Episode One Hundred Thirty-One - Letter to Pythocles 05 - Weather Phenomena

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Welcome to Episode One Hundred Thirty-One of Lucretius Today.

This is a podcast dedicated to the poet Lucretius, who wrote "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 our panelists from the EpicureanFriends.com forum, we'll walk you through the ancient Epicurean texts, and we'll 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.

If you find the Epicurean worldview attractive, we invite you to join us in the study of Epicurus at EpicureanFriends.com, where you will find a discussion thread for each of our podcast episodes and many other topics.

Today we continue Epicurus' Letter to Pythocles and we look at the implications of the Epicurean position on certain weather phenomena. Now let's join Joshua reading today's text:

BAILEY:

[99] Signs of the weather may occur owing to the coincidence of occasions, as happens with animals we can all see on earth, and also through alterations and changes in the atmosphere. For both these are in accordance with phenomena. But under what circumstances the cause is produced by this or that, we cannot perceive.

Clouds may be produced and formed both by the condensation of the atmosphere owing to compression by winds and by the interlacing of atoms clinging to one another and suitable for producing this result, and again by the gathering of streams from earth and the waters: and there are several other ways in which the formation of such things may not impossibly be brought about.

[100] And from them again rain may be produced if they are squeezed in one part or changed in another, or again by a downward current of wind moving through the atmosphere from appropriate places, a more violent shower being produced from certain conglomerations of atoms suited to create such downfalls.

Thunder may be produced by the rushing about of wind in the hollows of the clouds, as happens in vessels on earth, or by the reverberation of fire filled with wind inside them, or by

the rending and tearing of clouds, or by the friction and bursting of clouds when they have been congealed into a form like ice: phenomena demand that we should say that this department of celestial events, just like them all, may be caused in several ways.

[101] And lightnings too are produced in several ways: for both owing to the friction and collision of clouds a conformation of atoms which produces fire slips out and gives birth to the lightning, and owing to wind bodies which give rise to this flash are dashed from the clouds: or compression may be the cause, when clouds are squeezed either by one another or by the wind. Or again it may be that the light scattered abroad from the heavenly bodies is taken in by the clouds, and then is driven together by the movement of the clouds and wind, and falls out through the clouds; or else light composed of most subtle particles may filter through the clouds, whereby the clouds may be set on fire by the flame and thunder produced by the movement of the fire.

[102] Or the wind may be fired owing to the strain of motion and its violent rotation, or clouds may be rent by wind and atoms fall out which produce fire and cause the appearance of lightning. And several other methods may easily be observed, if one clings always to phenomena and can compare what is akin to these things. Lightning precedes thunder in such a conformation of the clouds, either because at the moment when the wind dashes in, the formation of atoms which gives rise to lightning is driven out, but afterwards the wind whirls about and produces the reverberation; or because they both dash out at the same moment, but lightning moves at a higher speed towards us, and thunder comes after, as in the case of some things seen at a distance and producing blows.

[103] Thunderbolts may occur because there are frequent gatherings of wind, which whirls about and is fanned into a fierce flame, and then a portion of it breaks off and rushes violently on the places beneath, the breaking taking place because the regions approached are successively denser owing to the condensation of clouds, or as the result of the actual outburst of the whirling fire, in the same way that thunder may be produced, when the fire becomes too great and is too violently fanned by wind and so breaks through the cloud, because it cannot retreat to the next regions owing to the constant condensation of clouds one on the other.

[104] And thunderbolts may be produced in other ways too. Only superstition must be excluded, as it will, if one successfully follows the lead of seen phenomena to gain indications about the invisible.

Cyclones may be produced either by the driving down of a cloud into the regions below in the form of a pillar, because it is pushed by the wind gathered inside it and is driven on by the violence of the wind, while at the same time the wind outside impels it sideways; or by wind forming into circular motion, while mist is simultaneously thrust down from above; or when a great rush of wind takes place and cannot pass through sideways owing to the surrounding condensation of the atmosphere.

[105] And when the spout is let down on to the land, whirlwinds are produced in all the various ways in which their creation may occur owing to the movement of the wind, but if it reaches the

sea it produces waterspouts.

HICKS

[99] "The signs in the sky which betoken the weather may be due to mere coincidence of the seasons, as is the case with signs from animals seen on earth, or they may be caused by changes and alterations in the air. For neither the one explanation nor the other is in conflict with facts, and it is not easy to see in which cases the effect is due to one cause or to the other.

"Clouds may form and gather either because the air is condensed under the pressure of winds, or because atoms which hold together and are suitable to produce this result become mutually entangled, or because currents collect from the earth and the waters; and there are several other ways in which it is not impossible for the aggregations of such bodies into clouds to be brought about.

[100] And that being so, rain may be produced from them sometimes by their compression, sometimes by their transformation; or again may be caused by exhalations of moisture rising from suitable places through the air, while a more violent inundation is due to certain accumulations suitable for such discharge. Thunder may be due to the rolling of wind in the hollow parts of the clouds, as it is sometimes imprisoned in vessels which we use; or to the roaring of fire in them when blown by a wind, or to the rending and disruption of clouds, or to the friction and splitting up of clouds when they have become as firm as ice. As in the whole survey, so in this particular point, the facts invite us to give a plurality of explanations.

[101] Lightnings too happen in a variety of ways. For when the clouds rub against each other and collide, that collocation of atoms which is the cause of fire generates lightning; or it may be due to the flashing forth from the clouds, by reason of winds, of particles capable of producing this brightness; or else it is squeezed out of the clouds when they have been condensed either by their own action or by that of the winds; or again, the light diffused from the stars may be enclosed in the clouds, then driven about by their motion and by that of the winds, and finally make its escape from the clouds; or light of the finest texture may be filtered through the clouds (whereby the clouds may be set on fire and thunder produced), and the motion of this light may make lightning;

[102] or it may arise from the combustion of wind brought about by the violence of its motion and the intensity of its compression; or, when the clouds are rent asunder by winds, and the atoms which generate fire are expelled, these likewise cause lightning to appear. And it may easily be seen that its occurrence is possible in many other ways, so long as we hold fast to facts and take a general view of what is analogous to them. Lightning precedes thunder, when the clouds are constituted as mentioned above and the configuration which produces lightning is expelled at the moment when the wind falls upon the cloud, and the wind being rolled up afterwards produces the roar of thunder; or, if both are simultaneous, the lightning moves with a greater velocity towards us and the thunder lags behind, exactly as when persons who are

striking blows are observed from a distance.

[103] A thunderbolt is caused when winds are repeatedly collected, imprisoned, and violently ignited; or when a part is torn asunder and is more violently expelled downwards, the rending being due to the fact that the compression of the clouds has made the neighbouring parts more dense; or again it may be due like thunder merely to the expulsion of the imprisoned fire, when this has accumulated and been more violently inflated with wind and has torn the cloud, being unable to withdraw to the adjacent parts because it is continually more and more closely compressed – generally by some high mountain where thunderbolts mostly fall.

[104] And there are several other ways in which thunderbolts may possibly be produced. Exclusion of myth is the sole condition necessary; and it will be excluded, if one properly attends to the facts and hence draws inferences to interpret what is obscure.

Fiery whirlwinds are due to the descent of a cloud forced downwards like a pillar by the wind in full force and carried by a gale round and round, while at the same time the outside wind gives the cloud a lateral thrust; or it may be due to a change of the wind which veers to all points of the compass as a current of air from above helps to force it to move; or it may be that a strong eddy of winds has been started and is unable to burst through laterally because the air around is closely condensed. 10

[105] And when they descend upon land, they cause what are called tornadoes, in accordance with the various ways in which they are produced through the force of the wind; and when let down upon the sea, they cause waterspouts.