

[Introductory material from www.answers.com]

Timaeus is a theoretical treatise of Plato in the form of a Socratic dialogue written ca. 360 B.C. E. The work puts forward speculation on the nature of the physical world. The dialogue takes place the day after Socrates described his ideal state. In Plato's works such a discussion occurs in the *Republic*. Socrates feels that his description of the ideal state wasn't sufficient for the purposes of entertainment and that "I would be glad to hear some account of it engaging in transactions with other states." (19b) Hermocrates wishes to oblige Socrates and mentions that Critias knows just the account. (20b) Critias goes on to tell the story of Atlantis, and how Athens used to be an ideal state that went to war with Atlantis. (25a) Critias believes that he is getting ahead of himself, and mentions that Timaeus will tell part of the account from the origin of the universe to man.

Timaeus starts his account by making a distinction between the physical world, which is the world of change, and the eternal world. Since, "a description of what is changeless, fixed and clearly intelligible will be changeless and fixed," (29a) it follows that a description of what changes and is likely, will also change and be just likely. In a description of the physical world, one "should not look for anything more than a likely store." (29b)

CRITIAS: Let me proceed to explain to you, Socrates, the order in which we have arranged our entertainment. Our intention is, that Timaeus, who is the most of an astronomer amongst us, and has made the nature of the universe his special study, should speak first, beginning with the generation of the world and going down to the creation of man; next, I am to receive the men whom he has created, and of whom some will have profited by the excellent education which you have given them; and then, in accordance with the tale of Solon, and equally with his law, we will bring them into court and make them citizens, as if they were those very Athenians whom the sacred Egyptian record has recovered from oblivion, and thenceforward we will speak of them as Athenians and fellow-citizens.

SOCRATES: I see that I shall receive in my turn a perfect and splendid feast of reason. And now, Timaeus, you, I suppose, should speak next, after duly calling upon the Gods.

TIMAEUS: All men, Socrates, who have any degree of right feeling, at the beginning of every enterprise, whether small or great, always call

upon God. And we, too, who are going to discourse of the nature of the universe, how created or how existing without creation, if we be not altogether out of our wits, must invoke the aid of Gods and Goddesses and pray that our words may be acceptable to them and consistent with themselves. Let this, then, be our invocation of the Gods, to which I add an exhortation of myself to speak in such manner as will be most intelligible to you, and will most accord with my own intent.

First then, in my judgment, we must make a distinction and ask, What is that which always is and has no becoming; and what is that which is always becoming and never is? That which is apprehended by intelligence and reason is always in the same state; but that which is conceived by opinion with the help of sensation and without reason, is always in a process of becoming and perishing and never really is. Now everything that becomes or is created must of necessity be created by some cause, for without a cause nothing can be created. The work of the creator, whenever he looks to the unchangeable and fashions the form and nature of his work after an unchangeable pattern, must necessarily be made fair and perfect; but when he looks to the created only, and uses a created pattern, it is not fair or perfect. Was the heaven then or the world, whether called by this or by any other more appropriate name—assuming the name, I am asking a question which has to be asked at the beginning of an enquiry about anything—was the world, I say, always in existence and without beginning? or created, and had it a beginning? Created, I reply, being visible and tangible and having a body, and therefore sensible; and all sensible things are apprehended by opinion and sense and are in a process of creation and created. Now that which is created must, as we affirm, of necessity be created by a cause. But the father and maker of all this universe is past finding out; and even if we found him, to tell of him to all men would be impossible. And there is still a question to be asked about him: Which of the patterns had the artificer in view when he made the world—the pattern of the unchangeable, or of that which is created? If the world be indeed fair and the artificer good, it is manifest that he must have looked to that which is eternal; but if what cannot be said without blasphemy is true, then to the created pattern. Every one will see that he must have looked to the eternal; for the world is the fairest of creations and he is the best of causes. And having been created in this way, the world has been framed in the likeness of that which is apprehended by reason and mind and is unchangeable, and must therefore of necessity, if this is admitted, be a copy of something. Now it is all-important that the beginning of everything should be according to nature. And in speaking of the copy and the original we may assume that words are akin to the matter which they describe; when they relate to the lasting and

permanent and intelligible, they ought to be lasting and unalterable, and, as far as their nature allows, irrefutable and immovable—nothing less. But when they express only the copy or likeness and not the eternal things themselves, they need only be likely and analogous to the real words. As being is to becoming, so is truth to belief. If then, Socrates, amid the many opinions about the gods and the generation of the universe, we are not able to give notions which are altogether and in every respect exact and consistent with one another, do not be surprised. Enough, if we adduce probabilities as likely as any others; for we must remember that I who am the speaker, and you who are the judges, are only mortal men, and we ought to accept the tale which is probable and enquire no further.

SOCRATES: Excellent, Timaeus; and we will do precisely as you bid us. The prelude is charming, and is already accepted by us—may we beg of you to proceed to the strain?

TIMAEUS: Let me tell you then why the creator made this world of generation. He was good, and the good can never have any jealousy of anything. And being free from jealousy, he desired that all things should be as like himself as they could be. This is in the truest sense the origin of creation and of the world, as we shall do well in believing on the testimony of wise men: God desired that all things should be good and nothing bad, so far as this was attainable. Wherefore also finding the whole visible sphere not at rest, but moving in an irregular and disorderly fashion, out of disorder he brought order, considering that this was in every way better than the other. Now the deeds of the best could never be or have been other than the fairest; and the creator, reflecting on the things which are by nature visible, found that no unintelligent creature taken as a whole was fairer than the intelligent taken as a whole; and that intelligence could not be present in anything which was devoid of soul. For which reason, when he was framing the universe, he put intelligence in soul, and soul in body, that he might be the creator of a work which was by nature fairest and best. Wherefore, using the language of probability, we may say that the world became a living creature truly endowed with soul and intelligence by the providence of God.

This being supposed, let us proceed to the next stage: In the likeness of what animal did the Creator make the world? It would be an unworthy thing to liken it to any nature which exists as a part only; for nothing can be beautiful which is like any imperfect thing; but let us suppose the world to be the very image of that whole of which all other animals both individually and in their tribes are portions. For the original of the universe contains in itself all intelligible beings, just as this world comprehends us and all other visible creatures. For the Deity,

intending to make this world like the fairest and most perfect of intelligible beings, framed one visible animal comprehending within itself all other animals of a kindred nature. Are we right in saying that there is one world, or that they are many and infinite? There must be one only, if the created copy is to accord with the original. For that which includes all other intelligible creatures cannot have a second or companion; in that case there would be need of another living being which would include both, and of which they would be parts, and the likeness would be more truly said to resemble not them, but that other which included them. In order then that the world might be solitary, like the perfect animal, the creator made not two worlds or an infinite number of them; but there is and ever will be one only-begotten and created heaven.

Now that which is created is of necessity corporeal, and also visible and tangible. And nothing is visible where there is no fire, or tangible which has no solidity, and nothing is solid without earth. Wherefore also God in the beginning of creation made the body of the universe to consist of fire and earth. But two things cannot be rightly put together without a third; there must be some bond of union between them. And the fairest bond is that which makes the most complete fusion of itself and the things which it combines; and proportion is best adapted to effect such a union. For whenever in any three numbers, whether cube or square, there is a mean, which is to the last term what the first term is to it; and again, when the mean is to the first term as the last term is to the mean,—then the mean becoming first and last, and the first and last both becoming means, they will all of them of necessity come to be the same, and having become the same with one another will be all one. If the universal frame had been created a surface only and having no depth, a single mean would have sufficed to bind together itself and the other terms; but now, as the world must be solid, and solid bodies are always compacted not by one mean but by two, God placed water and air in the mean between fire and earth, and made them to have the same proportion so far as was possible (as fire is to air so is air to water, and as air is to water so is water to earth); and thus he bound and put together a visible and tangible heaven. And for these reasons, and out of such elements which are in number four, the body of the world was created, and it was harmonized by proportion, and therefore has the spirit of friendship; and having been reconciled to itself, it was indissoluble by the hand of any other than the framer.

Now the creation took up the whole of each of the four elements; for the Creator compounded the world out of all the fire and all the water and all the air and all the earth, leaving no part of any of them nor any power of them outside. His intention was, in the first place, that the an-

imal should be as far as possible a perfect whole and of perfect parts: secondly, that it should be one, leaving no remnants out of which another such world might be created: and also that it should be free from old age and unaffected by disease. Considering that if heat and cold and other powerful forces which unite bodies surround and attack them from without when they are unprepared, they decompose them, and by bringing diseases and old age upon them, make them waste away—for this cause and on these grounds he made the world one whole, having every part entire, and being therefore perfect and not liable to old age and disease. And he gave to the world the figure which was suitable and also natural. Now to the animal which was to comprehend all animals, that figure was suitable which comprehends within itself all other figures. Wherefore he made the world in the form of a globe, round as from a lathe, having its extremes in every direction equidistant from the centre, the most perfect and the most like itself of all figures; for he considered that the like is infinitely fairer than the unlike. This he finished off, making the surface smooth all round for many reasons; in the first place, because the living being had no need of eyes when there was nothing remaining outside him to be seen; nor of ears when there was nothing to be heard; and there was no surrounding atmosphere to be breathed; nor would there have been any use of organs by the help of which he might receive his food or get rid of what he had already digested, since there was nothing which went from him or came into him: for there was nothing beside him. Of design he was created thus, his own waste providing his own food, and all that he did or suffered taking place in and by himself. For the Creator conceived that a being which was self-sufficient would be far more excellent than one which lacked anything; and, as he had no need to take anything or defend himself against any one, the Creator did not think it necessary to bestow upon him hands: nor had he any need of feet, nor of the whole apparatus of walking; but the movement suited to his spherical form was assigned to him, being of all the seven that which is most appropriate to mind and intelligence; and he was made to move in the same manner and on the same spot, within his own limits revolving in a circle. All the other six motions were taken away from him, and he was made not to partake of their deviations. And as this circular movement required no feet, the universe was created without legs and without feet.

Such was the whole plan of the eternal God about the god that was to be, to whom for this reason he gave a body, smooth and even, having a surface in every direction equidistant from the centre, a body entire and perfect, and formed out of perfect bodies. And in the centre he put the soul, which he diffused throughout the body, making it also to

be the exterior environment of it; and he made the universe a circle moving in a circle, one and solitary, yet by reason of its excellence able to converse with itself, and needing no other friendship or acquaintance. Having these purposes in view he created the world a blessed god.

Now God did not make the soul after the body, although we are speaking of them in this order; for having brought them together he would never have allowed that the elder should be ruled by the younger; but this is a random manner of speaking which we have, because somehow we ourselves too are very much under the dominion of chance. Whereas he made the soul in origin and excellence prior to and older than the body, to be the ruler and mistress, of whom the body was to be the subject. And he made her out of the following elements and on this wise: Out of the indivisible and unchangeable, and also out of that which is divisible and has to do with material bodies, he compounded a third and intermediate kind of essence, partaking of the nature of the same⁴ and of the other, and this compound he placed accordingly in a mean between the indivisible, and the divisible and material. He took the three elements of the same, the other, and the essence, and mingled them into one form, compressing by force the reluctant and unsociable nature of the other into the same. When he had mingled them with the essence and out of three made one, he again divided this whole into as many portions as was fitting, each portion being a compound of the same, the other, and the essence. And he proceeded to divide after this manner:—First of all, he took away one part of the whole [1], and then he separated a second part which was double the first [2], and then he took away a third part which was half as much again as the second and three times as much as the first [3], and then he took a fourth part which was twice as much as the second [4], and a fifth part which was three times the third [9], and a sixth part which was eight times the first [8], and a seventh part which was twenty-seven times the first [27]. After this he filled up the double intervals [i.e. between 1, 2, 4, 8] and the triple [i.e. between 1, 3, 9, 27] cutting off yet other portions from the mixture and placing them in the intervals, so that in each interval there were two kinds of means, the one exceeding and exceeded by equal parts of its extremes [as for example 1, $\frac{4}{3}$, 2, in which the mean $\frac{4}{3}$ is one-third of 1 more than 1, and one-third of 2 less than 2], the other being that kind of mean which exceeds and is exceeded by an equal number (e.g. 1, $\frac{4}{3}$, $\frac{3}{2}$, 2, $\frac{8}{3}$, 3, 4, $\frac{16}{3}$, 6, 8; and 1, $\frac{3}{2}$, 2, $\frac{9}{2}$, 6, 9, $\frac{27}{2}$, 18, 27). Where there were intervals of $\frac{3}{2}$ and of $\frac{4}{3}$ and of $\frac{9}{8}$, made by the connecting terms in the former intervals, he

⁴Omitting $\delta\upsilon$ $\pi\acute{\epsilon}\rho\iota$.

filled up all the intervals of $\frac{1}{3}$ with the interval of $\frac{2}{3}$, leaving a fraction over; and the interval which this fraction expressed was in the ratio of 256 to 243 (e.g. $243:256::\frac{81}{64}:\frac{4}{3}::\frac{243}{128}:\frac{2}{3}::\frac{81}{32}:\frac{8}{3}::\frac{243}{64}:\frac{16}{3}::\frac{81}{16}:\frac{242}{32}::8$). And thus the whole mixture out of which he cut these portions was all exhausted by him. This entire compound he divided lengthways into two parts, which he joined to one another at the centre like the letter X, and bent them into a circular form, connecting them with themselves and each other at the point opposite to their original meeting-point; and, comprehending them in a uniform revolution upon the same axis, he made the one the outer and the other the inner circle. Now the motion of the outer circle he called the motion of the same, and the motion of the inner circle the motion of the other or diverse. The motion of the same he carried round by the side (i.e. of the rectangular figure supposed to be inscribed in the circle of the Same) to the right, and the motion of the diverse diagonally (i.e. across the rectangular figure from corner to corner) to the left. And he gave dominion to the motion of the same and like, for that he left single and undivided; but the inner motion he divided in six places and made seven unequal circles having their intervals in ratios of two and three, three of each, and bade the orbits proceed in a direction opposite to one another; and three [Sun, Mercury, Venus] he made to move with equal swiftness, and the remaining four [Moon, Saturn, Mars, Jupiter] to move with unequal swiftness to the three and to one another, but in due proportion.

Now when the Creator had framed the soul according to his will, he formed within her the corporeal universe, and brought the two together, and united them centre to centre. The soul, interfused everywhere from the centre to the circumference of heaven, of which also she is the external envelopment, herself turning in herself, began a divine beginning of never-ceasing and rational life enduring throughout all time. The body of heaven is visible, but the soul is invisible, and partakes of reason and harmony, and being made by the best of intellectual and everlasting natures, is the best of things created. And because she is composed of the same and of the other and of the essence, these three, and is divided and united in due proportion, and in her revolutions returns upon herself, the soul, when touching anything which has essence, whether dispersed in parts or undivided, is stirred through all her powers, to declare the sameness or difference of that thing and some other; and to what individuals are related, and by what affected, and in what way and how and when, both in the world of generation and in the world of immutable being. And when reason, which works with equal truth, whether she be in the circle of the diverse or of the same—in voiceless silence holding her onward course in the sphere of the self-moved—when reason, I say, is hovering around the sensible

world and when the circle of the diverse also moving truly imparts the intimations of sense to the whole soul, then arise opinions and beliefs sure and certain. But when reason is concerned with the rational, and the circle of the same moving smoothly declares it, then intelligence and knowledge are necessarily perfected. And if any one affirms that in which these two are found to be other than the soul, he will say the very opposite of the truth.

When the father and creator saw the creature which he had made moving and living, the created image of the eternal gods, he rejoiced, and in his joy determined to make the copy still more like the original; and as this was eternal, he sought to make the universe eternal, so far as might be. Now the nature of the ideal being was everlasting, but to bestow this attribute in its fulness upon a creature was impossible. Wherefore he resolved to have a moving image of eternity, and when he set in order the heaven, he made this image eternal but moving according to number, while eternity itself rests in unity; and this image we call time. For there were no days and nights and months and years before the heaven was created, but when he constructed the heaven he created them also. They are all parts of time, and the past and future are created species of time, which we unconsciously but wrongly transfer to the eternal essence; for we say that he 'was,' he 'is,' he 'will be,' but the truth is that 'is' alone is properly attributed to him, and that 'was' and 'will be' are only to be spoken of becoming in time, for they are motions, but that which is immovably the same cannot become older or younger by time, nor ever did or has become, or hereafter will be, older or younger, nor is subject at all to any of those states which affect moving and sensible things and of which generation is the cause. These are the forms of time, which imitates eternity and revolves according to a law of number. Moreover, when we say that what has become *is* become and what becomes *is* becoming, and that what will become *is* about to become and that the non-existent *is* non-existent,—all these are inaccurate modes of expression (compare *Parmen.*). But perhaps this whole subject will be more suitably discussed on some other occasion.

Time, then, and the heaven came into being at the same instant in order that, having been created together, if ever there was to be a dissolution of them, they might be dissolved together. It was framed after the pattern of the eternal nature, that it might resemble this as far as was possible; for the pattern exists from eternity, and the created heaven has been, and is, and will be, in all time. Such was the mind and thought of God in the creation of time. The sun and moon and five other stars, which are called the planets, were created by him in order to distinguish and preserve the numbers of time; and when he had made their several bodies, he placed them in the orbits in which the

circle of the other was revolving,—in seven orbits seven stars. First, there was the moon in the orbit nearest the earth, and next the sun, in the second orbit above the earth; then came the morning star and the star sacred to Hermes, moving in orbits which have an equal swiftness with the sun, but in an opposite direction; and this is the reason why the sun and Hermes and Lucifer overtake and are overtaken by each other. To enumerate the places which he assigned to the other stars, and to give all the reasons why he assigned them, although a secondary matter, would give more trouble than the primary. These things at some future time, when we are at leisure, may have the consideration which they deserve, but not at present.

Now, when all the stars which were necessary to the creation of time had attained a motion suitable to them, and had become living creatures having bodies fastened by vital chains, and learnt their appointed task, moving in the motion of the diverse, which is diagonal, and passes through and is governed by the motion of the same, they revolved, some in a larger and some in a lesser orbit,—those which had the lesser orbit revolving faster, and those which had the larger more slowly. Now by reason of the motion of the same, those which revolved fastest appeared to be overtaken by those which moved slower although they really overtook them; for the motion of the same made them all turn in a spiral, and, because some went one way and some another, that which receded most slowly from the sphere of the same, which was the swiftest, appeared to follow it most nearly. That there might be some visible measure of their relative swiftness and slowness as they proceeded in their eight courses, God lighted a fire, which we now call the sun, in the second from the earth of these orbits, that it might give light to the whole of heaven, and that the animals, as many as nature intended, might participate in number, learning arithmetic from the revolution of the same and the like. Thus, then, and for this reason the night and the day were created, being the period of the one most intelligent revolution. And the month is accomplished when the moon has completed her orbit and overtaken the sun, and the year when the sun has completed his own orbit. Mankind, with hardly an exception, have not remarked the periods of the other stars, and they have no name for them, and do not measure them against one another by the help of number, and hence they can scarcely be said to know that their wanderings, being infinite in number and admirable for their variety, make up time. And yet there is no difficulty in seeing that the perfect number of time fulfils the perfect year when all the eight revolutions, having their relative degrees of swiftness, are accomplished together and attain their completion at the same time, measured by the rotation of the same and equally moving. After this manner, and for these rea-

sons, came into being such of the stars as in their heavenly progress received reversals of motion, to the end that the created heaven might imitate the eternal nature, and be as like as possible to the perfect and intelligible animal.

Thus far and until the birth of time the created universe was made in the likeness of the original, but inasmuch as all animals were not yet comprehended therein, it was still unlike. What remained, the creator then proceeded to fashion after the nature of the pattern. Now as in the ideal animal the mind perceives ideas or species of a certain nature and number, he thought that this created animal ought to have species of a like nature and number. There are four such; one of them is the heavenly race of the gods; another, the race of birds whose way is in the air; the third, the watery species; and the fourth, the pedestrian and land creatures. Of the heavenly and divine, he created the greater part out of fire, that they might be the brightest of all things and fairest to behold, and he fashioned them after the likeness of the universe in the figure of a circle, and made them follow the intelligent motion of the supreme, distributing them over the whole circumference of heaven, which was to be a true cosmos or glorious world spangled with them all over. And he gave to each of them two movements: the first, a movement on the same spot after the same manner, whereby they ever continue to think consistently the same thoughts about the same things; the second, a forward movement, in which they are controlled by the revolution of the same and the like; but by the other five motions they were unaffected, in order that each of them might attain the highest perfection. And for this reason the fixed stars were created, to be divine and eternal animals, ever-abiding and revolving after the same manner and on the same spot; and the other stars which reverse their motion and are subject to deviations of this kind, were created in the manner already described. The earth, which is our nurse, clinging (or 'circling') around the pole which is extended through the universe, he framed to be the guardian and artificer of night and day, first and eldest of gods that are in the interior of heaven. Vain would be the attempt to tell all the figures of them circling as in dance, and their juxtapositions, and the return of them in their revolutions upon themselves, and their approximations, and to say which of these deities in their conjunctions meet, and which of them are in opposition, and in what order they get behind and before one another, and when they are severally eclipsed to our sight and again reappear, sending terrors and intimations of the future to those who cannot calculate their movements—to attempt to tell of all this without a visible representation of the heavenly system⁵

⁵Reading τοῖς οὐδυν. and τοῦτων αὐτῶν.

would be labour in vain. Enough on this head; and now let what we have said about the nature of the created and visible gods have an end.

To know or tell the origin of the other divinities is beyond us, and we must accept the traditions of the men of old time who affirm themselves to be the offspring of the gods—that is what they say—and they must surely have known their own ancestors. How can we doubt the word of the children of the gods? Although they give no probable or certain proofs, still, as they declare that they are speaking of what took place in their own family, we must conform to custom and believe them. In this manner, then, according to them, the genealogy of these gods is to be received and set forth.

Oceanus and Tethys were the children of Earth and Heaven, and from these sprang Phorcys and Cronos and Rhea, and all that generation; and from Cronos and Rhea sprang Zeus and Herè, and all those who are said to be their brethren, and others who were the children of these.

Now, when all of them, both those who visibly appear in their revolutions as well as those other gods who are of a more retiring nature, had come into being, the creator of the universe addressed them in these words: 'Gods, children of gods, who are my works, and of whom I am the artificer and father, my creations are indissoluble, if so I will. All that is bound may be undone, but only an evil being would wish to undo that which is harmonious and happy. Wherefore, since ye are but creatures, ye are not altogether immortal and indissoluble, but ye shall certainly not be dissolved, nor be liable to the fate of death, having in my will a greater and mightier bond than those with which ye were bound at the time of your birth. And now listen to my instructions:—Three tribes of mortal beings remain to be created—without them the universe will be incomplete, for it will not contain every kind of animal which it ought to contain, if it is to be perfect. On the other hand, if they were created by me and received life at my hands, they would be on an equality with the gods. In order then that they may be mortal, and that this universe may be truly universal, do ye, according to your natures, betake yourselves to the formation of animals, imitating the power which was shown by me in creating you. The part of them worthy of the name immortal, which is called divine and is the guiding principle of those who are willing to follow justice and you—of that divine part I will myself sow the seed, and having made a beginning, I will hand the work over to you. And do ye then interweave the mortal with the immortal, and make and beget living creatures, and give them food, and make them to grow, and receive them again in death.'

Thus he spake, and once more into the cup in which he had previously mingled the soul of the universe he poured the remains of the

elements, and mingled them in much the same manner; they were not, however, pure as before, but diluted to the second and third degree. And having made it he divided the whole mixture into souls equal in number to the stars, and assigned each soul to a star; and having there placed them as in a chariot, he showed them the nature of the universe, and declared to them the laws of destiny, according to which their first birth would be one and the same for all,—no one should suffer a disadvantage at his hands; they were to be sown in the instruments of time severally adapted to them, and to come forth the most religious of animals; and as human nature was of two kinds, the superior race would hereafter be called man. Now, when they should be implanted in bodies by necessity, and be always gaining or losing some part of their bodily substance, then in the first place it would be necessary that they should all have in them one and the same faculty of sensation, arising out of irresistible impressions; in the second place, they must have love, in which pleasure and pain mingle; also fear and anger, and the feelings which are akin or opposite to them; if they conquered these they would live righteously, and if they were conquered by them, unrighteously. He who lived well during his appointed time was to return and dwell in his native star, and there he would have a blessed and congenial existence. But if he failed in attaining this, at the second birth he would pass into a woman, and if, when in that state of being, he did not desist from evil, he would continually be changed into some brute who resembled him in the evil nature which he had acquired, and would not cease from his toils and transformations until he followed the revolution of the same and the like within him, and overcame by the help of reason the turbulent and irrational mob of later accretions, made up of fire and air and water and earth, and returned to the form of his first and better state. Having given all these laws to his creatures, that he might be guiltless of future evil in any of them, the creator sowed some of them in the earth, and some in the moon, and some in the other instruments of time; and when he had sown them he committed to the younger gods the fashioning of their mortal bodies, and desired them to furnish what was still lacking to the human soul, and having made all the suitable additions, to rule over them, and to pilot the mortal animal in the best and wisest manner which they could, and avert from him all but self-inflicted evils.

When the creator had made all these ordinances he remained in his own accustomed nature, and his children heard and were obedient to their father's word, and receiving from him the immortal principle of a mortal creature, in imitation of their own creator they borrowed portions of fire, and earth, and water, and air from the world, which were hereafter to be restored—these they took and welded them together,

not with the indissoluble chains by which they were themselves bound, but with little pegs too small to be visible, making up out of all the four elements each separate body, and fastening the courses of the immortal soul in a body which was in a state of perpetual influx and efflux. Now these courses, detained as in a vast river, neither overcame nor were overcome; but were hurrying and hurried to and fro, so that the whole animal was moved and progressed, irregularly however and irrationally and anyhow, in all the six directions of motion, wandering backwards and forwards, and right and left, and up and down, and in all the six directions. For great as was the advancing and retiring flood which provided nourishment, the affections produced by external contact caused still greater tumult—when the body of any one met and came into collision with some external fire, or with the solid earth or the gliding waters, or was caught in the tempest borne on the air, and the motions produced by any of these impulses were carried through the body to the soul. All such motions have consequently received the general name of ‘sensations,’ which they still retain. And they did in fact at that time create a very great and mighty movement; uniting with the ever-flowing stream in stirring up and violently shaking the courses of the soul, they completely stopped the revolution of the same by their opposing current, and hindered it from predominating and advancing; and they so disturbed the nature of the other or diverse, that the three double intervals [i.e. between 1, 2, 4, 8], and the three triple intervals [i.e. between 1, 3, 9, 27], together with the mean terms and connecting links which are expressed by the ratios of 3:2, and 4:3, and of 9:8—these, although they cannot be wholly undone except by him who united them, were twisted by them in all sorts of ways, and the circles were broken and disordered in every possible manner, so that when they moved they were tumbling to pieces, and moved irrationally, at one time in a reverse direction, and then again obliquely, and then upside down, as you might imagine a person who is upside down and has his head leaning upon the ground and his feet up against something in the air; and when he is in such a position, both he and the spectator fancy that the right of either is his left, and the left right. If, when powerfully experiencing these and similar effects, the revolutions of the soul come in contact with some external thing, either of the class of the same or of the other, they speak of the same or of the other in a manner the very opposite of the truth; and they become false and foolish, and there is no course or revolution in them which has a guiding or directing power; and if again any sensations enter in violently from without and drag after them the whole vessel of the soul, then the courses of the soul, though they seem to conquer, are really conquered.

And by reason of all these affections, the soul, when encased in a

mortal body, now, as in the beginning, is at first without intelligence; but when the flood of growth and nutriment abates, and the courses of the soul, calming down, go their own way and become steadier as time goes on, then the several circles return to their natural form, and their revolutions are corrected, and they call the same and the other by their right names, and make the possessor of them to become a rational being. And if these combine in him with any true nurture or education, he attains the fulness and health of the perfect man, and escapes the worst disease of all; but if he neglects education he walks lame to the end of his life, and returns imperfect and good for nothing to the world below. This, however, is a later stage; at present we must treat more exactly the subject before us, which involves a preliminary enquiry into the generation of the body and its members, and as to how the soul was created,—for what reason and by what providence of the gods; and holding fast to probability, we must pursue our way.

First, then, the gods, imitating the spherical shape of the universe, enclosed the two divine courses in a spherical body, that, namely, which we now term the head, being the most divine part of us and the lord of all that is in us: to this the gods, when they put together the body, gave all the other members to be servants, considering that it partook of every sort of motion. In order then that it might not tumble about among the high and deep places of the earth, but might be able to get over the one and out of the other, they provided the body to be its vehicle and means of locomotion; which consequently had length and was furnished with four limbs extended and flexible; these God contrived to be instruments of locomotion with which it might take hold and find support, and so be able to pass through all places, carrying on high the dwelling-place of the most sacred and divine part of us. Such was the origin of legs and hands, which for this reason were attached to every man; and the gods, deeming the front part of man to be more honourable and more fit to command than the hinder part, made us to move mostly in a forward direction. Wherefore man must needs have his front part unlike and distinguished from the rest of his body. And so in the vessel of the head, they first of all put a face in which they inserted organs to minister in all things to the providence of the soul, and they appointed this part, which has authority, to be by nature the part which is in front. And of the organs they first contrived the eyes to give light, and the principle according to which they were inserted was as follows: So much of fire as would not burn, but gave a gentle light, they formed into a substance akin to the light of every-day life; and the pure fire which is within us and related thereto they made to flow through the eyes in a stream smooth and dense, compressing the whole eye, and especially the centre part, so that it kept out everything of a

coarser nature, and allowed to pass only this pure element. When the light of day surrounds the stream of vision, then like falls upon like, and they coalesce, and one body is formed by natural affinity in the line of vision, wherever the light that falls from within meets with an external object. And the whole stream of vision, being similarly affected in virtue of similarity, diffuses the motions of what it touches or what touches it over the whole body, until they reach the soul, causing that perception which we call sight. But when night comes on and the external and kindred fire departs, then the stream of vision is cut off; for going forth to an unlike element it is changed and extinguished, being no longer of one nature with the surrounding atmosphere which is now deprived of fire: and so the eye no longer sees, and we feel disposed to sleep. For when the eyelids, which the gods invented for the preservation of sight, are closed, they keep in the internal fire; and the power of the fire diffuses and equalizes the inward motions; when they are equalized, there is rest, and when the rest is profound, sleep comes over us scarce disturbed by dreams; but where the greater motions still remain, of whatever nature and in whatever locality, they engender corresponding visions in dreams, which are remembered by us when we are awake and in the external world. And now there is no longer any difficulty in understanding the creation of images in mirrors and all smooth and bright surfaces. For from the communion of the internal and external fires, and again from the union of them and their numerous transformations when they meet in the mirror, all these appearances of necessity arise, when the fire from the face coalesces with the fire from the eye on the bright and smooth surface. And right appears left and left right, because the visual rays come into contact with the rays emitted by the object in a manner contrary to the usual mode of meeting; but the right appears right, and the left left, when the position of one of the two concurring lights is reversed; and this happens when the mirror is concave and its smooth surface repels the right stream of vision to the left side, and the left to the right (He is speaking of two kinds of mirrors, first the plane, secondly the concave; and the latter is supposed to be placed, first horizontally, and then vertically.). Or if the mirror be turned vertically, then the concavity makes the countenance appear to be all upside down, and the lower rays are driven upwards and the upper downwards.

All these are to be reckoned among the second and co-operative causes which God, carrying into execution the idea of the best as far as possible, uses as his ministers. They are thought by most men not to be the second, but the prime causes of all things, because they freeze and heat, and contract and dilate, and the like. But they are not so, for they are incapable of reason or intellect; the only being which can properly

have mind is the invisible soul, whereas fire and water, and earth and air, are all of them visible bodies. The lover of intellect and knowledge ought to explore causes of intelligent nature first of all, and, secondly, of those things which, being moved by others, are compelled to move others. And this is what we too must do. Both kinds of causes should be acknowledged by us, but a distinction should be made between those which are endowed with mind and are the workers of things fair and good, and those which are deprived of intelligence and always produce chance effects without order or design. Of the second or co-operative causes of sight, which help to give to the eyes the power which they now possess, enough has been said. I will therefore now proceed to speak of the higher use and purpose for which God has given them to us. The sight in my opinion is the source of the greatest benefit to us, for had we never seen the stars, and the sun, and the heaven, none of the words which we have spoken about the universe would ever have been uttered. But now the sight of day and night, and the months and the revolutions of the years, have created number, and have given us a conception of time, and the power of enquiring about the nature of the universe; and from this source we have derived philosophy, than which no greater good ever was or will be given by the gods to mortal man. This is the greatest boon of sight: and of the lesser benefits why should I speak? even the ordinary man if he were deprived of them would bewail his loss, but in vain. Thus much let me say however: God invented and gave us sight to the end that we might behold the courses of intelligence in the heaven, and apply them to the courses of our own intelligence which are akin to them, the unperturbed to the perturbed; and that we, learning them and partaking of the natural truth of reason, might imitate the absolutely unerring courses of God and regulate our own vagaries. The same may be affirmed of speech and hearing: they have been given by the gods to the same end and for a like reason. For this is the principal end of speech, whereto it most contributes. Moreover, so much of music as is adapted to the sound of the voice⁶ and to the sense of hearing is granted to us for the sake of harmony; and harmony, which has motions akin to the revolutions of our souls, is not regarded by the intelligent votary of the Muses as given by them with a view to irrational pleasure, which is deemed to be the purpose of it in our day, but as meant to correct any discord which may have arisen in the courses of the soul, and to be our ally in bringing her into harmony and agreement with herself; and rhythm too was given by them for the same reason, on account of the irregular and graceless ways which prevail among mankind generally, and to help us against them.

⁶Reading φωνῆ and placing the comma after ἀκοῆν.