

CLASSIC REPRINT SERIES

The Difference between
THE DEMOCRITEAN
and EPICUREAN
PHILOSOPHY OF NATURE



by
Karl Marx

Forgotten Books

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**The Difference Between the Democritean and Epicurean
Philosophy of Nature.
with an Appendix**

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Foreword

The form of this treatise would have been on the one hand more strictly scientific, on the other hand in many of its arguments less pedantic, if its primary purpose had not been that of a doctor's dissertation. I am nevertheless constrained by external reasons to send it to the press in this form. Moreover I believe that I have solved in it a heretofore unsolved problem in the history of Greek philosophy.

The experts know that no preliminary studies that are even of the slightest use exist for the subject of this treatise. What Cicero and Plutarch have babbled has been babbled after them up to the present day. Gassendi, who freed Epicurus from the interdict which the Fathers of the Church and the whole Middle Ages, the period of realised unreason, had placed upon him, presents in his expositions ^[15] only one interesting element. He seeks to accommodate his Catholic conscience to his pagan knowledge and Epicurus to the Church, which certainly was wasted effort. It is as though one wanted to throw the habit of a Christian nun over the bright and flourishing body of the Greek *Lais*. It is rather that Gassendi learns philosophy from Epicurus than that he could teach us about Epicurus' philosophy.

This treatise is to be regarded only as the preliminary to a larger work in which I shall present in detail the cycle of Epicurean, Stoic and Sceptic philosophy in their relation to the whole of Greek speculation. ^[16] The shortcomings of this treatise, in form and the like, will be eliminated in that later work.

To be sure, *Hegel* has on the whole correctly defined the general aspects of the above-mentioned systems. But in the admirably great and bold plan of his history of philosophy, from which alone the history of philosophy can in general be dated, it was impossible, on the one hand, to go into detail, and on the other hand, the giant thinker was hindered by his view of what he called speculative thought *par excellence* from recognising in these systems their great importance for the history of Greek philosophy and for the Greek mind in general. These systems are the key to the true history of Greek philosophy. A more profound

indication of their connection with Greek life can be found in the essay of my friend Köppen, *Friedrich der Grosse und seine Widersacher*.^[17]

If a critique of Plutarch's polemic against Epicurus' theology has been added as an appendix, this is because this polemic is by no means isolated, but rather representative of an *espèce*, [species - Ed.] in that it most strikingly presents in itself the relation of the theologising intellect to philosophy.

The critique does not touch, among other things, on the general falsity of Plutarch's standpoint when he brings philosophy before the forum of religion. In this respect it will be enough to cite, in place of all argument, a passage from David Hume:

“... 'Tis certainly a kind of indignity to philosophy, whose *sovereign authority* ought everywhere to be acknowledged, to oblige her on every occasion to make apologies for her conclusions which may be offended at her. *This puts one in mind of a king arraign'd for high treason against his subjects.*”^[18]

Philosophy, as long as a drop of blood shall pulse in its world-subduing and absolutely free heart, will never grow tired of answering its adversaries with the cry of Epicurus:

Not the man who denies the gods worshipped by the multitude, but he who affirms of the gods what the multitude believes about them, is truly impious.^[19]

Philosophy makes no secret of it. The confession of Prometheus:

In simple words, I hate the pack of gods
[Aeschylus, *Prometheus Bound*]

is its own confession, its own aphorism against all heavenly and earthly gods who do not acknowledge human self-consciousness as the highest divinity. It will have none other beside.

But to those poor March hares who rejoice over the apparently worsened civil position of philosophy, it responds again, as Prometheus replied to the servant of the gods, Hermes:

Be sure of this, I would not change my state
Of evil fortune for your servitude.
Better to be the servant of this rock
Than to be faithful boy to Father Zeus.
(Ibid.)

Prometheus is the most eminent saint and martyr in the
philosophical calendar.

Berlin, March 1841

Part One:

Difference between
the Democritean and
Epicurean Philosophy
of Nature in General

The Subject of the Treatise

Greek philosophy seems to have met with something with which a good tragedy is not supposed to meet, namely, a dull ending. The objective history of philosophy in Greece seems to come to an end with Aristotle, Greek philosophy's Alexander of Macedon, and even the manly-strong Stoics did not succeed in what the Spartans did accomplish in their temples, the chaining of Athena to Heracles so that she could not flee.

Epicureans, Stoics and Sceptics are regarded as an almost improper addition bearing no relation to its powerful premises. Epicurean philosophy is taken as a syncretic combination of Democritean physics and Cyrenaic morality; Stoicism as a compound of Heraclitean speculation on nature and the Cynical-ethical view of the world, together with some Aristotelean logic; and finally Scepticism as the necessary evil confronting these dogmatisms. These philosophies are thus unconsciously linked to the Alexandrian philosophy by being made into a one-sided and tendentious eclecticism. The Alexandrian philosophy is finally regarded entirely as exaltation and derangement—a confusion in which at most the universality of the intention can be recognised.

To be sure, it is a commonplace that birth, flowering and decline constitute the iron circle in which everything human is enclosed, through which it must pass. Thus it would not have been surprising if Greek philosophy, after having reached its zenith in Aristotle, should then have withered. But the death of the hero resembles the setting of the sun, not the bursting of an inflated frog.

And then: birth, flowering and decline are very general, very vague notions under which, to be sure, everything can be arranged, but through which nothing can be understood. Decay itself is prefigured in the living; its shape should therefore be just as much grasped in its specific characteristic as the shape of life. Finally, when we glance at history, are Epicureanism, Stoicism and Scepticism particular phenomena? Are they not the prototypes of the Roman mind, the shape in which Greece wandered to Rome? Is not their essence so full of character, so

intense and eternal that the modern world itself has to admit them to full spiritual citizenship?

I lay stress on this only in order to call to mind the historical importance of these systems. Here, however, we are not at all concerned with their significance for culture in general, but with their connection with the older Greek philosophy.

Should not this relationship urge us at least to an inquiry, to see Greek philosophy ending up with two different groups of eclectic systems, one of them the cycle of Epicurean, Stoic and Sceptic philosophy, the other being classified under the collective name of Alexandrian speculation? Furthermore, is it not remarkable that after the Platonic and Aristotelean philosophies, which are universal in range, there appear new systems which do not lean on these rich intellectual forms, but look farther back and have recourse to the simplest schools—to the philosophers of nature in regard to physics, to the Socratic school in regard to ethics? Moreover, what is the reason why the systems that follow after Aristotle find their foundations as it were ready made in the past, why Democritus is linked to the Cyrenaics and Heraclitus to the Cynics? Is it an accident that with the Epicureans, Stoics and Sceptics all moments of self-consciousness are represented completely, but every moment as a particular existence? Is it an accident that these systems in their totality form the complete structure of self-consciousness? And finally, the character with which Greek philosophy mythically begins in the seven wise men, and which is, so to say as central point, embodied in Socrates as its *demiurge* — I mean the character of the wise man, of the *sophos* — is it an accident that it is asserted in those systems as the reality of true science?

It seems to me that though the earlier systems are more significant and interesting for the content, the post-Aristotelean ones, and primarily the cycle of the Epicurean, Stoic and Sceptic schools, are more significant and interesting for the subjective form, the character of Greek philosophy. But it is precisely the subjective form, the spiritual carrier of the philosophical systems, which has until now been almost entirely ignored in favour of their metaphysical characteristics.

I shall save for a more extensive discussion the presentation of the Epicurean, Stoic and Sceptic philosophies as a whole and in their total relationship to earlier and later Greek speculation.

Let it suffice here to develop this relationship as it were by an example, and only in one aspect, namely, their relationship to earlier speculation.

As such an example I select the relationship between the Epicurean and the Democritean philosophy of nature. I do not believe that it is the most convenient point of contact. Indeed, on the one hand it is an old and entrenched prejudice to identify Democritean and Epicurean physics, so that Epicurus' modifications are seen as only arbitrary vagaries. On the other hand I am forced to go into what seem to be microscopic examinations as far as details are concerned. But precisely because this prejudice is as old as the history of philosophy, because the differences are so concealed that they can be discovered as it were only with a microscope, it will be all the more important if, despite the interdependence of Democritean and Epicurean physics, an essential difference extending to the smallest details can be demonstrated. What can be demonstrated in the small can even more easily be shown where the relations are considered in larger dimensions, while conversely very general considerations leave doubt whether the result will hold when applied to details.

Opinions on the Relationship between Democritean and Epicurean Physics

The way in which my general outlook is related to earlier points of view will become quite obvious if a brief review is made of the opinions held by the ancient authors concerning the relationship between Democritean and Epicurean physics.

Posidonius the Stoic, Nicolaus and Sotion reproach Epicurus for having presented the Democritean doctrine of atoms and Aristippus' teaching on pleasure as his own.¹ Cotta the Academician asks in Cicero: "What is there in Epicurus' physics which does not belong to Democritus? True, he modifies some details, but most of it he repeats after him."² Cicero himself says similarly:

"In physics, where he is the most pretentious, Epicurus is a perfect stranger. Most of it belongs to Democritus; where he deviates from him, where he endeavours to improve, he spoils and worsens it."³

Although many authors reproach Epicurus for aspersions against Democritus, Leonteus, according to Plutarch, affirms on the contrary that Epicurus honoured Democritus because the latter had adhered to the true doctrine before him, because he had discovered the principles of nature earlier.⁴ In the essay *De placitis philosophorum* Epicurus is called one who philosophises

¹ Diogenes Laertius, X, 4. They are followed by Posidonius the Stoic and his school, and Nicolaus and Sotion ... [allege that] he (Epicurus) put forward as his own the doctrines of Democritus about atoms and of Aristippus about pleasure.

² Cicero, *On the Nature of the Gods*, I, xxvi [73]. What is there in Epicurus' natural philosophy that does not come from Democritus? Since even if he introduced *sonar* alterations ... yet most of his system is the same....

³ Id., *On the Highest Goods and Evils*, 1, vi [21]. Thus where Epicurus alters the doctrines of Democritus, he alters them for the worse; while for those ideas which he adopts, the credit belongs entirely to *Democritus*....

Ibid. [17, 18] ... the subject of Natural Philosophy, which is Epicurus' particular boast. Here, in the first place, *he is* entirely second-hand. His doctrines are those of Democritus, with a very few modifications. And as for the latter, where he attempts to improve upon his original, in my opinion he only succeeds in making things worse.... Epicurus for his part, where he follows Democritus, does not generally blunder.

after the manner of Democritus.¹ Plutarch in his *Colotes* goes further. Successively comparing Epicurus with Democritus, Empedocles, Parmenides, Plato, Socrates, Stilpo, the Cyrenaics and the Academicians, he seeks to prove that “Epicurus appropriated from the whole of Greek philosophy the false and did not understand the true”.² Likewise the treatise *De eo, quod secundum Epicurum non beats vivi possit* teems with inimical insinuations of a similar kind.

In the Fathers of the Church we find this unfavourable opinion, held by the more ancient authors, maintained. In the note I quote only one passage from Clement of Alexandria,³ a Father of the Church who deserves to be prominently mentioned with regard to Epicurus, since he reinterprets the warning of the apostle Paul against philosophy in general into a warning against Epicurean philosophy, as one which did not even once spin fantasies concerning providence and the like.⁴ But how common was the tendency to accuse Epicurus of plagiarism is shown most strikingly by *Sextus Empiricus*, who wishes to turn some quite inappropriate passages from Homer and Epicarmus into principal sources of Epicurean philosophy.⁵

⁴ Plutarch, *Reply to Colotes* (published by Xylander), 1108. Leonteus ... writes ... that Democritus was honoured by Epicurus for having reached the correct approach to knowledge before him ... because Democritus had first hit upon the first principles of natural philosophy. Comp. *ibid.*, 1111.

¹ (Id.) *On the Sentiments of the Philosophers*, V, 235, published by Tauchnitz. Epicurus, the son of Neocles, from Athens, who philosophised according to Democritus...

² Id., *Reply to Colotes*, 1111, 1112, 1114, 1115, 1117, 1119, 1120 seqq.

³ Clement of Alexandria, *The Miscellanies*, Vi, p. 629, Cologne edition [2]. Epicurus also has pilfered his leading dogmas from Democritus.

⁴ *Ibid.*, p. 295 [I, 11]. "Beware lest any man despoil you through philosophy and vain deceit, after the tradition of men, after the elements of the world and not after Christ" [Col. ii, 8] branding not all philosophy, but the Epicurean, which Paul mentions in the Acts of the Apostles [Acts xvii, 181, which abolishes providence ... and whatever other philosophy honours the elements, but places not over them the efficient cause, nor apprehends the Creator.

⁵ Sextus Empiricus, *Against the Professors* (Geneva edition) [I, 273]. Epicurus has been detected as guilty of having filched the best of his dogmas from the poets. For he has been shown to have taken his definition of the intensity of pleasures,- that it is "the removal of everything painful"-from this one verse:

It is well known that the more recent writers by and large make Epicurus, insofar as he was a philosopher of nature, a mere plagiarist of Democritus. The following statement of Leibniz may here represent their opinion in general:

“Of this great man” (Democritus) “we scarcely know anything but what Epicurus borrowed from him, and Epicurus was not capable of always taking the best.”¹

Thus while Cicero says that Epicurus worsened the Democritean doctrine, at the same time crediting him at least with the will to improve it and with having an eye for its defects, while Plutarch ascribes to him inconsistency² and a predisposition toward the inferior, hence also casts suspicion on his intentions, Leibniz denies him even the ability to make excerpts from Democritus skilfully. But all agree that Epicurus borrowed his physics from Democritus.

"When they had now put aside all longing for drinking and eating." [Homer, *Iliad*, I, 469]

And as to death, that "it is nothing to us", Epicharmus had already pointed this out to him when he said,

"To die or to be dead concerns me not."

So, too, he stole the notion that dead bodies have no feeling from Homer, where he writes,

""This dumb day that he beats with abuse in his violent fury."
[*Ibid.*, XXIV, 54]

¹ Letter of Leibniz to Mr. Des Maizeaux, containing [some] clarifications... [*Opera omnia*,] ed. L. Dutens, Vol. 2, p[p]. 66[-67].

² Plutarch, *Reply to Colotes*, 1111. Democritus is therefore to be censured not for admitting the consequences that flow from his principles, but for setting up principles that lead to these consequences.... If "does not say" means "does not admit it is so", he is following his familiar practice; thus he (Epicurus) does away with providence but says he has left us with piety; he chooses friends for the pleasure he gets, but says that he assumes the greatest pains on their behalf; and he says that while he posits an infinite universe he does not eliminate "up" and "down".

Difficulties Concerning the Identity Of the Democritean and Epicurean Philosophy of Nature

Apart from historical testimony, there is much other evidence for the identity of Democritean and Epicurean physics. The principles — atoms and the void — are indisputably the same. Only in isolated cases does there seem to be arbitrary, hence unessential, difference.

However, a curious and insoluble riddle remains. Two philosophers teach exactly the same science, in exactly the same way, but — how inconsistent! — they stand diametrically opposed in all that concerns truth, certainty, application of this science, and all that refers to the relationship between thought and reality in general. I say that they stand diametrically opposed, and I shall now try to prove it.

A. The opinion of Democritus *concerning the truth and certainty of human knowledge* seems hard to ascertain. Contradictory passages are to be found, or rather it is not the passages, but Democritus' views that contradict each other. For Trendelenburg's assertion in his commentary to Aristotelean psychology, that only later authors, but not Aristotle, knew of such contradictions, is factually incorrect. Indeed, in Aristotle's *Psychology* it is stated: "Democritus posits soul and mind [*Verstand*] as one and the same, since the phenomenon is the true thing." ⁽¹⁾ But in his *Metaphysics* he writes: "Democritus asserts that nothing is true or it is concealed from us." ⁽²⁾ Are not these passages of Aristotle contradictory? If the phenomenon is the true thing, how can the true thing be concealed? The concealment begins only when phenomenon and truth separate. But Diogenes Laertius reports that Democritus was counted among the Sceptics. His saying is quoted: "In reality we know nothing, for truth lies at the deep bottom of the well."⁽³⁾ Similar statements are found in *Sextus Empiricus*. ⁽⁴⁾

This sceptical, uncertain and internally self-contradictory view held by Democritus is only further developed in *the way in which the relationship between the atom and the world which is apparent to the senses is determined*.

Sensuous appearance, on the one hand, does not belong to the atoms themselves. It is not *objective appearance*, but *subjective semblance* [*Schein*]. “The *true* principles are the atoms and the void, *everything else is opinion, semblance*.”⁽⁵⁾ “Cold exists only according to opinion, heat exists only according to opinion, but in reality there are only the atoms and the void.”⁽⁶⁾ Unity therefore does not truly result from the many atoms, but rather “through the combination of atoms each thing *appears* to become a unity”.⁽⁷⁾ The principles can therefore be perceived only through reason, since they are inaccessible to the sensuous eye if only because of their smallness. For this reason they are even called *ideas*.⁽⁸⁾ The sensuous appearance is, on the other hand, the only true object, and the *aisthesis* [sensuous perception] *is the phronesis* [that which is rational]; this true thing however is the changing, the unstable, the phenomenon. But to say that the phenomenon is the true thing is contradictory.⁽⁹⁾ Thus now the one, now the other side is made the subjective and the objective. The contradiction therefore seems to be held apart, being divided between two worlds. Consequently, Democritus makes sensuous reality into subjective semblance; but the antinomy, banned from the world of objects, now exists in his own self-consciousness, where the concept of the atom and sensuous perception face each other as enemies.

Thus Democritus does not escape the antinomy. This is not yet the place to explain it. It is enough that we cannot deny its existence.

Now let us listen to Epicurus.

The wise man, he says, takes a dogmatic, *not a sceptical* position.⁽¹⁰⁾ Yes, exactly this makes him superior to all the others, that he knows with conviction.⁽¹¹⁾ “All senses are heralds of the true.”⁽¹²⁾ “*Nor is there anything which can refute sensations*, neither like can refute like, because of their equal validity, nor can unlike refute unlike, because they do not pass judgment on the same thing, nor the concept, because the concept depends on the sensuous perceptions,”⁽¹³⁾ as it says in the *Canon*. But while Democritus turns the sensuous world into *subjective semblance*, *Epicurus* turns it into *objective appearance*. And here he differs

quite consciously, since he claims that he shares *the same principles* but that he does not reduce the sensuous qualities to things of mere opinion.⁽¹⁴⁾

Since therefore sensation was in fact Epicurus' standard, since objective appearance corresponds to it: then we can only regard as a correct conclusion that at which Cicero shrugs his shoulder:

“The sun seems large to Democritus, because he is a man of science well versed in geometry; to Epicurus it seems *to be* about two feet large, for he pronounces it as large as it *seems*.”⁽¹⁵⁾

B. *This difference* in the *theoretical judgments* of Democritus and Epicurus concerning the certainty of science and the truth of its objects *manifests* itself in the *disparate scientific energy* and *practice* of these men.

Democritus, for whom the principle does not enter into the appearance, remains without reality and existence, is faced on the other hand with the *world of sensation* as the real world, full of content. True, this world is subjective semblance, but just because of this it is torn away from the principle, left in its own independent reality. At the same time it is the unique real object and *as such* has value and significance. Democritus is therefore driven into *empirical observation*. Dissatisfied with philosophy, he throws himself into the arms of *positive knowledge*. We have already seen that Cicero calls him *a vir eruditus* [Man of Science]. He is versed in physics, ethics, mathematics, in the encyclopedic disciplines, in every art.⁽¹⁶⁾ The catalogue alone of his books given by Diogenes Laertius bears witness to his erudition.⁽¹⁷⁾ But since it is the characteristic trait of erudition to expand in breadth and to collect and to search on the outside, we see Democritus wandering through *half the* world in order to acquire experiences, knowledge and observations.

“I have among my contemporaries,” he prides himself, “wandered through the largest part of the earth, investigating the remotest things. I have seen most climates and lands, and I have heard most learned men, and in linear composition with demonstration no one surpassed me, not even the so-called Arsipedonapts of the Egyptians;”⁽¹⁸⁾

Demetrius in the Homonymois [*Men of the Same Name*] and Antisthenes in the *Diadochais* [*Successions of Philosophers*] report that he travelled to Egypt to the priests in order to learn geometry, and to the Chaldeans in Persia, and that he reached the Red Sea. Some maintain that he also met the gymnosophists^[20] in India and set foot in Ethiopia.⁽¹⁹⁾ On the one hand it is the lust for knowledge that leaves him no rest; but it is at the same time dissatisfaction with true, i. e., *philosophical, knowledge* that drives him far abroad. The knowledge which he considers true is without content, the knowledge that gives him content is without truth. It could be a fable, but a true fable, that anecdote of the ancients, since it gives a picture of the contradictory elements in his being. Democritus is supposed to have blinded himself so that the *sensuous light of the eye* would not darken the *sharpness of intellect*.⁽²⁰⁾ This is the same man who, according to Cicero, wandered through half the world. But he did not find what he was looking for.

An opposite figure appears to us in Epicurus.

Epicurus is *satisfied* and *blissful* in *philosophy*.

“You must,” he says, “serve philosophy so that true freedom will be your lot. He who has subordinated and surrendered himself to it does not need to wait, he is emancipated at once. For to serve philosophy is freedom itself.”⁽²¹⁾

Consequently he teaches: “Let no one when young delay to study philosophy, nor when he is old grow weary of his study. For no one can come too early or too late to secure the health of his soul. And the man who says that the age for philosophy has either not yet come or has gone by is like the man who says that the age for happiness is not yet come to him, or has passed away.”⁽²²⁾

While Democritus, dissatisfied with philosophy, throws himself into the arms of empirical knowledge, *Epicurus has nothing but contempt for the positive sciences*, since in his opinion they contribute nothing to true perfection.⁽²³⁾ He is called an *enemy of science*, a scorner of grammar.⁽²⁴⁾ He is even accused of ignorance. “But,” says an Epicurean in Cicero, “it was not Epicurus who was without erudition, but those are ignorant who

believe that what is shameful for a boy not to know ought still to be recited by the old man.⁽²⁵⁾

But while Democritus seeks to learn from Egyptian priests, Persian Chaldeans and Indian gymnosophists, Epicurus prides himself on not having had a teacher, on being self-taught.⁽²⁶⁾ There are some people, he says according to Seneca, who struggle for truth without any assistance. Among these people he has himself traced out his path. And it is they, the self-taught, whom he praises most. The others, according to him, are second-rate minds.⁽²⁷⁾ While Democritus is driven into all parts of the world, Epicurus leaves his garden in Athens scarcely two or three times and travels to Ionia, not to engage in studies, but to visit friends.⁽²⁸⁾ Finally, while Democritus, despairing of acquiring knowledge, blinds himself, Epicurus, feeling the hour of death approaching, takes a warm bath, calls for pure wine and recommends to his friends that they be faithful to philosophy.⁽²⁹⁾

C. The differences that we have just set forth should not be attributed to the accidental individuality of the two philosophers; they embody two opposite tendencies. We see as a difference of practical energy that which is expressed in the passages above as a difference of theoretical consciousness.

We consider finally the *form of reflection* which expresses the relation of thought to being, their mutual relationship. In the general relationship which the philosopher sees between the world and thought, he merely makes objective for himself the relation of his own particular consciousness to the real world.

Now Democritus uses necessity as a form of reflection of reality.⁽³⁰⁾ Aristotle says of him that he traces everything back to necessity.⁽³¹⁾ Diogenes Laertius reports that the vortex of atoms, the origin of all, is the Democritean necessity.⁽³²⁾ More satisfactory explanations are given by the author of *De placitis philosophorum*:

Necessity is, according to Democritus, fate and law, providence and the creator of the world. But the substance of this necessity is the antitype and the movement and impulse of matter.⁽³³⁾

A similar passage is to be found in the *Physical Selections* of *Stobaeus*⁽³⁴⁾ and in the sixth book of the *Praeparatio evangelica* of *Eusebius*.⁽³⁵⁾ In the *Ethical Selections* of *Stobaeus* the following aphorism of *Democritus* is preserved⁽³⁶⁾ — it is almost exactly repeated in the 14th book of *Eusebius*⁽³⁷⁾: human beings like to create for themselves the illusion of chance — a manifestation of their own perplexity, since chance [*Zufall*] is incompatible with sound thinking. *Simplicius* similarly attributes to *Democritus* a passage in which *Aristotle* speaks of the ancient doctrine that does away with chance.⁽³⁸⁾

Contrast this with *Epicurus*:

“Necessity, introduced by some as the absolute ruler, *does not exist*, but some things are *accidental*, others depend on our *arbitrary will*. Necessity cannot be persuaded, but chance is unstable. It would be better to follow the myth about the gods than to be a slave to the *heimarmene* [what has been decreed, destiny] of the physicists. For the former leaves hope for mercy if we do honour to the gods, while the latter is inexorable necessity. But it is *chance*, which must be accepted, *not God*, as the multitude believe.”⁽³⁹⁾ “It is a misfortune to live in necessity, but to live in necessity is not a necessity. On all sides many short and easy paths to freedom are open. Let us therefore thank God that no man can be kept in life. It is permitted to subdue necessity itself.”⁽⁴⁰⁾

The Epicurean *Velleius* in *Cicero* says something similar about Stoic philosophy:

“What are we to think of a philosophy in which, as to ignorant old women, everything seems to occur through fate? ... by *Epicurus* we have been redeemed, set free.”⁽⁴¹⁾

Thus *Epicurus* even *denies disjunctive judgment* so as not to have to acknowledge any concept of necessity.⁽⁴²⁾

True, it is claimed that *Democritus* also used the concept of chance, but of the two passages on this matter which can be found in *Simplicius*⁽⁴³⁾ the one renders the other suspect, because it shows clearly that it was not *Democritus* who used the category of chance, but *Simplicius* who ascribed it to him as a consequence. For he says: *Democritus* assigns, generally

speaking, no cause for the creation of the world, he *seems* therefore to make chance the cause. Here, however, we are concerned not with the *determination of the content*, but with the *form* used *consciously* by Democritus. The situation is similar in regard to the report by Eusebius that Democritus made chance the ruler of the universal and divine and claimed that here it is through chance that everything happens, whereas he excluded chance from human life and empirical nature and called its supporters foolish.⁽⁴⁴⁾

In part, we see in these statements only a desire of the Christian bishop *Dionysius* for conclusion-forcing. In part, where the universal and divine begin, the Democritean concept of necessity ceases to differ from chance.

Hence, this much is historically certain: *Democritus* makes use of *necessity*, *Epicurus* of *chance*. And each of them rejects the opposite view with polemical irritation.

The principal consequence of this difference appears in the way individual physical phenomena are explained.

Necessity appears in finite nature as *relative necessity*, as *determinism*. Relative necessity can only be deduced from *real possibility*, i.e., it is a network of conditions, reasons, causes, etc., by means of which this necessity reveals itself. Real possibility is ~~!-[as it were]~~ the explication of relative necessity. And we find it used by Democritus. We cite some passages from Simplicius.

If somebody is thirsty and drinks and feels better, Democritus will not assign chance as the cause, but thirst. For, even though he seems to use chance in regard to the creation of the world, yet he maintains that chance is not the cause of any particular event, but on the contrary leads back to other causes. Thus, for example, digging is the cause of a treasure being found, or growing the cause of the olive tree.⁽⁴⁵⁾

The enthusiasm and the seriousness with which Democritus introduces this manner of explanation into the observation of nature, the importance he attaches to the striving to ascertain causes, are naively] expressed in his avowal:

“I would rather discover a new aetiology than acquire the Persian crown.”⁽⁴⁶⁾

Once again Epicurus stands directly opposed to Democritus. Chance, for him, is a reality which has only the value of possibility. *Abstract possibility*, however, is the direct *antipode of real possibility*. The latter is restricted within sharp boundaries, as is the intellect; the former is unbounded, as is the imagination. Real possibility seeks to explain the necessity and reality of its object; abstract possibility is not interested in the object which is explained, but in the subject which does the explaining. The object need only be possible, conceivable. That which is abstractly possible, which can be conceived, constitutes no obstacle to the thinking subject, no limit, no stumbling-block. Whether this possibility is also real is irrelevant, since here the interest does not extend to the object as object.

Epicurus therefore proceeds with a boundless nonchalance in the explanation of separate physical phenomena.

More light will be thrown upon this fact by the letter to Pythocles, later to be considered. Suffice it here to draw attention to Epicurus' attitude to the opinions of earlier physicists. Where the author of *De Placitis philosophorum* and Stobaeus quote the different views of the philosophers concerning the substance of the stars, the size and shape of the sun and similar matters, it is always said of Epicurus: He rejects none of these opinions, *all could* be right, he adheres to the *possible*.⁽⁴⁷⁾ Yes, Epicurus *polemicalises* even against the rationally determining, and for precisely this reason one-sided, method of explanation by real possibility.

Thus *Seneca* says in his *Quaestiones naturales*: Epicurus maintains that all these causes are possible, and then attempts in addition still other explanations. He *blames* those who claim that any particular one of them occurs, because it is rash to judge apodictically about that which can only be deduced from conjectures.⁽⁴⁸⁾

One can see that there is no interest in investigating the real causes of objects. All that matters is the tranquillity of the

explaining subject. Since everything possible is admitted as possible, which corresponds to the character of abstract possibility, the *chance of being* is clearly transferred only into the *chance of thought*. The only rule which Epicurus prescribes, namely, that “the explanation should *not contradict* sensation”, is self-evident; for to be abstractly possible consists precisely in being free from contradiction, which therefore must be avoided.⁽⁴⁹⁾ And Epicurus confesses finally that his method of explaining aims only at the *ataraxy*^[21] of *self-consciousness*, not at *knowledge of nature in and for itself*.⁽⁵⁰⁾ it requires no further clarification to show how in this matter, too, Epicurus differs from Democritus.

We thus see that the two men are opposed to each other at every single step. The one is a sceptic, the other a dogmatist; the one considers the sensuous world as subjective semblance, the other as objective appearance. He who considers the sensuous world as subjective semblance applies himself to empirical natural science and to positive knowledge, and represents the unrest of observation, experimenting, learning everywhere. ranging over the wide, wide world. The other, who considers the phenomenal world to be real, scorns empiricism; embodied in him are the serenity of thought satisfied in itself, the self-sufficiency that draws its knowledge *ex principio interno*. But the contradiction goes still farther. The *sceptic* and *empiricist*, who holds sensuous nature to be subjective semblance, considers it from the point of view of *necessity* and endeavours to explain and to understand the real existence of things. The *philosopher* and *dogmatist*, on the other hand, who considers appearance to be real, sees everywhere only chance, and his method of explanation tends rather to negate all objective reality of nature. There seems to be a certain absurdity in these contradictions.

It hardly seems still possible to presume that these men, who contradict each other on all points, will adhere to one and the same doctrine. And yet they seem to be chained to each other.

The task of the next section is to comprehend their relationship in general.^[22]

FOOTNOTES

⁽¹⁾ Aristotle, *On the Soul*, 1, p. 8 (published by Trendelenburg) [2, 404 (Homer, *Iliad* I, 469), 27-291. Democritus roundly identifies soul and mind, for he identifies what appears with what is true.

⁽²⁾ *Id.*, *Metaphysics*, IV, 5 [1009, (Homer *Iliad* XXIV, 54) 11-181. And this is why Democritus, at any rate, says that either there is no truth or to us at least it is not evident. And in general it is because they [i.e., these thinkers] suppose knowledge to be sensation, and this to be a physical alteration, that they say that what appears to our senses must be true; for it is for these reasons that both Empedocles and Democritus and, one may almost say, all the others have fallen victims to opinions of this sort. For Empedocles says that when men change their condition they change their knowledge.

By the way, the contradiction is expressed in this passage of the *Metaphysics* itself.

⁽³⁾ Diogenes Laertius, IX, 72. Furthermore, they find Xenophanes, Zeno of Elea, and Democritus to be sceptics.... Democritus [says:] "Of a truth we know nothing, for truth is in a well."

⁽⁴⁾ Comp. Ritter, *History of Ancient Philosophy* [in German], Part I, pp. 579 seqq. [2nd improved edition, 1836, pp. 619 seqq.]

⁽⁵⁾ Diogenes Laertius. IX, 44. His (Democritus') opinions are these: The first principles of the universe are atoms and empty space; everything else is merely thought to exist.

⁽⁶⁾ *Ibid.*, IX, 72. Democritus rejects qualities, saying: "Opinion says hot or cold, but the reality is atoms and empty space."

⁽⁷⁾ Simplicius, *Scholias to Aristotle* (collected by Brandis), p. 488. ... yet he (Democritus) does not really allow one being to be formed out of them, for it is quite foolish, he says, that two or more become one.

P. 5 14. [...] and therefore they (Democritus and Leucippus) said that neither the one becomes many nor do the many become the truly inseparable one but through the combination of atoms each thing appears to become a unity.

⁽⁸⁾ Plutarch, *Reply to Colotes*, 1111. The atoms, which he (Democritus) calls "*ideas*".

⁽⁹⁾ Comp. Aristotle, I. c.

⁽¹⁰⁾ Diogenes Laertius, X, 121. He [the wise man] will be a dogmatist but not a mere sceptic.

⁽¹¹⁾ Plutarch, *Reply to Colotes*, 1117. For it is one of Epicurus' tenets that none but the sage is unalterably convinced of anything.

(12) Cicero, *On the Nature of the Gods*, I, xxv [701. He (Epicurus) therefore said that all *the semes* give a true report. Comp. id., *On the Highest Goods and Evils*, I, vii. (Plutarch,) *On the Sentiments of the Philosophers*, IV, p. 287 [81. Epicurus holds that every impression and every phantasy is true.

(13) Diogenes Laertius, X, 31. Now in The Canon Epicurus affirms that our sensations and preconceptions and our feelings are the standards of truth.... 32. Nor is there anything which can refute sensations or convict them of error: one sensation cannot convict another and kindred sensation, for they are equally valid; nor can one sensation refute another which is not kindred but heterogeneous, for the objects which the two senses judge are not the same; nor again can reason refute them, for reason is wholly dependent on sensation.

(14) Plutarch, *Reply to Colotes*, I. c. [1110-1111]. He [Colotes] says that Democritus' words "colour is by convention, sweet by convention, a compound by convention", and so the rest, "what is real are the void and the atoms", are an attack on the senses.... I cannot deny the truth of this, but I can affirm that this view is as inseparable from Epicurus' theories as shape and weight are by their own assertion inseparable from the atom. For what does Democritus say? That entities infinite in number, indivisible and indestructible, destitute moreover of quality, and incapable of modification, move scattered about in the void; that when they draw near one another or collide or become entangled the resulting aggregate appears in the one case to be water, in others fire, a plant, or a man, but that everything really is the indivisible "forms", as he calls them [or: atoms, "ideas", as he calls them], and nothing else. For there is no generation from the non-existent, and again nothing can be generated from the existent, as the atoms are too solid to be affected and changed. From this it follows that there is no colour, since it would have to come from things colourless, and no natural entity or mind, since they would have to come from things without qualities.... Democritus is therefore to be censured, not for admitting the consequences that flow from his principles, but for setting up principles that lead to these consequences.... Epicurus claims to lay down the same first principles, but *nevertheless does not say that "colour is by convention", and so with the qualities [sweet, bitter] and the rest.*

(15) Cicero, *On the Highest Goods and Evils*, I, vi. Democritus, being an educated man and well versed in geometry, thinks the sun is of vast size; Epicurus considers it perhaps two feet in diameter, for he pronounces it *to be* exactly as large as it appears. Comp. (Plutarch,) *On the Sentiments of the Philosophers*, II, p. 265.

(16) Diogenes Laertius, IX, 37. [And truly Democritus] had trained himself both in physics and in ethics, nay more, in mathematics and the routine subjects of education, and was quite an expert in the arts.

(17) Comp. Diogenes Laertius, [IX,] 46[-49].

⁽¹⁸⁾ Eusebius, *Preparation for the Gospel*, X, p. 472. And somewhere he (Democritus) says proudly about himself: “I have wandered through a larger part of the earth than any of my contemporaries, investigating the remotest things, and I have seen most climates and lands, and I have heard the most learned men, and in linear composition with demonstration no one surpassed me, not even the so-called Arsipidonaps of the Egyptians, whose guest I was when already turning eighty.” For he went as far as Babylon and Persia and Egypt, where he also studied with the Egyptian priests.

⁽¹⁹⁾ Diogenes Laertius, IX, 35. According to Demetrius in his book on *Men of the Same Name* and Antisthenes in his *Successions of Philosophers* he (Democritus) travelled into Egypt to learn geometry from the priests, and he also went into Persia to visit the Chaldaeans as well as to the Red Sea. Some say that he associated with the gymnosophists in India and went to Aethiopia.

⁽²⁰⁾ Cicero, *Tusculan Disputations*, V, 39. When Democritus lost his sight... And this man believed that the sight of the eyes was an obstacle to the piercing vision of the soul, and whilst others often failed to see what lay at their feet, he ranged freely into the infinite without finding any boundary that brought him to a halt. Id, *On the Highest Goods and Evils*, V, xxix [87]. It is related of Democritus that he deprived himself of eyesight; and it is certain that [he did so] in order that his mind *should be distracted as little as Possible* from reflection.

⁽²¹⁾ Luc. Ann. Seneca, *Works*, II, p. 24, Amsterdam, 1672, Epistle VIII. I am still conning Epicurus ... If you would enjoy real freedom, you must be the slave of Philosophy.” The man who submits and surrenders himself to her is not kept waiting; he is emancipated on the spot. For the very service of Philosophy is freedom.

⁽²²⁾ Diogenes Laertius, X, 122. Let no one be slow to seek wisdom when he is young nor weary in the search thereof when he is grown old. For no age is too early or too late for the health of the soul. And to say that the season for studying philosophy has not yet come, or that it is past and gone, is like saying that the season for happiness is not yet or that it is now no more. Therefore, both old and young ought to seek wisdom, the former in order that, as age comes over him, he may be young in good things because of the grace of what has been, and the latter in order that, while he is young, he may at the same time be old, because he has no fear of the things which are to come. Comp. Clement of Alexandria, IV, 501.

⁽²³⁾ Sextus Empiricus, *Against the Professors*, I, 1. The case against the mathematici [or: Professors of Arts and Sciences] has been set forth in a general way, it would seem, both by Epicurus and by the School of Pyrrho, although the standpoints they adopt are different. Epicurus took the ground that the subjects taught are of no help in perfecting wisdom....

(24) Ibid., p. 11 [I, 491. And amongst them we must place Epicurus, although he seems to be bitterly hostile to the Professors of Arts and Sciences. Ibid., p. 54 [I, 2721. ... those accusers of grammar, Pyrrho, and Epicurus.... Comp. Plutarch, *That Epicurus Actually Makes a Pleasant Life Impossible*, 1094.

(25) Cicero, *On the Highest Goods and Evils*, I, xxi [721. No! Epicurus was not uneducated: the real ignoramuses are those who ask us to go on studying till old age the subjects that we ought to be ashamed not to have learnt in boyhood.

(26) Diogenes Laertius, X, 13. Apollodorus in his *Chronology* tells us that our philosopher (i.e., Epicurus) was a pupil of Nausiphanes and Praxiphanes; but in his letter to Eurydicus, Epicurus himself denies it and says that he was self-taught. Cicero, *On the Nature of the Gods*, I, xxvi [72]. For he (Epicurus) boasted that he had never had a teacher. This I for my part could well believe, even if he did not proclaim it....

(27) Seneca, *Epistle LII*, p. 177. Epicurus remarks that certain men have worked their way to the truth without any one's assistance, carving out their own passage. And he gives special praise to these, for their impulse has come from within, and they have forged to the front by themselves. Again, he says, there are others who need outside help, who will not proceed unless someone leads the way, but who win follow faithfully. Of these, he says, Metrodorus was one; this type of man is also excellent, but belongs to the second grade.

(28) Diogenes Laertius, X, 10. He spent all his life in Greece, notwithstanding the calamities which had befallen her in that age; when he did once or twice take a trip to Ionia, it was to visit his friends there. Friends indeed came to him from all parts and lived with him in his garden. This is stated by Apollodorus, who also says that he purchased the garden for eighty minae.

(29) Ibid., X, 15, 16. Hermippus relates that he entered a bronze bath of lukewarm water and asked for unmixed wine, which he swallowed, and then, having bidden his friends remember his doctrines, breathed his last.

(30) Cicero, *On Fate*, x [22, 23]. Epicurus [thinks] that the necessity of fate can be avoided.... Democritus preferred to accept the view that all events are caused by necessity.

Ibid., *On the Nature of the Gods*, I, xxv [69]. He [Epicurus] therefore invented a device to escape from determinism (the point had apparently escaped the notice of Democritus)....

Eusebius, *Preparation for the Gospel*, I, pp. 23 seqq. Democritus of Abdera [assumed] ... that all, the past as well as the present and the future, has been determined always, since time immemorial, by necessity.

(31) Aristotle, *On the Generation of Animals*, V, 8 [7 Sgb, 2-3]. Democritus ... reduces to *necessity* all the operations of Nature.

⁽³²⁾ Diogenes Laertius, IX, 45. All things happen by virtue of necessity, the vortex being the cause of the creation of all things, and this he (Democritus) calls *necessity*.

⁽³³⁾ (Plutarch) *On the Sentiments of the Philosophers*, p. 252 [I, 251. Parmenides and Democritus [say] that there is nothing in the world but what is necessary, and that this same necessity is otherwise called fate, right, providence and the creator of the world.

⁽³⁴⁾ Stobaeus, *Physical Selections*, I, 8. Parmenides and Democritus [say] that everything occurs by *necessity*, this being *fate*, justice, providence [and the architect of the world]. Leudppus [says] that everything [occurs] by necessity, this being fate. For he says ... nothing originates without cause, but everything because of a cause and of *necessity*.

⁽³⁵⁾ Eusebius, *Preparation for the Gospel*, VI, p. 257. ... fate, that ... for the others (i.e., Democritus) depends on these small bodies, which are carried downward and then ascend again, that conglomerate and again dissipate, that run away from each other and then come together again by *necessity*,

⁽³⁶⁾ Stobaeus, *Ethical Selections*, II 14]. Men like to create for themselves the illusion of chance-an excuse for their own perplexity; since chance is incompatible with sound thinking.

⁽³⁷⁾ Eusebius, *Preparation for the Gospel*, XIV, p. 782. ... and he (i.e., Democritus) has made chance the master and ruler of the universal and divine, and has claimed that everything happens through chance. At the same time he keeps it away from human life and has decried as stupid those who proclaim it. Indeed, at the beginning of his teachings he says: "Men like to create for themselves the illusion of chance-an excuse for their own folly; since it is natural that sound thinking is incompatible with chance; and they have said that this worst enemy of thinking rules; or rather, they accept chance instead of thinking by totally removing and abolishing sound thinking. For they do not appreciate thinking as blissful, but chance as the most reasonable."

⁽³⁸⁾ Simplicius, 1. c., p. 351. The expression "like the ardent doctrine that removes chance" seems to refer to Democritus....

⁽³⁹⁾ Diogenes Laertius, X, 133, 134. ... 'Destiny,' which some introduce as sovereign over all things, he laughs to scorn, affirming rather that some things happen of necessity, others by chance, others through our own agency. For he sees that necessity destroys responsibility and that chance or fortune is inconstant; whereas our own actions are free, and it is to them that praise and blame naturally attach. It were better, indeed, to accept the legends of the gods than to bow beneath the yoke of destiny which the natural philosophers have imposed. The one holds out some faint hope that we may escape if we honour the gods, while the necessity of the naturalists is deaf to all entreaties. But he holds to chance, not to a god, as the world in general [*hoi polloi*] does ...

⁽⁴⁰⁾ Seneca, *Epistle XII*, p. 42. “It is wrong to live under necessity; but no man is constrained to live under necessity.... On all sides lie many short and simple paths to freedom; and let us thank God that no man can be kept in life. We may spurn the very constraints that hold us.” Epicurus ... uttered these words....

⁽⁴¹⁾ Cicero, *On the Nature of the Gods*, 1, xx [55-56]. But what value can be assigned to a philosophy (i. e., the Stoic) which thinks that everything happens by fate? It is a belief for old women, and ignorant old women at that.... But Epicurus has set us free [from superstitious terrors] and delivered us out of captivity....

⁽⁴²⁾ *Ibid.*, I, xxv [70]. He (i.e., Epicurus) does the same in his battle with the logicians. Their accepted doctrine is that in every disjunctive proposition of the form “*so-and-so either is or not*, one of the two alternatives must be true. Epicurus took alarm; if such a proposition as “*Epicurus either will or will not be alive tomorrow*” were granted, one or the other alternative would be necessary. Accordingly he denied the necessity of a disjunctive proposition altogether.

⁽⁴³⁾ Simplicius, 1. c., p. 351. But also Democritus states, where he brings it up, that the different kinds must separate themselves from the totality, but not how and because of what reason, and seems to let them originate automatically and by chance.

Ibid., p. 351. ... and since this man (i. e., Democritus) has apparently applied chance in the creation of the world....

⁽⁴⁴⁾ Comp. Eusebius, 1. c., XIV, [plp. [781-1782. ... and this [said] one (i. e., Democritus), who had sought vainly and without reason for a cause, since he started from an empty principle and a faulty hypothesis, and has taken as the greatest wisdom the understanding of unreasonable [and foolish] happenings, without seeing the root and general necessity of things....

⁽⁴⁵⁾ Simplicius, 1. c., p. 351. ... indeed, when somebody is thirsty, he drinks cold water and feels fine again; but Democritus will probably not accept chance as the cause, but the thirst.

Ibid., p. 351. ... for, even though he (Democritus) seems to use chance in regard to the creation of the world, yet he maintains that in individual cases chance is not the cause of anything, but refers us back to other causes. For instance: the cause of treasure trove is the digging or the planting of the olive tree....

Comp. *ibid.*, p. 351. ... but in individual cases, he (Democritus) says, [chance] is not the cause.

⁽⁴⁶⁾ Eusebius, 1. c., XIV, 781. Indeed, Democritus himself is supposed to have said that he would rather discover a new causal explanation than acquire the Persian crown.

⁽⁴⁷⁾ (Plutarch) *On the Sentiments of the Philosophers*, II, p. 261 [13]. Epicurus rejects none of these opinions, [Marx added here: "(i.e., opinions of the philosophers on the substance of the stars)".] [for he keeps to] what is possible.

Ibid., II, p. 265 [21]. Epicurus says again that all the foregoing is possible.

Ibid. [II, 22] Epicurus believes that all the foregoing is possible.

Stobaeus, *Physical Selections*, I, p. 54. Epicurus rejects none of these opinions, for he keeps to what is possible.

⁽⁴⁸⁾ Seneca, *Questions of Nature*, [VI,] XX, [5,] p. 802. Epicurus asserts that all the foregoing may be causes, but he tries to introduce some additional ones. He criticises other authors for affirming too positively that some particular one of the causes is responsible, as it is difficult to pronounce anything as certain in matters in which conjecture must be resorted to.

⁽⁴⁹⁾ Comp. Part II, Chapter 5.

Diogenes Laertius, X, 88. However, we must observe each fact as presented, and further separate from it all the facts presented along with it, the occurrence of which from various causes is not contradicted by facts within our experience.... All these alternatives are possible; they are contradicted by none of the facts....

⁽⁵⁰⁾ Diogenes Laertius, X, 80. We must not suppose that our treatment of these matters fails of accuracy, so far as it is needful to ensure our tranquillity [ataraxy] and happiness.

Part II:
On the Difference
between
Democritean and
Epicurean Physics
In Detail

Chapter One: The Declination of the Atom from the Straight Line

Epicurus assumes a *threefold* motion of the atoms in the void.⁽¹⁾ One motion is the fall in a *straight* line, the second originates in the *deviation* of the atom *from the straight line*, and the third is established through the *repulsion of the many atoms*. Both Democritus and Epicurus accept the first and the third motion. The *declination of the atom* from the straight line differentiates the one from the other.⁽²⁾

This motion of declination has often been made the subject of a joke. *Cicero* more than any other is inexhaustible when he touches on this theme. Thus we read in him, among other things:

“Epicurus maintains that the atoms are thrust downwards in a straight line by their weight; this motion is said to be the natural motion of bodies. But then it occurred to him that if all atoms were thrust downwards, no atom could ever meet another one. Epicurus therefore resorted to a lie. He said that the atom makes a very tiny swerve, which is, of course, entirely impossible. From this arose complexities, combinations and adhesions of the atoms with one another, and out of this came the world, all parts of it and its contents. Besides all this being a puerile invention, he does not even achieve what he desires.”⁽³⁾

We find another version in the first book of *Cicero's* treatise *On the Nature of the Gods*:

“Since Epicurus saw that, if the atoms travelled downwards by their own weight, nothing would be within our control, for their motion would be determined and necessary, he invented a means for escaping this necessity, a means which had escaped the notice of Democritus. He says that the atom, although thrust downwards by its weight and gravity, makes a very slight swerve. To assert this is more disgraceful than to be incapable of defending what he wants.”⁽⁴⁾

Pierre Bayle expresses a similar opinion:

“Before him” (i.e., Epicurus) “only the motion of weight and that of reflection were conceded to the atom.... Epicurus

supposed that even in the midst of the void the atoms declined slightly from the straight line, and from this, he said, arose freedom.... It must be noted, in passing, that this was not the only motive that led him to invent this motion of declination. He also used it to explain the meeting of atoms; for he saw clearly that supposing they fall] move with equal speed downwards along straight lines, he would never be able to explain that they could meet, and that thus the creation of the world would have been impossible. It was necessary, then, that they should deviate from the straight line."⁽⁵⁾

For the present I leave the validity of these reflections an open question. This much everyone will notice in passing, that the most recent critic of Epicurus, *Schaubach*, has misunderstood Cicero when he says:

“The atoms are all thrust downwards by gravity, hence parallel, owing to physical causes, but through mutual repulsion they acquire another motion, according to Cicero (*De nature deorum*, I, xxv [, 69]) an oblique motion due to accidental causes, and indeed from all eternity.”⁽⁶⁾

In the first place, Cicero in the quoted passage does not make the repulsion the reason for the oblique direction, but rather the oblique direction the reason for the repulsion. In the second place, he does not speak of accidental causes, but rather criticises the fact that no causes at all are mentioned, as it would be in and for itself contradictory to assume repulsion and at the same time accidental causes as the reason for the oblique direction. At best one could then still speak of accidental causes of the repulsion, but not of accidental causes of the oblique direction.

For the rest, one peculiarity in Cicero's and Bayle's reflections is too obvious not to be stressed immediately. They foist upon Epicurus motives of which the one nullifies the other. Epicurus is supposed to have assumed a declination of the atoms in order to explain the repulsion on one occasion, and on another freedom. But if the atoms do not meet without declination, then declination as an explanation of freedom is superfluous; for the opposite of freedom begins, as we see in Lucretius,⁽⁷⁾ only with the deterministic and forced meeting of atoms. But if the atoms meet without declination, then this is superfluous for explaining

repulsion. I maintain that this contradiction arises when the causes for the declination of the atom from the straight line are understood so superficially and disconnectedly as they are by Cicero and Bayle. We shall find in Lucretius, the only one in general of all the ancients who has understood Epicurean physics, a more profound exposition.

We now shall consider the declination itself.

Just as the point is negated [*aufgehoben*] in the line, so is every falling body negated in the straight line it describes. its specific quality does not matter here at all. A falling apple describes a perpendicular line just as a piece of iron does. Every body, insofar as we are concerned with the motion of falling, is therefore nothing but a moving point, and indeed a point without independence, which in a certain mode of being—the straight line which it describes—surrenders its individuality [*Einzelheit*]. Aristotle therefore is correct when he objects against the Pythagoreans: “You say that the motion of the line is the surface, that of the point the line; then the motions of the monads will also be lines.”⁽⁸⁾ The consequence of this for the monads as well as for the atoms would therefore be—since they are in constant motion⁽⁹⁾ — that neither monads nor atoms exist, but rather disappear in the straight line; for the solidity of the atom does not even enter into the picture, insofar as it is only considered as something falling in a straight line. To begin with, if the void is imagined as spatial void, then the atom is the *immediate negation of abstract space*, hence a *spatial point*. The solidity, the intensity, which maintains itself in itself against the incohesion of space, can only be added by virtue of a principle which negates space in its entire domain, a principle such as time is in real nature. Moreover, if this itself is not admitted, the atom, insofar as its motion is a straight line, is determined only by space and is prescribed a relative being and a purely material existence. But we have seen that one moment in the concept of the atom is that of being pure form, negation of all relativity, of all relation to another mode of being. We have noted at the same time that — Epicurus objectifies for himself both moments

which, although they contradict one another, are nevertheless inherent in the concept of the atom.

How then can Epicurus give reality to the pure form-determination of the atom, the concept of pure individuality, negating any mode of being determined by another being?

Since he is moving in the domain of immediate being, all determinations are immediate. Opposite determinations are therefore opposed to one another as immediate realities.

But the relative existence which confronts the atom, *the mode of being which it has to negate*, is *the straight line*. The immediate negation of this motion is another motion, which, therefore, spatially conceived, is *the declination from the straight line*.

The atoms are purely self-sufficient bodies or rather bodies conceived in absolute self-sufficiency, like the heavenly bodies. Hence, again like the heavenly bodies, they move not in straight, but in oblique lines. *The motion of failing is the motion of non-self-sufficiency*.

If Epicurus therefore represents the materiality of the atom in terms of its motion along a straight line, he has given reality to its form-determination in the declination from the straight line, and these opposed determinations are represented as directly opposed motions.

Lucretius therefore is correct when he maintains that the declination breaks the *fati foedera*, [bonds of fate]⁽¹⁰⁾ and, since he applies this immediately to consciousness,⁽¹¹⁾ it can be said of the atom that the declination is that something in its breast that can fight back and resist.

But when Cicero reproaches Epicurus that

“he does not even attain the goal for which he made all this up -for if all atoms declined, none of them would ever combine, or some would deviate, others would be driven straight ahead by their motion. So it would be necessary as it were to give the atoms definite assignments beforehand: which had to move straight ahead and which obliquely”,⁽¹²⁾

this objection has the justification that the two moments inherent in the concept of the atom are represented as directly different motions, and therefore must be allotted to different individuals: an inconsistency, but a consistent one, since the domain of the atom is immediacy.

Epicurus feels this inherent contradiction quite well. He therefore endeavours to represent the declination as being as *imperceptible* as possible *to the senses*; it takes place

In time, in place unfixt (Lucretius, *De rerum nature*, II, 294).⁽¹³⁾ it occurs in the smallest possible space.⁽¹⁴⁾

Moreover *Cicero*,⁽¹⁵⁾ and, according to Plutarch, several ancient authors,⁽¹⁶⁾ reproach Epicurus for saying that the declination of the atom occurs *without cause*. Nothing more disgraceful, says Cicero, can happen to a physicist.⁽¹⁷⁾ But, in the first place, a physical cause such as Cicero wants would throw the declination of the atom back into the domain of determinism, out of which it was precisely to be lifted. *And then, the atom is by no means complete before it has been submitted to the determination of declination.* To inquire after the cause of this determination means therefore to inquire after the cause that makes the atom a principle—a clearly meaningless inquiry to anyone for whom the atom is the cause of everything, hence without cause itself.

Finally, *Bayle*,⁽¹⁸⁾—supported by the authority of *Augustine*,⁽¹⁹⁾ who states that Democritus ascribed to the atom a spiritual principle — an authority, by the way, who in contrast to Aristotle and the other ancients is without any importance—reproaches Epicurus for having thought out the concept of declination instead of this spiritual principle.

But, on the contrary, merely a word would have been gained with this “soul of the atom”, whereas the declination represents the real soul of the atom, the concept of abstract individuality.

Before we consider the consequence of the declination of the atom from the straight line, we must draw attention to another, most important element, which up to now has been entirely overlooked.

The declination of the atom from the straight line is, namely, not a particular determination which appears accidentally in Epicurean physics. On the contrary, the law which it expresses goes through the whole Epicurean philosophy, in such a way, however, that, as goes without saying, the determination of its appearance depends on the domain in which it is applied.

As a matter of fact, abstract individuality can make its concept, its form-determination, the pure being-for-itself, the independence from immediate being, the negation of all relativity, effective only by *abstracting from the being that confronts it*; for in order truly to overcome it, abstract individuality had to idealise it, a thing only generality can accomplish.

Thus, while the atom frees itself from its relative existence, the straight line, by abstracting from it, by swerving away from it; so the entire Epicurean philosophy swerves away from the restrictive mode of being wherever the concept of abstract individuality, self-sufficiency and negation of all relation to other things must be represented in its existence.

The purpose of action is to be found therefore in abstracting, swerving away from pain and confusion, in ataraxy.⁽²⁰⁾ Hence the good is the flight from evil,⁽²¹⁾ pleasure the swerving away from suffering.⁽²²⁾ Finally, where abstract individuality appears in its highest freedom and independence, in its totality, there it follows that the being which is swerved away from, is *all being*., *for this reason, the gods swerve away from the world*, do not bother with it and live outside it.⁽²³⁾

These gods of Epicurus have often been ridiculed, these gods who, like human beings, dwell in the intermundia [The spaces between the worlds, literally: inter-worlds] of the real world, have no body but a quasi-body, no blood but quasi-blood,⁽²⁴⁾ and, content to abide in blissful peace, lend no ear to any supplication, are unconcerned with us and the world, are honoured because of their beauty, their majesty and their superior nature, and not for any gain.

And yet these gods are no fiction of Epicurus. They did exist. *They are the Elastic gods of Greek art.*^[23] Cicero, the Roman, rightly scoffs at them,⁽²⁵⁾ but *Plutarch*, the Greek, has forgotten the whole Greek outlook when he claims that although this doctrine of the gods does away with fear and superstition, it produces no joy or favour in the gods, but instead bestows on us that relation to them that we have to the Hyrcanian^[24] fish, from which we expect neither harm nor advantage.⁽²⁶⁾ Theoretical calm is one of the chief characteristics of the Greek gods. As *Aristotle* says:

“What is best has no need of action, for it is its own end.”⁽²⁷⁾

We now consider the *consequence* that follows directly from the declination of the atom. In it is expressed the atom's negation of all motion and relation by which it is determined as a particular mode of being by another being. This is represented in such a way that the atom abstracts from the opposing being and withdraws itself from it. But what is contained herein, namely, *its negation of all relation to something else*, must be realised, *positively established*. This can only be done if *the being to which it relates itself is none other than itself*, hence equally an atom, and, since it itself is directly determined, *many atoms*. *The repulsion of the many atoms is therefore the necessary realisation of the lex atomi*, [Law of the atom] as Lucretius calls the declination. But since here every determination is established as a particular being, repulsion is added as a third motion to the former ones. Lucretius is therefore correct when he says that, if the atoms were not to decline, neither their repulsion nor their meeting would have taken place, and the world would never have been created.⁽²⁸⁾ For atoms are their own sole object and can only be related to themselves, hence speaking in spatial terms, they can only meet, because every relative existence of these atoms by which they would be related to other beings is negated. And this relative existence is, as we have seen, their original motion, that of falling in a straight line. Hence they meet only by virtue of their declination from the straight line. It has nothing to do with merely material fragmentation.⁽²⁹⁾

And in truth: the immediately existing individuality is only realised conceptually, inasmuch as it relates to something else which actually is itself — even when the other thing confronts it in the form of immediate existence. Thus man ceases to be a product of nature only when the other being to which he relates himself is not a different existence but is itself an individual human being, even if it is not yet the mind [*Geist*]. But for man as man to become his own real object, he must have crushed within himself his relative being, the power of desire and of mere nature. Repulsion is the first form of self-consciousness, it corresponds therefore to that self-consciousness which conceives itself as immediate-being, as abstractly individual.

The concept of the atom is therefore realised in repulsion, inasmuch as it is abstract form, but no less also the opposite, inasmuch as it is abstract matter; for that to which it relates itself consists, to be true, of atoms, but other atoms. *But when I relate myself to myself as to something which is directly another, then my relationship is a material one.* This is the most extreme degree of externality that can be conceived. In the repulsion of the atoms, therefore, their materiality, which was posited in the fall in a straight line, and the form-determination, which was established in the declination, are united synthetically.

Democritus, in contrast to Epicurus, transforms into an enforced motion, into an act of blind necessity, that which to Epicurus is the realisation of the concept of the atom. We have already seen above that he considers the vortex (*dini*) resulting from the repulsion and collision of the atoms to be the substance of necessity. He therefore sees in the repulsion only the material side, the fragmentation, the change, and not the ideal side, according to which all relation to something else is negated and motion is established as self-determination. This can be clearly seen from the fact that he conceives one and the same body divided through empty space into many parts quite sensuously, like gold broken up into pieces.⁽³⁰⁾ Thus he scarcely conceived of the One as the concept of the atom.

Aristotle correctly argues against him:

“Hence Leucippus and Democritus, who assert that the primary bodies always moved in the void and in the infinite, should say what kind of motion this is, and what is the motion natural to them. For if each of the elements is forcibly moved by the other, then it is still necessary that each should have also a natural motion, outside which is the enforced one. And this first motion must not be enforced but natural. Otherwise the procedure goes on to infinity.”⁽³¹⁾

The Epicurean declination of the atom thus changed the whole inner structure of the domain of the atoms, since through it the form-determination is validated and the contradiction inherent in the concept of the atom is realised. Epicurus was therefore the first to grasp the essence of the repulsion — even if only in sensuous form, whereas Democritus only knew of its material existence.

Hence we find also more concrete forms of the repulsion applied by Epicurus. In the political domain there is the *covenant*,⁽³²⁾ in the social domain friendship, which is praised as the highest good.

FOOTNOTES

⁽¹⁾ Stobaeus, *Physical Selections*, I, p. 33. Epicurus says ... that the atoms move sometimes vertically downwards, at other times by deviating from a straight line, but the motion upward is due to collision and recoil.

Comp. Cicero, *On the Highest Goods and Evils*, I, vi. (Plutarch,) *On the Sentiments of the Philosophers*, p. 249 [I, 12]. Stobaeus, l.c., p. 40.

⁽²⁾ Cicero, *On the Nature of the Gods*, I, xxvi [73]. What is there in Epicurus' natural philosophy that does not come from Democritus? Since even if he introduced some alterations, for instance the *swerve* of the atoms of which I spoke just now ...

⁽³⁾ Cicero, *On the Highest Goods and Evils*, I, vi [18-19]. He (Epicurus) believes that these same indivisible solid bodies are borne by their own weight perpendicularly downward, which he holds is the natural motion of all bodies; but thereupon this *clever fellow*, encountering the difficulty that if they all travelled downwards in a straight line, and, as I said, perpendicularly, no one atom would ever be able to overtake any other atom, accordingly introduced an idea of his own invention: he said that the atom makes a very tiny swerve, - the smallest divergence possible; and so are produced entanglements and combinations and cohesions of atoms with atoms, which result in the creation of the world and all its parts, and of all that is in them.

⁽⁴⁾ Cicero, *On the Nature of the Gods*, I, xxv [69-70]. Epicurus saw that if the atoms travelled downwards by their own weight, we should have no freedom of the will, since the motion of the atoms would be determined by necessity. He therefore invented a device to escape from determinism (the point had apparently escaped the notice of Democritus): he said that the atom while travelling vertically downward by the force of gravity makes a very slight swerve to one side. This defence discredits him more than if he had had to abandon his original position. Comp. Cicero, *On Fate*, x [22-23].

⁽⁵⁾ Bayle, *Dictionnaire historique et critique* (Historical and Critical Dictionary), art. Epicurus.

⁽⁶⁾ Schaubach, On Epicurus' Astronomical Concepts [in German], in *Archiv für Philologie und Pädagogie*, V, 4, [1839,] p. 549.

⁽⁷⁾ Lucretius, *On the Nature of Things*, 11, 251 ff. Again, if all movement is always interconnected, the new rising from the old in a determinate order ... what is the source of the free will?

⁽⁸⁾ Aristotle, *On the Soul*, I, 4 [409, 1-5]. How are we to imagine a unit [monad] being moved? By what agency? What sort of movement can be attributed to what is without parts or internal differences? If the unit is both originative of movement and itself capable of being moved, it must contain

differences. Further, since they *say* a moving line *generates* a surface and a moving point a line, the movements *of the psychic* units must *be* lines.

⁽⁹⁾ Diogenes Laertius, X, 43. The atoms are in continual motion.

Simplicius, 1.c., p. 424. ... the followers of Epicurus ... [taught] eternal motion.

⁽¹⁰⁾ Lucretius, *On the Nature of Things*, 11, 251, 253-255. ... if the atoms never swerve so as to originate some new movement that will snap the bonds of fate, the everlasting sequence of cause and effect....

⁽¹¹⁾ *Ibid.*, II, 279-280. ... there is within the human breast something that can fight against this force and resist it.

⁽¹²⁾ Cicero, *On the Highest Goods and Evils*, I, vi [19-20]. ... yet he does not attain the object for the sake of which this fiction was devised. For, if all the atoms swerve, none will ever come to cohere together; or if some swerve while others travel in a straight line, by their own natural tendency, in the first place this will be tantamount to assigning to the atoms their different spheres of action, some to travel straight and some sideways....

⁽¹³⁾ Lucretius, 1.c., 293.

⁽¹⁴⁾ Cicero, *On Fate*, x [22]. ... when the atom swerves sideways a minimal space, termed [by Epicurus] *elachiston* [the smallest].

⁽¹⁵⁾ *Ibid.* Also he is compelled to profess in reality, if not quite explicitly, that this swerve takes place without cause....

⁽¹⁶⁾ Plutarch, *On the Creation of the Soul*, VI (VI, p. 8, stereotyped edition). For they do not agree with Epicurus that the atom swerves somewhat, since he introduces a motion without cause out of the non-being.

⁽¹⁷⁾ Cicero, *On the Highest Goods and Evils*, I, vi [19]. The swerving is itself an arbitrary fiction (for Epicurus says *the atoms swerve* without a cause, *yet this* is a capital offence in a natural *philosopher, to speak of something taking place uncaused*). Then also he gratuitously deprives the atoms of what he himself declared to be the natural motion of all heavy bodies, namely, movement in a straight line downwards....'

⁽¹⁸⁾ Bayle, 1.c.

⁽¹⁹⁾ Augustine, Letter 56.

⁽²⁰⁾ Diogenes Laertius, X, 128. For the end of all our actions is to be free from pain and fear.

⁽²¹⁾ Plutarch, *That Epicurus Actually Makes a Pleasant Life Impossible*, 1091. Epicurus too makes a similar statement to the effect that the Good is a thing that arises out of your very escape from evil....

(22) Clement of Alexandria, *The Miscellanies*, II, p. 415 [21]. ... Epicurus also says that the removal of pain is pleasure....

(23) Seneca, *On Benefits*, IV [4, 11, p. 699. Yes, and therefore God does not give benefits, but, free from all care and unconcerned about us, he turns his back on the world... and benefits no more concern him than injuries....

(24) Cicero, *on the Nature of the Gods*, I, xxiv [68]. ... you gave us the formula just now -God has not body but a semblance of body, not blood but a kind of blood.

(25) *ibid.* xi [112, 115-116]. Well then, what meat and drink, what harmonies of music and flowers of various colours, what delights of touch and smell will you assign to the gods, so as to keep them steeped in pleasure?... Why, what reason have you for maintaining that men owe worship to the gods, if the gods not only pay no regard to men, but care for nothing and do nothing at all? "But deity possesses an excellence and pre-eminence which must of its own nature attract the worship of the wise." Now how can there be any excellence in a being so engrossed in the delights of his own pleasure that he always has been, is, and will continue to be entirely idle and inactive?

(26) Plutarch, *That Epicurus Actually Makes a Pleasant Life Impossible*, [1100-] 1101. ... their theory ... does remove a certain superstitious fear; but it allows no joy and delight to come to us from the gods. Instead, it puts us in the same state of mind with regard to the gods, of neither being alarmed nor rejoicing, that we have regarding the Hyrcanian fish. We expect nothing from them either good or evil.

(27) Aristotle, *On the Heavens*, II, 12 [292 4 -6]. ... while the perfectly conditioned has no need of action, since it is itself the end....

(28) Lucretius, *On the Nature of Things*, II, 221, 223-224. If it were not for this swerve, everything would fall downwards like rain-drops through the abyss of space. No collision would take place and no impact of atom on atom would have created anything. Thus nature would never have

(29) *Ibid.*, II, 284-292. So also in the atoms ... besides weight and impact there must be a third cause of movement, the source of this inborn power of ours....

But the fact that the mind itself has no internal necessity to determine its every act and compel it to suffer in helpless passivity-this is due to the slight swerve of the atoms....

(30) Aristotle, *On the Heavens*, I, 7 -276a, 11. If the whole is not [275 30-276, 1] If the whole is not continuous, but exists, as Democritus and Leucippus think, in the form of parts separated by void, there must necessarily be one movement of all the multitude. ... but their nature is one, like many pieces of gold separated from one another.

(31) *Ibid.*, III, 2 [300, 9-17]. Hence Leucippus and Democritus, who say that the primary bodies are in perpetual movement in the void or infinite, may be

asked to explain the manner of their motion and the kind of movement which is natural to them. For if the various elements are constrained by one another to move as they do, each must still have a natural movement which the constrained contravenes, and the prime mover must cause motion not by constraint but naturally. If there is no ultimate natural cause of movement and each preceding term in the series is always moved by constraint, we shall have an infinite process.

⁽³²⁾ Diogones Laertius, X, 150. Those animals which are incapable of making covenants with one another, to the end that they may neither inflict nor suffer harm, are *without either justice or injustice*. And those tribes which either could not or would not form mutual covenants to the same end are in like case. There never was an absolute justice, but only an agreement made in reciprocal intercourse, in whatever localities, now and again, from time to time, providing against the infliction or suffering of harm.

Chapter Two: The Qualities of the Atom

It contradicts the concept of the atom that the atom should have properties, because, as Epicurus says, every property is variable but the atoms do not change.¹ Nevertheless it is a *necessary consequence* to attribute properties to atoms. Indeed, the many atoms of repulsion separated by sensuous space must necessarily be *immediately different from one another and from their pure essence*, i.e., they must possess qualities.

In the following analysis I therefore take no account of the assertion made by *Schneider* and *Nürnbergger* that “Epicurus attributed no qualities to the atoms, paragraphs 44 and 54 of the letter to Herodotus in Diogenes Laertius have been interpolated”. If this were truly so, how is one to invalidate the evidence of Lucretius, Plutarch, and indeed of all other authors who speak of Epicurus? Moreover, Diogenes Laertius mentions the qualities of the atom not in two, but in ten paragraphs: Nos. 42, 43, 44, 54, 55, 56, 57, 58, 59 and 61. The grounds these critics give for their contention — that “they did not know how to reconcile the qualities of the atom with its concept”-are very shallow.”^[25] *Spinoza* says that ignorance is no argument. [Spinoza, *Ethics*, Part I, Prop. 36, Appendix] If one was to delete the passages in the ancients which he does not understand, how quickly would we have a *tabula rasa*!

Through the qualities the atom acquires an existence which contradicts its concept; it is assumed as an *externalised being different from its essence*. It is this contradiction which mainly interests Epicurus. Hence, as soon as he posits a property and thus draws the consequence of the material nature of the atom, he counterposits at the same time determinations which again destroy this property in its own sphere and validate instead the concept of the atom. *He therefore determines all properties in*

¹ Diogenes Laertius, X, 54. For every quality changes, but the atoms do not change. Lucretius, *On the Nature of Things*, II, 861-863. They must be kept far apart from the atoms, if we wish to provide the universe with imperishable foundations on which it may rest secure ...

such a way that they contradict themselves. Democritus, on the other hand, nowhere considers the properties in relation to the atom itself, nor does he objectify the contradiction between concept and existence which is inherent in them. His whole interest lies rather in representing the qualities in relation to concrete nature, which is to be formed out of them. To him they are merely hypotheses to explain the plurality . which makes its appearance. It follows that the concept of the atom has nothing to do with them.

In order to prove our assertion it is first of all necessary to elucidate the sources which here seem to contradict one another.

In the treatise *De placitis philosophorum* we read:

“*Epicurus* asserts that the atoms have three qualities: size, shape, weight. Democritus only assumed two: size and shape. Epicurus added weight as the third.”¹

The same passage is repeated word for word in the *Praeparatio evangelica* of Eusebius.²

It is confirmed by the testimony of Simplicius³ and Philoponus,⁴ according to whom Democritus attributed to the atoms only difference in size and shape. Directly contrary stands Aristotle who, in the book *De generationibus et corruptionibus*, attributes to the atoms of Democritus difference in weight.⁵ In another passage (in the first book of *De caelo*) Aristotle leaves undecided the

¹ (Plutarch,) *On the Sentiments of the Philosophers* [I, 3]. Epicurus ... affirms that ... bodies are subject to these three accidents, shape, size and weight. Democritus [acknowledged] but two: size and shape. Epicurus added the third, to wit, weight, for he pronounced that it is necessary that bodies receive their motion from that impulsion which springs from weight Comp. Sextus Empiricus, *Against the Professors*, p. 421 [X, 240].

² Eusebius, *Preparation for the Gospel*, XIV, p. 749 [141].

³ Simplicius, l.c., p. 362. ...giving (i.e., Democritus) them (i.e., the atoms) the difference with regard to size and shape....

⁴ Philoponus, *ibid.* He (Democritus) assigns a unique common nature of the body to all shapes; its parts are the atoms, which differ from each other in size and shape; for they have not only different shape but some of them are bigger, the others smaller.

⁵ Aristotle, *On Becoming and Decaying*, 1, 8 [326, 10]. ...and yet he [Democritus] says “the more any indivisible exceeds, the heavier it is”.

question of whether or not Democritus ascribed weight to the atoms, for he says:

"Thus none of the bodies will be absolutely light if they all have weight; but if all have lightness, none will be heavy."¹

In his *Geschichte der alten Philosophie*, Ritter, basing himself on the authority of Aristotle, rejects the assertions of Plutarch, Eusebius and Stobaeus.² He does not consider the testimony of Simplicius and Philoponus.

Let us see whether these passages are really so contradictory. In the passage cited, Aristotle does not speak of the qualities of the atom *ex professo*. [as someone who knows their profession] On the other hand, we read in the eighth book of the *Metaphysics*:

"Democritus assumes three differences between atoms. For the underlying body is one and the same with respect to matter, but it differs in *rhysmos*, meaning shape, in *trope*, meaning position, or in *diathige*, meaning arrangement."³

This much can be immediately concluded from this passage <!-- [~~Democritus does not posit the contradiction between the quality of the atom and its concept~~]->. Weight is not mentioned as a property of the Democritean atoms. The fragmented pieces of matter, kept apart by the void, must have special forms, and these are quite externally perceived from the observation of space. This emerges even more clearly from the following passage of Aristotle:

"Leucippus and his companion Democritus hold that the elements are the full and the void.... These are the basis of being as matter. just as those who assume only one

¹ Aristotle, *On the Heavens*, 1, 7 [276, 1-2, 4-7]. But each piece must, as we assert, have the same motion.... So that if it be weight that all possess, no body is, strictly speaking, light; and if lightness be universal, none is heavy. Moreover, whatever possesses weight or lightness will have its place either at one of the extremes or in the middle region.

² Ritter, *History of Ancient Philosophy* [in German], I, p. 568, Note 2 [2d improved edition, 1836, p. 602, Note 2].

³ Aristotle, *Metaphysics*, VIII, 2 [1042, 11-141. Democritus seems to think there are three kinds of difference between things [atoms]; the underlying body, the matter, is one and the same, but they differ either in rhythm, i. e. shape, or in turning, i. e. position, or in inter-contact, i. e. order.

fundamental substance generate all other things by its affections, assuming rarity and density as the principles of qualities—in the same way Leucippus and Democritus also teach that the differences between the atoms are the causes of the other things, for the underlying being differs only by *rhysmos*, *diathige* and *trope* That is, A differs from N in shape, AN from NA in arrangement, Z from N in position.”¹

It is evident from this quotation that Democritus considers the properties of the atom only in relation to the formation of the differences in the world of appearances, and not in relation to the atom itself. It follows further that Democritus does not single out weight as an essential property of the atoms. For him weight is taken for granted, since everything corporeal has weight. In the same way, according to him, even size is not a basic quality. It is an accidental determination which is already given to the atoms together with figure. Only the diversity of the figures is of interest to Democritus, since nothing more is contained in shape, position and arrangement. Size, shape and weight, by being combined as they are by Epicurus, are differences which the atom in itself possesses. Shape, position and arrangement are differences which the atom possesses in relation to something else. Whereas we find in Democritus mere hypothetical determinations to explain the world of appearances, in Epicurus the consequence of the principle itself will be presented to us. We shall therefore discuss in detail his determinations of the properties of the atom.

¹ Ibid., I, 4 [985b, 4-191]. Leucippus and his associate Democritus say that the full and the empty are the elements, calling the one being and the other non-being—the full and solid being being, the empty non-being (whence they say being no more is than non-being, because the solid no more is than the empty); and they make these the material causes of things. And as those who make the underlying substance one generate all other things by its modifications, supposing the rare and the dense to be the sources of modifications, in the same way these philosophers say the differences in the elements are the causes of all other qualities. These differences, they say, are three—shape and order and position. For they say the real is differentiated only by “rhythm” and “inter-contact” and “turning”; and of these rhythm is shape, inter-contact is order, and turning is position; for A differs from N in shape, AN from NA in order, and Z from N in position.

First of all, the atoms have size.¹ And then again, size is also negated. That is to say, they do not have *every* size;² but only some differences in size among them must be admitted.³⁽¹³⁾ Indeed, only the negation of the large can be ascribed to them, the small,⁴ — also not the minimum, for this would be merely a spatial determination, but the infinitely small, which expresses the contradiction.⁵ Rosinius, in his notes on the fragments of Epicurus; therefore translates one passage incorrectly and completely ignores the other, when he says:

“In this way Epicurus tried to make plausible the tenuity of the atoms of incredible smallness, by saying, according to Laertius, X, 44, that they have no size.”⁶

Now I shall not concern myself with the fact that, according to *Eusebius*, Epicurus was the first to ascribe infinite smallness to the atoms,⁷ whereas Democritus also assumed atoms of the largest size — *Stobaeus* says even as large as the world.⁸

This, on the one hand, contradicts the testimony of *Aristotle*.⁹ On the other hand, Eusebius, or rather the Alexandrian bishop

¹ Diogenes Laertius X 44. ...atoms have no quality at all except shape, size and weight. ... further, that they are not of any and every size; at any rate no atom has ever been seen by our senses.

² *Ibid.*, X, 56. But to attribute any and every size to the atoms does not help to explain the differences of quality in things; moreover, in that case atoms would exist large enough to be perceived by us, which is never observed to occur; nor can we conceive how such an occurrence should be possible, i. e., that an atom should become visible.

³ *Ibid.*, X, 55. Again, you should not suppose that the atoms have any and every size ... but *some* differences of size must be admitted.

⁴ *Ibid.*, X, 59. On the analogy of things within our experience we have declared that the atom has size; and this, small as it is, we have merely reproduced on a larger scale.

⁵ comp. *ibid.*, X, 58. *Stobaeus*, *Physical Selections*, I, p. 27.

⁶ Epicurus, *Fragments* (*On Nature*, II and XI), collected by Rosinius, ed. By Orefli, p. 26.

⁷ Eusebius, *Preparation for the Gospel*, XIV, p. 773 (Paris ed.). But they differed in that one of them (i.e., Epicurus) assumed that all atoms were infinitely small and could therefore not be perceived, while Democritus assumed that some large atoms existed too.

⁸ *Stobaeus*, *Physical Selections*, I, 17. Democritus even says ... that an atom is possible as large as the world. Comp. (Plutarch,) *On the Sentiments of the philosophers*, i, p. 235 11, 31.

Dionysius, from whom he takes excerpts, contradicts himself; for in the same book we read that Democritus assumed as the principles of nature indivisible bodies perceptible through reason.¹ This much at least is clear: Democritus was not aware of the contradiction; he did not pay attention to it, whereas it was the chief interest of Epicurus.

The *second* property of the Epicurean atoms is *shape*.² But this determination also contradicts the concept of the atom, and its opposite must be assumed. Abstract individuality is abstract identity-to-itself and therefore without shape. The differences in the shape of the atoms cannot, therefore, be determined³ although they are not absolutely infinite.⁴ It is rather by a definite and finite number of shapes that the atoms are differentiated from one another.⁵ From this it is obvious that there are not as many different figures as there are atoms,⁶ while Democritus assumes an infinite number of figures.⁷ If every

⁹ Aristotle, *On Becoming and Decaying*, 1, 8 1324, 301. ... invisible ... owing to their minuteness....

¹ Eusebius, *Preparation for the Gospel*, XIV, p. 749. Democritus ... [assumed] as the principles of the things indivisible ... bodies perceptible through reason.... Comp. (Plutarch,) *On the Sentiments of the Philosophers*, I, p. 235 [31].

² Diogenes Laertius, X, 54. Moreover, we must hold that the atoms in fact possess none of the qualities belonging to the world which come under our observation, except shape, weight, and size, and the properties necessarily conjoined with shape. comp. S. 44.

³ *Ibid.*, X, 42. Furthermore, the atoms ... vary indefinitely in their shapes.

⁴ *Ibid.*, X, 42. ... but the variety of shapes, though indefinitely larger, is not absolutely infinite.

⁵ Lucretius, *On the Nature of Things*, II, 513-514. ...you must acknowledge a corresponding limit to the different forms of matter. Eusebius, *Preparation for the Gospel*, XIV, p. 749. Epicurus ... [says] ... that the shapes of the atoms themselves are limited, and not infinite.... Comp. (Plutarch) *On the Sentiments of the Philosophers*, 1.c.

⁶ Diogenes Laertius, X, 42. The like atoms of each shape are absolutely infinite. Lucretius, *On the Nature of Things*, 11, 525-528. Since the varieties of form are limited, the number of uniform atoms must be unlimited. Otherwise the totality of matter would be finite, which I have proved in my verses is not so.

⁷ Aristotle, *On the Heavens*, III, 4 [303, 3-5, 10-15]. There is, further, another view-that of Leucippus and Democritus of Abdera-the implications of which are also unacceptable.... and further, they say that since the atomic bodies differ in shape, and there is an infinity of shapes, there is an infinity of simple bodies. But they have never explained in detail the shapes of the various

atom had a particular shape, then there would have to be atoms of infinite — *size*¹; for they would have an infinite difference, the difference from all the others, in themselves [*an sich*], like the monads of Leibniz. This leads to the inversion of Leibniz's assertion that no two things are identical, and there are infinitely many atoms of the same shape. This obviously negates again the determination of the shape, because a shape which no longer differs from another is not shape.²

Finally, it is highly important that Epicurus makes *weight* the third quality,³ for in the centre of gravity matter possesses the ideal individuality which forms a principal determination of the atom. Hence, once the atoms are brought into the realm of presentation, they must also have weight.

But weight also directly contradicts the concept of the atom, because it is the individuality of matter as an ideal point which lies outside matter. But the atom is itself this individuality, as it were the centre of gravity presented as an individual existence. Weight therefore exists for Epicurus only as *different weight*, and the atoms are themselves substantial *centres of gravity* like the heavenly bodies. If this is applied to the concrete, then the obvious result is the fact which old *Brucker* finds so amazing⁴ and of which Lucretius assures us,⁵ namely, that the earth has no centre towards which everything strives, and that there are no antipodes. Furthermore since weight belongs only to that atom which is different from the other, hence externalised and endowed with properties, then it is clear that where the atoms are not thought of as many in their differentiation from one

elements, except so, far as to allot the sphere to fire. Air, water and the rest..., Philoponus, l.c. They have ... not only entirely different shapes....

¹ Lucretius, *On the Nature of Things*, II, 474-484, 491-492, 495-497. ...the number of different forms of atoms is finite. If it were not so, some of the atoms would have to be of infinite magnitude. Within the narrow limits of any single particle, there can be only a limited range of forms....

... if you wish to vary its form still further ... the arrangement will demand still other parts.... Variation in shape goes with increase in size. You cannot believe, therefore, that the atoms are distinguished by an infinity of forms....

² comp. Note 25).

³ Diogenes Laertius, X, 44 and 54.

⁴ Brucker, *Institutions of the History of Philosophy* [Latin, 1747], p. 224.

⁵ Lucretius, *On the Nature of Things*, I, 1051-1052. 0, Memmius, here you must give up fully the belief that all things strive — as they say — to the middle of the world.

another, but only in relation to the void, the determination of weight ceases to exist. The atoms, as different as they may be in mass and shape, move therefore with equal speed in empty space.¹ Epicurus thus applies weight only in regard to repulsion and the resulting compositions. This has led to the assertions that only the conglomerations of the atoms are endowed with weight, but not the atoms themselves.²

Gassendi already praises Epicurus because, led purely by reason, he anticipated the experimentally demonstrated fact that all bodies, although very different in weight and mass, have the same velocity when they fall from above to below.³

The consideration of the properties of the atoms leads us therefore to the same result as the consideration of the declination, namely, that Epicurus objectifies the contradiction in the concept of the atom between essence and existence. He thus gave us the science of atomistics. In Democritus, on the other hand, there is no realisation of the principle itself. He only maintains the material side and offers hypotheses for the benefit of empirical observation.

¹ Diogenes Laertius, X, 43. The atoms move with equal speed, since the void makes way for the lightest and heaviest alike through all eternity.... 61. When they are travelling through the void and meet with no resistance, the atoms must move with equal speed. Neither will heavy atoms travel more quickly than small and light ones, so long as nothing meets them, nor will small atoms travel more quickly than large ones, provided they always find a passage suitable to their size; and provided that they meet with no obstruction.

Lucretius, *On the Nature of Things*, II, 235-239. But empty space can offer no resistance to any object in any quarter at any time, so as not to yield free passage as its own nature demands. Therefore, through undisturbed vacuum all bodies must travel at equal speed though impelled by unequal weights.

² comp. Ch. 3.

³ Feuerbach, *History of the Newer Philosophy*. [1833, quotations from] Gassendi, l. c., XXXIII, No. 7. Although Epicurus had perhaps never thought about this experiment, he [still] reached, led by reason, the same opinion about atoms that experiment has recently taught us. This opinion is that all bodies.... although very different in weight and bulk, have the same velocity when they fall from above to below. Thus he was of opinion that all atoms, however much they may differ in size and weight, move with an equal velocity.

Chapter Three: *Atomoi archai* [indivisible principles] and *atoma stoicheia* [indivisible elements]

Schaubach, in his treatise on the astronomical concepts of Epicurus, to which we have already referred, makes the following assertion:

"Epicurus, as well as *Aristotle*, has made a distinction between principles [*Anfänge*] (*atomoi archai*, Diogenes Laertius, X, 41) and *elements* (*atoma stoicheia*, Diogenes Laertius, X, 86). The former are the atoms recognisable only through reason and do not occupy space.¹ These are called atoms not because they are the smallest bodies, but because they are indivisible in space. According to these conceptions one might think that Epicurus did not attribute any spatial properties to the atom.² But in the letter to Herodotus (Diogenes Laertius, X, 44, 54) he gives the atoms not only weight but also size and shape.... I therefore consider these atoms as belonging to the second species, those that have developed out of the former but can still be regarded again as elementary particles of the bodies.³

Let us look more closely at the passage which *Schaubach* cites from Diogenes Laertius. It reads: *For instance such propositions that the All consists of bodies and non-corporeal nature, or that there are indivisible elements and other such statements.*

Epicurus here teaches Pythocles, to whom he is writing, that the teaching about meteors differs from all other doctrines in physics, for example, that everything is either body or void, that there are indivisible basic elements. It is obvious that there is here no reason to assume that it is a question of a second species

¹ Ametocha kenou [Stobaeus, *Physical Selections*, I, p. 306] does not at all mean "do not fill *space*", but "have no part of the void", it is the same as what at another place *Diogenes Laertius* says: "though they are without distinction of parts". In the same way we must explain this expression in (Plutarch,) *On the Sentiments of the Philosophers*, I, p. 236, and Simplicius, p. 405.

² This also is a wrong consequence. That which cannot be divided in space is not therefore outside of space or without spatial relation.

³ *Schaubach*, l.c., [p]p. [549-550].

of atoms.¹ It may perhaps seem that the disjunction between ‘The All consisting of bodies and non-corporeal bodies’ and ‘that there are indivisible elements establishes a difference between *soma* and *aroma stoicheia*, so that we might say that *soma* stands for atoms of the first kind in contrast to the *atoma stoicheia*. But this is quite out of the question. *Soma* means the corporeal in contrast to the void, which for this reason is called *asomaton*’.² The term *soma* therefore includes the atoms as well as compound bodies. For example, in the letter to Herodotus we read: ‘The All is body ... if there were not that which we call void, space and non-corporeal nature.... Among bodies some are compound, others the things out of which the compounds are made, and *these* latter are indivisible and unchangeable.... Consequently these first principles are necessarily of indivisible corporeal nature’³

Epicurus is thus speaking in the passage cited first of the corporeal in general, in contrast to the void, and then of the corporeal in particular, the atoms.

Schaubach’s reference to Aristotle proves just as little. True the difference between *arche* and *stoicheion*, which the Stoics particularly insist upon,⁴ can indeed also be found in Aristotle,⁵ but he nonetheless assumes the identity of the two expressions.⁶ He even teaches explicitly that *stoicheion* denotes primarily the

¹ Diogenes Laertius, X, 44.

² *ibid.*, X, 67. But it is impossible to conceive anything that is incorporeal as self-existent, except empty *space*.

³ *Ibid.*, X, 39, 40 and 41.

⁴ *Ibid.*, VII, [Ch.] 1 [134]. There is a difference, according to them (i. e., the Stoics), between principles and elements; the former being without generation or destruction, whereas the elements are destroyed when all things are resolved into fire.

⁵ Aristotle, *Metaphysics*, IV, 1 and 3.

⁶ *Comp.* 1. C.

atom.¹ Leucippus and Democritus likewise call the *Fullness and void*.²

In Lucretius, in Epicurus' letters as quoted by Diogenes Laertius, in the *Colotes* of Plutarch,³ in Sextus Empiricus,⁴ the properties are ascribed to the atoms themselves, and for this reason they were determined as transcending themselves [*sich selbst aufhebend*].

However, if it is thought an antinomy that bodies perceptible only to reason should be endowed with spatial qualities, then it is an even greater antinomy that the spatial qualities themselves can be perceived only through the intellect.⁵

Finally, *Schaubach*, in further support of his view, cites the following passage from Stobaeus: 'Epicurus [states] that the primary (bodies) should be simple, those bodies compounded from them however should have weight'

To this passage from Stobaeus could be added the following, in which *atoma stoicheia* are mentioned as a particular kind of atom: (Plutarch.) *De placit. philosoph.*, I, 246 and 249, and Stob., *Physical Selections*, I, p. 5.⁶ For the rest it is by no means

¹ Ibid., V, 3[1014 31-34; 1014, 5-6]. Similarly those who speak of the elements of bodies mean the things into which bodies are ultimately divided, while they are no longer divided into other things differing in kind; ... for which reason what is small and simple and indivisible is called an element.

² Ibid., I, 4.

³ Diogenes Laertius, X, 54. Plutarch, *Reply to Colotes*, 1110. ... that this view is as inseparable from Epicurus' theories as shape and weight are by their (i.e., the Epicureans) own assertion inseparable from the atom.

⁴ Sextus Empiricus, *Against the Professors*, p. 420.

⁵ Eusebius, *Preparation for the Gospel*, XIV, p. 773. ... Epicurus ... [assumed that] they [i.e., the atoms] cannot be perceived.... P. 749. ... but they [i.e., the atoms] have their own shape perceivable by reason.

⁶ (Plutarch.) *On the Sentiments of the Philosophers*, I, p. 246 [71]. The same (Epicurus) asserts that there are four other natural beings which are immortal of this sort are atoms, the vacuum, the infinite and the similar parts; and these last are- [called] homoeomerias and likewise elements. 12. Epicurus [thinks that] bodies are not to be limited, but the first bodies are simple bodies, and all those composed of them possess weight....

Stobaeus, *Physical Selections*, I, p. 52. Metrodorus, the teacher of Epicurus, [says] ... that the causes, however, are the atoms and elements. P. 5. Epicurus

claimed in these passages that the original atoms are without size, shape and weight. On the contrary, weight alone is mentioned as a distinctive characteristic of the *atomi archai* and *atoma stoicheia*. But we observed already in the preceding chapter that weight is applied only in regard to repulsion and the conglomerations arising therefrom.

With the invention of the *atoma stoicheia* we also gain nothing. It is just as difficult to pass from the *atomi archai* to the *atoma stoicheia* as it is to ascribe properties directly to them. Nevertheless I do not deny such a differentiation entirely. I only deny that there are two different and fixed kinds of atoms. They are rather different determinations of one and the same kind.

Before discussing this difference I would like to call attention to a procedure typical of Epicurus. He likes to assume the different determinations of a concept as different independent existences. just as his principle is the atom, so is the manner of his cognition itself atomistic. Every moment of the development is at once.. transformed in his hands into a fixed reality which, so to say, is separated from its relations to other things by empty space; every determination assumes the form of isolated individuality.

This procedure may be made clear by the following example.

The infinite, *to apeiron*, or the *infinitio*, as Cicero translates it, is occasionally used by Epicurus as a particular nature; and precisely in the same passages in which we find the *stoicheia* described as a fixed fundamental substance, we also find the *apeiron* turned into something independent.¹

However, according to Epicurus' own definitions, the infinite is neither a particular substance nor something outside of the atoms and the void, but rather an accidental determination of the void. We find in fact three meanings of *apeiron*.

First, *apeiron* expresses for Epicurus a quality common to the atoms and the void. It means in this sense the infinitude of the

[assumes] ... four substances essentially indestructible: the atoms, the void, the infinite and the similar parts, and these are called homoeomerias and elements.

¹ Comp. .1C.,

All, which is infinite by virtue of the infinite multiplicity of the atoms, by virtue of the infinite size of the void.¹

Secondly, *apeiria* is the multiplicity of the atoms, so that not the atom, but the infinitely many atoms are placed in opposition to the void.²

Finally, if we may draw from Democritus a conclusion about Epicurus, *apeiron* also means exactly the opposite, the unlimited void, which is placed in opposition to the atom determined in itself and limited by itself.³

In all these meanings -and they are the only ones, even the only possible ones for atomistics-the infinite is a mere determination of the atoms and of the void. Nevertheless, it is singled out as a particular existence, even set up as a specific nature alongside the principles whose determination it expresses.

Therefore, even if Epicurus himself thus fixed the determination by which the atom becomes *stoicheion* as an independent original kind of atom-which, by the way, is not the case judging by the historical superiority of one source over the other, even if Metrodorus ^[26] the disciple of Epicurus-as it seems more probable to us — was the first to change the differentiated determination into a differentiated existence⁴; we must ascribe to the subjective mode of atomistic consciousness the changing of separate moments into something independently existing. The

¹ Cicero, *On the Highest Goods and Evils*, I, vi. ...that which he follows the atoms, the void ... infinity itself, that they [i.e., the Epicureans] call *apeiria* Diogenes Laertius, X, 41. Again, the sum of things is infinite.... Moreover, the sum of things is unlimited both by reason of the multitude of the atoms and the -tent of the void.

² Plutarch, *Reply to Colotes*, I 1 14. Now look at the sort of first principles [you People adopt] to account for generation: infinity and the void -the void incapable of action, incapable of being acted upon, bodiless; the infinite disordered, irrational, -incapable of formulation, disrupting and confounding itself because of a multiplicity that defies control or limitation.

³ Simplicius, l.c., P. 488.

⁴ (Plutarch,) *On the Sentiments of the Philosophers*, p. 239 [I, 5]. But Metrodorus says ... that the number of worlds is infinite, and this can be seen from the fact that the number of causes is infinite.... But the causes are the atoms or the elements. Stobaeus, *physical Selections*, I, p. 52. Metrodorus, the teacher of Epicurus, [says] ... that the causes, however, are the atoms and elements.

granting of the form of existence to different determinations has not resulted in understanding of their difference.

For Democritus the atom means only *stoicheion* a material substrate. The distinction between the atom as arche and *stoicheion* as principle and foundation belongs to Epicurus. Its importance will be clear from what follows.

The contradiction between existence and essence, between matter and form, which is inherent in the concept of the atom, emerges in the individual atom itself once it is endowed with qualities. Through the quality the atom is alienated from its concept, but at the same time is perfected in its construction. It is from repulsion and the ensuing conglomerations of the qualified atoms that the world of appearance now emerges.

In this transition from the world of essence to the world of appearance, the contradiction in the concept of the atom clearly reaches its harshest realisation. For the atom is conceptually the absolute, essential form of nature. *This absolute form has now been degraded to absolute matter, to the formless substrate of the world of appearance.*

The atoms are, it is true, the substance of nature,¹ out of which everything emerges, into which everything dissolves²; but the

¹ Lucretius, *On the Nature of Things*, 1, 820-821. For the same elements compose sky, sea and lands, rivers and sun, crops, trees and animals... Diogenes Laertius, X, 39. Moreover, the sum total of things was always such as it is now, and such it will ever remain. For there is nothing into which it can change. For outside the sum of things there is nothing which could enter into it and bring about the change.... The whole of being consists of bodies.... 41. These elements are indivisible and unchangeable, and necessarily so, if things are not all to be destroyed and pass into non-existence, but are to be strong enough to endure when the composite bodies are broken up, because they possess a solid nature and are incapable of being anywhere or anyhow dissolved.

² Diogenes Laertius, X, 73. ... and all things are again dissolved, some faster, some slower, some through the action of one set of causes, others through the action of others. 74. It is clear, then, that he [Epicurus] also makes the worlds perishable, as their parts are subject to change. Lucretius, V, 109-110. May reason rather than the event itself convince you that the whole world can collapse with one ear-splitting crack! Ibid., V, 373-375. it follows, then, that the doorway of death is not barred to sky and sun

continuous annihilation of the world of appearance comes to no result. New appearances are formed; but the atom itself always remains at the bottom as the foundations³ Thus insofar as the atom is considered as pure concept, its existence is empty space, annihilated nature. Insofar as it proceeds to reality, it sinks down to the material basis which, as the bearer of a world of manifold relations, never exists but in forms which are indifferent and external to it. This is a necessary consequence, since the atom, presupposed as abstractly individual and complete, cannot actualise itself as the idealising and pervading power of this manifold.

Abstract individuality is freedom from being, not freedom in being. It cannot shine in the light of being. This is an element in which this individuality loses its character and becomes material. For this reason the atom does not enter into the daylight of appearances¹ or it sinks down to the material basis when it does enter it. The atom as such only exists in the void. The death of nature has thus become its immortal substance; and Lucretius correctly exclaims:

When death immortal claims his mortal life (*De verum nature* III, 869).

But the fact that Epicurus grasps the contradiction at this its highest peak and objectifies it, and therefore distinguishes the atom where it becomes the basis of appearance as *stoicheion* from the atom as it exists in the void as *arche* — this constitutes his philosophical difference from Democritus, who only objectifies the one moment. This is the same distinction which in the world of essence, in the realm of the atoms and of the void, separates Epicurus from Democritus. However, since only the atom with qualities is the complete one, since the world of appearance can only emerge from the atom which is complete and alienated from its concept, Epicurus expresses this by stating that only the qualified atom becomes *stoicheion* or only the *atomon stoicheion* is endowed with qualities.

and earth and the sea's unfathomed floods. It lies tremendously open and confronts them with a yawning chasm.

³ Simplicius, I.c., p. 425.

¹ Lucretius, II, 796. ...and the atoms do not emerge into the light....

Chapter Four

Time

Since in the atom matter, as pure relationship to itself, is exempted from all relativity and changeability, it follows immediately that time has to be excluded from the concept of the atom, the world of essence. For matter is eternal and independent only insofar as in its abstraction is made of the time moment. On this Democritus and Epicurus agree. But they differ in regard to the manner in which time, removed from the world of atoms, is now determined, whither it is transferred.

For Democritus time has neither significance nor necessity for the system. He explains time in order to negate it [*aufzuheben*]. It is determined as eternal, in order that — as *Aristotle*¹ and *Simplicius*² state — the emergence and passing away, hence the temporal, is removed from the atoms. Time itself offers proof that not everything need have an origin, a moment of beginning.

There is something more profound to be recognised in this notion. The imagining intellect that does not grasp the independence of substance inquires into its becoming in time. It fails to grasp that by making substance temporal it also makes time substantial and thus negates its concept, because time made absolute is no longer temporal.

But this solution is unsatisfactory from another point of view. Time excluded from the world of essence is transferred into the self-consciousness of the philosophising subject but does not make any contact with the world itself.

Quite otherwise with Epicurus. *Time*, excluded from the world of essence, becomes for him *the absolute form of appearance*. That is to say, time is determined as *accidens* of the accidens. The accidens is the change of substance in general. The accidens of the accidens is the change as reflecting in itself, the change as change. This pure form of the world of appearance is time.³

¹ Aristotle, *Physics*, VIII, 1 [251, 15-17]. ...in fact, it is just this that enables Democritus to show that all things cannot have had a becoming; for time, he says, is uncreated.

² *Simplicius*, l.c., p. 426. Democritus was so strongly convinced that time is eternal, that, in order to show that not all things have an origin, he considered it evident that time has no origin.

Composition is the merely passive form of concrete nature, time its active form. If I consider composition in terms of its being, then the atom exists beyond it, in the void, in the imagination. If I consider the atom in terms of its concept, then composition either does not exist at all or exists only in the subjective imagination. For composition is a relationship in which the atoms, independent, self-enclosed, as it were uninterested in one another, have likewise no relationship to one another. Time, in contrast, the change of the finite to the extent that change is posited as change, is just as much the real form which separates appearance from essence, and posits it as appearance, while leading it back into essence. Composition expresses merely the materiality of the atoms as well as of nature emerging from them. Time, in contrast, is in the world of appearance what the concept of the atom is in the world of essence, namely, the abstraction, destruction and reduction of all determined being into being-for-itself.

The following consequences can be drawn from these observations. *First*, Epicurus makes the contradiction between matter and form the characteristic of the nature of appearance, which thus becomes the counter-image of the nature of essence, the atom. This is done by time being opposed to space, the active form of appearance to the passive form. *Second*, Epicurus was the first to grasp appearance as appearance, that is, as alienation of the essence, activating itself in its reality as such an alienation. On the other hand, for Democritus, who considers composition as the only form of the nature of appearance, appearance does not by itself show that it is appearance, something different from essence. Thus when appearance is considered in terms of its existence, essence becomes totally blended [*konfundiert*] with it; when considered in terms of its concept, essence is totally separated from existence, so that it descends to the level of

³ Lucretius, I, 459, 462-463. Similarly, time by itself does not exist.... It must not be claimed that anyone can sense time by itself apart from the movement of things or their restful immobility.

Ibid., I, 479-482. So you may see that events cannot be said to be by themselves like matter or in the same sense as space. Rather, you should describe them as accidents of matter, or of the place in which things happen.

Sextus Empiricus, *Against the Professors*, p. 420. Here Epicurus calls time accident of accidents (*synptomata symptomaton*).

Stobaeus, *Physical Selections*, I, 8. Epicurus [calls time] an accident, i.e., something that accompanies motions.

subjective semblance. The composition behaves indifferently and materially towards its essential foundations. Time, on the other hand, is the fire of essence, eternally consuming appearance, and stamping it with dependence and non-essence. *Finally*, since according to Epicurus time is change as change, the reflection of appearance in itself, the nature of appearance is justly posited as objective, sensation is justly made the real criterion of concrete nature, although the atom, its foundation, is only perceived through reason.

Indeed, time being the abstract form of sensation, according to the atomism of Epicurean consciousness the necessity arises for it to be fixed as a nature having a separate existence within nature. The changeability of the sensuous world, its change as change, this reflection of appearance in itself which constitutes the concept of time, has its separate existence in conscious sensuousness. *Human sensuousness is therefore embodied time, the existing reflection of the sensuous world in itself.*

Just as this follows immediately from the definition of the concept of time in Epicurus, so it can also be quite definitely demonstrated in detail. In the letter from Epicurus to Herodotus¹ time is so defined that it emerges when the accidentals of bodies, perceived by the senses, are thought of as accidentals. Sensuous perception reflected in itself is thus here the source of time and time itself. Hence time cannot be defined by analogy nor can anything else be said about it, but it is

¹ Diogenes Laertius, X, 72. There is another thing which we must consider carefully. We must not investigate time as we do the other accidents which we investigate in a subject, namely, by referring them to the preconceptions envisaged in our minds; but we must take into account the plain fact itself, in virtue of which we speak of time as long or short, linking to it in intimate connection this attribute of duration. We need not adopt any fresh terms as preferable, but should employ the usual expression about it. Nor need we predicate anything else of time, as if this something else contained the same essence as is contained in the proper meaning of the word "time" (for this also is done by some). We must chiefly reflect upon that to which we attach this peculiar character of time, and by which we measure it. 73. No further proof is required: we have only to reflect that we attach the attribute of time to days and nights and their parts, and likewise to feelings of pleasure and pain and to neutral states, to states of movement and states of rest, conceiving a peculiar accident of these to be this very characteristic which we express by the word "time". He [i.e., Epicurus] says this both in the second book *On Nature* and in the *Larger Epitome*.

necessary to keep firmly to the Enargie itself; for sensuous perception reflected in itself is time itself, and there is no going beyond it.

On the other hand, in *Lucretius*, *Sextus Empiricus* and *Stobaeus*,¹ the accidens of the accidens, change reflected in itself, is defined as time. The reflection of the accidentals in sensuous perception and their reflection in themselves are hence posited as one and the same.

Because of this interconnection between time and sensuousness, the *eidola* [images], equally found in Democritus, also acquire a more consistent status.

The *eidola* are the forms of natural bodies which, as surfaces, as it were detach themselves like skins and transfer these bodies into appearance.² These forms of the things stream constantly forth from them and penetrate into the senses and in precisely this-way allow the objects to appear. Thus in hearing nature hears itself, in smelling it smells itself, in seeing it sees itself.³ Human sensuousness is therefore the medium in which natural

¹ Lucretius, *On the Nature of Things*, 1.c.

Sextus Empiricus, *Against the Professors*, p. 420 [X, 238, 240, 241, '2441. ... accident of accidents.... For this reason Epicurus compels us to think that an existing body consists of non-existing bodies, since he says that we have to think of the body as a composition of size and shape, resistance and weight.... Hence there must be accidents for time to exist, but for accidents to be present themselves there must be an underlying circumstance. However, if no underlying circumstance exists, then there can be no time.... When this therefore is time, and Epicurus says that accidents are the nature [of time], then time, according to Epicurus, must be its own accident. Comp. Stobaeus, 1.c.

² Diogenes Laertius, X, 46. Again, there are outlines or films, which are of the same shape as solid bodies, but of a thinness far exceeding that of any object that we see.... To these films we give the name of "images" or "idols 48. ... the production of the images is as quick as thought ... though no diminution of the bodies is observed, because other particles take their place. And those given off retain the position and arrangement which their atoms had when they formed part of the solid bodies....

Lucretius, IV, 30-32... images" of things, a sort of outer skin perpetually peeled off the surface of objects and flying about this way and that through the air.

Ibid., IV, 51-52. ... because each particular floating image wears the aspect and form of the object from whose body it has emanated.

processes are reflected as in a focus and ignited into the light of appearance.

In *Democritus* this is an inconsistency, since appearance is only subjective; in Epicurus it is a necessary consequence, since sensuousness is the reflection of the world of appearance in itself, its embodied time.

Finally, the interconnection between sensuousness and time is revealed in such a way *that the temporal character of things and their appearance to the senses are posited as intrinsically One*. For it is precisely because bodies appear to the senses that they pass away.¹ Indeed, the *eidola*, by constantly separating themselves from the bodies and flowing into the senses, by having their sensuous existence outside themselves as another nature, by not returning into themselves, that is, out of the diremption, dissolve and pass away.

Therefore: just as the atom is nothing but the natural form of abstract, individual self-consciousness, so sensuous nature is only the objectified, empirical, individual self-consciousness, and this is the sensuous. Hence the senses are the only criteria in concrete nature, just as abstract reason is the only criterion in the world of the atoms.

³ Diogenes Laertius, X, 49. We must also consider that it is by the entrance of something coming from external objects that we see their shapes and think of them. For external things would not stamp on us their own nature ... so well as by *the entrance into our eyes* or minds, to whichever their size is suitable, of certain films coming from the things themselves, these films or outlines being of the same colour and shape as the external things themselves.... 50. and this again explains why they present the appearance of a single continuous object and retain the mutual interconnection which they had with the object.... 52. Again, hearing takes place when a current passes from the object, whether person or thing, which emits voice or sound or noise, or produces the sensation of hearing in any way whatever. This current is broken up into homogeneous particles, which at the same time preserve a certain mutual connection.... 53. ... Again, we must believe that smelling, like hearing, would produce no sensation, were there not particles conveyed from the object which are of the proper sort for exciting the organ of smelling.

¹ Lucretius, *On the Nature of Things*, II, 1145-1146. It is natural, therefore, that everything should perish when it is thinned out...

Chapter Five

The Meteors

Ingenious as *Democritus'* astronomical opinions may be for his time, they present no philosophical interest. They neither go beyond the domain of empirical reflection, nor have they any more definite intrinsic connection with the atomic doctrine.

By contrast, *Epicurus'* theory of the celestial bodies and the processes connected with them, or his theory of meteors (in this one term he includes it all), stands in opposition not only to Democritus, but to the opinion of Greek philosophy as a whole. Worship of the celestial bodies is a cult practised by all Greek philosophers. The system of the celestial bodies is the first naive and nature-determined existence of true reason [*Vernunft*]. The same position is taken by Greek self-consciousness in the domain of the mind [*Geist*]. It is the solar system of the mind. The Greek philosophers therefore worshipped their own mind in the celestial bodies.

Anaxagoras himself, who first gave a physical explanation of heaven and in this way brought it down to earth in a sense different from that of Socrates, answered, when asked for what purpose he was born: *For the observation of the sun, the moon and the heaven.*¹ *Xenophanes*, however, looked up at heaven and said: The One is God.² The religious attitude of the *Pythagoreans*, *Plato* and *Aristotle* to the heavenly-bodies is well known.

Indeed, Epicurus opposes the outlook of the whole Greek people.

Aristotle says it often seems that the concept provides evidence for the phenomena and the phenomena for the concept. Thus all men have an idea of the gods and assign the highest region to the divine, barbarians as well as Hellenes, and in general all who believe in the existence of the gods, evidently connecting the immortal with the immortal, for otherwise it is impossible. Thus if the divine exists-as it actually does-then what we say about the

¹ Diogenes Laertius, 11, 3, 10. b

² Aristotle, *Metaphysics*, I, 5 [986, 25]. The One is God.

substance of the celestial bodies is also correct. But this corresponds also to sensuous perception, insofar as human conviction is concerned. For throughout the time that has passed, according to the memories handed down from people to people, nothing seems to have changed, either in heaven as a whole, or in any part of it. Even the name seems to have been handed down from the ancients to the present time, and they assumed that which we also say. For not once, not twice, but an infinite number of times have the same views come down to us. For since the primary body is something different, apart from the earth and the fire and the air and the water, they called the highest region "ether", from *their aei* [to run always]. giving it the by-name: eternal time.¹ But the ancients assigned heaven and the highest region to the gods, because it alone is immortal. But the present teaching testifies that it is indestructible, ungenerated and not subject to any mortal ills. In this way our concepts correspond at the same time to intimations about God.² But that there is one heaven is evident. It is a tradition handed down from

¹ Aristotle, *On the Heavens*, 1, 3 [270b, 4-24]. Our theory seems to confirm experience and to be confirmed by it. For all men have some conception of the nature of gods, and all who believe in the existence of gods at all, whether barbarian or Greek, agree in allotting the highest place to the deity, surely because they suppose that immortal is linked with immortal and regard any other supposition as inconceivable. If then there is, as there certainly is, anything divine, what we have just said about the primary bodily substance was well said. The mere least with human evidence of the senses is enough to convince us of. this at certainty. For. in the whole range of time past, so far as our inherited records reach, no change appears to have taken place either in the whole scheme of the outermost heaven or in any of its proper parts. The common name, too, which has been handed down from our distant ancestors even to our own day, seems to show that they conceived of it in the fashion which we have been expressing. 'The same ideas, one must believe, recur to men's minds not once or twice but again and again. And so, implying that the Primary body is something else beyond earth, fire, air and water, they gave to the highest place a name of its own, *aither*, derived from the fact that it "runs always" for an eternity of time.

² *Ibid.*, II, 1 [284a, 11-15, 284, 2-5]. The ancients gave the Gods the heaven or upper place., 'as being alone immortal; and our present argument testifies that it is indestructible and ungenerated. Further, it is unaffected by any mortal discomfort ... it is not only more appropriate so to conceive of its eternity, but also on this hypothesis alone are we able to advance a theory consistent with popular divinations of the divine nature.

our ancestors and the ancients and surviving in the form of the myths of later generations, that the heavenly bodies are gods and that the divine encompasses all nature. The rest was added in mythical form for the belief of the masses, as useful for the laws and for life. Thus the myths make the gods resemble man and some of the other living creatures, and invent similar things connected with and related to this. If we discard the additions and hold fast only to the first, namely, the belief that the primary substances are gods, then we must consider this as having been divinely revealed, and we must hold that after all sorts of art and philosophy had, in one way or another, been invented and lost again, these opinions came down to us like relics.¹

Epicurus, on the contrary, says:

To all this we must add that the greatest confusion of the human soul arises from the fact that men hold that the heavenly bodies are blessed and indestructible and have conflicting desires and actions, and conceive suspicion according to the myths.²⁽⁶⁾ As to the meteors, we must believe that motion and position and eclipse and rising and setting and related phenomena do not originate in them owing to One ruling and ordering or having ordered, One who at the same time is supposed to possess all bliss and

¹Aristotle, *Metaphysics*, XI (XII), 8 [1074 31, 38-1074, 3]. Evidently there is but one heaven.... Our forefathers in the most remote ages have handed down to their posterity a tradition, in the form of a myth, that these bodies are gods and that the divine encloses the whole of nature. The rest of the tradition has been added later in a mythical form with a view to the persuasion of the multitude and to its legal and utilitarian expediency; they say these gods are in the form of men or like some of the other animals, and they say other things consequent on and similar to those which we have mentioned. But if one were to separate the first point from these additions and take it alone that they thought the first substances to be gods, one must regard this as an inspired utterance; and reflect that, while probably each art and each science has often been developed as far as possible and has again perished, these opinions, with others, have been preserved until the present like relics of the ancient treasure.

²Diogenes Laertius, X, 81. There is yet one more point to seize, namely, that the greatest anxiety of the human mind arises through the belief that the heavenly bodies are blessed and indestructible, and that at the same time they have volitions and actions ... inconsistent with this belief ... apprehending some evil because of the myths....

indestructibility. For actions do not accord with bliss, but they occur due to causes most closely related to weakness, fear and need. Nor is it to be supposed that some fire-like bodies endowed with bliss arbitrarily submit to these motions. If one does not agree with this, then this contradiction itself produces the greatest confusion in men's souls.¹

Aristotle reproached the ancients for their belief that heaven required the support of Atlas² who: 'In the places of the West stands, supporting with his shoulders the pillar of heaven and earth (Aeschylus, *Prometh.*, 348 ff.). Epicurus, on the other hand, blames those who believe that man needs heaven. He finds the Atlas by whom heaven is supported in human stupidity and superstition. Stupidity and superstition also are Titans.

The letter of Epicurus to Pythocles deals entirely with the theory of the heavenly bodies, with the exception of the last section, which closes the letter with ethical precepts. And appropriately, ethical precepts are appended to the teaching on the meteors. For Epicurus this theory is a matter of conscience. Our study will therefore be based mainly on this letter to Pythocles. We shall supplement it from the letter to Herodotus, to which Epicurus himself refers in writing to Pythocles.³

First, it must not be supposed that any other goal but ataraxy and firm assurance can be attained from knowledge of the meteors,

¹) Ibid., X, 76.. Nay more, we are bound to believe that in the sky revolution, solstices, eclipses, risings and settings, and the like, take place without the ministration or command, either now or in the future, of any being who at the same time enjoys perfect bliss along with immortality. 77. For troubles and anxieties ... do not accord with bliss, but always imply weakness and fear and dependence upon one's neighbours. Nor, again, must we hold that things which are no more than globular masses of fire, being at the same time endowed with bliss, assume these motions at will.... Otherwise such inconsistency will of itself suffice to produce the worst disturbance in our minds.

² Aristotle, *On the Heavens*, II, 1 [284 ' 18-201. Hence we must not believe the old tale which. says that the world needs some Atlas to keep it safe.

³ Diogenes Laertius, X, 85. So you (i.e., Pythocles) will do well to take and learn them and get them up quickly along with the short epitome in my letter to Herodotus.

either taken as a whole or in part, just as from the other natural sciences.¹⁽¹⁰⁾ Our life does not need speculation and empty hypotheses, but that we should live without confusion. just as it is the business of the study of nature in general to investigate the foundations of what is most important: so happiness lies also in knowledge of the meteors. In and for itself the theory of setting and rising, of position and eclipse, contains no particular grounds for happiness; only terror possesses those who see these things without understanding their nature and their principal causes.² So far, only the *precedence* which the theory of the meteors is supposed to have over other sciences has been denied; and this theory has been placed on the same level as others.

But the theory of the meteors is *also specifically different* in comparison both with the method of ethics and with other physical problems, for example, the existence of indivisible elements and the like, where only one explanation corresponds to the phenomena. For this is not the case with the meteors.³ Their

¹ Ibid., X, 85. In the first place, remember that, like everything else, knowledge of celestial phenomena, whether taken along with other things or in isolation, as well as of the other sciences, has no other end in view than peace of mind and firm conviction.

Ibid., X, 82. But mental tranquillity means being released from all these troubles and cherishing a continual remembrance of the highest and most important truths.

² Ibid., X, 87. For our life has no need now of ideologies and false opinions; our one need is untroubled existence.

Ibid., X, 78. Further, we must hold that to arrive at accurate knowledge of the cause of things of most moment is the business of natural science, and that happiness depends on this (viz. on . the knowledge of celestial phenomena).

Ibid., X, 79. There is nothing in the knowledge of risings and settings and solstices and eclipses and all kindred subjects that contributes to our happiness; but those who are well informed about such matters and yet are ignorant what the heavenly bodies really are, and what are the most important causes of phenomena, feel quite as much fear as those who have no such special information-nay, perhaps even greater fear.

³ Ibid., X, 86. We do not seek to wrest by force what is impossible, nor to understand all matters equally well, nor make our treatment always as clear as when we discuss human life or explain the principles of ethics in general ... for instance, that the whole of being consists of bodies and intangible nature, or that the ultimate elements of things are indivisible, or any other proposition which ad-its only one explanation of the phenomena to be possible. But this is

origin has no simple cause, and they have more than one category of essence corresponding to the phenomena. For the study of nature cannot be pursued in accordance with empty axioms and laws.⁴ It is constantly repeated that the meteors are not to be explained *haplos* (simply, absolutely), but *poilachos* (in many ways).

This also holds for the rising and setting of the sun and the moon,³ the waxing and waning of the moon,⁴ the semblance of a face on the moon,⁵ the changes of duration of day and night,⁶ and other celestial phenomena.

How then is it to be explained?

Every explanation is sufficient. Only the myth must be removed. It will be removed when we observe the phenomena and draw conclusions from them concerning the invisible.⁷⁽¹⁸⁾ We must hold fast to the appearance, the sensation. Hence analogy must be applied. In this way we can explain fear away and free ourselves from it, by showing the causes of meteors and other things that are always happening and causing the utmost alarm to other people.⁸

not the case with celestial phenomena.

⁴ Ibid., X, 86. These at any rate admit of manifold causes for their occurrence and manifold accounts, none of them contradictory of sensation, of their nature.

For in the study of nature [physiology] we must not conform to empty assumptions and arbitrary laws, but follow the promptings of the facts.

³ Ibid., X, 92.

⁴ Ibid., X, 94.

⁵ Ibid., X, 95 and 96.

⁶ Ibid., X, 98

⁷ Ibid., X, 104. And [says Epicurus] there are several other ways in which thunderbolts may possibly be produced. Exclusion of myth is the sole condition necessary; and it will be excluded, if one properly attends to the facts and hence draws inferences to interpret what is obscure.

⁸ Ibid., X, 80. When, therefore, we investigate the causes of celestial phenomena, as of all that is unknown, we must take into account the variety of ways in which analogous occurrences happen within our experience. Ibid., X, 82. But mental tranquillity means being released from all these troubles.... Hence we must attend to present feelings and sense perceptions, whether those of mankind in general or those peculiar to the individual, and also attend to all

The great number of explanations, the multitude of possibilities, should not only tranquillise our minds and remove causes for fear, but also at the same time negate in the heavenly bodies their very unity, the absolute law that is always equal to itself. These heavenly bodies may behave sometimes in one way, sometimes in another; this possibility conforming to no law is the characteristic of their reality; everything in them is declared to be impermanent and unstable.¹ *The multitude of the explanations should at the same time remove [aufheben] the unity of the object.*

Thus while *Aristotle*, in agreement with other Greek philosophers, considers the heavenly bodies to be eternal and immortal, because they always behave in the same way; while he even ascribes to them an element of their own, higher and not subjected to the force of gravity; *Epicurus* in contrast claims the direct opposite. He reasons that the theory of the meteors is specifically distinguished from all other physical doctrine in this respect, that in the meteors everything occurs in a multiple and unregulated way, that everything in them is to be explained by a manifold of indefinitely many causes. Yes, in wrath and passionate violence he rejects the opposite opinion, and declares that those who adhere to only one method of explanation to the exclusion of all others, those who accept something Unique,

the clear evidence available, as given by each of the standards of truth. For by studying them we shall rightly trace to its cause and banish the source of disturbance and dread, accounting for celestial phenomena and for all other things which from time to time befall us and cause the utmost alarm to the rest of mankind.

Ibid., X, 87. Some phenomena within our experience afford evidence by which we may interpret what goes on in the heavens. We see how the former really take place, but not how the celestial phenomena take place, for their occurrence may possibly be due to a variety of causes. [88.1 However, we must observe each fact as presented, and further separate from it all the facts presented along with it, the occurrence of which from various causes is not contradicted by facts within our experience.

¹ Ibid., X, 78. Further, we must recognise on such points as this plurality of causes or contingency...

Ibid., X, 86. These [celestial phenomena] at any rate admit of manifold causes for their occurrence....

Ibid., X, 87. All things go on uninterruptedly, if all be explained by the method of plurality of causes ... so soon as we duly understand what may be plausibly alleged respecting them....

hence Eternal and Divine in the meteors, fall victim to idle explanation-making and to the slavish artifices of the astrologers; they overstep the bounds of the study of nature and throw themselves into the arms of myth; they try to achieve the impossible, and exert themselves over absurdities; they do not even realise where *ataraxy* itself becomes endangered. Their chatter is to be despised.¹ We must avoid the prejudice that investigation into these subjects cannot be sufficiently thorough and subtle if it aims only at our own *ataraxy* and bliss.² On the contrary, it is an absolute law that nothing that can disturb *ataraxy*, that can cause danger, can belong to an indestructible

¹ Ibid., X, 98. Whereas those who adopt only one explanation are in conflict with the facts and are utterly mistaken as to the way in which man can attain knowledge.

Ibid., X, 113. To assign a single cause for these effects when the facts suggest several causes is madness and a strange inconsistency; yet it is done by adherents of rash astrology, who assign meaningless causes for the stars whenever they persist in saddling the divinity with burdensome tasks.

Ibid., X, 97. And further, let the regularity of their orbits be explained in the same way as certain ordinary incidents within our own experience; the divine nature must not on any account be adduced to explain this, but must be kept free from the task and in perfect bliss. Unless this be done, the whole study of celestial phenomena will be in vain, as indeed it has proved to be with some who did not lay hold of a possible method, but fell into the folly of supposing that these events happen in one single way only and of rejecting all the others which are possible, suffering themselves to be carried into the realm of the unintelligible, and being unable to take a comprehensive view of the facts which must be taken as clues to the rest.

Ibid., X, 93. ...unmoved by the servile artifices of the astrologers.

Ibid., X, 87. ...we clearly fall away from the study of nature altogether and tumble into myth.

Ibid., X, 80. Therefore we must ... investigate the causes of celestial phenomena, as of all that is unknown, [... I while as for those who do not recognise the difference between what is or comes about from a single cause and that which may be the effect of any one of several causes, overlooking the fact that the objects are only seen at a distance, and are moreover ignorant of the conditions that render, or do not render, peace of mind impossible—all such persons we must treat with contempt.

² Ibid., X, 80. We must not suppose that our treatment of these matters fails of accuracy, so far as it is needful to ensure our tranquillity and happiness.

and eternal nature. Consciousness must understand that this is an absolute law.¹

Hence Epicurus concludes: *Since eternity of the heavenly bodies would disturb the ataraxy of self-consciousness, it is a necessary, a stringent consequence that they are not eternal.*

But how can we understand this peculiar view of Epicurus?

All authors who have written on Epicurean philosophy have presented this teaching as incompatible with all the rest of physics, with the atomic doctrine. The fight against the Stoics, against superstition, against astrology is taken as sufficient grounds.

And we have seen that Epicurus himself distinguishes the method applied in the theory of the meteors from the method of the rest of physics. But in which definition of his principle can the necessity of this distinction be found? How does the idea occur to him?

And he fights not only against astrology, but also against astronomy itself, against eternal law and rationality in the heavenly system. Finally, opposition to the Stoics explains nothing. Their superstition and their whole point of view had already been refuted when the heavenly bodies were declared to be accidental complexes of atoms and their processes accidental motions of the atoms. Thereby their eternal nature was destroyed, a consequence which Democritus was content to draw from these premises.² In fact, their very being was disposed of [*aufgehoben*].³ The atomist therefore was in no need of a new method.

But this is not yet the full difficulty. An even more perplexing antinomy appears.

¹ Ibid., X, 78. ... but we must hold that nothing suggestive of conflict or disquiet is compatible with an immortal and blessed nature. And the mind can grasp the absolute truth of this.

² Comp. Aristotle, *On the Heavens*, I, 10.

³ Ibid., I, 10 [279b, 25-261]. Suppose that the world was formed out of elements which were formerly otherwise conditioned than as they are now. Then ... if their condition was always so and could not have been otherwise, the world could never have come into being.

The atom is matter in the form of independence, of individuality, as it were the representative of weight. But the heavenly bodies are the supreme realisation of weight. In them all antinomies between form and matter, between concept and existence, which constituted the development of the atom, are resolved; in them all required determinations are realised. The heavenly bodies are eternal and unchangeable; they have their centre of gravity in, not outside, themselves. Their only action is motion, and, separated by empty space, they swerve from the straight line, and form a system of repulsion and attraction while at the same time preserving their own independence and also, finally, generating time out of themselves as the form of their appearance. *The heavenly bodies are therefore the atoms become real.* In them matter has received in itself individuality. Here Epicurus must therefore have glimpsed the highest existence of his principle, the peak and culminating point of his system. He asserted that he assumed the atom so that nature would be provided with immortal foundations. He alleged that he was concerned with the substantial individuality of matter. But when he comes upon the reality of his nature (and he knows no other 'nature but the mechanical), when he comes upon independent, indestructible matter in the heavenly bodies whose eternity and unchangeability were proved by the belief of the people, the judgment of philosophy, the evidence of the senses: then his one and only desire is to pull it down into earthly transience. He turns vehemently against those who worship an independent nature containing in itself the quality of individuality. This is his most glaring contradiction.

Hence Epicurus feels that here his previous categories break down, that the method of his theory becomes different. And the *profoundest knowledge* achieved by his system, its most thorough consistency, is that he is aware of this and expresses it consciously.

Indeed, we have seen how the whole Epicurean philosophy of nature is pervaded with the contradiction between essence and existence, between form and matter. But *this contradiction is resolved* in *the heavenly bodies*, the conflicting moments are

reconciled. In the celestial system matter has received form into itself, has taken up the individuality into itself and has thus achieved its independence. *But at this point it ceases to be affirmation of abstract self-consciousness.* In the world of the atoms, as in the world of appearance, form struggled against matter; the one determination transcended the other and precisely *in this contradiction abstract-individual self-consciousness felt its nature objectified.* The abstract form, which, in the shape of matter, fought against abstract matter, was *this self-consciousness itself.* But now, when matter has reconciled itself with the form and has been rendered self-sufficient, individual self-consciousness emerges from its pupation, proclaims itself the true principle and opposes nature, which has become independent.

All this can also be expressed from another point of view in the following way: *Matter*, having received into itself individuality, form, as is the case with the heavenly bodies, has ceased to be abstract individuality; it has become concrete individuality, universality. In the meteors, therefore, abstract-individual self-consciousness is met by its contradiction, shining in its materialised form, the universal which has become existence and nature. Hence it recognises in the meteors its deadly enemy, and it ascribes to them, as Epicurus does, all the anxiety and confusion of men. Indeed, the anxiety and dissolution of the abstract-individual is precisely the universal. Here therefore Epicurus' true principle, abstract-individual self-consciousness, can no longer be concealed. It steps out from its hiding place and, freed from material mummery, it seeks to destroy the reality of nature which has become independent by an explanation according to abstract possibility: what is possible may also be otherwise, the opposite of what is possible is also possible. Hence the polemic against those who explain the heavenly bodies *haplos* [simply, absolutely] that is, in one particular way, for the One is the Necessary and that which is Independent-in-itself.

Thus as long as nature as atom and appearance expresses individual self-consciousness and its contradiction, the

subjectivity of self-consciousness appears only in the form of matter itself. Where, on the other hand, it becomes independent, it reflects itself in itself, confronts matter in its own shape as independent form.

It could have been said from the beginning that where Epicurus' principle becomes reality it will cease to have reality for him. For if individual self-consciousness were posited in reality under the determination of nature, or nature under the determination of individual consciousness, then 'its determination, that is, its existence, would have ceased, because only the universal in free distinction from itself can know at the same time its own affirmation.

In the theory of meteors therefore appears the soul of the Epicurean philosophy of nature. Nothing is eternal which destroys the ataraxy of individual self-consciousness. The heavenly bodies disturb its ataraxy, its equanimity with itself, because they are the existing universality, because in them nature has become independent.

Thus the principle of Epicurean philosophy is not the *gastrology* of *Archestratus* as *Chrysippus* believes¹ but the absoluteness and freedom of self-consciousness - even if self-consciousness is only conceived in the form of individuality.

If abstract-individual self-consciousness is posited as an absolute principle, then, indeed, all true and real science is done away with [*aufgehoben*] inasmuch as individuality does not rule within the nature of things themselves. But then, too, everything collapses that is transcendently related to human consciousness and therefore belongs to the imagining mind. On the other hand, if that self-consciousness which knows itself only in the form of abstract universality is raised to an absolute principle, then the door is opened wide to superstitious and unfree mysticism. Stoic philosophy provides the historic proof of this. Abstract-universal self-consciousness has, indeed, the intrinsic urge to affirm itself

¹ Athenacus, *Banquet of the Learned*, III, 104. ... One ... must with good reason approve the noble Chrysippus for his shrewd comprehension of Epicurus' "Nature", and his remark that the very centre of the Epicurean philosophy is the *Gastrology* of *Archestratus*....

in the things themselves in which it can only affirm itself by negating them.

Epicurus is therefore the greatest representative of Greek Enlightenment, and he deserves the praise of Lucretius¹:

When human life lay grovelling in all men's sight, crushed to the earth under the dead weight of religion whose grim features loomed menacingly upon mortals from the four quarters of the sky, a man of Greece was first to raise mortal eyes in defiance, first to stand erect and brave the challenge. Fables of the gods did not crush him, nor the lightning flash and growling menace of the sky.... Therefore religion in its turn lies crushed beneath his feet, and we by his triumph are lifted level with the skies.

The difference between Democritean and Epicurean philosophy of nature which we established at the end of the general section has been elaborated and confirmed in all domains of nature. In *Epicurus*, therefore, *atomistics* with all its contradictions has been carried through and completed *as the natural science of selfconsciousness*. This self-consciousness under the form of abstract individuality is an absolute principle. Epicurus has thus carried atomistics to its final conclusion, which is its dissolution and conscious opposition to the universal. For *Democritus*, on the other hand, the *atom* is only the general *objective expression of the empirical investigation of nature as a whole*. Hence the atom remains for him a pure and abstract category, a hypothesis, the result of experience, not its active [*energisches*] principle. This hypothesis remains therefore without realisation, just as it plays no further part in determining the real investigation of nature.

¹ Lucretius, *On the Nature of Things*, 1, 63-70, 79-80.

Draft of New Preface ^[38]

The treatise that I herewith submit to the public is an old piece of work and was originally intended as part of a comprehensive exposition of Epicurean, Stoic, and Sceptic philosophy. At present, however, political and philosophical arrangements of an entirely different kind prevent me from bringing such a task to completion.

Only now the time has come in which the systems of the Epicureans, Stoics and Sceptics can be understood. They are the *philosophers of self-consciousness*. These lines will at any rate show how little has so far been achieved towards solving the problem.

[late 1841 & early 1842]