

Episode Seventy-One - The Formation Of the World (Our Part of the Universe)

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Welcome to Episode Seventy-One of Lucretius Today.

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. 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.

For anyone who is not familiar with our podcast, please check back to [Episode One](#) for a discussion of our goals and our ground rules. If you have any question about that, please be sure to contact us at EpicureanFriends.com for more information.

In this Episode 71 we will read approximately Latin line 416 -508 of Book V, and we will talk about the formation of our world from the fundamental elements. Now let's join Martin reading today's text.

Munro Notes-

416-431: I will now describe how the various parts of the world were formed: as we said above, it was not by design that atoms framed it; but after many fruitless collisions, they chanced to fall into such motions as produced the world and all that is in it.

432-448: then could be seen nothing that now is seen, sun stars earth sea or heaven, but a strange chaotic jumble of atoms unable to combine: gradually the different parts of the world began to separate.

449-494 : the heavy particles of earth collected in the midst and squeezed out the lighter atoms of the other parts of the world : ether with its fires first burst forth and collecting on high formed the outer-most sphere of the world; between it and earth the rudiments of sun and moon and stars took up their position; the earth, rid of these lighter particles, sank down still more where the bed of ocean is; and these depressions were flooded with salt water; and the more the earth was beaten upon by the heat of ether and the sun, the more it was condensed, and thus increased the ocean by particles of moisture squeezed out of it, and the heaven by elements of fire which flew off from it.

495-508: thus the earth sank to the bottom, and sea air and ether were left separate, ether above all, which glides on its even way and mixes with none of the lower elements.

Browne 1743

But now I shall explicate in order by what chance the violent agitation of matter produced the heavens, and the earth, and the deeps of the sea, and the courses of the sun and moon. For surely the principles of things could never fall into so regular a disposition by counsel or design, nor could they by agreement resolve what motions they should take among themselves. But the seeds of things, being from eternity beaten upon by outward blows, or used to be driven by the force of their own weight, met every way, tried all motions that might at last, by their uniting, end in the production of things; and then having attempted for an infinite time all sorts of union, and moved every way about, those seeds at length met and united, and became the principles of the great productions that followed, of the Earth, the Sea, the Heavens, and the whole animal creation.

But as yet there was no chariot of the sun to be seen, driving with his large stock of light through the sky; no sea, no heavens, no air, nothing like any beings of this world of ours to be seen; but a strange confusion, a mass of rude and undigested seeds. From this heap the various parts retired to their proper place, and seeds of like nature joined together and formed this world. Then were its mighty parts divided, and disposed in order, though produced from this confused mass, and from seeds of every kind; for the disagreeing powers of those seeds so disturbed their several courses, intervals, connections, weights, strokes, unions, and motions, and kept them so continually at war, that they could never all unite, nor agree upon any regular motions among themselves. Thus the heavens separated, and raised their bodies on high above the earth, and the sea, with its vast extent of collected waters, retired apart, and the pure and bright fires of the sky fled upwards and divided from the rest.

And first, the particles of earth, being heavy and entangled, met and sunk downwards towards the middle place of the mass, and the more closely twined the parts of it were, the more they squeezed out those seeds that composed the sea, the stars, the sun, and that formed the moon, and the heavens (the walls of this great world). For these consist of seeds much more smooth and round, and of much less principles than the Earth, and therefore the heavens (the abode of the stars) first got free through the subtle pores of the Earth, and ascended upwards; and being light, drew many seeds of fire along with them, much in the same manner with what we frequently observe when the golden rays of the bright morning sun first shine upon the grass decked with pearly dew, and the standing lakes and running rivers exhale a mist into the air, and the Earth sometimes seem to smoke. These vapors, when they are raised upwards and united, become clouds, and with their condensed bodies darken the whole sky, and so the light and spreading ether, being condensed, stretches widely over every place, and being diffused on all sides abroad, embraces every thing with its large circumference, and encloses it about.

The beginnings of the sun and moon follow next, whose orbs are rolled in the air between the ether and the Earth, and whose principles would unite neither with those of the Earth nor the Sky; they had not weight enough to sink so low as the one, nor were they sufficiently light to rise so high as the other; yet they are so placed between both that they constantly turn about their bodies, and so become parts of the whole world. As in these bodies of ours, some

members are continually at rest when others are always in motion. These things being separated, a great part of the earth sunk suddenly, and made a channel where the tides of the sea now flow, and formed a cavern for the salt waters. And the more the heat of the sky and the beams of the sun pressed every way with frequent strokes upon the Earth, full of pores on the outside (that so its particles, being driven towards the middle, might be more firm and condensed) the more the salt water like sweat was squeezed out, and by flowing enlarged the surface of the sea, and spread wider abroad; and the more the many corpuscles of fire and air disentangled themselves and flew off from the Earth, and formed themselves above, at a great distance, into the shining frame of the heavens. The valleys subsided, the mountains raised their lofty heads, nor could the rocks sink down, nor all parts of the Earth fall equally low. And thus the weight of the Earth, with its heavy body, stood firm, and its whole mass, like thick mud, fell to the bottom, and sunk the lowest, as the dregs of all.

Munro 1886

But in what ways you concur of matter founded earth and heaven and the deeps of the sea, the courses of the sun and moon, I will next in order describe. For verily not by design did the first-beginnings of things station themselves each in its right place by keen intelligence, nor did they bargain sooth to say what motions each should assume, but because the first-beginnings of things many in number in many ways impelled by blows for infinite ages back and kept in motion by their own weights have been wont to be carried along and to unite in all manner of ways and thoroughly to test every kind of production possible by their mutual combinations, therefore it is that spread abroad through great time after trying unions and motions of every kind they at length meet together in those masses which suddenly brought together become often the rudiments of great things, of earth sea and heaven and the race of living things.

At this time then neither could the sun's disk be discerned flying aloft with its abundant light, nor the stars of great ether, nor sea nor heaven, nor earth nor air, nor could any thing be seen like to our things, but only a strange stormy crisis and medley, gathered together out of first-beginnings of every kind, whose state of discord joining battle disordered their interspaces passages, connections, weights, blows, clashing, and motions, because by reason of their unlike forms and varied shapes they could not all remain thus joined together nor fall into mutually harmonious motions. Then next the several parts began to fly asunder and things to be joined like with like and to mark off the world and portion out its members and arrange its mighty parts, that is to say, to separate high heaven from earth, and let the sea spread itself out apart with its unmixed water, and likewise let the fires of ether spread apart pure and unmixed.

For first the several bodies of earth, because they were heavy and closely entangled, met together in the middle and took up all of them the lowest positions; and the more they got entangled and the closer their union, the more they squeezed out those particles which were to make up sea stars sun and moon and the walls of the great world. All these are of smooth and round seeds and of much smaller elements than the earth. Therefore the fire-laden ether first burst out from the different parts of the earth through all the porous openings and lightly bore

off with itself many fires; much in the same way as we often see, so soon as the morning light of the beaming sun blushes golden over the grass jeweled with dew, and the pools and the ever-running rivers exhale a mist, and even as the earth itself is sometimes seen to smoke; and when all these are gathered together aloft, then do clouds on high with a now cohering body weave a covering beneath heaven. In this way therefore then the light and expansive ether with its now cohering body swept round and arched itself on all sides and expanding widely in all directions round in this way fenced all other things in with its greedy grasp.

After it followed the rudiments of sun and moon, whose spheres turn round in air midway between earth and ether: these neither earth has taken unto itself nor greatest ether, because they were neither heavy enough to sink and settle down nor light enough to glide along the uppermost borders; they yet however are so placed between the two as to wheel along their life-like bodies and still to be parts of the whole world; just as in us some members may be at rest, while others at the same time are in motion. These things then being withdrawn, the earth in those parts where the vast azure level of ocean now spreads, in a moment sank in and drenched with salt flood the hollows. At every day the more the heats of ether round and the rays of the sun on all sides compressed the earth into a close mass by oft-repeated blows on all its outer edges, so that thus buffeted it was condensed and drawn together about its center, ever the more did the salt sweat squeezed out of its body increase by its oozings the sea and floating fields, and ever the more did those many bodies of heat and air escape and fly abroad and condense far away from earth the high glittering quarters of heaven. The plains sank down, the high hills grew in elevation; for the rocks could not settle down nor all the parts sink to one uniform level. Thus then the ponderous mass of earth was formed with close-cohering body and all the slime of the world so to speak slid down by its weight to the lowest point and settled at the bottom like dregs.

Bailey 1921

But by what means that gathering together of matter established earth and sky and the depths of ocean, and the courses of sun and moon, I will set forth, in order. For in very truth not by design did the first-beginnings of things place themselves each in their order with foreseeing mind, nor indeed did they make compact what movements each should start; but because many first-beginnings of things in many ways, driven on by blows from time everlasting until now, and moved by their own weight, have been wont to be borne on, and to unite in every way and essay everything that they might create, meeting one with another, therefore it comes to pass that scattered abroad through a great age, as they try meetings and motions of every kind, at last those come together, which, suddenly cast together, become often the beginnings of great things, of earth, sea and sky, and the race of living things.

Then, when things were so, neither could the sun's orb be seen, flying on high with its bounteous light, nor the stars of the great world, nor sea nor sky, nay nor earth nor air, nor anything at all like to the things we know, but only a sort of fresh-formed storm, a mass gathered together of first-beginnings of every kind, whose discord was waging war and confounding interspaces, paths, interlacings, weights, blows, meetings, and motions, because

owing to their unlike forms and diverse shapes, all things were unable to remain in union, as they do now, and to give and receive harmonious motions. From this mass parts began to fly off hither and thither, and like things to unite with like, and so to unfold a world, and to sunder its members and dispose its great parts, that is, to mark off the high heaven from the earth, and the sea by itself, so that it might spread out with its moisture kept apart, and likewise the fires of the sky by themselves, unmixed and kept apart.

Yea, verily, first of all the several bodies of earth, because they were heavy and interlaced, met together in the middle, and all took up the lowest places; and the more they met and interlaced, the more did they squeeze out those which were to make sea, stars, sun, and moon, and the walls of the great world. For all these are of smoother and rounder seeds, and of much smaller particles than earth. And so, bursting out from the quarter of the earth through its loose-knit openings, first of all the fiery ether rose up and, being so light, carried off with it many fires, in not far different wise than often we see now, when first the golden morning light of the radiant sun reddens over the grass bejewelled with dew, and the pools and ever-running streams give off a mist, yea, even as the earth from time to time is seen to steam: and when all these are gathered together as they move upwards, clouds with body now formed weave a web beneath the sky on high. Thus then at that time the light and spreading ether, with body now formed, was set all around and curved on every side, and spreading wide towards every part on all sides, thus fenced in all else in its greedy embrace.

There followed then the beginnings of sun and moon, whose spheres turn in air midway betwixt earth and ether; for neither earth nor the great ether claimed them for itself, because they were neither heavy enough to sink and settle down, nor light enough to be able to glide along the topmost coasts, yet they are so set between the two that they can move along their living bodies, and are parts of the whole world; even as in our bodies some limbs may abide in their place, while yet there are others moving. So when these things were withdrawn, at once the earth sank down, where now the vast blue belt of ocean stretches, and flooded the furrows with salt surge. And day by day, the more the tide of ether and the rays of the sun with constant blows along its outer edges constrained the earth into closer texture, so that thus smitten it condensed and drew together round its centre, the more did the salt sweat, squeezed out from its body, go to increase the sea and the swimming plains, as it trickled forth; yea, and the more did those many bodies of heat and air slip forth and fly abroad, and far away from earth condense the high glowing quarters of the sky. Plains sank down, lofty mountains grew in height; for indeed the rocks could not settle down, nor could all parts subside equally in the same degree. So then the weight of earth, with body now formed, sank to its place, and, as it were, all the slime of the world slid heavily to the bottom, and sank right down like dregs....