

4. Finally, the present writer is aware that it may be possible to represent some examples of linkage to *digressio* as not falling neatly into any one of the above categories. Nevertheless, it is hoped that this categorization will serve to explain the most obvious distinctions which may be made.

University of Sheffield

J. Colin Davies

LUCRETIUS' STRATEGY IN DE RERUM NATURA I

There is, it may confidently be said, some consensus about the degree to which central doctrines of Epicurean physics are embodied in Book I of *de rerum natura*¹). The two traditional axioms from which Lucretius takes his start (*principium*): *nihil e nihilo gigni* and *nihil ad nihilum redire* (vv. 149–214; 215–264) occupy an analogous place in Epicurus' *Letter to Herodotus* (38 f.) where they likewise precede the exposé of specific Epicurean theories. For Epicurus (ad Hdt. 39) τὸ πᾶν ἔστι (σώματα καὶ κενόν)²). Lucretius, as we shall see, agrees and offers arguments for the reality of the void and the necessity of positing it (vv. 329–69) whose primary basis is Epicurus' own argument in ad Hdt. 40. Bodies, we learn at vv. 483 ff., are divided into compounds and the constituents of the compounds which are of course the atoms. This fundamental piece of physical theory reproduces the distinction between συγκρίσεις and "those (bodies) of which these are made" (ad Hdt. 40 fin.). There are besides bodies and the void no other realities: *coniuncta* (properties) and *eventa* (accidents or events) whose claim to such status must for some reason be examined are ruthlessly discredited by Lucretius (vv. 418–82), who

1) To Carlo Giussani (T. Lucreti Cari de rerum natura libri sex, vol. 1, Torino 1896, pp. 1 ff.) belongs the merit of having shown the extent of correspondences between Lucretius' Book I and Epicurus' ad Hdt. 38–42. More recent studies will be cited in later notes.

2) With Gassendi, Von der Mühl, Arrighetti, Rist and others I prefer this supplement to Usener's (σώματα καὶ τόπος).

here again follows Epicurus' repudiation of *συμβεβηκότα* and *σμπώματα* (ibid. 40).

We could list other agreements and shall in fact mention some later on in this paper. Here I wish to turn at once to my principal question: Is there in *de rerum natura I* which we have seen, includes a careful disquisition of the void, a similarly elaborate account of *corpora*, or have we to content ourselves with the brief distinction of two kinds which has been mentioned above? The *Letter to Herodotus* (which, we must not forget, is an epitome) has very little of a general nature on *σώματα* – but the little will prove quite important.

In recent analyses of Book I our question has received two different answers. Diskin Clay in his *Lucretius and Epicurus*³⁾ refers us to vv. 418–32 as well as to other passages of the paragraph 418–48 where, it seemed to us, Lucretius' actual concern is to exclude *coniuncta* and *eventa*. To be sure we read in v. 410 *nam corpora sunt et inane . . .* but it would be strange and awkward if this section had to serve as the general account of *corpora*. Let us look at the other answer.

Cyril Bailey in his authoritative commentary of Lucretius defines as subject of vv. 146–482 “the permanent substratum; the existence of matter and void”⁴⁾. The former subject is in his opinion covered in vv. 148–328; at v. 329 Lucretius “passes to what was the second constituent of the universe in the view of atomism, namely void or space . . .” Although, as far as I see, Bailey never states it explicitly (and indeed as we shall presently see, involves himself in contradictions) we must infer that “matter” for him does duty for *corpora*⁵⁾. Important as the concept of *materies* is in Lucretius' theories of physical origins and growth, one may yet doubt whether it could be treated as interchangeable with *corpus* or *corpora*⁶⁾. And there are other difficulties not faced by Bailey.

3) (Ithaca, N. Y. 1983) 121 f.

4) Lucretius *de rerum natura* (3 vol.s, Oxford 1947) 2.624; 652; 665. Against Bailey's use of v. 418 as supporting his theory it should be said that, as his own translation shows, *repetere* cannot here mean ‘recapitulate’.

5) In Bailey's earlier book, *The Greek Atomists and Epicurus* (Oxford 1928) 278 ff., I find no attempt to clarify the relationship between *corpus* and *materies* in Lucretius.

6) On *materies* as rendering of *ἄλη* and on Epicurus' adoption of the Aristotelian *ἄλη* concept see Phronesis 22 (1977) 269 ff. In point of fact *materies* in Lucretius' scheme is closer to the atoms or *corpora prima* than it is to *corpora* in the general sense; for what guarantees its *aeternitas* is the atoms; see 1.500–502; 516–19; 538–50 and passim.

The arguments establishing *nihil e nihilo* (vv. 149–214) and *nihil ad nihilum* (vv. 215–264) can hardly be subsumed under the heading of *corpora* (or *materies*) since Epicurus establishes these fundamental truths in *ad Hdt.* (35 f.) even before he turns to τὸ πᾶν and declares it to consist of bodies and the void (*ibid.* 39).

So far we have paid no attention to vv. 265–328, the section in which Lucretius urges Memmius (and other readers) not to regard the smallness and invisibility of the atoms as fatal to the truth of his message⁷). Nature, he argues, abounds in processes and conditions where particles so small that they elude our vision must be at work. This section, following as it does the arguments for the *nihil ad nihilum* and immediately preceding the discussion of the void is separated by more than 150 lines from the passage (vv. 483 ff.) where the atoms make their first appearance. The anomaly of defending the atoms before they have been mentioned – in fact just before Lucretius moves to the subject of the void – seems to have escaped commentators of the poem.

Bailey, though not aware of this anomaly, accounts for the presence of vv. 266–328 by a suggestion which calls for scrutiny: “Lucretius’ previous arguments in support of the two general principles that nothing is created out of nothing or wholly destroyed have all turned on the existence of tiny imperceptible ‘seeds’ or particles. The objection then occurs to him that it is not easy to credit the existence of these small particles because they cannot be seen”⁸). Bailey might have strengthened his suggestion by quoting vv. 267 f.: *ne qua forte tamen coeptes diffidere dictis / quod nequeunt oculis rerum primordia cerni* . . . However, regarding the “tiny imperceptible ‘seeds’ or particles,” it is fair to observe that Lucretius has nowhere in the two preceding sections referred to the invisibility (or indeed to the tiny size) of the particles. The emphasis is on the eternity of matter or on the identity in kind of

7) The transition from this section to the arguments for the *inane* reads: *nec tamen undique corporea stipata tenentur / omnia natura; namque est in rebus inane* (vv. 329 f.). Phrased thus the lines may lead us to think that what precedes v. 329 is the Epicurean doctrine of *corpora*. Pierre Boyancé, *Lucrèce et l'Épicurisme* (Paris 1963) 93, regards the *invisibilia corpora* of this section as a “subtle preparation” for the invisible void of the next. Much as I admire Boyancé’s finesse and sensitivity, he here seems to carry subtlety too far. For the Epicureans the void is of interest as *intactum* (v. 334; ἀναφής φύσις), not as *invisibile*.

8) *Op. cit.* 2.643 f. Bailey’s observations (*ibid.*) regarding a conflict between invisible *corpora prima* and Epicurus’ trust in αἰσθησις are valid, and his analysis of the arguments in this section is admirable. If Lucretius here in fact composes independently, Bailey’s analysis shows how his mind went to work.

the creative seeds with the product growing from them⁹). Vv. 248 f. (to choose a passage relatively close to Bailey's meaning): *haud igitur redit ad nilum res ulla sed omnes / discidio redeunt in corpora materiai* leave the quality (or quantity) of the material completely undefined. Nor could it reasonably be maintained that such passages produce in the reader's mind an irresistible impatience to learn more about the nature of the seeds. There are only two, or including the prooemium three instances of the use of *primordia*¹⁰), the word which is meant to designate the atoms but the word itself carries no suggestion of a specific or technical meaning. What vv. 206–210 imply is the identity of *primordia* and *semina*, and while it is quite true that Lucretius again and again emphasizes the importance of *semina*, Bailey himself provides an observation (ad v. 159) which in effect refutes his comments (quoted above) ad vv. 266 ff.: "Just as the first principle was, as Aristotle said, common to all the physicists so the conception of the seed is such as any of them could have accepted. Lucretius is no doubt influenced in his phraseology, esp. in 205–14 by his own atomic conceptions, but he does not introduce the specific conception of the atom till he begins to describe the *corpora prima* in 483 ff." This is completely true and decides our immediate problem – against Bailey.

Still even if Lucretius has been careful not to touch on this precarious aspect of the central concept in Epicurean physics, he evidently knew that it would meet with incredulity. To counteract the psychological resistance was desirable and the sooner it was done the better. Some may imagine such resistance to have been particularly strong on the part of Roman readers accustomed to accept only what they could see, hear or touch¹¹). I would give little weight to this prejudice and would even be prepared to acquiesce in the anomalous place of vv. 265–328 (for which some

9) For the identity and preservation of the species see vv. 160–68; 169–73; 188–91; 204 f. For the eternity motif see especially vv. 221; 234–36; 239–41; 242; 245. *aeterna materies*, a conception unknown to Aristotle, is in all probability an innovation which became necessary for Epicurus when he applied Aristotle's ὕλη concept to the unbreakable, eternal atoms. It is interesting to see that early Christian thinkers rejected the notion of *aeterna materies* and insisted on a *creatio e nihilo* which was of course *divinitus*. For Gregory of Nyssa, de opif. hom. ch. 23 (PG 44 col. 212 B f.), a ὕλη coeternal with God would be a Manichaean heresy; in ch. 24 he explains how God though immaterial could create matter. It should be no surprise to find these thinkers and the Epicureans poles apart.

10) Vv. 55, 182, 210.

11) Cf. Clay op. cit. 119.

kind of explanation has now been found) if it were not the case that this anomaly is compounded by another. While most sections in this part of Book I correspond in content to paragraphs of Epicurus' *Letter to Herodotus*, vv. 265–328 have no counterpart in that Letter nor as far as we know anywhere else in Epicurus' own work¹²). Does this absence of a Greek model suggest that Lucretius realizing the need for such an effort of *psychagogia* composed this section *proprio Marte*? It seems necessary to examine its content more closely. One conclusion has however emerged and must be stated firmly: the arguments designed to prove the existence of *corpora caeca* cannot form a general theory of bodies analogous to that of the void which immediately follows. Atoms are only a species (and sub-topic) of bodies.

Even though on the whole I prefer to think of Lucretius as keeping in technical arguments close to a Greek treatise, whether of the master himself or of another Epicurean¹³), here may be a case where he relies on his own mind not only for the poetic form. May we entertain this opinion with a good conscience¹⁴)?

Regrettably we cannot come forward with a firm 'yes' or 'no.' Still the probability seems high that we here have a piece of Lucretius' own composition. Allowance must of course be made for the presence of Epicurean detail which has been skillfully worked into the fabric. The atomic doctrines underlying the statements about attrition and about sense impressions (vv. 311–19, 298–304) have been pointed out by Bailey¹⁵). What is said about imperceptible growth and decline (vv. 322–27) may be compared with the treatment of the same subject on more frankly atomic lines in Book II (1105–43). In principle we need not hesitate to assume Epicurean authority for other items where we are not in a position to prove it. On the other hand Lucretius himself may surely have noticed how garments absorbed moisture while exposed to the atmosphere of the sea coast and how they dried under

12) Cf. Giussani, *op. cit.* (n. 1) 2; Clay 118 f. Bailey's references (2.645) to ad Hdt. 44 schol. and 56 have no bearing on the issue.

13) This opinion may seem to imply dissent from the conviction of Lucretius' own creativity which Clay expresses (*op. cit.* 35 ff.) and which determines his procedure throughout his book. I am anxious to dispel this impression; for I too think of Lucretius' mind as stocked with Epicurean teachings so that also arguments of a technical character may be produced by him *pleno de pectore*. Even so they reproduce what he has read or (perhaps) heard.

14) Elizabeth Asmis, *Epicurus' Scientific Method* (Ithaca, N.Y. 1984) 237, regards vv. 268–328 as "an independent inductive proof".

15) Ad vv. 302–304 (2.648) and ad 311–19 (2.649).

the influence of the sun (vv. 305–8); to realize the operation of *corpora caeca* in these and similar processes (e. g., the slow loss of substance in objects frequently touched, vv. 311–24), he did not need an explicit statement in his Greek exemplaria.

If in fact what we read in vv. 265–328 was conceived and composed by Lucretius himself, psychological or pedagogical motives have proved stronger than the logic of his philosophical system. Other reasons are likely to have influenced the choice of so early a place. By presenting the arguments for *corpora caeca* before the disquisition about the void, and before the refusal to admit *coniuncta* and *eventa*, Lucretius created for himself an opportunity of displaying the ample resources of his poetic diction and imagination. The elaborate comparison between the power of hurricane-like winds and of terrific masses of water (vv. 271–89) called for a language which had itself this quality of power and had it in a superlative degree. Onomatopoeia, alliteration and the use of words apt to suggest rapid and vehement action, help to sustain this particular elevation of the style. Anyone reciting these lines aloud is forced to visualize the destruction of mighty ships (vv. 271 f.); he hears the crashing of big trees (vv. 273–76) and recalls in his imagination masses of water which, fed by torrential rain, rush downward with a fury sufficient to smash bridges and roll along big rocks (vv. 281–87). To *rapido turbine* of the wind sweeping the plain (v. 273) answers the *turbidus amnis* (vv. 286 f.) which knocks down whatever it meets and produces a *strages*¹⁶).

Once more then we have a chance of admiring Lucretius' Muse unimpeded in her flight. I do not suggest that as soon as technical subjects begin to dominate, poetry's wings are clipped. There are vigor and vividness along with pathos in a line like v. 558: *infinita aetas anteacti temporis*, and there still are lively and concrete vignettes. But when Lucretius concentrates on defending the existence of atoms and on hammering home their essential and

16) Note also *subito turbine* in v. 279. The rivers move *aperto corpore* (v. 297) whereas the winds are *caeca corpora* (v. 277). One cannot help remembering the methodical principle ὄψις τῶν ἀδήλων τὰ φαινόμενα, for which cf. Hans Diller's well known article in *Hermes* 67 (1933) 14 ff. (= *Kleine Schriften zur griech. Literatur*, Munich 1971, 119 ff.) as well as Otto Regenbogen, *Eine Forschungsmethode der antiken Naturwissenschaft* (in *Quellen und Studien zur Geschichte der Mathematik* 1, 1930, 131 ff.). See however also Asmis, *op. cit.* 237, for a different opinion about the methods here employed. Clay *op. cit.* 119 ff., has some illuminating observations regarding the poetic thoughts (I doubt however whether the proximity of invisible bodies and the invisible void is meaningful and intentional; cf. n. 7).

characteristic qualities, the logic of the arguments determines the style, and poetry must content itself with a relatively modest role. Excursions into nature at large and enjoyment of its life and colors are no longer possible.

Moreover the qualities that constitute the essence of the atom are *soliditas*, *simplicitas* and *aeternitas*¹⁷). From v. 503 to v. 634 successive paragraphs, with few exceptions¹⁸) furnish support for one or two, if not all three of these predicates. While without them the atom would simply not be what it is, invisibility cannot be of the essence, since it materializes only in the relation between the atom and the human eye. It is hard to imagine how arguments for it could have been worked in after v. 483.

One of the three characteristics which we have just seen to be essential for the atom is so inseparable from the concept that it presents itself at the very point where the atoms themselves are for the first time introduced as *rerum primordia: sed quae sunt rerum primordia nulla potest vis/stinguere; nam solido vincunt ea corpore demum* (vv. 485 f.). However Lucretius is aware that this essential and intrinsic property of the atom is bound to meet with disbelief. Obliging he himself lists a number of familiar experiences which would seem to exclude the possibility of unbreakable or impenetrable physical bodies (vv. 487–97). What follows in vv. 498–538 is intended to refute such preconceived opinions. Once more, then, there is the need of combating and overcoming resistance. For the reasons mentioned arguments aimed at establishing *solida pollentia simplicitate* are even more important than those marshalled in support of *corpora caeca*. We now understand even better why Lucretius chose for the eloquent defense of *invisibilia* a place where the ground was not prepared and where the logic of the system did not call for it.

But while we have found a variety of reasons why Lucretius chose this strange place, we have lost all hope of finding his general theory of *corpora* either in this section (vv. 265–328) or anywhere else before the arguments proving the reality of the void. Should we then after all turn to the section beginning at v. 418 where Diskin Clay has recently detected the subject of *corpora*¹⁹)? Once again we hesitate to take this step. The most serious obstacle which this hypothesis must face has already been mentioned. To state it

17) *immutabilitas* is added in vv. 584–98.

18) The exceptions are vv. 551–64; 577–83; 628–84. The arguments in these paragraphs are meant to furnish additional support for the atomic theory as such.

19) See above p. 316.

once more in slightly different language: The two lines at the beginning of this section: *omnis, ut est igitur per se, natura duabus / constitit in rebus; nam corpora sunt et inane*, suggest, not least by the word *igitur*, that we already are familiar with these two constituents of *omnis natura* (τὸ πᾶν) and the actual purpose of the arguments presented in vv. 418–482 is to deny the status of *esse per se*, i. e. true reality to some other candidates for it, especially to *coniuncta* and *eventa*²⁰).

True as these observations are, we must yet not fail to notice the peculiar method by which Lucretius discredits these aspirants to reality, for his arguments include some decidedly significant information about *corpora*. What we read in vv. 422 ff.: *corpus enim per se communis dedicat esse / sensus* (followed by an affirmation that *sensus* is the basic source of knowledge) is more specific than anything we have in earlier passages learned about bodies. Moreover, it is identical with the one and only item of support provided by Epicurus himself for σώματα in *ad Herodotum*²¹). A few lines later (vv. 433 ff.) focusing again on *esse aliquid ipsum* (presumably an expression close in meaning to *esse per se*), Lucretius envisages a physical object and wonders whether it has *tactus*. If yes, it must be included among the *corpora*. *Tangere enim et tangi nisi corpus nulla potest res* is in point of fact a proposition we have met earlier at v. 304 where its occurrence is so accidental and isolated that one would not easily regard it as contributing to a general theory of bodies. May we do so here (at vv. 433–38)? Despite our initial hesitation it seems advisable. Lucretius contrasts the *tactus* quality of bodies with the *intactile* (v. 437; cf. ἀναφή φύσιν, ad Hdt. 40 init.) of the void. What follows in vv. 440–44 brings out if not an actual contrast, at least a difference between bodies and the void. Bodies are characterized by the capacity of acting and suffering (= being acted upon), *facere et fungi*, whereas the void offers room for things to happen.

How far are we able to reconstruct an Epicurean theory of body on the basis of these doctrines? Three propositions stand

20) Strictly (and more correctly) speaking, the exclusion of any *tertium* besides *corpora* and *inane* is in vv. 418–48 kept in quite general terms and only at v. 449 does Lucretius turn to *coniuncta* and *eventa*, explaining by concrete illustrations what these terms mean and arguing against their status as independent realities. Bailey (2.665) correctly defines the content of vv. 418–48 and 449–82 but errs in regarding vv. 418 ff. as a recapitulation, an opinion which could be defended only for the *inane* in v. 429.

21) ad Hdt. 39: σώματα μὲν γὰρ ὡς ἔστιν αὐτῆ ἢ αἰσθησις ἐπὶ πάντων μαρτυρεῖ κτλ.

out: 1) The existence or reality of bodies is guaranteed by sense perception. 2) Bodies touch and are touched. 3) Bodies act and are acted upon²²). If this reconstruction falls short of furnishing Epicurus' complete theory of σώματα, it yet clearly provides three fundamental doctrines. Conceivably there is also in v. 435 f. an allusion to the physical extension of bodies but the passage may be understood along other lines and I prefer not to commit myself to this interpretation.

We are still entitled to wonder about Lucretius' procedure. Why did he not provide a straightforward account of *corpora* and their characteristics, covering this subject, before the account of the void? Why did he work what he wished to say on *corpora* into an argument meant to settle different, although related, matters? Any explanation of this curious procedure is bound to be tentative. We have found more than one reason why the defence of *corpora caeca* occupies the place where we read it and where, we may add, a general theory of *corpora* would have its normal and legitimate place. But would *facere* and *fungi, tangere* and *tangi* lend themselves to a treatment so attractive, dominated by a magnificent poetic comparison and abounding in persuasive detail? We find this difficult to imagine but we must beware of underrating Lucretius' creative powers. They might have brought to life an unpromising subject. The fact is that he applied them to another.

The University
of North Carolina

Friedrich Solmsen

22) In Plato, Soph. 247d f. the δύναμις εἶτ' εἰς τὸ ποιεῖν . . . εἶτ' εἰς τὸ παθεῖν is put forward as a definition of true reality. While possibly no more than tentative, it is in the context meant to secure the ὄντως εἶναι for σώματα as well as for (the Platonic) ἄσώματα; see 248c ff. For some other passages in Platonic dialogues and for the roles assigned to "acting" and "suffering" in Aristotle's science see my book, Aristotle's System of the Physical World (Ithaca, N. Y., 1961) 353 ff. Epicurus evidently found this definition (ἄθος) useful for σώματα. He need not have been influenced by the passage quoted from the *Sophistes*; for the definition once put forward is likely to have been bandied about a good deal in philosophical arguments.