

**Human and Environment in Greco-Roman Antiquity:
shaping and being shaped by the Natural World
CLCV 327/ESPN 249 (10)/COLL 300
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Primary Passages for Presentations

25 January: human and environment

- Hippocratic, *AWP* 12-13, Kennedy, Roy, Goldman 2013: 35-36 (on the connection between climate and human characteristics): **Michelle**
- Herodotus 9.122, Kennedy, Roy, Goldman 2013: 43 (why the Persians are so soft)
- Seneca, *On Anger* 2.15, Kennedy, Roy, Goldman 2013: 47 (environment, government, and anger)

29/31 January: agriculture

- Columella and Vergil on Soil Types (HOS 3.17-18): **Chloe**
- Drainage and Irrigation (HOS 3.19-21): **Jessica**
- Cato and Columella on pesticides (HOS 3.26)
- Pliny and Cato on grafting trees (HOS 3.56): **Tindell**

5/7 February: animals

- Pliny and Columella on mules (HOS 3.65): **Amanda**

12/14 February: industry (metals and textiles)

- On the hazards of mining (HOS 5.24-25): **Giancarlo**
- Pollution generated by smelting (HOS 6.17-18): **Emily**
- Fulling (HOS 9.36): **Carlo**

19/21 February: warfare

- Chemical Warfare (HOS 12.19, 12.28)

19/22 March: the city and the environment (construction and hydraulic engineering)

- Vitruvius on construction and site (HOS 7.15): **Andrew**
- Heating (HOS 7.55-57): **Kevin**
- Fire hazards and fire prevention (HOS 7.63-64): **Sarah**
- Sewers (HOS 8.15-16): **Alex**
- Baths (HOS 8.38): **Rachel**

26/28 March: paradise, real and imagined

- Herodotus on India (Kennedy, Roy, Goldman 2013, 273-275)
- Pliny on the people of China (Kennedy, Roy, Goldman 2013, 295-297): **Feng**
- Tacitus on the Brits (Kennedy, Roy, Goldman 2013, 365-366): **Colleen**
- Tacitus on the Germans (Kennedy, Roy, Goldman 2013, 367-381): **Keegan**
- Arcadia (Various authors, below **forthcoming**)

9 April: health and natural disasters

- Thucydides on the plague at Athens (below): **Huntley**
- Flooding of Tibur (below): **Spencer**
- Pliny the Younger on the Eruption of Vesuvius (below): **Anne**
- Earthquakes: **Corbin**

Arcadia

ARCADIA

PLAGUE AT ATHENS

Thucydides 2.48-54

XLVII. Such were the funeral ceremonies that took place during this winter, the close of which brought the first year of this war to an end. At the very beginning of summer the Peloponnesians and their allies, with two-thirds of their forces as before, invaded Attica, under the command of Archidamus, son of Zeuxidamus, king of the Lacedaemonians, and establishing themselves proceeded to ravage the country. And before they had been many days in Attica the plague began for the first time to show itself among the Athenians. It is said, indeed, to have broken out before in many places, both in Lemnos and elsewhere, though no pestilence of such extent nor any scourge so destructive of human lives is on record anywhere. For neither were physicians able to cope with the disease, since they at first had to treat it without knowing its nature, the mortality among them being greatest because they were most exposed to it, nor did any other human art avail. And the supplications made at sanctuaries, or appeals to oracles and the like, were all futile, and at last men desisted from them, overcome by the calamity.

XLVIII. The disease began, it is said, in Ethiopia beyond Egypt, and then descended into Egypt and Libya and spread over the greater part of the King's territory. Then it suddenly fell upon the city of Athens, and attacked first the inhabitants of the Peiraeus, so that the people there even said that the Peloponnesians had put poison in their cisterns; for there were as yet no public fountains there. But afterwards it reached the upper city also, and from that time the mortality became much greater. Now any one, whether physician or layman, may, each according to his personal opinion, speak about its probable origin and state the causes which, in his view, were sufficient to have produced so great a departure from normal conditions; but I shall describe its actual course, explaining the symptoms, from the study of which a person should be best able, having knowledge of it beforehand, to recognize it if it should ever break out again. For I had the disease myself and saw others sick of it.

XLIX. That year, as was agreed by all, happened to be unusually free from disease so far as regards the other maladies; but if anyone was already ill of any disease all terminated in this. In other cases from no obvious cause, but suddenly and while in good health, men were seized first with intense heat of the head, and redness and inflammation of the eyes, and the parts inside the mouth, both the throat and the tongue, immediately became blood-red and exhaled an

unnatural and fetid breath. In the next stage sneezing and hoarseness came on, and in a short time the disorder descended to the chest, attended by severe coughing. And when it settled in the stomach, that was upset, and vomits of bile of every kind named by physicians ensued, these also attended by great distress; and in most cases ineffectual retching followed producing violent convulsions, which sometimes abated directly, sometimes not until long afterwards. Externally, the body was not so very warm to the touch; it was not pale, but reddish, livid, and breaking out in small blisters and ulcers. But internally it was consumed by such a heat that the patients could not bear to have on them the lightest coverings or linen sheets, but wanted to be quite uncovered and would have liked best to throw themselves into cold water—indeed many of those who were not looked after did throw themselves into cisterns—so tormented were they by thirst which could not be quenched; and it was all the same whether they drank much or little. They were also beset by restlessness and sleeplessness which never abated. And the body was not wasted while the disease was at its height, but resisted surprisingly the ravages of the disease, so that when the patients died, as most of them did on the seventh or ninth day from the internal heat, they still had some strength left; or, if they passed the crisis, the disease went down into the bowels, producing there a violent ulceration, and at the same time an acute diarrhoea set in, so that in this later stage most of them perished through weakness caused by it. For the malady, starting from the head where it was first seated, passed down until it spread through the whole body, and if one got over the worst, it seized upon the extremities at least and left its marks there; for it attacked the privates and fingers and toes, and many escaped with the loss of these, though some lost their eyes also. In some cases the sufferer was attacked immediately after recovery by loss of memory, which extended to every object alike, so that they failed to recognize either themselves or their friends.

L. Indeed the character of the disease proved such that it baffles description, the violence of the attack being in each case too great for human nature to endure, while in one way in particular it showed plainly that it was different from any of the familiar diseases: the birds, namely, and the fourfooted animals, which usually feed upon human bodies, either would not now come near them, though many lay unburied, or died if they tasted of them. The evidence for this is that birds of this kind became noticeably scarce, and they were no longer to be seen either about the bodies or anywhere else; while the dogs gave a still better opportunity to observe what happened, because they live with man.

LI. Such, then, was the general nature of the disease; for I pass over many of the unusual symptoms, since it chanced to affect one man differently as compared

with another. And while the plague lasted there were none of the usual complaints, though if any did occur it ended in this. Sometimes death was due to neglect, but sometimes it occurred in spite of careful nursing. And no one remedy was found, I may say, which was sure to bring relief to those applying it—for what helped one man hurt another—and no constitution, as it proved, was of itself sufficient against it, whether as regards physical strength or weakness, but it carried off all without distinction, even those tended with all medical care. And the most dreadful thing about the whole malady was not only the despondency of the victims, when they once became aware that they were sick, for their minds straightway yielded to despair and they gave themselves up for lost instead of resisting, but also the fact that they became infected by nursing one another and died like sheep. And this caused the heaviest mortality; for if, on the one hand, they were restrained by fear from visiting one another, the sick perished uncared for, so that many houses were left empty through lack of anyone to do the nursing; or if, on the other hand, they visited the sick, they perished, especially those who made any pretensions to goodness. For these made it a point of honour to visit their friends without sparing themselves at a time when the very relatives of the dying, overwhelmed by the magnitude of the calamity, were growing weary even of making their lamentations. But still it was more often those who had recovered who had pity for the dying and the sick, because they had learnt what it meant and were themselves by this time confident of immunity; for the disease never attacked the same man a second time, at least not with fatal results. And they were not only congratulated by everybody else, but themselves, in the excess of their joy at the moment, cherished also a fond fancy with regard to the rest of their lives that they would never be carried off by any other disease.

LII. But in addition to the trouble under which they already laboured, the Athenians suffered further hardship owing to the crowding into the city of the people from the country districts; and this affected the new arrivals especially. For since no houses were available for them and they had to live in huts that were stifling in the hot season, they perished in wild disorder. Bodies of dying men lay one upon another, and half-dead people rolled about in the streets and, in their longing for water, near all the fountains. The temples, too, in which they had quartered themselves were full of the corpses of those who had died in them; for the calamity which weighed upon them was so overpowering that men, not knowing what was to become of them, became careless of all law, sacred as well as profane. And the customs which they had hitherto observed regarding burial were all thrown into confusion, and they buried their dead each one as he could. And many resorted to shameless modes of burial because so

many members of their households had already died that they lacked the proper funeral materials. Resorting to other people's pyres, some, anticipating those who had raised them, would put on their own dead and kindle the fire; others would throw the body they were carrying upon one which was already burning and go away.

LIII. In other respects also the plague first introduced into the city a greater lawlessness. For where men hitherto practised concealment, that they were not acting purely after their pleasure, they now showed a more careless daring. They saw how sudden was the change of fortune in the case both of those who were prosperous and suddenly died, and of those who before had nothing but in a moment were in possession of the property of the others. And so they resolved to get out of life the pleasures which could be had speedily and would satisfy their lusts, regarding their bodies and their wealth alike as transitory. And no one was eager to practise self-denial in prospect of what was esteemed honour, because everyone thought that it was doubtful whether he would live to attain it, but the pleasure of the moment and whatever was in any way conducive to it came to be regarded as at once honourable and expedient. No fear of gods or law of men restrained; for, on the one hand, seeing that all men were perishing 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 called to account and pay the penalty of his misdeeds. On the contrary, they believed that the penalty already decreed against them, and now hanging over their heads, was a far heavier one, and that before this fell it was only reasonable to get some enjoyment out of life.

LIV. Such then was the calamity that had befallen them by which the Athenians were sore pressed, their people dying within the walls and their land being ravaged without. And in their distress they recalled, as was natural, the following verse which their older men said had long ago been uttered:

"A Dorian war shall come and pestilence with it."

A dispute arose, however, among the people, some contending that the word used in the verse by the ancients was not λοιμός, "pestilence," but λιμός, "famine," and the view prevailed at the time that "pestilence" was the original word; and quite naturally, for men's recollections conformed to their sufferings. But if ever another Dorian war should visit them after the present war and a famine happen to come with it, they would probably, I fancy, recite the verse in that way. Those, too, who were familiar with it, recalled that other oracle given to the Lacedaemonians, when, in answer to their inquiry whether they should go

Thucydides: Plague at Athens

to war, the god responded that if they “warred with all their might victory would be theirs,” adding that he himself would assist them. Now so far as the oracle is concerned, they surmised that what was then happening was its fulfilment, for the plague broke out immediately after the Peloponnesians had invaded Attica; and though it did not enter the Peloponnesus to any extent, it devastated Athens most of all, and next to Athens the places which had the densest population. So much for the history of the plague.

FLOODING OF THE TIBUR

Dio Cassius, 37.58 (60 bce)

This was the condition into which these men brought the affairs of Rome at that time, after concealing their alliance as long as possible. For they did whatever they had decided on, while feigning and putting forward utterly opposite motives, in order that they might still remain undiscovered for a long period, until they should have made sufficient preparations. Yet Heaven was not ignorant of their doings, but then and there revealed very plainly to those who could understand any such signs all that was to result later because of them. For of a sudden such a storm descended upon the whole city and all the country that quantities of trees were torn up by the roots, many houses were shattered, the boats moored in the Tiber both near the city and at its mouth were sunk, and the wooden bridge destroyed, and a theatre built of timbers for some festival collapsed, and in the midst of all this great numbers of human beings perished. These signs were revealed in advance, as an image of what should befall the people both on land and on water.

Dio Cassius 39.61.1-2 (54 BCE)

Meanwhile, the Tibur, either because excessive rains had occurred somewhere upstream above the city, or because a violent wind from the sea had driven back its outgoing tide, or still more probably, as was surmised, by the act of some divinity, suddenly rose so high as to inundate all the lower levels of the city and to overwhelm even many of the higher portions. The houses, therefore, being constructed of brick, became soaked through and collapsed, while all the animals perished in the flood. And of the people, all who did not take refuge in time, were caught, either in their dwellings or in the streets, and lost their lives. The remaining houses too became weakened since the mischief lasted for many days, and they caused injuries to many, either at the time or later.

Cicero *To his brother Quintus* 25 [3.5] described the same storm for his brother Quintus, recounting which famous monuments suffered from storm damage:

At Rome, and particularly along the Appian Way up to the Temple of Mars, there are amazing floods. The promenade of Crassipes was swept away, and gardens, and numerous shops. A huge volume of water reaches up to the public fishpond.

ON THE ERUPTION OF MT. VESUVIUS

Pliny the Younger 6.16: To Tacitus

Thank you for asking me to send you a description of my uncle's death so that you can leave an accurate account of it for posterity; I know that immortal fame awaits him if his death is recorded by you. It is true that he perished in a catastrophe which destroyed the loveliest regions of the earth, a fate shared by whole cities and their people, and one so memorable that it is likely to make his name live for ever: and he himself wrote a number of books of lasting value: but you write for all time and can still do much to perpetuate his memory. The fortunate man, in my opinion, is he to whom the gods have granted the power either to do something which is worth recording or to write what is worth reading, and most fortunate of all is the man who can do both. Such a man was my uncle, as his own books and yours will prove. So you set me a task I would choose for myself, and I am more than willing to start on it.

My uncle was stationed at Misenum, in active command of the fleet. On 24 August, in the early afternoon, my mother drew his attention to a cloud of unusual size and appearance. He had been out in the sun, had taken a cold bath, and lunched while lying down, and was then working at his books. He called for his shoes and climbed up to a place which would give him the best view of the phenomenon. It was not clear at that distance from which mountain the cloud was rising (it was afterwards known to be Vesuvius); its general appearance can best be expressed as being like a pine rather than any other tree, for it rose to a great height on a sort of trunk and then split off into branches, I imagine because it was thrust upwards by the first blast and then left unsupported as the pressure subsided, or else it was borne down by its own weight so that it spread out and gradually dispersed. Sometimes it looked white, sometimes blotched and dirty, according to the amount of soil and ashes it carried with it. My uncle's scholarly acumen saw at once that it was important enough for a closer inspection, and he ordered a fast boat to be made ready, telling me I could come with him if I wished. I replied that I preferred to go on with my studies, and as it happened he had himself given me some writing to do.

As he was leaving the house he was handed a message from Rectina, wife of Tascius, whose house was at the foot of the mountain, so that escape was impossible except by boat. She was terrified by the danger threatening her and implored him to rescue her from her fate. He changed his plans, and what he had begun in a spirit of inquiry he completed as a hero. He gave orders for the warships to be launched and went on board himself with the intention of

bringing help to many more people besides Rectina, for this lovely stretch of coast was thickly populated. He hurried to the place which everyone else was hastily leaving, steering his course straight for the danger zone. He was entirely fearless, describing each new movement and phase of the portent to be noted down exactly as he observed them. Ashes were already falling, hotter and thicker as the ships drew near, followed by bits of pumice and blackened stones, charred and cracked by the flames: then suddenly they were in shallow water, and the shore was blocked by the debris from the mountain. For a moment my uncle wondered whether to turn back, but when the helmsman advised this he refused, telling him that Fortune stood by the courageous and they must make for Pomponianus at Stabiae. He was cut off there by the breadth of the bay (for the shore gradually curves round a basin filled by the sea) so that he was not as yet in danger, though it was clear that this would come nearer as it spread. Pomponianus had therefore already put his belongings on board ship, intending to escape if the contrary wind fell. This wind was of course full in my uncle's favour, and he was able to bring his ship in. He embraced his terrified friend, cheered and encouraged him, and thinking he could calm his fears by showing his own composure, gave orders that he was to be carried to the bathroom. After his bath he lay down and dined; he was quite cheerful, or at any rate he pretended he was, which was no less courageous.

Meanwhile on Mount Vesuvius broad sheets of fire and leaping flames blazed at several points, their bright glare emphasized by the darkness of night. My uncle tried to allay the fears of his companions by repeatedly declaring that these were nothing but bonfires left by the peasants in their terror, or else empty houses on fire in the districts they had abandoned. Then he went to rest and certainly slept, for as he was a stout man his breathing was rather loud and heavy and could be heard by people coming and going outside his door. By this time the courtyard giving access to his room was full of ashes mixed with pumice-stones, so that its level had risen, and if he had stayed in the room any longer he would never have got out. He was wakened, came out and joined Pomponianus and the rest of the household who had sat up all night. They debated whether to stay indoors or take their chance in the open, for the buildings were now shaking with violent shocks, and seemed to be swaying to and fro as if they were torn from their foundations. Outside on the other hand, there was the danger of falling pumice-stones, even though these were light and porous; however, after comparing the risks they chose the latter. In my uncle's case one reason outweighed the other, but for the others it was a choice of fears. As a protection against falling objects they put pillows on their heads tied down with cloths.

Elsewhere there was daylight by this time, but they were still in darkness, blacker and denser than any night that ever was, which they relieved by lighting torches and various kinds of lamp. My uncle decided to go down to the shore and investigate on the spot the possibility of any escape by sea, but he found the waves still wild and dangerous. A sheet was spread on the ground for him to lie down, and he repeatedly asked for cold water to drink. Then the flames and smell of sulphur which gave warning of the approaching fire drove the others to take flight and roused him to stand up. He stood leaning on two slaves and then suddenly collapsed, I imagine because the dense fumes choked his breathing by blocking his windpipe which was constitutionally weak and narrow and often inflamed. When daylight returned on the 26th—two days after the last day he had seen—his body was found intact and uninjured, still fully clothed and looking more like sleep than death.

Meanwhile my mother and I were at Misenum, but this is not of any historic interest, and you only wanted to hear about my uncle's death. I will say no more, except to add that I have described in detail every incident which I either witnessed myself or heard about immediately after the event, when reports were most likely to be accurate. It is for you to select what best suits your purpose, for there is a great difference between a letter to a friend and history written for all to read.

6.20 To Tacitus

So the letter which you asked me to write on my uncle's death has made you eager to hear about the terrors and also the hazards I had to face when left at Misenum, for I broke off at the beginning of this part of my story. "Though my mind shrinks from remembering . . . I will begin."

After my uncle's departure I spent the rest of the day with my books, as this was my reason for staying behind. Then I took a bath, dined, and then dozed fitfully for a while. For several days past there had been earth tremors which were not particularly alarming because they are frequent in Campania: but that night the shocks were so violent that everything felt as if it were not only shaken but overturned. My mother hurried into my room and found me already getting up to wake her if she were still asleep. We sat down in the forecourt of the house, between the buildings and the sea close by. I don't know whether I should call this courage or folly on my part (I was only seventeen at the time) but I called for a volume of Livy and went on reading as if I had nothing else to do. I even went

on with the extracts I had been making. Up came a friend of my uncle's who had just come from Spain to join him. When he saw us sitting there and me actually reading, he scolded us both—me for my foolhardiness and my mother for allowing it. Nevertheless, I remained absorbed in my book.

By now it was dawn, but the light was still dim and faint. The buildings round us were already tottering, and the open space we were in was too small for us not to be in real and imminent danger if the house collapsed. This finally decided us to leave the town. We were followed by a panic-stricken mob of people wanting to act on someone else's decision in preference to their own (an element in fear which is like prudence), who hurried us on our way by pressing hard behind in a dense crowd. Once beyond the buildings we stopped, and there we had some extraordinary experiences which thoroughly alarmed us. The carriages we had ordered to be brought out began to run in different directions though the ground was quite level, and would not remain stationary even when wedged with stones. We also saw the sea sucked away and apparently forced back by the earthquake: at any rate it receded from the shore so that quantities of sea creatures were left stranded on dry sand. On the landward side a fearful black cloud was rent by forked and quivering bursts of flame, and parted to reveal great tongues of fire, like flashes of lightning magnified in size.

At this point my uncle's friend from Spain spoke up still more urgently: "If your brother, if your uncle is still alive, he will want you both to be saved; if he is dead, he would want you to survive him—so why put off your escape?" We replied that we would not think of considering our own safety as long as we were uncertain of his. Without waiting any longer, our friend rushed off and hurried out of danger as fast as he could.

Soon afterwards the cloud sank down to earth and covered the sea; it had already blotted out Capri and hidden the promontory of Misenum from sight. Then my mother implored, entreated, and commanded me to escape as best I could—a young man might escape, whereas she was old and slow and could die in peace as long as she had not been the cause of my death too. I told her I refused to save myself without her, and grasping her hand forced her to quicken her pace. She gave in reluctantly, blaming herself for delaying me. Ashes were already falling, not as yet very thickly. I looked round: a dense black cloud was coming up behind us, spreading over the earth like a flood. "Let us leave the road while we can still see," I said, "or we shall be knocked down and trampled underfoot in the dark by the crowd behind." We had scarcely sat down to rest when darkness fell, not the dark of a moonless or cloudy night, but as if the lamp

had been put out in a closed room. You could hear the shrieks of women, the wailing of infants, and the shouting of men; some were calling their parents, others their children or their wives, trying to recognize them by their voices. People bewailed their own fate or that of their relatives, and there were some who prayed for death in their terror of dying. Many besought the aid of the gods, but still more imagined there were no gods left and that the universe was plunged into eternal darkness for evermore. There were people, too, who added to the real perils by inventing fictitious dangers: some reported that part of Misenum had collapsed or another part was on fire, and though their tales were false they found others to believe them. A gleam of light returned, but we took this to be a warning of the approaching flames rather than daylight. However, the flames remained some distance off; then darkness came on once more and ashes began to fall again, this time in heavy showers. We rose from time to time and shook them off, otherwise we should have been buried and crushed beneath their weight. I could boast that not a groan or cry of fear escaped me in these perils, had I not derived some poor consolation in my mortal lot from the belief that the whole world was dying with me and I with it.

At last the darkness thinned and dispersed into smoke or cloud; then there was genuine daylight, and the sun actually shone out, but yellowish as it is during an eclipse. We were terrified to see everything changed, buried deep in ashes like snowdrifts. We returned to Misenum where we attended to our physical needs as best we could, and then spent an anxious night alternating between hope and fear. Fear predominated, for the earthquakes went on, and several hysterical individuals made their own and other people's calamities seem ludicrous in comparison with their frightful predictions. But even then, in spite of the dangers we had been through and were still expecting, my mother and I had still no intention of leaving until we had news of my uncle.

Of course these details are not important enough for history, and you will read them without any idea of recording them; if they seem scarcely worth even putting in a letter, you have only yourself to blame for asking for them.

Suetonius, *Life of the Divine Titus* 33

His reign was marked by various catastrophes, such as the eruption of Vesuvius in Campania (AD79), and a disastrous fire in Rome (AD80) which burned for three days and nights, accompanied by an unprecedented outbreak of plague. He

Eruption of Vesuvius

reacted not merely with an Emperor's concern, but with an overriding paternal affection, extending consolation in published edicts and lending help to the full extent of his means.

He chose a board of commissioners by lot to organise aid relief in Campania, and employed the estates of those without heirs, who lost their lives in the eruption, to the reconstruction of destroyed towns.

His only audible comment on the fire in Rome was that *he* was ruined, and he furnished public buildings and temples with the contents of his villas, and appointed several knights to organise and hasten the repair work.

There was no aid, human or divine which he did not seek to relieve the plague and restrict the spread of epidemic, ensuring the distribution of medicines of every kind, and performing all manner of sacrifice.

Martial 4.44

This is Vesbius [Vesuvius], green yesterday with viny shades; here had the noble grape loaded the dripping vats; these ridges Bacchus loved more than the hills of Nysa [the mythical place where he was raised]; on this mount of late the Satyrs set afoot their dances; this was the haunt of Venus, more pleasant to her than Lacedaemon; this spot was made glorious by the fame of Hercules [Herculaneum]. All lies drowned in fire and melancholy ash; even the High Gods could have wished this had not been permitted them