

Episode Fourteen - Atoms Are Solid And Indestructible, and Constitute the Seeds of All Things.

Post by "Cassius" of April 4, 2020 at 8:46 AM

Welcome to Episode Fourteen of Lucretius Today. This is a podcast dedicated to the poet Lucretius, author of "On The Nature of Things," the only complete presentation of Epicurean philosophy left to us from the ancient world.

I am your host Cassius, and together with my panelists from the EpicureanFriends.com forum, we'll walk you through the six books of Lucretius' poem, and discuss how Epicurean philosophy can apply to you today. Be aware that none of us are professional philosophers, and everyone here is a self-taught Epicurean. We encourage you to study Epicurus for yourself, and we suggest the best place to start is the book, "Epicurus and His Philosophy" by Canadian professor Norman DeWitt. Find out more about the nature and goals of our podcast at Lucretiustoday.com, where you can download a copy of the text that we read from each week.

In previous episodes we have discussed:

- (1) **Venus / Pleasure As Guide of Life:** That Pleasure, using the allegory of Venus, is the driving force of all life; That the way to rid ourselves of pain is to replace pain with pleasure, using the allegory of Venus entertaining Mars, the god of war;
- (2) **The Achievement of Epicurus:** That Epicurus was the great philosophic leader who stood up to supernatural religion, opened the gates to a proper understanding of nature, and thereby showed us how we too can emulate the life of gods;
- (3-4) **So Great Is The Power of Religion To Inspire Evil Deeds!** That it is not Epicurean philosophy, but supernatural religion, which is truly unholy and prompts men to commit evil deeds;
- (5) **On Resisting The Threats of Priests And Poets:** That false priests and philosophers will try to scare you away from Epicurean philosophy with threats of punishment after death, which is why you must understand that those threats cannot be true; That the key to freeing yourself from false religion and false philosophy is found in the study of nature;
- (6-7) **Step One: Nothing Comes From Nothing.** The first major observation which underlies all the rest of Epicurean philosophy is that we observe that **nothing is ever generated from nothing.**

- (8) **Step Two: Nothing Goes To Nothing.** The second major observation is that **nothing is ever destroyed completely to nothing.**
- (9) **The Evidence That Atoms Exist, Even Though They Are Unseen.** The next observation is that we know elemental particles exist, even though we cannot see them just like we know that wind and other things exist by observing their effects.
- (10-11) **The Void And Its Nature.** We also know that the void exists, because things must have space in which to move, as we see they do move.
- (12) **Everything We Experience Is Composed Of A Combination of Matter And Void.** Everything around us that we experience is a natural combination of atoms and void.
- (13) **The Things We Experience Are Properties and Qualities Of Atoms And Void And Cease To Exist When Their Atoms Disperse.** All things we experience around us are either (1) the **properties** (essential conjuncts; essential and unchanging) or **qualities** (events; inessential and changing depending on context) of bodies. All these arise from the nature, movement, and combinations of the atoms, and cease to exist when the atoms which compose the bodies disperse. Therefore it is incorrect to think that ideas or stories such as that of the Trojan war have any permanent existence.

In Episode 14, we move to the argument that **Atoms Are Solid And Indestructible, And Therefore Eternal, and By Means of These Living Things Continue Their Kind.** Once again we continue to discuss how the atoms constitute the "seeds" of all things, and thus how the regularity we see around us occurs without the need for any supernatural forces to guide them.

Here is the text that will be covered in Episode Fourteen:

[Review the prior sections of Book 1 of Daniel Browne by clicking here.](#)

[1743 Daniel Browne Edition \(click link for English and Latin\):](#)

Lastly, bodies are either the first seeds of things, or formed by the uniting of those seeds. The simple seeds of things no force can strain, their solid parts will never be subdued. Though it is difficult, I own, to think that any thing in nature can be found perfectly solid; for heaven's thunder passes through the walls of houses, just as sound or words; iron in the fire grows hot, and burning stones fly into pieces by the raging heat; the stiffness of the gold is loosed by fire, and made to run; the hard and solid brass, subdued by flames, dissolves; the heat and piercing cold passes through silver; both of these we find as in our hand we hold a cup, and at the top pour water hot or cold: so nothing wholly solid seems to be found in nature. But because reason and the fixed state of things oblige me, hear, I beg, while in few verses we evince that there are beings that consist of solid and everlasting matter which we call the seeds, the first principles of things, from whence the whole of things begin to be.

And, first, because we find two sorts of things unlike in nature, in themselves distinct, body and space, 'tis necessary each should be entire, and separate in itself; for where there is a space which we call void, there nothing is of body; so were body is, there nothing is of empty space: and therefore such things are as solids and first seeds, which nothing in them can admit of void.

Besides, because in all created things there is a void, 'tis necessary some solid matter should still include this void; nor can you prove, by any rule of reason, that any thing contains within itself an empty space, unless you will allow what holds it in is perfect solid; and this is nothing else but the close union of the first seeds, which bind and do confine within themselves this void. Matter therefore composed of solid parts eternal is, when all things else must die.

Further, if there was no such thing as we call void, every thing would be solid; then again, unless there were some things solid to fill up the space they hold, all would be empty space. Body from space therefore is in itself distinct; for all is neither full, nor is all void; and therefore there are solid seeds which make a difference between full and space.

These solid seeds by no force from without can be dissolved, nor can they be destroyed by being pierced within, nor made to yield by any other means, as proved before. For nothing can be bruised without a void, or broken or by force be cleft in two, or receive moisture, or the piercing cold, or searching fire which all things else destroys. And the more of void the solid seeds confine, the sooner when they are struck will they dissolve and fall to pieces; therefore, if these first seeds are solid, free from void, they, as I said, must be eternal, and from death secure.

Again, if matter had not been eternal, long before now all beings had returned to nothing, and each being we behold again had been restored from nothing; but, as before I proved, nothing from nothing can be made, and what was once in being can never to nothing be reduced; it follows, those first seeds must be composed of principles immortal, into which at last each being must dissolve, and thence supply an everlasting stock of matter to repair the things decayed. These first seeds therefore are solid and simple, else they could not last entire through ages past and infinite, to repair beings perished and dissolved.

But still, if nature had prefixed no bounds in breaking things to pieces, the parts of matter, broken by every passing age, had been reduced so small that nothing could of them be formed that would in any time become mature; for things we see much sooner are dissolved than are again restored; and therefore what an infinite tract of ages past has broken, and separated and dissolved, in future time can never be repaired; so that certain bounds of breaking and dividing must be set, because we see each being is repaired, and stated times are fixed to ever thing in which it feels the flower of its age.

And yet, though the first seeds of things are solid, all beings that are compounded, such as air and water, earth and fire, may be soft, (however made, or by what power formed) and from them be produced, because there is a void still mixed with things; and, on the contrary, if these

first seeds were soft, what reason can there be assigned whence hardened flints and iron could be formed, for nature would want the proper principles to work upon; and therefore these first seeds must simple solids be, by whose union close and compact all things are bound up firm, and so display their strength and hardy force.

Again, because each being in its kind has certain bounds prefixed to its increase, and to the preservation of its life, and since by nature's laws it is ordained to each how far their powers to act or not extend; since nothing changes, and every thing goes on as it began, each kind of birds, most steady in their course, shew the same colors painted on their wings, the principles of matter whence they spring must be fixed and unchangeable; if the seeds of things could change by any means, it would be unknown what could be formed, what not; by what means every being is limited, and stops short within the bounds it cannot break; nor could the course of time in every age, the nature, motion, diet, and the manners of the old sire impress upon the young.

Munro:

[484] Bodies again are partly first-beginnings of things, partly those which are formed of a union of first beginnings. But those which are first-beginnings of things no force can quench: they are sure to have the better by their solid body. Although it seems difficult to believe that aught can be found among things with a solid body. For the lightning of heaven passes through the walls of houses, as well as noise and voices; iron grows red-hot in the fire and stones burn with fierce heat and burst asunder the hardness of gold is broken up and dissolved by heat; the ice of brass melts vanquished by the flame; warmth and piercing cold ooze through silver, since we have felt both, as we held cups with the hand in due fashion and the water was poured down into them. So universally there is found to be nothing solid in things. But yet because true reason and the nature of things constrains, attend until we make clear in a few verses that there are such things as consist of solid and everlasting body, which we teach are seeds of things and first-beginnings, out of which the whole sum of things which now exists has been produced.

[504] First of all then since there has been found to exist a two-fold and widely dissimilar nature of two things, that is to say of body and of place in which things severally go on, each of the two must exist for and by itself and quite unmixed. For wherever there is empty space which we call void, there body is not; wherever again body maintains itself, there empty void no wise exists. First bodies therefore are solid and without void.

[512] Again since there is void in things begotten, solid matter must exist about this void, and no thing can be proved by true reason to conceal in its body and have within it void, unless you choose to allow that that which holds it in is solid. Again that can be nothing but a union of matter which can keep in the void of things. Matter therefore, which consists of a solid body, may be everlasting, though all things else are dissolved.

[520] Moreover, if there were no empty void, the universe would be solid; unless on the other hand there were certain bodies to fill up whatever places they occupied, the existing universe would be empty and void space. Therefore sure enough body and void are marked off in alternate layers, since the universe is neither of a perfect fulness nor a perfect void. There are therefore certain bodies which can vary void space with full.

[525] These can neither be broken in pieces by the stroke of blows from without nor have their texture undone by aught piercing to their core nor give way before any other kind of assault; as we have proved to you a little before. For without void nothing seems to admit of being crushed in or broken up or split in two by cutting, or of taking in wet or permeating cold or penetrating fire, by which all things are destroyed. And the more anything contains within it of void, the more thoroughly it gives way to the assault of these things. Therefore if first bodies are as I have shown solid and without void, they must be everlasting.

[541] Again unless matter had been eternal, all things before this would have utterly returned to nothing and whatever things we see would have been born anew from nothing. But since I have proved above that nothing can be produced from nothing, and that what is begotten cannot be called to nothing, first-beginnings must be of an imperishable body, into which all things can be dissolved at their last hour, that there may be a supply of matter for the reproduction of things. Therefore first-beginnings are of solid singleness, and in no other way can they have been preserved through ages during infinite time past in order to reproduce things.

[552] Again if nature had set no limit to the breaking of things, by this time the bodies of matter would have been so far reduced by the breaking of past ages that nothing could within a fixed time be conceived out of them and reach its utmost growth of being. For we see that anything is more quickly destroyed than again renewed; and therefore that which the long, the infinite duration of all bygone time had broken up demolished and destroyed, could never be reproduced in all remaining time. But now sure enough a fixed limit to their breaking has been set, since we see each thing renewed, and at the same time definite periods fixed for things each after its kind to reach the flower of their age.

[566] Moreover while the bodies of matter are most solid, it may yet be explained in what way all things which are formed soft, as air water earth fires, are so formed and by what force they severally go on, since once for all there is void mixed up in things. But on the other hand if the first-beginnings of things be soft, it cannot be explained out of what enduring basalt and iron can be produced; for their whole nature will utterly lack a first foundation to begin with. First-beginnings therefore are strong in solid singleness, and by a denser combination of these all things can be closely packed and exhibit enduring strength.

Again if no limit has been set to the breaking of bodies, nevertheless the several bodies which go to things must survive from eternity up to the present time, not yet assailed by any danger. But since they are possessed of a frail nature, it is not consistent with this that they could have

continued through eternity harassed through ages by countless blows.

[578] Again too since a limit of growing and sustaining life has been assigned to things each after its kind, and since by the laws of nature it stands decreed what they can each do and what they cannot do, and since nothing is changed, but all things are so constant that the different birds all in succession exhibit in their body the distinctive marks of their kind, they must sure enough have a body of unchangeable matter also. For if the first-beginnings of things could in any way be vanquished and changed, it would then be uncertain too what could and what could not rise into being, in short on what principle each thing has its powers defined, its deep-set boundary mark; nor could the generations reproduce so often each after its kind the nature habits, way of life and motions of the parents.

Bailey:

[484] Bodies, moreover, are in part the first-beginnings of things, in part those which are created by the union of first-beginnings. Now the true first-beginnings of things, no force can quench; for they by their solid body prevail in the end. Albeit it seems hard to believe that there can be found among things anything of solid body. For the thunderbolt of heaven passes through walled houses, as do shouts and cries; iron grows white hot in the flame, and stones seethe in fierce fire and leap asunder; then too the hardness of gold is relaxed and softened by heat, and the ice of brass yields beneath the flame and melts; warmth and piercing cold ooze through silver, since when we have held cups duly in our hands we have felt both alike, when the dewy moisture of water was poured in from above. So true is it that in things there is seen to be nothing solid. But yet because true reasoning and the nature of things constrain us, give heed, until in a few verses we set forth that there are things which exist with solid and everlasting body, which we show to be the seeds of things and their first-beginnings, out of which the whole sum of things now stands created.

[504] First, since we have found existing a twofold nature of things far differing, the nature of body and of space, in which all things take place, it must needs be that each exists alone by itself and unmixed. For wherever space lies empty, which we call the void, body is not there; moreover, wherever body has its station, there is by no means empty void. Therefore the first bodies are solid and free from void.

[512] Moreover, since there is void in things created, solid matter must needs stand all round, nor can anything by true reasoning be shown to hide void in its body and hold it within, except you grant that what keeps it in is solid. Now it can be nothing but a union of matter, which could keep in the void in things. Matter then, which exists with solid body, can be everlasting, when all else is dissolved.

[520] Next, if there were nothing which was empty and void, the whole would be solid; unless on the other hand there were bodies determined, to fill all the places that they held, the whole

universe would be but empty void space. Body, then, we may be sure, is marked off from void turn and turn about, since there is neither a world utterly full nor yet quite empty. There are therefore bodies determined, such as can mark off void space from what is full.

[525] These cannot be broken up when hit by blows from without, nor again can they be pierced to the heart and undone, nor by any other way can they be assailed and made to totter; all of which I have above shown to you but a little while before. For it is clear that nothing could be crushed in without void, or broken or cleft in twain by cutting, nor admit moisture nor likewise spreading cold or piercing flame, whereby all things are brought to their end. And the more each thing keeps void within it, the more is it assailed to the heart by these things and begins to totter. Therefore, if the first bodies are solid and free from void, as I have shown, they must be everlasting.

[541] Moreover, if matter had not been everlasting, ere this all things had wholly passed away to nothing, and all that we see had been born again from nothing. But since I have shown above that [nothing can be created from nothing](#), nor can what has been begotten be summoned back to nothing, the first-beginnings must needs be of immortal body, into which at their last day all things can be dissolved, that there may be matter enough for renewing things. Therefore the first-beginnings are of solid singleness, nor in any other way can they be preserved through the ages from infinite time now gone and renew things.

[552] Again, if nature had ordained no limit to the breaking of things, by now the bodies of matter would have been so far brought low by the breaking of ages past, that nothing could be conceived out of them within a fixed time, and pass on to the full measure of its life; for we see that anything you will is more easily broken up than put together again. Wherefore what the long limitless age of days, the age of all time that is gone by, had broken ere now, disordering and dissolving, could never be renewed in all time that remains. But as it is, a set limit to breaking has, we may be sure, been appointed, since we see each thing put together again, and at the same time fixed seasons ordained for all things after their kind, in the which they may be able to reach the flower of their life.

[566] There is this too that, though the first-bodies of matter are quite solid, yet we can give account of all the soft things that come to be, air, water, earth, fires, by what means they come to being, and by what force each goes on its way, when once void has been mingled in things. But on the other hand, if the first-beginnings of things were to be soft, it will not be possible to give account whence hard flints and iron can be created; for from the first all nature will lack a first-beginning of foundation. There are then bodies that prevail in their solid singleness, by whose more close-packed union all things can be riveted and reveal their stalwart strength. Moreover, if no limit has been appointed to the breaking of things, still it must needs be that all the bodies of things survive even now from time everlasting, such that they cannot yet have been assailed by any danger. But since they exist endowed with a frail nature, it is not in harmony with this that they have been able to abide for everlasting time harried through all the ages by countless blows.

[578] Once again, since there has been appointed for all things after their kind a limit of growing and of maintaining life, and inasmuch as it stands ordained what all things severally can do by the laws of nature, and what too they cannot, nor is anything so changed, but that all things stand so fast that the diverse birds all in their due order show that the marks of their kind are on their body, they must also, we may be sure, have a body of unchanging substance. For if the first-beginnings of things could be vanquished in any way and changed, then, too, would it be doubtful what might come to being, what might not, yea, in what way each thing has its power limited and its deepset boundary-stone, nor could the tribes each after their kind so often recall the nature, habits, manner of life and movements of the parents.

Post by “Cassius” of April 21, 2020 at 9:04 PM

Episode 14 of the Lucretius Today Podcast is now available. We hope you will enjoy this episode and that you will leave us comments, suggestions and questions in the thread below.

<https://www.spreaker.com/episode/25870233>

Post by “Godfrey” of April 27, 2020 at 9:29 PM

A particularly enjoying and illuminating episode!

I'm curious if somebody could find the Greek word used in the letter to Herodotus that has been translated as "seed," and share what the nuances of the original word are....

Post by “Don” of April 28, 2020 at 11:24 AM

Here are the sections translated as "seeds" in the Letter to Herodotus (numbers are to sections in Diogenes Laertius). [Perseus Digital Library uses the "Lives of Eminent Philosophers." Diogenes Laertius. R.D. Hicks. Cambridge. Harvard University Press. 1972 \(First published 1925\).](#)

<https://www.epicureanfriends.com/thread/1511-episode-fourteen-atoms-are-solid-and-indestructible-and-constitute-the-seeds-of/>

Section 38 in that translation has "germs" but uses the same Greek word: **σπέρμα (sperma)** and each of the sections just uses a different declension. It literally means "**seed**." Below are the sections for context. [Here is a link to the Perseus Digital Library's Greek Word Study Tool that has links to LSJ, Middle Liddell, Slater, and Autenrieth](#). I *love* that Greek Word Study Tool! [Also like Wiktionary for the declensions](#).

[38] ... For in that case anything would have arisen out of anything, standing as it would in no need of its proper **germs**.

πρῶτον μὲν ὅτι οὐδὲν γίνεται ἐκ τοῦ μὴ ὄντος. πᾶν γὰρ ἐκ παντὸς ἐγίνατ' ἂν **σπερμά** των γε οὐθὲν προσδεόμενον

This section uses **σπέρματα** (another declension)

[74] "And further, we must not suppose that the worlds have necessarily one and the same shape. [On the contrary, in the twelfth book "On Nature" he himself says that the shapes of the worlds differ, some being spherical, some oval, others again of shapes different from these. They do not, however, admit of every shape. Nor are they living beings which have been separated from the infinite.] For nobody can prove that in one sort of world there might not be contained, whereas in another sort of world there could not possibly be, the **seeds** out of which animals and plants arise and all the rest of the things we see. [And the same holds good for their nurture in a world after they have arisen. And so too we must think it happens upon the earth also.]

[74] "Ἔτι δὲ καὶ τοὺς κόσμους οὔτε ἐξ ἀνάγκης δεῖ νομίζειν ἓνα σχηματισμὸν ἔχοντας : : [ἀλλὰ καὶ διαφορὸς αὐτοῦς ἐν τῇ ιβ' Περὶ φύσεως αὐτός φησιν: οὐς μὲν γὰρ σφαιροειδεῖς, καὶ ὠοειδεῖς ἄλλους, καὶ ἀλλοιοσχήμονας ἐτέρους: οὐ μέντοι πᾶν σχῆμα ἔχειν. οὐδὲ ζῶα εἶναι ἀποκριθέντα ἀπὸ τοῦ ἀπείρου.] οὐδὲ γὰρ ἂν ἀποδείξειεν οὐδεὶς, ὡς <ἐν> μὲν τῷ τοιούτῳ καὶ οὐκ ἂν ἐμπεριελήφθη τὰ τοιαῦτα **σπέρματα**, ἐξ ὧν ζῶά τε καὶ φυτὰ καὶ τὰ λοιπὰ πάντα <τὰ> θεωρούμενα συνίσταται, ἐν δὲ τῷ τοιούτῳ οὐκ ἂν ἐδυνήθη. [ῶσαύτως δὲ καὶ ἐντραφήναι. τὸν αὐτὸν δὲ τρόπον καὶ ἐπὶ γῆς νομιστέον.]

In the *Letter to Pythocles*, we find **σπερμάτων**:

[89] "That there is an infinite number of such worlds can be perceived, and that such a world may arise in a world or in one of the intermundia (by which term we mean the spaces between worlds) in a tolerably empty space and not, as some maintain, in a vast space perfectly clear and void.¹¹⁶ It arises when certain suitable **seeds** rush in from a single world or intermundium, or from several, and undergo gradual additions or articulations or changes of place, it may be, and waterings from appropriate sources, until they are matured and firmly settled in so far as the foundations laid can receive them.

[89] "Ὅτι δὲ καὶ τοιοῦτοι κόσμοι εἰσὶν ἄπειροι τὸ πλῆθος ἔστι καταλαβεῖν, καὶ ὅτι καὶ ὁ τοιοῦτος δύναται κόσμος γίνεσθαι καὶ ἐν κόσμῳ καὶ μετακοσμίῳ, ὃ λέγομεν μεταξὺ κόσμων διάστημα, ἐν πολυκένῳ τόπῳ καὶ οὐκ ἐν μεγάλῳ εἰλικρινεῖ καὶ κενῷ, καθάπερ τινές φασιν,

ἐπιτηδείων τινῶν **σπερμάτων** ῥυέντων ἀφ' ἑνὸς κόσμου ἢ μετακοσμίου ἢ καὶ ἀπὸ πλειόνων κατὰ μικρὸν προσθέσεις τε καὶ διαρθρώσεις καὶ μεταστάσεις ποιούντων ἐπ' ἄλλον τόπον, ἐὰν οὔτω τύχη, καὶ ἐπαρδεύσεις ἐκ τῶν ἐχόντων ἐπιτηδείως ἕως τελειώσεως καὶ διαμονῆς ἐφ' ὅσον τὰ ὑποβληθέντα θεμέλια τὴν προσδοχὴν δύναται ποιεῖσθαι.

This section uses the same word, different declension: σπερμάτων

Post by “Cassius” of April 28, 2020 at 12:23 PM

Thank you Eugenios!

Post by “Godfrey” of April 28, 2020 at 12:54 PM

Thanks Eugenios!

I've actually begun learning the Greek alphabet: you've got me inspired! Baby steps though

Post by “Don” of April 28, 2020 at 5:06 PM

[Quote from Godfrey](#)

Thanks Eugenios!

I've actually begun learning the Greek alphabet: you've got me inspired! Baby steps though

You're welcome. That was fun!

I learned the Greek alphabet in junior high school and would take notes in them (using them more like a code than a language). Eventually, I thought I better learn some of the language they were used to write 😊.