [see **X.1 & 2**]. Although it has been denied that transmission of disease by contagion occurs in the Hippocratic *Corpus*, *Epidemics* I.1 seems to suggest otherwise **[X.9]**.

It may also be noted here that in his description of the Athenian plague Thucydides makes no mention of the legend which later attributed its cessation to the intervention of Hippocrates. (see, for example, Galen, *On theriac to Piso* 16 at **X.10**).

[1] In modern times the term 'plague' is commonly used to denote bubonic plague, *Yersinia pestis*, the Black Death. Here, however, this term is used to denote any widespread epidemic disease.