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THE OHIO STATE UNIVERSITY, PH.D., 1978

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EPISTEMOLOGY AND THE HISTORY OF MANKIND IN LUCRETIUS’ DE RERUM NATURA 5 and 6

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By
Arnold S. Cohen, A.B., M.A.

* * * * *

The Ohio State University
1978

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INTRODUCTION

*De Rerum Natura*, written by Titus Lucretius Carus in the first century B.C., holds a unique position in the history of Latin literature and Roman philosophy. It is both the earliest extant hexameter poem in Latin as well as the first and fullest explanation of Epicureanism in Latin. Its scope and wisdom are universal and touch upon the physical, ethical, moral, and historical composition of the universe. It can offer insights to all men because of its vast range of subjects.

Although those portions of *De Rerum Natura* that are concerned with the relationship of man and his milieu are the major aspects of concern in the present study, they are certainly not to be thought of as being in any way divorced from the rest of the poem. In fact, the poem cannot be comprehended at all without a serious regard for the work as an entity.

In a work that attempts to elucidate the basic system of Epicurean philosophy, it is not surprising that the author would attempt to apply a consistent epistemology. Throughout the entire poem Lucretius endeavors to employ a coherent system for acquiring knowledge. Lucretius' epistemology is based closely upon Epicurean physics; thus, he relies upon the senses, unless there is no way that the senses alone can suffice, such as in his explanation of atoms and void, concepts that he can explain only by analogy to that which can be apprehended by the senses.

Lucretius has no specific discussion of his methodology in *De Rerum Natura*, but he does state that only *naturae species ratiocine*
can dispel the darkness and shadows of the mind. What Lucretius means by this phrase has never been satisfactorily demonstrated, despite some scholarly discussion of the problem. Even when it has been dealt with, few scholars have attempted to show that Lucretius employed this epistemology with consistency throughout the work. Chapter One of this study defines Lucretius' epistemology and traces its use in the sections of the poem that deal with physics and history.

Because the history of mankind presents a subject to which it is difficult to apply his scientific method, it becomes one of the best tests of the validity of Lucretian epistemology. The sections of Book 5 that deal with the history of mankind have long been the subject of much controversy. Especially vexing has been the progress/regress question that many scholars have attempted to resolve. Chapter Two will show that Lucretius transfers his epistemology to his discussion of the ways primitive man perceives and uses the perceptible data of his milieu to change his environment. One can deal more easily with the scholarly problems of Book 5 by reading it with a careful regard for Lucretius' epistemology, for it becomes obvious that it is not technological change per se that defines progress, movement toward ataraxia. On the other hand, the cause of ethical and psychological quagmires is not new technology, but rather the methodology employed to produce such changes. Read with this insight, the summun cacumen of the final line of Book 5 takes on, at best, an ambivalent quality.

If, however, there is any hesitation remaining about Lucretius' emphasis on the need for correct epistemology, a study of the prologue and plague of Book 6 will banish it. Book 6 is the least studied book
of De Rerum Natura, perhaps because of its prosaic discussions of meteorological and terrestrial phenomena. Book 6 has, however, a natural companion to Book 5, and Chapter Three of this study shows that it continues and elaborates many of the themes of the previous book. In addition, the plague at Athens is a striking and violent conclusion to a work that has as one of its goals the dissipation of the fear of death. Chapter Three also points out that the plague again restates, albeit metaphorically, the necessity of adherence to Epicurean epistemology.

This study attempts to solve some of the problems associated with Books 5 and 6 by showing that the key to understanding them lies in the realization that Lucretius' use of Epicurean epistemology is pervasive. A review of the past studies shows, however, that many scholars have disregarded epistemology in treating man's history in Books 5 and 6 of De Rerum Natura.

Most of the critical works on Lucretius' view of man's history have dealt with the aforementioned progress/regress question; that is, whether or not Lucretius feels that man is making progress by the technology he develops or is regressing from a primeval Golden Age. This controversy began in the nineteenth century with the publication by J. M. Guyau of La Morale d'Épicure et ses Rapports avec les Doctrines Contemporaines (Paris, 1878) which argued that Lucretius' description of history in Book 5 is a denial of the ancient theory of a fall from a Golden Age. This study was, however, contradicted early in the twentieth century by L. Robin, who argued that Lucretius preferred the innocent life of the primitive.
Since the appearance of these two studies, scholars have continued to reinterpret the evidence in Book 5 that led to these opposing viewpoints. Although few have been so certain that Lucretius was writing a description of man's progress as Tenney Frank, most studies have found some evidence for progress, although they also discuss mitigating features of Lucretius' account. Chief among the adherents of this mixed assessment are Lovejoy and Boas, M. Taylor, A. Keller, and J.P. Borle. Some critics have felt that Lucretius' history is basically pessimistic in outlook. The most incisive article that has adopted this point of view is by William Green.

Scholarship about Book 6 has been quite sparse. While most of it concerns the finale of the book, the plague at Athens, it has often centered on the problem of whether or not Book 6 or De Rerum Natura is finished. A scholar who has worked on this question is E. Bignone who discusses the possibility that Lucretius intended to write a conclusion in which he discusses the abodes of the gods. Although this study contains interesting points, it is highly speculative. More recently scholars such as R. Minadeo and D. Bright have assumed that Book 6 is the final book of De Rerum Natura and have attempted to analyze how this book fits with the structure of the entire poem. The article by Bright is especially important, for it focuses on several interesting aspects of the plague, chiefly the way in which Lucretius attempts to produce a generalized account of man against disease by de-emphasizing the historical features of the plague. Articles by Cormager and Elder have made much of the idea that the plague is a spiritual and emotional plague as well as a physical malaise. Cormager's method has been to compare the
description of the plague given by Lucretius to that of his source Thucydides and to note the changes that Lucretius has made from the earlier author.

While I am deeply indebted to the work that these and other scholars have done, none of those who have worked on Book 5 has attempted to consider the significant events of mankind's history with regard for the underlying epistemological doctrine that all knowledge must spring from naturae species. In addition, none of the studies of Book 6 has shown that by its destruction of men's senses the plague has deprived them of their basis for contact with naturae species. These will be my goals: to consider mankind's history in light of Epicurean epistemology, to go beyond the question of whether or not there is progress, and to show why some changes in man's condition represent progress and others do not. In discussing the plague at Athens I will demonstrate that the plague alienates man from naturae species; that is, from the underlying ground of Epicurean epistemology.

2. Tenney Frank, Life and Literature in the Roman Republic (Berkeley, 1930).


CHAPTER I

LUcretius' EPISTEMOLOGY: NATURAE SPECIES RATIOQUE

The purpose of this chapter is to investigate the epistemology used by Lucretius in De Rerum Natura and to show how this epistemology is pervasive; that is, consistently applied to both the physical system of the universe and the realm of human actions in Book 5. Of particular concern is how Lucretius has come to his theories about earlier men through his use of vestigia, traces of the past that continued to exist in his contemporary world.

Lucretius announces his epistemological system in four identical passages, the first of which occurs at 1.146-1.148:

Hunc igitur terrorem animi tenebrasque necesset
non radii solis neque lucida tela diei
discutiant, sed naturae species ratioque.

It is necessary that neither the rays of the sun nor the shining darts of daylight dispel this terror of the mind and the dark recesses, but rather the perception of nature and reason.

There has already been some scholarly discussion of this passage, especially the meaning of naturae species ratioque. Both Diskin Clay and Cyril Bailey feel that species and ratio are inseparable concepts, although Clay is forced to admit that "... in De Rerum Natura reason and the visible are seen as standing widely apart." My own view is that there are substantial reasons to understand the genitive naturae as governing species alone and to realize that ratio, while it should stand closely joined to naturae species, is a separate entity.
When the reader arrives at the first of the four passages concerning naturae species ratiocine (1.148) he does so without a clear definition of either species or ratio. There are two possible explanations why Lucretius does not define these terms: either he will do so later in the work, or he assumes that the reader comprehends them from current usage. Lucretius never gives a formal definition of either of the terms in De Rerum Natura, although he is very careful to define, for example, *homoeomeria* (1.830), a philosophic term that was not in common usage. It is possible that Lucretius defines *homoeomeria* because it is a Greek word without a specific Latin equivalent; however, he does not give detailed explanations of the terms *harmonia* (3.100) or *preestera* (6.424), terms also borrowed from the Greek, as Lucretius himself points out. It is more likely that Lucretius takes great care to explain *homoeomeria* because it involves a difficult philosophic concept that was not familiar to his contemporary Romans. Lucretius, then, must not discern any such difficulty in using species and ratio, for there is no similar attempt to define them in De Rerum Natura.

Although *species* is an important term in Epicurean and Lucretian epistemology, Lucretius uses the word in its common sense. *Species* is a word that had been used often in Roman literature before Lucretius. It is found frequently in Plautus, where it usually means one's personal appearance. In the *Mostellaria*, for example, Scapha (ancilla) says that she prefers to be praised than to be criticized accurately or to have some men make fun of her *species* (1,3,23): *tamen laudari* *multo malo / quam vero culpari aut mean speciem alios inridere*. This
is the same meaning that is used in the Miles Gloriosus when Pyrogopolynices declares *meam laudat speciem* (4,2,11) or when Acroteleutium states *atque eius meam extemplo speciem spernat* (4,6,20) as well as when Theopropides berates a slave in the Mostellaria: *puere, praeter speciem stultus es* (4,2,53). This meaning of *species* remained into the first century B.C., for Cicero talks about . . . *aliquem humana specie et figura qui tantum immanentest bestias vicerit.* (Rosc. Am. 22,63) Species, however, by this time acquired other meanings as well, for in De Divinatione (1,20) it must mean a statue, and in De Re Publica it takes on the general meaning of appearance: *qua re prima sit haec forma et species et origo tyranni . . .* (2,29,51). This is the same sense that Cicero imparts to the word in the Tusculan Disputations (5,13,9), once again joining it with *forma*.

If we keep in mind the Epicurean theory of vision, in which all objects throw off thin films of atoms that strike the eye and form an impression on it, it will not be surprising that in Lucretius the term *species* includes both the common meaning of "appearance" as well as that of "perception". At 2.489 – 2.490, when commenting on the way in which the re-arrangement of atoms affects appearance, Lucretius says

```plaintext
... quam quisque det ordo
formai speciem totius corporis eius

what appearance each arrangement
of atoms gives to the form of the whole body . . .
```

The arrangement of the atoms gives a particular appearance to each body, and it is this appearance which is perceived by the observer by means of films emitted by the body. This sense of *species* is especially evident at 6.994; at that point Lucretius tells us that
species is seen to flow (fluere) through glass and metal, allowing us to see an object. Similar uses of species can be found at many other places in De Rerum Natura (2.665, 1025; 4.100, 135, 141, 602; 5.94, 582, 1294).

Another sense that Lucretius applies to species is that of attentive seeing or looking at an object. At 4.139 ff. Lucretius imparts this meaning when he discusses how we see simulacra. Here he states

... speciem quo vertimus, omnes
res ibi eam contra feriant forma atque colore.
(4.241 - 4.242)

wherever we turn our attention, all things strike against it with form and color

Eam in line 242 is the object of contra, and its antecedant is speciem (attention); thus, species takes on the meaning of an attentive application of the sense of sight. Further evidence that this is the meaning is contained in vertimus, which shows that the observer is actually directing the species.

In discussing the difficulty of seeing extremely small particles Lucretius states

sed quae corpora decedant in tempore quoque
invida praecclusit speciem natura videndi
(1.320 - 1.321)

The grudging nature of seeing has shut off from our attention what particles fall from bodies at any particular instant.5

Here, species means attention, for as hard as one tries to perceive these small corpora, it is impossible to see them. At 3.213 - 3.214, when discussing the lightness of the atoms of the mind, he says that you can discern nothing extracted from the body in terms of sight or
weight at the time of death. *Species* coupled with *cernas* means the perception of the body or, even more, the examination of the body by the attentive application of the sense of sight. This is affirmed by its proximity to *pondus*, which means the process of weighing the body by using the tactile sense. Thus the perception of a body, after its death, even with close scrutiny, remains unchanged. This meaning of *species* is the most common in *De Rerum Natura* (2.364, 421, 1037; 4.52, 707; 5.706 - 707, 724)

The meaning of *ratio* is more complex, especially as it relates to *species*. Bailey's discerns five meanings for *ratio*: (1) reasoning, thinking, understanding; (2) system, philosophy; (3) account, theory; (4) "workings" of nature; and (5) the vague sense of way or means. Although Bailey's note seems to be well taken, his own translation blurs the distinctions that he so carefully sets up.

Bailey's explanation of Lucretius' use of *ratio* is not wrong, but it is incomplete in that it does not concern itself in any way with the application of *ratio* to *species*. Although it is impossible to trace each of the uses of *ratio* before and during the first half of the first century B.C., its uses in philosophy all seem to be rooted in two underlying meanings: (1) the process of reasoning and (2) any explanation. Of course, it is also used in a non-technical sense that is identical with Bailey's fifth category.

In Epicurean epistemology sensation is the basis for understanding. According to Rist, the ideal situation is one in which "statements do not contradict the self-evident truth of sense - data." There are, however, objects that are so remote that propositions about them
cannot be validated by sensation. For these the method of testing validity is to be sure that there is no contradictory sensory evidence. Some things cannot be seen or perceived in any way at all (i.e. void). Statements about these can be made by inferences, inferences that are grounded in the senses. Occasionally, as with meteorological phenomena, a variety of explanations may appear to be consistent with sensory data. In these cases, no judgement should be made about the comparative validity of the explanations, and they should all be considered true.

Lucretius reproduces the first part of Epicurean epistemology outlined above at 4.469 - 4.521, where he states that ratio comes from the senses and that it is better to be at fault through lack of ratio than to ignore sensory data. But, relying upon sensory data alone is possible only in an ideal situation and Lucretius is obviously aware that ratio must be joined with species to allow statements to be made about those objects that are too distant to examine closely or those that are totally imperceptible to any of the senses.

Lucretius joins the two concepts of ratio and species over and over again. Let us see how Lucretius, although he does not always actually employ these two words in his text, keeps the concepts constantly in the reader's mind in his discussions.

Three times in Book 1 (1.197, 1.823, 1.912) Lucretius uses the simile of the letters in a word compared to the atoms in a body. The first simile is to show that atoms are common to many substances just as the same letters are common to many words; the second depicts how a shift in the arrangement of the first beginnings can produce changes equivalent to those brought about by the re-arrangement of letters in
a word; the third simile is a restatement of the second. Each of these is closely connected with the verb *videre*. The first two similes both contain a form of the verb; the third follows closely upon one (1.907). Lucretius wants the reader to observe carefully the *elementa* (letters) of the word and to note how a re-organization or addition of *elementa* can completely change the meaning of the word. To emphasize the point directly before the third simile Lucretius demonstrates to the reader how this process works:

iamne vides igitur, paulo quod diximus ante, permagni referre eadem primordia saepe cum quibus et quali positura contineantur et quos inter se dent motus accipiantque, atque eadem paulo inter se mutata creare ignis et lignum? quo pacto verba quoque ipsa inter se paulo inter se mutatis sunt elementis, cum ligna atque ignis distincta voce notemus. (1.907 – 1.914)

Now, therefore, do you see what we said a little before that it is a condition of great importance with what others these same first-beginnings are held together and in what position, and what movements they give to each other and receive from each other, and that the same first-beginnings, a little changed, create fire and wooden beams? In the same way, too, we use the words themselves, when their letters are altered a little, to indicate wooden beams and fire with a distinct sound.

The juxtaposition of *ignis* and *lignum*, whose letters are so similar, is a verbal method of showing the relationship of fire and wood. Lucretius, then, by the application of *ratio*, which here means analogy, can show that the re-arrangement of atoms can similarly change wood to fire. Thus, Lucretius is asking the reader to see the *elementa* of the words, which, in this instance, constitute the *species*, and to see the effect of the shift of these *elementa*. He is also requiring
that the reader "see" the analogous process at work in the realm of the atoms.

This application of ratio to species is employed several times by Lucretius: nonne vides, he asks, how blood and gore spurt up from a wound, or how timbers leap up when pressed down in water. If you do, then it is possible to draw an analogy with fire which also appears to leap up. When you see the species of the flames leaping up, it is necessary to realize by the application of ratio that they are also being compelled upwards by some force, although their weights are fighting to draw them downwards again.

Ratio must also be used when Lucretius proves that the mind is composed of small, light, rotund atoms, a statement which cannot be directly attested by the use of species. The reader is asked to observe the quick-flowing properties of water, which is composed of small, easily moving particles (quippe volubilibus parvisque creatae figuris [3.190]) and to compare them with the properties of honey, which is not made of such light or fine or round particles (non tam levibus exstat/corporibus neque tam subtilis atque rutundis [3.194 - 3.195]). Again the reader is asked to watch how a breeze scatters poppy seed, but, on the other hand, is not able to move corn ears or stones. From these two visible examples the reader is asked to draw a general conclusion by the application of ratio: the lighter an object is, the more mobile it is; and conversely, the heavier it is, the more stationary it is. We are then asked to apply this general concept to the composition of the mind, and once again, by using ratio to find that it is composed of small, light and rotund particles, because it is by far the most nimble substance.
The concept of *ratio* is quite complicated in the above passage. First of all, it means inductive reasoning based on sense data, requiring the reader to come to a general principle from sensory evidence of specific examples. It also means the application of a general principle to a specific case, here to the mind.

The induction of a general principle is the *ratio* that Lucretius uses to prove that *simulacra* are given off by bodies. Lucretius gives five examples of the process in which various bodies give off parts of themselves. We see that wood gives off smoke, and fires, heat (4.56); grasshoppers shed their skins; newborn calves their afterbirth (*membranas*); and snakes, their skins. These five cases are both examples of the process and the proof of it. Lucretius employs inductive reasoning to come to the general conclusion that since these five examples occur, films must be emitted from the topmost body of all things. Since, however, we can see the *membranas* of grasshoppers, calves and snakes, but we cannot actually see *simulacra* flying about, we are implicitly asked to apply analogy, to help us jump from the perceptible to the imperceptible.

The *naturae species* constitutes, then, the empirical data from which, through a process of induction, generalizations about the universe are drawn. To come to the conclusion that fire falls downward Lucretius begins with the physical observation of *species*: comets fall to earth, stars fall to earth, rays of the sun fall to earth and scatter their warmth there, and thunderbolts fly to earth. Each of these is an example of fire that falls downward and leads to the general conclusion that fire falls downward.
Thus far we have discussed two important applications of ratio to species: (1) analogy, which allow us to understand the imperceptible or distant in nature by appeal to observational phenomena which are similar in nature, and (2) induction, which draws generalizations about nature from what is perceived by the senses.

To account for changes in color, Lucretius begins with an assumption that he has made previously that atoms are colorless and that change in color is due to a change in the position of these atoms. He then applies this theory to visible objects that change color. The reader is first asked to observe how seas stirred up by great winds can change color from black to white. He then refutes several possibilities: that the sea is composed of atoms that are all of one color; that the sea is composed of atoms that are all of different colors. His conclusion is that what is needed to effect the change in color is some external force in order to rearrange the atoms, which, in this case is provided by the winds. A further application of this principle is related to the plumage of doves (which at times is red with garnet and at other times mingles blue emeralds with green) and the tail of the peacock (which changes hue depending on its position in relation to light). In these latter two cases the change of color is also accounted for by the imposition of an external corporeal force: light. Here the ratio that Lucretius is using is essentially deductive, the application of his theory of color change to individual cases, but these individual cases can also lead to the affirmation of a new general principle that "light is the necessary condition for the existence of color."
The best methodology for the Epicureans in proving a principle is to have sense-data clearly point out the principle with the smallest interposition of ratio possible. It is with this in mind that Lucretius recounts what may have been an experiment to show that first beginnings are without color. It entails the plucking apart of brightly colored fabric to see that the color disappears until it is completely destroyed. (2.831). To demonstrate that some substances are composed of atoms that are more hooked together than they are in others, Lucretius presents some other simple tests of the perceptible world:

in quo iam genere in primis adamantina saxa
prima acie constant ictus contemnere sueta
et validi silices ac duri robora ferri
aeraque quae clauntria restantia vociferantur
illa quidem debent e levibus atque rutundis
esse magis, fluvido quae corpore liquida constant;
namque papaveris haustus itemst facilis quod aquarum;
 nec retinentur enim inter se glomeramina quaeque
et perculsus item proclive volubilis exstat.
omnia postremo quae puncto tempore cernis
diffugere, ut fumum nebulas flammasque nescissest,
si minus omnia sunt e levibus atque rutundis,
at non esse tamem perplexis indupedita.
(2.447 - 2.457)

In which sort, now, first of all, there are adamantine stones, accustomed to defy blows as well as strong flints and the strength of hard iron and brass rings which scream out while opposing the bolts. Those things which are liquids with flowing body ought to be made from lighter and rounder particles; for a handful of poppy-seed is as easily moved as a drink of water; (for the round bodies are not held back by each other) when they are struck they roll downhill. Finally, all those things that you see scatter at an instant, like smoke, clouds and flame, if they are not made from round and light particles, are, by necessity, not hindered by entangled ones.

In these examples there is demonstrable proof of the statement that there are different atomic unions that produce different reactions
in the various substances. Therefore, while the meaning of species is not at all difficult to comprehend, the application of ratio to it is quite complex. First of all, species can be any perceptible evidence in the world, but ratio may make a variety of uses of it. It is (1) analogy, through which the unseen can be made lucid by its similarity to the seen, or (2) inductive reasoning by which general principles can be obtained from several examples in the species that are accessible to the sense, or (3) species may serve as specific examples with which to prove by deduction a general assumption of the Epicureans.

Now that we have delved into the meanings of species and ratio and their relationship to one another, we turn from the scientific portion of De Rerum Natura to the second half of Book 5, which deals with the realm of human action. Here we will try to discover what species Lucretius uses and how he applies ratio to it. Lucretius himself admits there are some problems in dealing with history and does not claim to use species, but rather vestigia:

propter quid sit prius actum respicere aetas nostra nequit, nisi qua ratio vestigia monstrat.
(5.1446 - 5.1447)

Besides our age is not able to look back at what was done at an earlier time, unless somehow (qua) reasoning points out traces. Lucretius says that he is unable to look back upon what was done in earlier ages (respicer nequit) unless ratio somehow shows traces. The implication is that there is some type of evidence to which ratio may be applied in order to find out what happened in earlier ages.
Let us look at the section on human history (5.925ff.) closely. The immediate source for Lucretius' treatment is Epicurus' Letter to Herodotus (75a):

Men were taught or forced by instinct to do many things of many kinds, but reason later elaborated on what had begun by instinct and introduced new inventions.

Lucretius begins by dealing with only the first part of this statement: how primitive man coped instinctively with his milieu. This is also the same subject matter that is treated by Diodorus Siculus (1,8.11-12,22). Diodorus says that the life of primitive man was disorderly and savage (1.8.11), that he lived on the uncultivated herbs and the fruits of trees and went naked, knowing nothing of houses and fire.

While Lucretius employs the same basic outline as Diodorus Siculus, his treatment is quite different. The difference is that Lucretius infuses his work with a plethora of details that are not contained in the writings of Diodorus. Lucretius gives us a vignette of primitive man replete with his motivations and emotions, even though Lucretius could not have been there, nor, by his own admission, could he have relied upon earlier accounts or upon archaeological data.

One place, of course, to find vestigia of the past would be in contemporary society. This would be especially true if one could find enough similarity between the present and the past so that reasoning by analogy could be applied to these vestigia.

Lucretius actually takes pains to point out the similarities of life in the primitive world and contemporary culture (5.988ff). He points to the dangers that exist in each age, and his conclusion is quite clear: there are no essential qualitative or quantitative
differences. Further, the needs of primitive and modern men are exactly the same: hunger, thirst, a dwelling place, warmth, sex, security. In order to cope with these needs Lucretius shows that primitive man developed a variety of new inventions.

It is due to these new inventions that the human race begins to soften and human relationships begin to replace the singular fears of primitive man. The one relationship that Lucretius specifically names is amicitias, an extremely important concept; it is one that would have been pregnant with numerous associations for an Epicurean like Lucretius as well as for a man of politics during the first century B.C. like Memmius, the individual to whom Lucretius has dedicated De Rerum Natura. That these associations were not missed by Lucretius is apparent from his employment in this passage of such other politically important terms as foedus and pars.

From this discussion of the origin of human associations Lucretius turns to another problem that had been dealt with by Epicurus: the origin of language.

To demonstrate that language is natural for man, Lucretius takes recourse in observational evidence, but since he could not have experienced the process of linguistic development, the observational evidence upon which he relies is not contemporary with the period in which language arises, but exists in vestigia that can be observed in his own world.

Lucretius begins with the premise that language is the special talent of mankind, and that it is developed because each living being feels that he is capable of using his own powers. Lucretius comes to
this assumption from the following vestigia: children, who cannot yet speak, gesture; calves that have not yet developed horns practice butting; and panthers and lion cubs fight by clawing and biting even though their teeth and nails have scarcely appeared. The second part of Lucretius' discussion concerns the refutation of a name-giver, a Stoic idea. He produces five arguments against the idea that names exist due to the thesis. The last of these arguments is based on the a priori assumption that there is a form of communication between all animals, an assumption for which he goes on to give examples. The vocal habits of cattle, Molossian hounds, horses and dogs are delineated by Lucretius. Then, because he obviously assumes that man is part of the same category of beings as the other animals, he is able to argue from analogy that man would be no less likely than they to be able to make diverse sounds for diverse feelings. Since, however, language is the special talent which nature has granted to men, mankind is able to produce sounds with greater variety and facility. If one accepts the basic assumptions of Lucretius that man is similar to other terrestrial animals and that communication among these animals exists, it is a simple step to accept the premise that man communicates verbally. Additionally, if one assumes that animals achieve communication without divine intervention, as Lucretius does, it is also difficult to deny that man developed language without the assistance of a name-giver.

Lucretius next discusses the uses of fire by primitive man. Clearly, his explanation is based upon how he saw it being used in his own day for cooking and warmth. In addition, the methods by which Lucretius
claims that man first received fire (by lightning and friction) were also phenomena observable by Lucretius and are certainly the vestigia that he used.

Lucretius turns at this point from the topic of the increased comfort caused by the use of fire to two subjects which are quite anxiety producing for man: political history (5.1105 - 5.1160) and religion (5.1161 - 5.1240). These two areas of man's history will be more fully treated in Chapter 2. Here, it is sufficient to note that again Lucretius is able to rely upon vestigia. To make historical generalizations from the political chaos of the first century B.C. in Rome would be consistent with Lucretius' methodology in other sections of Book 5 (language and fire). The rise of religion, however, is a more difficult area of history for Lucretius. How individuals come to believe in the gods may not have been possible for him to observe, but certainly the assignation of the control of natural phenomena to the gods was common practice among those who adhered to traditional Roman religious beliefs.

Lucretius passes from religion to his final discussion of man's history. He does not, however, return to an exegesis of political and social developments per se, but in the close of the book he concentrates on a catalogue of significant technological discoveries. It is likely that Giussani is correct when he asserts that the purpose of these sections is to show that these discoveries and inventions were made without divine intervention or assistance.

The origin and history of each of these advances would be difficult for Lucretius to discover. There was no species to which he
could apply ratio, and thus, as he tells us, he is forced to rely upon vestigia. The vestigia for Lucretius cannot be accounts in other authors, for he admits that these are inaccessible; thus the vestigia are probably aspects of contemporary artes such as metal working that he could observe (5.1241 - 5.1280). He could have seen how metals were heated to high temperatures in order to be melted and then cast in molds to produce useful shapes. It is this process that Lucretius tries to recreate in nature - for nature, as Epicurus taught, is the impetus for invention.

First, Lucretius needs to find a natural source of high heat. The source of heat that is provided by Lucretius is an immense forest fire, for which he even goes on to give probable causes, either lightning from heaven or men's use of fire for warfare or clearing fields. Each of these explanations is possible and non-refutable, and each could have been observed by Lucretius. They are, as well, consistent with his non-teleological viewpoint that the forest fire would not have been kindled with any particular purpose.

Next, Lucretius takes pains to indicate how men developed the technique of casting metals. This process apparently originated because primitive men saw how the metals melted by the forest fire assumed the same shape as the hollows in the earth in which they cooled. When the streams of metals solidified, men, attracted by their gleam, picked them up and realized that metals could be liquified and molded into various shapes.

The relationship of ratio and observable evidence in this passage is again complicated. In fact, there are two separate
relationships that can be differentiated. First of all, Lucretius applies _ratio_ to contemporary metallurgy. In doing this he uncovers general conditions that are always necessary for metal working: intense heat and a type of mold. Then, he tries to find out by _ratio_ how these first came to be under the guidance of _natura_.

Lucretius continues his account by describing the relative merits of various metals. Bronze and iron, perhaps because of their extensive use, are treated in a separate paragraph. Their associations with both the peacetime activity of agriculture and with warfare are brought to light, and this leads Lucretius to a more detailed discussion of warfare in the next paragraph. After his reflection on the application of metallurgy to warfare and warfare in general, there is a brief discussion of some of the other uses of metals.

It is now important to regard three topics that follow the account of warfare (5.1350ff.). In each of these Lucretius demonstrates that nature is the stimulus for inventions. The first invention upon which he discourses is weaving. The short paragraph is included because of the close association of weaving with the discovery of how to use iron, since iron is used to cut and smooth the wooden parts of the looms that Lucretius can observe in his own day. His discussion of the history of weaving is based upon observation of _vestigia_ in modern technology. Two aspects of these _vestigia_ strike him, and he elaborates on them. First, in his day women do the weaving, and thus, they are responsible for the production of clothing. In _De Rerum Natura_ all other major activities related to the satisfaction of men's needs are ascribed to men. This was observationally true for Lucretius, for he
could have observed his fellow Roman citizens and slaves as well working in the fields or on ships unaccompanied by women. In his own account the skills of building, metallurgy, agriculture and warfare are uniquely male pursuits, and therefore, ratio applied to these individual activities should lead one to the corollary that men are also responsible for weaving. Ratio, here, would be the induction that men are responsible for all major economic activities and then the application of this principle to weaving. The problem is that ratio and observational evidence are in obvious conflict. The resolution of this problem is quite clever. Lucretius says that weaving was originally a male occupation, but that it passed to women because men turned to harder work.

The other aspect of weaving that must have fascinated Lucretius was the technology of the loom itself, for he names each of its parts (insilia, radii, scaphi). He has obviously been able to examine one closely and has observed in its precision and complexity the need to build looms with iron tools. It is likely that his close examination led to his account of its invention.

Next in Lucretius' account the reader is told that nature is the example for planting and grafting. In these cases Lucretius would have had no difficulty in finding examples of natural propagation of plants in the fields and meadows around Rome. That man imitated nature would be made abundantly clear by observation of the agricultural techniques of Roman farmers and share-croppers. There are, then, the vestigia in current use that could lead Lucretius to postulate that the earliest farmers acted in the same way as contemporary ones. Chapter Two will take up the development of agriculture in more detail.
The third invention ascribed to nature's stimulus is the art of music and verse. Both of these must have constantly been within the poet's reach. He could easily have observed the various instruments used as well as have heard how they imitated sounds in nature. It is not surprising that he would posit the stimulus for music in the sound of the wind whistling through the reeds, since the tibiae, which employed reeds for the production of sound, were among the most popular Roman wind instruments. ¹⁹

The early musicians, of course, observed the effects of the breezes whistling through the reeds and heard the mellifluous songs of birds, and then, by generalizing the conditions that were needed to produce music, applied analogy to nature and reproduced by *ars* the same sounds. To emphasize the necessity of *ratio* even here in the case of a non-technological invention, Lucretius paraphrases the Letter to Herodotus (75a) and says that reason brings each thing to light (5.1388 - 5.1389).

The pastoral associations of the invention of music and song impel Lucretius to describe their effects upon men, who once they are freed from the necessities of survival enjoy these pleasures (5.1392 - 5.1397). Lucretius mentions some further developments in the sophistication of rhythm, but the rest of the paragraph (5.1412 - 5.1435) is concerned with moral reflections.

This moral passage is important for it emphasizes the similarities between past and present. Lucretius sees that human nature is fundamentally the same in all ages, with the same emotions and desires. The only difference that he notes, and this is purely an ethical judgement, is that modern man is more culpable (5.1425) because he attempts to
obtain for himself luxuries that are unnecessary. Although he does not explicitly state it, implicit in this passage is a justification for drawing conclusions about primitive man from contemporary vestigia.

This paragraph continues with an explanation of men's desire for the useless, and the results of this desire. These wants arise because men have not yet learned what the limits of possession are and how true pleasure grows (5.1432). This lack of knowledge has drawn life into the sea (for trading purposes) has stirred up the great tides of war from the depths.

Lucretius now brings Book 5 to a close. He points out the necessary and natural knowledge that heaven teaches man about the return of the seasons. Then, he returns to catalogue further developments in history: walled cities, divided and separated fields, sailing, auxiliaries and allies, poetry and letters. At this point Lucretius is no longer dealing in origins. The developments are presented without any elaboration as examples of the artes in the modern world. Lucretius continues his list of artes in the final paragraph: sailing (again), agriculture, road building, songs, painting, and sculpture. He says that men have seen each of these artes come clear in their hearts, and that men have come to an extreme point in terms of these arts.

From our analysis of Book 5, it can be seen that Lucretius has been consistent in his application of Epicurean ratio. Whenever possible he has relied upon species, but when this was not possible, he applied his ratio to vestigia of the past that he found in his own age. His application of ratio included the inductive process as well as dedication and analogy.
ENDNOTES

1. 1.146-1.148, 2.59-2.61, 3.91-3.93, 6.39-6.41.


11. For Epicurean color theory see Rist, Epicurus, 63. Also see Bruce Aune, Knowledge, Mind, and Nature (New York, 1967) 8-9.


13. For the relationship of Diodorus' account to those of Epicurus and Lucretius, see Bailey's edition, vol. 3, 1473.
14. For the political significance of amicitia, see Lily Ross Taylor, *Party Politics in the Age of Caesar* (Berkeley, 1949) 7-9. This is the only extant instance of this noun with a 5th declension termination in the Latin language. It is, however, impossible to know if Lucretius had any special nuance in mind.


20. 5.1392-5.1397 repeat very closely 2.29-2.33 with the replacement of saepe itaque for cum tamen in the first line of the passage and pingebant for conspergunt in the last.

21. The last two lines of this paragraph are problematic. Bailey, following Giussani, takes altum as high plane. Surely, Lucretius cannot see the turbulence and danger caused by greed as a high plane. It is preferable to follow Monro's translation, and there is no reason to take altum metaphorically, as Merrill does. Lucretius' knowledge of and disdain for the sea are obvious in many passages in *De Rerum Natura*. In addition, altum serves as a good means to emphasize aestus in the following line.

22. There is some controversy of the meaning of the last line of Book 5. Many critics and translators, such as Bailey and Latham, wish to render summum cacumen as the "highest pinnacle" of the arts; but surely among the many skills which Lucretius notes there are enough with negative associations that he could never mean to imply such a positive connotation. The word cacumen, according to the TLL, most
often means the top point, but always in reference to some physical object such as a tree, blade of grass or mountain. No other early Latin writer uses the word in any other sense except Lucretius himself who in a clause similar to the one in question says *donec alescendi summum tetigere cacumen* (2.1130). In that phrase *alescendi summum cacumen* means "the extreme limit of growing." The implication here, then, is not that this litany of artes implies a high level of civilization, but rather that they have reached the limit of growth.

One further comment needs to be made. In each of the artes that Lucretius has discussed in detail in Book 5 (metallurgy, agriculture, music) there are two stages of development. Initially man's application of ratio to species produces a positive result, but in the second stage man modifies his discoveries by using ratio alone. Thus, for example, the initially positive associations of metallurgy deteriorate into frenzied warfare, and the rustic charm of music is transformed into sophisticated rhythmic exercises.
One of the major controversies which confronts students of Book 5 of *De Rerum Natura* is whether or not Lucretius has written a history that progresses from a primitive to a sophisticated society. This question is now one hundred years old, having had its beginnings in the criticism of J.M. Guyau, whose view was that this history was definitely an account of man's progress. According to Guyau, Lucretius' view was significantly different from his ancient predecessors, who posited a primeval Golden Age, and who saw man's history as a regression from this primitive happiness.¹

It was another French scholar, Robin, who presented one of the first careful analyses of *De Rerum Natura* that was diametrically opposed to the view of Guyau, pointing out the preference that Lucretius had for the primitive, natural life.²

There have been numerous studies since that time that have abetted the arguments of both sides of the problem, and these discussions have continued into the present decade.³ Thus, it is with some trepidation that I enter the fray.

I begin with an admonition: one should not read man's history in the Fifth Book believing that it was Lucretius' primary aim to prove that there was either progress or regress. What is most important to Lucretius is that changes in the conditions of mankind have taken place without
the help of gods, demi-gods, or heroes. Of equal importance to him is to show that these changes must take place by man's proper application of ratio to naturae species; for it is only by this process that natura is able to be comprehended, and it is only through knowledge of natura that man can effect real change, for natura is the paradigm of true knowledge. This is critical for Lucretius, for true knowledge can only be obtained through the employment of the correct epistemology.

In addition, it is also important in dealing with the progress/regress question to decide upon a clear and Epicurean definition of progress. It is generally accepted that the goal of the Epicurean sect and of Lucretius, as the primary transmitter of the philosophy to the Romans, was that of freeing men's minds from the cares and anxieties of the world; that is, to enable men to achieve ataraxia. The physics and the ethics of the Epicurean system both are constituted with this goal in mind. It is logical, then, that the only real progress that one might make would be in the development of new ways to achieve a more peaceful existence. For the Epicurean the only measure of progress is the ethical yardstick. Political and technological change do not represent progress without a concomitant increase in happiness; that is, without increasing the possibility of attaining ataraxia.

Although many critics have pointed out the concurrent trends in Book 5 of increasing technological proficiency and political sophistication joined to growing violence and anxiety, it is Margaret Taylor's analysis of where and how this trend begins in the Lucretian account that is the most accurate. From 5.925 where man first appears until 5.1104 (the end of the section on fire) man seems to make steady progress. From the section beginning with 5.1105, however, there is a shift in tone and
outlook; political and technological changes are often coupled with ethical admonishments by Lucretius. Although Ms. Taylor points out the place in the text where there is a change in tone, she does not show that this alteration is at least partially due to a change in the methodology by which man learns to cope with his environment. There is an abandonment of correct Epicurean epistemology and the use of human ratio without the proper regard for species. At this point it is necessary to look at the text of Lucretius with care.

In Lucretius' comparison of primitive and modern men (5.988-5.1012), he tells the reader that for all of the good things which existed for primitive men, their lives were still filled with care - the anxiety of waiting to be driven from their homes by wild animals or possible death by starvation. Certainly, this is not conducive to ataraxia. In addition, the main body of the comparison is concerned with the similarities between primitive and modern men (5.988 - 5.1010), the implication of which is that there is no significant increase in happiness for the moderns. The anxieties for later men are different from those for the primitives, and often they are even worse. Modern men are no closer than primitive men to reaching ataraxia.

After comparing primitives and moderns, the rest of the book is given over to a series of categories which represent the areas in which man has effected changes in his lifestyle.

There are two sources of knowledge for these changes. On the one hand, there is natura, the direct apperception of which is the truest way to gain knowledge according to the epistemology of the Epicureans. The other source of knowledge in the anthropology is
man's reason alone. In terms of the previous chapter, one method of change is the application of ratio to naturae species; the other is simply the use of ratio alone. Lucretius points out that in man's history there are instances when man has relied upon both. There is, however, definitely a difference in the effect. When man uses the correct Epicurean epistemology, the resulting knowledge is generally useful, durable and helpful in reducing anxiety; when man relies upon ratio alone, as we shall see, the result is often violent and, if not short-lived, at least volatile.

The original impetus for the development of primitive men for Lucretius, as for Epicurus, stems from nature. At first, nature provides simple foods on her own (5.938) and caves for housing and woodland trysts, but man still remains subject to many dangers.

At 5.1010 Lucretius begins to describe the advent of civilization. In answer to 5.953 - 5.955 where he presents primitive men living in caves and clothed with rough skins, Lucretius states that men now prepared shelters, skins and fires for their own use. Here man is not simply interacting with his environmental conditions as he finds them, but as Epicurus put it

... reason later elaborated on what had begun by instinct and introduced new inventions.

(Ad Hdt. 75a)

The reason that primitive man uses encompasses all of the technical definitions that we have attributed to ratio in the first chapter. Thus, from seeing how caves provide shelter from the elements, early man may have made generalized assumptions about how to provide protection for himself. Secondly, he may have used analogy by seeing
how nature provides shelter and then by attempting to produce analogous dwellings for himself. Finally, he may have taken the general assumptions that he formulated from his observation of the way in which caves provide shelter and have applied these general conditions to the construction of the individual dwellings that he was preparing for himself. This is the case for other new developments as well.

Let us turn to two changes that have been taught by nature: the acquisition of language and fire. The discussion of language in De Rerum Natura is clearly based upon a passage in the Letter to Herodotus. Epicurus delineates two stages in the development of language. The first is a natural process in which men make varying sounds according to their experiences and their environment. The second state is when men assign names to objects by general assent among themselves. Lucretius details very carefully the natural process, but he actually avoids explaining the process of consent. At 5.1028 near the inception of his discussion of language acquisition Lucretius states, at varios linguae sonitus natura subegit. It is nature that forces man to issue forth the various sounds that he makes, and in 5.1029, Lucretius states that utilitas or adaptation of these sounds formed the names of things. Here we have an excellent basis for knowledge: ratio applied to naturae species. To reinforce this point Lucretius even calls this process of adaptation ratio (5.1030). The natural aspects of man’s language acquisition are further fortified by the comparison of it to a variety of activities of animals (5.1031 - 5.1038). Speech is a power given to man to use by nature, just as horns are given to bulls and claws and teeth are given to panthers and lions. That man should
refine this power is totally consistent with what has already been said about the proper basis of knowledge for an Epicurean.

One further point should be made. The tone of the passage that deals with language is consistently constructive. As Richard Minadeo had demonstrated thoroughly in his careful analysis of Lucretian vocabulary, there are very few destructive words in this passage. Lucretius includes in this passage such words as *natura*, 1028; *expressit*, 1029; *nata*, 1034; *created*, 1038; all of which Minadeo has catalogued as creative. It is obvious that for Lucretius the acquisition of speech is a positive and progressive process.

A passage in which Minadeo finds more balance between creation and destruction is that in which man receives fire from nature and is instructed how to use it. This balance arises, perhaps, from Lucretius' comprehension that fire, unbridled and in its natural state is a violent, often harmful force; but harnessed by men's *ratio*, it is an aid to man nearly without equal.

Once again, as in the case of language, nature is the impetus for man's *ratio*. Lightning or the natural friction of tree limbs rubbing together may have brought fire to mankind (5.1091 - 5.1101), and the sun taught men the use of fire:

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inde cibum coquere ac flammae mollire vapore
sol docuit, quoniam mitescere multa videbant
verberibus radiorum atque aestu victa per agros.
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(5.1102 - 5.1104)

Next the sun taught men to cook food and to soften it by the warmth of the blazing fire, since they saw many things throughout the fields grow soft, subdued by lashes and heat of its rays.
Although he sees the danger of fire in its untamed state, Lucretius expresses no reservations about the positive effects that the acquisition of fire might bring to men. As long as nature teaches or gives the impetus for an "advance" in learning, the "advance" is progress towards more happiness, towards ataraxia.

We would, then, expect that when a new development in man's history occurs without this process that progress might be inhibited or even reversed. We should expect that when man applies his ratio without grounding it in naturae species that, even if some superficial benefit initially occurs, there would be a general increase in anxiety and turmoil, and consequently, a retreat from ataraxia. If we examine Lucretius' passage on political development we can see that this is so. Just as Lucretius found it important to emphasize natura at the beginning of the passage on language, so he feels that it is significant to mention the impetus for political systems at the very inception of this section (hinc ingenio qui praebabant et corde vigebant. 5.1105 . . . 5.1107). It is not nature at all, but clever men, who have shown the rest how to change earlier lifestyles.

At first there is a general advancement in the stability of man's existence, but this advance is not long-lived. The period of the kings, which is one of orderly development, is not discussed for long before Lucretius launches into an attack on the turmoil which property and greed bring to men. This ethical and moral vituperation is unlike anything which can be found in the passages on language and fire. Of course, Epicureans theoretically despised politics, in any case, and it is not surprising to find Lucretius expressing this
aversion. What is more interesting is the reason Lucretius gives for the political tumult that he is describing. The text is very explicit at this point:

quandoquidem sapiunt alieno ex ore petuntque res ex auditis potius quam sensibus ipsis
(5.1133 - 5.1134)

because they learn from the lips of others and they seek things from hearsay rather than from the senses themselves.

Alieno ex ore refers the reader to the opening lines of this section in which those men outstanding in cleverness have taught other men about political systems. Thus, it is not only that man has chosen the wrong goal (involvement in political processes) that causes him problems, it is that he has not acquired knowledge directly from nature. What he has learned cannot be true knowledge, because that can only be learned from natura. To emphasize this point Lucretius begins his next section on the violence which follows kingship with ergo. This word coming at the opening line of this paragraph tells us that what follows is the result of the false basis of knowledge that man has about his political systems.

This false basis produces false goals, and man is diverted from ataraxia towards objects that are more immediately pleasurable. Furthermore, in pursuing these false goals, men become violently competitive, overthrowing the kings and regressing to a disorderly state (5.1136) completely the opposite of the calm and peace needed to attain ataraxia.

In the next section of the text Lucretius moves on to consider the origins of religion (5.1161ff). This section is not an incidental digression, as Bailey implies in his commentary. In fact, it is the
core of the historical account, for it is the formalization of Lucretius' thought about the relationship of the gods and mankind. First, Lucretius states the importance of religion and depicts its universality in a series of verbal pictures; then, he produces two reasons for early men to believe in the gods. Both of these involve species. The first reason for the belief in the gods is the direct perception of the simulacra of the gods, \(^{10}\) which come to men both awake and asleep. From these simulacra men obtain information about the physical appearance of the gods. The second cause of the belief in the gods is that men are incapable of discerning the causes of natural phenomena in the world (either the regular natural phenomena such as the recurrence of day and night or irregular ones such as the sporadic occurrence of thunder and lightning). Thus, because of the inexplicable nature of these aspects of the universe, men assume that they are controlled by the gods. The basis for knowledge which men use in the second case to infer the existence of the gods is, of course, false (\textit{perfugium} [5.1186]) because it is grounded in no observable evidence. The fact that the heavenly phenomena exist does not prove anything about the gods at all. Furthermore, a rational explanation of these phenomena is possible, as Lucretius has shown in the beginning of Book 5 (for regular occurrences) and will show in Book 6 (for irregular phenomena such as thunder, lightning, and earthquakes). \(^{11}\)

Lucretius next moves on to a discussion of the discovery of several artes. Artes, in \textit{De Rerum Natura}, are mere skills that do nothing or little to change man's essential condition. Artes, as we shall see, are conceived by men with little regard for \textit{naturae} species,
and therefore, they do not seem to have the positive and enduring qualities that characterize those changes in man's condition that have the proper epistemological underpinnings.

Aside from the skill of governing which Lucretius obviously disparages, we might see what other thing he considers artes. In the final section of Book 5 Lucretius lists many of the developments of man and then makes a summary statement:

Navigia atque agri culturas moenia leges arna vias vestis (et) cetera de genere horum, praemia, delicias quoque vitae funditus omnis, carmina picturas, et daedala signa polita, usus et impigrae simul experientia mentis paulatim docuit pedemptim progredientis, sic unumquicquid paulatim protrahit aetas in medium ratioque in luminis erigit oras, namque alid ex alio clarescere corde videbant, artibus ad summum donec venere cacumen. (5.1448 - 5.1457)

Navigation, agriculture, walls, laws, arms, roads, dress and other things of this kind, all of the prerogatives and charms of life, poems and pictures, and statues, wrought and polished; all these need and the repeated attempts of an industrious mind taught little by little, step by step as time went by. Thus time gradually brings forth each thing into the presence of all and reasoning raises it up into the coasts of light. For they saw in their heart one thing grow clear from another until they came to the highest pinnacle of the arts.

According to the last two lines of this passage man has reached the highest point (cacumen) in regard to skills. What are the skills which Lucretius mentions and what does he feel about them?

The first skill is navigia, sailing. Throughout De Rerum Natura there is an expressed hostility toward sailing. In an extended comparison of atoms scattered about in the universe to the parts of a ship scattered on the beach Lucretius states that this is a warning
to men to shun the treachery, power, and deceit of the sea (2.555 - 2.558. The sea possesses a witchery or an attraction by which it lures men to destruction. This is a point which Lucretius makes both at 2.559 and again at 5.1004. At 5.1006 the basis for man's knowledge of sailing is revealed; Lucretius calls it improba navigii ratio. Sailing, then, is not learned from natura, but by means of ratio, which is nowhere in the text connected with natura when Lucretius is discussing sailing. Furthermore, sailing is presented in Book 5 as one of the chief dangers that historical man confronts in the comparison of early men to contemporary men, for despite all the dangers that primitive individuals suffer, they are never crushed en masse by the perilous expanses of the seas (5.1000 - 1.1001).

The second of the artes is agri cultura. This is not so easily classified as completely negative, for, as Lucretius says, it has its basis in the example of nature:

\[
\text{At specimen sationis et insitionis origo}
\]
\[
\text{ipsa fuit rerum primum natura creatrix}
\]
\[
(5.1361 - 5.1362)
\]

But the model for sowing and the origin of grafting were first nature herself, the creatrix.

It is nature that man follows in planting and grafting, for the earliest farmers, like the earliest metallurgists, are initially presented as fine Epicureans, observing the species in their milieu (berries and nuts falling to the ground and producing new shoots) and applying ratio to it. Ratio in this case would mean the inductive process of watching individual seeds producing individual plants and generalizing that all seeds produce plants. Then, the earliest farmers,
by a process of analogy, would try to reproduce nature by means of their own skills. These skills, however, are only a substitution for the pristine, bountiful munificence of a "mother earth" who no longer provides for her offspring sus sponte. William S. Anderson has shown with great clarity how Lucretius gradually changes earth from a symbol of fecund nature into an adversary against whom man must struggle. This metamorphosis has been completed by Book 5. Take, for example, the passage beginning at 5.195. After dismissing most of the earth as unfit for tillage, Lucretius turns to the remaining portion. Even this nature would cover with thorns, unless human strength opposes her (5.206 - 5.207). This passage is a stronger restatement of what Lucretius has already pointed out at 2.1150ff., the oft-quoted passage about the aged plowman who sighs that incassum magnos cecidisse labores (2.1163).

Even when Lucretius superficially appears to present agriculture in a positive light, his language is actually quite negative:

inque dies magis in montem succedere silvas cogebant infraque locum concedere cultis, prata lacus rivos segetes vinetaque laeta collibus et campis ut haberent, atque olearum caerulea distinguens inter plaga currere posset per tumulos et convallis camposque profusa; ut nunc esse vides vario distincta lepore omnia, quae pomis intersita d ulci bus ornant arbustisque tenent felicibus obsita circum. (5.1370 - 5.1378)

More and more, day in and day out, they kept on forcing the wood to fall back upon the mountain and to yield the land below to cultivation so that they might have meadows, ponds, streams, cornfields and fertile vineyards in place of hills and plains, and the dark bands of olive trees might be able to run between marking them off, having spread through the hills, the isolated valleys and the plains,
so that now you see all the lands, marked
by a different elegance which they ornament
by planting them with fecund fruit trees
and by encircling them with fertile shrubs.

Let us look at the vocabulary of this passage. Men force (cogebant)
nature to fall back (succedere) and to give way (concedere) to man's
own vision of the way nature should be. Nature loses her innate vital-
ity in this passage, and she is at least partially represented as a
tumulus, a sepulchral mound. She becomes a product of ars which men
adorn with elegance (5.1377).

Therefore, while agriculture may represent a temporary stopgap
measure for the increasing infertility of a worn-out earth, by the end
of Book 5 the techniques originally taught by natura are being used to
subvert natura herself. Because of the hostility between man and nature,
agriculture can accomplish little permanent benefit, and its usefulness
is not worth the labor and cura that men must expend.

The third of the so-called advances that Lucretiuscatalogues in
the last paragraph of Book 5 is walls (moenia). This is an un-
expected inclusion in the list. The word moenia in De Rerum Natura is
nearly always used in the expression moenia mundi, and, as such, should
in no way be included in a list of ars. There are, however, a few
exceptions, all of which occur in Book 5 and Book 6. In Book 6 there
are two passages in which this term refers to city or house walls
and at 5.232 Lucretius states that animals, in contrast to mankind,
have no need for weapons or for high walls with which they might protect
their property. Men, on the other hand, live fenced in by strong
towers (5.1449).
From this brief survey of the use of the word moenia it is obvious that the use of the word in this list at the conclusion of Book 5 is by synecdoche intended to stand for urban life in general. Cities are anathema to Lucretius from the first mentions of the beginnings of urban life. At 5.1108 kings found cities, and affairs instantly go awry. It is the cities where religious cults have taken hold strongly (5.1132), and it is the cities that most revere the Magna Mater (2.624). In addition, throughout Book 5 and in Book 6, as well, cities are centers of destruction. Lucretius repeatedly discusses the fall of cities in Book 6 and gives numerous reasons for these disasters. Finally, the close of Book 6, the plague at Athens, is one of the gloomiest appraisals of urban life in literature; it is the overcrowded conditions of the city that cause Athens to be filled with death and dying (6.1090 - 6.1286). Whatever good others might see in the process of urbanization, Lucretius is determined to emphasize the anxiety and stress caused by it. The cares of the city are a retrograde step from the attainment of ataraxia. Because of this, urban life can in no way represent progress in De Rerum Natura.

Conversely, it is the countryside that is a source for great pleasure for Lucretius. The most happy milieu for mankind is the pastoral:

```
cum tamen inter se prostrati in gramine molli
 propter aquae rivum sub ramis arboris altae
 non magnis opibus iucunde corpora curant,
 praesertim cum tempestas arridet at anni
 tempora consperrunt viridantis floribus herbas,
 (2.29 - 2.33 and 5.1392 - 5.1396)
```
Nevertheless, men lying among each other in the soft grass near the bank of a stream under the branches of a lofty tree with no great difficulty pleasantly take care of their bodies, especially when the weather is favorable and the seasons of the year sprinkle the green meadows with flowers.

Lying in the flower-strewn grass under a tall tree in the warmth of the sunshine is surely one way to be in close harmony with natura. These passages are, perhaps, the most precise evocation of ataraxia that Lucretius offers in the work.

Laws, too, are seen as anxiety-producing. Laws are a direct result of the turmoil which is the reaction of men to the establishment of cities and political systems (5.1144 - 5.1147). As a solution, however, they are not entirely satisfactory, for men establish the laws themselves, and, worst of all, the laws cause an increase in fear. Men may be free of the turmoil of political violence, but they become anxious about the possibility of punishment. Lucretius is quite straightforward on this point: *inde metus maculat poenarum praemia vitae* (5.1151).

In any legal system laws include a form of punishment for those who do not conform to them. Whether or not these punishments are even carried out, the minds of men, especially fools, are affected by them (3.1014 - 3.1023). How much more difficult it is to obtain peace of mind when confronted ceaselessly by these fears, real or imagined. Lucretius feels that the mere expectation of punishment wears out the spirit with anxiety (3.823 - 3.825), an idea which he seems to have borrowed directly from Epicurus.
Warfare is the next of the \textit{artes} which Lucretius takes up in his list. He has already established that war and peace are two of the \textit{eventa} of history (1.1456). Eventa are, by nature, impermanent. \textit{Bellum} is carried on both in the realm of atoms and men in \textit{De Rerum Natura}. Although Anderson makes a convincing point about the creative properties that attach to \textit{bellum} when it is associated with atoms, he readily concedes that it has strong negative connotations in regard to mankind.\textsuperscript{18} Lucretius builds up the horrors of warfare from the beginning of Book 1, where \textit{Mavors}, representing the turmoil of the political situation of the first century B.C., acts as a deterrent to the creative forces of the poet himself.\textsuperscript{19} It is obvious that \textit{bellum} forces both man and \textit{natura} to deny creative impulses, and it is for this reason that Lucretius begs Venus to assist the poet in accomplishing a cessation of the activities of \textit{Mavors}:

\begin{quote}
\textit{. . . suavis ex ore loquellas}
\textit{funde petens placidam Romanis, inculce, pacem}
\textit{nam neque nos agere hoc patriae tempore iniquo}
\textit{possumus aequo animo . . . .}
\end{quote}

Pour from your mouth sweet speech, seeking quiet peace for the Romans, renowned goddess, for we are not able to carry out our work with a calm mind, while the times are so unsettled for our country.

In the second proem Lucretius urges man to put a distance between himself and warfare.\textsuperscript{20} To watch it from afar is not dangerous; it is actually pleasant (2.5 - 2.6), but only because the observer perceives himself free from its evils. In Book 5, however, warfare is pictured in a completely unfavorable manner. Metallurgy, which itself has no negative associations and was originally learned from \textit{natura} is employed to create more and more cruel weapons. With the universal
use of iron, the methods of warfare become equalized; that is hostile parties have equal access to the latest technology of warfare (5.1295). Men, thus, try to surpass each other by new means of fighting. The outcome of these attempts is to increase terror in mankind (5.1305 - 5.1307).

It is, surely, one of Lucretius' main points in the paragraph that follows 5.1307 that warfare is not only fear-provoking to one's enemy; it begets universal panic. If one looks carefully at the language of this paragraph this point becomes even more evident. Lions slaughter nullo discrimine (5.1314), shaking their fearful manes undique (5.1319), and the boars slaughter their own allies (5.1326).

It matters not that Lucretius seems to admit that this scene is imaginary. What is important is the utterly dreadful vision of warfare that he presents. How, then, do we consider warfare as an advancement or contribution toward reaching an advanced state of civilization?

Viae, although first introduced in this list in Book 5, can be passed over briefly. Roads are an accoutrement of urban life, connecting one settlement or town to another. As such they are crucial in spreading abroad the notions of cities and city life. In addition, they are often built by the military and act as pathways for armies and destruction. Because Lucretius has just mentioned weapons in his list of artes, it is not surprising that Lucretius would think next of the routes which spread the anxiety of warfare.

About a more personal aspect of civilization, dress, Lucretius has been more definitive in his point of view than he was about roads. Although dress itself is not necessarily considered bad, dress only
compensates for the fact that civilized man is no longer as hardy as primitive man once was:

ignis enim curavit ut alsia corpora frigus
non ita iam possent caeli sub tegmine ferre.
(5.1015 - 5.1016)

For fire brought it about that their bodies could not bear the frosty cold under the vault of heaven.

It is, on the other hand, man's concern with splendiferous clothing and coverlets as symbols of wealth and power which affronts Lucretius and on which he dwells in De Rerum Natura. It does nothing more for one to lie on embroidered purple coverlets than on a plebeian garment if you are tossing with sickness and fever (2.35 - 2.36), and the costly sea-green dress of the lover still drinks up the sweat of love (4.1127 - 4.1128). In fact clothing makes no difference at all, except to create a desire for unnecessary finery. Furthermore, the use of clothing by men is an obvious indication that animals better fit into the realm of natura than man does. After all, animals do not need clothing, since natura provides for them:

nec varias quaerunt vestis pro tempore caeli,
denique non armis opus est, non moenibus altis,
qui sua tutentur, quando omnibus omnia large
tellus ipse parit naturaque daedala rerum.
(5.231 - 5.234)

They do not seek a variety of garments appropriate for each season of the year, and they need neither arms nor high walls to protect their own possessions, when the earth herself produces everything abundantly for all of them, and nature, the artificer of the universe.

In addition, the desire for beautiful clothing increases man's worries and cares (5.1430 - 5.1431). On balance, this increase in anxiety
far offsets any good which clothing might do to ameliorate man's physical discomfiture.

Although the use of clothing may be learned by the application or ratio to species, for animals seem to be wearing clothing, and some even change skins (snakes, for example, shed theirs [3.614]); there is, however, nothing in nature which would teach man to prefer one type of clothing to another. It is this concern with style, material, and elegance which results from having man's ratio divorced from naturae species.

It is clear that it is not possible to understand the close of Book 5 in a positive and creative way as Minadeo and Barra do. It is true that the finale of the book is the statement that men have reached the highest pinnacle in regard to the artes, but might this not mean that man has strayed farthest from the comprehension of natura? Minadeo has made much of the point that Book 5 flows naturally into Book 6. His reasoning is that the high point of civilization, discussed in general terms at the end of Book 5, is specifically represented by Athens in the sixth proem. Let us turn briefly to the Athens of De Rerum Natura.

For the ancients Athens was the city in which the artes reached their zenith. For Lucretius, however, it is also the city where men's hearts were filled with hostile complaints. The language of the sixth proem is that of psychological malaise which is expanded in much detail in the description of the plague at the finale of the Book:

\[
\text{nec minus esse domi cuiquam tamen anxia corda atque animi ingratis vitam vexare [sine ulla] pausa atque ingestis cogi saevire querellis (6.14 - 6.16)}
\]
However, not anyone at home had a heart less
turbulent, and although the mind was unwilling,
it continued to disturb life without any cessation,
and was forced to rage with complaints heaped
upon complaint.

In De Rerum Natura it is not Athens' state of advancement that makes
her important or famous; it is that she is so ethically and morally
debased that Epicurus arose to purge the breasts of men with truthful
words and to set the limits of desire and fear.

There is a telling bit of phraseology in the last paragraph of
Book 5 that concerns not the artes themselves, but the way in which
they come to be known. Lucretius nowhere in this paragraph says that
natura has taught men the artes; rather, he claims that men have
learned these by usus et impigrae simul experientia mentis (5.1452).

To comprehend what Lucretius means we must first understand the terms
usus and naturae experientia.

Usus represents the unnatural needs that man is attempting to
satisfy. This is the meaning that Lucretius usually imparts to
the word throughout the text, and this is what the word means in the
sixth proem which directly follows this paragraph. It is important
to realize that usus is not to be considered identical with utilitas,
as the translation of Bailey might lead the reader to believe:
"Practice and the inventiveness of the eager mind taught them little
by little" is the translation that Bailey supplies for 5.1452.

Compare that with his translation of utilitas expressit nomina rerum:
"use shaped the names of things." The difference is so slight that
it is apparent that Bailey does not realize that utilitas means "that
which is advantageous" or the "recognition of that which is
advantageous." Utilitas serves as a complement to the stimulus of natura, while usus replaces natura as both a goad and a starting point for the artes.

Experientia mentis (5.1452) is identical with ratio that is detached from naturae species, and it is closely joined with usus in the text. Thus, it is not natura at all that has taught men the artes; usus has created a stimulus, and time (5.1454) and ratio have satisfied the need.

The final trappings of civilization with which Lucretius concludes his list are, at best, useless accoutrements, without which man might live happily enough. Carmina are certainly divorced from Epicurean reality. They are subject to taste (2.506), and, in addition, they may even be religious, such as the books of Tyrrhenian prophecies about lightning (6.381). The same criticisms may be leveled at picturae and signa as well. Without getting into the much discussed question of the relationship of poetry to philosophy in De Rerum Natura, it is likely that Lucretius considered his subject matter more significant than its presentation.

From this analysis, then, it is clear that for Lucretius there is an important distinction between the advances taught by nature and the skill which men learn from other men (such as the political arts) or which are due to the stimulus of usus.

While man is applying his ratio to naturae species he is making progress toward ataraxia, but when he turns from this epistemological system, he stumbles farther from his desired happiness. That is why, for Lucretius, it is neither the hostile and predatory milieu and life
of the primitive, nor the urbane, but anxiety-ridden world of his contemporaries that is the highest point of civilization. Nor is it the psychologically diseased Athens of the plague. It is that gentle period characterized by amicitias (5.1019) and concordia (5.1024) when men have learned to cooperate and communicate with one another and to enjoy the simple pleasures of a warm meal in a rustic surrounding that most nearly approaches ataraxia.

What is significant in the closing paragraph of Book 5 is also the statement that man has reached the summum cacumen with respect to the artes, a state dangerously distant from the peaceful bliss of ataraxia.
1. J.M. Guyau, La Morale d'Épicure et ses Rapports avec les Doctrines Contemporaines (Paris, 1898).


5. M. Taylor, "Progress and Primitivism," 191: "But as these first associations devolved into more complex communities, the consequent increase of possession brought the familiar vices in train." Taylor's point is essentially correct, but she does not point out the underlying reason for the increase in vice: the abandonment of correct Epicurean epistemology.

6. This closely follows Epicurus' discussion of language (Ad. Hdt., 75). Epicurus is explicit: it is not by thesis, but by physis that language arises; later, acting in common consent (koinos) there is a deliberate process to avoid ambiguity which involves adapting the sounds to form the names of things. This process is what Lucretius calls utilitas. Carlo Giussani takes the view that Lucretius is paralleling Epicurus. He, too, suggests that utilitas represents the second stage (thesis) of language acquisition. For Giussani's discussion see his edition of De Rerum Natura (Turin, 1923) vol. 1, 283.

Not all scholars agree, however. Thomas Cole understands utilitas as the realization by primitive man that language is expedient. Gregory Vlastos concurs and states: "Lucretius, however, as Epicurus before him, attempts to merge as best he can the 'natural' origin of speech with its political utility." For these opposing views see Thomas Cole, Democritus and the Source of Greek Anthropology, APA Monograph 25 (1967) 61. n. 3; Gregory Vlastos, "On the Pre-History of Diodorus," AJP 67 (1946) 55, n. 20.
7. For an analysis of the vocabulary of this passage see Richard Minadeo, The Lyre of Science: Form and Meaning in Lucretius' De Rerum Natura (Detroit, 1969) Appendix I.

8. Note 7 above.


11. Lucretius' views closely parallel those of Epicurus in the Letter to Herodotus (76):

We should not regard the course and revolutions of the heavenly bodies - their eclipses, rising and settings, and the like - as the operation of some deity who dutifully performs these functions, who decrees them or did decree them, and who simultaneously enjoys absolute blessedness as well as immortality.

Epicurus advises men to discover the cause of natural phenomena by analogy with events that take place in their own experience, exactly the epistemology that Lucretius uses in his discussions of natural phenomena in Book 6. Unfortunately for primitive men, at the time that they were developing their beliefs and rituals, there was no one to warn them of the dangers that religion holds.


14. At 5.340 and 5.1237 cities fall by earthquakes and by flood; at 6.587, by blasts of air issuing forth from the earth and by earthquake; at 6.590 cities are shown sinking into the seas. At 6.596 Lucretius states that men's fears of earthquakes are two-fold in cities because of the possible collapse of upper storeys or the chance that buildings might sink into their foundations.

15. Daniel S. Gillis, "Pastoral Poetry in Lucretius," Latomus 26 (1969) 339-362 discusses this pastoral section with regard to the sources in Epicurus, Theocritus, and Moschus' Bucolica. He also shows how this scene functions to indicate the state which is reached upon the attainment of ataraxia.
16. The only difference in the two passages is that the first two words of the passage at 5.1392 are saepe itaque, not cum tamen.

17. Epicurus, K.D., 34 and 35.


24. For a more detailed analysis, see the following chapter in this dissertation.

25. Nature and man are diametrically opposed to one another. If man learns from nature anywhere in De Rerum Natura, it is not because that is the plan of nature. In fact, Lucretius has taken great pains to point out the non-teleological workings of natura. Man, on the other hand, can set a definite goal and proceed toward it, but this capability often requires him to disregard naturae species and to act in opposition to it. See Book 4, 823-827. For a discussion of Lucretius' non-teleological viewpoint see Bailey's edition of De Rerum Natura, vol. 3, 1280; see also W.H. Owen, "Structural Patterns," I69.

26. An exception to this may occur at 5.1287.

27. At 6.9.


29. Poetry, painting, and statues are all removed from Epicurean reality.
CHAPTER III

THE PLAGUE AT ATHENS: ALIENATION FROM NATURAE SPECIES

The proem of Book 5 is a natural outgrowth of the conclusion of Book 5, and the entire Sixth Book is a perfect companion to Book 5. In the Fifth Book Lucretius showed the regular motions of the heavens and explained man's place in them. To do this he gave a generalized account of human history, concentrating on mankind's response to these regular natural phenomena. In the Sixth Book Lucretius turns to the irregular and unusual natural occurrences in an attempt, once again, to prove the absence of divine causation. The culmination of this book is a picture of man's response to a particularly unusual and horrible event: the plague at Athens. My goal in this chapter will be to show how the plague acts to destroy men's senses, and thus deprive them of their capacity to perceive naturae species.

Recent scholarship on Book 6 has concentrated on the final scenes of the plague, especially on the differences between Lucretius and his source, Thucydides. Elder's analysis shows that Lucretius' changes were intentionally designed to shift the focus away from the purely physical description of the plague's effects to its effects upon the mental and emotional state of men.\(^1\) Henry Steel Commager's expansion of this idea presents a more detailed study of the individual passages in which Lucretius has developed the notion that those who have fear and desire are punished by the plague.\(^2\) Commager's and Elder's views are...
similar in outlook. The fundamental difference between them is that Elder believes that "he (Lucretius) may . . . have intended, deliberately, to end with the plague," whereas Commager thinks that Lucretius' account may not be so intentional, but rather "a half-felt similarity between the victims of the plague at Athens and the sufferers from the psychic plague of fear and desire."^{4}

While the meaning of the plague at Athens has been a subject of recent literary criticism, the question of whether or not the poem is finished or near completion has been long-lived.^{5} Despite the fact that Lucretius never carries out his promise to discuss the abodes of the gods (5.155), a topic which Bignone feels that Lucretius intended to discuss,^{6} most critics accept the poem as nearly finished at the point at which it breaks off.

Bright is among those critics who regard the work as essentially complete. Although his article carefully argues for the transposition of vv.6.1247 - 6.1251 to the end of the poem, it also offers some clever insights into the entire section on the plague, showing how Lucretius "has cleared away the setting, the unnecessary and the optimistic, leaving a tale of timeless, pointed and unrelieved horror."^{7} In addition, he has noted that the plague systematically destroys each of man's senses, and his conclusion "that man left to his own devices will create total chaos"^{8} is essentially correct.

The plague at Athens can be understood on three levels. First, it is obviously an historical account of an actual event, recorded by Thucydides and included by Lucretius as the example, par excellence, of plagues and how they work. Secondly, as Bright has pointed out, it is a generalized account of "Everyman facing Disease."^{9} Finally
it represents the struggle of the Athenians against their own ignorance of naturae species ratioque.

The first of the preceding points needs no explanation, and the second has been carefully worked out by Bright. The third point needs to be clarified. Epicurus had not yet appeared in Athens to provide a system for comprehending natura and thus for avoiding fear and avarice, which are the true plague. On the other hand, it is in fifth-century Athens that the Sophists arose, a group of men who purported to entrust themselves to ratio: however, by Epicurean standards they did not always ground this ratio in naturae species, and often preached moral and ethical relativity. Sophistic ratio could provide no basis for coping with the plague of the spirit and may simply have been another symptom of it.

As we shall see, the concluding passages about the plague are anticipated by the proem of Book 6, in which Athens is first praised as the birthplace of Epicurus and then criticized because men there are filled with anxiety (6.14 - 6.16). Additionally, Epicurus' accomplishment of putting an end to fear and desire (6.25) and of teaching man how to cope with the ills which nature may prepare for him (6.30 - 6.32) foreshadows the finale of the book, for it is the plague, caused by nature, which produces the psychological plague of fear. Indeed, the themes of the plague are hinted at even as early as the proem of Book 5. There, Epicurus is portrayed as the conqueror of cuppedino and timor (5.45 - 5.46). Epicurus' method of dispelling these is to teach men with the proper application of ratio to naturae species.
While it would be surprising to find mention of Epicurus at the end of Book 6, since throughout the work Lucretius has reserved mention of him for the proems, it should be noted that there is no mention of vera ratio, the term which Lucretius uses to refer to the Epicurean system. Vera ratio is totally absent from the horrible finale. Thus, the plague in Athens can be regarded metaphorically as a plague due to the lack of Epicurean thought. The solacia dulcia vitae (5.21, 6.4) of the proems of Books 5 and 6 are nowhere to be found in the unmitigated mania of the plague. In addition, although Epicurus appears in the anxiety-ridden Athens described in the Sixth Proem to set a limit to desire and fear (6.26), there are no limits to be discerned in the avidi contagia morbi (6.1236).

The victims of the plague cannot escape their deaths; there is no escape either for those who avoid the diseased or for those who attend them, for its effects are all-pervasive and all too real. If we consider the plague scenes in connection with the proem of Book 5, we can see that the plague is antithetical to that proem. While Hercules has conquered a multitude of mythological monsters, his accomplishments are worthless. This is so because the beasts, representing only physical danger to mankind, are easy to avoid: quae loca vitandi plerumque est nostra potestas (5.42). The most important danger which people must avoid is living their lives sine puro pectore (5.18), as the victims of the Athenian plague do. Thus, it is Epicurus, who veridis ... purgavit pectora dictis (6.24), who is the true hero, not Hercules. Epicurus has produced the remedy for the dangers that mankind cannot avoid:
at nisi purgaturst pectus, quae proelia nobis
atque pericula tumst ingratis insinuandum?
(5.43 - 5.44)

But, unless the breast is cleansed, what
battles and dangers, then, must we be in-
volved in, even though we be unwilling?

In addition, that Lucretius saw ethical and psychological problems as
linked to physical conditions is apparent in the proem of Book 5, for
desire and fear, qualities which Epicurus is said to have conquered, are
followed closely by a list of other dangers that he has also destroyed.
In this list Lucretius commingles weaknesses that can affect both the
body and spirit: *superbia* (haughtiness), *spurcitia* (filth), *petulantia*
(impudence), *luxus* (debauchery), *desidia* (idleness or weakness).

How does the plague accomplish its destruction? It alienates man
from *naturae species* by destroying, or more specifically, altering,
man's means of perception. In fact, it is not until man begins to lose
his senses that Lucretius introduces the element of fear into the account.
The order in which men lose their senses is not random. First the
sense of sight, the chief mechanism by which *naturae species* can be
perceived, is attacked. The sense of sight is radically altered by
the plague: the eyes are spread over with a red glow that impairs the
ability to see. Additionally, there is a loss of the power to communi-
cate:

\[ \text{sanguine et ulceribus vocis via saepta coibat} \]
\[ \text{atque animi interpres manabant lingua cruore} \]
\[ \text{debilitata malis . . .} \]
(6.1148 - 6.1150)

The pathway of the voice was clogged with
blood and sores; the tongue - the inter-
preter of the mind attacked by disease,
flowed with gore.
Initially, Lucretius' description of the effects of the plague on the eyes is identical to that of Thucydides, but then Lucretius changes the original account. He reports not only the physical symptoms of the mouth and throat, but adds a new nuance, for in his account the tongue is named the animi interpres, the interpreter of the mind. In this way Lucretius shifts the emphasis from the purely physical to the psychological. Whereas in Thucydides' account the corresponding passage is entirely descriptive, it is Lucretius' intention to emphasize that man is losing his power both to perceive naturae species and to communicate intelligibly.

Men, being progressively cut off from the physical world react with psychological horror. The pain flows in cor maestum; the cor, seat of human emotions, becomes diseased (6.1152), the mind falters (6.1156), and anxius angor, along with querellis, becomes a constant companion of the diseased individual.

The language of this passage closely parallels that of the description of the psychological state of the Athenians prior to the advent of Epicurus in the proem of the Sixth Book:

\[\text{nec minus esse domi cuiquam tamen anxlia corda atque animi ingratis vitam vexare (sine ulla) pausa atque infestis cogi saevire querellis (6.14 - 6.16)}\]

And yet not any of them had a heart less worried and it troubled their lives, even though their minds were unwilling, and the heart was forced to rage with hostile complainings.

The citizens of Athens living in technological luxury at the opening of the Sixth Book have precisely the same symptoms as the plague-stricken victims of the finale of the book.
In the description of the plague's victims at the end of Book 6, Lucretius uses language that is pregnant with moral and psychological overtones. As Commager has pointed out,\(^{14}\) *anxius angor* echoes the description of Tityos in Book 3 (3.992 - 3.994). Because Tityos, who represents those living beings that are suffering the pains of Tartarus on earth, is being consumed by desire and greed, it is not difficult to transfer this association to the victims of the plague.

That the vocabulary and mood of the proem and finale of Book 6 are similar has already been pointed out. So, too, the similarity between the language of the finale of Book 6 and the description of Tityos in Book 3 has been demonstrated. In order to see that Lucretius intentionally wants to convey the thought that the victims of the plague are suffering torment similar to those being punished in Tartarus, let us compare the following passages. The first is a metaphorical presentation of the psychological state of the citizens of Athens as a damaged vessel; the second is a description of the punishment of the Danaids, who are an allegorical representation of people who are constantly being consumed by greed:

\[
\begin{align*}
\text{intellegit ibi vitium vas efficere ipsum} \\
\text{omniaque illius vitio corruptier intus} \\
\text{quae collata foris et commoda cumque venirent;} \\
\text{partim quod fluxum pertusumque esse videbat} \\
\text{ut nulla posset ratione explerier umquam} \\
\end{align*}
\]

(6.17 - 6.21)

Therefore, he then realized that it was the vessel itself that produced the disease, and that it spoiled from within everything with this disease— all things that were gathered to it from outside, even the pleasant, agreeable things; partly because he saw that it was leaking and perforated, so that it would never be able to be filled by any method.
Then to feed eternally the unthankful nature of the mind and to fill it with good things and never to sate it, which the seasons of the year do for us when they return and bear their produce and their manifold charms, though we are never filled by the fruits of life—this, I believe, is the story which is recounted of the maidens, who, in the prime of their lives, together pour water into a perforated vessel that cannot be filled by any method.

Especially striking is the similarity of the language of the two passages, particularly the language of the last two lines of each. Pertusum, the perfect passive participle of pertundo, is employed in both to describe the vas, which in the second passage, at least, is a metaphor for the mind that infects whatever it touches. Because the mind is thought in Epicurean psychology to be corporeal, pertusum is an appropriate adjective. In both passages Lucretius states that the leaking vas is not able to be filled by ratio. Ratio, in these passages, does not have only the simple meaning of way or means, but rather encompasses the more technical definitions given in the first study. Thus, the final clause of each passage can be understood to mean that ratio by itself is of no avail in counteracting the effects of the pertusum vas: ratio cannot repair the mind that is being destroyed by avarice and ambition, unless ratio is grounded in the naturae species. Additionally, vitium (6.17) is precisely the same phenomenon described in 3.1003 - 3.1004 — an attempt to gratify the thankless mind.
at all times and never to be able to satisfy it; that is, to be con-
sumed completely by greed. Thus, from this comparison of the proem
of Book 6 to the description of those tormented in Tartarus we can
see that we are being given foreshadowings of the description of the
Epicurean hell with which Lucretius closes the entire work.

Once men have lost their sight and are firmly in the grips of
fear, they turn increasingly to their own ratio, often with conse-
quences opposite to those which they intended. The desire for life-
sustaining water, for instance, causes them to plummet headlong into
wells 6.1174 - 6.1175.

The victims of the plague are treated by frightened medical
practitioners who whisper in hushed tones as they attend to their
patients (mussabat tacito medacina timore [6.1179]). This passage
has no counterpart in Thucydides. It is another Lucretian addition
to Thucydides' account, and it was probably added to anticipate another
addition: the loss of the capacity to hear, a process that is accom-
panied, according to Lucretius, by a mind filled with fear. Here,
the doctors are, in effect, barely audible to their patients, but
hearing, just as sight, is not obliterated completely by the plague;
rather, it is destroyed by a false stimulation produced internally
by the victim of the disease himself: sollicitae porro plenaque
sonoribus aures (6.1185). Men's ears are filled with their own
sounds. They can no longer hear the real world, and they can perceive
only the diseased sounds of their own making.

The impairment of hearing is followed swiftly by the loss of the
sense of touch (6.1190), the ultimate basis for the knowledge of natura
in the physical system which Epicurus postulated.
Bereft of sight, speech, hearing and touch, most men die. This is not surprising; they are scarcely alive if they have so little contact with the reality of natura. For those that do not die there is further horror: they lose the sense of smell. Now truly cut off from naturae species, men can react with the ratio of a mind filled with dread. The loss of smell represents the ultimate loss of human capacity: huc hominis totae vires corporisque fluebat (6.1204).

In the plague Lucretius has shown us those men who have eyes, but cannot see; men who have ears, but cannot hear; men who possess all of their sensory organs, but cannot employ them. It is these men, who can only react with an overwhelming fear of death, that are driven on to more and more outrageous acts.

Once man is deprived of his senses, impelled by fear (6.1212), he hastens his own death by voluntarily destroying his own limbs and genitals, having no basis whatsoever of knowledge of what he is doing. There is a surprising resemblance of the self-castration of the victims of the plague to the self-mutilation of the priests of the Magna Mater; their goal, according to Lucretius, was to terrify the minds of men with fear (2.623). Further, Lucretius tells us that the actions of the priests of the Magna Mater were based upon ratio that was far from true: longe sunt tamen a vera ratione repulsae (2.645). The actions of the victims of the plague are equally far removed from vera ratio; that is the ratio grounded in naturae species.

As the religious madness of the worship of the Magna Mater blights the cities (2.607, 624; 5.1162), so, too, does the psychological malaise of the plague develop in the urbs. While there is a
generalizing tendency on the part of Lucretius that de-emphasizes the historical circumstances of Athens during the Peloponnesian War, it is, on the other hand, important for Lucretius that the plague occurs primarily in an urban context, for this section on the plague continues the poet's hostility toward the urban milieu that I have previously noted.

Bailey has sought to show that the plague initially struck in the countryside. In his Commentary he says about line 6.1140:

... Lucretius seems here to be thinking of the migration of the rural population from the fields (funestos agros) to Athens (urbem), and the vias will then be the roads along which they moved. Both here and in 1259 he apparently supposes the plague to have originated in the countryside. 18

An examination of the opening lines of this section will show that the opposite is true:

Haec ratio quondam morborum et mortifer aestus
finibus in Cecropis funestos reddidit agros
vastavitque vias, exhausit civibus urbem.
(6.1138 - 6.1140)

Although the order in the Latin is the fields filled with the dead, the vacant streets and the empty city, there is no indication from this that the plague originated in the countryside. 19 Lucretius, while he is generally careful about his use of temporal words, here makes no attempt to give a chronological order to these events. The fields are becoming filled with the dead bodies of those who were striken with the disease in the city. Even Thucydides' account (2.48) places the origin of the plague in Attica in the Piraeus, not in the countryside. It is only later in Thucydides' discussion of the plague (2.52) that the people from the countryside stream into the city of Athens.
Furthermore, the migration of the people from countryside to city in Thucydides is due to the incursions of the Spartan troops. This cause is never mentioned in Lucretius at all. If, then, this passage implies a movement at all, it is the movement of dead bodies to the countryside from the city for the purpose of burial. The best translation for this passage would be

This cause of plague and death-bearing anxiety once filled the mournful fields in the land of Cecrops, when it made the streets desolate and emptied the city of its citizens.

Thus, initially the plague is an urban phenomenon.

There is some additional internal evidence to show that Bailey is incorrect. It is not until 6.1252 that Lucretius turns specifically to the effects of the plague upon the inhabitants of the rural areas, opening this section with praeterea iam (moreover now) to show the succession of events. Therefore, his descriptions of the plague prior to line 1252 can be assumed to refer primarily to its effects upon the city-dwellers.

Lucretius spends little time on the plague in the countryside; those who become ill flow into the already afflicted city and fill all of the buildings there, increasing the death and destruction. It is significant that these rustic peasants come to the city only after they have become diseased; that is, presumably only after they have begun to lose contact with naturae species. These sick men are drawn to the city as if by the magnetic force that Lucretius has described in the passages immediately preceding those on the plague (6.998 - 6.1089). Sadly for the rustics, who are blind to the dangers inherent in the city, there is no relief to be found there, only inexorable death.
There is also evidence that shows that Lucretius was writing with the assumptions that traditional Roman burial customs were being used, albeit the setting is Athens, for it is not until the end of the entire account that he states that they broke down:

\[
\text{nec mos ille sepultrae remanabat in urbe quod prius hic populus semper consuerat humari; perturbatus enim totus trepidabat, et unus quisque. suum pro re compostum maestus humabat. (6.1278 - 6.1281)}
\]

The custom of burial did not continue in the city where previously this community always had been accustomed to perform the rites of burial; for the whole community, thrown into confusion wavered, and each wretched man buried the ashes of his kin by himself in place of this.

The plague, however, does not end in death. What begins as the psychological malaise of mankind spreads outward to attack nature herself. Athens becomes Avernian, a foul pollutant of nature (6.1215 - 6.1222). This causes the aforementioned migration of the diseased men from the countryside to the city. The city pollutes the countryside and then attracts those who are too ill to realize the folly of going to the city.

Finally, men forsake even religion (6.1276 - 6.1277). Normally Lucretius would welcome the abandonment of religion and all of its attendant problems and superstitions, but at this point in De Rerum Natura even religion seems preferable to the total ethical and psychological anarchy into which the inhabitants of Athens are falling. Religion, although it is misguided, at least represents an attempt to deal with natura with some degree of order. The people of Athens, however, abandon even this, giving themselves over completely to fear
and desire, even struggling and killing over each others' funeral pyres.

The description of the plague at Athens effectively shows man in a world that he is increasingly unable to understand, a world from which he is more and more alienated, a world in which natura herself is threatened by man's inability to comprehend her.

Why would Lucretius end De Rerum Natura on this note of chaos? Could he have been trying to frighten mankind into accepting the tenets of Epicureanism by this horrible finale? Is it a last desperate appeal of a man who doubts that his rational explanations have accomplished his goals?

Although it is unexpected initially, the description of the plague is actually a fitting conclusion to Books 5 and 6, for it reinforces many of the themes that Lucretius has developed in them. Both books have dealt first with natural phenomena, the regular aspects of nature in Book 5 and the irregular in Book 6. Both books end with the relationship of man to nature. In Book 5 man uses his ratio to harness and control natura with a resultant increase in human disorder and discord because man has not paid enough attention to naturae species. In Book 6 man is forced by his loss of all capacity to comprehend naturae species to deal with an irregular and terrifying aspect of nature with ratio alone, with graphically horrible results.

How does the plague at Athens, described by Lucretius, relate to Book 5 and Book 6 and to De Rerum Natura as a whole? It has already been pointed out that the plague is antithetical to the apparently insignificant monsters that are subdued by Hercules in the proem of Book
5; unlike those monsters the plague is not a purely physical danger, it is also an ethical and psychological one.

There is also another, more interesting connection with the proem of Book 5. In that prologue Lucretius proffers a picture of those who might slip away from Epicureanism when confronted with phenomena that cannot be comprehended with facility and who might, therefore, assign once again unlimited powers to the gods (5.82 - 5.90). Books 5 and 6 seem to be preventive in nature, designed to check those who might stray from doing so.

In Book 5 Lucretius deals with the configurations of the universe and shows how earth, air, fire, and water divided from each other by natural means:

\[
\text{Sed quibus ille modis coniectus matetiae}
\]
\[
\text{fundarit terram et caelaum et pontique profunda,}
\]
\[
\text{solus lunai cursus, ex ordine ponam.}
\]
\[
(5.416 - 5.418)
\]

But I shall explain in order in what ways that mass of matter poured out the earth and the heaven and the depths of the sea and the solitary path of the moon.

He then goes on to discuss living beings and the relationship of these to their ecology. Book 5 concludes with man's history, ostensibly progress, but, in reality, when one looks beyond the surface, a flight from \text{natura} to \text{artes}, a flight from the attainment of \text{ataraxia}.

Book 6 deals with a more subtle and more frightening stratum of the same topics that are in Book 5: those specific aspects of the universe that are so difficult to explain by observation that many men are compelled to return to superstition and \text{religio} for explanations. These are the phenomena that occur simultaneously with the regular
configurations of nature, but more rarely or only intermittently. In a similar manner the plague is co-ordinate with the description of the attainment of the *sumnum cacumen* in Book 5, for it represents a hidden side of the apparent achievement of the Athenians, not overtly mentioned in Book 5: the concomitant psychological destruction of mankind. Book 5, then concludes with men who stray from the knowledge afforded by species; Book 6 ends with men who have absolutely no basis at all for knowledge.

The plague of Book 6 also reinforces the conclusions of Book 5. The very artes by which Lucretius has defined the *sumnum cacumen* are almost nowhere to be found in the scenes of dying and destruction. There are roads, but they are deserted; for in confronting the totally hostile aspects of *natura* to what avail might men turn to the *artes* enumerated in Book 5? Ships, agriculture, laws, statues, poetry and painting are absent in the virtual breakdown of civilization with *natura*.

Ultimately *natura* reigns supreme. In this her most awful form she controls man and can be neither harnassed nor understood by him. Nature is finally shown as an uncontrollable entity when men lack the *vera ratio* of Epicureanism.  De Rerum Natura is not lacking a conclusion, as some critics believe. Lucretius is intentionally demanding that the reader return again to the opening pages of the work and read and digest it again. If the reader has had any doubts that Epicureanism is vitally crucial for the comprehension of *natura*, he must be shocked into accepting its tenets by seeing the havoc of a world without any hope of attaining *ataraxia*. Thus, the reader must turn again to the sweet, procreative vision of Venus in the proem of
Book 1 and know that this is only one, ephemeral facet of natura. It is only the comprehension of the totality of natura, explicitly detailed in the poem that will be the cure for the psychological affliction of mankind.

On the physical level there is no cure for the plague, but once the tenets of Epicurus are understood, the inevitability of death can be easily accepted without fear:

{oerta quidem finis vitae mortalibus adstat
nec devitari letum pote quin obeamus
(3.1078 - 3.1079)}

Indeed a sure end of life awaits mortals, and we are not able to escape death, rather let us go to meet it.
ENDNOTES


2. Henry Steele Commager, "Lucretius' Interpretation of the Plague," HSCP 67 (1957) 105. See also 6.1240.


10. Here we may have an example of the isonomia which so many critics have pointed out in the relationship of the poems of Books 5 and 6 to the conclusion of the last book. In these poems Epicurus conquers fear and desire; in the plague fear and desire wreak havoc and destruction upon mankind. For a discussion of isonomia in Lucretius see K.L. McKay, "Animals in war and isonomia," AJP 85 (1964) 124 - 135. Also see E. Bignone, Storia.


12. That sight is the most important of the senses is obvious from Lucretius' discussion of human faculties in Book 5. There, he devotes 250 lines of the text to describing vision, nearly one hundred verses to explaining hearing and about sixty each to taste and smell.


15. That Lucretius is intent upon destroying man's ability to perceive nature begins to come into clearer focus when one realizes that Thucydides makes no mention of the effects of the plague upon the ears at all.

16. Here, again, the body of the victim of the plague destroys its own basis for contact with naturae species:

\[ \text{corruptus anguinis expletis naribus ibat} \]
\[ (6.1205) \]

The nose is filled with foul blood.

17. See Catullus, 63 for another contemporary description of the worship of the Magna Mater. In Catullus' version the youth, Attis, is impelled to self-castration by furor animi (4.38) that is identified closely with Cybele (92). For further discussion of this passage in Lucretius see Douglas J. Stewart, "The Silence of Magna Mater," HSCP 75 (1970) 75 - 84; see also Paavo Numminen, "Severa Mater," Arctos N.S. 3 (1962) 143 - 166: Numminen believes that the galli serve as examples of men who desert duty (158). See also Pierre Boyancé, "Cybele aux Mégalésies," Latomus 13 (1954) 337 - 342: Boyancé believes that the description of the rites of the Magna Mater in Lucretius is based on an actual festival that took place in Rome.


19. Bright also shows the disease spreading first from city to countryside. See "The Plague," 615.

20. The last mention of natura in De Rerum Natura is at 6.1135: an caelum ultro natura corruptum/deferat . . . . The hostile aspect of nature is announced by Lucretius directly before the actual description of the plague which begins at 6.1138.
CONCLUSION

It can be seen from these studies that there is a clear underlying epistemology which Lucretius defines in De Rerum Natura by the phrase naturae species ratiocine. This phrase consists of two distinct, but closely related elements: naturae species, the appearance of nature and its perception, and ratio, induction, deduction or analogy based upon naturae species. For Lucretius the ultimately perfect epistemology would be the direct apperception of natura without the intervention of ratio, but the poet is obviously aware that there are many instances in nature when, due either to great distance or minute size of that which is to be observed, direct perception is not possible. It is in these cases, one of which is man's history, that Lucretius admits the employment of ratio in his epistemology with the provision that it be intimately joined to naturae species.

While it is not so perplexing to ascertain Lucretius' methodology in those sections of De Rerum Natura that treat of the physical composition of the universe; it is much more difficult to grasp the epistemology in the parts that deal with the position of mankind in the universe. In these passages the poet himself is forced to acknowledge that he cannot rely solely upon naturae species, but must turn instead to vestigia, traces of naturae species that he can discern in his contemporary culture and technology. Lucretius is able to discover much about the origin of various extant artes by this
method. Lucretius also theorizes that primitive men used Epicurean epistemology in discovering some new aspects of technology and culture.

What Lucretius posits for the early history of mankind are two epistemological choices: either the application of ratio to naturae species, which produces true knowledge, or the exercise of ratio alone, which has the opposite effect. Among those primitives, then, there are some who choose to be Epicureans naturally, although many do not. The option that primitive man takes determines whether the result of his choice will bring him closer to ataraxia or drive him further from it. It is those areas (i.e. language and the use of fire) in which man's new knowledge is closely tied to naturae species that bring him nearest to the Epicurean goal of acquiring ataraxia.

That Lucretius realized that man in his most primitive condition could never be able to achieve ataraxia is patent from his analysis of the dangers that attend the primeval denizens of the world. It is also clear that, in Lucretius' view, the sophisticated inhabitant of a technologically advanced age and place is not in any way closer to reaching ataraxia, for the man of the advanced age dwells in an artificial world, removed from natura by his own wanton use of ratio; that is, ratio which is in no way grounded in naturae species. Thus, the summum cacumen which man has reached by the end of Book 5 represents the ultimate distance from attunement to natura, from ataraxia.

Lucretius is so adamant about the ethical and psychological dangers that infest the technologically advanced urban environment that he offers a striking example to the reader of the malignant city: Athens, a city that is being consumed by the plague, devastating
to the body, but even more noxious to the spirit. Given the chaotic political, moral and ethical climate at Rome during Lucretius' lifetime the scenes of the plague at Athens remind the reader that thoughts of Rome lie scarcely hidden beneath the ostensible description of Athens as a city in turmoil.

In many ways the plague at Athens is one of the most important portions of the whole work, for it focuses the attention of the reader upon the mental destruction caused by a disease that strips away all of man's capacity to relate to naturae species by means of his senses. In fact, the plague serves as an admonition to those who might willingly abandon Epicurean epistemology that freedom from fear and greed is possible only by grounding one's ratio in naturae species.

It is surely Lucretius' point that only when man has thoroughly learned the true way to observe his environment, perhaps by careful study of De Rerum Natura, will he realize that ataraxia, the ultimate goal, is so simple to reach: it is merely the pleasure attendant upon simple rusticity, gentle friendship and harmonious rapport with one's fellow man. It does not require technological advance; on the contrary, to attain ataraxia, man must disdain any changes which are not readily taught by natura or which place man in opposition to natura, the fount of man's existence.

Throughout these studies I have tried to demonstrate that Lucretius employs a consistent epistemology in his own writing and that De Rerum Natura is a manifesto of the dangers that attend ignorance of or disregard for the correct methodology of acquiring knowledge.
It has also been my goal to show that there is a close relationship between Book 5 and Book 6. Chapters 2 and 3 show that these books are closely integrated. First, the close relationship between the proems of Book 5 and Book 6 is evident from the stress on the dangers of timor and cupidino and the praise of Epicurus who conquered these perils. Secondly, the weaknesses discussed in the proem of Book 5 (superbia, spurcitia, petulantia, luxus, desidiae) qualities that Lucretius calls the true dangers of mankind, are graphically treated in the conclusion of Book 6. Finally, the city of Athens has been shown to be a specific example of the general discussion of the advance of technology and concomitant decline in ethics that is treated of in the close of Book 5. While it is possible to comprehend the theory of the ethical and psychological difficulties associated with the summum cacumen in Book 5, it is only at the conclusion of Book 6 that the horrifying depiction of the Athenian city in virtual collapse provides visual proof of the dangers of uncontrolled, groundless ratio.

The emphasis that Lucretius has attached to his epistemology by the four-fold repetition of naturae species ratioque is justified by the importance it possesses for Lucretius in observing all aspects of the universe, including the position of man in it. His advice to mankind, careful attention to naturae species must become the means by which man attempts to change his environment, if he desires to make real progress.
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