

Sicily.—On a hill near the Doric Temple at Gela have been found the remains of a small archaic temple. They consist mainly of foundations, and only a few fragments of a column-shaft, and an archaic capital have been recovered. There are, however, numerous pieces of terracotta decoration from the entablature; and among the acroteria is an immense gorgoneion, which was originally more

than three feet in diameter. The date is fixed at about the end of the seventh century B.C.¹

The British Museum.

E. J. FORSDYKE.

¹ *Arch. Anzeiger*, 1908, ii.; *Notizie d. Scavi*, 1907, p. 38.

CORRESPONDENCE

To the Editor of THE CLASSICAL REVIEW.

EPICURUS AND LUCRETIUS.

THE letter of W. T. L. in the December number of the *Classical Review* forms an interesting contribution to the elucidation of the very difficult doctrine of the *minimae partes* in Lucr. i. 599-634, and Sections 56-59 of Epicurus' letter to Herodotus; but as I find myself at variance with him in several points of his interpretation alike of Epicurus, Lucretius, and Giussani, I venture to submit to you certain criticisms of your correspondent's views.

1. In the first place W. T. L. suggests that the reason why an atom is invisible is not because it is so small, but because it does not possess quality: 'if an atom were as large as a mountain, it would still be invisible.' This is an ingenious deduction from Epicurean premises, but it cannot, I think, be maintained as sound Epicurean doctrine in the face of such passages as (a), Ep. ad Hdt. 55, ἀλλὰ μὴν οὐδὲ δεῖ νομίζειν πᾶν μέγεθος ἐν ταῖς ἀτόμοις ὑπάρχειν, ἵνα μὴ τὰ φαινόμενα ἀντιμαρτυρῆ, *i.e.* 'lest we may be contradicting the evidence of the senses that atoms are invisible'; or (b), if a clearer statement be wanted, the next sentence but one, 'that the atoms should be of all sizes is not necessary to produce the differences of qualities,' ἀφίχθαι τε ἅμ' ἔδει καὶ πρὸς ἡμᾶς ὁρατὰς ἀτόμους: 'if the atoms were very big, we should see them'; or (c), by implication, in reference to a passage now lost, Lucr. II. 498, 9. W. T. L.'s notion seems to come from an inexact recollection of the perfectly correct definition of the atoms given by Giussani on p. 59, 'the atoms, that is, the absolutely invisible, *not only* because of their smallness, *but also* because of their solidity and singleness, which excludes all emission of idols.'

2. 'Atoms, like all finite (ὀρισμένα) bodies, whether "visible" or "invisible," must have parts, that is, "extremities" (ἀκρά, cacumina), *e.g.* a right side and a left, to determine their shape But since the finite cannot contain the infinite, there must be a point at which the separation of these parts or "extremities" ceases.' The language here is very loose and indeed misleading, for, so far from the separation of the parts of the atom 'ceasing,' Epicurus' whole point is that it could never even

begin. There seems to be a confusion between the 'visible' object and the atom, between 'parts' and 'extremities.' In the visible object the separation of parts can continue perceptibly until we reach the point when, as W. T. L. has clearly explained in the next paragraph, any more division would put the new section outside the range of sight; an ἀκρόν can only be seen as a part of an ὄγκος. But the atom is itself in the sphere of νοητά what the ὄγκος is in the sphere of αἰσθητά: if it could be divided into its πέρατα, they would be outside the range of creative matter (see 3), for they themselves have no parts.

3. 'Apart from it (the atom), they (the ἀκρά) would be οὐ νοητά, that is, without material parts determining their shape. They are, therefore, as material, inseparable from the body. If isolated from it, they would cease to be matter and become nothing.' They would be 'without material parts,' but they would neither be 'οὐ νοητά,' nor 'nothing,' for they would still have extension (see 4). As Lucr. very carefully explains, 628-634, they would not have the qualities and capacities which are necessary for 'creative matter.'

4. 'The conclusion therefore is, that the atom must have parts (ἀκρά), but these parts themselves are without parts, that is, without extension (ἀμετάβαρα), and therefore cannot be conceived as existing separate from the atoms. Unextended themselves, they merely supply the atom with its extension.' If they were unextended themselves, they could not supply the atom with extension: no combination of mathematical points can make a material body. It is strange that a reading of Giussani should have led to this conclusion, for the one point which he labours above all to establish is that Epicurus was trying to maintain the 'inherent contradiction of materialism' (p. 61) that the πέρατα of the atom have extension but not parts: 'the atom (p. 59) is the minimum of matter, the "extremities" the minimum of extension.' Nor can the very difficult word ἀμετάβαρα mean 'without extension.' The idea is rather that you could not put the 'extremities' in a row and 'pass' mentally from the one to the other, saying 'now I am looking at A, now at B, and so on.' That can only be done with objects large enough to have determined shape and outline, and that implies parts. The πέρατα have

extension but no such determinate and independent shape.

5. W. T. L.'s translation of Lucr. i. 749, is certainly a great improvement on the 'current' translation of Munro, but I would venture to suggest one further alteration: the *quod* in line 752 is surely a relative, not a conjunction, and is exactly parallel to the *quod* of line 750. I should translate: 'although we see that that is the extreme point of anything, which seems, judged by our senses, to be a least part, so that you may infer from this that the extreme point of things which you cannot see, is the least part also for them.' (I agree in accepting Postgate's *et illis*.)

I may perhaps be allowed to use this opportunity to call attention to the one place in which Giussani seems to me to have gone seriously wrong in his interpretation of Epicurus, namely, in the last sentence but one of the section (59 ad fin.), ἡ γὰρ κοινότης ἢ ὑπάρχοντα αὐτοῖς πρὸς τὰ ἀμετάβατα ἰκανῆ τὸ μέχρι τούτου συντελέσαι. Giussani renders, 'the common character which the atoms have with sensible things in regard to the *partes minimae*, is that which renders them fit for the completion or rather the creation of things up to the point which we see.' This is very difficult, and necessitates a great deal of reading between the lines. Surely αὐτοῖς is not the atoms but the *πέρατα* of the atoms, πρὸς τὰ ἀμετάβατα is constructed directly after κοινότης, and συντελέσαι is not transitive but intransitive in its regular idiomatic sense. I should translate, 'the community of characteristics which the extremities of the atoms have with the inseparable particles of things perceived, is sufficient to justify their being classed together to this extent' (*i.e.* for the purposes of an analogy from the seen to the unseen); and then he goes on naturally enough to explain where the essential difference comes in, 'but of course it is impossible that the extremities of the atom should ever have been brought together by motion to form an atom' (*sc.* as the ἀμετάβατα of the visible object, being themselves formed of many atoms, were brought together to form the object).

Much of the difficulty of the problem of *minimae partes* disappears, I think, on consideration of the history of the idea. It originated with the statement of Leucippus that the reason of the indestructibility of the atoms (note that here we have Lucretius' context, not Epicurus'—a divergence which has caused Giussani qualms), is τὸ σμικρὸν καὶ τὸ ἀμερές (Simpl. *Phys.* p. 925. 10, Diels *Frag.* ed. 2, Leucippus 13). Now Leucippus doubtless meant by ἀμερές 'indivisibility,' but his statement lent a handle to opponents who chose to interpret it 'the fact that they are without parts': what is without parts, they might argue, is without magnitude, and cannot therefore have material being at all. Aristotle, according to Simplicius, was not slow to use this argument, and it is highly probable that earlier critics did too. Democritus shelved the difficulty by suppressing the infelicitous epithet and allowing his atoms to be of some size, but Epicurus characteristically

faced it, and from the quite disproportionate length which his discussion occupies in the letter to Herodotus, we may be sure he was answering opponents and trying to think out his reply on strictly Epicurean lines. Hence his appeal to the sensuous analogy: we can in ordinary life see extremely minute parts of bodies, as parts, which if isolated, would become invisible, though still remaining in the realm of matter: they are the *minima* of the perceptible world. Similarly the atom must have such parts, never existing except as parts of the atom, which, if isolated, would cease to be matter, though they would still have extension: they are the *minima* of the material world. As the size of the visible object is determined by the number of its perceptible *minima*, so is the size of the atom determined by the number of its material *minima*. And then as in other cases (notably at the end of § 62) he scrupulously points out where the analogy breaks down: 'Of course the perceptible *minima* are materially separable one from another and liable to be broken up still further: the material *minima* are not.' His answer is a satisfactory one from the point of view of his own logic, but, as Giussani says, it has not solved 'the insoluble antinomy.' At the bottom of the scale of material existence, we have that which is material, yet can only exist as a part of matter, that which has extension, but no parts. Would the modern scientist be able to make any very different answer?

I hope, that in an endeavour to clear up some difficult points suggested by your correspondent's letter, I have not made darkness worse confounded.

C. B.

CHICAGO, Dec. 2, 1908.

To the Editor, THE CLASSICAL REVIEW.

The editors of *Homeric Vocabularies* fully appreciate the extended and careful notice you have given that book. Yet with all his acuteness your reviewer has failed to grasp our problem and method. For our method we may be allowed to say that, while it is obviously not the only one, it has already proved its efficiency, for example in President Harper's *Hebrew Vocabularies*, now in a fifth edition; for our statistics, that they are based on Gehring's *Index Homericus*, where anyone may verify them for himself; and for our meanings, that we may well be excused for failing to satisfy a reviewer who thinks 'great-hearted' for *μεγάθυμος* 'a mere school-boy's rendering.' Is Walter Leaf then a mere school-boy? Your reviewer wishes us to print *κορέννυμ*, because he finds it in his Homeric dictionary. But he will not find it, or any form from that stem, in Homer, and we have tried not to lead students to expect in Homer forms they will not find there. For the misprints to which your reviewer calls attention, however, we give him hearty thanks.

WILLIAM B. OWEN.

EDGAR J. GOODSPEED.