Physical Doctrines of the Stoics

Diogenes Laertius

132. [The Stoics divide] their physical doctrine…into sections (1) about bodies; (2) about principles; (3) about elements; (4) about the gods; (5) about bounding surfaces and space whether filled or empty. This is a division into species; but the generic division is into three parts, dealing with (i.) the universe; (ii.) the elements; (iii.) the subject of causation.

The part dealing with the universe admits, they say, of division into two : for with one aspect of it the mathematicians also are concerned, in so far as they treat questions relating to the fixed stars and the planets, e.g. whether the sun is or is not just so large as it appears to be, and the same about the moon, the question of their revolutions, and other inquiries of the same sort. But there is another aspect or field of cosmological57 inquiry, which belongs to the physicists alone:

133. this includes such questions as what the substance of the universe is, whether the sun and the stars are made up of form and matter, whether the world has had a beginning in time or not, whether it is animate or inanimate, whether it is destructible or indestructible, whether it is governed by providence, and all the rest. The part concerned with causation, again, is itself subdivided into two. And in one of its aspects medical inquiries have a share in it, in so far as it involves investigation of the ruling principle of the soul and the phenomena of soul, seeds, and the like. Whereas the other part is claimed by the mathematicians also, e.g. how vision is to be explained, what causes the image on the mirror, what is the origin of clouds, thunder, rainbows, halos, comets, and the like.

134. They hold that there are two principles in the universe, the active principle and the passive. The passive principle, then, is a substance without quality, i.e. matter, whereas the active is the reason inherent in this substance, that is God. For he is everlasting and is the artificer of each several thing throughout the whole extent of matter. This doctrine is laid down by Zeno of Citium in his treatise On Existence, Cleanthes in his work On Atoms, Chrysippus in the first book of his Physics towards the end, Archedemus in his treatise On Elements, and Posidonius in the second book of his Physical Exposition. There is a difference, according to them, between principles and elements ; the former being without generation or destruction, whereas the elements are destroyed when all things are resolved into fire. Moreover, the principles are incorporeal and destitute of form, while the elements have been endowed with form.

135. Body is defined by Apollodorus in his Physics as that which is extended in three dimensions, length, breadth, and depth. This is also called solid body. But surface is the extremity of a solid body, or that which has length and breadth only without depth. That surface exists not only in our thought but also in reality is maintained by Posidonius in the third book of his Celestial Phenomena. A line is the extremity of a surface or length without breadth, or that which has length alone. A point is the extremity of a line, the smallest possible mark or dot.

God is one and the same with Reason, Fate, and Zeus ; he is also called by many other names.

136. In the beginning he was by himself ; he transformed the whole of substance through air into water, and just as in animal generation the seed has a moist vehicle, so in cosmic moisture God, who is the seminal reason of the universe, remains behind in the moisture as

such an agent, adapting matter to himself with a view to the next stage of creation. Thereupon he created first of all the four elements, fire, water, air, earth. They are discussed by Zeno in his treatise On the Whole, by Chrysippus in the first book of his Physics, and by Archedemus in a work On Elements. An element is defined as that from which particular things first come to be at their birth and into which they are finally resolved.

137. The four elements together constitute unqualified substance or matter. Fire is the hot element, water the moist, air the cold, earth the dry. Not but what the quality of dryness is also found in the air. Fire has the uppermost place ; it is also called aether, and in it the sphere of the fixed stars is first created ; then comes the sphere of the planets, next to that the air, then the water, and lowest of all the earth, which is at the centre of all things.

The term universe or cosmos is used by them in three senses : (1) of God himself, the individual being whose quality is derived from the whole of substance ; he is indestructible and ingenerable, being the artificer of this orderly arrangement, who at stated periods of time absorbs into himself the whole of substance and again creates it from himself.

138. (2) Again, they give the name of cosmos to the orderly arrangement of the heavenly bodies in itself as such ; and (3) in the third place to that whole of which these two are parts. Again, the cosmos is defined as the individual being qualifying the whole of substance, or, in the words of Posidonius in his elementary treatise on Celestial Phenomena, a system made up of heaven and earth and the natures in them, or, again, as a system constituted by gods and men and all things created for their sake. By heaven is meant the extreme circumference or ring in which the deity has his seat.

The world,in their view, is ordered by reason and providence: so says Chrysippus in the fifth book of his treatise On Providence and Posidonius in his work On the Gods, book iii.—inasmuch as reason pervades every part of it, just as does the soul in us. Only there is a difference of degree ; in some parts there is more of it, in others less.

139. For through some parts it passes as a “hold” or containing force, as is the case with our bones and sinews ; while through others it passes as intelligence, as in the ruling part of the soul. Thus, then, the whole world is a living being, endowed with soul and reason, and having aether for its ruling principle : so says Antipater of Tyre in the eighth book of his treatise On the Cosmos. Chrysippus in the first book of his work On Providence and Posidonius in his book On the Gods say that the heaven, but Cleanthes that the sun, is the ruling power of the world. Chrysippus, however, in the course of the same work gives a somewhat different account, namely, that it is the purer part of the aether ; the same which they declare to be preeminently God and always to have, as it were in sensible fashion, pervaded all that is in the air, all animals and plants, and also the earth itself, as a principle of cohesion.

140. The world, they say, is one and finite, having a spherical shape, such a shape being the most suitable for motion, as Posidonius says in the fifth book of his Physical Discourse and the disciples of Antipater in their works on the Cosmos. Outside of the world is diffused the infinite void, which is incorporeal. By incorporeal is meant that which, though capable of being occupied by body, is not so occupied. The world has no empty space within it, but forms one united whole. This is a necessary result of the sympathy and tension which binds together things in heaven and earth. Chrysippus discusses the void in his work On Void and in the first book of his Physical Sciences ; so too Apollophanes in his Physics, Apollodorus, and Posidonius in his Physical Discourse, book ii. But these, it is added [i.e. sympathy and tension], are likewise bodies.

141. Time too is incorporeal, being the measure of the world’s motion. And time past and time future are infinite, but time present is finite. They hold that the world must come to an end, inasmuch as it had a beginning, on the analogy of those things which are understood by the senses. And that of which the parts are perishable is perishable as a whole. Now the parts of the world are perishable, seeing that they are transformed one into the other. Therefore the world itself is doomed to perish. Moreover, anything is destructible if it admits of deterioration ; therefore the world is so, for it is first evaporated and again dissolved into water.

142. The world, they hold, comes into being when its substance has first been converted

from fire through air into moisture and then the coarser part of the moisture has condensed as earth, while that whose particles are fine has been turned into air, and this process of rarefaction goes on increasing till it generates fire. Thereupon out of these elements animals and plants and all other natural kinds are formed by their mixture. The generation and the destruction of the world are discussed by Zeno in his treatise On the Whole, by Chrysippus in the first book of his Physics, by Posidonius in the first book of his work On the Cosmos, by Cleanthes, and by Antipater in his tenth book On the Cosmos. Panaetius, however, maintained that the world is indestructible.

The doctrine that the world is a living being, rational, animate and intelligent, is laid down by Chrysippus in the first book of his treatise On Providence, by Apollodorus in his Physics, and by Posidonius.

143. It is a living thing in the sense of an animate substance endowed with sensation ; for animal is better than non-animal, and nothing is better than the world, ergo the world is a living being. And it is endowed with soul, as is clear from our several souls being each a fragment of it. Boëthus, however, denies that the world is a living thing. The unity of the world is maintained by Zeno in his treatise On the Whole, by Chrysippus, by Apollodorus in his Physics, and by Posidonius in the first book of his Physical Discourse. By the totality of things, the All, is meant, according to Apollodorus, (1) the world, and in another sense (2) the system composed of the world and the void outside it. The world then is finite, the void infinite.

144. Of the stars some are fixed, and are carried round with the whole heaven ; others, the wandering stars or planets, have their special motions. The sun travels in an oblique path through the zodiac. Similarly the moon travels in a spiral path. The sun is pure fire: so Posidonius in the seventh book of his Celestial Phenomena. And it is larger than the earth, as the same author says in the sixth book of his Physical Discourse. Moreover it is spherical in shape like the world itself according to this same author and his school. That it is fire is proved by its producing all the effects of fire ; that it is larger than the earth by the fact that all the earth is illuminated by it; nay more, the heaven beside. The fact too that the earth casts a conical shadow proves that the sun is greater than it. And it is because of its great size that it is seen from every part of the earth.

145. The moon, however, is of a more earthy composition, since it is nearer to the earth. These fiery bodies and the stars generally derive their nutriment, the sun from the wide ocean, being a fiery kindling, though intelligent ; the moon from fresh waters, with an admixture of air, close to the earth as it is : thus Posidonius in the sixth book of his Physics ; the other heavenly bodies being nourished from the earth. They hold that the stars are spherical in shape and that the earth too is so and is at rest ; and that the moon does not shine by her own light, but by the borrowed light of the sun when he shines upon her.

An eclipse of the sun takes place when the moon passes in front of it on the side towards us, as shown by Zeno with a diagram in his treatise On the Whole.

146. For the moon is seen approaching at conjunctions and occulting it and then again receding from it. This can best be observed when they are mirrored in a basin of water. The moon is eclipsed when she falls into the earth's shadow : for which reason it is only at the full moon that an eclipse happens [and not always then], although she is in opposition to the sun every month ; because the moon moves in an oblique orbit, diverging in latitude relatively to the orbit of the sun, and she accordingly goes farther to the north or to the south. When, however, the moon's motion in latitude has brought her into the sun's path through the zodiac, and she thus comes diametrically opposite to the sun, there is an eclipse. Now the moon is in latitude right on the zodiac, when she is in the constellations of Cancer, Scorpio, Aries and Taurus : so Posidonius and his followers tell us.

147. The deity, say they, is a living being, immortal, rational, perfect or intelligent in happiness, admitting nothing evil [into him], taking providential care of the world and all that therein is, but he is not of human shape. He is, however, the artificer of the universe and, as it were, the father of all, both in general and in that particular part of him which is all-pervading, and which is called many names according to its various powers. They give the name Dia (Δία) because all things are due to (διά) him ; Zeus (Ζῆνα) in so far as he is the cause of life (ζῆν) or

pervades all life ; the name Athena is given, because the ruling part of the divinity extends to the aether ; the name Hera marks its extension to the air ; he is called Hephaestus since it spreads to the creative fire ; Poseidon, since it stretches to the sea ; Demeter, since it reaches to the earth. Similarly men have given the deity his other titles, fastening, as best they can, on some one or other of his peculiar attributes.

148. The substance of God is declared by Zeno to be the whole world and the heaven, as well as by Chrysippus in his first book Of the Gods, and by Posidonius in his first book with the same title. Again, Antipater in the seventh book of his work On the Cosmos says that the substance of God is akin to air, while Boëthus in his work *On Nature* speaks of the sphere of the fixed stars as the substance of God. Now the term Nature is used by them to mean sometimes that which holds the world together, sometimes that which causes terrestrial things to spring up. Nature is defined as a force moving of itself, producing and preserving in being its offspring in accordance with seminal principles62 within definite periods, and effecting results homogeneous with their sources.

149. Nature, they hold, aims both at utility and at pleasure, as is clear from the analogy of human craftsmanship. That all things happen by fate or destiny is maintained by Chrysippus in his treatise De fato, by Posidonius in his De fato, book ii., by Zeno and by Boëthus in his De fato, book i. Fate is defined as an endless chain of causation, whereby things are, or as the reason or formula by which the world goes on. What is more, they say that divination in all its forms is a real and substantial fact, if there is really Providence. And they prove it to be actually a science on the evidence of certain results : so Zeno, Chrysippus in the second book of his *De divinatione*, Athenodorus, and Posidonius in the second book of his Physical Discourse and the fifth book of his *De divinatione*. But Panaetius denies that divination has any real existence.

150. The primary matter they make the substratum of all things : so Chrysippus in the first book of his Physics, and Zeno. By matter is meant that out of which anything whatsoever is produced. Both substance and matter are terms used in a twofold sense according as they signify (1) universal or (2) particular substance or matter. The former neither increases nor diminishes, while the matter of particular things both increases and diminishes. Body according to them is substance which is finite : so Antipater in his second book On Substance, and Apollodorus in his Physics. Matter can also be acted upon, as the same author says, for if it were immutable, the things which are produced would never have been produced out of it. Hence the further doctrine that matter is divisible ad infinitum. Chrysippus says that the division is not ad infinitum, but itself infinite ; for there is nothing infinitely small to which the division can extend. But nevertheless the division goes on without ceasing.

151. Hence, again, their explanation of the mixture of two substances is, according to Chrysippus in the third book of his Physics, that they permeate each other through and through, and that the particles of the one do not merely surround those of the other or lie beside them. Thus, if a little drop of wine be thrown into the sea, it will be equally diffused over the whole sea for a while and then will be blended with it.

Diogenes Laertius. *Lives and Opinions of the Eminent Philosophers*. Book VII. Trans. C.D. Yonge. Cambridge, MA: Harvard University Press, 1926.