LUCRETIUS VI

Athens was first to spread abroad her grain For sick mankind – she gave men life again, Creating laws and giving consolation, Spawning a man with crystal penetration, A wise truth-teller who, though he is dead, Has had his name for many aeons spread, Because of his divine discoveries, To the domain of all divinities. For when he saw that mankind's every need Had now almost been met and that, indeed, As far as possible they were risk-free And saw men rolling in prosperity, Honoured and famed, proud fathers, nonetheless, At home, experiencing uneasiness And bitterly lamenting, he then saw That mankind's vessel was itself the flaw: For everything that came from the outside Perverted and tainted what was inside, However advantageous, partially Because it leaked and he could clearly see That it could not be filled in any way, And partially because, as one may say, With a foul smell it was contaminated, And so with true words he regenerated The heart and limited fear and desire And showed that chief good to which we aspire And pointed out the narrow path that we

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Might take to reach that goal unswervingly And all the sin that lingers everywhere And lives among us, flying here and there By chance or force, as nature had designed And from what ports they might be met. Mankind Did not have cause to irritate its breast With waves of misery, he would attest. For just as little children shake with fright At all things in the darkness in the night, So we sometimes quake in the light of day At what should cause fear no more than what they Feared in the dark. So this despondency, This terror of the mind will have to be Dispelled, not by the sun's bright shafts of day But nature's law. So I'll get under way And weave the web of my discourse. Since I Have shown the heavens are mortal and the sky Has given birth, explaining principally What has been done there and what needs to be Accomplished still, to what remains give ear. Since I am now the Muses' charioteer, How winds arise and then are pacified I will explain and tell what men have spied In earth and heaven and were frequently Held in suspense with great trepidity, Abused by fear of the gods, kept crushed below Upon the earth because they did not know The cause of things, thus pressured to assign Events to those they thought of as divine.

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If those who are well taught and therefore know The gods have carefree lives, yet even so Wonder how things occur, especially Those things up in the sky that we can see, They fall back on their ancient veneration And take harsh masters their imagination Accepts as absolute, since they have got No knowledge of what can and what cannot Be done, thus how the power of each thing Is firmly fixed: so by blind reasoning They're led astray. Therefore, unless you spew This from your mind and throw out far from you Those thought unworthy of divinity, Hostile to peace, their holy sanctity Will often do you harm. The gods, however, Cannot feel such dishonour as to ever Thirst to inflict on you fierce punishment. No, you believe that they, in their content And peaceful lives, are threatening to throw Waves of great rage that you may never show Your piety at their shrines or ever be Able to welcome with tranquillity Their images. What will from that ensue Is clear. By reasoning that's wholly true You must reject a life like that. A deal Of words I've said, but much more I'll reveal In polished verse. We must see how the sky Functions and know the law it's governed by; I must sing tempests and bright lightnings, too,

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By what cause they are moved and what they do, Lest you divide the heavens senselessly In sixteen quarters, trembling to see From which of them the fire makes its flight And whether it turns to the left or right, How it pierced walls and exercised its sway Beyond and then moved out and on its way. Show me the course, skillful Calliope, Who give men pleasure and tranquillity, As to my final goal I run my race, For it's marked out for me, and win first place And gain the splendid crown of victory, Spurred on by your support. Primarily, The reason thunder shakes the azure sky Is that clouds rush together way up high As winds conflict. For where the sky is fair There's no sound to be heard, but anywhere The clouds are dense, the thunder's often loud. Besides, there is less density in a cloud Than in a stone or wood, but then again More than in mist or flying smoke; for then, Likes stones, they'd fall due to their gravity Or else, like smoke, have no ability To hold together or even contain Within themselves cold snow or hail or rain. They rumble, too, above us in the sky As when in a great theatre one may spy A canvas awning cracking in between Its poles and beams, and sometimes it is seen,

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When ripped, beneath strong winds to fly around, As paper, when it's torn, makes that same sound, Or hung-up clothes or sheets of paper snap Whenever breezes ruffle them and flap Them through the air. And clouds on certain days Can't meet head-on but, side by side, will graze Each other as they pass and make a din That's long and dry, an irritation in The ears, until each one of them has gone From its confined abode and carries on. Thus all things seem to tremble at the sound Of thunder and the massive walls around The wide-spread firmament are torn asunder And leap apart when people hear that thunder; Strong winds twist through the clouds summarily And whirl round in that same locality And gradually hither and yon compel The clouds to form a void with a crusty shell; Then when the winds lose their ascendancy, The clouds are torn and terrifyingly Explode. A tiny vesicle supplied With air, when perforated on one side, Can make a noise as loud, therefore no wonder! There is another time when clouds may thunder -When winds blow through them. For we often see That clouds can act like branches variously While looking violent as they sweep about; Leaves rustle, branches creak, there is no doubt, When blasts of North-West wind are blazing through

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A teeming forest. It can happen, too, That a fierce wind will rush unswervingly Into a cloud and break it. We can see Down here what it can do, for though it's less Of a tempestuous nature, nonetheless It wrenches lofty trees out of the ground. Among the clouds, as well, waves can be found, Which, as they break, growl out a roaring sound, Which happens in deep rivers and around The ocean's waves. Thunder, too, breaks out loud When lightning's burning fire falls from one cloud To another cloud, which, if, whenever it takes The fire in, is soaked with water, makes A dreadful noise, meanwhile immediately Destroying it, just as similarly A furnace's white-hot iron, when it's downed In ice-cold water, makes a hissing sound. To take this further, if the cloud were drier When it received the lightning-stroke, the fire Will loudly kindle it immediately, As if the laurelled peaks were mightily Attacked by wind-blown flames; for it's a fact That nothing burns like laurel when it's cracked By flame on Phoebus' altar in Delphi. Again, a noise in huge clouds up on high Is made by cracks of ice and hail; for when The wind packs all of them together, then The clouds are crushed together narrowly And mixed with hail. Lightning, additionally,

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Occurs when clouds clash and send seeds of flame Abroad, for stones and steel will do the same And strike out sparks of light. The reason why The ear hears thunderclaps after the eye Has seen the lightning is that things take longer To reach the ear. To make your judgment stronger, If you see someone cutting down a tree Far off, before you hear the thud you see The stroke; in the same way, before we hear The thunder it's the lightning that is clear To sight, though both occurred concurrently. Thus with their rapid light clouds comparably Tinge places, and hailstorms with a quivering burst Will flash and dazzle. When a wind has first Entered a cloud and, moving more and more, Congealed it, as I have explained before, It becomes hotter by its very speed, Like all things else – a bullet will indeed 190 Melt when it's cast afar - and when it breaks The black cloud, by its violent force it makes Its seeds of fire squeeze out, the very same That caused the winking flickerings of flame; And then ensues the sound, which strikes the ears Somewhat more tardily than what appears Before the eyes. It is a proven fact That this will take place when the clouds compact, Piled one upon the other massively; So do not be deceived because we see 200 From here how wide they are as they extend

Far upwards in the sky. So do but lend Your eyes to how the clouds can be conveyed Across the mountains where they are displayed In heaps, pressed from above and lying still, The winds wrapped all around them. Then you will Behold that mass, able to recognize The stone-built caves which, should a storm arise, The winds fill up, complaining noisily That by the clouds they're kept in custody, 210 Menacing like wild animals. This way And that they growl there, hoping that they may Find a way out as through the clouds they churn The many seeds of fire and finally burn And shatter them. Another reason why The golden flowing flame can swiftly fly To earth is that the clouds have to possess Many seeds of fire. Thus when they're moistureless Their colour mostly flames and shines. Indeed From the sun's light they must gain many a seed, 220 Thus blushing red. So when the wind apace Drives them into a tightly confined space, They squeeze out seeds and make the flames shine bright. And also when the clouds grow thin, there's light. For when a wind that's tranguil has broadcast Them here and there as they go gliding past, The seeds that make the lightning have to fall, And then the lightning makes no noise at all And does not terrify. A thunderbolt Has marks of heat burnt in and strokes that jolt 230 And dents that breathe foul sulphur; these are all The marks of fire, not breezes or rainfall. And often houses' roofs, additionally, They set alight, assuming mastery Over their rooms as well. This most refined Of all the fires has nature so combined With elements so rapid and so small It can't be blocked by anything at all. The powerful thunderbolt can pass straight through A house's walls, as sounds and voices do, 240 And pierces stone and bronze and instantly Melts bronze and gold, and by its energy Wine will evaporate in a heartbeat Yet keep the vessels safe, because the heat With ease tempers the earthenware, and so It makes it pervious and thus will flow Into the jar itself, then far and near Dissolves the wine's first seeds. This, it's quite clear, The sun can't do for ages, even though Its quivering blaze is powerful: for so w50 Rapid and strong it is. I'll tell you now How thunderbolts have been produced and how They have the energy to split and burn Down towers with one stroke, to overturn Houses, rip beams, topple to the ground Monuments, kill men and animals all around, And other things, and I will not delay With promises. We must believe that they Were first produced from thick clouds piled on high,

Since they were never issued when the sky Is peaceful or when the clouds are lightly packed. Indeed there is no doubt, for many a fact Can prove it, since the clouds all mass together When thunder happens, and we wonder whether Hell's empty of all darkness everywhere, Which now has filled the caverns of the air. To such a degree beneath the hideous night Of cloud there hangs the face of horrid fright, As the tempest starts to forge her bolts. Besides, Often a black cloud will affect the tides -A pitchy flood, with darkness stuffed on high, Falls down upon the waters from the sky And brings with it a jet-black squall which teems With thunderbolts and storms and winds and streams Of flame, thus making people here below Shiver with fear and run for shelter. So We must believe the tempests have to surge High over us, for clouds could not submerge The earth with so much black unless each one Was piled on many others that the sun Would be blocked out. Nor could cascades of rain Oppress us so that every stream and plain Would swim in flood unless the sky were packed With clouds piled high above us. So, in fact, In such a case winds blow and fires flare With rumblings and lightnings everywhere. I said just now that hollow clouds contain Many seeds of heat and therefore they must gain

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Warmth from rays of the sun. And therefore, when The wind collects them in one place and then Has pressed out many seeds of torridness And with that fire begins to coalesce, The whirlwind goes into that narrow place And turns itself about inside the space And hones the thunderbolt. The wind indeed Is kindled in two ways, first by its speed And then by contact. The wind's energy Heightens its heat and the intensity Of the fire thrusts in, while the bolt, now fit For action, as it were, will promptly split The cloud, and then a rapid flame will fly With flashing lights, and then, up in the sky, A loud crash follows, and the firmament Appears to overwhelm it as it's rent Apart, then tremors in the sky assail The earth and in the sky murmurings trail And almost all the tempest with the jolt Quivers, and roars come from the thunderbolt. Then heavy rain ensues, and everywhere There seems to be but rain throughout the air. The torrent from that cloudburst and the blast Of wind that it discharges is so vast, When sound and flames fly forth. Sometimes, also, A force of wind is stirred up and will blow And fall upon a cloud that is replete With a full-formed thunderbolt, whole and complete, And, once the wind has burst it, instantly

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A fiery vortex falls, a thing that we Call thunderbolt. It can occur elsewhere According to the force employed. And there 320 Have been times when a wind has been conveyed *Sans* fire but has ignited as it made Its lengthy trek through space, and, as it flew, Lost certain bodies too large to pass through The air equally well, and from the air Itself scraped tiny ones which mingled there With it, producing fire in their flight; In the same way a bullet will ignite And cast off many cold bodies in its course. Fire is created by the very force 330 Of the blow, when cold winds strike. How can this be? Well, when the wind has smitten violently, Then from the winds heat elements may flow As well as from that which received the blow; When stone is struck by iron, out fire flies, Where seeds do not the less homogenize Since iron's cold. A thing, then, must be hit And kindled by a thunderbolt if it Is fit for flames. No wind may totally Be cold if it's been sped down forcefully 340 From heaven, but if it's not first lit by flame As it goes on its way, yet all the same It must be warm and mixed with heat when it Arrives. The swiftness and the heavy hit Inflicted by the bolt (they usually With such a fall move expeditiously)

Occurs because among the clouds a force Is stirred up and embarks upon a course Of rapid movement: when, subsequently, The cloud can't hold back the intensity, The force is pressed out and is therefore flown Remarkably, like missiles which are thrown From catapults. The elements are small And smooth, however, so it's not at all An easy task for something to impede A thing with such a substance since with speed It penetrates the narrow ways; and thus It smoothly flies with rapid impetus While rarely checked. All weights are naturally Thrust downwards always; a velocity Is added, though, when it inflicts a blow As well and makes the first momentum grow In weight, thus with more speed and violently Disintegrating every entity It meets that tries to bar it with delay. And since it rushes from a long, long way, It must keep getting faster as it grows In strength by moving, stiffening the blows. Its seeds are carried thus, as one may say, Into one place as they roll on their way And from the air itself it possibly Draws bodies which provoke velocity With blows. Nor does it cause any distress To everything it meets in its progress, Because the fire, being fluid, passes through

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Their pores. And many it transfixes, too, Because its very particles have lighted Upon the points where everything's united. It melts both bronze and gold immediately Because it's made of bodies terribly 380 Minute and elements so smooth that they Can very easily effect a way Within and, once it's found its way inside, Loosen all bonds. It is at autumntide When all the regions of the firmament, Set with its shining stars, is usually rent With shaking all around, as is the earth, And when the springtime brings its flowers to birth. For in the cold fires fail, and when it's hot The winds are lacking and the clouds are not 390 So dense. So when the temperature's between The two, all causes of the bolt are seen To be combined. For the year's choppy seas Mingle together cold and heat – for these Are both essential for a cloud to bring A bolt to life – so that in everything There's discord, and the wildly billowing air With fires and winds engages everywhere. So springtime is when warmth must say adieu To cold and so a battle must ensue 400 Between those unlike things as they compete In wild confusion; then when the last heat Mixed with the early cold has come around, Which we call autumn time, conflict is found

And bitter winters come into a fight With summers. That's the reason why it's right That they're called choppy seas. Thus it's no wonder That in that season there is so much thunder, With turbulent tempests stirred up in the air Since all's confusion with well-matched warfare 410 On either side, as flames are coalesced With winds and water. Thus you may digest The nature of the thunderbolt and see The role it plays through its intensity, Not by unrolling scrolls to find a spell And vainly search for signals that can tell The gods' intent, to learn how fire came And into which quarter it turned its flame, And how it has pierced walls and how got back 420 And what's the harm inflicted by a crack Of thunder. If the heavens are shaken by The gods with dreadful noise up in the sky, Who cast their fire at will, why don't they see That when an execrable felony Has been committed that they ought to clout The man who did it, making him breathe out Sulphurous flames, his breast pierced through, to show A lesson to mankind? Why rather, though, Should guiltless men in a tornado's flame From heaven be burned? Why do they vainly aim 430 At deserts? Is it that they're practising For other punishments and strengthening Their muscles? Why allow a powerful jolt

Against the earth from Jupiter's thunderbolt? And why does Jupiter himself not spare That thunderbolt and cast it from the air Upon his foes? Why does he never cast His bolt on earth and sound his thunder-blast From a clear sky? Does he instead descend Into the clouds himself once they ascend And only after that, when he's close by, Direct his thunderbolt and see it fly? Why does he strike the sea? And what has he Against the waves, the vast immensity Of water and the swimming plains? What's more, If for us to be on the lookout for His bolt is his desire, why does he not Provide a way to see it when it's shot? But if his wish is unexpectedly To crush us with his fire, why then does he Strike from where we can see it, and thereby Avoid it, and prepare up in the sky The dark with rumblings and a dreadful din? How is it you believe he can shoot in Many directions at one time? Maybe You'll say it's never done, but actually It's often done and must be done indeed So that, as showers and rain pour down to feed Many regions of the earth, many bolts will fall All at the self-same time. Now, last of all, Why does he smash shrines of divinities And even his own illustrious territories?

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Why crush many a fine-wrought effigy And rob his statues of their majesty, Inflicting dreadful wounds on them? And why Is he wont to attack places on high? Why is most of his fire seen upon The mountain-tops? Well then, to carry on, It's easy from these thoughts to comprehend How what the Greeks call presteres descend Into the ocean. For occasionally A kind of column drops into the sea, Surrounding which the strong winds agitate The waters, which begin to fulminate; Ships caught in it were perilously cast About. This happens when the furious blast Of winds at times can't burst the cloud it tries To burst but thrusts it, giving it the guise Of a column, to the billows of the sea As though it were, degree by small degree, Thrust by an arm and fist; and when the gust Of wind tears it asunder, it is thrust Out of the cloud and down into the sea, And on the waves it bubbles wondrously. The whirlwind twists and brings the cloud with it And when the surface of the sea is hit By that full cloud, the wind aggressively Dives through the water, stirring up the sea, And loudly makes it boil. Its vortex snakes Into the clouds sometimes, where then it rakes Their seeds together and then imitates

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The Greek-named *presteres* as it rotates Down from the sky. On landing, it's dispersed And violently vomits forth a burst Of storm and whirlwind. But since it is rare That this occurs, and also , here and there, Mountains get in the way, more frequently We see it on the wide and open sea And there's nothing above it but the sky. The clouds amass together up on high When many flying bodies suddenly Meet up: they're rougher and, to some degree, Entangled yet can coalesce. These mould Small clouds at first and yet they still can hold Together and by combination grow And then are borne upon the winds that blow Until a savage tempest should arise. The nearer are the mountains to the skies, The more, through dusty clouds, will every peak In that high place with dusky blackness reek Since, when the clouds first form, before the eye Sees them, so thin are they, they're carried high By winds up to the peaks. Now they're amassed In a much larger pack and can at last Be seen, appearing simultaneously To fly into the ether. We can see, When we ascend a mountain, that the air Abounds with windy breezes everywhere. Besides, that many particles appear Across the entire sea is made quite clear

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When clothes are hung up on the shore and take The sticky moisture in and therefore make It likelier that many bodies may Surge up together from the salty spray And swell the clouds above, for we may see That there exists a consanguinity Between these moistures. We can see, as well, From rivers and the earth itself a swell Of clouds and steam arising, in this way Exhaled like breath and bringing an array Of darkness as they thus suffuse the sky, Uniting as they gradually supply The clouds; for heat drives through the firmament And thus, packed close, a weave of clouds is blent. The bodies that create this hullabaloo Of clouds and flying storms enter the blue From outside. For their number I have proved Is infinite and shown how fast they're moved In flight and that they instantaneously Can travel through a space that cannot be Imagined. No surprise, then, if a squall And murkiness can in no time at all Cover the sea and land with clouds so great, Since all the elements can navigate Their way through all the passages of the air And through the breathing-channels everywhere Around us. Listen now as I explain How in the clouds the moistures of the rain Increase together and how showers fall,

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Sent down upon the earth. So, first of all, There rises from the earth full many a seed Of water with the clouds, you will concede, From many things, and they together grow As blood, sweat and all moisture we must know Grows with our bodies. Often clouds will pull Much water from the sea, like strands of wool, As by the winds they're carried. In this way From all the rivers water's snatched away Into the clouds. And when from here and there The seeds and clouds unite, while everywhere They grow, the clouds, now packed together, try To oust the moisture in two ways: they fly Together, aided by the breezes' might, And when a greater mass of clouds, packed tight, Than usual is collected, from on high They downwards press and make the showers fly Abroad. And if these clouds are rarefied By breezes or become somewhat untied, Struck by the sun's great heat, they then secrete Their rainy moisture, just as wax will heat And melt above a fire and attain Liquid. There's a fierce downpour of rain When clouds are pressed together violently Both by the wind and their own energy. But when the seeds of water move, the rain Is wont to be persistent and remain For a long time, and storm-rack on storm-rack And cloud on cloud from every region stack

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While borne along and from above they stream And everywhere the earth breathes back the steam. 580 When the sun shines amidst the gloomy squall Against the clouds from which the showers fall, A rainbow stands amid the murkiness. There are some other things that coalesce Inside the clouds and some which live and grow Above us, winds and hail and frost and snow And powerful ice which makes the waters freeze And curb the eager rivers – how all these Are made and why is easy to find out And see in your mind's eye once you've no doubt 590 About all of the elements' qualities. The reason for earthquakes' occurrences Now learn. And, in the first place, you must know That, as the sky above, the earth below Is full of windy caverns which possess Many lakes and pools and a great wilderness Of rocks and cliffs. And so we must surmise Beneath the earth's back many a river lies Hidden that rolls its waters violently And moves its rocks: for facts demand that she 600 Be everywhere herself. If this is so And these things are attached to her below, And each cavern with age deteriorates, The upper earth trembles and oscillates With some disaster; mountains start to fall, And with the massive shock the tremblings crawl Both far and wide at once – and well they may

Since buildings by the road tremble and sway When lightweight wagons pass, which will also, If a stone should jolt the wheels, as on they go, 610 Jump upwards. And sometimes when from the ground After some time a giant mass is found To roll into a lake, the earth also, Jogged by the water's waves, moves to and fro, Just as a vessel sometimes can't remain Immobile if the water can't refrain From moving too. When winds beneath the ground Desert one place and vehemently pound Against the lofty caves, into that course The headlong wind is making with great force 620 The earth will lean. The buildings, as they rise In their construction up into the skies, Incline, beams overhanging and prepared To go. However, some people are scared To think that for the great world's population A period of total desolation Is waiting, though a looming mass they see Over the earth. Yet if increasingly The winds should blow, no force could hold the world In limbo, keeping it from being hurled 630 Into perdition. But, because they wane In turns, gain force, revive and blow again, The earth makes idle threats more frequently Than ever she effects calamity. She makes a forward lean, then with a spring Moves back again, meanwhile recovering

The equilibrium she had before. And that's how buildings totter, the top more Than the foundation. When a blast of air Or wind should blow – it doesn't matter where, Above the earth itself or underground – And fly into the caves and whirl around And loudly growl, the force it agitates And drives it outwards as it lacerates The earth and formulates a great crevasse. At Syrian Sidon this once came to pass, And Aegium, when an earthquake overthrew Them with that force of air. Many others, too, Have fallen thus, and many have sunk down Into the ocean's depths and caused to drown The populace. But should it not break out, The air and wind are scattered all about, Plague-like, through all the openings that lie Beneath the earth, and tremors start thereby, Just as we shake with cold unwittingly. And therefore a two-fold anxiety Affects the citizens, because they dread The lofty houses and the caverns spread Beneath the earth lest nature suddenly Tears all asunder and confusingly Opens her gaping jaws and tries to fill The earth with ruin and all kinds of ill. So let them all think that the earth and sky Can't be corrupted and will never die; Yet sometimes peril adds a goad of fear

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That suddenly the earth will disappear Beneath our feet. Men wonder why the sea Is not increased in volume naturally, For many waters flow into the tide As many rivers run from every side. 670 Add wandering showers, too, and storms that fly Onto all seas and lands out of the sky, And all the ocean's springs: yet if you weigh The sea with all things else you'll find that they Amount to just one drop. Accordingly, Don't think it so surprising that the sea Does not increase. Besides, the sun's heat draws A lot away from it – another cause For doubt. Indeed we see wet garments dried By the sun, and yet the seas spread far and wide 680 Beneath us, and yet even though the sun Takes but a sip from it in any one Location, yet a superfluity He'll take away from that expanse of sea. Much moisture's swept away from the sea's face By winds, since we can often find no trace Of wet in roads after one night and see Soft mud massing in crusts. For recently I've shown much moisture's taken away as well By clouds descending on the ocean's swell: 690 Across the world they spray it everywhere When it is raining and the breezes bear The clouds along with them. Now finally, The earth is porous, girdling the sea:

So, since into the sea the waters course, The salt sea likewise must exude perforce Onto the land. The pungency is strained, And water oozes back till it's attained Each river's source, whence in a moving mass Over the earth once more it then may pass Along its marked-out path. Now in what way Mt. Etna breathes out fury I will say. For it was no familiar devastation Attending that fierce tempest's domination In Sicily's fields, attracting all the eyes Of neighbouring folk, who saw up in the skies The regions of the heavens sparkling And smoking as they stood there quivering In panic that another tragedy Was in the plans of nature. You must be Diligent in these matters and survey

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All quarters everywhere so that you may Remember the profundity of all We see and recognize how very small A fraction of the world is just one sky – Less than one man when he is measured by The whole earth. If you keep this steadily In mind, discerning it with clarity, You'll cease to wonder at a multitude Of things. For which of us is in the mood For wonder if a fever should assail Our bodies with its heat or we should ail With something else? A foot will suddenly Swell up or we will feel some agony In teeth or eyes or that accursed thing Erysipelas, which burns us, slithering Across our limbs, because assuredly Seeds do exist in many an entity, And foul diseases from the earth and air Are in sufficient numbers that they flare Immeasurably. Therefore there's a supply Of everything out of the earth and sky From infinite space, we must believe, and so The earth can quiver suddenly to and fro And over land and sea can whirlwinds rush And in abundance Etna's fires can gush And heavens burst in a blaze, and heavily Tempests can pour, when incidentally The waters' seeds for that effect have massed. "But much too huge is that tempestuous blast." Alright, but any river seems to be The largest to a man who formerly Has never seen a larger; it's the same With trees or men, and everyone may claim

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That all things of all kinds that he may see Are huge because they're bigger yet than he Has seen before, though sky and sea and land Are but a modicum if they are scanned With all there is. But now I'll clarify How Etna's flames are rouse that they might fly Out of the furnaces. Primarily The mountain's hollow, held up principally By flinty caverns, where there's wind, which air Invigorates by flying everywhere. And when the wind's grown hot and savagely Heated the rocks in its vicinity, The earth as well, it darts without delay Quick flames, rises and makes its fiery way Into the mountain's throat. The fires are, Along with all their sparks, scattered afar So that their thick, black smoke may emanate As well as boulders of a wondrous weight. You may be sure such is the energy That air possesses. Furthermore, the sea Around much of the mountain's roots will break Its waves and, with a sucking sound, will make Its surf recede; caves from this sea, below The earth, into the maw of the mountain go. Wind mixed with water, then, we must admit, Enters, the facts of the case compelling it To pierce through from the ocean whence it came And to extinguish and lift high the flame And cast up rocks and raise out of the sea

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Sand-clouds. Upon the very apogee Are craters, as they're called in Sicily (We call them throats or mouths). Additionally, There are a lot of things for which we name Not one but many causes; all the same, One of them is the true cause: for, let's say, You see a man's corpse lying far away -Perhaps you think you should enumerate All causes of his death lest you don't state The actual one. You could not prove a blade, The cold, poison or some disease had made The final blow, but we will surely find The cause of death was something of this kind. In many other things like views we state. The Nile's the only river in full spate Near summer. For it irrigates the land Mid-season since the stream is forced to stand By northerly winds which at the mouth appear (They're called Etesian at that time of year): They blow against it, hold it and impel The waters to the channel. It is well Beyond a doubt that those sharp blasts are rolled From all the polar stars of northern cold And blow against the current. From that land Of heat, the Nile flows south where there are tanned Black tribes baked by the sun. Maybe, as well, Great mounds of sand pile up against the swell And block the mouth: the winds stir up the sea, Which drive the sand inward; accordingly

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The outlet of the river is more barred: Thus the descending waters find it hard To flow. There may be also at its head More rain then when the Etesian winds have sped To drive the clouds together there. You may Be sure, when to the regions of noonday They're pushed, the clouds are violently compressed, At last collected on a mountain crest. 810 Perhaps the river grows straight from the heart Of Ethiopian peaks, whence clouds depart Out to the plains through the intensity Of the sun's melting rays. Listen to me As the Avernian regions and their lakes I tell of. First of all, the region takes Its name from the fact that it's a dreadful threat To birds which, flying over it, forget How they should use their wings and, slackening Their sails, fall through the ether, plummeting, 820 Their necks limp, into water or the ground, As nature wills it. This region is found Near Cumae, where the mountains up on high Reek, with rank sulphur filled and shrouded by Hot springs. In Athens there's another place, High on the citadel, where you may face Tritonian Pallas' shrine, the fostering Athene, whither no crow will take wing, Not even when an offering is there Upon the altar. They take so much care 830 To flee, not, as the Grecian bards have sung,

Due to their vigil – no, its quality Itself repels them. Also history Says such a place in Syria is found -As soon as beasts set foot upon the ground, It makes them fall down heavily as though Slain sacrifices to the gods below. But these are nature's work – where they arose And what produced them everybody knows. And so the gates of Orcus cannot be Within those regions and no deity Of Hell can draw souls into the domain Of Acheron, just as some folk maintain Swift stags can draw a serpent from its lair By breathing. Logic, you must be aware, Proves this is false. I strive to speak what's true. First, as I've frequently explained to you, There are so many different entities Upon the earth, and several of these (Like food) aid life, but many strike us dead With maladies. As I have also said, Each animal has a very different need From others for the life that it must lead, For every one is structured differently. A many a pernicious entity Enters the ears and nose, rough to the touch And noxious; many, too, are very much Not to be touched, looked at or tasted. You May see how many things harm humans, too.

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First, there is cast a shade so threatening From certain trees that they can often bring On headaches should you lie there on the ground. On Helicon's mountain- peaks there can be found A tree whose vile stench kills a fellow flat If he should smell its flower. You must know that The earth has many kinds of seeds which she Keeps hold of and then mingles variously And passes on. A new-extinguished light Offends the nose and overpowers guite At once a man who customarily Foams at the mouth and falls. The heavily-Scented castor makes a woman fall Asleep again as she lets go of all Her dainty work, if she has smelt it when She had her monthly period. And then, A lot of things loosen the limbs and shake The spirit. Once again, if you should take Too long a hot bath after a full meal You may, while still immersed, easily keel Over. The heavy fumes of charcoal easily Can creep into the brain lest formerly One drinks some water. Should a fever take Possession of a man, wine's smell will make A corpse of him. Do you not see that Earth Itself has to our sulphur given birth, And with its filthy odour asphalt grows In lumps together. Then again, when those Who mine silver and gold, examining

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The earth below us, o how everything 890 Reeks in Scaptensula! Those mines of gold -What kinds of devilry do they all hold And breathe out! And the men - what kind of hue Do they take on! What do they look like! You Must see and hear how soon their death will be, Their forces spent, since of necessity They must keep working. All the streams breathed out From the earth go forth and wander all about The open sky. Avernus thus must send Its deadly power up in the sky to end 900 The lives of birds, contaminating part Of heaven: thus when birds should chance to dart Thither, they're caught by poison they can't see And maybe fall straight down unswervingly To where the breath flew up so that same breath May make the coup de grâce and clinch their death. It seems to cause a giddiness at first, But afterwards, when they have surely burst Into those poison springs, their life as well Must be spewed forth, because within that Hell 910 Much evil lurks. Sometimes the power there That drives that exhalation parts the air Between the birds and earth so that a space Is left there. So when they fly to that place, Their wings lack power and halt immediately And on both sides they waste their energy. They can't count on their wings and so descend To earth and in near-empty space they send

Their souls to roam abroad through every pore As there they lie. Well-water, furthermore, 920 Grows colder in the summer, since the ground Is rarefied by heat and spreads around Into the air what seeds it might possess. The more the earth has lost some fieriness, The colder grows the water that's concealed Within the earth. Then when the earth's congealed And pulverized by cold and coalesces, Through that congealing into the walls it presses What heat it has. There is a spring, they say, Near Ammon's shrine that's cold during the day 930 And hot at night. This spring excessively Men wonder at; some hold the theory That the earth boils with the sun's fieriness When night with terrifying gloominess Has spread the earth. But this opinion Is far from sensible. For, when the sun Can't heat up water, though it blazes so, How is it possible, when it's below Earth's mass, that it can make the water boil, Soaked with its heat, beneath that compressed soil, 940 Especially since its warmth can't adequately Pass through a wall? How, then? Assuredly Because the ground's more pervious right there About the fountain than it is elsewhere. A lot of seeds of fire are around The water, so when night has quashed the ground With dewy waves, the earth will frigid grow

At heart, contracting. In this way, as though Pressed by a hand, it sends into the spring 950 What seeds of fire it has, engendering The water's heat. When the earth is agitated By the sun's rays and thus attenuated, The seeds return to their original source: Thus through the earth the water's warmth may course. And that's the reason why the spring is cold In the light of day. Besides, the water's rolled About by the rays of the sun, and the tremulous Heat in daylight makes it pervious, And that's the reason why it ousts each seed Of fire in its store, just as indeed 960 Water sends out the cold that it possesses From time to time so that it deliquesces The ice. There is a cold spring which, when tow Is held above it, frequently will throw A flame which catches fire instantly; A torch amid the waters similarly Sparkles and shines wherever it's impelled By winds, since many seeds of fire are held In water, and from down in the earth below There must be bodies of fire which rise and go 970 All through the entire spring, into the air Exhaled, though there are not sufficient there To heat the spring. Besides, there is a force That makes them break out suddenly and course Along the water, later gathering Above. This is exactly like the spring

Of Aradus in the sea, which splashes out Sweet water but the brine that flows about The spring they keep away. Again, the sea In many others spots treats bounteously 980 Parched sailors, for among the brine they spew Sweet water. Thus these seeds can burst out through This spring; and when upon some tow they meet Together, sticking to the torch's heat, They blaze up suddenly because the tow And floating torches, all of them aglow, Have seeds of fire, too. Is it not true That when beside a burning night-light you Have placed a wick that you have first snuffed out, 990 The wick is kindled once again without Touching the flame? The torch reacts the same. And many other things become a flame Far from the heat, before the fire is there And drenches them. This, therefore, we must dare To think that this occurs in that spring, too. To pass on, then, I will review for you How there exists a stone that can attract Iron, established by some natural act (This stone the Greeks call 'magnet', since it came From the Magnesian region), and its fame 1000 Awes men because a chain quite frequently Has small rings hanging from it: one may see Sometimes a few suspended in a string, Some five or more of them all dangling And swaying in the breeze, one from another

Hanging beneath, and each learns from its brother The stone's attracting force, which through and through Discharges and prevails. But until you Account for things of this sort, you must set A deal of principles before you get 1010 Your answer, and you must in your pursuit Be patient as you deeply delve to root It out. Your heedful ears and mind, therefore, I'm anxious to elicit all the more. In the first place, from everything we see There must be bodies flowing constantly, Discharged and scattered, which assail our eyes, Exciting vision. Constant odour flies From things, rivers are cold, the sun has heat, 1020 The sea-waves spray as chillingly they beat Upon the sea-walls. Through the ear a spate Of noises ooze, which never will abate. We have a salty taste when by the sea We chance to take a walk; similarly When wormwood and pure water coalesce Before our eyes we feel a bitterness. From all things certain qualities emanate And then in all directions dissipate. It's constant, since we feel it constantly, Since it is always given us to see 1030 All things and smell them, and to hear them, too. How porous bodies are I'll tell to you Once more, which in my first book I made plain. Although it is important to attain
Knowledge of many subjects, with none more Important than the one I'll now explore, We must accept there's nothing that we see But bodies mixed with void. Primarily, In caves the rocks above with sweat ooze out, The moisture dripping down with many a gout; We sweat, too, and our beards grow, and the hair Appears upon our bodies everywhere. Food enter all our veins to boost and feed Our frames, even the extreme parts indeed, Like nails. Both cold and heat we feel to go Through bronze: silver and gold we feel also When we hold teeming cups. Voices flit through Stone walls, where cold and odour trickle, too, As well as fire's heat, which, too, can pierce Through iron, for its strength is very fierce. And when heaven's corselet girds us all around, The power of diseases has been found, Which comes in from without; and naturally Storms rise from earth and sky, subsequently Withdrawing thither, since it's very clear That there is no non-porous texture here On earth. Moreover, not all bodies hurled From things have been donated in this world The same force on the senses, nor are they Germane to everything in the same way. Firstly, the sun bakes earth and makes it dry But melts the ice, compelling up on high The snow to thaw, and wax it liquefies

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And with its burning heat it mollifies Both bronze and gold, and yet contrarily It shrivels hides and flesh. Additionally, Water will harden iron when one takes It from the fire, but yet again it makes Soft hides and flesh, once hardened by the heat. To nanny-goats the olive is as sweet 1070 As if it literally were drizzling With nectar and ambrosia; and yet no thing Has bitterer leaves for man. Again, pigs flee From marjoram oil and each variety Of unguent, for what they find poisonous Sometimes appears to give new life to us. Though mud is hateful to us, nonetheless They find it pleasurable and obsess In rolling in it. But there's something yet That I think best to say before I set 1080 About my proper theme. Since we can see Many pores in different things, then they must be Endowed with their own natures and, as well, Their own directions, because, truth to tell, All beasts have different senses - each discerns The object proper to it, and one learns That sound and taste and smell can penetrate With different senses. One can infiltrate Itself through stone, another one can pass Through wood, another gold, another glass 1090 Or silver, since through glass images flow, Through silver warmth, while one thing's seen to go

More quickly than another, although they Yet make their journey by the self-same way. The nature of the paths assuredly Produces this eventuality, Because it's modified in waves galore, As I have shown a little while before, Due to each nature and how they're created. So when these principles have been instated, Prepared for us and laid out thoroughly, What's left is simple, since we easily Are able to deduce the explanation And show the reason for this gravitation. Firstly, there must be many seeds which flow Out of this stone, or a current that must blow And beat away the air which lies between Iron and stone, and when this space has been Made empty and there is an ample place Inside, the iron's seeds enter this space And fall together, whose result must be That the ring pursues them, passing totally Inside in the same way. There is no one thing Whose seeds are more connected, gathering Themselves, than iron which is chill and rough. What I've revealed, therefore, is proof enough That there are many bodies which exude From iron which aren't able to intrude Into the void unless he ring goes, too: It does indeed do this and follows through Until it's reached the stone where it will cling,

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Attached by hidden links. That very thing Occurs in every part: where there's a space, Above or on the side, the bodies race Into the void; by blows from everywhere Are they impelled, and up into the air They cannot rise at will. And, furthermore, As soon as the air is rarefied before The ring, it's driven forward by that air Behind, which buffets all things everywhere. It drives the iron then since on one side There is a space wherein it may abide. This air I speak of is insidious, Piercing the iron's many holes, and thus Reaches the particles, and then it thrusts It forward as a ship's moved by the gusts Of wind when lacking sails. All things have air Since they are pervious, and everywhere It hems and joins them all. The air, therefore, Hidden inside the iron's every pore, With restless movement ever agitated, Then beats the ring which thus is animated: It's carried to where it before had thrown Itself towards the void. From this same stone It goes sometimes, because it's wont to flee But then to follow, too, alternately. I've seen the Samothracian iron dance, When all the iron filings madly prance Within a bronze bowl where the stone was laid Beneath: so keen the iron was to evade

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The stone. And when the bronze has come between. There's chaos, since its current's surely seen To go ahead and thoroughly obtain Possession of the iron's pores. Again, The current comes and finds the iron replete And now is quite unable to repeat Its swim across it. Then accordingly It must assail the iron: equally It spews while through the bronze it sets about Moving throughout the bronze that which without 1160 The bronze it often sucks back. Do not be Surprised the flow has not the ability To drive other things: some stand firm by their weight, Like gold, some are so easy to permeate That things flow through them unrestrainedly And cannot be propelled – wood's seen to be A substance of that kind. So iron, then, Stands in between the two of them, and when Some tiny bodies of bronze should through it go, The magnet stones propel it by their flow. 1170 These properties, though, are not so discrete That there aren't many more I can repeat To you: for with each other they agree, But nothing else. To start with, you may see That only mortar can cement a stone And wood is joined by glue of bull alone So that the grain of boards will often gape Before the glue loosens its hold. The grape Mingles its juice with water from a spring,

And yet there cannot be such mingling With pitch or olive-oil. The sea-shell's hue Unites with wool and stays thus, even if you Attempt to renovate it with the sea, Even if it plies its waves entirely To wash it out. Just one thing can cement Two gold things; tin's the only element Uniting bronze to bronze. So many more Examples can be found – and yet wherefore? You must not use so long and devious A method, and I myself should not discuss This theme laboriously. For to embrace Many things but briefly is the perfect case: When textures of all entities coincide That empty places here become allied With full ones there, and thus contrariwise, That is the best approach. We may surmise That certain parts are linked with couplings As if they had been tied with hooks and rings, Just like with iron and stone apparently. Now I'll explain the cause of malady, How it amasses and with sudden breath Assails mankind and beasts and causes death. First, many seeds, as I have shown before, Support us, but there must be many more That fly around and bring death and disease, And if by chance or misadventure these Amass and thus the heavens have been cast Into unrest, the air receives a blast

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Of sickness. These diseases bring their scourge Either from without as down the sky they surge, 1210 Like clouds or mist, or gather frequently From earth when through the damp it's come to be Putrescent, struck by an unseasonable blow Of sun and rain. Do you not see, also, That those who travel far from home will be Affected by the weather's novelty? For what a difference must we understand Between the climate of the British land And that of Egypt, where the world's pole's bent Somewhat? Cannot we see how different 1220 Is Pontus from Cadiz and from those places Where tribes of people dwell with blackened faces? And as we see four climates so diverse, Four winds, four quarters of the universe, We find folk vary in their looks and hue, Subject to different diseases, too. For instance there's elephantiasis, Found by the Nile in middle-Egypt – this Is not found elsewhere. Attica is found To have affliction of the feet, while round 1230 Achaea there's infection of the eyes. Hence various different maladies arise In various parts: it's the variety Of airs that causes this. Accordingly, Whenever a sky that's alien to us all Begins to move, a dangerous air will crawl In snail-like fashion, like a cloud or mist,

And brings chaos wherever it may list, Compelling change; and often, when our sky It enters, it corrupts it and thereby It makes it like itself and therefore strange To us. Thus when this pestilential change Falls on the waters or upon the fields Where corn is grown and other produce yields The nourishment required by beasts and men Or even hovers in the air, and when We breathe the air mixed with it, likewise we Must then absorb it, too. Similarly The pestilence can give a fatal shock To cattle and distemper to a flock Of sluggish sheep. No matter if we take A trip to places which are apt to make Us sick or choose a different atmosphere Elsewhere or if a tainted sky's brought here By Nature or she gives us something we Aren't used to and has the ability To harm us! Such a cause of maladies Occurred once in the principalities Of Cecrops, poisoning the countryside: It made the roads a desert as men died In cities. Starting well within the land Of Egypt, far across the air it spanned The swimming plains, at length falling upon All the inhabitants of Pandion, Who then were visited by malady With death assailing them extensively.

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They first felt burning heat inside the head And with that fire the eyes were flaming red. The throat was black within and it would bleed While ulcers clogged the passage to impede 1270 The voice; the tongue, interpreter of the head, Was weak with pain and also freely bled, Heavy and rough, then, having now possessed The throat, this dreadful plague filled up the chest, Flooding the mind, and all life's bulwarks reeled Indeed. The patient's breathing, too, revealed A foul stench, like the penetrating smell Of corpses left unburied. Then, as well, The mind grew faint, being about to go Across death's threshold. This oppressive woe 1280 Rubbed shoulders with piercing anxiety Mingled with howls and grievous threnody. Often the patient retched through day and night, The limbs and muscles cramped, making him quite Past weariness. And yet one could not see Upon the frame any torridity, But merely warmth, which showed a vivid red As though with ulcers, as it may be said, It burned, as erysipelas can glide Across the limbs. And yet men blazed inside: 1290 A red-hot flame within the gut would burn, And nothing light or slender could you turn To use to help them, only wind and cold. Some with this plague in cooling rivers rolled.

Many fell into wells, which they struck first With gaping mouths, all drenched with parching thirst -A water's flood seemed but a modicum. Fatigued, they could not find one thing to numb The pain. Below her breath, in silent fright, Medicine muttered, since within her sight 1300 They rolled their staring eyes repeatedly, Sleepless and cursed by their infirmity. Many other signs of death I'll mention here: A mind unsettled due to grief and fear, A gloomy brow, a look that's mad and wild, Ears that are also troubled and beguiled By droning, pants emitted frequently And deep breaths uttered intermittently, Dank sweat down from their features trickling And thin, salt, yellow spittle issuing 1310 With effort from the throat. Relentlessly The hands twitched and the limbs shook; gradually A bitter cold would creep up from the toes, The nostrils were compressed, the tip of the nose Grew sharp, the eyes were sunken in the head, The temples hollow and, as of one dead, The hard skin cold, the forehead showing strain, The mouth agape. Very soon in death's domain They lay. Upon the eighth day or, at most, The ninth, those wretched folks gave up the ghost. 1320 If one of them had happened to evade Destructive death, yet later they were made To undergo foul ulcers and to bear

Black discharge from the bowels - waiting there Was waste and death, or else corrupted blood Would issue from choked nostrils in a flood Which pained the head, and through this ran the store Of human strength and substance. Furthermore, He who evaded the foul flux of blood Yet found this plague could cascade in a flood 1330 Into the limbs and sinews, even veer Into the genitals. Some with a strong fear Of death would go on living even though They'd cut their penis off, and some would go The rest of life without their hands and feet; Some lost their eyes; their fear was so complete. And there were some who lost their memory And did not know their own identity. Though piles of bodies lay upon the ground Unburied, tribes of birds and beasts would bound 1340 Away to dodge the stench or, tasting, faint And die a speedy death due to the taint. Yet back then no-one hardly saw a bird And from the forests scarcely came a herd Of gloomy beasts. Most grew weak with disease And died. Dogs were among the first of these, Those faithful beasts, who, scattered all about Upon the roads, reluctantly let out Their final breath, their lives twisted away. And there were struggles when a vast array 1350 Of funerals with no mourners went around The streets. No solid remedy was found,

For what gave some the strength to breathe the air And look up at the sky gave dark despair To others. In predicaments like these, The worst thing was when one found the disease Had felled him, knowing death was looming, he Would lie with saddened heart despondently And give up his existence then and there. No-one at any time or anywhere Cease to pass on this greed plague, as though They were but sheep and hornèd herds; and so, Chiefly, the dead were piled up in a heap: For anyone who made attempts to keep Watch on the sick, although they had a dread Of death and love of life, would soon be dead, Afflicted by a fatal carelessness, Themselves deserted, plagued by helplessness. But those who stayed at hand would perish there From the disease and labour that they'd bear Through duty and the voice of those who'd plead As wearily they watched, mingled indeed With dying wails. It was this kind of death That noble people at their final breath Would meet. Now by this time the shepherds all, The drovers, ploughmen, to, began to fall. In the back-corners of their huts they'd lie, Assailed by poverty and doomed to die. One sometimes saw a total family Lifeless, the mother, father, progeny. The countryside, though, had no less despair

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Than Rome whither there came from everywhere A mob of sickly farmers – they would press In buildings and outside, where death's distress Pied up the corpses. Many a sick man went Out to the highways, by his great thirst sent, And by the fountains with Silenus' head They now, choked with their hankering, lay dead. And all along those highways one might see Many a half-dead body raggedly 1390 Abused with negligence, near buried quite With vile and obscene filth - a dreadful sight! Wrapped up in rags and well-nigh putrefied, With nought but skin upon their bones, they died. The holy temples of the deities Had Death becrammed with all its carcasses, Each altar filled with corpses everywhere, The shrine of which the sacristans took care And filled with guests. There was no admiration For worship now, for all the tribulation 1400 Suppressed it. Burial rites, which evermore Had been observed for many years before, Was banished. Everyone was filled with dread And, as he may, would bury his own dead. For sudden urgency and poverty Caused awful acts, as people piercingly Shrieked out as on a stranger's pyre they lay Their kin: the torch once placed beneath it, they Indulged in bloody brawls rather than leave Their loved one, and then they would weep and grieve 1410

As they went home. A multiplicity Would take themselves to bed in misery. And there was nobody whom one would know Untouched by death and malady and woe.