



ON GENERATION AND CORRUPTION

ARISTOTLE

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**ON
GENERATION
AND CORRUPTION**

**BY
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will be neither their matter, nor either of them existing in its full reality without qualification. There will result instead an 'intermediate': and this 'intermediate', according as it is potentially more hot than cold or vice versa, will possess a power-of-heating that is double or triple its power-of-cooling, or otherwise related thereto in some similar ratio. Thus all the other bodies will result from the contraries, or rather from the 'elements', in so far as these have been 'combined': while the elements' will result from the contraries, in so far as these 'exist potentially' in a special sense-not as matter 'exists potentially', but in the sense explained above. And when a thing comes-to-be in this manner, the process is 'combination'; whereas what comes-to-be in the other manner is matter. Moreover (ii) contraries also 'suffer action', in accordance with the disjunctively-articulated definition established in the early part of this work.' For the actually-hot is potentially-cold and the actually cold potentially-hot; so that hot and cold, unless they are equally balanced, are transformed into one another (and all the other contraries behave in a similar way). It is thus, then, that in the first place the 'elements' are transformed; and that (in the second place) out of the 'elements' there come-to-be flesh and bones and the like-the hot becoming cold and the cold becoming hot when they have been brought to the 'mean'. For at the 'mean' is neither hot nor cold. The 'mean', however, is of considerable extent and not indivisible. Similarly, it is qua reduced to a 'mean' condition that the dry and the moist, as well as the contraries we have used as examples, produce flesh and bone and the remaining compounds.

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All the compound bodies--all of which exist in the region belonging to the central body--are composed of all the 'simple' bodies. For they all contain Earth because every 'simple' body is to be found specially and most abundantly in its own place. And they all contain Water because (a) the compound must possess a definite outline and Water, alone of the 'simple' bodies, is readily adaptable in shape: moreover (b) Earth has no power of cohesion without the moist. On the contrary, the moist is what holds it

together; for it would fall to pieces if the moist were eliminated from it completely.

They contain Earth and Water, then, for the reasons we have given: and they contain Air and Fire, because these are contrary to Earth and Water (Earth being contrary to Air and Water to Fire, in so far as one Substance can be 'contrary' to another). Now all compounds presuppose in their coming-to-be constituents which are contrary to one another: and in all compounds there is contained one set of the contrasted extremes. Hence the other set must be contained in them also, so that every compound will include all the 'simple' bodies.

Additional evidence seems to be furnished by the food each compound takes. For all of them are fed by substances which are the same as their constituents, and all of them are fed by more substances than one. Indeed, even the plants, though it might be thought they are fed by one substance only, viz. by Water, are fed by more than one: for Earth has been mixed with the Water. That is why farmers too endeavour to mix before watering. Although food is akin to the matter, that which is fed is the 'figure'--i.e. the 'form' taken along with the matter. This fact enables us to understand why, whereas all the 'simple' bodies come-to-be out of one another, Fire is the only one of them which (as our predecessors also assert) 'is fed'. For Fire alone-or more than all the rest-is akin to the 'form' because it tends by nature to be borne towards the limit. Now each of them naturally tends to be borne towards its own place; but the 'figure'--i.e. the 'form'--Of them all is at the limits.

Thus we have explained that all the compound bodies are composed of all the 'simple' bodies.

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Since some things are such as to come-to-be and pass-away, and since coming-to-be in fact occurs in the region about the centre, we must explain the number and the nature of the 'originative sources' of all coming-to-be

alike: for a grasp of the true theory of any universal facilitates the understanding of its specific forms.

The 'originative sources', then, of the things which come-to-be are equal in number to, and identical in kind with, those in the sphere of the eternal and primary things. For there is one in the sense of 'matter', and a second in the sense of 'form': and, in addition, the third 'originative source' must be present as well. For the two first are not sufficient to bring things into being, any more than they are adequate to account for the primary things.

Now cause, in the sense of material origin, for the things which are such as to come-to-be is 'that which can be-and-not-be': and this is identical with 'that which can come-to-be-and-pass-away', since the latter, while it is at one time, at another time is not. (For whereas some things are of necessity, viz. the eternal things, others of necessity are not. And of these two sets of things, since they cannot diverge from the necessity of their nature, it is impossible for the first not to be and impossible for the second to be. Other things, however, can both be and not be.) Hence coming-to-be and passing-away must occur within the field of 'that which can be-and not-be'. This, therefore, is cause in the sense of material origin for the things which are such as to come-to-be; while cause, in the sense of their 'end', is their 'figure' or 'form'-and that is the formula expressing the essential nature of each of them.

But the third 'originative source' must be present as well--the cause vaguely dreamed of by all our predecessors, definitely stated by none of them. On the contrary (a) some amongst them thought the nature of 'the Forms' was adequate to account for coming-to-be. Thus Socrates in the *Phaedo* first blames everybody else for having given no explanation; and then lays it down; that 'some things are Forms, others Participants in the Forms', and that 'while a thing is said to "be" in virtue of the Form, it is said to "come-to-be" qua sharing in," to "pass-away" qua "losing," the 'Form'. Hence he thinks that 'assuming the truth of these theses, the Forms must be causes both of coming-to-be and of passing-away'. On the other hand (b) there were others who thought 'the matter' was adequate by itself to account for coming-to-be, since 'the movement originates from the matter'.

Neither of these theories, however, is sound. For (a) if the Forms are causes, why is their generating activity intermittent instead of perpetual and continuous—since there always are Participants as well as Forms? Besides, in some instances we see that the cause is other than the Form. For it is the doctor who implants health and the man of science who implants science, although ‘Health itself’ and ‘Science itself’ are as well as the Participants: and the same principle applies to everything else that is produced in accordance with an art. On the other hand (b) to say that ‘matter generates owing to its movement’ would be, no doubt, more scientific than to make such statements as are made by the thinkers we have been criticizing. For what ‘alters’ and transfigures plays a greater part in bringing things into being; and we are everywhere accustomed, in the products of nature and of art alike, to look upon that which can initiate movement as the producing cause. Nevertheless this second theory is not right either.

For, to begin with, it is characteristic of matter to suffer action, i.e. to be moved: but to move, i.e. to act, belongs to a different ‘power’. This is obvious both in the things that come-to-be by art and in those that come to-be by nature. Water does not of itself produce out of itself an animal: and it is the art, not the wood, that makes a bed. Nor is this their only error. They make a second mistake in omitting the more controlling cause: for they eliminate the essential nature, i.e. the ‘form’. And what is more, since they remove the formal cause, they invest the forces they assign to the ‘simple’ bodies—the forces which enable these bodies to bring things into being—with too instrumental a character. For ‘since’ (as they say) ‘it is the nature of the hot to dissociate, of the cold to bring together, and of each remaining contrary either to act or to suffer action’, it is out of such materials and by their agency (so they maintain) that everything else comes-to-be and passes-away. Yet (a) it is evident that even Fire is itself moved, i.e. suffers action. Moreover (b) their procedure is virtually the same as if one were to treat the saw (and the various instruments of carpentry) as ‘the cause’ of the things that come-to-be: for the wood must be divided if a man saws, must become smooth if he planes, and so on with the remaining tools. Hence, however true it may be that Fire is active, i.e. sets things moving, there is a further point they fail to observe—viz. that Fire is inferior to the tools or instruments in the manner in which it sets things moving.

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As to our own theory--we have given a general account of the causes in an earlier work,' we have now explained and distinguished the 'matter' and the 'form'. Further, since the change which is motion has been proved' to be eternal, the continuity of the occurrence of coming-to-be follows necessarily from what we have established: for the eternal motion, by causing 'the generator' to approach and retire, will produce coming-to-be uninterruptedly. At the same time it is clear that we were right when, in an earlier work,' we called motion (not coming-to-be) 'the primary form of change'. For it is far more reasonable that what is should cause the coming-to-be of what is not, than that what is not should cause the being of what is. Now that which is being moved is, but that which is coming-to-be is not: hence, also, motion is prior to coming-to-be.

We have assumed, and have proved, that coming-to-be and passing-away happen to things continuously; and we assert that motion causes coming-to-be. That being so, it is evident that, if the motion be single, both processes cannot occur since they are contrary to one another: for it is a law of nature that the same cause, provided it remain in the same condition, always produces the same effect, so that, from a single motion, either coming-to-be or passing-away will always result. The movements must, on the contrary, be more than one, and they must be contrasted with one another either by the sense of their motion or by its irregularity: for contrary effects demand contraries as their causes.

This explains why it is not the primary motion that causes coming-to-be and passing-away, but the motion along the inclined circle: for this motion not only possesses the necessary continuity, but includes a duality of movements as well. For if coming-to-be and passing-away are always to be continuous, there must be some body always being moved (in order that these changes may not fail) and moved with a duality of movements (in order that both changes, not one only, may result). Now the continuity of this movement is caused by the motion of the whole: but the approaching and retreating of the moving body are caused by the inclination. For the

consequence of the inclination is that the body becomes alternately remote and near; and since its distance is thus unequal, its movement will be irregular. Therefore, if it generates by approaching and by its proximity, it destroys by retreating and becoming remote: and if it generates by many successive approaches, it also destroys by many successive retirements. For contrary effects demand contraries as their causes; and the natural processes of passing-away and coming-to-be occupy equal periods of time. Hence, too, the times-i.e. the lives-of the several kinds of living things have a number by which they are distinguished: for there is an Order controlling all things, and every time (i.e. every life) is measured by a period. Not all of them, however, are measured by the same period, but some by a smaller and others by a greater one: for to some of them the period, which is their measure, is a year, while to some it is longer and to others shorter.

And there are facts of observation in manifest agreement with our theories. Thus we see that coming-to-be occurs as the sun approaches and decay as it retreats; and we see that the two processes occupy equal times. For the durations of the natural processes of passing-away and coming-to-be are equal. Nevertheless it often happens that things pass-away in too short a time. This is due to the 'intermingling' by which the things that come-to-be and pass-away are implicated with one another. For their matter is 'irregular', i.e. is not everywhere the same: hence the processes by which they come-to-be must be 'irregular' too, i.e. some too quick and others too slow. Consequently the phenomenon in question occurs, because the 'irregular' coming-to-be of these things is the passing-away of other things.

Coming-to-be and passing-away will, as we have said, always be continuous, and will never fail owing to the cause we stated. And this continuity has a sufficient reason on our theory. For in all things, as we affirm, Nature always strives after 'the better'. Now 'being' (we have explained elsewhere the exact variety of meanings we recognize in this term) is better than 'not-being': but not all things can possess 'being', since they are too far removed from the 'originative source. 'God therefore adopted the remaining alternative, and fulfilled the perfection of the universe by making coming-to-be uninterrupted: for the greatest possible coherence would thus be

secured to existence, because that 'coming-to-be should itself come-to-be perpetually' is the closest approximation to eternal being.

The cause of this perpetuity of coming-to-be, as we have often said, is circular motion: for that is the only motion which is continuous. That, too, is why all the other things-the things, I mean, which are reciprocally transformed in virtue of their 'passions' and their 'powers of action' e.g. the 'simple' bodies imitate circular motion. For when Water is transformed into Air, Air into Fire, and the Fire back into Water, we say the coming-to-be 'has completed the circle', because it reverts again to the beginning. Hence it is by imitating circular motion that rectilinear motion too is continuous.

These considerations serve at the same time to explain what is to some people a baffling problem--viz. why the 'simple' bodies, since each them is travelling towards its own place, have not become dissevered from one another in the infinite lapse of time. The reason is their reciprocal transformation. For, had each of them persisted in its own place instead of being transformed by its neighbour, they would have got dissevered long ago. They are transformed, however, owing to the motion with its dual character: and because they are transformed, none of them is able to persist in any place allotted to it by the Order.

It is clear from what has been said (i) that coming-to-be and passing-away actually occur, (ii) what causes them, and (iii) what subject undergoes them. But (a) if there is to be movement (as we have explained elsewhere, in an earlier work') there must be something which initiates it; if there is to be movement always, there must always be something which initiates it; if the movement is to be continuous, what initiates it must be single, unmoved, ungenerated, and incapable of 'alteration'; and if the circular movements are more than one, their initiating causes must all of them, in spite of their plurality, be in some way subordinated to a single 'originative source'. Further (b) since time is continuous, movement must be continuous, inasmuch as there can be no time without movement. Time, therefore, is a 'number' of some continuous movement-a 'number', therefore, of the circular movement, as was established in the discussions at the beginning. But (c) is movement continuous because of the continuity of that which is moved, or because that in which the movement occurs (I mean, e.g. the

place or the quality) is continuous? The answer must clearly be 'because that which is moved is continuous'. (For how can the quality be continuous except in virtue of the continuity of the thing to which it belongs? But if the continuity of 'that in which' contributes to make the movement continuous, this is true only of 'the place in which'; for that has 'magnitude' in a sense.) But (d) amongst continuous bodies which are moved, only that which is moved in a circle is 'continuous' in such a way that it preserves its continuity with itself throughout the movement. The conclusion therefore is that this is what produces continuous movement, viz. the body which is being moved in a circle; and its movement makes time continuous.

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Wherever there is continuity in any process (coming-to-be or 'alteration' or any kind of change whatever) we observe consecutiveness', i.e. this coming-to-be after that without any interval. Hence we must investigate whether, amongst the consecutive members, there is any whose future being is necessary; or whether, on the contrary, every one of them may fail to come-to-be. For that some of them may fail to occur, is clear. (a) We need only appeal to the distinction between the statements 'x will be' and 'x is about to which depends upon this fact. For if it be true to say of x that it 'will be', it must at some time be true to say of it that 'it is': whereas, though it be true to say of x now that 'it is about to occur', it is quite possible for it not to come-to-be-thus a man might not walk, though he is now 'about to' walk. And (b) since (to appeal to a general principle) amongst the things which 'are' some are capable also of 'not-being', it is clear that the same ambiguous character will attach to them no less when they are coming-to-be: in other words, their coming-to-be will not be necessary.

Then are all the things that come-to-be of this contingent character? Or, on the contrary, is it absolutely necessary for some of them to come-to-be? Is there, in fact, a distinction in the field of 'coming-to-be' corresponding to the distinction, within the field of 'being', between things that cannot possibly 'not-be' and things that can 'not-be'? For instance, is it necessary

that solstices shall come-to-be, i.e. impossible that they should fail to be able to occur?

Assuming that the antecedent must have come-to-be if the consequent is to be (e.g. that foundations must have come-to-be if there is to be a house: clay, if there are to be foundations), is the converse also true? If foundations have come-to-be, must a house come-to-be? The answer seems to be that the necessary nexus no longer holds, unless it is 'necessary' for the consequent (as well as for the antecedent) to come-to-be-'necessary' absolutely. If that be the case, however, 'a house must come to-be if foundations have come-to-be', as well as vice versa. For the antecedent was assumed to be so related to the consequent that, if the latter is to be, the antecedent must have come-to-be before it. If, therefore, it is necessary that the consequent should come-to-be, the antecedent also must have come-to-be: and if the antecedent has come-to-be, then the consequent also must come-to-be-not, however, because of the antecedent, but because the future being of the consequent was assumed as necessary. Hence, in any sequence, when the being of the consequent is necessary, the nexus is reciprocal-in other words, when the antecedent has come-to-be the consequent must always come-to-be too.

Now (i) if the sequence of occurrences is to proceed ad infinitum 'downwards', the coming to-be of any determinate 'this' amongst the later members of the sequence will not be absolutely, but only conditionally, necessary. For it will always be necessary that some other member shall have come-to-be before 'this' as the presupposed condition of the necessity that 'this' should come-to-be: consequently, since what is 'infinite' has no 'originative source', neither will there be in the infinite sequence any 'primary' member which will make it 'necessary' for the remaining members to come-to-be.

Nor again (ii) will it be possible to say with truth, even in regard to the members of a limited sequence, that it is 'absolutely necessary' for any one of them to come-to-be. We cannot truly say, e.g. that 'it is absolutely necessary for a house to come-to-be when foundations have been laid': for (unless it is always necessary for a house to be coming-to-be) we should be faced with the consequence that, when foundations have been laid, a thing,

which need not always be, must always be. No: if its coming-to-be is to be 'necessary', it must be 'always' in its coming-to-be. For what is 'of necessity' coincides with what is 'always', since that which 'must be' cannot possibly 'not-be'. Hence a thing is eternal if its 'being' is necessary: and if it is eternal, its 'being' is necessary. And if, therefore, the 'coming-to-be' of a thing is necessary, its 'coming-to-be' is eternal; and if eternal, necessary.

It follows that the coming-to-be of anything, if it is absolutely necessary, must be cyclical--i.e. must return upon itself. For coming to-be must either be limited or not limited: and if not limited, it must be either rectilinear or cyclical. But the first of these last two alternatives is impossible if coming-to-be is to be eternal, because there could not be any 'originative source' whatever in an infinite rectilinear sequence, whether its members be taken 'downwards' (as future events) or 'upwards' (as past events). Yet coming-to-be must have an 'originative source' (if it is to be necessary and therefore eternal), nor can it be eternal if it is limited. Consequently it must be cyclical. Hence the nexus must be reciprocal. By this I mean that the necessary occurrence of 'this' involves the necessary occurrence of its antecedent: and conversely that, given the antecedent, it is also necessary for the consequent to come-to-be. And this reciprocal nexus will hold continuously throughout the sequence: for it makes no difference whether the reciprocal nexus, of which we are speaking, is mediated by two, or by many, members.

It is in circular movement, therefore, and in cyclical coming-to-be that the 'absolutely necessary' is to be found. In other words, if the coming-to-be of any things is cyclical, it is 'necessary' that each of them is coming-to-be and has come-to-be: and if the coming-to-be of any things is 'necessary', their coming-to-be is cyclical.

The result we have reached is logically concordant with the eternity of circular motion, i.e. the eternity of the revolution of the heavens (a fact which approved itself on other and independent evidence), since precisely those movements which belong to, and depend upon, this eternal revolution 'come-to-be' of necessity, and of necessity 'will be'. For since the revolving body is always setting something else in motion, the movement of the things it moves must also be circular. Thus, from the being of the 'upper revolution' it follows that the sun revolves in this determinate manner; and

since the sun revolves thus, the seasons in consequence come-to-be in a cycle, i.e. return upon themselves; and since they come-to-be cyclically, so in their turn do the things whose coming-to-be the seasons initiate.

Then why do some things manifestly come to-be in this cyclical fashion (as, e.g. showers and air, so that it must rain if there is to be a cloud and, conversely, there must be a cloud if it is to rain), while men and animals do not 'return upon themselves' so that the same individual comes-to-be a second time (for though your coming-to-be presupposes your father's, his coming-to-be does not presuppose yours)? Why, on the contrary, does this coming-to-be seem to constitute a rectilinear sequence?

In discussing this new problem, we must begin by inquiring whether all things 'return upon themselves' in a uniform manner; or whether, on the contrary, though in some sequences what recurs is numerically the same, in other sequences it is the same only in species. In consequence of this distinction, it is evident that those things, whose 'substance'--that which is undergoing the process-is imperishable, will be numerically, as well as specifically, the same in their recurrence: for the character of the process is determined by the character of that which undergoes it. Those things, on the other hand, whose 'substance' is perish, able (not imperishable) must 'return upon themselves' in the sense that what recurs, though specifically the same, is not the same numerically. That why, when Water comes-to-be from Air and Air from Water, the Air is the same 'specifically', not 'numerically': and if these too recur numerically the same, at any rate this does not happen with things whose 'substance' comes-to-be-whose 'substance' is such that it is essentially capable of not-being.
