

19.1 | *Nature and the Natural*

Of all the terms in the vocabulary of speculative thought, the words "nature" and "natural" have, perhaps, the greatest ambiguity. The passages collected here reflect the range and variety of the meanings that have been attached to them.

Nature is sometimes identified with the cosmos itself and, as so regarded, it embraces everything, even being identified with God in the view of pantheists who think of God as immanent in nature, not as transcending it. But it is also conceived as quite distinct from God—as the creation of God, who, as uncreated, is therefore referred to as supernatural. In other contexts, a basic distinction is drawn between nature and art—the natural and the artificial, that which is independent of man and that which is in some way dependent on man's efforts or intervention. But nature is also conceived by certain writers as being an artist or as being the product of the divine art. In still other contexts, nature is personified as if it were a brooding omnipresence, the embodiment of an indwelling reason, purposeful and even benevolent; and against such views, the reader will find the opinion expressed that nature represents blind ne-

cessity or chance, indifferent to human well-being and human aspirations.

The quotations included in this section set forth most of the maxims that have been formulated concerning nature's operations, usually expressed in personified form: that nature does nothing in vain; that nature abhors a vacuum; that nature can make no mistakes; that nature knows best; that nature does nothing by jumps; that nature is frugal or economical, employing the fewest means to achieve its ends and wasting nothing; that nature manifests the wisdom of God; and so on. Most of these sayings have been challenged or contradicted.

When nature is regarded as the standard of what is right or reasonable, to say that something is unnatural or contrary to nature condemns it morally; but it has also been maintained that there is nothing unnatural or contrary to nature, though it may violate custom or received opinion.

The poets celebrate the beauties of nature as well as its awesome powers. Together with the philosophers and others, they speak of the things that men can learn from nature, and the benefits to be derived from intimacy with it.

1 *Achilleus*. The enormous strength of Ocean with his deep-running waters,
Ocean, from whom all rivers are and the entire sea
and all springs and all deep wells have their waters of him, yet
even Ocean is afraid of the lightning of great Zeus and the dangerous thunderbolt when it breaks from the sky crashing.

Homer, *Iliad*, XXI, 195

2 *Eleatic Stranger*. Looking, now, at the world and all the animals and plants, at things which grow

upon the earth from seeds and roots, as well as at inanimate substances which are formed within the earth, fusile or non-fusile, shall we say that they come into existence—not having existed previously—by the creation of God, or shall we agree with vulgar opinion about them?

Theaetetus. What is it?

Str. The opinion that nature brings them into being from some spontaneous and unintelligent cause. Or shall we say that they are created by a divine reason and a knowledge which comes from God?

Theaet. I dare say that, owing to my youth, I may often waver in my view, but now when I look

at you and see that you incline to refer them to God, I defer to your authority.

Str. Nobly said, Theaetetus, and if I thought that you were one of those who would hereafter change your mind, I would have gently argued with you, and forced you to assent; but as I perceive that you will come of yourself and without any argument of mind, to that belief which, as you say, attracts you, I will not forestall the work of time. Let me suppose, then, that things which are said to be made by nature are the work of divine art, and that things which are made by man out of these are work of human art. And so there are two kinds of making and production, the one human and the other divine.

Plato, *Sophist*, 265A

- 3 *Athenian Stranger*. I am afraid that we have unconsciously lighted on a strange doctrine.

Cleinias. What doctrine do you mean?

Ath. The wisest of all doctrines, in the opinion of many.

Cl. I wish that you would speak plainer.

Ath. The doctrine that all things do become, have become, and will become, some by nature, some by art, and some by chance.

Cl. Is not that true?

Ath. Well, philosophers are probably right; at any rate we may as well follow in their track, and examine what is the meaning of them and their disciples.

Cl. By all means.

Ath. They say that the greatest and fairest things are the work of nature and of chance, the lesser of art, which, receiving from nature the greater and primeval creations, moulds and fashions all those lesser works which are generally termed artificial.

Cl. How is that?

Ath. I will explain my meaning still more clearly. They say that fire and water, and earth and air, all exist by nature and chance, and none of them by art, and that as to the bodies which come next in order—earth, and sun, and moon, and stars—they have been created by means of these absolutely inanimate existences. The elements are severally moved by chance and some inherent force according to certain affinities among them—of hot with cold, or of dry with moist, or of soft with hard, and according to all the other accidental admixtures of opposites which have been formed by necessity. After this fashion and in this manner the whole heaven has been created, and all that is in the heaven, as well as animals and all plants, and all the seasons come from these elements, not by the action of mind, as they say, or of any God, or from art, but as I was saying, by nature and chance only. Art sprang up afterwards and out of these, mortal and of mortal birth, and produced in play certain images and very partial imitations of the truth, having an affinity to one

another, such as music and painting create and their companion arts. And there are other arts which have a serious purpose, and these co-operate with nature, such, for example, as medicine, and husbandry, and gymnastic. And they say that politics cooperate with nature, but in a less degree, and have more of art; also that legislation is entirely a work of art, and is based on assumptions which are not true.

Plato, *Laws*, X, 888B

- 4 Of things that exist, some exist by nature, some from other causes.

'By nature' the animals and their parts exist, and the plants and the simple bodies (earth, fire, air, water)—for we say that these and the like exist 'by nature'.

All the things mentioned present a feature in which they differ from things which are *not* constituted by nature. Each of them has *within itself* a principle of motion and of stationariness (in respect of place, or of growth and decrease, or by way of alteration). On the other hand, a bed and a coat and anything else of that sort, *qua* receiving these designations—i.e. insofar as they are products of art—have no innate impulse to change. But insofar as they happen to be composed of stone or of earth or of a mixture of the two, they *do* have such an impulse, and just to that extent—which seems to indicate that *nature is a source or cause of being moved and of being at rest in that to which it belongs primarily*, in virtue of itself and not in virtue of a concomitant attribute.

Aristotle, *Physics*, 192b9

- 5 Of things constituted by nature some are ungenerated, imperishable, and eternal, while others are subject to generation and decay. The former are excellent beyond compare and divine, but less accessible to knowledge. The evidence that might throw light on them, and on the problems which we long to solve respecting them, is furnished but scantily by sensation; whereas respecting perishable plants and animals we have abundant information, living as we do in their midst, and ample data may be collected concerning all their various kinds, if only we are willing to take sufficient pains. Both departments, however, have their special charm. The scanty conceptions to which we can attain of celestial things give us, from their excellence, more pleasure than all our knowledge of the world in which we live; just as a half glimpse of persons that we love is more delightful than a leisurely view of other things, whatever their number and dimensions. On the other hand, in certitude and in completeness our knowledge of terrestrial things has the advantage. Moreover, their greater nearness and affinity to us balances somewhat the loftier interest of the heavenly things that are the objects of the higher philosophy. Having already treated of the celestial world, as far as our conjectures could reach, we proceed

to treat of animals, without omitting, to the best of our ability, any member of the kingdom, however ignoble. For if some have no graces to charm the sense, yet even these, by disclosing to intellectual perception the artistic spirit that designed them, give immense pleasure to all who can trace links of causation, and are inclined to philosophy. Indeed, it would be strange if mimic representations of them were attractive, because they disclose the mimetic skill of the painter or sculptor, and the original realities themselves were not more interesting, to all at any rate who have eyes to discern the reasons that determined their formation. We therefore must not recoil with childish aversion from the examination of the humbler animals. Every realm of nature is marvellous: and as Heraclitus, when the strangers who came to visit him found him warming himself at the furnace in the kitchen and hesitated to go in, is reported to have bidden them not to be afraid to enter, as even in that kitchen divinities were present, so we should venture on the study of every kind of animal without distaste; for each and all will reveal to us something natural and something beautiful. Absence of haphazard and conduciveness of everything to an end are to be found in Nature's works in the highest degree, and the resultant end of her generations and combinations is a form of the beautiful.

If any person thinks the examination of the rest of the animal kingdom an unworthy task, he must hold in like disesteem the study of man. For no one can look at the primordia of the human frame—blood, flesh, bones, vessels, and the like—without much repugnance. Moreover, when any one of the parts or structures, be it which it may, is under discussion, it must not be supposed that it is its material composition to which attention is being directed or which is the object of the discussion, but the relation of such part to the total form. Similarly, the true object of architecture is not bricks, mortar, or timber, but the house; and so the principal object of natural philosophy is not the material elements, but their composition, and the totality of the form, independently of which they have no existence.

Aristotle, *Parts of Animals*, 644^b21

6 A general principle must here be noted, which will be found applicable not only in this instance but in many others that will occur later on. Nature allots each weapon, offensive and defensive alike, to those animals alone that can use it; or, if not to them alone, to them in a more marked degree; and she allots it in its most perfect state to those that can use it best; and this whether it be a sting, or a spur, or horns, or tusks, or what it may of a like kind.

Aristotle, *Parts of Animals*, 661^b28

7 Nature creates nothing without a purpose, but al-

ways the best possible in each kind of living creature by reference to its essential constitution. Accordingly if one way is better than another that is the way of Nature.

Aristotle, *On the Gait of Animals*, 704^b16

8 Nature flies from the infinite, for the infinite is unending or imperfect, and Nature ever seeks an end.

Aristotle, *Generation of Animals*, 715^b15

9 The monstrosity belongs to the class of things contrary to Nature, not any and every kind of Nature, but Nature in her usual operations; nothing can happen contrary to Nature considered as eternal and necessary, but we speak of things being contrary to her in those cases where things generally happen in a certain way but may also happen in another way. In fact, even in the case of monstrosities, whenever things occur contrary indeed to the established order but still always in a certain way and not at random, the result seems to be less of a monstrosity because even that which is contrary to Nature is in a certain sense according to Nature, whenever, that is, the formal nature has not mastered the material nature.

Aristotle, *Generation of Animals*, 770^b10

10 The observed facts show that nature is not a series of episodes, like a bad tragedy.

Aristotle, *Metaphysics*, 1090^b19

11 Darkness of mind must be dispelled not by the rays of the sun and glittering shafts of day, but by the aspect and the law of nature; the warp of whose design we shall begin with this first principle, nothing is ever gotten out of nothing by divine power. Fear in sooth holds so in check all mortals, because they see many operations go on in earth and heaven, the causes of which they can in no way understand, believing them therefore to be done by power divine. For these reasons when we shall have seen that nothing can be produced from nothing, we shall then more correctly ascertain that which we are seeking, both the elements out of which every thing can be produced and the manner in which all things are done without the hand of the gods.

Lucretius, *Nature of Things*, I

12 All nature . . . as it exists by itself, is founded on two things: there are bodies and there is void in which these bodies are placed and through which they move about.

Lucretius, *Nature of Things*, I

13 You should desire with all your might to shun the weakness, with a lively apprehension to avoid the mistake of supposing that the bright lights of the eyes were made in order that we might see; and that the tapering ends of the shanks and hams are

attached to the feet as a base in order to enable us to step out with long strides; or again that the forearms were slung to the stout upper arms and ministering hands given us on each side, that we might be able to discharge the needful duties of life. Other explanations of like sort which men give, one and all put effect for cause through wrongheaded reasoning; since nothing was born in the body that we might use it, but that which is born begets for itself a use: thus seeing did not exist before the eyes were born, nor the employment of speech ere the tongue was made; but rather the birth of the tongue was long anterior to language and the ears were made long before sound was heard, and all the limbs, I trow, existed before there was any employment for them: they could not therefore have grown for the purpose of being used. But on the other hand engaging in the strife of battle and mangling the body and staining the limbs with gore were in vogue long before glittering darts ever flew; and nature prompted to shun a wound or ever the left arm by the help of art held up before the person the defence of a shield. Yes and consigning the tired body to rest is much older than a soft-cushioned bed, and the slaking of thirst had birth before cups. These things therefore which have been invented in accordance with the uses and wants of life, may well be believed to have been discovered for the purpose of being used. Far otherwise is it with all those things which first were born, then afterwards made known the purposes to which they might be put; at the head of which class we see the senses and the limbs. Wherefore again and again I repeat, it is quite impossible to believe that they could have been made for the duties which they discharge.

Lucretius, *Nature of Things*, IV

- 14 But, ere we stir the yet unbroken ground,
The various course of seasons must be found;
The weather, and the setting of the winds,
The culture suiting to the several kinds
Of seeds and plants, and what will thrive and rise,
And what the genius of the soil denies.
This ground with Bacchus, that with Ceres, suits:
That other loads the trees with happy fruits:
A fourth, with grass unbidden, decks the ground.
Thus Tmolus is with yellow saffron crowned:
India black ebon and white ivory bears;
And soft Idumè weeps her od'rous tears.
Thus Pontus sends her beaver-stones from far;
And naked Spaniards temper steel for war:
Epirus, for the Elean chariot, breeds
(In hopes of palms) a race of running steeds.
This is the original contract; these the laws
Imposed by Nature, and by Nature's cause,
On sundry places, when Deucalion hurled
His mother's entrails on the desert world;
Whence men, a hard laborious kind, were born.

Virgil, *Georgics*, I

- 15 Some steep their seed, and some in cauldrons boil,
With vigorous nitre and with lees of oil,
O'er gentle fires, the exuberant juice to drain,
And swell the flattering husks with fruitful grain.
Yet is not the success for years assured,
Though chosen is the seed, and fully cured,
Unless the peasant, with his annual pain,
Renews his choice, and culls the largest grain.
Thus all below, whether by Nature's curse,
Or Fate's decree, degenerate still to worse.
So the boat's brawny crew the current stem,
And, slow advancing, struggle with the stream:
But if they slack their hands, or cease to strive,
Then down the flood with headlong haste they
drive.

Virgil, *Georgics*, I

- 16 You may drive out nature with a fork, yet still she
will return.

Horace, *Epistles*, I, 10

- 17 Nature which governs the whole will soon change
all things which thou seest, and out of their sub-
stance will make other things, and again other
things from the substance of them, in order that
the world may be ever new.

Marcus Aurelius, *Meditations*, VII, 25

- 18 Nature alone has the power to expand a body in
all directions so that it remains unruptured and
preserves completely its previous form. Such then
is growth, and it cannot occur without the nutri-
ment which flows to the part and is worked up
into it.

Galen, *Natural Faculties*, I, 7

- 19 It has been made clear in the preceding discussion
that nutrition occurs by an alteration or assimila-
tion of that which nourishes to that which receives
nourishment, and that there exists in every part of
the animal a faculty which in view of its activity
we call, in general terms, alterative, or, more spe-
cifically, assimilative and nutritive. . . .

Our argument has clearly shown the necessity
for the genesis of such a faculty, and whoever has
an appreciation of logical sequence must be firmly
persuaded from what we have said that, if it be
laid down and proved by previous demonstration
that Nature is artistic and solicitous for the
animal's welfare, it necessarily follows that she
must also possess a faculty of this kind.

Galen, *Natural Faculties*, III, 1

- 20 To You, then, evil utterly is not—and not only to
You, but to Your whole creation likewise, evil is
not: because there is nothing over and above Your
creation that could break in or derange the order
that You imposed upon it. But in certain of its
parts there are some things which we call evil be-
cause they do not harmonize with other things;
yet these same things do harmonize with still

others and thus are good; and in themselves they are good. All these things which do not harmonize with one another, do suit well with that lower part of creation which we call the earth, which has its cloudy and windy sky in some way apt to it. God forbid that I should say: "I wish that these things were not"; because even if I saw only them, though I should want better things, yet even for them alone I should praise You: for that You are to be praised, things of earth show—*dragons, and all deeps, fire, hail, snow, ice, and stormy winds, which fulfill Thy word; mountains and all hills, fruitful trees and all cedars; beasts and all cattle, serpents and feathered fowl; kings of the earth and all people, princes and all judges of the earth; young men and maidens, old men and young, praise Thy name.* And since from the heavens, O our God, all Thy angels praise Thee in the high places, and all Thy hosts, sun and moon, all the stars and lights, the heavens of heavens, and the waters that are above the heavens, praise Thy name—I no longer desired better, because I had thought upon them all and with clearer judgement I realized that while certain higher things are better than lower things, yet all things together are better than the higher alone.

Augustine, *Confessions*, VII, 13

- 21 This cause . . . of a good creation, namely, the goodness of God—this cause, I say, so just and fit, which, when piously and carefully weighed, terminates all the controversies of those who inquire into the origin of the world, has not been recognized by some heretics, because there are, forsooth, many things, such as fire, frost, wild beasts, and so forth, which do not suit but injure this thin-blooded and frail mortality of our flesh, which is at present under just punishment. They do not consider how admirable these things are in their own places, how excellent in their own natures, how beautifully adjusted to the rest of creation, and how much grace they contribute to the universe by their own contributions as to a commonwealth; and how serviceable they are even to ourselves, if we use them with a knowledge of their fit adaptations—so that even poisons, which are destructive when used injudiciously, become wholesome and medicinal when used in conformity with their qualities and design; just as, on the other hand, those things which give us pleasure, such as food, drink, and the light of the sun, are found to be hurtful when immoderately or unseasonably used. And thus divine providence admonishes us not foolishly to vituperate things, but to investigate their utility with care; and, where our mental capacity or infirmity is at fault, to believe that there is a utility, though hidden, as we have experienced that there were other things which we all but failed to discover.

Augustine, *City of God*, XI, 22

- 22 In natural things species seem to be arranged in degrees; as the mixed things are more perfect than

the elements, and plants than minerals, and animals than plants, and men than other animals; and in each of these one species is more perfect than others. Therefore, as the divine wisdom is the cause of the distinction of things for the sake of the perfection of the universe, so is it the cause of inequality. For the universe would not be perfect if only one grade of goodness were found in things.

Aquinas, *Summa Theologica*, I, 47, 2

- 23 God and nature and any other agent make what is best in the whole, but not what is best in every single part, except in order to the whole. . . . And the whole itself, which is the universe of creatures, is better and more perfect if some things in it can fail in goodness, and do sometimes fail, God not preventing this.

Aquinas, *Summa Theologica*, I, 48, 2

- 24 But God knows well that nothing man may do Will ever keep restrained a thing that nature Has made innate in any human creature.

Take any bird and put it in a cage
And do your best affection to engage
And rear it tenderly with meat and drink
Of all the dainties that you can bethink,
And always keep it cleanly as you may;
Although its cage of gold be never so gay,
Yet would this bird, by twenty thousand-fold,
Rather, within a forest dark and cold,
Go to eat worms and all such wretchedness.
For ever this bird will do his business
To find some way to get outside the wires.
Above all things his freedom he desires.

Or take a cat, and feed him well with milk
And tender flesh, and make his bed of silk,
And let him see a mouse go by the wall;
Anon he leaves the milk and flesh and all
And every dainty that is in that house,
Such appetite has he to eat a mouse.
Desire has here its mighty power shown
And inborn appetite reclaims its own.

A she-wolf also has a vulgar mind;
The wretchedest he-wolf that she may find,
Or least of reputation, she'll not hate
Whenever she's desirous of a mate.

All these examples speak I of these men
Who are untrue, and not of sweet women.
For men have aye a lickerish appetite
On lower things to do their base delight
Than on their wives, though they be ne'er so fair
And ne'er so true and ne'er so debonair.
Flesh is so fickle, lusting beyond measure,
That we in no one thing can long have pleasure
Or virtuous keep more than a little while.

Chaucer, *Canterbury Tales*:
Manciple's Tale

- 25 We should . . . follow the wisdom of nature, which, as it takes very great care not to have produced anything superfluous or useless, often pre-

fers to endow one thing with many effects.

Copernicus, *De Revolutionibus*, I, 10

26 *Pantagruel*. The writings of abstinent, abstemious, and long-lasting hermits were every whit as saltless, dry, jejune, and insipid, as were their bodies when they did compose them. It is a most difficult thing for the spirits to be in a good plight, serene and lively, when there is nothing in the body but a kind of voidness and inanity; seeing the philosophers with the physicians jointly affirm, that the spirits, which are styled animal, spring from, and have their constant practice in and through the arterial blood, refined, and purified to the life within the admirable net, which, wonderfully framed, lieth under the ventricles and tunnels of the brain. He gave us also the example of the philosopher, who, when he thought most seriously to have withdrawn himself unto a solitary privacy, far from the rustling clatterments of the tumultuous and confused world, the better to improve his theory, to contrive, comment and ratiocinate, was, notwithstanding his uttermost endeavours to free himself from all untoward noises, surrounded and environed about so with the barking of curs, bawling of mastiffs, bleating of sheep, prating of parrots, tattling of jack-daws, grunting of swine, girning of boars, yelping of foxes, mewling of cats, cheeping of mice, squeaking of weasels, croaking of frogs, crowing of cocks, cackling of hens, calling of partridges, chanting of swans, chattering of jays, peeping of chickens, singing of larks, creaking of geese, chirping of swallows, clucking of moor-fowls, cucking of cuckoos, bumbling of bees, rammage of hawks, chirring of linnets, croaking of ravens, screeching of owls, whicking of pigs, gushing of hogs, curring of pigeons, grumbling of cushet-doves, howling of panthers, curkling of quails, chirping of sparrows, crackling of crows, nuzzing of camels, whining of whelps, buzzing of dromedaries, mumbling of rabbits, cricking of ferrets, humming of wasps, mioling of tigers, bruzzing of bears, sussing of kitlings, clamoring of scarves, whimpering of fulmarts, boeing of buffalos, warbling of nightingales, quavering of meavises, drintling of turkies, coniating of storks, trantling of peacocks, clattering of magpies, murmuring of stock-doves, crouting of cormorants, cigling of locusts, charming of beagles, guarring of puppies, snarling of messens, rantling of rats, guerieting of apes, snuttering of monkees, pioling of pelicans, quacking of ducks, yelling of wolves, roaring of lions, neighing of horses, baring of elephants, hissing of serpents, and wailing of turtles, that he was much more troubled, than if he had been in the middle of the crowd at the fair of Fontenay or Niort. Just so is it with those who are tormented with the grievous pangs of hunger. The stomach begins to gnaw, and bark as it were, the eyes to look dim, and the veins, by greedily sucking some refectioen to themselves from the

proper substance of all the members of a fleshy consistence, violently pull down and draw back that vagrant, roaming spirit, careless and neglecting of his nurse and natural host, which is the body; as when a hawk upon the fist, willing to take her flight by a soaring aloft in the open spacious air, is on a sudden drawn back by a leash tied to her feet.

Rabelais, *Gargantua and Pantagruel*, III, 13

27 When I play with my cat, who knows if I am not a pastime to her more than she is to me? Plato, in his picture of the golden age under Saturn, counts among the principal advantages of the man of that time the communication he had with the beasts; inquiring of them and learning from them, he knew the true qualities and differences of each one of them; whereby he acquired a very perfect intelligence and prudence, and conducted his life far more happily than we could possibly do. Do we need a better proof to judge man's impudence with regard to the beasts? . . .

This defect that hinders communication between them and us, why is it not just as much ours as theirs? It is a matter of guesswork whose fault it is that we do not understand one another; for we do not understand them any more than they do us. By this same reasoning they may consider us beasts, as we consider them.

Montaigne, *Essays*, II, 12, Apology for Raymond Sebond

28 There is no apparent reason to judge that the beasts do by natural and obligatory instinct the same things that we do by our choice and cleverness. We must infer from like results like faculties, and consequently confess that this same reason, this same method that we have for working, is also that of the animals. Why do we imagine in them this compulsion of nature, we who feel no similar effect? Besides, it is more honorable, and closer to divinity, to be guided and obliged to act lawfully by a natural and inevitable condition, than to act lawfully by accidental and fortuitous liberty; and safer to leave the reins of our conduct to nature than to ourselves. The vanity of our presumption makes us prefer to owe our ability to our powers than to nature's liberality; and we enrich the other animals with natural goods and renounce them in their favor, in order to honor and ennoble ourselves with goods acquired: a very simple notion, it seems to me, for I should prize just as highly graces that were all mine and inborn as those I had gone begging and seeking from education. It is not in our power to acquire a fairer recommendation than to be favored by God and nature.

Montaigne, *Essays*, II, 12, Apology for Raymond Sebond

29 It is one and the same nature that rolls its course. Anyone who had formed a competent judgment of its present state could infer from this with cer-

tainty both all the future and all the past.

Montaigne, *Essays*, II, 12, Apology
for Raymond Sebond

- 30 We call contrary to nature what happens contrary to custom; nothing is anything but according to nature, whatever it may be. Let this universal and natural reason drive out of us the error and astonishment that novelty brings us.

Montaigne, *Essays*, II, 30,
Of a Monstrous Child

- 31 We have abandoned Nature and we want to teach her her lesson, she who used to guide us so happily and so surely. And yet the traces of her teaching and the little that remains of her image—imprinted, by the benefit of ignorance, on the life of that rustic, unpolished mob—learning is constrained every day to go and borrow, to give its disciples models of constancy, innocence, and tranquillity. It is fine to see these disciples, full of so much beautiful knowledge, obliged to imitate that stupid simplicity, and imitate it in the primary actions of virtue; and a fine thing that our sapience learns from the very animals the most useful teachings for the greatest and most necessary parts of our life: how we should live and die, husband our possessions, love and bring up our children, maintain justice—a singular testimony of human infirmity; and that this reason of ours that we handle as we will, always finding some diversity and novelty, leaves in us no apparent trace of Nature. And men have done with Nature as perfumers do with oil: they have sophisticated her with so many arguments and farfetched reasonings that she has become variable and particular for each man, and has lost her own constant and universal countenance; and we must seek in the animals evidence of her that is not subject to favor, corruption, or diversity of opinion.

Montaigne, *Essays*, III, 12, Of Physiognomy

- 32 Let us give Nature a chance; she knows her business better than we do.

Montaigne, *Essays*, III, 13, Of Experience

- 33 When I dance, I dance; when I sleep, I sleep; yes, and when I walk alone in a beautiful orchard, if my thoughts have been dwelling on extraneous incidents for some part of the time, for some other part I bring them back to the walk, to the orchard, to the sweetness of this solitude, and to me. Nature has observed this principle like a mother, that the actions she has enjoined on us for our need should also give us pleasure; and she invites us to them not only through reason, but also through appetite. It is unjust to infringe her laws.

Montaigne, *Essays*, III, 13, Of Experience

- 34 *Duke Senior*. Hath not old custom made this life more sweet

Than that of painted pomp? Are not these woods
More free from peril than the envious court?

Here feel we but the penalty of Adam,
The seasons' difference, as the icy fang

And churlish chiding of the winter's wind,
Which, when it bites and blows upon my body

Even till I shrink with cold, I smile and say

"This is no flattery: these are counsellors
That feelingly persuade me what I am."

Sweet are the uses of adversity,

Which, like the toad, ugly and venomous,

Wears yet a precious jewel in his head;

And this our life exempt from public haunt

Finds tongues in trees, books in the running
brooks,

Sermons in stones, and good in everything.

Shakespeare, *As You Like It*, II, i, 2

- 35 *Amiens*. [sings] Under the greenwood tree
Who loves to lie with me,

And turn his merry note

Unto the sweet bird's throat,

Come hither, come hither, come hither:

Here shall he see

No enemy

But winter and rough weather.

Shakespeare, *As You Like It*, II, v, 1

- 36 *Corin*. And how like you this shepherd's life,
Master Touchstone?

Touchstone. Truly, shepherd, in respect of itself, it is a good life; but in respect that it is a shepherd's life, it is naught. In respect that it is solitary, I like it very well; but in respect that it is private, it is a very vile life. Now, in respect it is in the fields, it pleaseth me well; but in respect it is not in the court, it is tedious. As it is a spare life, look you, it fits my humour well; but as there is no more plenty in it, it goes much against my stomach.

Shakespeare, *As You Like It*, III, ii, 11

- 37 *Edmund*. Thou, nature, art my goddess; to thy law
My services are bound. Wherefore should I

Stand in the plague of custom, and permit

The curiosity of nations to deprive me,

For that I am some twelve or fourteen moonshines

Lag of a brother? Why bastard? wherefore base?

When my dimensions are as well compact,

My mind as generous, and my shape as true,

As honest madam's issue? Why brand they us

With base? with baseness? bastardy? base, base?

Who, in the lusty stealth of nature, take

More composition and fierce quality

Than doth, within a dull, stale, tired bed,

Go to the creating a whole tribe of fops,

Got 'tween asleep and wake?

Shakespeare, *Lea*, I, ii, 1

- 38 *Kent*. Where's the King?
Gentleman. Contending with the fretful element;

- Bids the wind blow the earth into the sea,
Or swell the curled waters 'bove the main,
That things might change or cease; tears his white
hair,
Which the impetuous blasts, with eyeless rage,
Catch in their fury, and make nothing of;
Strives in his little world of man to out-scorn
The to-and-fro-conflicting wind and rain.
This night, wherein the cub-drawn bear would
couch,
The lion and the belly-pinched wolf
Keep their fur dry, unbonneted he runs,
And bids what will take all.
Shakespeare, *Lear*, III, i, 3
- 39 *Lear*. Blow, winds, and crack your cheeks! rage!
blow!
You cataracts and hurricanes, spout
Till you have drench'd our steeples, drown'd the
cocks!
You sulphurous and thought-executing fires,
Vaunt-couriers to oak-cleaving thunderbolts,
Singe my white head! And thou, all-shaking
thunder,
Smite flat the thick rotundity o' the world!
Crack nature's moulds, all germens spill at once,
That make ingrateful man!
Fool. O nuncle, court holy-water in a dry house
is better than this rain-water out o' door. Good
nuncle, in, and ask thy daughters' blessing. Here's
a night pities neither wisc man nor fool.
Lear. Rumble thy bellyful! Spit, fire! spout,
rain!
Nor rain, wind, thunder, fire, are my daughters.
I tax not you, you elements, with unkindness;
I never gave you kingdom, call'd you children,
You owe me no subscription. Then let fall
Your horrible pleasure; here I stand, your slave,
A poor, infirm, weak, and despised old man:
But yet I call you servile ministers,
That have with two pernicious daughters join'd
Your high engender'd battles 'gainst a head
So old and white as this. O! O! 'tis foul!
Shakespeare, *Lear*, III, ii, 1
- 40 *Perdita*. Sir, the year growing ancient,
Not yet on summer's death, nor on the birth
Of trembling winter, the fairest flowers o' the sea-
son
Are our carnations and streak'd gillyvors,
Which some call Nature's bastards. Of that kind
Our rustic garden's barren; and I care not
To get slips of them.
Polixenes. Wherefore, gentle maiden,
Do you neglect them?
Per. For I have heard it said
There is an art which in their piedness shares
With great creating Nature.
Pol. Say there be;
Yet Nature is made better by no mean
But Nature makes that mean; so, over that art
- Which you say adds to Nature, is an art
That Nature makes. You see, sweet maid, we
marry
A gentler scion to the wildest stock,
And make conceive a bark of baser kind
By bud of nobler race. This is an art
Which does mend Nature, change it rather, but
The art itself is Nature.
Per. So it is.
Pol. Then make your garden rich in gillyvors,
And do not call them bastards.
Shakespeare, *Winter's Tale*, IV, iv, 80
- 41 *Clerimont*. [sings] Still to be neat, still to be dressed
As you were going to a feast,
Still to be powdered, still perfumed;
Lady, is it to be presumed,
Though art's hid causes are not found,
All is not sweet, all is not sound.
Give me a look, give me a face,
That makes simplicity a grace;
Robes loosely flowing, hair as free—
Such sweet neglect more taketh me,
'Than all th' adulteries of art.
They strike mine eyes, but not my heart.
Jonson, *Epicene*, II, i
- 42 The subtilty of nature is far beyond that of sense
or of the understanding; so that the specious med-
itations, speculations, and theories of mankind are
but a kind of insanity, only there is no one to
stand by and observe it.
Bacon, *Novum Organum*, I, 10
- 43 As in ordinary life every person's disposition, and
the concealed feelings of the mind and passions
are most drawn out when they are disturbed—so
the secrets of nature betray themselves more read-
ily when tormented by art than when left to their
own course.
Bacon, *Novum Organum*, I, 98
- 44 The empire of man over things is founded on the
arts and sciences alone, for nature is only to be
commanded by obeying her.
Bacon, *Novum Organum*, I, 129
- 45 Easy is everything to nature's majesty, who uses
her strength sparingly, and dispenses it with cau-
tion and foresight for the commencement of her
works by imperceptible additions, but hastens to
decay with suddenness and in full career. In the
generation of things is seen the most excellent, the
eternal and almighty God, the divinity of nature,
worthy to be looked up to with reverence; but all
mortal things run to destruction of their own ac-
cord in a thousand ways.
William Harvey, *Animal Generation*, 41
- 46 If in the domain and rule of nature . . . many

excellent operations are daily effected surpassing the powers of the things themselves, what shall we not think possible within the pale and regimen of nature, of which all art is but imitation? And if, as ministers of man, they effect such admirable ends, what, I ask, may we not expect of them, when they are instruments in the hand of God?

William Harvey, *Animal Generation*, 71

- 47 There is no doubt that in all things which nature teaches me there is some truth contained; for by nature, considered in general, I now understand no other thing than either God Himself or else the order and disposition which God has established in created things; and by my nature in particular I understand no other thing than the complexus of all the things which God has given me.

Descartes, *Meditations on First Philosophy*, VI

- 48 Nature itself cannot err.

Hobbes, *Leviathan*, I, 4

- 49 What reason may not go to School to the wisdom of Bees, Ants, and Spiders? what wise hand teacheth them to do what reason cannot teach us? ruder heads stand amazed at those prodigious pieces of Nature, Whales, Elephants, Dromidaries and Camels; these, I confess, are the Colossus and Majestick pieces of her hand: but in these narrow Engines there is more curious Mathematicks; and the civility of these Little Citizens, more neatly sets forth the Wisdom of their Maker. Who admires not *Regio-Montanus* his Fly beyond his Eagle, or wonders not more at the operation of two Souls in those little Bodies, than but one in the Trunk of a Cedar?

Sir Thomas Browne, *Religio Medici*, I, 15

- 50 I hold there is a general beauty in the works of God, and therefore no deformity in any kind or species of creature whatsoever: I cannot tell by what Logick we call a *Toad*, a *Bear*, or an *Elephant* ugly, they being created in those outward shapes and figures which best express the actions of their inward forms. And having past that general Visitation of God, who saw that all that he had made was good, that is, conformable to his Will, which abhors deformity, that is the rule of order and beauty; there is no deformity but in Monstrosity; wherein, notwithstanding, there is a kind of Beauty. Nature so ingeniously contriving the irregular parts, as they become sometimes more remarkable than the principal Fabrick. To speak yet more narrowly, there was never any thing ugly or misshapen, but the Chaos; wherein, notwithstanding, to speak strictly, there was no deformity, because no form; nor was it yet impregnant by the voice of God; now Nature was not at variance with Art, nor Art with Nature, they being both servants of his providence: Art is the perfection of Nature: were the World now as it was the sixth day, there

were yet a Chaos: Nature hath made one World, and Art another. In brief, all things are artificial: for Nature is the Art of God.

Sir Thomas Browne, *Religio Medici*, I, 16

- 51 Nature has some perfections to show that she is the image of God, and some defects to show that she is only His image.

Pascal, *Pensées*, VIII, 580

- 52 *Lawrence* of vertuous Father vertuous Son,
Now that the Fields are dank, and ways are mire,
Where shall we sometimes meet, and by the fire
Help wast a sullen day; what may be won
From the hard Season gaining: time will run
On smoother, till *Favonius* re-inspire
The frozen earth; and cloth in fresh attire
The Lillie and Rose, that neither sow'd nor spun.

What neat repast shall feast us, light and choice,
Of Attick tast, with Wine, whence we may rise
To hear the Lute well toucht, or artfull voice
Warble immortal Notes and *Tuskan* Ayre?
He who of those delights can judge, and spare
To interpose them oft, is not unwise.

Milton, *Lawrence of vertuous Father vertuous Son*

- 53 *Raphael*. Accuse not Nature, she hath don her part;
Do thou but thine.

Milton, *Paradise Lost*, VIII, 561

- 54 The attempt . . . to show that nature does nothing in vain (that is to say, nothing which is not profitable to man), seems to end in showing that nature, the gods, and man are alike mad.

Spinoza, *Ethics*, I, Appendix

- 55 It will doubtless seem a marvellous thing for me to endeavour to treat by a geometrical method the vices and follies of men, and to desire by a sure method to demonstrate those things which these people cry out against as being opposed to reason, or as being vanities, absurdities, and monstrosities. The following is my reason for so doing. Nothing happens in nature which can be attributed to any vice of nature, for she is always the same and everywhere one. Her virtue is the same, and her power of acting; that is to say, her laws and rules, according to which all things are and are changed from form to form, are everywhere and always the same; so that there must also be one and the same method of understanding the nature of all things whatsoever, that is to say, by the universal laws and rules of nature.

Spinoza, *Ethics*, III, Introduction

- 56 The custom of applying the words *perfect* and *imperfect* to natural objects has arisen rather from

prejudice than from true knowledge of them. For . . . nature does nothing for the sake of an end, for that eternal and infinite Being whom we call God or Nature acts by the same necessity by which He exists; for . . . He acts by the same necessity of nature as that by which He exists. The reason or cause, therefore, why God or nature acts and the reason why He exists are one and the same. Since, therefore, He exists for no end, He acts for no end; and since He has no principle or end of existence, He has no principle or end of action. A final cause, as it is called, is nothing, therefore, but human desire, insolar as this is considered as the principle or primary cause of anything.

Spinoza, *Ethics*, IV, Preface

- 57 We are to admit no more causes of natural things than such as are both true and sufficient to explain their appearances. To this purpose the philosophers say that Nature does nothing in vain, and more is in vain when less will serve; for Nature is pleased with simplicity, and affects not the pomp of superfluous causes.

Therefore to the same natural effects we must, as far as possible, assign the same causes. As to respiration in a man and in a beast; the descent of stones in Europe and in America; the light of our culinary fire and of the sun; the reflection of light in the earth, and in the planets.

Newton, *Principia*, III, Rules 1-2

- 58 There are never in nature two beings which are exactly alike.

Leibniz, *Monadology*, 9

- 59 Nature makes many *particular things*, which do agree one with another in many sensible qualities, and probably too in their internal frame and constitution: but it is not this real essence that distinguishes them into species; it is men who, taking occasion from the qualities they find united in them, and wherein they observe often several individuals to agree, range them into sorts, in order to their naming, for the convenience of comprehensive signs; under which individuals, according to their conformity to this or that abstract idea, come to be ranked as under ensigns: so that this is of the blue, that the red regiment; this is a man, that a drill: and in this, I think, consists the whole business of genus and species.

Locke, *Concerning Human Understanding*, Bk. III, VI, 36

- 60 You will say, Hath Nature no share in the production of natural things, and must they be all ascribed to the immediate and sole operation of God? I answer, if by *Nature* is meant only the visible *series* of effects or sensations imprinted on our minds, according to certain fixed and general laws, then it is plain that Nature, taken in this

sense, cannot produce anything at all. But, if by *Nature* is meant some being distinct from God, as well as from the laws of nature, and things perceived by sense, I must confess that word is to me an empty sound without any intelligible meaning annexed to it. Nature, in this acceptation, is a vain chimera, introduced by those heathens who had not just notions of the omnipresence and infinite perfection of God.

Berkeley, *Principles of Human Knowledge*, 150

- 61 Such is the artificial contrivance of this mighty machine of nature that, whilst its motions and various phenomena strike on our senses, the hand which actuates the whole is itself unperceivable in men of flesh and blood.

Berkeley, *Principles of Human Knowledge*, 151

- 62 All are but parts of one stupendous whole,
Whose body Nature is, and God the soul;
That, chang'd thro' all, and yet in all the same,
Great in the earth, as in th' æthereal frame,
Warms in the sun, refreshes in the breeze,
Glow's in the stars, and blossoms in the trees,
Lives thro' all life, extends thro' all extent,
Spreads undivided, operates unspent,
Breathes in our soul, informs our mortal part,
As full, as perfect, in a hair as heart;
As full, as perfect, in vile Man that mourns,
As the rapt Seraph that adores and burns;
To him no high, no low, no great, no small;
He fills, he bounds, connects, and equals all.

Pope, *Essay on Man*, Epistle I, 267

- 63 It seems evident that, if all the scenes of nature were continually shifted in such a manner that no two events bore any resemblance to each other, but every object was entirely new, without any similitude to whatever had been seen before, we should never, in that case, have attained the least idea of necessity, or of a connexion among these objects. We might say, upon such a supposition, that one object or event has followed another; not that one was produced by the other. The relation of cause and effect must be utterly unknown to mankind. Inference and reasoning concerning the operations of nature would, from that moment, be at an end; and the memory and senses remain the only canals, by which the knowledge of any real existence could possibly have access to the mind. Our idea, therefore, of necessity and causation arises entirely from the uniformity observable in the operations of nature, where similar objects are constantly conjoined together, and the mind is determined by custom to infer the one from the appearance of the other.

Hume, *Concerning Human Understanding*, VIII, 64

- 64 *The Philosopher*. We are curious. I want to know how being so crude in your mountains, in your

deserts, in your seas, you appear nevertheless so industrious in your animals, in your vegetables?

Nature. My poor child do you want me to tell you the truth? It is that I have been given a name which does not suit me; my name is "Nature", and I am all art.

Phil. That word upsets all my ideas. What! nature is only art?

Na. Yes, without any doubt. Do you not know that there is an infinite art in those seas and those mountains that you find so crude? do you not know that all those waters gravitate towards the centre of the earth, and mount only by immutable laws; that those mountains which crown the earth are the immense reservoirs of the eternal snows which produce unceasingly those fountains, lakes and rivers without which my animal species and my vegetable species would perish? And as for what are called my animal kingdom, my vegetable kingdom and my mineral kingdom, you see here only three; learn that I have millions of kingdoms. But if you consider only the formation of an insect, of an ear of corn, of gold, of copper, everything will appear as marvels of art.

Phil. It is true. The more I think about it, the more I see that you are only the art of I know not what most potent and industrious great being, who hides himself and who makes you appear. All reasoners since Thales, and probably long before him, have played at blind man's bluff with you; they have said: "I have you!" and they had nothing. We all resemble Ixion; he thought he was kissing Juno, and all that he possessed was a cloud.

Na. Since I am all that is, how can a being such as you, so small a part of myself, seize me? Be content, atoms my children, with seeing a few atoms that surround you, with drinking a few drops of my milk, with vegetating for a few moments on my breast, and with dying without having known your mother and your nurse.

Phil. My dear mother, tell me something of why you exist, of why there is anything.

Na. I will answer you as I have answered for so many centuries all those who have interrogated me about first principles: I KNOW NOTHING ABOUT THEM.

Phil. Would not non-existence be better than this multitude of existences made in order to be continually dissolved, this crowd of animals born and reproduced in order to devour others and to be devoured, this crowd of sentient beings formed for so many painful sensations, that other crowd of intelligences which so rarely hear reason. What is the good of all that, Nature?

Na. Oh! go and ask Him who made me.

Voltaire, *Philosophical Dictionary*: Nature

65 While the earth was left to its natural fertility and covered with immense forests, whose trees were never mutilated by the axe, it would present on

every side both sustenance and shelter for every species of animal. Men, dispersed up and down among the rest, would observe and imitate their industry, and thus attain even to the instinct of the beasts, with the advantage that, whereas every species of brutes was confined to one particular instinct, man, who perhaps has not any one peculiar to himself, would appropriate them all, and live upon most of those different foods which other animals shared among themselves; and thus would find his subsistence much more easily than any of the rest.

Accustomed from their infancy to the inclemencies of the weather and the rigour of the seasons, inured to fatigue, and forced, naked and unarmed, to defend themselves and their prey from other ferocious animals, or to escape them by flight, men would acquire a robust and almost unalterable constitution. The children, bringing with them into the world the excellent constitution of their parents, and fortifying it by the very exercises which first produced it, would thus acquire all the vigour of which the human frame is capable. Nature in this case treats them exactly as Sparta treated the children of her citizens: those who come well formed into the world she renders strong and robust, and all the rest she destroys; differing in this respect from our modern communities, in which the State, by making children a burden to their parents, kills them indiscriminately before they are born.

Rousseau, *Origin of Inequality*, I

66 Give civilised man time to gather all his machines about him, and he will no doubt easily beat the savage; but if you would see a still more unequal contest, set them together naked and unarmed, and you will soon see the advantage of having all our forces constantly at our disposal, of being always prepared for every event, and of carrying one's self, as it were, perpetually whole and entire about one.

Rousseau, *Origin of Inequality*, I

67 We should beware . . . of confounding the savage man with the men we have daily before our eyes. Nature treats all the animals left to her care with a predilection that seems to show how jealous she is of that right. The horse, the cat, the bull, and even the ass are generally of greater stature, and always more robust, and have more vigour, strength and courage, when they run wild in the forests than when bred in the stall. By becoming domesticated, they lose half these advantages; and it seems as if all our care to feed and treat them well serves only to deprave them. It is thus with man also: as he becomes sociable and a slave, he grows weak, timid and servile; his effeminate way of life totally enervates his strength and courage. To this it may be added that there is still a greater difference between savage and civilised man, than