Timaeus

By Plato

Translated by Benjamin Jowett

Persons of the Dialogue

SOCRATES

CRITIAS

TIMAEUS

HERMOCRATES

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Socrates. One, two, three; but where, my dear Timaeus, is the fourth

of those who were yesterday my guests and are to be my entertainers

to-day?

Timaeus. He has been taken ill, Socrates; for he would not willingly

have been absent from this gathering.

Soc. Then, if he is not coming, you and the two others must supply

his place.

Tim. Certainly, and we will do all that we can; having been handsomely

entertained by you yesterday, those of us who remain should be only

too glad to return your hospitality.

Soc. Do you remember what were the points of which I required you

to speak?

Tim. We remember some of them, and you will be here to remind us of

anything which we have forgotten: or rather, if we are not troubling

you, will you briefly recapitulate the whole, and then the particulars

will be more firmly fixed in our memories?

Soc. To be sure I will: the chief theme of my yesterday's discourse

was the State-how constituted and of what citizens composed it would

seem likely to be most perfect.

Tim. Yes, Socrates; and what you said of it was very much to our mind.

Soc. Did we not begin by separating the husbandmen and the artisans

from the class of defenders of the State?

Tim. Yes.

Soc. And when we had given to each one that single employment and

particular art which was suited to his nature, we spoke of those who

were intended to be our warriors, and said that they were to be guardians

of the city against attacks from within as well as from without, and

to have no other employment; they were to be merciful in judging their

subjects, of whom they were by nature friends, but fierce to their

enemies, when they came across them in battle.

Tim. Exactly.

Soc. We said, if I am not mistaken, that the guardians should be gifted

with a temperament in a high degree both passionate and philosophical;

and that then they would be as they ought to be, gentle to their friends

and fierce with their enemies.

Tim. Certainly.

Soc. And what did we say of their education? Were they not to be trained

in gymnastic, and music, and all other sorts of knowledge which were

proper for them?

Tim. Very true.

Soc. And being thus trained they were not to consider gold or silver

or anything else to be their own private property; they were to be

like hired troops, receiving pay for keeping guard from those who

were protected by them-the pay was to be no more than would suffice

for men of simple life; and they were to spend in common, and to live

together in the continual practice of virtue, which was to be their

sole pursuit.

Tim. That was also said.

Soc. Neither did we forget the women; of whom we declared, that their

natures should be assimilated and brought into harmony with those

of the men, and that common pursuits should be assigned to them both

in time of war and in their ordinary life.

Tim. That, again, was as you say.

Soc. And what about the procreation of children? Or rather not the

proposal too singular to be forgotten? for all wives and children

were to be in common, to the intent that no one should ever know his

own child, but they were to imagine that they were all one family;

those who were within a suitable limit of age were to be brothers

and sisters, those who were of an elder generation parents and grandparents,

and those of a younger children and grandchildren.

Tim. Yes, and the proposal is easy to remember, as you say.

Soc. And do you also remember how, with a view of securing as far

as we could the best breed, we said that the chief magistrates, male

and female, should contrive secretly, by the use of certain lots,

so to arrange the nuptial meeting, that the bad of either sex and

the good of either sex might pair with their like; and there was to

be no quarrelling on this account, for they would imagine that the

union was a mere accident, and was to be attributed to the lot?

Tim. I remember.

Soc. And you remember how we said that the children of the good parents

were to be educated, and the children of the bad secretly dispersed

among the inferior citizens; and while they were all growing up the

rulers were to be on the look-out, and to bring up from below in their

turn those who were worthy, and those among themselves who were unworthy

were to take the places of those who came up?

Tim. True.

Soc. Then have I now given you all the heads of our yesterday's discussion?

Or is there anything more, my dear Timaeus, which has been omitted?

Tim. Nothing, Socrates; it was just as you have said.

Soc. I should like, before proceeding further, to tell you how I feel

about the State which we have described. I might compare myself to

a person who, on beholding beautiful animals either created by the

painter's art, or, better still, alive but at rest, is seized with

a desire of seeing them in motion or engaged in some struggle or conflict

to which their forms appear suited; this is my feeling about the State

which we have been describing. There are conflicts which all cities

undergo, and I should like to hear some one tell of our own city carrying

on a struggle against her neighbours, and how she went out to war

in a becoming manner, and when at war showed by the greatness of her

actions and the magnanimity of her words in dealing with other cities

a result worthy of her training and education. Now I, Critias and

Hermocrates, am conscious that I myself should never be able to celebrate

the city and her citizens in a befitting manner, and I am not surprised

at my own incapacity; to me the wonder is rather that the poets present

as well as past are no better-not that I mean to depreciate them;

but every one can see that they are a tribe of imitators, and will

imitate best and most easily the life in which they have been brought

up; while that which is beyond the range of a man's education he finds

hard to carry out in action, and still harder adequately to represent

in language. I am aware that the Sophists have plenty of brave words

and fair conceits, but I am afraid that being only wanderers from

one city to another, and having never had habitations of their own,

they may fail in their conception of philosophers and statesmen, and

may not know what they do and say in time of war, when they are fighting

or holding parley with their enemies. And thus people of your class

are the only ones remaining who are fitted by nature and education

to take part at once both in politics and philosophy. Here is Timaeus,

of Locris in Italy, a city which has admirable laws, and who is himself

in wealth and rank the equal of any of his fellow-citizens; he has

held the most important and honourable offices in his own state, and,

as I believe, has scaled the heights of all philosophy; and here is

Critias, whom every Athenian knows to be no novice in the matters

of which we are speaking; and as to, Hermocrates, I am assured by

many witnesses that his genius and education qualify him to take part

in any speculation of the kind. And therefore yesterday when I saw

that you wanted me to describe the formation of the State, I readily

assented, being very well aware, that, if you only would, none were

better qualified to carry the discussion further, and that when you

had engaged our city in a suitable war, you of all men living could

best exhibit her playing a fitting part. When I had completed my task,

I in return imposed this other task upon you. You conferred together

and agreed to entertain me to-day, as I had entertained you, with

a feast of discourse. Here am I in festive array, and no man can be

more ready for the promised banquet.

Her. And we too, Socrates, as Timaeus says, will not be wanting in

enthusiasm; and there is no excuse for not complying with your request.

As soon as we arrived yesterday at the guest-chamber of Critias, with

whom we are staying, or rather on our way thither, we talked the matter

over, and he told us an ancient tradition, which I wish, Critias,

that you would repeat to Socrates, so that he may help us to judge

whether it will satisfy his requirements or not.

Crit. I will, if Timaeus, who is our other partner, approves.

Tim. I quite approve.

Crit. Then listen, Socrates, to a tale which, though strange, is certainly

true, having been attested by Solon, who was the wisest of the seven

sages. He was a relative and a dear friend of my great-grandfather,

Dropides, as he himself says in many passages of his poems; and he

told the story to Critias, my grandfather, who remembered and repeated

it to us. There were of old, he said, great and marvellous actions

of the Athenian city, which have passed into oblivion through lapse

of time and the destruction of mankind, and one in particular, greater

than all the rest. This we will now rehearse. It will be a fitting

monument of our gratitude to you, and a hymn of praise true and worthy

of the goddess, on this her day of festival.

Soc. Very good. And what is this ancient famous action of the Athenians,

which Critias declared, on the authority of Solon, to be not a mere

legend, but an actual fact?

Crit. I will tell an old-world story which I heard from an aged man;

for Critias, at the time of telling it, was as he said, nearly ninety

years of age, and I was about ten. Now the day was that day of the

Apaturia which is called the Registration of Youth, at which, according

to custom, our parents gave prizes for recitations, and the poems

of several poets were recited by us boys, and many of us sang the

poems of Solon, which at that time had not gone out of fashion. One

of our tribe, either because he thought so or to please Critias, said

that in his judgment Solon was not only the wisest of men, but also

the noblest of poets. The old man, as I very well remember, brightened

up at hearing this and said, smiling: Yes, Amynander, if Solon had

only, like other poets, made poetry the business of his life, and

had completed the tale which he brought with him from Egypt, and had

not been compelled, by reason of the factions and troubles which he

found stirring in his own country when he came home, to attend to

other matters, in my opinion he would have been as famous as Homer

or Hesiod, or any poet.

And what was the tale about, Critias? said Amynander.

About the greatest action which the Athenians ever did, and which

ought to have been the most famous, but, through the lapse of time

and the destruction of the actors, it has not come down to us.

Tell us, said the other, the whole story, and how and from whom Solon

heard this veritable tradition.

He replied:-In the Egyptian Delta, at the head of which the river

Nile divides, there is a certain district which is called the district

of Sais, and the great city of the district is also called Sais, and

is the city from which King Amasis came. The citizens have a deity

for their foundress; she is called in the Egyptian tongue Neith, and

is asserted by them to be the same whom the Hellenes call Athene;

they are great lovers of the Athenians, and say that they are in some

way related to them. To this city came Solon, and was received there

with great honour; he asked the priests who were most skilful in such

matters, about antiquity, and made the discovery that neither he nor

any other Hellene knew anything worth mentioning about the times of

old. On one occasion, wishing to draw them on to speak of antiquity,

he began to tell about the most ancient things in our part of the

world-about Phoroneus, who is called "the first man," and about Niobe;

and after the Deluge, of the survival of Deucalion and Pyrrha; and

he traced the genealogy of their descendants, and reckoning up the

dates, tried to compute how many years ago the events of which he

was speaking happened. Thereupon one of the priests, who was of a

very great age, said: O Solon, Solon, you Hellenes are never anything

but children, and there is not an old man among you. Solon in return

asked him what he meant. I mean to say, he replied, that in mind you

are all young; there is no old opinion handed down among you by ancient

tradition, nor any science which is hoary with age. And I will tell

you why. There have been, and will be again, many destructions of

mankind arising out of many causes; the greatest have been brought

about by the agencies of fire and water, and other lesser ones by

innumerable other causes. There is a story, which even you have preserved,

that once upon a time Paethon, the son of Helios, having yoked the

steeds in his father's chariot, because he was not able to drive them

in the path of his father, burnt up all that was upon the earth, and

was himself destroyed by a thunderbolt. Now this has the form of a

myth, but really signifies a declination of the bodies moving in the

heavens around the earth, and a great conflagration of things upon

the earth, which recurs after long intervals; at such times those

who live upon the mountains and in dry and lofty places are more liable

to destruction than those who dwell by rivers or on the seashore.

And from this calamity the Nile, who is our never-failing saviour,

delivers and preserves us. When, on the other hand, the gods purge

the earth with a deluge of water, the survivors in your country are

herdsmen and shepherds who dwell on the mountains, but those who,

like you, live in cities are carried by the rivers into the sea. Whereas

in this land, neither then nor at any other time, does the water come

down from above on the fields, having always a tendency to come up

from below; for which reason the traditions preserved here are the

most ancient.

The fact is, that wherever the extremity of winter frost or of summer

does not prevent, mankind exist, sometimes in greater, sometimes in

lesser numbers. And whatever happened either in your country or in

ours, or in any other region of which we are informed-if there were

any actions noble or great or in any other way remarkable, they have

all been written down by us of old, and are preserved in our temples.

Whereas just when you and other nations are beginning to be provided

with letters and the other requisites of civilized life, after the

usual interval, the stream from heaven, like a pestilence, comes pouring

down, and leaves only those of you who are destitute of letters and

education; and so you have to begin all over again like children,

and know nothing of what happened in ancient times, either among us

or among yourselves. As for those genealogies of yours which you just

now recounted to us, Solon, they are no better than the tales of children.

In the first place you remember a single deluge only, but there were

many previous ones; in the next place, you do not know that there

formerly dwelt in your land the fairest and noblest race of men which

ever lived, and that you and your whole city are descended from a

small seed or remnant of them which survived. And this was unknown

to you, because, for many generations, the survivors of that destruction

died, leaving no written word. For there was a time, Solon, before

the great deluge of all, when the city which now is Athens was first

in war and in every way the best governed of all cities, is said to

have performed the noblest deeds and to have had the fairest constitution

of any of which tradition tells, under the face of heaven.

Solon marvelled at his words, and earnestly requested the priests

to inform him exactly and in order about these former citizens. You

are welcome to hear about them, Solon, said the priest, both for your

own sake and for that of your city, and above all, for the sake of

the goddess who is the common patron and parent and educator of both

our cities. She founded your city a thousand years before ours, receiving

from the Earth and Hephaestus the seed of your race, and afterwards

she founded ours, of which the constitution is recorded in our sacred

registers to be eight thousand years old. As touching your citizens

of nine thousand years ago, I will briefly inform you of their laws

and of their most famous action; the exact particulars of the whole

we will hereafter go through at our leisure in the sacred registers

themselves. If you compare these very laws with ours you will find

that many of ours are the counterpart of yours as they were in the

olden time. In the first place, there is the caste of priests, which

is separated from all the others; next, there are the artificers,

who ply their several crafts by themselves and do not intermix; and

also there is the class of shepherds and of hunters, as well as that

of husbandmen; and you will observe, too, that the warriors in Egypt

are distinct from all the other classes, and are commanded by the

law to devote themselves solely to military pursuits; moreover, the

weapons which they carry are shields and spears, a style of equipment

which the goddess taught of Asiatics first to us, as in your part

of the world first to you. Then as to wisdom, do you observe how our

law from the very first made a study of the whole order of things,

extending even to prophecy and medicine which gives health, out of

these divine elements deriving what was needful for human life, and

adding every sort of knowledge which was akin to them. All this order

and arrangement the goddess first imparted to you when establishing

your city; and she chose the spot of earth in which you were born,

because she saw that the happy temperament of the seasons in that

land would produce the wisest of men. Wherefore the goddess, who was

a lover both of war and of wisdom, selected and first of all settled

that spot which was the most likely to produce men likest herself.

And there you dwelt, having such laws as these and still better ones,

and excelled all mankind in all virtue, as became the children and

disciples of the gods.

Many great and wonderful deeds are recorded of your state in our histories.

But one of them exceeds all the rest in greatness and valour. For

these histories tell of a mighty power which unprovoked made an expedition

against the whole of Europe and Asia, and to which your city put an

end. This power came forth out of the Atlantic Ocean, for in those

days the Atlantic was navigable; and there was an island situated

in front of the straits which are by you called the Pillars of Heracles;

the island was larger than Libya and Asia put together, and was the

way to other islands, and from these you might pass to the whole of

the opposite continent which surrounded the true ocean; for this sea

which is within the Straits of Heracles is only a harbour, having

a narrow entrance, but that other is a real sea, and the surrounding

land may be most truly called a boundless continent. Now in this island

of Atlantis there was a great and wonderful empire which had rule

over the whole island and several others, and over parts of the continent,

and, furthermore, the men of Atlantis had subjected the parts of Libya

within the columns of Heracles as far as Egypt, and of Europe as far

as Tyrrhenia. This vast power, gathered into one, endeavoured to subdue

at a blow our country and yours and the whole of the region within

the straits; and then, Solon, your country shone forth, in the excellence

of her virtue and strength, among all mankind. She was pre-eminent

in courage and military skill, and was the leader of the Hellenes.

And when the rest fell off from her, being compelled to stand alone,

after having undergone the very extremity of danger, she defeated

and triumphed over the invaders, and preserved from slavery those

who were not yet subjugated, and generously liberated all the rest

of us who dwell within the pillars. But afterwards there occurred

violent earthquakes and floods; and in a single day and night of misfortune

all your warlike men in a body sank into the earth, and the island

of Atlantis in like manner disappeared in the depths of the sea. For

which reason the sea in those parts is impassable and impenetrable,

because there is a shoal of mud in the way; and this was caused by

the subsidence of the island.

I have told you briefly, Socrates, what the aged Critias heard from

Solon and related to us. And when you were speaking yesterday about

your city and citizens, the tale which I have just been repeating

to you came into my mind, and I remarked with astonishment how, by

some mysterious coincidence, you agreed in almost every particular

with the narrative of Solon; but I did not like to speak at the moment.

For a long time had elapsed, and I had forgotten too much; I thought

that I must first of all run over the narrative in my own mind, and

then I would speak. And so I readily assented to your request yesterday,

considering that in all such cases the chief difficulty is to find

a tale suitable to our purpose, and that with such a tale we should

be fairly well provided.

And therefore, as Hermocrates has told you, on my way home yesterday

I at once communicated the tale to my companions as I remembered it;

and after I left them, during the night by thinking I recovered nearly

the whole it. Truly, as is often said, the lessons of our childhood

make wonderful impression on our memories; for I am not sure that

I could remember all the discourse of yesterday, but I should be much

surprised if I forgot any of these things which I have heard very

long ago. I listened at the time with childlike interest to the old

man's narrative; he was very ready to teach me, and I asked him again

and again to repeat his words, so that like an indelible picture they

were branded into my mind. As soon as the day broke, I rehearsed them

as he spoke them to my companions, that they, as well as myself, might

have something to say. And now, Socrates, to make an end my preface,

I am ready to tell you the whole tale. I will give you not only the

general heads, but the particulars, as they were told to me. The city

and citizens, which you yesterday described to us in fiction, we will

now transfer to the world of reality. It shall be the ancient city

of Athens, and we will suppose that the citizens whom you imagined,

were our veritable ancestors, of whom the priest spoke; they will

perfectly harmonise, and there will be no inconsistency in saying

that the citizens of your republic are these ancient Athenians. Let

us divide the subject among us, and all endeavour according to our

ability gracefully to execute the task which you have imposed upon

us. Consider then, Socrates, if this narrative is suited to the purpose,

or whether we should seek for some other instead.

Soc. And what other, Critias, can we find that will be better than

this, which is natural and suitable to the festival of the goddess,

and has the very great advantage of being a fact and not a fiction?

How or where shall we find another if we abandon this? We cannot,

and therefore you must tell the tale, and good luck to you; and I

in return for my yesterday's discourse will now rest and be a listener.

Crit. Let me proceed to explain to you, Socrates, the order in which

we have arranged our entertainment. Our intention is, that Timaeus,

who is the most of an astronomer amongst us, and has made the nature

of the universe his special study, should speak first, beginning with

the generation of the world and going down to the creation of man;

next, I am to receive the men whom he has created of whom some will

have profited by the excellent education which you have given them;

and then, in accordance with the tale of Solon, and equally with his

law, we will bring them into court and make them citizens, as if they

were those very Athenians whom the sacred Egyptian record has recovered

from oblivion, and thenceforward we will speak of them as Athenians

and fellow-citizens.

Soc. I see that I shall receive in my turn a perfect and splendid

feast of reason. And now, Timaeus, you, I suppose, should speak next,

after duly calling upon the Gods.

Tim. All men, Socrates, who have any degree of right feeling, at the

beginning of every enterprise, whether small or great, always call

upon God. And we, too, who are going to discourse of the nature of

the universe, how created or how existing without creation, if we

be not altogether out of our wits, must invoke the aid of Gods and

Goddesses and pray that our words may be acceptable to them and consistent

with themselves. Let this, then, be our invocation of the Gods, to

which I add an exhortation of myself to speak in such manner as will

be most intelligible to you, and will most accord with my own intent.

First then, in my judgment, we must make a distinction and ask, What

is that which always is and has no becoming; and what is that which

is always becoming and never is? That which is apprehended by intelligence

and reason is always in the same state; but that which is conceived

by opinion with the help of sensation and without reason, is always

in a process of becoming and perishing and never really is. Now everything

that becomes or is created must of necessity be created by some cause,

for without a cause nothing can be created. The work of the creator,

whenever he looks to the unchangeable and fashions the form and nature

of his work after an unchangeable pattern, must necessarily be made

fair and perfect; but when he looks to the created only, and uses

a created pattern, it is not fair or perfect. Was the heaven then

or the world, whether called by this or by any other more appropriate

name-assuming the name, I am asking a question which has to be asked

at the beginning of an enquiry about anything-was the world, I say,

always in existence and without beginning? or created, and had it

a beginning? Created, I reply, being visible and tangible and having

a body, and therefore sensible; and all sensible things are apprehended

by opinion and sense and are in a process of creation and created.

Now that which is created must, as we affirm, of necessity be created

by a cause. But the father and maker of all this universe is past

finding out; and even if we found him, to tell of him to all men would

be impossible. And there is still a question to be asked about him:

Which of the patterns had the artificer in view when he made the world-the

pattern of the unchangeable, or of that which is created? If the world

be indeed fair and the artificer good, it is manifest that he must

have looked to that which is eternal; but if what cannot be said without

blasphemy is true, then to the created pattern. Every one will see

that he must have looked to, the eternal; for the world is the fairest

of creations and he is the best of causes. And having been created

in this way, the world has been framed in the likeness of that which

is apprehended by reason and mind and is unchangeable, and must therefore

of necessity, if this is admitted, be a copy of something. Now it

is all-important that the beginning of everything should be according

to nature. And in speaking of the copy and the original we may assume

that words are akin to the matter which they describe; when they relate

to the lasting and permanent and intelligible, they ought to be lasting

and unalterable, and, as far as their nature allows, irrefutable and

immovable-nothing less. But when they express only the copy or likeness

and not the eternal things themselves, they need only be likely and

analogous to the real words. As being is to becoming, so is truth

to belief. If then, Socrates, amid the many opinions about the gods

and the generation of the universe, we are not able to give notions

which are altogether and in every respect exact and consistent with

one another, do not be surprised. Enough, if we adduce probabilities

as likely as any others; for we must remember that I who am the speaker,

and you who are the judges, are only mortal men, and we ought to accept

the tale which is probable and enquire no further.

Soc. Excellent, Timaeus; and we will do precisely as you bid us. The

prelude is charming, and is already accepted by us-may we beg of you

to proceed to the strain?

Tim. Let me tell you then why the creator made this world of generation.

He was good, and the good can never have any jealousy of anything.

And being free from jealousy, he desired that all things should be

as like himself as they could be. This is in the truest sense the

origin of creation and of the world, as we shall do well in believing

on the testimony of wise men: God desired that all things should be

good and nothing bad, so far as this was attainable. Wherefore also

finding the whole visible sphere not at rest, but moving in an irregular

and disorderly fashion, out of disorder he brought order, considering

that this was in every way better than the other. Now the deeds of

the best could never be or have been other than the fairest; and the

creator, reflecting on the things which are by nature visible, found

that no unintelligent creature taken as a whole was fairer than the

intelligent taken as a whole; and that intelligence could not be present

in anything which was devoid of soul. For which reason, when he was

framing the universe, he put intelligence in soul, and soul in body,

that he might be the creator of a work which was by nature fairest

and best. Wherefore, using the language of probability, we may say

that the world became a living creature truly endowed with soul and

intelligence by the providence of God.

This being supposed, let us proceed to the next stage: In the likeness

of what animal did the Creator make the world? It would be an unworthy

thing to liken it to any nature which exists as a part only; for nothing

can be beautiful which is like any imperfect thing; but let us suppose

the world to be the very image of that whole of which all other animals

both individually and in their tribes are portions. For the original

of the universe contains in itself all intelligible beings, just as

this world comprehends us and all other visible creatures. For the

Deity, intending to make this world like the fairest and most perfect

of intelligible beings, framed one visible animal comprehending within

itself all other animals of a kindred nature. Are we right in saying

that there is one world, or that they are many and infinite? There

must be one only, if the created copy is to accord with the original.

For that which includes all other intelligible creatures cannot have

a second or companion; in that case there would be need of another

living being which would include both, and of which they would be

parts, and the likeness would be more truly said to resemble not them,

but that other which included them. In order then that the world might

be solitary, like the perfect animal, the creator made not two worlds

or an infinite number of them; but there is and ever will be one only-begotten

and created heaven.

Now that which is created is of necessity corporeal, and also visible

and tangible. And nothing is visible where there is no fire, or tangible

which has no solidity, and nothing is solid without earth. Wherefore

also God in the beginning of creation made the body of the universe

to consist of fire and earth. But two things cannot be rightly put

together without a third; there must be some bond of union between

them. And the fairest bond is that which makes the most complete fusion

of itself and the things which it combines; and proportion is best

adapted to effect such a union. For whenever in any three numbers,

whether cube or square, there is a mean, which is to the last term

what the first term is to it; and again, when the mean is to the first

term as the last term is to the mean-then the mean becoming first

and last, and the first and last both becoming means, they will all

of them of necessity come to be the same, and having become the same

with one another will be all one. If the universal frame had been

created a surface only and having no depth, a single mean would have

sufficed to bind together itself and the other terms; but now, as

the world must be solid, and solid bodies are always compacted not

by one mean but by two, God placed water and air in the mean between

fire and earth, and made them to have the same proportion so far as

was possible (as fire is to air so is air to water, and as air is

to water so is water to earth); and thus he bound and put together

a visible and tangible heaven. And for these reasons, and out of such

elements which are in number four, the body of the world was created,

and it was harmonised by proportion, and therefore has the spirit

of friendship; and having been reconciled to itself, it was indissoluble

by the hand of any other than the framer.

Now the creation took up the whole of each of the four elements; for

the Creator compounded the world out of all the fire and all the water

and all the air and all the earth, leaving no part of any of them

nor any power of them outside. His intention was, in the first place,

that the animal should be as far as possible a perfect whole and of

perfect parts: secondly, that it should be one, leaving no remnants

out of which another such world might be created: and also that it

should be free from old age and unaffected by disease. Considering

that if heat and cold and other powerful forces which unite bodies

surround and attack them from without when they are unprepared, they

decompose them, and by bringing diseases and old age upon them, make

them waste away-for this cause and on these grounds he made the world

one whole, having every part entire, and being therefore perfect and

not liable to old age and disease. And he gave to the world the figure

which was suitable and also natural. Now to the animal which was to

comprehend all animals, that figure was suitable which comprehends

within itself all other figures. Wherefore he made the world in the

form of a globe, round as from a lathe, having its extremes in every

direction equidistant from the centre, the most perfect and the most

like itself of all figures; for he considered that the like is infinitely

fairer than the unlike. This he finished off, making the surface smooth

all around for many reasons; in the first place, because the living

being had no need of eyes when there was nothing remaining outside

him to be seen; nor of ears when there was nothing to be heard; and

there was no surrounding atmosphere to be breathed; nor would there

have been any use of organs by the help of which he might receive

his food or get rid of what he had already digested, since there was

nothing which went from him or came into him: for there was nothing

beside him. Of design he was created thus, his own waste providing

his own food, and all that he did or suffered taking place in and

by himself. For the Creator conceived that a being which was self-sufficient

would be far more excellent than one which lacked anything; and, as

he had no need to take anything or defend himself against any one,

the Creator did not think it necessary to bestow upon him hands: nor

had he any need of feet, nor of the whole apparatus of walking; but

the movement suited to his spherical form was assigned to him, being

of all the seven that which is most appropriate to mind and intelligence;

and he was made to move in the same manner and on the same spot, within

his own limits revolving in a circle. All the other six motions were

taken away from him, and he was made not to partake of their deviations.

And as this circular movement required no feet, the universe was created

without legs and without feet.

Such was the whole plan of the eternal God about the god that was

to be, to whom for this reason he gave a body, smooth and even, having

a surface in every direction equidistant from the centre, a body entire

and perfect, and formed out of perfect bodies. And in the centre he

put the soul, which he diffused throughout the body, making it also

to be the exterior environment of it; and he made the universe a circle

moving in a circle, one and solitary, yet by reason of its excellence

able to converse with itself, and needing no other friendship or acquaintance.

Having these purposes in view he created the world a blessed god.

Now God did not make the soul after the body, although we are speaking

of them in this order; for having brought them together he would never

have allowed that the elder should be ruled by the younger; but this

is a random manner of speaking which we have, because somehow we ourselves

too are very much under the dominion of chance. Whereas he made the

soul in origin and excellence prior to and older than the body, to

be the ruler and mistress, of whom the body was to be the subject.

And he made her out of the following elements and on this wise: Out

of the indivisible and unchangeable, and also out of that which is

divisible and has to do with material bodies, he compounded a third

and intermediate kind of essence, partaking of the nature of the same

and of the other, and this compound he placed accordingly in a mean

between the indivisible, and the divisible and material. He took the

three elements of the same, the other, and the essence, and mingled

them into one form, compressing by force the reluctant and unsociable

nature of the other into the same. When he had mingled them with the

essence and out of three made one, he again divided this whole into

as many portions as was fitting, each portion being a compound of

the same, the other, and the essence. And he proceeded to divide after

this manner:-First of all, he took away one part of the whole [1],

and then he separated a second part which was double the first [2],

and then he took away a third part which was half as much again as

the second and three times as much as the first [3], and then he took

a fourth part which was twice as much as the second [4], and a fifth

part which was three times the third [9], and a sixth part which was

eight times the first [8], and a seventh part which was twenty-seven

times the first [27]. After this he filled up the double intervals

[i.e. between 1, 2, 4, 8] and the triple [i.e. between 1, 3, 9, 27]

cutting off yet other portions from the mixture and placing them in

the intervals, so that in each interval there were two kinds of means,

the one exceeding and exceeded by equal parts of its extremes [as

for example 1, 4/3, 2, in which the mean 4/3 is one-third of 1 more

than 1, and one-third of 2 less than 2], the other being that kind

of mean which exceeds and is exceeded by an equal number. Where there

were intervals of 3/2 and of 4/3 and of 9/8, made by the connecting

terms in the former intervals, he filled up all the intervals of 4/3

with the interval of 9/8, leaving a fraction over; and the interval

which this fraction expressed was in the ratio of 256 to 243. And

thus the whole mixture out of which he cut these portions was all

exhausted by him. This entire compound he divided lengthways into

two parts, which he joined to one another at the centre like the letter

X, and bent them into a circular form, connecting them with themselves

and each other at the point opposite to their original meeting-point;

and, comprehending them in a uniform revolution upon the same axis,

he made the one the outer and the other the inner circle. Now the

motion of the outer circle he called the motion of the same, and the

motion of the inner circle the motion of the other or diverse. The

motion of the same he carried round by the side to the right, and

the motion of the diverse diagonally to the left. And he gave dominion

to the motion of the same and like, for that he left single and undivided;

but the inner motion he divided in six places and made seven unequal

circles having their intervals in ratios of two-and three, three of

each, and bade the orbits proceed in a direction opposite to one another;

and three [Sun, Mercury, Venus] he made to move with equal swiftness,

and the remaining four [Moon, Saturn, Mars, Jupiter] to move with

unequal swiftness to the three and to one another, but in due proportion.

Now when the Creator had framed the soul according to his will, he

formed within her the corporeal universe, and brought the two together,

and united them centre to centre. The soul, interfused everywhere

from the centre to the circumference of heaven, of which also she

is the external envelopment, herself turning in herself, began a divine

beginning of never ceasing and rational life enduring throughout all

time. The body of heaven is visible, but the soul is invisible, and

partakes of reason and harmony, and being made by the best of intellectual

and everlasting natures, is the best of things created. And because

she is composed of the same and of the other and of the essence, these

three, and is divided and united in due proportion, and in her revolutions

returns upon herself, the soul, when touching anything which has essence,

whether dispersed in parts or undivided, is stirred through all her

powers, to declare the sameness or difference of that thing and some

other; and to what individuals are related, and by what affected,

and in what way and how and when, both in the world of generation

and in the world of immutable being. And when reason, which works

with equal truth, whether she be in the circle of the diverse or of

the same-in voiceless silence holding her onward course in the sphere

of the self-moved-when reason, I say, is hovering around the sensible

world and when the circle of the diverse also moving truly imparts

the intimations of sense to the whole soul, then arise opinions and

beliefs sure and certain. But when reason is concerned with the rational,

and the circle of the same moving smoothly declares it, then intelligence

and knowledge are necessarily perfected. And if any one affirms that

in which these two are found to be other than the soul, he will say

the very opposite of the truth.

When the father creator saw the creature which he had made moving

and living, the created image of the eternal gods, he rejoiced, and

in his joy determined to make the copy still more like the original;

and as this was eternal, he sought to make the universe eternal, so

far as might be. Now the nature of the ideal being was everlasting,

but to bestow this attribute in its fulness upon a creature was impossible.

Wherefore he resolved to have a moving image of eternity, and when

he set in order the heaven, he made this image eternal but moving

according to number, while eternity itself rests in unity; and this

image we call time. For there were no days and nights and months and

years before the heaven was created, but when he constructed the heaven

he created them also. They are all parts of time, and the past and

future are created species of time, which we unconsciously but wrongly

transfer to the eternal essence; for we say that he "was," he "is,"

he "will be," but the truth is that "is" alone is properly attributed

to him, and that "was" and "will be" only to be spoken of becoming

in time, for they are motions, but that which is immovably the same

cannot become older or younger by time, nor ever did or has become,

or hereafter will be, older or younger, nor is subject at all to any

of those states which affect moving and sensible things and of which

generation is the cause. These are the forms of time, which imitates

eternity and revolves according to a law of number. Moreover, when

we say that what has become is become and what becomes is becoming,

and that what will become is about to become and that the non-existent

is non-existent-all these are inaccurate modes of expression. But

perhaps this whole subject will be more suitably discussed on some

other occasion.

Time, then, and the heaven came into being at the same instant in

order that, having been created together, if ever there was to be

a dissolution of them, they might be dissolved together. It was framed

after the pattern of the eternal nature, that it might resemble this

as far as was possible; for the pattern exists from eternity, and

the created heaven has been, and is, and will be, in all time. Such

was the mind and thought of God in the creation of time. The sun and

moon and five other stars, which are called the planets, were created

by him in order to distinguish and preserve the numbers of time; and

when he had made-their several bodies, he placed them in the orbits

in which the circle of the other was revolving-in seven orbits seven

stars. First, there was the moon in the orbit nearest the earth, and

next the sun, in the second orbit above the earth; then came the morning

star and the star sacred to Hermes, moving in orbits which have an

equal swiftness with the sun, but in an opposite direction; and this

is the reason why the sun and Hermes and Lucifer overtake and are

overtaken by each other. To enumerate the places which he assigned

to the other stars, and to give all the reasons why he assigned them,

although a secondary matter, would give more trouble than the primary.

These things at some future time, when we are at leisure, may have

the consideration which they deserve, but not at present.

Now, when all the stars which were necessary to the creation of time

had attained a motion suitable to them,-and had become living creatures

having bodies fastened by vital chains, and learnt their appointed

task, moving in the motion of the diverse, which is diagonal, and

passes through and is governed by the motion of the same, they revolved,

some in a larger and some in a lesser orbit-those which had the lesser

orbit revolving faster, and those which had the larger more slowly.

Now by reason of the motion of the same, those which revolved fastest

appeared to be overtaken by those which moved slower although they

really overtook them; for the motion of the same made them all turn

in a spiral, and, because some went one way and some another, that

which receded most slowly from the sphere of the same, which was the

swiftest, appeared to follow it most nearly. That there might be some

visible measure of their relative swiftness and slowness as they proceeded

in their eight courses, God lighted a fire, which we now call the

sun, in the second from the earth of these orbits, that it might give

light to the whole of heaven, and that the animals, as many as nature

intended, might participate in number, learning arithmetic from the

revolution of the same and the like. Thus then, and for this reason

the night and the day were created, being the period of the one most

intelligent revolution. And the month is accomplished when the moon

has completed her orbit and overtaken the sun, and the year when the

sun has completed his own orbit. Mankind, with hardly an exception,

have not remarked the periods of the other stars, and they have no

name for them, and do not measure them against one another by the

help of number, and hence they can scarcely be said to know that their

wanderings, being infinite in number and admirable for their variety,

make up time. And yet there is no difficulty in seeing that the perfect

number of time fulfils the perfect year when all the eight revolutions,

having their relative degrees of swiftness, are accomplished together

and attain their completion at the same time, measured by the rotation

of the same and equally moving. After this manner, and for these reasons,

came into being such of the stars as in their heavenly progress received

reversals of motion, to the end that the created heaven might imitate

the eternal nature, and be as like as possible to the perfect and

intelligible animal.

Thus far and until the birth of time the created universe was made

in the likeness of the original, but inasmuch as all animals were

not yet comprehended therein, it was still unlike. What remained,

the creator then proceeded to fashion after the nature of the pattern.

Now as in the ideal animal the mind perceives ideas or species of

a certain nature and number, he thought that this created animal ought

to have species of a like nature and number. There are four such;

one of them is the heavenly race of the gods; another, the race of

birds whose way is in the air; the third, the watery species; and

the fourth, the pedestrian and land creatures. Of the heavenly and

divine, he created the greater part out of fire, that they might be

the brightest of all things and fairest to behold, and he fashioned

them after the likeness of the universe in the figure of a circle,

and made them follow the intelligent motion of the supreme, distributing

them over the whole circumference of heaven, which was to be a true

cosmos or glorious world spangled with them all over. And he gave

to each of them two movements: the first, a movement on the same spot

after the same manner, whereby they ever continue to think consistently

the same thoughts about the same things; the second, a forward movement,

in which they are controlled by the revolution of the same and the

like; but by the other five motions they were unaffected, in order

that each of them might attain the highest perfection. And for this

reason the fixed stars were created, to be divine and eternal animals,

ever-abiding and revolving after the same manner and on the same spot;

and the other stars which reverse their motion and are subject to

deviations of this kind, were created in the manner already described.

The earth, which is our nurse, clinging around the pole which is extended

through the universe, he framed to be the guardian and artificer of

night and day, first and eldest of gods that are in the interior of

heaven. Vain would be the attempt to tell all the figures of them

circling as in dance, and their juxtapositions, and the return of

them in their revolutions upon themselves, and their approximations,

and to say which of these deities in their conjunctions meet, and

which of them are in opposition, and in what order they get behind

and before one another, and when they are severally eclipsed to our

sight and again reappear, sending terrors and intimations of the future

to those who cannot calculate their movements-to attempt to tell of

all this without a visible representation of the heavenly system would

be labour in vain. Enough on this head; and now let what we have said

about the nature of the created and visible gods have an end.

To know or tell the origin of the other divinities is beyond us, and

we must accept the traditions of the men of old time who affirm themselves

to be the offspring of the gods-that is what they say-and they must

surely have known their own ancestors. How can we doubt the word of

the children of the gods? Although they give no probable or certain

proofs, still, as they declare that they are speaking of what took

place in their own family, we must conform to custom and believe them.

In this manner, then, according to them, the genealogy of these gods

is to be received and set forth.

Oceanus and Tethys were the children of Earth and Heaven, and from

these sprang Phorcys and Cronos and Rhea, and all that generation;

and from Cronos and Rhea sprang Zeus and Here, and all those who are

said to be their brethren, and others who were the children of these.

Now, when all of them, both those who visibly appear in their revolutions

as well as those other gods who are of a more retiring nature, had

come into being, the creator of the universe addressed them in these

words: "Gods, children of gods, who are my works, and of whom I am

the artificer and father, my creations are indissoluble, if so I will.

All that is bound may be undone, but only an evil being would wish

to undo that which is harmonious and happy. Wherefore, since ye are

but creatures, ye are not altogether immortal and indissoluble, but

ye shall certainly not be dissolved, nor be liable to the fate of

death, having in my will a greater and mightier bond than those with

which ye were bound at the time of your birth. And now listen to my

instructions:-Three tribes of mortal beings remain to be created-without

them the universe will be incomplete, for it will not contain every

kind of animal which it ought to contain, if it is to be perfect.

On the other hand, if they were created by me and received life at

my hands, they would be on an equality with the gods. In order then

that they may be mortal, and that this universe may be truly universal,

do ye, according to your natures, betake yourselves to the formation

of animals, imitating the power which was shown by me in creating

you. The part of them worthy of the name immortal, which is called

divine and is the guiding principle of those who are willing to follow

justice and you-of that divine part I will myself sow the seed, and

having made a beginning, I will hand the work over to you. And do

ye then interweave the mortal with the immortal, and make and beget

living creatures, and give them food, and make them to grow, and receive

them again in death."

Thus he spake, and once more into the cup in which he had previously

mingled the soul of the universe he poured the remains of the elements,

and mingled them in much the same manner; they were not, however,

pure as before, but diluted to the second and third degree. And having

made it he divided the whole mixture into souls equal in number to

the stars, and assigned each soul to a star; and having there placed

them as in a chariot, he showed them the nature of the universe, and

declared to them the laws of destiny, according to which their first

birth would be one and the same for all,-no one should suffer a disadvantage

at his hands; they were to be sown in the instruments of time severally

adapted to them, and to come forth the most religious of animals;

and as human nature was of two kinds, the superior race would here

after be called man. Now, when they should be implanted in bodies

by necessity, and be always gaining or losing some part of their bodily

substance, then in the first place it would be necessary that they

should all have in them one and the same faculty of sensation, arising

out of irresistible impressions; in the second place, they must have

love, in which pleasure and pain mingle; also fear and anger, and

the feelings which are akin or opposite to them; if they conquered

these they would live righteously, and if they were conquered by them,

unrighteously. He who lived well during his appointed time was to

return and dwell in his native star, and there he would have a blessed

and congenial existence. But if he failed in attaining this, at the

second birth he would pass into a woman, and if, when in that state

of being, he did not desist from evil, he would continually be changed

into some brute who resembled him in the evil nature which he had

acquired, and would not cease from his toils and transformations until

he followed the revolution of the same and the like within him, and

overcame by the help of reason the turbulent and irrational mob of

later accretions, made up of fire and air and water and earth, and

returned to the form of his first and better state. Having given all

these laws to his creatures, that he might be guiltless of future

evil in any of them, the creator sowed some of them in the earth,

and some in the moon, and some in the other instruments of time; and

when he had sown them he committed to the younger gods the fashioning

of their mortal bodies, and desired them to furnish what was still

lacking to the human soul, and having made all the suitable additions,

to rule over them, and to pilot the mortal animal in the best and

wisest manner which they could, and avert from him all but self-inflicted

evils.

When the creator had made all these ordinances he remained in his

own accustomed nature, and his children heard and were obedient to

their father's word, and receiving from him the immortal principle

of a mortal creature, in imitation of their own creator they borrowed

portions of fire, and earth, and water, and air from the world, which

were hereafter to be restored-these they took and welded them together,

not with the indissoluble chains by which they were themselves bound,

but with little pegs too small to be visible, making up out of all

the four elements each separate body, and fastening the courses of

the immortal soul in a body which was in a state of perpetual influx

and efflux. Now these courses, detained as in a vast river, neither

overcame nor were overcome; but were hurrying and hurried to and fro,

so that the whole animal was moved and progressed, irregularly however

and irrationally and anyhow, in all the six directions of motion,

wandering backwards and forwards, and right and left, and up and down,

and in all the six directions. For great as was the advancing and

retiring flood which provided nourishment, the affections produced

by external contact caused still greater tumult-when the body of any

one met and came into collision with some external fire, or with the

solid earth or the gliding waters, or was caught in the tempest borne

on the air, and the motions produced by any of these impulses were

carried through the body to the soul. All such motions have consequently

received the general name of "sensations," which they still retain.

And they did in fact at that time create a very great and mighty movement;

uniting with the ever flowing stream in stirring up and violently

shaking the courses of the soul, they completely stopped the revolution

of the same by their opposing current, and hindered it from predominating

and advancing; and they so disturbed the nature of the other or diverse,

that the three double intervals [i.e. between 1, 2, 4, 8], and the

three triple intervals [i.e. between 1, 3, 9, 27], together with the

mean terms and connecting links which are expressed by the ratios

of 3 : 2, and 4 : 3, and of 9 : 8-these, although they cannot be wholly

undone except by him who united them, were twisted by them in all

sorts of ways, and the circles were broken and disordered in every

possible manner, so that when they moved they were tumbling to pieces,

and moved irrationally, at one time in a reverse direction, and then

again obliquely, and then upside down, as you might imagine a person

who is upside down and has his head leaning upon the ground and his

feet up against something in the air; and when he is in such a position,

both he and the spectator fancy that the right of either is his left,

and left right. If, when powerfully experiencing these and similar

effects, the revolutions of the soul come in contact with some external

thing, either of the class of the same or of the other, they speak

of the same or of the other in a manner the very opposite of the truth;

and they become false and foolish, and there is no course or revolution

in them which has a guiding or directing power; and if again any sensations

enter in violently from without and drag after them the whole vessel

of the soul, then the courses of the soul, though they seem to conquer,

are really conquered.

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

mortal body, now, as in the beginning, is at first without intelligence;

but when the flood of growth and nutriment abates, and the courses

of the soul, calming down, go their own way and become steadier as

time goes on, then the several circles return to their natural form,

and their revolutions are corrected, and they call the same and the

other by their right names, and make the possessor of them to become

a rational being. And if these combine in him with any true nurture

or education, he attains the fulness and health of the perfect man,

and escapes the worst disease of all; but if he neglects education

he walks lame to the end of his life, and returns imperfect and good

for nothing to the world below. This, however, is a later stage; at

present we must treat more exactly the subject before us, which involves

a preliminary enquiry into the generation of the body and its members,

and as to how the soul was created-for what reason and by what providence

of the gods; and holding fast to probability, we must pursue our way.

First, then, the gods, imitating the spherical shape of the universe,

enclosed the two divine courses in a spherical body, that, namely,

which we now term the head, being the most divine part of us and the

lord of all that is in us: to this the gods, when they put together

the body, gave all the other members to be servants, considering that

it partook of every sort of motion. In order then that it might not

tumble about among the high and deep places of the earth, but might

be able to get over the one and out of the other, they provided the

body to be its vehicle and means of locomotion; which consequently

had length and was furnished with four limbs extended and flexible;

these God contrived to be instruments of locomotion with which it

might take hold and find support, and so be able to pass through all

places, carrying on high the dwelling-place of the most sacred and

divine part of us. Such was the origin of legs and hands, which for

this reason were attached to every man; and the gods, deeming the

front part of man to be more honourable and more fit to command than

the hinder part, made us to move mostly in a forward direction. Wherefore

man must needs have his front part unlike and distinguished from the

rest of his body.

And so in the vessel of the head, they first of all put a face in

which they inserted organs to minister in all things to the providence

of the soul, and they appointed this part, which has authority, to

be by nature the part which is in front. And of the organs they first

contrived the eyes to give light, and the principle according to which

they were inserted was as follows: So much of fire as would not burn,

but gave a gentle light, they formed into a substance akin to the

light of every-day life; and the pure fire which is within us and

related thereto they made to flow through the eyes in a stream smooth

and dense, compressing the whole eye, and especially the centre part,

so that it kept out everything of a coarser nature, and allowed to

pass only this pure element. When the light of day surrounds the stream

of vision, then like falls upon like, and they coalesce, and one body

is formed by natural affinity in the line of vision, wherever the

light that falls from within meets with an external object. And the

whole stream of vision, being similarly affected in virtue of similarity,

diffuses the motions of what it touches or what touches it over the

whole body, until they reach the soul, causing that perception which

we call sight. But when night comes on and the external and kindred

fire departs, then the stream of vision is cut off; for going forth

to an unlike element it is changed and extinguished, being no longer

of one nature with the surrounding atmosphere which is now deprived

of fire: and so the eye no longer sees, and we feel disposed to sleep.

For when the eyelids, which the gods invented for the preservation

of sight, are closed, they keep in the internal fire; and the power

of the fire diffuses and equalises the inward motions; when they are

equalised, there is rest, and when the rest is profound, sleep comes

over us scarce disturbed by dreams; but where the greater motions

still remain, of whatever nature and in whatever locality, they engender

corresponding visions in dreams, which are remembered by us when we

are awake and in the external world. And now there is no longer any

difficulty in understanding the creation of images in mirrors and

all smooth and bright surfaces. For from the communion of the internal

and external fires, and again from the union of them and their numerous

transformations when they meet in the mirror, all these appearances

of necessity arise, when the fire from the face coalesces with the

fire from the eye on the bright and smooth surface. And right appears

left and left right, because the visual rays come into contact with

the rays emitted by the object in a manner contrary to the usual mode

of meeting; but the right appears right, and the left left, when the

position of one of the two concurring lights is reversed; and this

happens when the mirror is concave and its smooth surface repels the

right stream of vision to the left side, and the left to the right.

Or if the mirror be turned vertically, then the concavity makes the

countenance appear to be all upside down, and the lower rays are driven

upwards and the upper downwards.

All these are to be reckoned among the second and co-operative causes

which God, carrying into execution the idea of the best as far as

possible, uses as his ministers. They are thought by most men not

to be the second, but the prime causes of all things, because they

freeze and heat, and contract and dilate, and the like. But they are

not so, for they are incapable of reason or intellect; the only being

which can properly have mind is the invisible soul, whereas fire and

water, and earth and air, are all of them visible bodies. The lover

of intellect and knowledge ought to explore causes of intelligent

nature first of all, and, secondly, of those things which, being moved

by others, are compelled to move others. And this is what we too must

do. Both kinds of causes should be acknowledged by us, but a distinction

should be made between those which are endowed with mind and are the

workers of things fair and good, and those which are deprived of intelligence

and always produce chance effects without order or design. Of the

second or co-operative causes of sight, which help to give to the

eyes the power which they now possess, enough has been said. I will

therefore now proceed to speak of the higher use and purpose for which

God has given them to us. The sight in my opinion is the source of

the greatest benefit to us, for had we never seen the stars, and the

sun, and the heaven, none of the words which we have spoken about

the universe would ever have been uttered. But now the sight of day

and night, and the months and the revolutions of the years, have created

number, and have given us a conception of time, and the power of enquiring

about the nature of the universe; and from this source we have derived

philosophy, than which no greater good ever was or will be given by

the gods to mortal man. This is the greatest boon of sight: and of

the lesser benefits why should I speak? even the ordinary man if he

were deprived of them would bewail his loss, but in vain. Thus much

let me say however: God invented and gave us sight to the end that

we might behold the courses of intelligence in the heaven, and apply

them to the courses of our own intelligence which are akin to them,

the unperturbed to the perturbed; and that we, learning them and partaking

of the natural truth of reason, might imitate the absolutely unerring

courses of God and regulate our own vagaries. The same may be affirmed

of speech and hearing: they have been given by the gods to the same

end and for a like reason. For this is the principal end of speech,

whereto it most contributes. Moreover, so much of music as is adapted

to the sound of the voice and to the sense of hearing is granted to

us for the sake of harmony; and harmony, which has motions akin to

the revolutions of our souls, is not regarded by the intelligent votary

of the Muses as given by them with a view to irrational pleasure,

which is deemed to be the purpose of it in our day, but as meant to

correct any discord which may have arisen in the courses of the soul,

and to be our ally in bringing her into harmony and agreement with

herself; and rhythm too was given by them for the same reason, on

account of the irregular and graceless ways which prevail among mankind

generally, and to help us against them.

Thus far in what we have been saying, with small exception, the works

of intelligence have been set forth; and now we must place by the

side of them in our discourse the things which come into being through

necessity-for the creation is mixed, being made up of necessity and

mind. Mind, the ruling power, persuaded necessity to bring the greater

part of created things to perfection, and thus and after this manner

in the beginning, when the influence of reason got the better of necessity,

the universe was created. But if a person will truly tell of the way

in which the work was accomplished, he must include the other influence

of the variable cause as well. Wherefore, we must return again and

find another suitable beginning, as about the former matters, so also

about these. To which end we must consider the nature of fire, and

water, and air, and earth, such as they were prior to the creation

of the heaven, and what was happening to them in this previous state;

for no one has as yet explained the manner of their generation, but

we speak of fire and the rest of them, whatever they mean, as though

men knew their natures, and we maintain them to be the first principles

and letters or elements of the whole, when they cannot reasonably

be compared by a man of any sense even to syllables or first compounds.

And let me say thus much: I will not now speak of the first principle

or principles of all things, or by whatever name they are to be called,

for this reason-because it is difficult to set forth my opinion according

to the method of discussion which we are at present employing. Do

not imagine, any more than I can bring myself to imagine, that I should

be right in undertaking so great and difficult a task. Remembering

what I said at first about probability, I will do my best to give

as probable an explanation as any other-or rather, more probable;

and I will first go back to the beginning and try to speak of each

thing and of all. Once more, then, at the commencement of my discourse,

I call upon God, and beg him to be our saviour out of a strange and

unwonted enquiry, and to bring us to the haven of probability. So

now let us begin again.

This new beginning of our discussion of the universe requires a fuller

division than the former; for then we made two classes, now a third

must be revealed. The two sufficed for the former discussion: one,

which we assumed, was a pattern intelligible and always the same;

and the second was only the imitation of the pattern, generated and

visible. There is also a third kind which we did not distinguish at

the time, conceiving that the two would be enough. But now the argument

seems to require that we should set forth in words another kind, which

is difficult of explanation and dimly seen. What nature are we to

attribute to this new kind of being? We reply, that it is the receptacle,

and in a manner the nurse, of all generation. I have spoken the truth;

but I must express myself in clearer language, and this will be an

arduous task for many reasons, and in particular because I must first

raise questions concerning fire and the other elements, and determine

what each of them is; for to say, with any probability or certitude,

which of them should be called water rather than fire, and which should

be called any of them rather than all or some one of them, is a difficult

matter. How, then, shall we settle this point, and what questions

about the elements may be fairly raised?

In the first place, we see that what we just now called water, by

condensation, I suppose, becomes stone and earth; and this same element,

when melted and dispersed, passes into vapour and air. Air, again,

when inflamed, becomes fire; and again fire, when condensed and extinguished,

passes once more into the form of air; and once more, air, when collected

and condensed, produces cloud and mist; and from these, when still

more compressed, comes flowing water, and from water comes earth and

stones once more; and thus generation appears to be transmitted from

one to the other in a circle. Thus, then, as the several elements

never present themselves in the same form, how can any one have the

assurance to assert positively that any of them, whatever it may be,

is one thing rather than another? No one can. But much the safest

plan is to speak of them as follows:-Anything which we see to be continually

changing, as, for example, fire, we must not call "this" or "that,"

but rather say that it is "of such a nature"; nor let us speak of

water as "this"; but always as "such"; nor must we imply that there

is any stability in any of those things which we indicate by the use

of the words "this" and "that," supposing ourselves to signify something

thereby; for they are too volatile to be detained in any such expressions

as "this," or "that," or "relative to this," or any other mode of

speaking which represents them as permanent. We ought not to apply

"this" to any of them, but rather the word "such"; which expresses

the similar principle circulating in each and all of them; for example,

that should be called "fire" which is of such a nature always, and

so of everything that has generation. That in which the elements severally

grow up, and appear, and decay, is alone to be called by the name

"this" or "that"; but that which is of a certain nature, hot or white,

or anything which admits of opposite equalities, and all things that

are compounded of them, ought not to be so denominated. Let me make

another attempt to explain my meaning more clearly. Suppose a person

to make all kinds of figures of gold and to be always transmuting

one form into all the rest-somebody points to one of them and asks

what it is. By far the safest and truest answer is, That is gold;

and not to call the triangle or any other figures which are formed

in the gold "these," as though they had existence, since they are

in process of change while he is making the assertion; but if the

questioner be willing to take the safe and indefinite expression,

"such," we should be satisfied. And the same argument applies to the

universal nature which receives all bodies-that must be always called

the same; for, while receiving all things, she never departs at all

from her own nature, and never in any way, or at any time, assumes

a form like that of any of the things which enter into her; she is

the natural recipient of all impressions, and is stirred and informed

by them, and appears different from time to time by reason of them.

But the forms which enter into and go out of her are the likenesses

of real existences modelled after their patterns in wonderful and

inexplicable manner, which we will hereafter investigate. For the

present we have only to conceive of three natures: first, that which

is in process of generation; secondly, that in which the generation

takes place; and thirdly, that of which the thing generated is a resemblance.

And we may liken the receiving principle to a mother, and the source

or spring to a father, and the intermediate nature to a child; and

may remark further, that if the model is to take every variety of

form, then the matter in which the model is fashioned will not be

duly prepared, unless it is formless, and free from the impress of

any of these shapes which it is hereafter to receive from without.

For if the matter were like any of the supervening forms, then whenever

any opposite or entirely different nature was stamped upon its surface,

it would take the impression badly, because it would intrude its own

shape. Wherefore, that which is to receive all forms should have no

form; as in making perfumes they first contrive that the liquid substance

which is to receive the scent shall be as inodorous as possible; or

as those who wish to impress figures on soft substances do not allow

any previous impression to remain, but begin by making the surface

as even and smooth as possible. In the same way that which is to receive

perpetually and through its whole extent the resemblances of all eternal

beings ought to be devoid of any particular form. Wherefore, the mother

and receptacle of all created and visible and in any way sensible

things, is not to be termed earth, or air, or fire, or water, or any

of their compounds or any of the elements from which these are derived,

but is an invisible and formless being which receives all things and

in some mysterious way partakes of the intelligible, and is most incomprehensible.

In saying this we shall not be far wrong; as far, however, as we can

attain to a knowledge of her from the previous considerations, we

may truly say that fire is that part of her nature which from time

to time is inflamed, and water that which is moistened, and that the

mother substance becomes earth and air, in so far as she receives

the impressions of them.

Let us consider this question more precisely. Is there any self-existent

fire? and do all those things which we call self-existent exist? or

are only those things which we see, or in some way perceive through

the bodily organs, truly existent, and nothing whatever besides them?

And is all that which, we call an intelligible essence nothing at

all, and only a name? Here is a question which we must not leave unexamined

or undetermined, nor must we affirm too confidently that there can

be no decision; neither must we interpolate in our present long discourse

a digression equally long, but if it is possible to set forth a great

principle in a few words, that is just what we want.

Thus I state my view:-If mind and true opinion are two distinct classes,

then I say that there certainly are these self-existent ideas unperceived

by sense, and apprehended only by the mind; if, however, as some say,

true opinion differs in no respect from mind, then everything that

we perceive through the body is to be regarded as most real and certain.

But we must affirm that to be distinct, for they have a distinct origin

and are of a different nature; the one is implanted in us by instruction,

the other by persuasion; the one is always accompanied by true reason,

the other is without reason; the one cannot be overcome by persuasion,

but the other can: and lastly, every man may be said to share in true

opinion, but mind is the attribute of the gods and of very few men.

Wherefore also we must acknowledge that there is one kind of being

which is always the same, uncreated and indestructible, never receiving

anything into itself from without, nor itself going out to any other,

but invisible and imperceptible by any sense, and of which the contemplation

is granted to intelligence only. And there is another nature of the

same name with it, and like to it, perceived by sense, created, always

in motion, becoming in place and again vanishing out of place, which

is apprehended by opinion and sense. And there is a third nature,

which is space, and is eternal, and admits not of destruction and

provides a home for all created things, and is apprehended without

the help of sense, by a kind of spurious reason, and is hardly real;

which we beholding as in a dream, say of all existence that it must

of necessity be in some place and occupy a space, but that what is

neither in heaven nor in earth has no existence. Of these and other

things of the same kind, relating to the true and waking reality of

nature, we have only this dreamlike sense, and we are unable to cast

off sleep and determine the truth about them. For an image, since

the reality, after which it is modelled, does not belong to it, and

it exists ever as the fleeting shadow of some other, must be inferred

to be in another [i.e. in space ], grasping existence in some way

or other, or it could not be at all. But true and exact reason, vindicating

the nature of true being, maintains that while two things [i.e. the

image and space] are different they cannot exist one of them in the

other and so be one and also two at the same time.

Thus have I concisely given the result of my thoughts; and my verdict

is that being and space and generation, these three, existed in their

three ways before the heaven; and that the nurse of generation, moistened

by water and inflamed by fire, and receiving the forms of earth and

air, and experiencing all the affections which accompany these, presented

a strange variety of appearances; and being full of powers which were

neither similar nor equally balanced, was never in any part in a state

of equipoise, but swaying unevenly hither and thither, was shaken

by them, and by its motion again shook them; and the elements when

moved were separated and carried continually, some one way, some another;

as, when rain is shaken and winnowed by fans and other instruments

used in the threshing of corn, the close and heavy particles are borne

away and settle in one direction, and the loose and light particles

in another. In this manner, the four kinds or elements were then shaken

by the receiving vessel, which, moving like a winnowing machine, scattered

far away from one another the elements most unlike, and forced the

most similar elements into dose contact. Wherefore also the various

elements had different places before they were arranged so as to form

the universe. At first, they were all without reason and measure.

But when the world began to get into order, fire and water and earth

and air had only certain faint traces of themselves, and were altogether

such as everything might be expected to be in the absence of God;

this, I say, was their nature at that time, and God fashioned them

by form and number. Let it be consistently maintained by us in all

that we say that God made them as far as possible the fairest and

best, out of things which were not fair and good. And now I will endeavour

to show you the disposition and generation of them by an unaccustomed

argument, which am compelled to use; but I believe that you will be

able to follow me, for your education has made you familiar with the

methods of science.

In the first place, then, as is evident to all, fire and earth and

water and air are bodies. And every sort of body possesses solidity,

and every solid must necessarily be contained in planes; and every

plane rectilinear figure is composed of triangles; and all triangles

are originally of two kinds, both of which are made up of one right

and two acute angles; one of them has at either end of the base the

half of a divided right angle, having equal sides, while in the other

the right angle is divided into unequal parts, having unequal sides.

These, then, proceeding by a combination of probability with demonstration,

we assume to be the original elements of fire and the other bodies;

but the principles which are prior to these God only knows, and he

of men who is the friend God. And next we have to determine what are

the four most beautiful bodies which are unlike one another, and of

which some are capable of resolution into one another; for having

discovered thus much, we shall know the true origin of earth and fire

and of the proportionate and intermediate elements. And then we shall

not be willing to allow that there are any distinct kinds of visible

bodies fairer than these. Wherefore we must endeavour to construct

the four forms of bodies which excel in beauty, and then we shall

be able to say that we have sufficiently apprehended their nature.

Now of the two triangles, the isosceles has one form only; the scalene

or unequal-sided has an infinite number. Of the infinite forms we

must select the most beautiful, if we are to proceed in due order,

and any one who can point out a more beautiful form than ours for

the construction of these bodies, shall carry off the palm, not as

an enemy, but as a friend. Now, the one which we maintain to be the

most beautiful of all the many triangles (and we need not speak of

the others) is that of which the double forms a third triangle which

is equilateral; the reason of this would be long to tell; he who disproves

what we are saying, and shows that we are mistaken, may claim a friendly

victory. Then let us choose two triangles, out of which fire and the

other elements have been constructed, one isosceles, the other having

the square of the longer side equal to three times the square of the

lesser side.

Now is the time to explain what was before obscurely said: there was

an error in imagining that all the four elements might be generated

by and into one another; this, I say, was an erroneous supposition,

for there are generated from the triangles which we have selected

four kinds-three from the one which has the sides unequal; the fourth

alone is framed out of the isosceles triangle. Hence they cannot all

be resolved into one another, a great number of small bodies being

combined into a few large ones, or the converse. But three of them

can be thus resolved and compounded, for they all spring from one,

and when the greater bodies are broken up, many small bodies will

spring up out of them and take their own proper figures; or, again,

when many small bodies are dissolved into their triangles, if they

become one, they will form one large mass of another kind. So much

for their passage into one another. I have now to speak of their several

kinds, and show out of what combinations of numbers each of them was

formed. The first will be the simplest and smallest construction,

and its element is that triangle which has its hypotenuse twice the

lesser side. When two such triangles are joined at the diagonal, and

this is repeated three times, and the triangles rest their diagonals

and shorter sides on the same point as a centre, a single equilateral

triangle is formed out of six triangles; and four equilateral triangles,

if put together, make out of every three plane angles one solid angle,

being that which is nearest to the most obtuse of plane angles; and

out of the combination of these four angles arises the first solid

form which distributes into equal and similar parts the whole circle

in which it is inscribed. The second species of solid is formed out

of the same triangles, which unite as eight equilateral triangles

and form one solid angle out of four plane angles, and out of six

such angles the second body is completed. And the third body is made

up of 120 triangular elements, forming twelve solid angles, each of

them included in five plane equilateral triangles, having altogether

twenty bases, each of which is an equilateral triangle. The one element

[that is, the triangle which has its hypotenuse twice the lesser side]

having generated these figures, generated no more; but the isosceles

triangle produced the fourth elementary figure, which is compounded

of four such triangles, joining their right angles in a centre, and

forming one equilateral quadrangle. Six of these united form eight

solid angles, each of which is made by the combination of three plane

right angles; the figure of the body thus composed is a cube, having

six plane quadrangular equilateral bases. There was yet a fifth combination

which God used in the delineation of the universe.

Now, he who, duly reflecting on all this, enquires whether the worlds

are to be regarded as indefinite or definite in number, will be of

opinion that the notion of their indefiniteness is characteristic

of a sadly indefinite and ignorant mind. He, however, who raises the

question whether they are to be truly regarded as one or five, takes

up a more reasonable position. Arguing from probabilities, I am of

opinion that they are one; another, regarding the question from another

point of view, will be of another mind. But, leaving this enquiry,

let us proceed to distribute the elementary forms, which have now

been created in idea, among the four elements.

To earth, then, let us assign the cubical form; for earth is the most

immoveable of the four and the most plastic of all bodies, and that

which has the most stable bases must of necessity be of such a nature.

Now, of the triangles which we assumed at first, that which has two

equal sides is by nature more firmly based than that which has unequal

sides; and of the compound figures which are formed out of either,

the plane equilateral quadrangle has necessarily, a more stable basis

than the equilateral triangle, both in the whole and in the parts.

Wherefore, in assigning this figure to earth, we adhere to probability;

and to water we assign that one of the remaining forms which is the

least moveable; and the most moveable of them to fire; and to air

that which is intermediate. Also we assign the smallest body to fire,

and the greatest to water, and the intermediate in size to air; and,

again, the acutest body to fire, and the next in acuteness to, air,

and the third to water. Of all these elements, that which has the

fewest bases must necessarily be the most moveable, for it must be

the acutest and most penetrating in every way, and also the lightest

as being composed of the smallest number of similar particles: and

the second body has similar properties in a second degree, and the

third body in the third degree. Let it be agreed, then, both according

to strict reason and according to probability, that the pyramid is

the solid which is the original element and seed of fire; and let

us assign the element which was next in the order of generation to

air, and the third to water. We must imagine all these to be so small

that no single particle of any of the four kinds is seen by us on

account of their smallness: but when many of them are collected together

their aggregates are seen. And the ratios of their numbers, motions,

and other properties, everywhere God, as far as necessity allowed

or gave consent, has exactly perfected, and harmonised in due proportion.

From all that we have just been saying about the elements or kinds,

the most probable conclusion is as follows:-earth, when meeting with

fire and dissolved by its sharpness, whether the dissolution take

place in the fire itself or perhaps in some mass of air or water,

is borne hither and thither, until its parts, meeting together and

mutually harmonising, again become earth; for they can never take

any other form. But water, when divided by fire or by air, on reforming,

may become one part fire and two parts air; and a single volume of

air divided becomes two of fire. Again, when a small body of fire

is contained in a larger body of air or water or earth, and both are

moving, and the fire struggling is overcome and broken up, then two

volumes of fire form one volume of air; and when air is overcome and

cut up into small pieces, two and a half parts of air are condensed

into one part of water. Let us consider the matter in another way.

When one of the other elements is fastened upon by fire, and is cut

by the sharpness of its angles and sides, it coalesces with the fire,

and then ceases to be cut by them any longer. For no element which

is one and the same with itself can be changed by or change another

of the same kind and in the same state. But so long as in the process

of transition the weaker is fighting against the stronger, the dissolution

continues. Again, when a few small particles, enclosed in many larger

ones, are in process of decomposition and extinction, they only cease

from their tendency to extinction when they consent to pass into the

conquering nature, and fire becomes air and air water. But if bodies

of another kind go and attack them [i.e. the small particles], the

latter continue to be dissolved until, being completely forced back

and dispersed, they make their escape to their own kindred, or else,

being overcome and assimilated to the conquering power, they remain

where they are and dwell with their victors, and from being many become

one. And owing to these affections, all things are changing their

place, for by the motion of the receiving vessel the bulk of each

class is distributed into its proper place; but those things which

become unlike themselves and like other things, are hurried by the

shaking into the place of the things to which they grow like.

Now all unmixed and primary bodies are produced by such causes as

these. As to the subordinate species which are included in the greater

kinds, they are to be attributed to the varieties in the structure

of the two original triangles. For either structure did not originally

produce the triangle of one size only, but some larger and some smaller,

and there are as many sizes as there are species of the four elements.

Hence when they are mingled with themselves and with one another there

is an endless variety of them, which those who would arrive at the

probable truth of nature ought duly to consider.

Unless a person comes to an understanding about the nature and conditions

of rest and motion, he will meet with many difficulties in the discussion

which follows. Something has been said of this matter already, and

something more remains to be said, which is, that motion never exists

in what is uniform. For to conceive that anything can be moved without

a mover is hard or indeed impossible, and equally impossible to conceive

that there can be a mover unless there be something which can be moved-motion

cannot exist where either of these are wanting, and for these to be

uniform is impossible; wherefore we must assign rest to uniformity

and motion to the want of uniformity. Now inequality is the cause

of the nature which is wanting in uniformity; and of this we have

already described the origin. But there still remains the further

point-why things when divided after their kinds do not cease to pass

through one another and to change their place-which we will now proceed

to explain. In the revolution of the universe are comprehended all

the four elements, and this being circular and having a tendency to

come together, compresses everything and will not allow any place

to be left void. Wherefore, also, fire above all things penetrates

everywhere, and air next, as being next in rarity of the elements;

and the two other elements in like manner penetrate according to their

degrees of rarity. For those things which are composed of the largest

particles have the largest void left in their compositions, and those

which are composed of the smallest particles have the least. And the

contraction caused by the compression thrusts the smaller particles

into the interstices of the larger. And thus, when the small parts

are placed side by side with the larger, and the lesser divide the

greater and the greater unite the lesser, all the elements are borne

up and down and hither and thither towards their own places; for the

change in the size of each changes its position in space. And these

causes generate an inequality which is always maintained, and is continually

creating a perpetual motion of the elements in all time.

In the next place we have to consider that there are divers kinds

of fire. There are, for example, first, flame; and secondly, those

emanations of flame which do not burn but only give light to the eyes;

thirdly, the remains of fire, which are seen in red-hot embers after

the flame has been extinguished. There are similar differences in

the air; of which the brightest part is called the aether, and the

most turbid sort mist and darkness; and there are various other nameless

kinds which arise from the inequality of the triangles. Water, again,

admits in the first place of a division into two kinds; the one liquid

and the other fusile. The liquid kind is composed of the small and

unequal particles of water; and moves itself and is moved by other

bodies owing to the want of uniformity and the shape of its particles;

whereas the fusile kind, being formed of large and uniform particles,

is more stable than the other, and is heavy and compact by reason

of its uniformity. But when fire gets in and dissolves the particles

and destroys the uniformity, it has greater mobility, and becoming

fluid is thrust forth by the neighbouring air and spreads upon the

earth; and this dissolution of the solid masses is called melting,

and their spreading out upon the earth flowing. Again, when the fire

goes out of the fusile substance, it does not pass into vacuum, but

into the neighbouring air; and the air which is displaced forces together

the liquid and still moveable mass into the place which was occupied

by the fire, and unites it with itself. Thus compressed the mass resumes

its equability, and is again at unity with itself, because the fire

which was the author of the inequality has retreated; and this departure

of the fire is called cooling, and the coming together which follows

upon it is termed congealment. Of all the kinds termed fusile, that

which is the densest and is formed out of the finest and most uniform

parts is that most precious possession called gold, which is hardened

by filtration through rock; this is unique in kind, and has both a

glittering and a yellow colour. A shoot of gold, which is so dense

as to be very hard, and takes a black colour, is termed adamant. There

is also another kind which has parts nearly like gold, and of which

there are several species; it is denser than gold, and it contains

a small and fine portion of earth, and is therefore harder, yet also

lighter because of the great interstices which it has within itself;

and this substance, which is one of the bright and denser kinds of

water, when solidified is called copper. There is an alloy of earth

mingled with it, which, when the two parts grow old and are disunited,

shows itself separately and is called rust. The remaining phenomena

of the same kind there will be no difficulty in reasoning out by the

method of probabilities. A man may sometimes set aside meditations

about eternal things, and for recreation turn to consider the truths

of generation which are probable only; he will thus gain a pleasure

not to be repented of, and secure for himself while he lives a wise

and moderate pastime. Let us grant ourselves this indulgence, and

go through the probabilities relating to the same subjects which follow

next in order.

Water which is mingled with fire, so much as is fine and liquid (being

so called by reason of its motion and the way in which it rolls along

the ground), and soft, because its bases give way are less stable

than those of earth, when separated from fire and air and isolated,

becomes more uniform, and by their retirement is compressed into itself;

and if the condensation be very great, the water above the earth becomes

hail, but on the earth, ice; and that which is congealed in a less

degree and is only half solid, when above the earth is called snow,

and when upon the earth, and condensed from dew, hoarfrost. Then,

again, there are the numerous kinds of water which have been mingled

with one another, and are distilled through plants which grow in the

earth; and this whole class is called by the name of juices or saps.

The unequal admixture of these fluids creates a variety of species;

most of them are nameless, but four which are of a fiery nature are

clearly distinguished and have names. First there is wine, which warms

the soul as well as the body: secondly, there is the oily nature,

which is smooth and divides the visual ray, and for this reason is

bright and shining and of a glistening appearance, including pitch,

the juice of the castor berry, oil itself, and other things of a like

kind: thirdly, there is the class of substances which expand the contracted

parts of the mouth, until they return to their natural state, and

by reason of this property create sweetness;-these are included under

the general name of honey: and, lastly, there is a frothy nature,

which differs from all juices, having a burning quality which dissolves

the flesh; it is called opos (a vegetable acid).

As to the kinds of earth, that which is filtered through water passes

into stone in the following manner:-The water which mixes with the

earth and is broken up in the process changes into air, and taking

this form mounts into its own place. But as there is no surrounding

vacuum it thrusts away the neighbouring air, and this being rendered

heavy, and, when it is displaced, having been poured around the mass

of earth, forcibly compresses it and drives it into the vacant space

whence the new air had come up; and the earth when compressed by the

air into an indissoluble union with water becomes rock. The fairer

sort is that which is made up of equal and similar parts and is transparent;

that which has the opposite qualities is inferior. But when all the

watery part is suddenly drawn out by fire, a more brittle substance

is formed, to which we give the name of pottery. Sometimes also moisture

may remain, and the earth which has been fused by fire becomes, when

cool, a certain stone of a black colour. A like separation of the

water which had been copiously mingled with them may occur in two

substances composed of finer particles of earth and of a briny nature;

out of either of them a half solid body is then formed, soluble in

water-the one, soda, which is used for purging away oil and earth,

and other, salt, which harmonizes so well in combinations pleasing

to the palate, and is, as the law testifies, a substance dear to the

gods. The compounds of earth and water are not soluble by water, but

by fire only, and for this reason:-Neither fire nor air melt masses

of earth; for their particles, being smaller than the interstices

in its structure, have plenty of room to move without forcing their

way, and so they leave the earth unmelted and undissolved; but particles

of water, which are larger, force a passage, and dissolve and melt

the earth. Wherefore earth when not consolidated by force is dissolved

by water only; when consolidated, by nothing but fire; for this is

the only body which can find an entrance. The cohesion of water again,

when very strong, is dissolved by fire only-when weaker, then either

by air or fire-the former entering the interstices, and the latter

penetrating even the triangles. But nothing can dissolve air, when

strongly condensed, which does not reach the elements or triangles;

or if not strongly condensed, then only fire can dissolve it. As to

bodies composed of earth and water, while the water occupies the vacant

interstices of the earth in them which are compressed by force, the

particles of water which approach them from without, finding no entrance,

flow around the entire mass and leave it undissolved; but the particles

of fire, entering into the interstices of the water, do to the water

what water does to earth and fire to air, and are t</pre></body></html>