

ON THE APPARENT FACE IN THE ORB OF THE MOON.

Plutarch

I. Then said Sylla, “These things belong to my story, and form part of it: but if you come at all into collision with these popular notions, that are in everybody’s mouth, about the Face in the Moon, I think I should be glad to learn it.” “Why should we not,” I replied, “driven back as we are by the difficulty in the first case, to the latter subject—just as people in lingering diseases, when they have lost all hope in the common remedies, and usual courses of diet, fly for refuge to purifications, spells, and dreams: in the same way it is a matter of compulsion in obscure and insoluble problems, when common, accredited, and customary arguments fail to convince, to make trial of others more out of the way, and not despise them; but to chant, as it were, over ourselves some old-fashioned charm, and hunt out the truth in all quarters.

II. “For you see at once how absurd is the explanation that the apparent figure in the moon is merely an affection of the sight, which is dazzled by the brightness, by reason of its own weakness; a thing we call. . . it takes no notice that this effect should rather take place in regard to the Sun, which strikes upon the eye both sharp and forcibly; whence Empedocles hath described the difference between the two, not inelegantly,

“‘The shrill-voiced sun, the softly whispering moon,’

designating in this way the attractive, cheerful, and inoffensive character of the latter luminary. Afterwards, giving the reason why dim and weak eyes discern no difference of form *in* the moon, but her orb strikes upon them as smooth and completely filled up, whilst those that have sharp and strong sight make out better, and distinguish the lineaments of the Face, and seize upon the difference more clearly. For the contrary ought to be the case, if that appearance were produced from the eye’s being overcome; because where the sense affected was weaker, the stronger would be the impression produced. But the inequality [of the surface] refutes this explanation, for the sight does not rest upon a continuous and confused shadow. And Hegesianax in describing it hath not ill said,

“‘With fire she shines all round, but in the midst
More blue than black appears a maiden’s face
And moisten’d cheeks, that blush to meet the gaze.’

For in reality the shaded parts, as they go round, creep under the bright ones, and are in turn cut away and compressed, and in a word, are interwoven one with the other. So that the figure resembles a sketch in outline, according to Clearchus; which seems plausibly said to *your* Aristotle—for *Aristotle* is a man of your own, being, as he was, fond of antiquity, although he did introduce into it a good deal of the Peripatetic philosophy.

III. And upon Apollonius taking up the conversation, and asking what was the opinion of Clearchus: “It better suits,” replied I, “any other person than yourself to be ignorant of the story, inasmuch as it proceeds from the very focus of geometry: for the fellow says that the so-called face is only reflected images and appearances of the great sea (the ocean) that are shown upon the moon; for that her external circumference when concave is naturally adapted to catch the reflections rising up from various quarters, whilst the full moon is of all mirrors, in point of polish and of brilliancy the most beautiful and the most clear. For just as you suppose that the rainbow, when the light is reflected against the sun, is impressed upon the clouds that have received gradually a watery smoothness and surface, in the same way, that writer says, the external sea (our ocean) is reflected on the moon, not indeed from the place it occupies, but from where the reflection of the air has made the image of it, that is to say, its surface and reflection. And Agesianax, in another place, has said:—

“‘Or some great wave of ocean, rising steep,
Shows like an image on the blazing mirror.’”

IV. Apollonius then was amused, and exclaimed: “How original and entirely new is the construction of this theory—it bespeaks a man possessed of audacity as well as wit! But in what way is it open to objection?” “In the first place,” I replied, “because the nature of the outer sea is one and the same, a uniform and unbroken expanse of water; whereas the appearance of the dark parts in the moon is not one and the same, but shows as it were projecting tongues of land, because the bright part diversifies and defines the dark; so that from each of these being separated, and having a boundary of its own, the projections of the bright parts upon the darkened, assuming the form of elevations and depressions, arrange in a most natural manner the features that appear around the eyes and lips; so that we must either suppose there are several outer seas intersected by tongues of land and continents, which supposition is both absurd and false, or else there being but one it is not reasonable that the image of it should be reflected diversified in this way. It is, however, safer to ask the question than to demonstrate, when *you* are present, whether the habitable world, being equal in length and width, it is possible for all the view at once from the moon to be reflected and reach the sea. . . . nay, more, to such as are sailing on the great ocean, and live in the middle of it, like the Britons—and this too, whilst the earth, as you have told us, does not occupy the place of a center with regard to the sphere of the moon.” “It is *your* business,” I replied, “to investigate this problem; the reflection of the prospect, however, against the moon, is neither your business to investigate, nor that of Hipparchus, although it is an interesting question. But many amongst natural philosophers are not satisfied to hold this doctrine of similar effects with respect to the sight; but it is more probable that the thing is a *collision*, or as it were impact and rebound of particles, in the same way as the *atoms* invented by Epicurus. Your Clearchus will not, I fancy, suppose the moon a ponderous and solid body, but a star composed of aether, and luminous, to use your language, . . . it is natural she should reflect the view or the impact to the same extent that the reflection has gone away from her. And if he requires anything more, we will ask how it comes that the face in the moon alone is the reflection of the ocean, and not in any other of the stars, numerous as they be: and yet probability demands that the sight should be thus affected with respect to all alike, or no one at all. Look at Lucius, and remind him of what was said at first starting.”

V. Then Lucius: “But for fear we should seem to be insulting Pharnaces, by passing over the Stoical doctrine on the subject, without a word said for it, pray make some reply, by all means, to the man that supposes the moon a mixture of air and liquid fire, and asserts that as when a ripple runs over the sea in a calm, so when this air blackens, an appearance like definite shapes is produced . . . [on the moon’s face].” “You act kindly,” replied I, “my dear Lucius, in thus cloaking their absurdity under decent names; but not so did our friend, who used to say, ‘they gave the moon a black eye,’ by thus covering her face with spots and dark patches, at one and the same time proclaiming her *Artemis* and *Athene*, and then making her out a composition and mass of dusky air and coaly fire, not possessing any kindling spark or light of her own, but to be a body hard of separation, and scorched by fire: just like those pieces of earthenware styled by the poets ‘lustreless and ashy.’ Because, however, a charcoal fire, such as they make out the moon’s to be, has neither permanence nor consistence, unless it gets hold of a material that retains and at the same time feeds it, I fancy those philosophers have seen farthest into the matter who say in joke, that Vulcan is said to be *lame*, because fire cannot go on without *wood* any more than a lame man without a *stick*. If, then, the moon is *fire*, from whence is so large a quantity of air generated in her? for the region that revolves above and around her is not of air, but of a superior element, that has the natural property of sublimating and setting on fire everything in its reach. And if this air has been generated, how comes it that it continues so long a time, and does not fly off and change its form, being set at liberty by the fire, but maintains itself and co-exists such a length of time together with the fire, like a nail fixed in the same place and riveted close? For it behoves it, as being subtile and diffused, not to remain stationary, but to fly abroad; for that it should be condensed is not possible, inasmuch as it is mixed up with fire, and has no particle of moisture nor of earth, by which things alone are as naturally disposed to be solidified. And velocity of flight inflames the air contained in stones and in that cold substance, lead, much more, then, that contained in fire, whirling along too with such immense swiftmess. For they (the Stoics) quarrel with Empedocles for making the moon ‘a congelation of air, of the nature of hail, embraced by a sphere of fire;’ whilst they themselves pretend that the moon, a ball of fire, contains air dispersed in different directions, and this, too, though she has neither fissures in her surface, nor deep places, nor cavities (things which those that make her out an earthly substance concede to her), but this same air is lying, forsooth, superficially upon her convexity. This arrangement is preposterous with respect to permanence, and impossible with respect to sight in the times of full moon; for, in that case, it ought not to define anything black and shaded, but either be hidden and darkened [completely], or else to be lighted up at the same time when the moon is taken possession of by

the sun. For amongst ourselves, the air in the deep places and hollows of the earth, whither the light doth not enter, continues obscure and unilluminated; whilst that from without diffused around the earth acquires brightness and a lustrous color, for it readily mixes itself with every kind of property, or force, by reason of its liquid nature, and especially if it but 'lay hold of the light,' as you call it, and touch the same, then is it entirely converted and lighted up. This selfsame fact, therefore, though it may seem to do good service to such as are for thrusting the air in the moon into her deep places and ravines, yet refutes those of you who *knead up* and compose her sphere, I know not how, out of air and fire; for it is not possible for shade to be left upon her surface, when the sun illuminates with his light the whole extent of the moon that we take in with the sight."

VI. Then Pharnaces, whilst I was still speaking, broke in with: "Just what I expected comes against us, borrowed from the Academy, when we are engaged in arguing with other people: never to furnish proof of what they assert themselves, but they needs must treat as defendants such as do not attack them, whatever the case may be. But *me*, at any rate, you will not draw into making a defense of the theory you impute to the Stoics, before I get satisfaction out of you for turning the affairs of the universe upside down." "Only," replied Lucius laughing, "do not bring an action for impiety against us, just as Cleanthes thought it right that the Greeks collectively should impeach Aristagoras the Stoic, of impiety, for overthrowing the altar of earth, because the fellow attempted to account for visible phenomena by supposing that the sky remains fixed, and that the earth rolls round down an oblique circle, turning at the same time upon its own axis. We, however, say nothing out of our own heads; whilst they who suppose the moon an earth, how do they turn things upside down, any more than you do who place the earth here in the air, although it be, by far, bigger than the moon, as mathematicians calculate her magnitude during her eclipses, and by the length of time consumed in her passage through the shadow? For the shadow of the earth is projected of lesser size by the illuminating body being the larger; and that the upper part of the shadow itself is fine and narrow, was not unknown, as he says, to Homer also, for he entitles night 'swift,' by reason of the *pointed* form of the shadow. But by this philosopher the moon is convicted on the strength of her eclipses, and gets off with hardly three of her own (apparent) magnitudes, for consider to how many moons the earth is equal, if it projects a shadow, which, at the shortest, is thrice the diameter of the moon. But yet you are afraid for the moon, lest she should tumble down; but as for the earth, Eschylus perhaps has reassured you, like Atlas,

"'He stands, the pillar of the sky and earth,
Propping a load not easy for the arms;'

that is, if there flows under the moon only thin air, not competent to support a solid body; whilst the earth, according to Pindar, 'adamantine-shod columns keep in on every side.' And for this reason Pharnaces himself is under no apprehension of the earth's falling, whereas he compassionates such as lie under the roadway of the moon, namely, the Ethiopians and people of Taprobane, lest so vast a weight should drop upon them; and yet, a safeguard to the moon against falling down is her motion, and the rapidity of her gyration, just as objects placed in slings have a hindrance from falling out in the circular whirling. For the natural tendency acts upon each object, unless it be diverted by some extraneous force. Consequently, her own weight does not act upon the moon, because by means of her rapid rotation its downward tendency is neutralized; there were rather cause to wonder at her not remaining stationary, like the earth, and not rolling out of her place. As it is, the moon has the greatest reason for not being carried in our direction; but the earth, as being destitute of other motion, it was natural should remain fixed through the force of gravity alone, because it is heavier than the moon, not by the same proportion as it is the larger of the two, but in still greater degree inasmuch as the latter is all the lighter through heat and burning up of her substance. And, in fine, the moon, from what you say, if she be *fire*, naturally stands in need of earth and matter, in which she walks, and clings to, and keeps together, and fans the flame of her force. Now fire cannot be imagined as being maintained without fuel, but earth, you assert, remains fixed without either foundation or root." "Certainly so," replied Pharnaces, "because it occupies its proper and natural place, as being itself the center, for this is the place around which all weights gravitate and rest, and are carried and tend together from all parts; whereas the whole upper region, even though it should receive some earthy substance forcibly thrown up, immediately excludes it—better say, discharges it, to be carried downwards in the way its own natural tendency directs."

VII. In return for this, I wishing to obtain a little respite for Lucius whilst refreshing his memory, called to Theon: “Who was it, Theon,” said I, “of the tragic writers that remarks of physicians that,

“‘With bitter drugs they purge the bitter bile?’”

and on his answering, “Sophocles,” “This privilege must be granted to them,” said I, “whether we will or no; but we must not listen to philosophers when they choose to defend absurdities by other absurdities, and in fighting for the monstrosities of their doctrines invent others yet more strange and wonderful, just as these men bring in the ‘gravitation to the center’—a notion, what amount of extravagance does it not involve? Do not they make out earth to be a sphere, though it contains such depths and heights and inequalities of surface? Do not they make the Antipodes live like caterpillars or lizards, turned upside down, clinging to the earth? And they represent ourselves as not walking erect to stand firm upon it, but wavering away all on one side, like so many drunken men! Don’t they pretend that masses of a thousand talents weight falling through the depths of earth, when they arrive at the center are arrested, though there be nothing to encounter or support them? and that if, carried along by their velocity, they shoot past the center, they are turned back again and retrace their course spontaneously? Do not they teach that sections of beams, sawed off on each side of *earth*, do not tend downwards continually, but when they fall upon the ground are repelled from without, and are come together again at the center, and that an impetuous stream of water flowing downwards, should it come to the central point (which they pretend is incorporeal) stands fast suspended in a circle around the pole, incessantly lifting up, and being lifted up incessantly? Some of these notions, indeed, they do not assert without foundation, if one should strain himself to the utmost to present them to his conception. This is indeed turning things upside down and making them run backwards, to make as far as the center ‘downwards,’ and under the center ‘upwards.’ So that if a person out of sympathy for the earth, should occupy the center thereof, and should stand upon his head, holding at the same time his head upwards and his feet also, and dig through all the space opposite him, he would emerge turned upside down and be dragged along on coming to the surface; and if forsooth, another man be imagined as walking opposite to him the feet of both would be, and also be called, turned ‘upwards.’

VIII. “Of such and such great absurdities not a wallet-ful, but rather a whole juggler’s stock and shopful, have these men strapped upon their backs and drag after them, and yet they say others are idle chatterers for placing the moon, being an earth, up aloft, not where the center is. And yet truly, if every ponderous thing does tend towards the same point, and presses with all its particles upon its own center—earth will claim for herself all ponderous things, not so much because earth is the center of the universe, as because they are particles of herself; and the fact of things gravitating downwards will be a proof, not of the centripetal force towards earth, but of *affinity* and sympathy, as it were, with earth, in particles once separated from her, and now flying back to her again. For in the same way that the sun attracts to himself the particles out of which he is composed, so doth earth receive the falling stone, and carries it to the place where in course of time each one of such bodies is made one with and assimilated to herself. But if it happens to be some other body, not assigned to earth from the beginning, nor a fragment separated from herself, but having a composition and nature of its own (as those men will say of the moon)—what prevents it from existing by itself, separately, following its own tendency, and fettered by its own particles? By no means is earth proved to be the center of the universe, and the connection and relation of the latter here with earth, guide us to the manner in which it is probable the phenomena relating to the moon take their course. I do not see why the philosopher who forces all earthy and ponderous particles into one and the same place, and makes them out portions of one and the same body, does not concede the same natural tendency to such as are without weight, but allows so many composite bodies of fire to exist separately, and does not imperatively collect into one lump all the stars that be, and demand that there should be one common body of all upward tending and fiery particles.”

IX. “But,” said I, “you assert that the sun, my dear Apollonides, is distant infinite myriads of miles from the superior circumference, while the Morning Star, and Mercury, and the other planets, all placed below him, keeping far aloof from the fixed stars, and at great distances from each other, pursue their course; whereas for the ponderous and earthy particles you suppose the universe offers no free space, nor interval between each other in its whole extent. You see it is ridiculous if we shall assert that the moon is not an earth *because* she is posted remote from the lower space, but should call her a *star*, seeing her thrust away so

many myriads of miles from the superior circumference, and crept as it were into some hole and corner of creation: at least she is so much below the other stars that one cannot express the measure of the distance, but arithmetic fails you mathematicians in calculating the same; whereas, in a manner, she touches Earth, and revolving near,

“‘As of a chariot, follows in the rut,’

says Empedocles. ‘She around the point . . .’

“For neither does she often overpass the shadow [of Earth], and elevate herself a little, by reason that the illuminating body is exceeding great, but she appears to revolve so close to, and as it were in the embrace of Earth, as to be screened against the Sun by it, without ever soaring above this shady terrestrial and darksome region which is the allotment of Earth. Wherefore I think we must confidently declare the moon to be within the limits of Earth, and to be overcast by the point of Earth’s shadow.

X. “And consider, leaving out of the case the other fixed stars and planets, what Aristarchus points out in his treatise ‘Upon Magnitudes and Distances,’ that the distance of the sun is more than eighteen times, but less than twenty times the distance of the moon, by which she is separated from us: and yet the computation that gives the greatest elevation to the moon says she is distant from us fifty-six times the space from the center of the earth [to the circumference]: this length is of forty thousand stadia, according to those who make a moderate calculation of it. And, calculated from this basis, the sun’s distance from the moon amounts to over four thousand and thirty myriads of stadia. So far, then, is she separated from the sun by reason of her weight, and approximated to earth, that if one must define substances by localities, the constitution and beauty of Earth attracts the moon, and she is of influence in matters and over persons upon Earth, by reason of her relationship and proximity. And we do not go wrong, I think, when we assign to those bodies above denominated such immense depth and distance, and leave to that which is below a certain circular course and Broadway as much as lies between earth and the moon: for neither the man who pretends the summit of heaven to be the sole ‘above,’ and denominates all the rest as ‘below,’ is reasonable in his definition; nor yet is he who circumscribes ‘below’ by the limits of Earth, or rather by the Center, to be listened to: but even moveable. . . . inasmuch as the universe allows of the interval required by reason of its own extensiveness. But in reply to such a demand that all which is separate from earth shall be consequently ‘above’ and ‘on high,’ another directly responds with the contrary axiom, that all which is reckoned from the fixed circumference is to be considered as ‘below.’

XI. “And, finally, in what sense, and in reference to what thing is Earth said to be ‘intermediate?’ For the universe is infinite; now that which is infinite hath neither beginning nor limit, so it does not belong to it to possess a *middle*: for infinity is the deprivation of limits. But he who makes out Earth to be the middle not of the *universe*, but of the *world*, is ridiculous for his simplicity if he does not reflect that the ‘world’ itself is liable to the very same objections: for the universe hath not left a middle place for it also, but it is borne along without house or home in the boundless vacuum, towards nothing cognate to itself; perhaps it has found out for itself some other cause for remaining fixed, and so has stood still, but certainly not owing to the nature of its position. And it is allowable for one to conjecture alike with respect to Earth and with respect to the moon, that by some contrary soul and nature they are [actuated, the consequence of the diversity being] differences, the former remaining stationary here, the latter moving along. But apart from these considerations, see whether a certain important fact has not escaped their notice. For if whatsoever space, and whatever thing exists away from the center of Earth, is the ‘above,’ then no part of Earth is ‘below,’ but Earth herself and the things upon Earth; and, in a word, everybody standing around or investing the center, become the ‘above;’ whilst ‘below’ is one sole thing, that incorporeal point, which has the duty of counterbalancing the whole constitution of the world; if, indeed, the ‘below’ is by its nature opposed to the ‘above.’ And this is not the only absurdity in the argument, but it also does away with the cause through which all ponderous bodies gravitate in this direction, and tend downwards: for there is no mark below towards which they move: for the incorporeal point is not likely (nor do they pretend it is) to exert so much force as to draw down all objects to itself, and keep them together around itself. But yet, it is proved unreasonable, and repugnant to facts, to suppose the ‘above’ of the world to be a whole, but the

'below' an incorporeal and indefinite limit: whereas that course is consistent with reason, to say, as we do, that the space is large and possessed of width, and is defined by the 'above' and the 'below' of locality.

XII. "Not but that we may, if you please, suppose that motions in the heavens are contrary to the nature of those of terrestrial bodies; and let us examine the matter quietly, not in the tragic style, but in a good-humored way, how such an assumption as this does not make out the moon not to be an earth, but only an earth in a position for which it is not naturally adapted. For the phenomena at Etna underground are against the order of Nature; but 'fire is there, and the blast imprisoned in the bellows is the upward force;' whereas that which by nature is imponderous, comes, in spite of itself, into places for which it was not made. And the Soul itself," I continued, "is it not locked up by God in the body against its own nature: the one swift, the other slow; the one fiery, the other frigid (as you assert); the one invisible, the other an object of sense? For this reason, therefore, let us not say that the soul is nothing to the body; but that it is a thing divine, which by reason of its gravity and density, travels round all heaven, earth, and sea, at one and the same moment, and being parcelled out pervades the flesh, the sinews, the marrow of our bodies, the cause of feelings in infinite variety, when coupled with moisture. But this Jupiter of ours doth not follow his own nature, nor is one great continuous fire; but occasionally he withdraws himself, bends downwards, and changes his form, having turned and still turning himself into every object in the course of his changes. But take heed, my good sir, and consider, lest by transposing and drawing away each thing in turn from the place where it is naturally meant to be, you philosophically bring about the dissolution of the world, and introduce the 'Discord' of Empedocles into its affairs; or, rather, lest you stir up to war upon Nature, the Titans and Giants of old, and should desire to see again the fabled terrific disorder and lawlessness of their times; apart everything ponderous, and apart everything light:

"'Where no one views with awe Sol's glorious face,
Nor Earth's own shaggy breed, nor Ocean's kind,'

as Empedocles says; nor did Earth participate in heat, nor Water in air, neither was there anything of the ponderous up above, or of the imponderous down below, but unmixed, unsocial, solitary were the principles of the universe—not admitting the union of one with another, nor communication, but fleeing and shrinking away from each other, carried along by individual and independent impulses, they were so circumstanced as is everything from which God is absent, according to Plato (that is, just as our bodies are circumstanced, when mind and soul have left them); until what time *Desire* came upon Nature by the sending of Providence, when Amity was engendered, and Venus and Love, as Empedocles declares, as also say Parmenides and Hesiod, in order that they, by exchanging places and borrowing forces from one another, and the one set being bound by the necessity of motion, the other by that of rest, compelled to emerge and change place from the position where Nature placed them, towards a better one, they might bring about the union and fellowship of the Whole.

XIII. "For if no other part of the divisions of the world were placed contrary to its nature, but each lay where it was naturally fit, standing in need of no change of place nor re-arrangement, and without having needed anything of the sort at the beginning, I am puzzled to see what is the business of a Providence, or of what Jupiter has been creator and father, 'that most skillful artificer.' For there is no use of marshallers in a camp, if each one of the officers knows out of his own head the rank, station, and moment, that he is bound to occupy and to observe; nor of gardeners or builders, if the water of itself is disposed to move upon the things that require it, and to flow over and irrigate the same; and in the other case, the bricks, timbers, and stones following their natural tendencies and inclinations, should of themselves take up the requisite arrangement and position. And if this argument does not downright subvert the doctrine of a Providence, but leaves to God the government and distribution of things that be—why should we be surprised that Nature has been so ordered and divided, that here is fixed Fire, there Stars; and again, the Earth here, and overhead the Moon; all of them bound by a stronger chain than the natural one, that is, by the one in accordance with *Reason* [*logos*]? Wherefore, if all things must needs follow their natural tendencies, and move on in the manner for which they were created, then let not the Sun revolve in a circle, nor yet Venus, nor any other of the planets, do the same—for it is *upward*, and not in a *circle*, that imponderous and fiery bodies were created to move. But if Nature possesses such a power of exchange, in spite of the locality, that *here* Fire as it moves, moves upwards, but after it has arrived at heaven, it is carried around in company

with the celestial revolution. What is there to be surprised at if it comes to pass with ponderous and earthy bodies, when transferred into another form of motion, that they be overpowered by the influence of the element that encompasses them? For in fact, it is not consistent with Nature that the upward tendency of imponderous bodies should be neutralized by the motion of the heavens; but rather that it should not be able to master such as be ponderous and gravitate downwards; nay rather, on occasion, when it has transposed the latter also by its own power, it should employ their nature to a better end than for what it was created.

XIV. “Not but that if one must dismiss the notion of habits violently overcome, and speak one’s opinion without disguise, it is probable no part of the universe possesses either place, order, or motion, of its own, which we can universally style its *natural* one; but that when each thing shows itself usefully and properly moving to that end on account of which, and for which, it was born or has been manufactured, and submitting to, or doing that which is conducive to its own preservation, perfection, or efficiency, it then appears to possess its natural place, motion, and disposition. Man himself, at any rate, who as much as anything that exists is naturally made, holds *upward* the ponderous and earthy portions of himself, especially about the head, and in his *center* the hot and fiery particles. And of the teeth, part are planted above, part below, and yet neither set are placed contrary to Nature; nor of Fire, is the part that shines in the eyes placed *according* to nature, and that detached in the belly and the heart placed *contrary* to nature; but each respectively is stationed properly and serviceably:

“‘Truly the snail and thick-skinned tortoise,’

and the nature of every shell-fish, as Empedocles says from his own observation:

“‘Where earth thou shalt behold above their flesh,’

and the stony substance does not oppress their constitution, nor crush it by its incumbent weight; neither, on the other hand, doth the heat, by reason of its lightness, fly off and escape upwards; but they are mingled with each other and ranged together, in accordance with the nature of each.

XV. “In the same way, therefore, is it probable the world is constituted, that is, if it be a *living thing*, containing earth in many places, in many others water and fire, and air, not forcibly compressed, but arranged in order by Reason. For neither is the eye *squeezed out* of the mass into the place it now fills in the body, in consequence of its levity, nor did the heart slip down and fall into the breast by reason of its weight, but because it was better each of the two should be so placed. Therefore, let us not think, of the parts of the world, either that Earth is lying here because she hath tumbled down through her own weight, or the Sun (as Metrodorus the Chian supposed) was shot up into the upper region, through his levity, after the manner of a bubble, or that the other stars got into the places where they now are, because they gravitated thither as though according to the discrimination of a pair of scales. But, inasmuch as He that rules by *reason* is the master, they, like light-giving eyes, are fixed in the brow of the universe, and stray about: whilst the sun fills the place of a heart, and, like blood and breath, distributes and disperses from out of himself both heat and light. Earth and sea the world uses according to Nature for whatever purposes an animal uses its belly and bladder: whilst the moon placed between Heaven and Earth, like the liver between the belly and the heart, or some other soft intestine, diffuses here the warmth from above, and the exhalations rising hence she subtilizes by a certain process of digestion and purification, around herself, and emits them again. But whether her earthy and solid part contains any region adapted for the reception of other things, is a matter we cannot ascertain. And in every case, the better part masters the subordinate part. And what can we gain, so consistent with probability as this, out of what those philosophers assert? They assert that the luminous and subtle part of the aether, was converted into sky by reason of its liquidity; and the condensed and conglomerated part into air, and that the moon is the most sluggish part of these two, and also the most turbid. But in spite of this, it is in anybody’s power to see that the moon is not cut off from the aether, but rather floats on much of it in the space around herself, and having under her the wind in abundance . . . revolve the comets. Thus, each one is put ‘in its fold,’ not in accordance with their tendencies depending on the gravity or levity of substance, but as having been arranged by another cause, namely *Reason*.”

XVI. After these things had been said, and I handed over the subject to Lucius, as I was advancing to the proofs of the theory, Aristotle said with a smile: "I testify that you have been directing your whole argument against such as suppose the moon to be half made of fire, and who pretend that universally some bodies tend upwards, others downwards, of their own accord. For if there is anyone that says the stars revolve in a circle by their own nature, and are made of an element entirely different from the four we know—something has just occurred to my recollection very opportunely to get them out of the difficulty." "But," said Lucius, "if we make all the other stars, and the whole of heaven, into one pure and unmixed nature, freed also from all necessity of change consequent upon passiveness, and if we trace out an orbit along which they all [shall move] with never-ceasing revolution—no one, perhaps, will quarrel with us on the present occasion; although a thousand difficulties are left still unsolved. And when the argument shall comprehend and touch upon the moon, she no longer keeps her impassiveness, and that vaunted beauty of her substance. But to pass over the other inequalities and differences [she exhibits], this very Face that appears in her, is produced either by some affection of her own substance, or by the admixture of some different one. Now that which is mixed with another suffers something, for it loses its own purity, being infected by the quality of the inferior element. But her own spurious nature, the weakness of her pace, her heat so inefficient and dull, whereby, according to Ion, 'no grape is ripened black'—to what shall we attribute all this except to her feeble nature and passiveness; that is, if passiveness belongs to an eternal and celestial body? and, to sum up, my dear Aristotle, considered as an Earth the moon shows herself to be a perfectly beautiful, awful, and well-ordered thing; but viewed as a star or a luminary, or some divine and celestial body, I fear she will prove shapeless and uncomely, and bring shame upon that glorious appellation, if of all the so numerous bodies existing in the heavens, she alone goes about begging light from another, according to Parmenides,

“With eyes aye fixed upon the solar beams.”

Now my opponent in the dispute, quoting the saying of Anaxagoras, "The sun grafts brightness in the moon," was applauded by the company; but I will not repeat what I learnt either from you, or conjointly with you; but will gladly go on to what is left. "That the moon, then, is illuminated, not like glass or crystal, by the direct or transmitted light of the sun, is a probable supposition; nor again, by reason of collected illumination or collected reflection, in the same way as torches do, when the light is augmented; for in that case it will be full moon to us none the less at the times of new moon, or first and third quarters, if she neither covers nor blocks out the sun; but the light rather passes through her by reason of her fluidity, or else it shines into her by way of intermixture, and lights up all around her. For it is not possible to lay the blame in the case of her dark quarters upon her deviations, or retreatings, as in the cases when she shows half her orb, or the same gibbous or crescent-shaped; but, according to Democritus, she stands in a vertical line to the illuminating body, and receives and takes in the sun: so that it were probable that she at the same time is illuminated and illuminates that body. But she is very far from doing this; for at that moment she is invisible, and she frequently hides, and causes him to disappear, 'she strips him of his beams,' as Empedocles says,

“Till up aloft, she veils so much his face
As the width measures of the *blue-eyed* moon:'

as though the [sun's] light fell upon night and darkness, and not upon another star. And as to what Posidonius says, that 'the light of the sun does not pass through her, on account of the depth of the moon,' is plainly confuted by the fact; for the air, though unlimited and having a depth many times greater than the moon's, is entirely illuminated and shone upon by his rays. There is left, therefore, the doctrine of Empedocles, that it is by means of a certain reflection of the sun upon the moon that the illumination which proceeds from her here below is brought about. Consequently it [her light] comes to us neither warm, nor brilliant, naturally enough, as there has been a kindling and a mingling of different lights in that case; but just as voices in the case of reflections send back the echo of the sound more dull, and the blows of shots that rebound from an object fall with greatly diminished force,

“So the ray striking on the moon's broad disk,'

makes a feeble and dull rebound upon us, being deprived of its strength by reflection.”

XVII. Then Sylla taking up the conversation said: “Certainly, this notion possesses some degree of probability, but the thing that is the strongest of those that make against it, pray, does it admit of any softening down, or has it escaped my companion’s observation?” “What is this?” replied Lucius, “do you mean the question about the half-moon?” “Yes, certainly,” answered Sylla; “for the assertion has some reason on its side, that, since all reflection takes place at equal angles, when the moon, showing but half her disk, rides in mid-heaven, the light from her does not travel towards us, but glides off to the part opposite to earth; for the sun, being upon the horizon, touches the moon with his rays; consequently, being refracted at an equal angle, it [the light from the sun] will rebound to the other extremity, and not throw the light so far as us; or else there will be a great distortion and parallax of the angle, which thing is not possible.” “Nay, but indeed,” replied Lucius, “this thing has been asserted;” and looking, as he was talking, towards Menelaus the mathematician, “I am ashamed, my dear Menelaus, to take up a mathematical question in your presence, which serves as the very foundation for the whole science of Opticks, but there is no help for it,” he continued, “for the fact that all reflection extends itself at equal angles, is neither self-evident nor universally admitted, but is contradicted in the case of convex mirrors, when they make images larger than the objects themselves to one point of vision. It is also contradicted in the case of double mirrors, which being inclined to each other, and an angle formed between them, each of the surfaces presents the appearance of a double one, and gives four images from one face, two of them looking towards the left parts from outside, and two others, indistinct, looking to the right, in the depth of the mirror. Of the production of which images, Plato explains the cause; for he has said that in consequence of the mirror’s having got height, on this side and on that, the eyes transfer the reflection, as they change their place from one side to the other. If, therefore, of the images some run back directly to us, whilst some slipping to the other side of the mirror are thrown back again from thence to us, it is not possible that all reflections take place in equal angles, as many as . . . joining battle, they demand to do away with the equality of angles by means of the *emanations* flowing from the moon upon the earth, because they suppose this theory more plausible than the former. Not but that if we must needs gratify your great darling, Geometry, and concede the point,—in the first place it is likely enough that such happens in the case of reflectors made very exact as to their polished surfaces; whereas the moon offers many inequalities and asperities of surface, so that rays from a great body [like the sun] going astray at considerable elevations, that allow of their reflecting and exchanging with one another, are reflected in all sorts of ways, and entangled with each other, and kindle up the lustre in itself, because it is thrown upon us from several reflectors at once. In the next place, even though we allow the reflections upon the moon herself to be at equal angles, it is not impossible that the rays, travelling through so vast a distance, may get reflections and circular slips of their own, so that the light is brought into one, and made to shine. Some, too, write to show that she casts many of her beams upon earth in the line. . . . under the inclined, subtended. To construct a diagram in illustration of this theory, and that, too, for many spectators, would be quite impracticable.

XVIII. “To sum up, I wonder how they manage about the half-moon’s reaching us, together with the full round, and the crescent. For if the mass of the moon, illuminated by the sun, were made of aether, or of fire, he would not have left her hemisphere shaded, and without lustre to the sense [perceptible], but had he touched her in ever so small a degree, in going round her, it would have been a natural consequence that the sun should fill her substance, and penetrate through the whole of it with his all-pervading light, from the want of any resistance. For where wine touches water at the edge, or a drop of blood falls into any liquid, the whole quantity turns red, and changes to the color of blood; in like manner, they pretend that the air itself is illuminated, not by emanations of any sort, or rays mingling themselves in it, but by a conversion and transformation due to impact and contagion: how do they imagine that star touches star, and light light, without mixing together or making any confusion or change at all, but to illumine those objects only which they touch upon their surface? For the circle which the sun, as he goes round, traces and turns about with reference to the moon, at one time falls upon the line which divides the visible from the invisible portion of her body, at another time rises up vertically so as to cut them, and to be cut by the moon, producing various inclinations and relations of the lighted to the darkened part, the complete circle and the crescent forms in her appearance, all which proves more than anything else that her illumination is not the result of *mixture* but of *contact*, not *ignition* but *irradiation*. And since not only she is lighted up, but transmits hither the image of her light, she supplies yet further reason for our insisting upon our own explanation of her nature;

for reflections are produced by no object that is porous or of loose texture. There is no such thing as light rebounding back out of light, or fire out of fire, easily conceivable; but the object that will produce opposition and fracture must necessarily be something ponderous and solid in order there may be impact *against* it, and resilience *from* it. At any rate the sun himself penetrates the air because it neither furnishes obstacles, nor offers resistance; whereas from sticks and stones and clothes exposed to the light the same sun gives back many reflections and irradiations. Thus, in fact, we see the entire earth illuminated by her, for she does not admit the light to a depth like water, nor through the whole substance like air, but whatever kind of orbit of the sun moves round the moon, and for as large a portion of her as is cut off thereby, just such another circle goes round the earth, and just so large a portion is there illuminating, and leaving the other not lighted up; for the hemisphere that is illuminated seems to be little larger in either case. Allow me to speak geometrically according to analogy, that if, there being three things which the light from the sun touches, namely, the earth, the moon, and the air, we see the moon illuminated, not in the same way as the air, but rather in the same way as the earth; it necessarily follows the two have the same nature, being made to be affected in the same way by the same agent.”

XIX. And when all had applauded Lucius, “Well done,” I exclaimed, “you have added a good defense to a good subject; for I must not defraud you of your due.” And he replied with a smile, “In the second place then, we must further make use of analogy in order that we may demonstrate the moon’s affinity to Earth, not only from both being similarly acted upon by the same thing, but by their both producing the same effects. For that there is no one thing so similar to another amongst the phenomena connected with the sun, as the sun’s being eclipsed is to his actual setting, you must allow to me if you call to mind the eclipse which took place the year before this meeting, when many stars became visible in different parts of the sky directly at the beginning of midday, and a mixture [of light and darkness] resembling daybreak pervaded the atmosphere, otherwise this Theon here will bring down upon us Mimmermus, and Cydias, and Archilochus, and Stesichorus, and Pindar to boot, all lamenting for ‘the brightest one stolen away, and night coming on at midday, and the sun’s ray [travelling] the path of darkness’ . . . as they say. And above all, Homer, telling how ‘men’s countenances were covered over with night and darkness, and the sun was lost out of heaven and vanished around the moon,’ . . . this happens when one lunar month is ending and the next commencing. The rest, with the accurate calculations of mathematicians, has been worked out and brought to a certainty; namely, that night is the shadow of the earth, and the eclipse of the sun is the shadow of the moon, when the light comes to be in it. For the sun when setting, is blocked up by the earth against the sight; but when eclipsed he is blocked up by the moon, and both phenomena are occultations, but that of setting is due to the earth, that of eclipse to the moon, because she intercepts the view of him with her shadow. What takes place is easily understood from the following considerations. If the effect is the same, the agents are the same; for it is a matter of necessity that the same things should happen in the same case from the same causes. But that the darkness attending eclipses is not complete darkness, and does not condense the atmosphere in the same degree that night does, is a circumstance we ought not to be surprised at; for the *substance* is the same of the object that causes night and that causes the eclipse, but the *magnitude* of each is not equal: for the Egyptians, I think, say the moon is the seventy-second part of earth in size; Anaxagoras, that she is as big as the Peloponnesus. But Aristarchus proves that the moon’s diameter bears a proportion [to that of earth] which is less than sixty to nineteen, but somewhat greater than one hundred and eight to forty. Consequently earth entirely takes away the sun from sight, by reason of her magnitude; for the obstruction she presents is extensive, and endures the space of a night, whereas the moon, even though she may occasionally hide the sun, the occultation has no time to last, and no extensiveness, but some light shows itself round his circumference that does not allow the darkness to become deep and unmixed. Aristotle (the ancient one, I mean) gives as one cause, besides some others, of the moon’s being seen eclipsed more frequently than the sun, ‘that the sun is eclipsed by the obstruction of the moon, whereas the moon is . . .’ But Posidonius thus describes the phenomenon: ‘The eclipse is the conjunction of the sun and the shadow of the moon, of which the eclipse . . . for to those people alone is the eclipse visible from whom the moon’s shadow shall occupy and block out the sight of the sun.’ And when he agrees that the shadow of the moon is projected as far as us, I do not know what more he has left himself to say, for of a *star* there can be no shadow, because that thing which is unilluminated is designated *shadow*—now light does naturally not produce shadow, but destroy it.”

XX. “But after this,” said he, “what further evidence was adduced?” “The moon,” I replied, “received the same explanation as to her eclipse.” “You have done well to remind me,” said he, “but beforehand, on the supposition that you are all convinced and hold that the moon is eclipsed because she is overtaken by the shadow, I now direct myself to the reason—or would you prefer that I should make a lecture and a display of eloquence beforehand, by enumerating the various attempts at the explanation, one after the other?” “Yes, truly, Theon,” I replied, “lecture on these points; for I too require some persuasion, having only heard the question stated in this way—that the three bodies being come upon one straight line, namely, the earth, the sun, and the moon, the eclipses then happen, because the earth takes away the sun from the moon; on the contrary, the moon takes away the sun from the earth, for the sun is eclipsed when the moon, and the moon when the earth stands in the middle of the three; of which cases the one happens in the conjunction, the other in the time of full-moon.” Then Lucius remarked: “These are about the most important of the theories current; but first of all, take in hand, if you please, the explanation derived from the *figure* of the shadow; for it is a cone, as though a great fire or light projected a mass, less indeed than a sphere, but still spherical in form, for which reason in eclipses of the moon the outlines of the darkened parts against the bright ones have their edges circular; for whatever sections a round thing coming in contact with another round thing, may either receive or produce, as they go off in all directions, they are made circular by reason of their resemblance [to what produced them]. In the second place, I fancy you know that the moon is first eclipsed on the parts towards the east; whereas the sun is on those towards the west, because the earth’s shadow moves towards the west from the east. The sun and the moon, on the contrary, move towards the east. All this, visible facts enable us to discover, and may be understood without very lengthy explanations, and from them the shadow as the cause of the eclipse is established. For when the sun is eclipsed by being *overtaken* by, and the moon by *meeting* that which causes the eclipse, probably, or rather, necessarily, the sun is first overtaken from behind, the moon from the front, for the occultation begins from that side where the object in front first casts the shadow, and the moon first casts it upon the sun from the west, as she is racing against him, but upon *her* he casts it from the east, because she is moving below in a contrary direction, from the east. Thirdly, then, consider the question of the *duration*, and of the *extent* of her eclipses. When she is eclipsed high in heaven and at her apogee she is obscured for only a short time, but being in her perigee and low when thus affected, she is greatly oppressed, and emerges with difficulty from the shadow. And yet, when she is low, she is making the greatest movements, but when high the smallest of all. But the cause of the difference lies in the shadow, for it is broadest at the base, as all cones are, and contracting gradually, at the top it ends in a sharp and fine point. Consequently, the moon entering into this shadow when she is low down, is caught by it in its largest circumference and passes through its deepest and darkest part, but when up high, just grazing the shadow, as though in shallow water, she quickly makes her escape. I shall pass over all that has been said with special reference to *bases* and *transits*; because they admit the cause so far as possibility goes. But I return to the argument before me, that has ocular demonstration for its starting point. For we see that fire out of a shady place shows itself and shines abroad all the more; whether through the density of the obscured air not allowing of divergences and dispersions, but keeping together and compressing the element in one place; or else this is an affection of the sense [vision], just as hot things compared with cold seem hotter, and pleasures compared with pains seem more intense, even so bright things contrasted with dark become conspicuous, because they exaggerate their appearance through the opposite affections of the sense: the former supposition of the two is likely to be the more probable, for in the sunshine every sort of fire doth not only lose its brightness, but through yielding thereto becomes inoperative and duller; because the heat disperses and diffuses its proper force. If then the moon possesses an infantine and ineffective fire, being ‘a feminine star,’ as these philosophers pretend, it befits her to be affected in none of the ways in which she is affected at present, but altogether the contrary of them all; she ought to appear where now she is hidden, and be hidden exactly where she now appears: that is to say, be hidden for the rest of the time as being obscured by the circumambient aether, but emerge and become visible every six months, and again every five, when she enters into the shadow of the earth. For the 365 revolutions of the ecliptic full moons contain 404 periods of six months, and the rest of five months each. It would therefore be necessary that the moon should be visible at intervals of so many months, because she became conspicuous in the shadow; but she . . . becomes eclipsed and loses her light, but recovers it again, when she emerges from the shadow, and often shows herself by day, as being anything rather than a fiery or star-like substance.”

XXI. Lucius having said this, Pharnaces and Apollonides in a way came into collision with each other [in their eagerness to answer him], but when Apollonides gave up the turn, Pharnaces continued, “This fact

does most of all prove the moon to be a fire or a star, for she is not *entirely* invisible during eclipses, but displays the hot-coal and grim color which is her own proper hue." But Apollonides stood firm with respect to the shadow, "for [he said] the mathematicians always so denominated the unilluminated place, and that the heavens did not admit of 'shadow.'" "This [said I] is rather the disputing captiously with a *name* than dealing philosophically and mathematically with the *fact*, for the place obstructed by the earth, if one chooses not to call it 'shadow,' but 'unilluminated region,' it is all the same unavoidable that the moon, on coming into it . . . and altogether," added I, "it is silly to say the shadow of the earth does not reach so far . . . the shadow of the moon impinging upon the sight, and . . . towards the earth, causes an eclipse of the sun. I will now turn to you, Pharnaces, for that coal-like and glowing color, which you pretend is the natural complexion of the moon, is really that of a body that possesses density and depth; for in things unsubstantial no remnant or vestige of flame is accustomed to remain; nor is there any food for fire except in a solid body that will receive and nourish the spark kindling it; as Homer also hath sung,

"When the fire-flower was spent and quenched the blaze,
Spreading the ashes wide.'

For the 'charcoal' is probably not *fire*, but an ignited substance, and affected by fire dwelling upon, and wearing itself out upon a mass which is both solid and possessed of durability; whereas the flames are but the lighting up and jets of an unsubstantial nutriment and material, speedily consumed by reason of its weakness. Consequently, nothing could have been so convincing a proof that the moon is an earthy and dense substance, than if 'smouldering coal' were proper to her as her color. But is it not the case, my dear Pharnaces, that moons in eclipse assume various colors; and mathematicians (astrologers) define these colors, and distinguish them according to the time and the season? For instance, if the moon be eclipsed in the evening, she appears dreadfully black up to the third and one-half hour, but if at midnight she emits this [just mentioned] purplish light, and fire, and flame-color, whilst from the hour of morning and half an hour later, the blush rises on her face; and finally at daybreak she puts on a dark blue and cheerful complexion, from which in reality the poets and Empedocles style her the 'Blue-eyed.' When, therefore, we see the moon putting on so many different colors when in the shadow, they do not deal fairly in dwelling upon a single one of them, namely, the smouldering coal, which we really may say is the most uncongenial to her of them all; and is rather a mixture and remnant of the fire shining through the shadow round about her; but her natural color [we define] to be dark-blue and earthy. For whereas here below shady places in the vicinity of lakes and rivers that catch the sun are similarly dyed and made brilliant in robes of purple, yea, even of *scarlet*, and give forth many various images of color, through the reflections of the light, what wonder is it if the vast flood of shadow, falling as it were into a celestial ocean of light, not steady nor at rest, but agitated by stars infinite in number, and receiving mixtures and changes of all kinds, should extract different colors at different times, and give them out from the moon? A star, or a fire, would not in the shadow show itself black, or glaucous, or dark blue; but over mountains, or plains, or sea, many variations of color from the sun go and come; and he casts the lustre of the dye, tempered with shadows and with mists, as with the hues of the painter's palette; whereof that of the sea, widely diffused, Homer hath given a name to, calling it 'violet-colored,' and 'wine-faced ocean,' and elsewhere the 'purple wave;' and, again, 'blue-green sea,' and the 'white calm;' whereas the variations about earth of colors showing themselves differently at different times he has passed over in silence as being endless in quantity. The moon is not likely to possess only a *single* visible appearance like the sea; but much more so to resemble the earth in her nature, concerning which Socrates of old told a fable, whether that he was hinting at this, or describing, it may be, some other creation. For it is neither incredible nor astonishing if she, having nothing in herself that is corrupting or turbid, but extracting the pure light out of heaven, and being full of heat, not of a consuming and fierce fire, but one that is liquid and harmless, and consistent with her nature, should possess wondrous beauties of scenery, flame-colored hills, zones of purple, gold and silver, not dug out from her bowels, but cropping up in abundance to the surface, or overlaid upon polished eminences. And if the sight (vision) of these things penetrates through the shadow differently at different times, as far as us, by reason of some difference and variation of the surrounding medium (atmosphere), the moon doth not thereby lose the preciousness nor the holiness of her glory, which . . . being held sacred by mankind, she is something more than 'a turbid and dreggy fire,' as the Stoics pretend. Fire, however, with the Medes and Assyrians enjoys honors well suited to barbarians, who worship things hurtful before things worthy of reverence, by way of deprecating their anger; but the name of Earth is, I ween, dear to all, and to the Greek

even venerable, and with us it is the hereditary rule to worship her in the same way as any other deity. We men are far from thinking the moon, which is a celestial earth, to be a body without life, and without mind, and destitute of those things which the gods have a right to enjoy, when we, by law, pay the requital for her blessings, and naturally respect that which is superior in virtue and in power, and therefore to be respected. Wherefore let us believe that we do not offend in supposing her an earth; and as for this her *face* visible to us, just as our own earth contains deep recesses [let us believe that] in the same way she too is opened out into vast gulfs, containing either water or darkened air, into which the sun's light doth not descend, or even touch, but falls short of them entirely, and produces a reflection that is dispersed and lost in those places."

XXII. Then Apollonides, scornfully interrupting, exclaimed: "What, then, in the Moon's own name, does it seem to you possible that this appearance is nothing but shadows of streams or of deep ravines, and comes all the way from the moon to us here to our sight? Perhaps you do not consider the consequences, must I tell them? Listen, then, even though you be not ignorant of them already. The diameter of the moon measures twelve fingers' breadth, as it appears to the eye, at her mean distances; whilst of the black and shaded parts each one appears larger than a half digit, so as to be larger than the twenty-fourth part of the diameter; and, again, if we should estimate the circumference of the moon at thirty thousand stadia only, and the diameter at ten thousand, according to the rule, then each one of the shaded parts in her, will not be less than five hundred stadia. Consider, pray, in the first place, whether it be possible that such cavities and such great inequalities of surface should exist in the moon as to produce an obscuration of this extent. In the next place, being so large, why are they not perceptible to us?" And I, smiling at him, replied, "Well done, Apollonides, to have invented such a demonstration, on the strength of which you will make out both yourself and me to be bigger than those Aloads of old; not, however, at all times of day, but chiefly at sunrise and sunset; you think that because the sun makes our shadows enormous, the fact furnishes this fine argument to the sense, that if the shadow cast be big the thing casting the shadow must be exceeding great. In Lemnos neither of us, I well know, has ever been; both of us, however, have often heard that popular iambic line—

"Athos has hid the flank of Lemnian Cow."

For the shadow of the mountain, as it seems, strikes upon a little cow of bronze, extending a length of no less than seven hundred stadia across the sea . . . to be the height that casts the shadow; for the reason that the divergences of the light make the shadows many times greater than the bodies themselves. Come, pray, and consider that the sun is at his greatest distance from the moon at what time she is full, and produces the most distinct figure of the face by reason of the deepness of the shading; for it is the receding of the illumining light that makes the shade deep, not the greatness of the inequalities on the surface of the moon. And, again, neither do the rays of the sun allow the projecting parts of mountains to be discerned by day, whereas their deep places, valleys, and shaded parts are visible from a great distance; it therefore is nothing strange if it is not possible to discern distinctly the reception (of solar light) and the illumination of the moon, whilst the strong contrasts of the shaded against the bright parts do not escape our sight and observation.

XXIII. "But the fact," continued I, "which seems still more to upset the alleged reflection of light from the moon, is that when people are standing in reflected lights, it comes to pass they see not only the thing illuminated but the thing that illuminates. For when a bright light cast from water is dancing up and down against a wall, the sight of it takes place in the point that is illuminated in consequence of the reflection; it (the sight) distinguishes three different things, namely, the reflected light, the water producing the reflection, and the Sun himself from whom the ray, falling upon the water, has been reflected. These points being confessed and evident, (the Stoics) recommend such as assert the earth to be illuminated by the moon, to demonstrate that the Sun shows himself (is reflected) in the moon in the same manner by night, when the reflection from him is produced. But as he does not appear then, they believe that the illumination takes place in some other way than by *reflection*: but if this be not so, then neither is the moon an earth." "What answer, then, must be made to them?" replied Apollonides, "for the phenomena of reflection are in all probability universal, and like our own." "Certainly," said I, "in one way they *are* universal, but in another way they are not universal. In the first place, observe how these people take the phenomena of the spectrum, upside down and inside out: for upon earth and below it is the *water*, but above earth, and on

high, it is the *moon*. Consequently the reflected rays make the form of the angle corresponding—the one having its apex above upon the moon, the other having it below upon the earth. Let them, therefore, not demand that it shall produce every image proper to mirrors, or an equal reflection from every distance—for in so doing they are fighting against demonstration. But those who make out the moon to be a body, neither polished nor fluid like water, but ponderous and earthy, I understand how they borrow from the sun what the appearance is in her that meets the sight: for neither does milk produce the same kind of mirrors, nor render back reflections (as the water), owing to the inequality and density of its particles: by what means, therefore, is it possible that the moon should send out from herself an image in the same way as the more brilliant surfaces of mirrors? And yet, even in these, if a cobweb, or rust, or roughness should cover the focus from which the image is generated it is [not] reflected and imaged; and the mirrors themselves are seen, but give back no reflection. And whoso pretends that either our sight should reflect upon the sun, or else that the moon should not reflect the sun from herself upon us, is ridiculous by his requiring the eye to be a sun, the sight the solar beam, and the moon the heavens. For that the Sun's reflection, impinging with a blow upon the moon by reason of its intensity and brightness, should be carried as far as us, is reasonable enough; whereas the sight being feeble, unsubstantial, and ever so small a fraction [of the solar light], what wonder is it if it neither produces an impressive stroke, nor in rebounding preserves its continuity, but is broken up and comes to an end; not possessing a large stock of light, so as not to be dissipated around the inequalities and roughnesses of the (moon's) surface? From mirrors, indeed, and other reflecting surfaces, it is not impossible for the proceeding reflection to strike upon the eye, as it is near to its origin; but from the moon, even though there should be some slippery glances of herself, they will be feeble and indistinct, and come prematurely to an end by reason of the length of the distance they have to travel. And, besides, concave mirrors make the reflected light more intense than that surrounding them, so as frequently to emit a flame; whilst the convex and spherical kinds, by reason of the light striking on them from all sides, produce a feeble and indistinct. . . . For you observe, indeed, when two rainbows appear, from a cloud enveloping another cloud, that the one enclosing the other shows its hues weak and confused: because the exterior cloud, lying further off from the sight, produces a reflection neither intense nor powerful. And what need is there to say more, when the sun's light reflected from the moon doth lose all its heat, and of its brightness there comes to us merely an unsubstantial and ineffectual remnant? Surely, when the sight travels along the same course, is it conceivable that a single particle of a remnant shall reach the sun from the moon? I do not think it. Consider, too," added I, "that if the sight is similarly affected in the case of water and of the moon, the full moon would be obliged to render back the images of earth, plants, men, and stars, in the same way as the other reflecting surfaces return them. But if reflections (repercussion) of the view do not take place against the latter object, through its own weakness, or through the unevenness of the moon's surface, we must not demand that they shall be produced upon the sun."

XXIV. "We therefore," I continued, "have now related to you all the different theories that have not slipped our memory. But it is now high time to call upon Sylla, nay, rather to *exact* from him his story, as having been our hearer upon certain conditions. Wherefore, if you please, let us end our walk, and, sitting down upon the steps, furnish him with a stationary audience." This was agreed to; and when we had sat down: "I," said Theon, "desire as much as any one of you to hear what is about to be said, Lamprias; but previously I would be glad to hear about those said to live in the moon—not *who* they are that dwell there, but whether it is *possible* to inhabit there: for if that is not possible, it is absurd to say the moon is an earth, for she will appear to have been made for no purpose, but all in vain, if she neither bears crops, nor furnishes men of some sort with habitation, birth, and living: for the which ends we say *this* earth was made, according to Plato, 'for our nurse, and unwearied keeper both by day and night, and our artificer.' For you see that many tales are told, both in jest and earnest, about these matters. For to those dwelling *under* the moon, as they say, she is suspended overhead, as though they were so many Tantalii; those, again, living upon her surface, fast bound like so many Ixions, with such incredible velocity of revolution . . . and yet she does not move with a single motion; but, as is said somewhere, she is a 'traveller on three roads,' at one and the same time carried onwards lengthways towards the Zodiac, and broadways, and deepways. Of which motions, the first the mathematicians call the 'circuit,' the second the 'spiral,' and the third, I know not why, the 'inequality:' although they have observed nothing *equal* or regular in her recessions. Consequently, if a *lion* once fell down into the Peloponnesus from her rapid gyration, it is [not] surprising—it is, on the contrary, a wonder we do not continually see showers of men, and heaps of cattle, diving down from thence, and turning round and round in the air. For it is ridiculous to argue about a residence there, if she is not capable of containing generation or stability. For whilst the Egyptians and

Troglodytes, over whose heads the sun stands vertically for a single day at the solstice, and then departing, hardly escape being burnt up through the dryness of the atmosphere, pray is it likely people in the moon can stand twelve summer days in each year, when month by month the sun stands plumb-line over them, and remains stationary, when it is full-moon? At any rate, winds and clouds and showers, without which there is no growth of plants, or nourishment for things produced, cannot possibly be thought of under such circumstances, as being brought together, in consequence of the heat and rarefaction of the atmosphere; for neither do the mountains there, however lofty, harbor the furious and ascending winters; but . . . now, the air kept in perpetual agitation through its lightness, escapes this settlement and condensation—unless, forsooth, we shall say, that like as Minerva dropped down nectar and ambrosia over Achilles, when he refused all food, so the moon that is both named and *is* Minerva, feeds her inhabitants, by issuing out unto them daily ambrosia, in the same way as Pherecydes of old supposes the gods are fed. As for the Indian root, which Megasthenes says they neither eat nor drink, but, as they are *without mouths*, they burn and use like incense, and are nourished by the fume—how is it to be found growing there if the moon is never rained on?”

XXV. When Theon had spoken this, . . . “Well done,” I replied; “by the sportiveness of your discourse [you have relieved] the seriousness of the subject: which inspires us with courage to pursue the dispute, inasmuch as we do not look for a very spiteful or grave examination from our audience. For truly they differ greatly from the people that believe these tales [but they equally differ from those] who are disgusted with and utterly disbelieve them, and are not willing to consider dispassionately what is possible and probable. In the first place, then, it does not necessarily follow that because the moon is not inhabited by men, she was made for no purpose, and in vain. For neither do we see this earth of ours universally utilized and inhabited, but only a small portion thereof, like so many capes or peninsulas jutting out into the vasty deep, is capable of breeding animals and plants, whilst the rest lies partly desert and barren by reason of winters or of drought, whilst the greater portion of her surface is submerged under the spreading ocean. But you who love and admire Aristarchus do not attend to Crates when he acknowledges,

“‘Ocean, to all, the origin ordained
Both men and gods, spreads over most of earth.’

But these things are far from being created to no purpose, for the sea sends up mild exhalations, and the most refreshing airs in the height of summer; whilst from the uninhabited and frozen quarter, the snows quietly melting away, relax and disperse . . . For the sake of day and night, an unwearied guardian in the midst, “according to Plato,” and creator. There is no objection then to the moon’s being really devoid of all living things, but affording reflection to the light diffused around her, and a rallying-point for the rays of the stars, and meeting-place within herself, in which she digests the exhalations rising up from earth, and in concert with the sun extracts the over fiery and harsh part of the same, and discharges it. And if we concede so much to ancient tradition, that she is named ‘Artemis,’ we shall say, as before, that she is *unfruitful* (like that virgin goddess), yet in other respects full of help and beneficial. For her revolution being accomplished with great evenness and tranquillity, smooths down and distends the atmosphere that moves against (encounters) her, so that there is no danger of those dwelling upon her falling off, or slipping down. For this [revolution] and the varied and erratic nature of her motion is not a sign of irregularity and confusion, but, as astronomers make out, of a wonderful order in these phenomena, and of a course in cycles revolving around other cycles, in which they confine her; some of them making her immovable, others travelling forwards with the same velocity [as the cycles] in the opposite direction. For these progressions of the cycles, their revolutions and their relations towards each other and to us, bring about in the most regular manner all the phenomena of the lunar motion, such as her elevations and depressions, her deviations in the direction of her breadth, and revolutions in that of her length. As for the intense heat and perpetual roasting [of her inhabitants] by the sun, you need not be too much afraid of all that, if you oppose to the eleven summer conjunctions all the full moons; and secondly, the continuity of the change, as a set off against the excessive heats, that indeed do not last for a long time, which circumstance produces a peculiar temperature, and softens down either extreme, and the mean between them, in all likelihood, produces a temperature resembling that of spring. In the next place, the [sun] sends down on us his heat through turbid air, and with much effort, which heat is nourished by the exhalations [of earth]; but there above, the air is rarefied and transparent, and disperses and diffuses the sun’s rays, that have no excessive heat or substance.

Wood and corn the rains themselves nourish, but in a different way: as up the country about Thebes, with you and at Syene, it is not the rain water [that nourishes], but the earth herself that drinks the earth-born water and employs the wind and dews, yet will not, I fancy, submit to a comparison, in point of fertility, with the best rain-watered soil, by reason of its goodness and natural constitution. Plants the same in kind amongst us, even though they be greatly pinched by the frosts, bring forth abundant and fine fruit; whereas in Libya and amongst you in Egypt they are difficult of cultivation, and very susceptible of the frosts. Whilst Gedrosea and the Troglodyte country, which reaches down to the ocean, is barren through want of rain, and entirely destitute of water, yet in the seas lying adjacent, and spreading round it, grow wonderful monsters of plants, and spring up from the bottom; some of which they call olive trees, some laurels, others Isis-hair. The plants called ‘anacampsaroles,’ not only live, when taken out of the ground, if hung up as long as you please, but even flower . . . Some [crops] are sown towards winter, others again, for instance, sesame at midsummer, and millet, also thyme or centaury, if planted in good and rich soil, and watered and irrigated, degenerates from its natural character and loses its virtue, but loves dryness and reverts thereby to its own nature. And if it be true, as people say, that they do not even bear the dews, like most of the Arabian plants, which fade away when moistened and are destroyed—what wonder is it if there should grow in the moon roots, seeds, and woods that require neither rain nor winter, but are naturally adapted for a summer-like and rarefied atmosphere? Why is it improbable that the moon herself emits genial airs, and that currents (of air) are produced by the very rapidity of her gyration, that quietly supply dews and a slight moisture, which being diffused and dispersed assist the vegetation, and that her actual temperature is neither fiery nor droughty but soft and humid? For no feeling of dryness comes down to us from her, but on the contrary many proofs of moisture and a feminine nature; the growth of plants, the putrefaction of meat, the conversion [fermentation] and settling of wine, the softening of timber, the easy delivery of women. I am afraid of again provoking and stirring up Pharnaces, now that he is quiet, by talking of the tides of the ocean (as his own sect pretend), and the flooding of straits that are overspread and swollen by the action of the moon, through the renewal of their fluidity. Consequently, I will rather turn myself to you, my dear Theon; for you say, quoting to us those lines of Alcman’s:

“‘Daughter of Jove, nourishing Dew! and Nurse of the sacred moon.’

Because here he calls the air Jupiter, and says that he, being *moistened* by the moon, *dissolves* into the dew. She appears, my friend, to possess a nature the opposite to the sun’s, that is, if not only whatever he is naturally disposed to condense and to dry up, she by her nature softens and dissolves, but also she moistens and cools down the heat proceeding from him, when it impinges upon and is mingled with herself. Those who think the moon to be a fiery and burning substance, are in the wrong; and they who demand that living creatures up there shall possess all the things that those here below require for their birth, nutriment, and existence, seem to pay no consideration to the disparities in nature of the two worlds, in which it is perhaps possible to find greater and more numerous differences and disparities of the living things between one another than are found. between things that do not live at all [here on earth]. Granting that there be no such things in reality as men without mouths, and nourished by the smell, unless . . . not seem, the virtue of which Ammonius told us about, and Hesiod has hinted at, when he says:

“‘Or how much enjoyment lies in the mallow and asphodel.’

But Euripides really hath made it plain, by teaching that Nature with quite a small spark warms up and keeps together the living being, “if it shall have received the bigness of an olive, standing in need of no assistance more.” And that those living upon the moon must be slender in person, and are content to be fed upon what comes to hand, is probable enough; for that the moon herself is, like the sun (which is a fiery living thing and many times bigger than the earth), said to be nourished by the moist vapors rising from the earth, as are also the other stars innumerable as they are: in the same way they suppose the necessary animals that the upper region produces are light and attenuated. But these facts we do not perceive, nor that there is place, nature, or other constitution of things adapted for them. As if, therefore, we were unable to approach or touch the sea, but only to stand afar off and contemplate it, and learning by inquiry that the water is bitter, undrinkable, and briny, someone should tell us that living creatures, numberless, huge, and varied in shape, are nourished in its depths, and that it swarms with wild creatures that use the water just as

we do the air, you would think he was imposing upon you with fiction and prodigies. We appear to be similarly situated and to experience the same thing with respect to the moon in disbelieving that men of some sort inhabit her. *They* on their part part will, I fancy, much more wonder as they look down upon our earth, lying like the sediment and dregs of the universe amongst damps, mists, and clouds; showing through them a lightless, low, immovable spot, *they* must wonder whether it breeds and maintains living creatures endowed with motion, breath, and warmth. And if perchance they may have heard Homer's lines,

“Horrible dark, which dread the very gods
Sunk below hell as far as heaven from earth,’

they will declare that all this is said with reference to *this* place, and that hell and Tartarus lie here; and that the one and only earth is the moon, which is equally distant from those upper and lower regions.”

XXVI. Almost whilst I was still speaking, Sylla took up the discourse with “Stop, Lamprias, and shut to the wicket of your speech lest you unwittingly run the fable aground, and throw this play of mine into confusion, for it has a different scene and plot. Now, I am the player, but first I will tell you the author of the piece, if there is no objection, who begins after Homer's fashion with,

“An isle Ogygian lies far out at sea,’

distant five days' sail from Britain, going westwards, and three others equally distant from it, and from each other, are more opposite to the summer visits of the sun ; in one of which the barbarians fable that Saturn is imprisoned by Jupiter, whilst his son lies by his side, as though keeping guard over those islands and the sea, which they call ‘the Sea of Saturn.’ The great continent by which the great sea is surrounded on all sides, they say, lies less distant from the others, but about five thousand stadia from Ogygia, for one sailing in a rowing-galley; for the sea is difficult of passage and muddy through the great number of currents, and these currents issue out of the great land, and shoals are formed by them, and the sea becomes clogged and full of earth, by which it has the appearance of being solid. That sea-coast of the mainland Greeks are settled on, around a bay not smaller than the Maeotis, the entrance of which lies almost in a straight line opposite the entrance to the Caspian Sea.’ Those Greeks call and consider themselves *continental* people, but *islanders* all such as inhabit this land of ours, inasmuch as it is surrounded on all sides by the sea; and they believe that with the peoples of Saturn were united, later, those who wandered about with Hercules, and being left behind there, they rekindled into strength and numbers the Greek element, then on the point of extinction, and sinking into the barbarian language, manners, and laws; whence Hercules has the first honors there, and Saturn the second. But when the star of Saturn, which we call the ‘Informer,’ but they ‘Nocturnal,’ comes into the sign of the Bull every thirty years, they having got ready a long while beforehand all things required for the sacrifice and the games . . . they send out people appointed by lot in the same number of ships, furnished with provisions and stores necessary for persons intending to cross so vast a sea by dint of rowing, as well as to live a long time in a foreign land. When they have put to sea, they meet, naturally, with different fates, but those who escape from the sea, first of all, touch at the foremost isles, which are inhabited by Greeks also, and see the sun setting for less than one hour for thirty days in succession; and this interval is night, attended with slight darkness, and a twilight glimmering out of the west. Having spent ninety days there, treated with honor and hospitality, being both considered and entitled ‘holy,’ thenceforward they voyage with the help of the winds. No other people inhabit the islands save themselves and those that had been sent out before; it is, indeed, allowed to such as have served thirteen years in waiting upon the god, to return home, but the greatest part prefer to remain there, partly out of habit, partly because they have all things in abundance without toil and trouble, as they pass their time in sacrifices and hymn singing, or in studying legends and philosophy of some sort. For wonderful are both the island and the mildness of the climate; whilst the deity himself has been an obstacle to some when contemplating departure, by manifesting himself to them as to familiars and friends, not by way of dreams or by tokens, but conversing with them in a visible form with many apparitions and speeches of genii. For Saturn himself is imprisoned in a vast cavern, sleeping upon a rock overlaid with gold; for his sleep has been contrived by Jupiter for his chaining—whilst birds fly down from the rock, which are ordained to carry ambrosia to him, whilst the island is overspread with fragrance, diffused from the rock as from a fountain. Those genii wait upon and nurse Saturn, who had been his companions at the

time when truly he used to reign over both gods and men; and they, being endowed with prophecy, foretell, on their own account, many things, but important matters, and such as concern the highest things, they go down into the cavern and report as the dreams of Saturn; for whatsoever things Jupiter is devising for the future, Saturn dreams what they are about, and that which is kingly and divine. The stranger having been carried there, as he told us, and waiting upon the god at his leisure, he gained acquaintance with astrology and geometry as far as it is possible to advance, whilst he took up 'natural science' for his department of philosophy. But, seized at last with a desire and longing to become acquainted with the 'great island,' for so, as was natural, they denominate the territories inhabited by ourselves; when the thirty years had expired, and the successors were come from home, he took leave of his friends and sailed away, having provided himself carefully with all other stores, and carrying his travelling expenses in [the shape of] cups of gold. All that he endured, and how many nations he passed through, consulting their sacred books, and receiving initiation into all their mysteries, would take a whole day to enumerate in the way that he related it to us, describing the circumstances very well and particularly; but as much of them as is connected with the present inquiry you must now hear, for he spent a very long time at Carthage, inasmuch as he received great honors amongst us for having discovered, deposited in the earth, some sacred parchments, which had been secretly carried off at the time when the former city was destroyed, and which had been concealed a very long time. Of the visible powers, he said we ought (and exhorted me also) especially to worship the moon, as being in reality, and also reputed, the sovereign of life."

XXVII. When I was astonished at this, and begged for some clearer information, "Many things, Sylla," said he, "are told amongst the Greeks, but not all rightly, concerning the Gods. For instance, at starting, you are right in calling the same person 'Demeter,' and the 'Maid,' but not right in supposing the place of each as one and the same, and that both were occupied by the same things, for the one is on the earth, and mistress of things upon earth, the other in the moon, and of the things pertaining to the moon. She is named the 'Maid,' and 'Persephone,' the latter as being the *bringer of light*, but 'maid' because we call *maid* (pupil) that part of the eye in which the image of the spectator is reflected, just as the image of the sun is reflected in the moon. In the legends told about their wandering and going in search, there is a [certain amount of] truth; for they long for each other when they are apart, and often embrace under the obscurity. Now the being at one time in heaven and in the light, at another in the darkness and the night, is not false as regards the Maid; but the time has occasioned error in the counting, since it is not *during* six months, but at *intervals* of six months that we see her enveloped in shadow by the earth as if by a mother, but rarely experiencing this at intervals of five months; for it is impossible for her to leave the shades, and from them pass, as Homer disguising the thing hath not ill said,

"'Into Elysian plains and Earth's recess.'

For where the earth's shadow ceases to reach, this point we supposed the limit and end of earth. To this place no bad or unpurified person ascends; but the good, after decease, being carried hither, continue here enjoying a very tranquil life, not, however, a blissful one, nor that of gods, until the Second Death."

XXVIII. "What, pray, is this, Sylla?" said I. "Do not ask questions about it," replied he, "for I am going to relate it all. Man most people rightly think a *composite* being, but wrongly think a composite of *two* parts only, for they reckon the *mind* as only a part of the *soul*, being no less in error than they who think the soul to be only part of the *body*; for the mind is as much better and more divine than the soul, as the soul is superior to the body. For the conjunction of body and soul produces . . . *Reason*, whereof the one is the origin of pleasure and pain, the other, of vice and virtue. Of these three combined things, the earth furnished for the birth the *body*, the moon the *soul*, the sun the *mind*, just as he supplies light to the moon. The death which we die makes the man *two* instead of *three*, the second (death) makes him *one* out of *two*. The first takes place in the region of Demeter [because the earth] and also the dead are subject to her, whence the Athenians of old used to call the [dead] "Demetrians." The second [death] takes place in the moon, the dominion of Persephone; and of the former the consort is the Earthly Hermes, of the latter, the Heavenly. The former separates the soul from the body, hastily and with violence; but Persephone gently and slowly loosens the mind from the soul, and for this reason she has been named the "Only-begotten," because the best part of the man becomes *single* when separated from the rest by her means. Each of these changes happens, according to nature, as follows: every soul, whether without mind, or joined to mind, on

departing from the body, is ordained to wander in the region lying between the moon and earth for a term, not equal in all cases; but the wicked and incontinent pay a penalty for their sins; whereas the virtuous, in order, as it were, to purify themselves and to recover breath, after the body, as being the source of sinful pollution, must pass a certain fixed time in the mildest region of air, which they call the "Meadow of Hades." Then, as though returning to their native land after enforced banishment, they taste of joy, such as the initiated into mysteries feel, mingled with trouble and apprehension, joined with a peculiar hope, for it drives off and tosses away many of them when already making for the moon; and they [the virtuous] also see the ghosts of people there turned upside down, and, as it were, descending into the abyss. Such as are arrived above, and have got firm footing there [on the moon], like victors in the games, crowned with wreaths, encircle their heads with crowns called crowns of "Constancy," made of feathers, because the irrational and passionate part of the soul they have in life presented to Reason, manageable and kept in restraint. In the next place, their sight resembles a sunbeam, and the soul, wafted on high by the air surrounding the moon, gains tone and vigor from the same, just as here below steeled tools gain it by the tempering; for that which was unsubstantial and diffuse becomes solid and transparent, so as to be nourished by the exhalation it meets with there; and Heraclitus hath well said that 'Souls in Hades have the sense of smell.'"

XXIX. "They contemplate, in the first place, the magnitude and beauty of the moon; also her nature, which is not simple and unmixed, but as it were a combination of star and earth; for just as earth mixed with air and moisture becomes soft, and the blood mingling itself with the flesh produces sensibility, in like manner they say the moon being mixed up from her inmost depth, becomes both animated and generative, and at the same time has the symmetrical arrangement of its levity around the center of the mass for a counteracting force to its own gravity. For it is in this way that our world, being composed out of elements that by their own nature tend some upwards, some downwards, is free from all motion in its place. These facts Xenocrates appears to have discovered through a certain admirable process of reasoning, having taken his starting-point out of Plato. For it is Plato who proved that also each one of the stars is composed of earth and fire, by means of the ascertained analogy of the intervening substances; because nothing comes within the reach of sense that has not some portion of earth and of fire mingled with it. Now Xenocrates says the sun is composed of fire and the First Solid; but the moon of the Second Solid and her own air; and the earth out of water, fire, and the Third of the Solids; and, generally, that neither the solid, taken by itself, nor the fluid, is capable of a soul. Thus much, then, for the physical constitution of the moon. The breadth, and the magnitude of her is not what the geometricians assert, but much larger; for she measures the shadow of the earth only a few times with her own magnitude, not in consequence of her smallness, but because she puts out all her speed, that she may pass through the darkened spot, and carry out with her the souls of the good, that are eager for it and cry aloud to her; because they hear no longer, whilst they are in the shadow, the harmony of the heavens, and at the same time, the souls of those suffering punishment rush up towards her from below through the shadow, wailing and shouting (for which reason, during eclipses, most people clatter their brass pots and clap their hands, and make a noise to scare away the ghosts), for the so-called Face frightens them when they come nigh, looking grim and horrible. Such it is not really, but like as our earth has deep and great gulfs—one of them flowing inwards towards us through the Pillars of Hercules; others flowing outwards as the Caspian, and those in the Red Sea—in like manner there are deep places and gulf-like in the moon, whereof the largest is called 'Hecate's dungeon,' in which the souls either suffer or inflict punishment, for the things which they have either done or endured, when they have already been made genii: as for the two smaller depths, because the souls pass through them on the way towards heaven and towards earth back again, the one is denominated the 'Elysian Plain,' the other the 'Passage of Persephone the Terrestrial!'"

XXX. "The genii do not always pass their time upon her (the moon), but they come down hither and take charge of Oracles; they are present at and assist in the most advanced of the initiatory rites [in the several Mysteries], as punishers and keepers of wrong-doers they act, and shine as saviors in battle and at sea; and whatsoever thing in these capacities they do amiss, either out of spite, unfair partiality, or envy, they are punished for it, for they are driven down again to earth and coupled with human bodies. Of the best of these genii they told him were those who wait upon Saturn now, and the same in old times were the Idaei Dactyli in Crete, the Curetes in Phrygia, the Trophonii in Boeotia Lebadea, and others without number in various parts of the world, of whom the holy places, honors, and titles still remain; though of some the powers have

ceased since they have experienced a removal of their virtue to another locality. This change they suffer, some sooner, some later, when the *mind* has been separated from the *soul*. The mind separates itself out of a desire of reaching the Image in the sun, through which shines forth the Desirable, and Beautiful, and Divine, and Blissful, to which every unmixed nature aspires in different ways. For the moon herself, out of desire for the sun, revolves round and comes in contact with him, because she longs to derive from him the generative principle. The nature of the soul is left behind in the moon, retaining vestiges as it were and dreams of life; and on this account you must suppose it rightly said:

“‘Like to a dream, the soul took wing and fled.’

For the soul does not suffer this all at once; nor as soon as separated from the body, but afterwards when she has become desolate and solitary, when the mind is departed. And Homer (said he) appears to have spoken especially through divine inspiration about the whole question:

“‘There midst the rest strong Hercules I marked,
His spectre—for himself dwells with the gods.’

For each individual of us is not anger, nor fear, nor desire, just as he is neither pieces of flesh nor humors; but that wherewith we think and understand is the soul, impressed by the mind, and in its turn impressing the body, and impinging upon it from all parts it models the form; so that, though it may continue a long time separated from both (the mind and the body), yet as it retains the likeness and imprint, it is properly denominated the “Image” (or *Spectre*). Of these images the moon is the element: for they are resolved into her substance, like as bodies into earth, of the dead. Quickly resolved are the temperate, such as have led a tranquil, philosophic, and leisurely life on earth; for being let go from the mind, and no longer subject to the passions, they wither away. Of those ambitious, busy, amorous, and irascible when in the body, the souls are visited, like dreams, with recollections of their past life, and are troubled with them; like that of Endymion of old. For their restless and passionate character stirs them up, and draws them away from the moon towards a second birth; she suffers them not, however [to escape], but recalls them to herself, and soothes them to remain. For it is far from quiet or orderly work, when souls, separated from mind, get possession of a body subject to passions. Of such souls came perchance the Tityi and the Typhons, and that Typhon who used to hinder and trouble the oracular power at Delphi: for they are destitute of reason, and actuated by the passionate part, puffed up with pride and self-conceit. But, in time, even these the moon absorbs into herself, and reduces to order. In the next place, the sun having *impregnated* the mind with vital force, produces new souls. And, thirdly, earth furnishes a body: for earth takes back after death that which she gave at birth; whereas the sun *takes* nothing, only *takes back* the mind, which he gave: but the moon both takes and gives, and puts together, and separates; in virtue of two different powers, of which the combining power is named ‘Elithyia,’ the separative one ‘Artemis.’ And of the Three Fates, Atropos, seated in the sun, supplies the origin of birth; Clotho, moving about the moon, unites together and mingles the various parts; lastly, Lachesis, on earth, who has most to do with Fortune, puts her hand to the work. For the inanimate part is powerless, and liable to be acted upon by others; but the mind is impassive and independent; and the soul is of mixed nature, and intermediate between the two: just as the moon hath been made by the Deity a mixture of things above and of things below, ‘a great, full horn,’ bearing the same relation to the sun that the earth bears to the moon.

“All this,” said Sylla, “I heard the stranger recounting; and the chamberlains and ministers of Saturn had related it, as he said, to him. You, Lamprias, are at liberty to make what use you please of the story.”