Episode One Hundred Twenty - Letter to Herodotus 09 - Epicurus' Rejection of Infinite Divisibility

Post by “Cassius” of April 30, 2022 at 9:46 AM

Welcome to Episode One Hundred Twenty of Lucretius Today.

This is a podcast dedicated to the poet Lucretius, who wrote "On The Nature of Things," the only complete presentation of Epicurean philosophy left to us from the ancient world.

I am your host Cassius, and together with our panelists from the EpicureanFriends.com forum, we'll walk you through the ancient Epicurean texts, and we'll discuss how Epicurean philosophy can apply to you today. We encourage you to study Epicurus for yourself, and we suggest the best place to start is the book "Epicurus and His Philosophy" by Canadian professor Norman DeWitt.

If you find the Epicurean worldview attractive, we invite you to join us in the study of Epicurus at EpicureanFriends.com, where you will find a discussion thread for each of our podcast episodes and many other topics.

Today we continue our review of Epicurus' letter to Herodotus, and we move further into fundamental physics and discuss issues related to the question of whether matter can be infinitely divided.

Now let's join Joshua reading today's text:

Bailey

Moreover, we must not either suppose that every size exists among the atoms, in order that the evidence of phenomena may not contradict us, but we must suppose that there are some variations of size. For if this be the case, we can give a better account of what occurs in our feelings and sensations.

[56] But the existence of atoms of every size is not required to explain the differences of qualities in things, and at the same time some atoms would be bound to come within our ken and be visible; but this is never seen to be the case, nor is it possible to imagine how an atom could become visible.

Besides this we must not suppose that in a limited body there can be infinite parts or parts of every degree of smallness. Therefore, we must not only do away with division into smaller and smaller parts to infinity, in order that we may not make all things weak, and so in the composition of aggregate bodies be compelled to crush and squander the things that exist into

the non-existent, but we must not either suppose that in limited bodies there is a possibility of continuing to infinity in passing even to smaller and smaller parts.

[57] For if once one says that there are infinite parts in a body or parts of any degree of smallness, it is not possible to conceive how this should be, and indeed how could the body any longer be limited in size? (For it is obvious that these infinite particles must be of some size or other; and however small they may be, the size of the body too would be infinite.) And again, since the limited body has an extreme point, which is distinguishable, even though not perceptible by itself, you cannot conceive that the succeeding point to it is not similar in character, or that if you go on in this way from one point to another, it should be possible for you to proceed to infinity marking such points in your mind.

[58] We must notice also that the least thing in sensation is neither exactly like that which admits of progression from one part to another, nor again is it in every respect wholly unlike it, but it has a certain affinity with such bodies, yet cannot be divided into parts. But when on the analogy of this resemblance we think to divide off parts of it, one on the one side and another on the other, it must needs be that another point like the first meets our view. And we look at these points in succession starting from the first, not within the limits of the same point nor in contact part with part, but yet by means of their own proper characteristics measuring the size of bodies, more in a greater body and fewer in a smaller.

[59] Now we must suppose that the least part in the atom too bears the same relation to the whole; for though in smallness it is obvious that it exceeds that which is seen by sensation, yet it has the same relations. For indeed we have already declared on the ground of its relation to sensible bodies that the atom has size, only we placed it far below them in smallness. Further, we must consider these least indivisible points as boundary-marks, providing in themselves as primary units the measure of size for the atoms, both for the smaller and the greater, in our contemplation of these unseen bodies by means of thought. For the affinity which the least parts of the atom have to the homogeneous parts of sensible things is sufficient to justify our conclusion to this extent: but that they should ever come together as bodies with motion is quite impossible.

HICKS

Again, you should not suppose that the atoms have any and every size, lest you be contradicted by facts; but differences of size must be admitted; for this addition renders the facts of feeling and sensation easier of explanation.

[56] But to attribute any and every magnitude to the atoms does not help to explain the differences of quality in things; moreover, in that case atoms large enough to be seen ought to have reached us, which is never observed to occur; nor can we conceive how its occurrence should be possible, i. e. that an atom should become visible. "Besides, you must not suppose that there are parts unlimited in number, be they ever so small, in any finite body. Hence not

only must we reject as impossible subdivision ad infinitum into smaller and smaller parts, lest we make all things too weak and, in our conceptions of the aggregates, be driven to pulverize the things that exist, i. e. the atoms, and annihilate them; but in dealing with finite things we must also reject as impossible the progression ad infinitum by less and less increments.

[57] For when once we have said that an infinite number of particles, however small, are contained in anything, it is not possible to conceive how it could any longer be limited or finite in size. For clearly our infinite number of particles must have some size; and then, of whatever size they were, the aggregate they made would be infinite. And, in the next place, since what is finite has an extremity which is distinguishable, even if it is not by itself observable, it is not possible to avoid thinking of another such extremity next to this. Nor can we help thinking that in this way, by proceeding forward from one to the next in order, it is possible by such a progression to arrive in thought at infinity.

[58] We must consider the minimum perceptible by sense as not corresponding to that which is capable of being traversed, i.e. is extended, nor again as utterly unlike it, but as having something in common with the things capable of being traversed, though it is without distinction of parts. But when from the illusion created by this common property we think we shall distinguish something in the minimum, one part on one side and another part on the other side, it must be another minimum equal to the first which catches our eye. In fact, we see these minima one after another, beginning with the first, and not as occupying the same space; nor do we see them touch one another's parts with their parts, but we see that by virtue of their own peculiar character (i.e. as being unit indivisibles) they afford a means of measuring magnitudes: there are more of them, if the magnitude measured is greater; fewer of them, if the magnitude measured is less.

[59] We must recognize that this analogy also holds of the minimum in the atom; it is only in minuteness that it differs from that which is observed by sense, but it follows the same analogy. On the analogy of things within our experience we have declared that the atom has magnitude; and this, small as it is, we have merely reproduced on a larger scale. And further, the least and simplest things must be regarded as extremities of lengths, furnishing from themselves as units the means of measuring lengths, whether greater or less, the mental vision being employed, since direct observation is impossible. For the community which exists between them and the unchangeable parts (i.e. the minimal parts of area or surface) is sufficient to justify the conclusion so far as this goes. But it is not possible that these minima of the atom should group themselves together through the possession of motion.

YONGE

Hence these somethings capable of being diversely arranged must be indestructible, exempt from change, but possessed each of its own distinctive mass and configuration. This must remain.

[55] "For in the case of changes of configuration within our experience the figure is supposed to be inherent when other qualities are stripped off, but the qualities are not supposed, like the shape which is left behind, to inhere in the subject of change, but to vanish altogether from the body. Thus, then, what is left behind is sufficient to account for the differences in composite bodies, since something at least must necessarily be left remaining and be immune from annihilation. "Again, you should not suppose that the atoms have any and every size, lest you be contradicted by facts; but differences of size must be admitted; for this addition renders the facts of feeling and sensation easier of explanation.

[56] But to attribute any and every magnitude to the atoms does not help to explain the differences of quality in things; moreover, in that case atoms large enough to be seen ought to have reached us, which is never observed to occur; nor can we conceive how its occurrence should be possible, i. e. that an atom should become visible. "Besides, you must not suppose that there are parts unlimited in number, be they ever so small, in any finite body. Hence not only must we reject as impossible subdivision ad infinitum into smaller and smaller parts, lest we make all things too weak and, in our conceptions of the aggregates, be driven to pulverize the things that exist, i. e. the atoms, and annihilate them; but in dealing with finite things we must also reject as impossible the progression ad infinitum by less and less increments.

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