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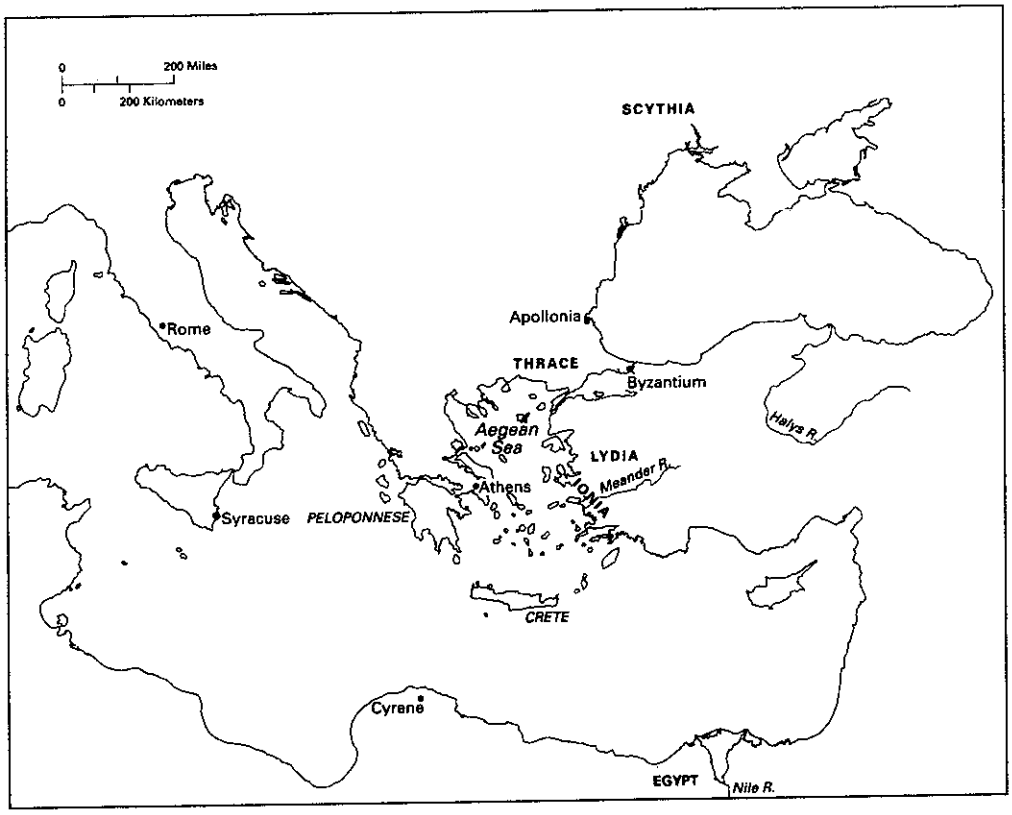

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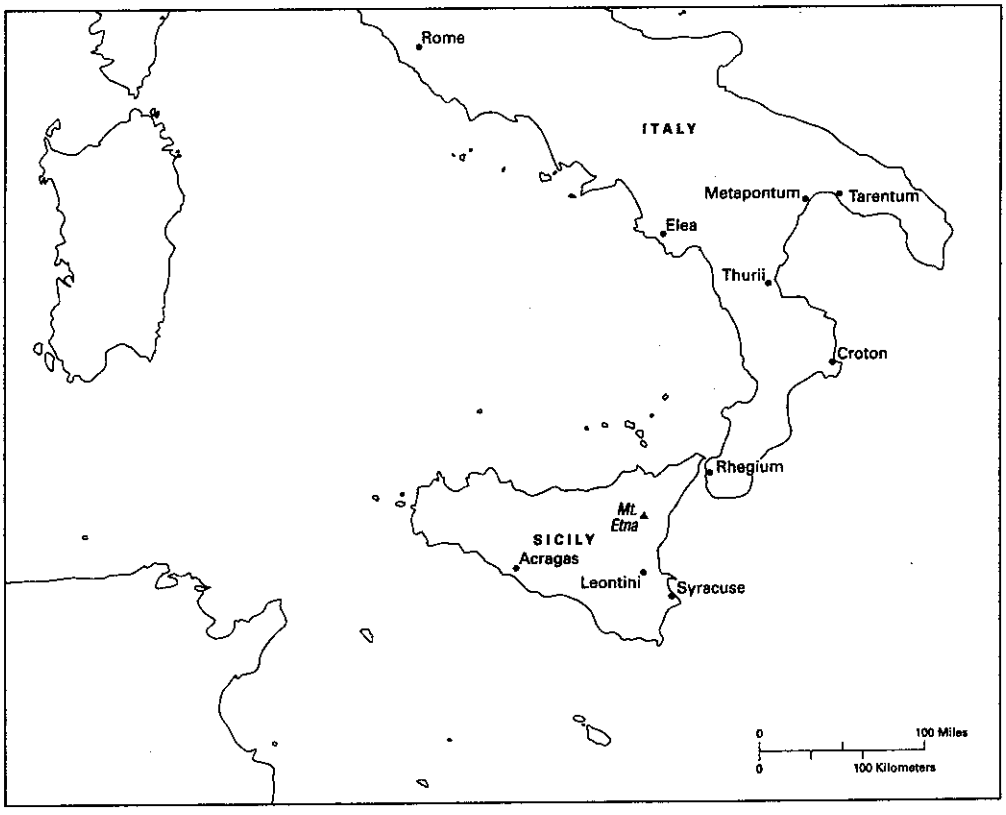

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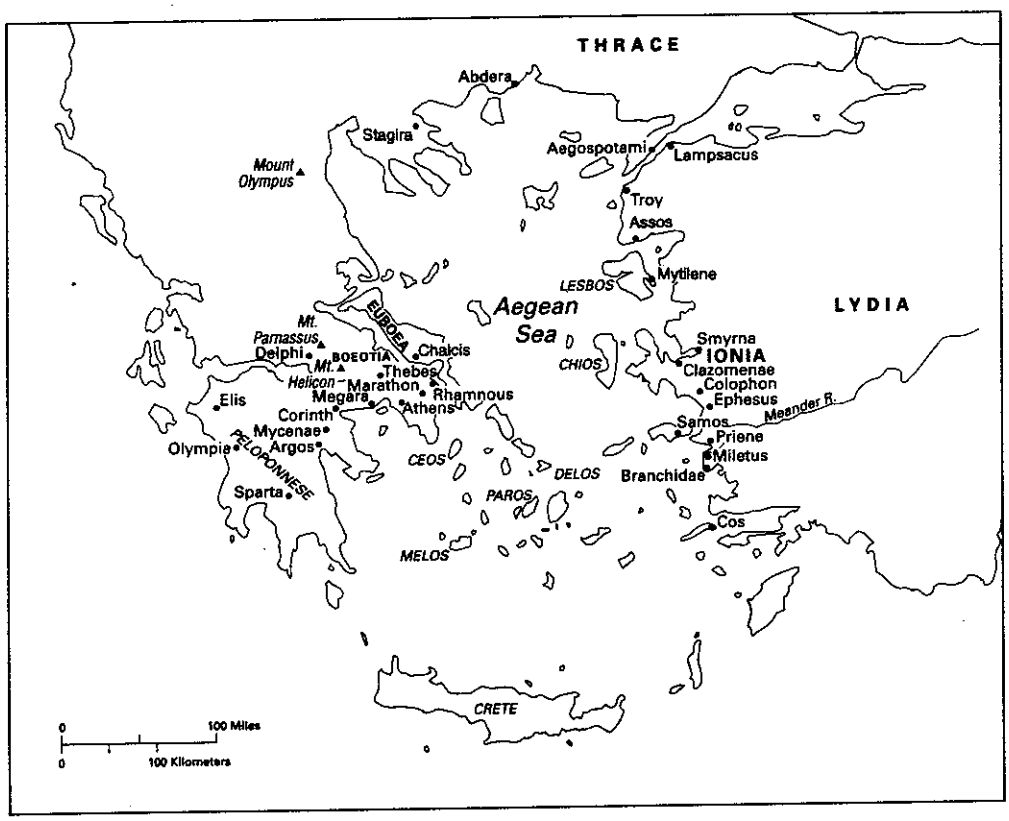

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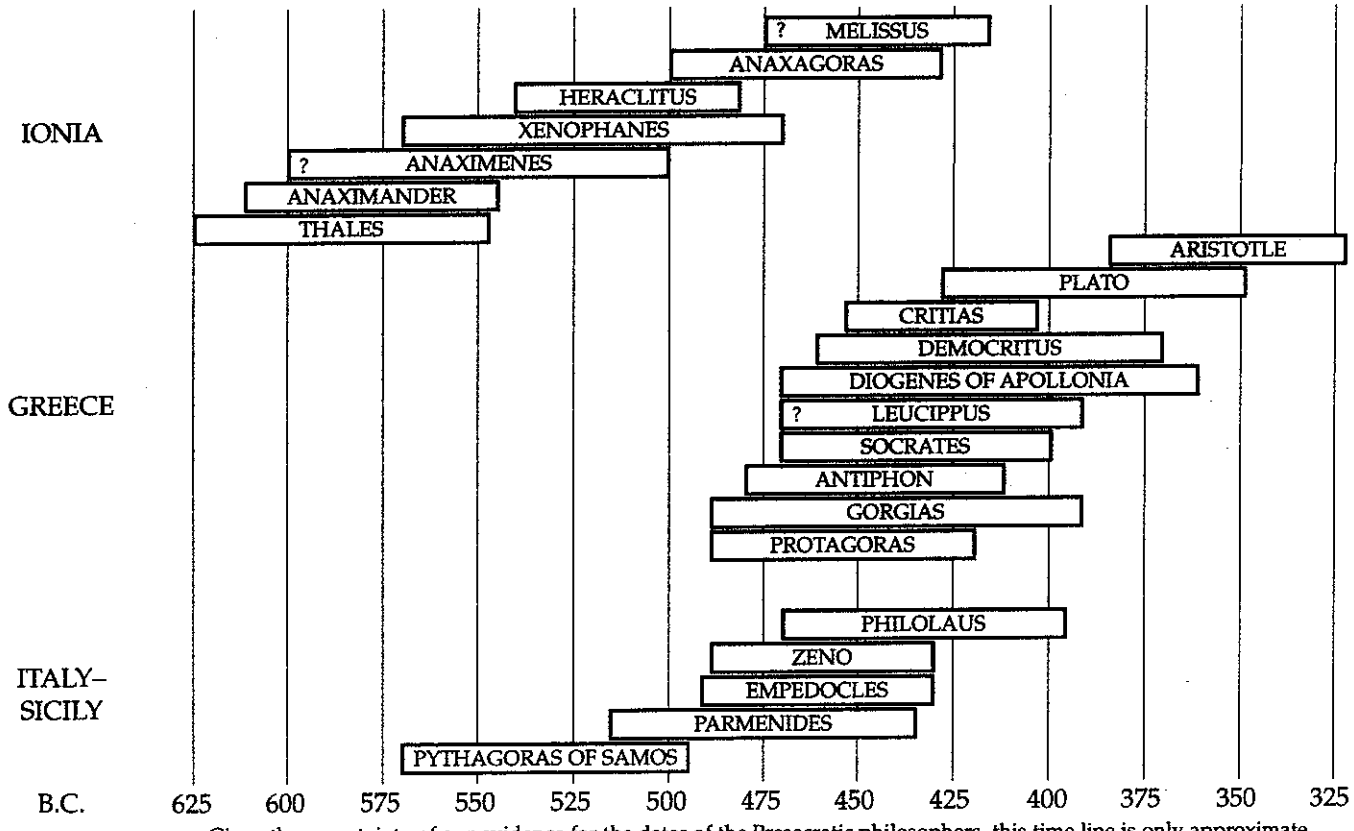

Given the uncertainty of our evidence for the dates of the Presocratic philosophers, this time line is only approximate.

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INTRODUCTION

In 585 B.C. Thales of Miletus reportedly predicted an eclipse of the sun. Although we know none of the details of his prediction, this event has traditionally marked the beginning of philosophy and science in Western thought. Although many people, from Aristotle to modern scholars, have speculated as to why Western philosophy and science began in Miletus, a Greek city on the Ionian coast of Asia Minor, no one really knows the answer. So both the circumstances and the particular event that tradition has chosen for the origin of Western philosophy are shrouded in uncertainty. But uncertain as the details may be, it is clear that Thales stands at the beginning of a great tradition of rational and critical speculation and thought about the world and the place of human beings in it that continues to the present day.

Thales was the first of a succession of thinkers known as the Presocratic philosophers who lived and worked in Greece before and during the lifetime of Socrates (470–399). They do not belong to any unified school of thought, but they share intellectual attitudes and assumptions and a spirit of enthusiastic rational inquiry that makes it reasonable to regard them as a group. It was not simply Thales' prediction of an eclipse that justifies our naming him the first Western philosopher and scientist—after all, both the Egyptians and the Babylonians had complex astronomies. But Thales and his fellow-Milesians Anaximander and Anaximenes manifested an outlook that truly marks the beginning of philosophy. Part of this outlook was a commitment to argument and critical inquiry, together with a view about the nature of justification. Another was the belief that the natural world, indeed the entire universe, could be explained in terms that do not refer to anything beyond nature itself. Thales claimed that everything is really water in some form or other, that water, by undergoing certain natural processes, both becomes and accounts for everything there is. This may strike us as a rather crude and naïve claim.

But Aristotle, one of the earliest historians of philosophy, suggests that Thales had reasons for holding it and arguments to back it up:

> Maybe he got this idea from seeing that the nourishment of all things is moist, and that the hot itself comes to be from this and lives on this (the principle of all things is that from which they come to be)—getting this idea from this consideration and also because the seeds of all things have a moist nature; and water is the principle of the nature of moist things. (Aristotle, *Metaphysics* 983b18–27 = DK11A12)

On Aristotle's view, Thales' theory is based on evidence acquired by inquiry and on reasoning about that evidence. We may contrast Thales' account of the character of the natural world with the story of the origin of the cosmos offered by Hesiod (probably in the century before Thales):

> Tell me these things, Olympian Muses,
> From the beginning, and tell which of them came first.
> In the beginning there was only Chaos, the Abyss,
> But then Gaia, the Earth, came into being,
> Her broad bosom the ever-firm foundation of all,
> And Tartaros, dim in the underground depths,
> And Eros, loveliest of all the Immortals, who
> Makes their bodies (and men's bodies) go limp,
> Mastering their minds and subduing their wills.
> From the Abyss were born Erebos and dark Night.
> And Night, pregnant after sweet intercourse
> With Erebos, gave birth to Aether and Day.
> Earth's first child was Ouranos, starry Heaven,
> Just her size, a perfect fit on all sides.
> And a firm foundation for the blessed gods.
> And she bore the Mountains in long ranges, haunted
> By the Nymphs who live in the deep mountain dells.
> Then she gave birth to the barren, raging Sea
> Without any sexual love. But later she slept with
> Ouranos and bore Ocean with its deep currents,
> And also Koios, Krios, Hyperion, Iapetos,
> Theia, Rheia, Themis, Mnemosyne,
> Gold-crowned Phoibe and lovely Tethys.

> After them she bore a most terrible child,
> Kronos, her youngest, an arch-deceiver,
> And this boy hated his lecherous father.
> (Hesiod, *Theogony*, 114–39; tr. Lombardo)

Hesiod invokes the Muses as both the authority for his claims and the source of his information. He does not assume that the story he is about to tell could be deduced from natural evidence, or that he could have arrived at the account of the origins of the universe without supernatural aid, or that he must offer arguments and evidence for his claims. It is enough for him that he has divine warrant for his story. When we turn to the details of the cosmogony (or account of the origins of the universe) we find that it is in fact a theogony (an account of the origins of the gods). Each part of the cosmos is identified with a god who has a distinct personality. The change from Chaos to the presence of Gaia (Earth), Tartaros (the underworld beyond Chaos), Eros (Desire), Erebos (probably the darkness under the earth), and Night is unexplained: Earth and the other gods simply came into being. There is no attempt to explain how or justify that these gods began to exist at just that particular time rather than some other. Once Eros is present, the model of generation is for the most part sexual, though lines 131–32 assert (with no further explanation) that Earth gave birth to the Sea "without any sexual love." These gods, who in some sense are the various parts of the universe, are like humans in their desires and purposes. As in the Egyptian, Sumerian, and Hebrew creation myths, Hesiod makes no clear distinction between a personality and a part of the universe: The natural and the supernatural coincide. And as he feels no compunction about merely asserting his claims without arguments to support them, Hesiod clearly thinks that the proper response to his story is unquestioning acceptance rather than critical scrutiny and rational agreement or disagreement.

The Presocratic philosophers rejected both Hesiod's sort of explanation and his attitude to uncritical belief. But we should be careful not to overstate the case here: In the fragments of Presocratic philosophy we shall find gaps in rational explanation, appeals to the Muses or to divine warrant, and breaks in the connection between theory and evidence. But despite all this, the Presocratic philosophers took a bold leap in adopting this critical

attitude. In the case of the three Milesians, for instance, we find each proposing a different thing as the one fundamental reality of the cosmos. Anaximander, who followed Thales, rejected his idea that water is the basic stuff. Perhaps he thought that water was too specific a thing to change into everything else; at any rate, in its place he hypothesized a single material reality that had no specific characteristics, something he called the indefinite (or the boundless). Anaximander's pupil and follower, Anaximenes, in turn rejected his view, apparently arguing that the boundless was too indefinite to do the job Anaximander thought it could. Anaximenes suggested that air is the one basic stuff of the universe. Moreover, he saw that there was a gap in the views of Thales and Anaximander, because they had provided no mechanism for the changes their single stuffs underwent in the process of becoming everything else. Anaximenes remedies this omission by proposing that air becomes everything else by the processes of condensation and rarefaction. From just this brief look at their views, it is clear that, despite their disagreements, the Milesians worked within a shared framework of argument and justification.

In adopting this critical attitude, the Presocratics faced the question of just what a human being could, as a matter of fact, know. The Milesians might give arguments for their claims that everything is really a form of water, or air, but how could they actually justify claims about an original state of the universe that none of them had experienced? Hesiod would have had an answer to this question. As we have seen, he calls on the divine Muses to establish the truth of his claims about the births of the gods. Similarly, in the *Iliad*, we find Homer calling on the Muses to tell him the catalogue of the ships and men who went to Troy. The Muses are divine and immortal: They were there and thus are appropriate both as witnesses to the truth and as assurance that the story Homer tells is true. In Homer and Hesiod we find the same mechanism, the divine warrant of the Muses, invoked to justify different sorts of claims, the one religious and cosmogonical, the other historical.

> Tell me now, Muses,
> Who live on Olympus – for you are
> Goddesses, and are present,
> And know all things, while we

> Hear only reports and know nothing–
> Who were the Greek captains and lords?
> The rank and file I could never name,
> Not even if I had ten tongues, ten mouths,
> A voice that never broke and a bronze heart,
> Unless the Olympian Muses, daughters
> Of Zeus Aegis-holder, called to my mind
> All those who came under Ilion's walls.
> (*Iliad* 2. 484–92; tr. Lombardo)

But in rejecting divine authority as the warrant for their claims, the Presocratics close off an avenue of justification for their theories. A tantalizing mention of this problem appears in the work of Alcmaeon, who echoes Homer, but is far less optimistic about human knowledge: "Concerning things unseen the gods have clarity, but as far as human beings may judge . . ." (DK24B1; tr. Curd). We do not have the end of the fragment but it is likely that Alcmaeon draws a distinction between the all-encompassing divine understanding and the limited knowledge available to humans. Throughout their work, we find the Presocratics wondering what separates sure and certain knowledge from mere belief, and worrying about the very possibility of such knowledge. Moreover, as more and more competing theories about the cosmos appear, the question of what sort of theory can be justified comes to the fore. Sometimes, as we have seen in the debate among the three Milesians, justification is a question of which theory seems best to fit the evidence. But there is another aspect to justification as well, and that is a meta-theoretical question about what constitutes a genuine theory in the first place, no matter what its content. This issue is raised most strikingly by Parmenides of Elea, and Parmenides' powerful arguments about what can be genuinely thought and said haunt the Presocratic philosophers who come after him. Indeed, echoes of these arguments are heard even in the thought of Plato and Aristotle.

Although we call these Presocratics "philosophers," they were, in fact, active in a tremendous number of fields. They would not have thought of astronomy, physics, practical engineering, and what we would call philosophy as separate disciplines, and they would not have thought that engaging in any of these would have precluded their being active in politics. In a society that was

more oral than literary, in which books were just beginning to be written and distributed, the Presocratics thought and wrote about an enormous number of things. In the ancient testimonies about the Presocratics, we find reports of books (or parts of books) on physics, ethics, astronomy, epistemology, religion, mathematics, farming, metaphysics, meteorology, geometry, politics, the mechanisms of sense perception, history, and even painting and travel. They wrote in poetry and they wrote in prose. They were as interested in the question of how we ought to live as they were in the problem of the basic material out of which the physical world is made. Struggling to make philosophical notions clear in a language that did not yet have technical philosophical terms, they used elegant images and awkward analogies, straightforward arguments and intricate paradoxes. Much of their work has not survived, and we know of it only through the reports and mentions of later philosophers and historians. Most of what has come to us has been fragments of their work in natural philosophy, metaphysics, epistemology, and ethics, and the bulk of the material included here is on those topics.

In the latter part of the fifth century, however, there appeared a number of thinkers primarily interested in moral and political questions. These were the Sophists. They were independent, often itinerant, teachers of wisdom and political skills. They raised questions about the nature of moral virtue and the best way for a city to be governed, and they took on paying pupils to whom they taught their rhetorical skills and their social and political thought. With the Sophists we come to the end of the Presocratic period. Most of them were contemporaries of Socrates and Plato, and indeed, Aristophanes, the great comic poet, presents Socrates himself as a Sophist in his play *The Clouds*. It is worth noting that in that play Socrates is represented as having the traditional Presocratic meteorological and cosmological interests (although in Plato's dialogues, Socrates denies that these are his concerns), suggesting that our modern distinction between Presocratic philosophers and Sophists may be too extreme.

In studying the Presocratic philosophers, we find ourselves at the beginning of a great adventure. The metaphysical, epistemological, and ethical problems and puzzles that engaged them became part of the philosophical project that Plato and Aristotle inherited and then passed on to other, later, philosophers, including ourselves. We may find some of their views strange, even bizarre, and we may find that some of their arguments are difficult to comprehend. But the Presocratics saw and understood the importance and usefulness of rational inquiry and the critical evaluation of arguments and evidence. As we join them in this adventure, we become a part of the intellectual tradition that began with Thales' prediction.

Sources

Not a single Presocratic book has survived intact; what we know of the Presocratics is gathered from quotations or summaries in other philosophical works, so our knowledge is fragmentary. Our evidence for Presocratic thought is of two sorts, direct quotations and summaries or references, called testimonia. The Presocratics were quoted and discussed in many ancient books. Below is a list of our most important sources for Presocratic fragments and testimonia.

Both Plato and Aristotle referred to and occasionally quoted Presocratic thinkers, but care must be used in dealing with fragments from these sources. Both often referred to their predecessors for polemical purposes, and both often presented (not always accurate) summaries of positions rather than quotations.

Among our most valuable sources are the commentaries on Aristotle by the Neoplatonist philosopher Simplicius (sixth century A.D.). In his commentaries Simplicius gives long quotations from a number of important Presocratic thinkers, especially Parmenides, Anaxagoras, and Empedocles. Occasionally, and especially in the case of Parmenides, Simplicius tells us that he is quoting more of a certain text than is necessary to make his point because the work in question has become rare and ought to be preserved. Another commentator on Aristotle, Alexander of Aphrodisias (around 200 A.D.), is another such source.

Theophrastus, Eudemus, and Meno, students and followers of Aristotle, wrote histories of philosophy. (These were part of a project organized by Aristotle.) Theophrastus wrote on the "physical opinions" (physics) of the earlier philosophers, while Eudemus

concentrated on astronomy, mathematics, and theology, and Meno on medicine. Unfortunately, these works too are lost and survive only in fragments quoted by later thinkers. But where they are available, they provide important insights into Presocratic thought.

The Roman orator and philosopher Cicero (mid-first century B.C.) included quotations from and references to earlier Presocratic thinkers in his accounts of earlier philosophy.

Clement of Alexandria (second half of the second century A.D.) wrote a work called *Miscellanies,* comparing Greek and Christian thought, in the course of which he often quotes Presocratic writings.

Sextus Empiricus, the skeptical philosopher of the second century A.D., quotes a number of Presocratic texts on sense experience and knowledge.

Plutarch, in the second century A.D., quotes from many of the Presocratics in his moral essays. The evidence from Plutarch is complicated by the fact that there are several works also attributed to Plutarch, but not written by him, that also quote the Presocratics (these are designated as by "pseudo-Plutarch"). John Stobaeus (fifth century A.D.) wrote a book called *Eclogae Physicae (Selections on Natural Philosophy)* in which he, too, quoted many Presocratics. H. Diels argued for an earlier (second century A.D.?), lost common source for the work of pseudo-Plutarch and Stobaeus, which he called the *Placita (Opinions)* by Aetius.

In the late second or early third century A.D. Hippolytus, Bishop of Rome, wrote a book called *Refutation of All Heresies.* There he argues that Christian heresies can be linked to Greek philosophical thought. In the course of this ambitious project, he both gives summaries of Presocratic thought and quotes from a number of Presocratics.

Diogenes Laertius (third century A.D.) wrote a wide-ranging but unreliable *Lives of the Philosophers.* Though it contains lively accounts of the lives and work of the Greek philosophers, it must be used with care because it contains much hearsay and invention.

THE MILESIANS

Three philosophers from the city of Miletus in Ionia, Thales, Anaximander, and Anaximenes, make up the Milesian "school." Thales is reported to have been the teacher of Anaximander, who was, in turn, the teacher of Anaximenes. The three agree that the cosmos began as a single stuff that changed to become the universe as we see it today. (This view is called material monism.) They also concur that this underlying stuff constitutes the real and basic nature of all that makes up the cosmos, and that the original material has within it its own source of motion and change.

Thales

Thales is often included among the Seven Sages of Greece, a traditional list of wise men. Apollodorus suggests that he was born about 625. (We should accept this date with caution, as Apollodorus usually calculated birthdates assuming that a man was forty years old at the time of his greatest achievement. Thus, Thales' suggested birthdate is arrived at by assuming that he was forty in 585, the year he reportedly predicted the eclipse.) Plato and Aristotle tell stories about Thales that testify that even in ancient times philosophers had a mixed reputation for practicality:

> Once while Thales was gazing upwards while doing astronomy, he fell into a well. A clever and delightful Thracian serving-girl is said to have made fun of him, since he was eager to know the things in the heavens but failed to notice what was in front of him and right next to his feet.
>
> (Plato, *Theaetetus* 174a4–8 = 11A9)

> The story goes that when they found fault with him for his poverty, supposing that philosophy is useless, he learned from his astronomy that there would be a large crop of olives. Then, while it was still winter, he obtained a little money and made deposits on all the olive presses both in Miletus and in Chios.

Since no one bid against him, he rented them cheaply. When the right time came, suddenly many tried to get the presses all at once, and he rented them out on whatever terms he wished, and so made a great deal of money. In this way he proved that philosophers can easily be wealthy if they desire, but this is not what they are interested in.

(Aristotle, *Politics* 1259a9–18 = 11A10)

Thales argued that the basic stuff of the universe was one thing, water, by which he meant either that everything is really water in one form or another or that everything comes from water. Aristotle, who is the source of these reports, seems unsure about which of these propositions Thales adopted; this tells us that even by Aristotle's time Thales was known only by report rather than by any direct evidence. According to the tradition with which Aristotle was familiar, Thales also said that the earth rests or floats on water (though this may be the result of a confusion about his claim that everything is water).

1. Of those who first pursued philosophy, the majority believed that the only principles of all things are principles in the form of matter. For that of which all existing things are composed and that out of which they originally come into being and that into which they finally perish, the substance persisting but changing in its attributes, this they state is the element and principle of things that are. . . . For there must be one or more than one nature out of which the rest come to be, while it is preserved. (Aristotle, *Metaphysics* 1.3 983b6–18 = 11A2)

2. However, not all agree about the number and form of such a principle, but Thales, the founder of this kind of philosophy, declares it to be water. (This is why he indicated that the earth rests on water.) Maybe he got this idea from seeing that the nourishment of all things is moist, and that the hot itself comes to be from this and lives on this (the principle of all things is that from which they come to be)—getting this idea from this consideration and also because the seeds of all things have a moist nature; and water is the principle of the nature of moist things. (Aristotle, *Metaphysics* 1.3 983b18–27 = 11A12)

3. Some say it [the earth] rests on water. This is the oldest account we have inherited, and they report that Thales of Miletus gave it. It rests because it floats like wood or some other such thing (for none of them is by nature such as to rest on air, but on water). As though the same argument did not apply to the water supporting the earth as to the earth itself.

(Aristotle, *On the Heavens* 2.13 294a28–34 = 11a14; tr. Curd)

4. Some declare that it [the soul] is mixed in the whole [universe], and perhaps this is why Thales thought all things are full of gods. (Aristotle, *On the Soul* 1.5 411a7–8 = 11A22)

5. From what has been related about him, it seems that Thales, too, supposed that the soul was something that produces motion, if indeed he said that the magnet has soul, because it moves iron.

(Aristotle, *On the Soul* 405a19–21 = 11A22; tr. Curd)

Anaximander

Diogenes Laertius says that Anaximander was sixty-four years old in 547/546. This dating agrees with the ancient reports that Anaximander was a student or follower of Thales. He was said to have been the first person to construct a map of the world. Anaximander agrees with Thales that there is one material stuff out of which everything in the cosmos comes, but he disagrees about the nature of this stuff. He seems to have argued that if the originating material is something as definite as water (which, after all, has a particular character of its own), then it cannot really become everything else. He claims that the single original material of the cosmos is something indefinite or boundless (apeiron *in Greek). This indefinite stuff is in motion, and, as a result of the motion, something that gives rise to the opposites hot and cold is separated off from it (Anaximander does not say what this something is). The hot takes the form of fire, which is the origin of the sun and the other heavenly bodies. The cold is dark mist, which is transformed into air and earth. Both of these are originally moist, but dry as the result of the heat of fire. Thus, in the first development from the moving, indefinite stuff, Anaximander's theory postulates substantial opposites which act on*

each other and which are the matter for the sensible world. The reciprocal action of the opposites is the subject of fragment B1, the only direct quotation that we have from Anaximander. In the fragment he stresses that changes in the world are not capricious, and with the mention of injustice and retribution he affirms that there are lawlike forces that guarantee the orderly processes of change between opposites.

6. Of those who declared that the first principle is one, moving and indefinite, Anaximander . . . said that the indefinite was the first principle and element of things that are, and he was the first to introduce this name for the first principle [i.e., he was the first to call the first principle indefinite]. He says that the first principle is neither water nor any other of the things called elements, but some other nature which is indefinite, out of which come to be all the heavens and the worlds in them. The things that are perish into the things out of which they come to be, according to necessity, for they pay penalty and retribution to each other for their injustice in accordance with the ordering of time, as he says in rather poetical language.
(Simplicius, *Commentary on Aristotle's Physics* 24.13–21 = 12B1 + A9)

7. This does not have a first principle, but this seems to be the first principle of the rest, and to contain all things and steer all things, as all declare who do not fashion other causes aside from the infinite . . . and this is divine. For it is deathless and indestructible, as Anaximander says and most of the natural philosophers. (Aristotle, *Physics* 3.4 203b10–15 = 12A15)

8. He declares that what arose from the eternal and is productive of [or, capable of giving birth to] hot and cold was separated off at the coming to be of this cosmos, and a kind of sphere of flame from this grew around the dark mist about the earth like bark about a tree. When it was broken off and enclosed in certain circles, the sun, moon and stars came to be.
(pseudo-Plutarch, *Miscellanies* 179.2 = 12A10)

9. The earth's shape is curved, round, like a stone column. We walk on one of the surfaces and the other one is set opposite.

The stars come to be as a circle of fire separated off from the fire in the cosmos and enclosed by dark mist. There are vents, certain tube-like passages at which the stars appear. For this reason, eclipses occur when the vents are blocked. The moon appears sometimes waxing sometimes waning as the passages are blocked or opened. The circle of the sun is twenty-seven times <that of the earth> and that of the moon <18 times>, and the sun is highest, and the circles of the fixed stars are lowest. (Hippolytus, *Refutation* 1.6.3–5 = 12A11)

10. Some, like Anaximander . . . declare that the earth is at rest on account of its similarity. For it is no more fitting for what is established at the center and equally related to the extremes to move up rather than down or sideways. And it is impossible for it to make a move simultaneously in opposite directions. Therefore, it is at rest of necessity.
(Aristotle, *On the Heavens* 2.13 295b11–16 = 12A26)

11. Anaximander says that the sun is equal to the earth, and the circle where it has its vent and on which it is carried is twenty-seven times the size of the earth. (Aetius 2.21.1 = 12A21)

12. Anaximander says that the stars are borne by the circles and spheres on which each one goes. (Aetius 2.16.5 = 12A18)

13. Anaximander says that the first animals were produced in moisture, enclosed in thorny barks. When their age increased they came out onto the drier part, their bark broke off, and they lived a different mode of life for a short time.
(Aetius 5.19.4 = 12A30)

14. He also declares that in the beginning humans were born from other kinds of animals, since other animals quickly manage on their own, and humans alone require lengthy nursing. For this reason, in the beginning they would not have been preserved if they had been like this.
(pseudo-Plutarch, *Miscellanies* 179.2 = 12A10)

15. Anaximander . . . believed that there arose from heated water and earth either fish or animals very like fish. In these

humans grew and were kept inside as embryos up to puberty. Then finally they burst and men and women came forth already able to nourish themselves.

(Censorinus, *On the Day of Birth* 4.7 = 12A30)

Anaximenes

Anaximenes was said by ancient sources to be a younger associate or student of Anaximander. Anaximenes agrees with Thales and Anaximander in adopting material monism, but proposes a different underlying reality, which he calls aer *(usually translated "air" although* aer *is more like a dense mist than what we think of as air).* Aer *is indefinite enough to produce the other things in the cosmos but it is not as vague as Anaximander's boundless. Anaximander had left it quite unclear just what it is that comes from the indefinite that is productive of hot and cold, and Anaximenes may well have argued that the indefinite was too nebulous a stuff to do the cosmic job Anaximander intended for it. Anaximenes says that everything is really just* aer *in some form or other, but he improves on the theories of Thales and Anaximander by explicitly including in his account the processes, condensation and rarefaction, by which* aer *is transformed into everything else.*

16. Anaximenes . . . like Anaximander, declares that the underlying nature is one and boundless, but not indeterminate as Anaximander held, but definite, saying that it is air. It differs in rarity and density according to the substances <it becomes>. Becoming finer it comes to be fire; being condensed it comes to be wind, then cloud, and when still further condensed it becomes water, then earth, then stones, and the rest come to be out of these. He too makes motion eternal and says that change also comes to be through it.

(Theophrastus, quoted by Simplicius, *Commentary on Aristotle's Physics* 24.26–25.1 = 13A5)

17. Just as our soul, being air, holds us together and controls us, so do breath and air surround the whole cosmos.

(Aetius, 1.3.4 = 13B2)

18. Anaximenes . . . said that the principle is unlimited [boundless] air, out of which come to be things that are coming to be, things that have come to be, and things that will be, and gods and divine things. The rest come to be out of the products of this. The form of air is the following: when it is most even, it is invisible, but it is revealed by the cold and the hot and the wet, and movement. It is always moving, for all the things that undergo change would not change unless it was moving. For when it becomes condensed and finer, it appears different. For when it is dissolved into what is finer, it comes to be fire, and on the other hand air comes to be winds when it becomes condensed. Cloud results from air through felting, and water when this happens to a greater degree. When condensed still more it becomes earth and when it reaches the absolutely densest stage it becomes stones.

(Hippolytus, *Refutation* 1.7.1–3 = 13A7)

19. Anaximenes determined that air is a god and that it comes to be and is without measure, infinite and always in motion.

(Cicero, *On the Nature of the Gods* 1.10.26 = 13A10)

20. Anaximenes stated that clouds occur when the air is further thickened. When it is condensed still more, rain is squeezed out. Hail occurs when the falling water freezes, and snow when some wind is caught up in the moisture.

(Aetius 3.4.1 = 13A17)

21. Or as Anaximenes of old believed, let us leave neither the cold nor the hot in the category of substance, but <hold them to be> common attributes of matter which come as the results of its changes. For he declares that matter which is contracted and condensed is cold, whereas what is fine and "loose" (calling it this way with this very word) is hot. As a result he claimed that it is not said unreasonably that a person releases both hot and cold from his mouth. For the breath becomes cold when compressed and condensed by the lips, and when the mouth is relaxed, the escaping breath becomes warm through the rareness.

(Plutarch, *The Principle of Cold* 7 947F = 13B1)

22. When the air is felted the earth is the first thing to come into being, and it is very flat. This is why it rides on the air, as is reasonable. (pseudo-Plutarch, *Miscellanies* 3 = 13A6)

23. Anaximenes, Anaxagoras and Democritus say that its flatness is the cause of its staying at rest. For it does not cut the air below, but covers it like a lid, as bodies with flatness apparently do, since these are difficult for winds to move because of their resistance. They say that the earth does this same thing with respect to the air beneath. And the air, lacking sufficient room to move aside, stays at rest in a mass because of the air beneath. (Aristotle, *On the Heavens* 2.13 294b13–20 = 13A20)

24. Likewise the sun and moon and all other heavenly bodies, which are fiery, are carried upon the air on account of their flatness. (Hippolytus, *Refutation* 1.7.4 = 13A7)

PYTHAGORAS AND PYTHAGOREANISM

Pythagoras was born on the island of Samos in the eastern Aegean sometime around 570; according to tradition, his father was a gem-cutter or engraver. He reportedly traveled in Egypt and Babylonia, leaving Samos around 530 to escape the rule of the tyrant Polycrates. Eventually Pythagoras settled in Croton (in Southern Italy) and founded a community that was philosophical, religious, and political. After about twenty years there was an uprising in Croton and elsewhere against the Pythagorean influence; the Pythagoreans were temporarily driven out and many were killed. Pythagoras himself was said to have taken sanctuary in a temple in Metapontum where he starved to death. Despite these and other setbacks, there continued to be Pythagoreans in Southern Italy (one of them, Archytas of Tarentum, was a friend of Plato). Little is known of the views of Pythagoras himself, except that he had a reputation for great learning (a reputation that would later be mocked by Heraclitus), and that he was probably the originator of the important Pythagorean doctrine of the transmigration of souls (a view ridiculed by Xenophanes). Sometime during Pythagoras' life or soon after his death, his disciples split into two groups, the mathematikoi *and the* akousmatikoi. *The* akousmatikoi *were followers who venerated Pythagoras' teachings on religion and the proper way to live (the word* akousmatikoi *comes from* akousmata, *"things heard"), but had little interest in the philosophical aspects of Pythagoreanism. The* mathematikoi *had a great reputation in the ancient world for philosophical, mathematical, musical, and astronomical knowledge (the word* mathematikoi *comes from* mathema, *"study" or "learning"). These different sorts of knowledge were connected in Pythagorean thought, for the Pythagoreans believed that number was the key to understanding the cosmos. Their original insight was that the numerical ratios of the musical scale indicate that the apparent chaos of sound can be brought into rational, knowable order by the imposition of number. They reasoned that the entire universe is a harmonious arrangement (in Greek,* kosmos*) ordered by, and thus knowable through, number. The*

Pythagoreans rejected Ionian methods, and turned from inquiry into the stuff of the universe to a study of its form. This view of the rational arrangement of the universe can be found in the work of Philolaus, the earliest Pythagorean who left a book. He was born in Croton, probably about 470, and so never knew Pythagoras himself, who died around 494. Philolaus claimed that the cosmos was made up of what he termed limiters and unlimiteds, fitted together in what he called a harmonia *(literally a carpenter's joint; also a musical fitting together or harmony). This* harmonia *is expressible in numerical ratios and is thus, according to Philolaus, knowable. In Philolaus we see the Pythagorean assumptions about number at work, although it is possible that Aristotle's famous report that the Pythagoreans said that everything is number is Aristotle's own interpretation rather than a claim that any of the early Pythagoreans actually made (it is not, for instance, clearly present in the extant fragments of Philolaus).*

1. Once [Pythagoras] passed by as a puppy was being beaten, the story goes, and in pity said these words:
   "Stop, don't beat him, since it is the soul of a man, a friend of mine,
   which I recognized when I heard it crying."
   (Diogenes Laertius, *Lives of the Philosophers* 8.36 = Xenophanes 21B7)

2. Much learning ["polymathy"] does not teach insight. Otherwise it would have taught Hesiod and Pythagoras and moreover Xenophanes and Hecataeus.
   (Diogenes Laertius, *Lives of the Philosophers* 9.1 = Heraclitus 22B40)

3. Pythagoras the son of Mnesarchus practiced inquiry more than all other men, and making a selection of these writings constructed his own wisdom, polymathy, evil trickery.
   (Diogenes Laertius, *Lives of the Philosophers* 8.6 = Heraclitus 22B129)

4. Thus [Pherecydes] excelled in both manhood and reverence and even in death has a delightful life for his soul,

if indeed Pythagoras was truly wise about all things,
he who truly knew and had learned thoroughly the opinions of men.
(Diogenes Laertius, *Lives of the Philosophers* 1.120 = Ion 36B4)

5. There was a certain man among them who knew very holy matters
   who possessed the greatest wealth of mind,
   mastering all sorts of wise deeds.
   For when he reached out with all his mind
   easily he would survey every one of the things that are,
   yea, within ten and even twenty generations of humans.
   (Porphyry, *Life of Pythagoras* 30 = Empedocles 31B129)

6. First he declares that the soul is immortal; then that it changes into other kinds of animals; in addition that things that happen recur at certain intervals, and nothing is absolutely new; and that all things that come to be alive must be thought akin. Pythagoras seems to have been the first to introduce these opinions into Greece.
   (Porphyry, *Life of Pythagoras* 19 = 14,8a)

7. Heraclides of Pontus says that Pythagoras said the following about himself. Once he had been born Aethalides and was believed to be the son of Hermes. When Hermes told him to choose whatever he wanted except immortality, he asked to retain both alive and dead the memory of what happened to him. . . . Afterwards he entered into Euphorbus and was wounded by Menelaus. Euphorbus said that once he had been born as Aethalides and received the gift from Hermes, and told of the migration of his soul and what plants and animals it had belonged to and all it had experienced in Hades. When Euphorbus died his soul entered Hermotimus, who, wishing to provide evidence, went to Branchidae, entered the sanctuary of Apollo, and showed the shield Menelaus had dedicated. (He said that when Menelaus was sailing away from Troy he dedicated the shield to Apollo.) The shield had already rotted away and only the ivory facing was preserved. When Hermotimus died, it [the soul] became Pyrrhus the Delian fisherman, and

again remembered everything. . . . When Pyrrhus died it became Pythagoras and remembered all that has been said.
(Diogenes Laertius, *Lives of the Philosophers* 8.4–5 = 14,8)

8. There are two kinds of the Italian philosophy called Pythagorean since two types of people practiced it, the *akousmatikoi* and the *mathematikoi*. Of these, the *akousmatikoi* were admitted to be Pythagoreans by the others, but they did not recognize the *mathematikoi*, but claimed that their pursuits were not those of Pythagoras, but of Hippasus. . . . The philosophy of the *akousmatikoi* consists of unproved and unargued *akousmata* to the effect that one must act in appropriate ways, and they also try to preserve all the other sayings of Pythagoras as divine dogma. These people claim to say nothing of their own invention, and say that to make innovations would be wrong. But they suppose that the wisest of their number are those who have got the most *akousmata*.
(Iamblichus, *Life of Pythagoras* 81,82 = 18,2 = 58C4)

9. All the *akousmata* referred to in this way fall under three headings. (a) Some indicate what something is, (b) others indicate what is something in the greatest degree, and (c) others what must or must not be done. (a) The following indicate what something is. What are the Isles of the Blest? Sun and Moon. What is the oracle at Delphi? The tetractys, which is the harmony in which the Sirens sing. (b) Others indicate what is something in the greatest degree. What is most just? To sacrifice. What is the wisest? Number, and second wisest is the person who assigned names to things. What is the wisest thing in our power? Medicine. What is most beautiful? Harmony.
(Iamblichus, *Life of Pythagoras* 82 = 58C4)

10. <Pythagoras ordered his followers> not to pick up <food> which had fallen, to accustom them not to eat self-indulgently or because it fell on the occasion of someone's death . . . not to touch a white rooster, because it is sacred to the Month and is a suppliant. It is a good thing, and is sacred to the Month because it indicates the hours, and white is of the nature of good, while black is of the nature of evil . . . not to break bread, because friends long ago used to meet over a single loaf just as foreigners still do, and not to divide what brings them together. Others <explain this practice> with reference to the judgment in Hades, others say that it brings cowardice in war, and still others that the whole universe begins from this.
(Aristotle, fr. 195 [Rose], quoted in Diogenes Laertius, *Lives of the Philosophers* 8.34–35 = 58C3)

11. At the same time as these [Leucippus and Democritus] and before them, those called Pythagoreans took hold of mathematics and were the first to advance that study, and being brought up in it, they believed that its principles are the principles of all things that are. Since numbers are naturally first among these, and in numbers they thought they observed many likenesses to things that are and that come to be . . . and since they saw the attributes and ratios of musical scales in numbers, and other things seemed to be made in the likeness of numbers in their entire nature, and numbers seemed to be primary in all nature, they supposed the elements of numbers to be the elements of all things that are.
(Aristotle, *Metaphysics* 1.5 985b23–986a2 = 58B4)

12. The elements of number are the even and the odd, and of these the latter is limited and the former unlimited. The One is composed of both of these (for it is both even and odd) and number springs from the One; and numbers, as I have said, constitute the whole universe.
(Aristotle, *Metaphysics* 1.5 986a17–21 = 58B5)

13. The Pythagoreans similarly posited two principles, but added something peculiar to themselves, not that the limited and the unlimited are distinct natures like fire or earth or something similar, but that the unlimited itself and the One itself are the substance of what they are predicated of. This is why they call number the substance of all things.
(Aristotle, *Metaphysics* 1.5 987a13–19 = 58B8)

14. They say that the unlimited is the even. For when this is surrounded and limited by the odd it provides things with the

quality of unlimitedness. Evidence of this is what happens with numbers. For when gnomons are placed around the one, and apart, in the one case the shape is always different, and in the other it is always one.

(Aristotle, *Physics* 3.4 203a10–15 = 58B28)

15. The tetractys is a certain number, which being composed of the four first numbers produces the most perfect number, ten. For one and two and three and four come to be ten. This number is the first tetractys, and is called the source of ever flowing nature since according to them the entire cosmos is organized according to *harmonia*, and *harmonia* is a system of three concords—the fourth, the fifth, and the octave—and the proportions of these three concords are found in the aforementioned four numbers.

(Sextus Empiricus, *Against the Mathematicians* 7.94–95, not in DK)

16. They supposed the elements of numbers to be the elements of all existing things.

(Aristotle, *Metaphysics* 1.5 986a1–2 = 58B4)

Philolaus
(tr. Curd)

17. Nature in the cosmos was fitted together out of unlimiteds and limiters; both the cosmos as a whole and everything in it.

(Diogenes Laertius, *Lives of the Philosophers* 8.85 = Philolaus 44B1)

18. It is necessary that the things that are be all either limiters or unlimiteds, or both limiters and unlimiteds; but they could not always be unlimiteds only. Since, then, it appears that they are neither from limiters only nor from unlimiteds only, it is thus clear that both the cosmos and the things in it were fitted together from both limiters and unlimiteds. And things in their activities make this clear. For, some of them, from limiters, limit; some, from both limiters and unlimiteds, both

limit and do not limit; and others, from unlimiteds, will be clearly unlimited.

(Stobaeus, *Selections* 1.21.7a = 44B2)

19. Concerning nature and harmony it is like this: the being of things, which is eternal, and nature itself admit of divine and not human knowledge except that it was not possible for any of the things that are and are known by us to come to be, without the existence of the being of the things from which the cosmos was put together, both the limiters and the unlimiteds. And since these principles existed, being neither alike nor of the same kind, it would have been impossible for them to be ordered, if harmony had not come upon them, in whatever way it came to be. Those things that are alike and of the same kind were in no need of harmony, but those that are unlike and not of the same kind, nor of the same speed,* it is necessary that these be linked together by harmony, if they are going to be held in an arrangement *(kosmos)*.

(Stobaeus, *Selections* 1.21.7d = 44B6)

20. The magnitude of the scale [*harmonia*] is the fourth and the fifth. The fifth is greater than the fourth by a tone. For from the highest [string; the lowest in pitch] to the middle [string] is a fourth; from the middle to the lowest [string; the highest in pitch] is a fifth; from the lowest [string] to the third is a fourth; from the third to the highest [string] is a fifth. That which is in the midst of the middle [string] and the third is a tone. The fourth is the ratio 3:4, the fifth is 3:2, and the octave is 2:1. Thus the scale [*harmonia*] is five tones and two semitones, the fifth is three tones and a semitone, and the fourth is two tones and a semitone. (Stobaeus, *Selections* 1.21.7d = 44B6a)

21. And indeed all things that are known have number. For without this nothing whatever could possibly be thought of or known. (Stobaeus, *Selections* 1.21.7b = 44B4)

22. Number, indeed, has two kinds peculiar to it, odd and even, and a third mixed from both of them, even-odd. And of

*Following the manuscripts with Burkert and Huffman, though "of the same speed" does not make much sense here.

each kind there are many forms, which each thing itself shows by signs. (Stobaeus, *Selections* 1.21.7c = 44B5)

23. The first thing to be fitted together [harmonized], the one in the middle of the sphere, is called the hearth.
(Stobaeus, *Selections* 1.21.8 = 44B7)

XENOPHANES

Born in Colophon, a city on the west coast of Asia Minor, near Ephesus and Miletus, Xenophanes was a wandering poet and philosopher. We know, on his own evidence, that he lived to a great age, but the details of his life are hazy. He was born about 570 and was said to have left Colophon after it fell to the Medes in 546/545. He refers to Pythagoras and his doctrine of the transmigration of souls in one fragment, and some of the ancient reports say that he was a teacher of Parmenides. Xenophanes wrote in verse and concerned himself with religious and philosophical topics as well as more "poetic" matters (one of his fragments is a poem about how to prepare for a symposium, or drinking party). But he seems to have been keenly interested in religious issues, including questions about the nature of the gods, and he explored problems in the nature and possibility of human knowledge. Xenophanes rejected the traditional Olympian accounts of the gods, such as are found in Hesiod's Theogony, *arguing that there is a single, non-anthropomorphic god who is unmoving, but all-seeing, all-hearing, and all-thinking and who "shakes all things by the thought of his mind." In a challenge to human claims to have "sure and certain" knowledge about anything hidden from perception (we should recall that telescopes or microscopes were not invented until the seventeenth century A.D.), Xenophanes draws a sharp distinction between knowledge and belief; but at the same time he suggests that rational inquiry is the best way to attain what knowledge we can. The fragments and later accounts of his views suggest that Xenophanes shared with the Milesians an interest in natural philosophy, although few scientific fragments remain.*

1. Already there are sixty-seven years
tossing my thought throughout the land of Greece.
From my birth there were twenty-five in addition to these,
if I know how to speak truly about these matters.
(Diogenes Laertius, *Lives of the Philosophers* 9.18 = 21B8)

2. Give us no fights with Titans, no, nor Giants
nor Centaurs—the forgeries of our fathers—
nor civil brawls, in which no advantage is.
But always to be mindful of the gods is good.
(Athenaeus, *Scholars at Dinner* 11.462c = 21B1.21–24)

3. Homer and Hesiod have ascribed to the gods all deeds
which among men are a reproach and a disgrace:
thieving, adultery, and deceiving one another.
(Sextus Empiricus, *Against the Mathematicians* 9.193 = 21B11)

4. Mortals believe that the gods are born
and have human clothing, voice, and form.
(Clement, *Miscellanies* 5.109 = 21B14)

5. Ethiopians say that their gods are flat-nosed and dark,
Thracians that theirs are blue-eyed and red-haired.
(Clement, *Miscellanies* 7.22 = 21B16)

6. If oxen and horses and lions had hands
and were able to draw with their hands and do the same things as men,
horses would draw the shapes of gods to look like horses
and oxen to look like oxen, and each would make the
gods' bodies have the same shape as they themselves had.
(Clement, *Miscellanies* 5.110 = 21B15)

7. Xenophanes used to say that those who say that the gods are born are just as impious as those who say that they die, since in both ways it follows that there is a time when the gods do not exist. (Aristotle, *Rhetoric* 2.23 1399b6–9 = 21A12)

8. God is one, greatest among gods and men,
not at all like mortals in body or thought.
(Clement, *Miscellanies* 5.109 = 21B23)

9. All of him sees, all of him thinks, all of him hears.
(Sextus Empiricus, *Against the Mathematicians* 9.144 = 21B24)

10. But without effort he shakes all things by the thought of his mind.
(Simplicius, *Commentary on Aristotle's Physics* 23.19 = 21B25)

11. He always remains in the same place, moving not at all,
nor is it fitting for him to go to different places at different times.
(Simplicius, *Commentary on Aristotle's Physics* 23.10 = 21B26)

12. By no means did the gods reveal all things to mortals from the beginning,
but in time, by searching, they discover better.
(Stobaeus, *Selections* 1.8.2 = 21B18)

13. No man has seen nor will anyone know
the truth about the gods and all the things I speak of.
For even if a person should in fact say what is absolutely the case,
nevertheless he himself does not know, but belief is fashioned over all things [or, in the case of all persons].
(Sextus Empiricus, *Against the Mathematicians* 7.49.110 = 21B34)

14. Let these things be believed as resembling the truth.
(Plutarch, *Table Talk* 9.7.746b = 21B35)

15. She whom they call Iris, this thing too is cloud,
purple and red and yellow to behold.
(Scholium BLT on *Iliad* 11.27 = 21B32)

16. Xenophanes says that the things on boats which shine like stars,
which some call the Dioscuri,
are little clouds which shine as a result of the motion.
(Aetius 2.18.1 = 21A39)

17. Sea is the source of water and the source of wind.
For not without the great ocean would there come to be
in clouds the force of wind blowing out from within,

nor the streams of rivers nor the rain water of the upper sky,
but great ocean is the sire of clouds and winds and rivers.
(Geneva Scholium on *Iliad* 21.196 = 21B30)

18. Xenophanes declared that the sea is salty because many mixtures flow together in it. . . . He believes that earth is being mixed into the sea and over time it is being dissolved by the moisture, saying that he has the following kinds of proofs, that sea shells are found in the middle of the earth and in mountains, and the impressions of a fish and seals have been found at Syracuse in the quarries, and the impression of a laurel leaf in the depth of the stone in Paros, and on Malta flat shapes of all marine life. He says that these things occurred when all things were covered with mud long ago and the impressions were dried in the mud. All humans are destroyed when the earth is carried down into the sea and becomes mud, and then there is another beginning of coming to be, and this change occurs in all the world orders.
(Hippolytus, *Refutation* 1.14.5–6 = 21A33)

19. All things that come into being and grow are earth and water.
(Philoponus, *Commentary on Aristotle's Physics* 1.5.125 = 21B29)

20. If god had not created yellow honey,
they would say that figs are far sweeter.
(Herodian, *On Peculiar Speech* 41.5 = 21B38)

HERACLITUS

According to Diogenes Laertius, Heraclitus of Ephesus was born about 540. He was a member of one of the aristocratic families of Ephesus, but tradition tells us that he turned his back on the political life usually associated with such an upbringing, resigning a hereditary ruling position to his brother. He had a reputation for both misanthropy and obscurity (one of his traditional nicknames was "the Riddler"). The former is probably based on his rude references to a number of historians and other philosophers and the latter on the enigmatic paradoxes he generates in expounding his views. He wrote a single book, of which fragment 1 is apparently the opening. Although he made a number of claims about the nature of the universe, he seems to have been as interested in exploring questions about knowledge and the human condition as in exploring cosmological issues (many of his cosmological views can be traced to Xenophanes). He argued that there was a single divine law of the universe, which he called the logos, *which rules and guides the cosmos. (The word* logos *means, among other things, "account," and "thing said" or "word"; like our notion of giving an account, to give a* logos *is to give an explanation as well as simply to say something.) Although the* logos *is an independent, objective truth available to all, Heraclitus claimed that most people do not exercise their abilities to come to understand it, acting instead as if they are asleep and in a private world. He thus attempted to bridge the gap between divine and human knowledge pointed out by Xenophanes and Alcmaeon by claiming that there was a link between the divine* logos *(the account of what there is) and the souls of human beings. Thus Heraclitus claimed that there is a possibility of acquiring sure and certain knowledge, though he ridiculed the wide interests of his predecessors Hesiod, Pythagoras, Xenophanes, and Hecataeus (an early Ionian writer of history or mythography ca. 500). "Much learning," he said, "does not teach understanding." The simple collection of facts will not result in knowledge; rather, there must be insight into and understanding of the significance of these facts. A fundamental part of this insight is seeing how all that is known consti-*

tutes a unity. Heraclitus himself offered signs of this unity in his paradoxes about the unity of opposites. He insisted that, despite the fact that there is universal change, there is a single, unchanging, law of the cosmos—the logos *which both underlies and governs these changes. Thus one who understands the* logos *can understand the workings of the cosmos. The physical sign or manifestation of the* logos *is fire, an element that is always changing, yet always the same.*

1. This *logos* holds always but humans always prove unable to understand it, both before hearing it and when they have first heard it. For though all things come to be [or, happen] in accordance with this *logos*, humans are like the inexperienced when they experience such words and deeds as I set out, distinguishing each in accordance with its nature and saying how it is. But other people fail to notice what they do when awake, just as they forget what they do while asleep.
(Sextus Empiricus, *Against the Mathematicians* 7.132 = 22B1)

2. For this reason it is necessary to follow what is common. But although the *logos* is common, most people live as if they had their own private understanding.
(Sextus Empiricus, *Against the Mathematicians* 7.133 = 22B2)

3. For many, in fact all that come upon them, do not understand such things, nor when they have noticed them do they know them, but they seem to themselves <to do so>.
(Clement, *Miscellanies* 2.8.1 = 22B17)

4. The best renounce all for one thing, the eternal fame of mortals, but the many stuff themselves like cattle.
(Clement, *Miscellanies* 5.59.4 = 22B29)

5. People are deceived about the knowledge of obvious things, like Homer who was wiser than all the Greeks. For children who were killing lice deceived him by saying, "All we saw and caught we have left behind, but all we neither saw nor caught we bring with us." (Hippolytus, *Refutation* 9.9.5 = 22B56)

6. [Heraclitus judged human opinions to be] children's playthings. (Stobaeus, *Selections* 2.1.16 = 22B70)

7. They are at odds with the *logos*, with which above all they are in continuous contact, and the things they meet every day appear strange to them. (Marcus Aurelius, *Meditations* 4.46 = 22B72)

8. Divine things for the most part escape recognition because of unbelief. (Plutarch, *Coriolanus* 38 = Clement, *Miscellanies* 5.88.4 = 22B86)

9. A fool is excited by every word *(logos)*.
(Plutarch, *On Listening to Lectures* 40f–41a = 22B87)

10. Dogs bark at everyone they do not know.
(Plutarch, *Should Old Men Take Part in Politics?* 787c = 22B97)

11. What understanding or intelligence have they? They put their trust in popular bards and take the mob for their teacher, unaware that most people are bad, and few are good.
(Proclus, *Commentary on Plato's Alcibiades I*, p. 117, Westerink = 22B104)

12. Of all those whose accounts *(logoi)* I have heard, no one reaches the point of recognizing that that which is wise is set apart from all. (Stobaeus, *Selections* 3.1.174 = 22B108)

13. Every beast is driven to pasture by blows.
([Aristotle] *On the World* 6.401a10 = 22B11)

14. Much learning ("polymathy") does not teach insight. Otherwise it would have taught Hesiod and Pythagoras, and moreover Xenophanes and Hecataeus.
(Diogenes Laertius, *Lives of the Philosophers* 9.1 = 22B40)

15. Pythagoras the son of Mnesarchus practiced inquiry more than all other men, and making a selection of these writings constructed his own wisdom, polymathy, evil trickery.
(Diogenes Laertius, *Lives of the Philosophers* 8.6 = 22B129)

16. Heraclitus said that Homer deserved to be expelled from the contests and flogged, and Archilochus likewise.
(Diogenes Laertius, *Lives of the Philosophers* 9.1 = 22B42)

17. The knowledge of the most famous persons, which they guard, is but opinion. Justice will convict those who fabricate falsehoods and bear witness to them.
(Clement, *Miscellanies* 5.9.3 = 22B28)

18. [Rebuking some for their unbelief, Heraclitus says,] Knowing neither how to hear nor how to speak.
(Clement, *Miscellanies* 2.24.5 = 22B19)

19. Eyes and ears are bad witnesses to people if they have barbarian souls. (Sextus Empiricus, *Against the Mathematicians* 7.126 = 22B107)

20. Uncomprehending when they have heard, they are like the deaf. The saying describes them: though present they are absent. (Clement, *Miscellanies* 5.115.3 = 22B34)

21. One ought not to act and speak like people asleep.
(Marcus Aurelius, *Meditations* 4.46 = 22B73)

22. For the waking there is one common world, but when asleep each person turns away to a private one.
(pseudo-Plutarch, *On Superstition* 166c = 22B89)

23. A man in the night kindles a light for himself when his sight is extinguished; living he touches* the dead when asleep, when awake he touches the sleeper.
(Clement, *Miscellanies* 4.141.2 = 22B26)

24. What we see when awake is death, what we see asleep is sleep. (Clement, *Miscellanies* 3.21.1 = 22B21)

25. Human nature has no insight, but divine nature has it.
(Origen, *Against Celsus* 6.12 = 22B78)

*The same word in Greek may be translated either as 'kindles' or as 'touches'.

26. A man is called infantile by a divinity as a child is by a man.
(Origen, *Against Celsus* 6.12 = 22B79)

27. The wise is one alone; it is unwilling and willing to be called by the name of Zeus.
(Clement, *Miscellanies* 5.115.1 = 22B32)

28. Thinking is common to all.
(Stobaeus, *Selections* 3.1.179 = 22B113)

29. It belongs to all people to know themselves and to think rightly. (Stobaeus, *Selections* 3.5.6 = 22B116)

30. I searched myself. (Plutarch, *Against Colotes* 1118c = 22B101)

31. Men who are lovers of wisdom must be inquirers into many things indeed. (Clement, *Miscellanies* 5.140.5 = 22B35)

32. All that can be seen, heard, experienced—these are what I prefer. (Hippolytus, *Refutation* 9.9.5 = 22B55)

33. Eyes are more accurate witnesses than ears.
(Polybius, *Histories* 12.27.1 = 22B101a)

34. If all things were smoke, nostrils would distinguish them.
(Aristotle, *On the Senses* 5.443a23 = 22B7)

35. Souls smell [i.e., use the sense of smell] in Hades.
(Plutarch, *On the Face in the Moon* 943e = 22B98)

36. Unless he hopes for the unhoped for, he will not find it, since it is not to be hunted out and is impassable.
(Clement, *Miscellanies* 2.17.4 = 22B18)

37. Those who seek gold dig up much earth but find little.
(Clement, *Miscellanies* 4.4.2 = 22B22)

38. It is weariness to labor at the same things and <always> to be beginning [or, It is weariness to labor for the same <masters> and to be ruled]. (Plotinus, *Enneads* 4.8.1 = 22B84b)

39. Nature loves to hide. (Themistius, *Orations* 5.69b = 22B123)

40. The Lord whose oracle is at Delphi neither speaks nor conceals, but gives a sign.
(Plutarch, *On the Pythian Oracle* 404d = 22B93)

41. Wisdom is one thing, to be skilled in true judgment, how all things are steered through all things.
(Diogenes Laertius, *Lives of the Philosophers* 9.1 = 22B41)

42. Let us not make random conjectures about the greatest matters.
(Diogenes Laertius, *Lives of the Philosophers* 9.73 = 22B47)

43. Right thinking is the greatest excellence, and wisdom is to speak the truth and act in accordance with nature, while paying attention to it. (Stobaeus, *Selections* 3.1.178 = 22B112)

44. Listening not to me but to the *logos* it is wise to agree that all things are one. (Hippolytus, *Refutation* 9.9.1 = 22B50)

45. Things taken together are whole and not whole, <something which is> being brought together and brought apart, in tune and out of tune; out of all things there comes a unity, and out of a unity all things.
([Aristotle] *On the World* 5.396b20 = 22B10)

46. They do not understand how, though at variance with itself, it agrees with itself. It is a backwards-turning* attunement like that of the bow and lyre.
(Hippolytus, *Refutation* 9.9.2 = 22B51)

47. An unapparent connection *(harmonia)* is stronger than an apparent one. (Hippolytus, *Refutation* 9.9.5 = 22B54)

48. Those who speak with understanding must rely firmly on what is common to all as a city relies on law [or, its law] and much more firmly. For all human laws are nourished by one law, the divine law; for it has as much power as it wishes and is sufficient for all and is still left over.
(Stobaeus, *Selections* 3.1.179 = 22B114)

*Reading *palintropos* here (ed.).

49. What is opposed brings together; the finest harmony *(harmonia)* is composed of things at variance, and everything comes to be in accordance with strife.
(Aristotle, *Nicomachean Ethics* 8.2 1155b4 = 22B8)

50. The sea is the purest and most polluted water: to fishes drinkable and bringing safety, to humans undrinkable and destructive. (Hippolytus, *Refutation* 9.10.5 = 22B61)

51. Pigs rejoice in mud more than pure water.
(Clement, *Miscellanies* 1.2.2 = 22B13)

52. Asses would choose rubbish rather than gold.
(Aristotle, *Nicomachean Ethics* 10.5 1176a7 = 22B9)

53. We would call oxen happy when they find bitter vetch to eat.
(Albertus Magnus, *On Vegetables* 6.401 = 22B4)

54. Pigs wash themselves in mud, birds in dust or ash.
(Columella, *On Agriculture* 8.4.4 = 22B37)

55. The most beautiful of apes is ugly in comparison with the human race. (Plato, *Hippias Major* 289a3–4 = 22B82)

56. The wisest of humans will appear as an ape in comparison with a god in respect of wisdom, beauty, and all other things.
(Plato, *Hippias Major* 289b4–5 = 22B83)

57. The most beautiful arrangement is a pile of things poured out at random. (Theophrastus, *Metaphysics* 15 (p. 16 Ross and Fobes) = 22B124)

58. Physicians who cut and burn complain that they receive no worthy pay, although they do these things.
(Hippolytus, *Refutation* 9.10.3 = 22B58)

59. The track of writing is straight and crooked.*
(Hippolytus, *Refutation* 9.10.4 = 22B59)

60. The road up and the road down are one and the same.
(Hippolytus, *Refutation* 9.10.4 = 22B60)

61. Upon those who step into the same rivers, different and again different waters flow.
(Arius Didymus, Fr. 39.2 (*Dox.gr.* 471.4) = 22B12)

62. [It is not possible to step twice into the same river]. . . . It scatters and again comes together, and approaches and recedes. (Plutarch, *On the E at Delphi* 392b = 22B91a, b)

63. We step into and we do not step into the same rivers. We are and we are not. (Heraclitus, *Homeric Questions* 24 Oelmann (Schleiermacher, fr. 72) = 22B49a)

64. The beginning and the end are common on the circumference of a circle.
(Porphyry, *Notes on Homer* (On *Iliad* 24.200) = 22B103)

65. The name of the bow *(bios)* is life *(bios)*, but its work is death.
(*Etymologicum Magnum*, sv *bios* = 22B48)

66. Cold things grow hot, a hot thing cold, a moist thing withers, a parched thing is wetted. (John Tzetzes, *Notes on the Iliad* p. 126 Hermann = 22B126)

67. The same thing is both living and dead, and the waking and the sleeping, and young and old; for these things transformed are those, and those transformed back again are these.
(pseudo-Plutarch, *Consolation to Apollonius* 106e = 22B88)

68. Most men's teacher is Hesiod. They are sure he knew most things—a man who could not recognize day and night; for they are one. (Hippolytus, *Refutation* 9.10.2 = 22B57)

*Hippolytus has 'gnapheon' ('carding wheels'); sometimes emended to 'grapheon' ('writing') (ed.).

69. They would not have known the name of justice if these things did not exist. (Clement, *Miscellanies* 4.9.7 = 22B23)

70. Disease makes health pleasant and good, hunger satiety, weariness rest. (Stobaeus, *Selections* 3.1.178 = 22B111)

71. It is death to souls to become water, death to water to become earth, but from earth comes water and from water soul.
(Clement, *Miscellanies* 6.17.2 = 22B36)

72. The turnings of fire: first, sea; and of sea, half is earth and half fiery waterspout. . . . Earth is poured out as sea, and is measured according to the same ratio *(logos)* it was before it became earth. (Clement, *Miscellanies* 5.104.3, 5 = 22B31a, b)

73. Fire lives the death of earth and air lives the death of fire, water lives the death of air, earth that of water.
(Maximus of Tyre 41.4 = 22B76a)

74. The cosmos, the same for all, none of the gods nor of humans has made, but it was always and is and shall be: an ever-living fire being kindled in measures and being extinguished in measures. (Clement, *Miscellanies* 5.103.6 = 22B30)

75. Changing, it rests.
(Plotinus, *Enneads* 4.8.1 = 22B84a; minor rev. Curd)

76. Even the posset separates if it is not being stirred.
(Theophrastus, *On Vertigo* 9 = 22B125)

77. All things are an exchange for fire and fire for all things, as goods for gold and gold for goods.
(Plutarch, *On the E at Delphi* 338d–e = 22B90)

78. Thunderbolt steers all things.
(Hippolytus, *Refutation* 9.10.7 = 22B64)

79. War is the father of all and king of all, and some he shows as gods, others as humans; some he makes slaves, others free.
(Hippolytus, *Refutation* 9.9.4 = 22B53)

80. It is necessary to know that war is common and justice is strife and that all things happen in accordance with strife and necessity. (Origen, *Against Celsus* 6.42 = 22B80)

81. For fire will advance and judge and convict all things. (Hippolytus, *Refutation* 9.10.6 = 22B66)

82. Fire is want and satiety. (Hippolytus, *Refutation* 9.10.7 = 22B65)

83. God is day and night, winter and summer, war and peace, satiety and hunger, but changes the way <fire,> when mingled with perfumes, is named according to the scent of each. (Hippolytus, *Refutation* 9.10.8 = 22B67)

84. It is law, too, to obey the counsel of one. (Clement, *Miscellanies* 5.155.2 = 22B33)

85. To God all things are beautiful and good and just, but humans have supposed some unjust and others just. (Porphyry, *Notes on Homer* (On *Iliad* 4.4) = 22B102)

86. Immortal mortals, mortal immortals [or, immortals are mortal, mortals are immortal], living the death of the others and dying their life. (Hippolytus, *Refutation* 9.10.6 = 22B62)

87. The sun will not overstep his measures; otherwise, the Erinyes, ministers of Justice, will find him out. (Plutarch, *On Exile* 604a = 22B94)

88. The sun is new each day. (Aristotle, *Meteorology* 2.2 355a13 = 22B6)

89. Its [the sun's] breadth is the length of the human foot. (Aetius 2.21 = 22B3)

90. If there were no sun, as far as concerns all the other stars it would be night. (pseudo-Plutarch, *Is Water or Fire the More Useful?* 957a; 22B99)

91. They vainly purify themselves with blood when defiled with it, as if a man who had stepped into mud were to wash it off with mud. He would be thought mad if anyone noticed him acting thus. (Aristocritus, *Theosophia* 68; Origen, *Against Celsus* 7.62 = 22B5)

92. If it were not for Dionysus that they hold processions and sing hymns to the shameful parts [phalli], it would be a most shameless act; but Hades and Dionysus are the same, in whose honor they go mad and celebrate the Bacchic rites. (Clement, *Protreptic* 34.5 = 22B15)

93. Nightwalkers, Magi, Bacchoi, Lenai, and the initiated. [These people Heraclitus threatens with what happens after death. . . .] For the secret rites practiced among humans are celebrated in an unholy manner. (Clement, *Protreptic* 22.2 = 22B14)

94. The Sibyl with raving mouth uttering mirthless [and unadorned and unperfumed phrases, reaches a thousand years in her voice on account of the god]. (Plutarch, *Why the Pythia No Longer Prophesies in Verse* 397a = 22B92)

95. It is death for souls to become wet. (Numenius, fr. 30; Porphyry, *The Cave of the Nymphs* 10 = 22B77)

96. A gleam of light is a dry soul, wisest and best. (Stobaeus, *Selections* 3.5.8 = 22B118)

97. A man when drunk is led by a boy, stumbling and not knowing where he goes, having his soul moist. (Stobaeus, *Selections* 3.5.7 = 22B117)

98. Gods and humans honor those slain in war. (Clement, *Miscellanies* 4.16.1 = 22B24)

99. Greater deaths win greater destinies. (Clement, *Miscellanies* 4.49.2 = 22B25)

100. Things unexpected and unthought of await humans when they die. (Clement, *Miscellanies* 4.22.144 = 22B27)

101. They arise and become vigilant guardians of the living and the dead. (Hippolytus, *Refutation* 9.10.6 = 22B63)

102. How could one fail to be seen by that which does not set? (Clement, *Pedagogue* 2.99.5 = 22B16)

103. Corpses are more fit to be thrown out than dung. (Plutarch, *Table Talk* 669a = 22B96)

104. You would not discover the limits of the soul although you travelled every road: it has so deep a *logos*. (Diogenes Laertius, *Lives of the Philosophers* 9.7 = 22B45)

105. The soul has a self-increasing *logos*. (Stobaeus, *Selections* 3.1.180a = 22B115)

106. Every grown man of the Ephesians should hang himself and leave the city to the boys; for they banished Hermodorus, the best man among them, saying "let no one of us excel, or if he does, be it elsewhere and among others." (Strabo 14.25 = 22B121)

107. May wealth never leave you, Ephesians, lest your wickedness be revealed. (John Tzetzes, *Scholia on Aristophanes' Plutus* 88 = 22B125a)

108. One person is ten thousand to me if he is best. (Theodorus Prodromus, *Letters* 1 = 22B49)

109. A lifetime [or, eternity] is a child playing, playing checkers; the kingdom belongs to a child. (Hippolytus, *Refutation* 9.9.4 = 22B52)

110. The people must fight for the law as for the city wall. (Diogenes Laertius, *Lives of the Philosophers* 9.2 = 22B44)

111. Willful violence *(hubris)* must be quenched more than a fire. (Diogenes Laertius, *Lives of the Philosophers* 9.1 = 22B43)

112. A person's character is his divinity. (Stobaeus, *Selections* 4.40.23 = 22B119)

113. It is not better for humans to get all they want. (Stobaeus, *Selections* 3.1.176 = 22B110)

114. It is better to conceal ignorance. (Plutarch, *Table Talk* 644F. = 22B95)

115. It is difficult to fight against anger, for whatever it wants it buys at the price of soul. (Plutarch, *Coriolanus* 22.2 = 22B85)