

Anaximander 611-546 BC Miletus

Origins

Anaximander of Miletus says that the principle of the things that exist is the infinite; for it is out of this that everything comes into being and into which everything passes away; because of this infinite universes are generated and perish back into that from which they came. So, as it happens, he says why it must be infinite: so that whatever is currently coming into being should not lack anything.

(Source Aetios I, 3, 3. C2 CE VS 12)

Anaximander, the son of Praxiades of Miletus, who became successor and disciple of Thales has suggested that the principle and [primary] element of the things that exist is the infinite. He was the first to use this term 'principle'. And he says that it is not water nor any other of the things that are usually called elements, but something of a different nature, infinite, out of which come to be all the heavens and the worlds within them. "The things out of which all things come to be, when they are destroyed return these things, according to what must be; for they pay penalty and recompense to one another for their infringements according to the order of time" describing [the four elements] thus in rather poetic terms. For it is clear that this author, when he viewed the transformation of the four elements into each other did not see fit to judge that there was one substance underlying these, but something else distinct from these. And he considers the [physical process of coming to be] not to be a feature of some element undergoing a qualitative change, but of opposites separating out in the course of an eternal motion.

(Source Simplicius *Physics* 24, 13 ff VS 15)

He says that out of this eternal [infinite element] a generative substance of warm and moist separated out at the beginning of this world. And a ball of fire grew out of this in the air surrounding the earth, like the foliage of a tree; when this was torn away and trapped in certain orbits the sun and the moon and the stars were founded.

(Pseudo-Plutarch *Stromata* 2 Frag 179 VS 17)

The earth is in mid-air, but it isn't held by anything, but stays there because it is equidistant to everything. Its form is a solid disk, a bit like the segment of a pillar. Of its two surfaces, one is the one we walk on, and the other is upside down. The origin of the stars is a circle of fire separated off from the fire throughout the world, but enveloped by air. But there are vents, tube-like passages, through which the stars appear; this is why, when the vents are blocked, eclipses take place. And the moon sometimes appears full, sometimes waning, according to how closed or open the passages are. And the circle of the sun is twenty-seven times that of the earth and the circle of the moon is nineteen times [bigger]. And the furthest away is the sun, and the nearest are the circles of the fixed stars.

(Hippolytus, *Heretics* I 6, 3-5, VS 18)

Some of them claim that the sea is what is left of the original moisture; for at one point the region around the earth was moist, and then some of the moisture was turned to vapour by the sun; out of it came the winds, and the changing positions of the sun and moon. Because these changed their courses in the face of these vaporisations and exhalations, turning around these as they found the opportunity. But part of the water was left in the hollow places of the earth and this is the sea; which is why it shrinks each time that it is dried up by the sun, and in the end it will at some point be completely dry. According to Theophrastus, Anaximander and Diogenes were of this opinion.

(Alexander *On the Heavens* S 67.3 VS 23)

Anaximander believed that the first animals were generated contained inside a spiny shell, but as they matured they emerged onto dryer areas and once the shell around them had broken they soon took on another form of life.

(Aetios V 19, 4 VS 26)

He describes how humans were first generated and nourished inside fish, as is the case with sharks, and once they had become able to support themselves, they emerged and took to the land.

(Plutarch, *Symposium* 730 E, VS 29)

Anaximenes (Mid sixth century BCE, Miletus)

Anaximenes holds the doctrine that the single moving, infinite principle of everything that exists is air. His claims are as follows: air is almost bodiless, and because we come into being according to its outflowing, it must be infinite and fertile, because it never fails.

(Olympiodorus of Alexandria *On the sacred art* VS 3)

But Anaximenes, who was also from Miletus, the son of Eurystratus, said that air was the infinite principle out of which everything came into being, the things which are coming to be, have come to be and shall yet be, along with the gods and divine realities; and everything else is derived from these. The form of air is like this: when it is most homogeneous, it is invisible to sight, but it is revealed by cold and heat, and moisture and movement. And it is always moving, for it would not be transformed as much as it is, unless it were in motion. For it appears different according as it is compacted or rarefied; for when it is scattered to become more rarefied, it becomes fire, but again winds are air become denser, out of air cloud is formed by compacting, and in a further degree, water; when it is made still denser it is earth and at the greatest degree of density, stone. So that the key determinants of coming to be are the opposites, hot and cold.

(Hippolytus *Heresies* I, 7, 1-3 VS 5)

He says that the earth is flat, riding on air, and similarly the sun and moon and all the other stars, which are fiery, ride on the air because of their flatness. The stars were generated from the earth because of the vapour that rose from it, and as it rarefied it became fire, and from the fire in mid-air the stars were formed. But there are also entities of an earthy nature in the region of the stars that move around with them. But unlike what others have supposed, he says that the stars do not move round under the earth, but about the earth, like a hat around our head; and the sun disappears from sight, not by sinking under the earth, but by being screened off by the higher parts of the earth, and by the fact that its distance from us is greater. The stars provide no heat because of their distance from us. Winds are generated when air that has been compressed becomes rarefied and starts moving; when it gathers and is further condensed clouds are generated and thus it transforms to water. Hail comes into being when the water carried down from the cloud congeals; and snow, when the same things, are more moist as they compact; lightning is when the clouds are split by the force of winds, because when these part, a ray of light comes about, bright and fiery; a rainbow is generated when the sun's rays fall on condensed air; an earthquake when the earth undergoes excessive changes from heating and cooling.

(Hippolytus *Heresies* I, 7, 4-8 VS 9)

Anaxagoras (500 – 428: Clazomenae, Athens, Lampsacus)

Anaxagoras says that [homogenous substances] infinite in number separate out of one mixture, that is, all [kinds of thing] are in everything, with each individual entity marked out according to the dominant [homogenous substance]. He makes this point clearly at the beginning of his first book of the *Physics*:

“All things were together, infinite in number and in minuteness. For smallness was infinite too and when everything was together, nothing [distinctive] was visible because of the smallness. For air and aether controlled everything, both being infinite, for these are the greatest among the totality of things, both in quantity and size.”

(Simplicius VS 21)

Anaxagoras clearly states in the first book of the *Physics* that coming to be and passing away are a matter of mixing and separation, when he writes as follows: “The Greeks hold an incorrect opinion about coming to be and passing away. For there is no entity that comes to be or passes away, but there is mixture and separation of entities that already exist. So they should properly call coming to be ‘being mixed together’ and passing away ‘separation out’” All of that and his claim “all things were together” and his claim that things are generated due to mixture and

separation, indicates his belief that nothing can come into being out of what does not exist. But anything that comes into being, does so out of what exists.

(Simplicius VS 23)

All things find motion, and similar substances come together when they are moved by Mind. And everything under the heavens is ordered by the circular motion; anything dense and moist and dark and cold, and everything that is heavy comes together in the centre, and when these are compacted, earth is formed. The contraries of these, the warm, the bright, the dry and the light, rise up towards the aether.

(Hippolytus, VS 32)

He writes this about mind: "Mind is infinite, self-governing and is mixed with nothing else, but is alone by itself. For if it were not by itself, but mixed with something else, it would have had a share of all the entities if it had been mixed with anything: for in every thing, there is a part of every thing, as I have said earlier. And the things that were mixed in with it would impede it, so that it would not be able to control any entity, in the same way as it can being alone by itself.

"For it is the finest of all entities and the purest, and it has all understanding about everything and has the greatest power; anything that has soul, the greater or the lesser, mind masters them all. And mind controlled the whole of the circular movement, initiating its circular motion. At first it began the motion from the minute, then it circled more and will circle still more.

"And mind knows all the things which are being mixed and separated off and made distinct, what sort of things were going to arise, and what sort of things there were, and all that now is, and the sort of things that shall come into being. All these things mind has ordered, including this circular movement, in which the stars and sun and moon and the air and aether move, separated off. And it is the motion itself that made them separate out. And the dense is separated from the fine and the hot from the cold and the dark from the bright, and from the moist, the dry.

"And there are many parts of many things. Nothing is completely separated or distinguished from anything else apart from mind. For every mind is similar, both the greater and the less. Nothing else is like anything else, but whatever it has the greatest quantity of, this is what each single thing most distinctively is and was".

(Simplicius VS 38)

The earth is flat and broad in shape and remains in mid-air because of its size and because there is no void and because the air is strong enough to bear the earth floating on it. With regard to the watery entities on the earth, the sea arises from the waters within it, and as these turn to vapour, they thus leave salty deposits, and also the rivers that flow into it. The rivers take their origin from the rains, as well as from

the waters within the earth. For it is hollow and holds water in its hollows. The Nile floods in summer when the waters flow down into it from the southern snows. The sun and moon and all the stars are fiery rocks, caught up in the circular movement of the aether. Below the stars there are bodies invisible to us which are carried around with the sun and moon. We do not feel the heat of the stars because they are at a great distance from the earth. Also they are not as hot as the sun because they are in a cooler space. The moon is below the sun and closer to us. The sun is bigger than the Peloponnese. The moon does not have its own light but receives it from the sun, the circuit of the stars goes beneath the earth. The moon is eclipsed when it is screened off by the earth and sometimes by things that are below the moon. The sun [is eclipsed] when a new moon screens it off. The sun and moon move to and from their turning points as they are pushed by the air. The moon turns more often, because it cannot resist the cold. Anaxagoras was the first to define eclipses and changes of phase. He said that the moon was of earth and had plains and valleys on it. The Milky Way was a refraction of light from stars that were not lit by the sun. Meteor stars were like sparks springing off, generated by the motion of the heavens. Winds came about as air was rarefied by the sun, and what was heated, withdrew and moved away towards the heavens. Thunder and lightning came about from heat falling on the clouds. Earthquakes took place when the air above struck the air below the earth; for when this was moved the earth that was floating on it was also shaken.

(Hippolytus *Heresies* VS 48)

Extracts taken from Jaap Mansfeld, *Die Vorsokratiker* (VS), (Reklam: Stuttgart, 1987)

