

Buffon "On Nature: First View." Translated from the French by William Smellie, *Buffon's Natural History*. . London: H.D. Symonds, 1797. Volume 10. In public domain.

GENERAL VIEWS OF NATURE.

FIRST VIEW.

NATURE is that system of laws established by the Creator for regulating the existence of bodies and the succession of beings. Nature is therefore not a body, for if it were so it would comprehend every thing; neither is it a being, for in that case it would necessarily be God. We must rather consider Nature as an immense living power, which is in subordination to the Supreme Being, and by his command animates the universe, and whose actions are dependent on, and continued by, his concurrence or consent. This power is that part of the Divine power which is manifested to mankind ;

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mankind ; it is the cause and effect, the mode and substance, the design and execution. Extremely different from all human art, whose productions are inanimate, Nature is herself a work perpetually alive, an active and unceasing operator, who knows how to make use of every material, and though always employed on the same invariable plan, her power, instead of suffering diminution, is perfectly inexhaustible : time, space, and matter, are her means ; the universe her object ; and motion and life her end.

Every object in the universe are the effects of this power. Those springs which she makes use of are active forces which time and space can only limit but never destroy ; forces which unite, balance, and oppose, but incapable of annihilating each other. Some penetrate and connect bodies, others heat and animate them. It is principally by attraction and impulsion that this power acts upon brute matters, while heat and organic molecules are her chief active agents, which she employs in the formation and expansion of organized beings. Aided by such instruments, how can the operations of Nature be limited ? She only wants the additional power to create and annihilate to become omnipotent. But these two extremes the Almighty

has reserved to himself alone : the power of creating and annihilating are his peculiar attributes ; that of changing, destroying, unfolding, renewing, and producing, are the only privileges he has conferred on this or any other agent. Nature, the minister of his *irrevocable* commands, the depository of his immutable decrees, never deviates from the laws he has prescribed to her ; she never changes any part of his original plan, but in all her operations she exhibits the will and design of the eternal Lord of the universe. This grand design, this unalterable impression of all existence, is the model upon which she invariably acts ; a model which all the features are so strongly impressed that they can never be effaced ; a model which the infinite number of copies, instead of impairing, only serve to renew.

Therefore we may affirm that every thing has been created, but nothing annihilated ; Nature acts between the two without ever reaching either the one or other extreme. It is in some points of this vast space, which she has filled and traversed from the beginning of ages, that we must endeavour to lay hold of her to bring her into view.

What an infinity of objects, comprehending an infinity of matter, which would have been

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created in vain, had it not been divided into portions, separated from each other by almost inconceivable spaces. Myriads of luminous globes, placed at immense distances, are the bases which support the fabric of the universe, and millions of opaque globes, which circulate round them, constitute the moving order of its architecture. By two primitive forces, each of which are in continual action, these masses are revolved and carried thro' the immensity of space ; and their combined efforts produce the zones of the celestial spheres, and in the midst of vacuity establish fixed stations, and regular routes and orbits. From motion proceeds the equilibrium of worlds, and the repose of the universe. The first of these forces is equally divided, but the second is separated in unequal proportions. Every atom of matter contains the same degree of attractive force, while every individual globe has a different quantity of impulsive force assigned to each. Of the stars, some are fixed and others wandering ; some globes appear formed to attract, and others for impelling or being impelled. Some spheres have received a common impulsion in the same direction, and others a particular impulsion. Some stars are alone, and others are attended by satellites ; some are luminous, and

and others opaque masses. There are planets whose different parts successively enjoy a borrowed light, and there are comets which, after being lost in the immensity of space for several ages, return to receive the influence of the solar heat. There are some suns which appear and disappear as if they were alternately kindled and extinguished; and there are others which merely shew themselves and then are seen no more. Heaven abounds with great events, but which the human eye is scarcely able to perceive. A sun which expires and annihilates a world, or system of worlds, has no other effect upon the eyes of man than an *ignis-fatuus*, which gives a transitory blaze and then vanishes for ever. Man, confined to the terrestrial atom on which he vegetates, considers this atom as a world, and looks upon other worlds as atoms.

This earth which we inhabit is scarcely distinguishable among the other globes, and perfectly invisible to the distant spheres; it is at least a million times smaller than the sun by which it is illuminated, and even a thousand times less than some of the planets which, by its influence, the sun compels to circulate around him. Saturn, Jupiter, Mars, the Earth, Venus, Mercury, and the Sun, occupy that

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small portion of the heavens which we term our Universe. These planets, with their satellites, moving with amazing celerity in the same direction, and almost in the same plane, compose a wheel of an immense diameter, whose axis supports the whole weight, and which by the rapidity of its own rotation must inflame and diffuse heat and light throughout the whole circumference. As long as this regular motion continues (and which will be eternal, unless the Divine Mover exerts the same force to destroy as He thought necessary to create them) the sun will burn and illuminate all the spheres of this universe with his splendor; and as, in a system where the whole of the bodies mutually attract each other, nothing can be lost, or removed without being returned, the quantity of matter must always remain the same; this great source of light and life can never be extinguished or exhausted, for the other suns, which also continually dart forth their fires, constantly restore to our sun as much light as they take from him. Comets are more numerous than the planets, and like them depend on the power of the sun; they also press on the common focus, and by augmenting the weight increase the inflammation. They may also be said to form a part of our

universe,

universe, for, like the planets, they are subject to the attraction of the sun. But in their projectile and impelled motions they have nothing in common either with each other or with the planets. Every one of them circulates in a different plane, and they each describe orbits in different periods of time; for some perform their revolutions in a few years, while others require several centuries. The sun, just moving round his own centre, remains, in other respects, properly at rest in the midst, and, at the same time, serves as a torch, a focus, and an axis, to all and every part of this wonderful machine.

That the sun continues immovable, and regulates the motions of the other globes, is to be ascribed to his magnitude alone. The force of attraction being in proportion to the mass of matter; as the sun is so considerably larger than any of the comets, and contains above a thousand times more matter than the most extensive planet, they can neither derange him nor diminish his influence, which extending to immense distances keeps the whole within the bounds of his power, and thus at particular periods recalls those which have stretched farthest into the regions of space. Some of these, on being brought back, approach so near

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the sun, that after having cooled for ages they undergo an inconceivable degree of heat. From experiencing these alternate extremes of heat and cold, they are subject to singular vicissitudes, as well as from the inequalities of their motions, which at some times are most amazingly rapid, and at others so infinitely slow as to be scarcely perceptible. In comparison with the planets the comets may be considered as worlds in disorder, for to them the orbits of the planets are regular, their movements equal, their temperature always the same; they appear to be places of rest, where, every thing being permanent, Nature has the power of establishing an uniform plan of operation, and successively to mature her various productions. Among the planets the Earth, which we inhabit, seems to possess peculiar advantages; from being less distant from the sun than Saturn, Jupiter, and Mars, it does not experience that excess of cold; nor is it so scorched as Venus and Mercury, which appear to revolve in an orbit too near the body of that luminary. Besides, what a peculiar magnificence from Nature does the earth enjoy? A pure light, gradually extending from east to west, alternately gilds both hemispheres of this globe; which is also surrounded with a pure transparent

transparent element. By a mild and fertile heat all the germs of existence are animated and unfolded, and they are nourished and supported by a plentiful supply of excellent waters. Considerable eminences dispersed over the surface of the land, not only check, but collect the moist vapours which float in the air, and give rise to perpetual mountains. Immense cavities evidently formed for the reception of those waters, separate islands, and continents. The sea in extent is equal to that of the land: nor is this a cold and barren element, but a new empire, no less rich and no less furnished with inhabitants. By the finger of the Almighty are the limits of the waters marked out. If the sea encroaches on the western shores, it retreats from those of the east. This great mass of water, though inactive of itself, is agitated, and put in motion by the influence of the celestial bodies, and from which arises its regular and constant flux and reflux; it rises and falls with the course of the moon, and is always at the highest when the action of the sun and moon concurs, and it is from these causes uniting at the time of the equinoxes, that the tides are then higher than at any other time; and this is certainly the strongest mark of the connection of this globe with the heavens. These
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general and constant motions are the cause of many variable and particular circumstances; it is by those that the transportations of the earth is occasioned, which falling in the form of sediment, produces mountains at the bottom of the sea, similar to those which are on the surface of the land; they also give rise to currents, which following the direction of these chains of mountains, bestow on them a figure, whose angles correspond, and maintaining a course in the midst of the waves as waters run upon land, they may be considered, in fact, as sea-rivers.

The Air being lighter and more fluid than water, is subject to the influence of a greater number of powers. It is constantly agitated by the effects of the sun and moon, by the immediate action of the sea, and by the rarefaction and condensation of heat and cold. The winds are, as it may be said, its currents; they force and collect the clouds, they give rise to meteors, and transport the moist vapours of the ocean to the surfaces of islands and continents; from them proceed storms, and they diffuse and distribute the fertile dews and rains over the land; they interfere with the regular motions of the sea, agitate the waters, sometimes stop, and at others precipitate the currents,

rents, elevate the waves, and excite dreadful storms and tempests. Forced by them the troubled ocean rises towards the heavens, and with a tremendous noise and violence, rushes against those immovable barriers, which it can neither destroy nor surmount.

The Earth being elevated above the level of the sea, is thus defended against its eruptions. Its surface is beautifully enamelled with various flowers, and a constant renewing verdure; it is inhabited by numberless species of inhabitants, and where man, placed to assist the intentions of Nature, presides over every other being, finds a place of perfect repose, and a delightful habitation. He alone is endowed with knowledge, and dignified with the faculty of admiration; the Almighty has rendered him capable of distinguishing the wonders of the universe, and a witness of his increasing miracles. Animated by a ray of divinity, he participates the mysteries of the Deity. It is by this ray that he is enabled to think and reflect, and that he perceives and understands the wonderful works of his Creator.

The external throne of the Divine magnificence is Nature; while man, by contemplating her, advances by degrees to the internal throne of the Almighty. He is formed to

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adore his Creator, and to have dominion over every other creature; he is the vassal of heaven, and the lord of the earth; by him this nether globe is peopled, ennobled, and enriched; he establishes order, subordination, and harmony among living beings, and even to Nature herself he gives polish, extension, cultivation, and embellishment; for he cuts down the thistle and bramble, and, by his care, multiplies the vine and the rose. In those dreary deserts where man has not inhabited, we find them over-run with thorns and briars; the trees deformed, broken, and corrupted, and the seeds which ought to renew and embellish the scene, are choked by surrounding rubbish, and reduced to sterility. Nature, who, in other situations, we find adorned with the splendour of youth, has here the appearance of old age and decrepitude. Here the earth, overloaded with the spoils of its productions, instead of presenting a scene of beautiful verdure, exhibits only a rude mass of coarse herbage, and trees loaded with parasitical plants, as lichens, agaries, and other impure and corrupted fruits; the low grounds are covered with putrid and stagnating waters; these miry lands being neither solid nor fluid, are not only impassable, but are entirely useless to the inhabitants of both

land

land and water ; and the marshes abounding with stinking aquatic plants, serve only to nourish venomous insects, and to harbour infectious animals. There is, besides, between the putrid marshes of the low grounds, and the decayed forests of the high parts of the country, a species of lands, or savannas, but which are very different to our meadows ; for in them there is an abundance of noxious herbs which spring up, and check the growth of the useful kinds : instead of that delicate channelled turf, which may be considered as the down of the earth, they are covered over with coarse vegetables and hard prickly plants, which are so interwoven, that they appear to have more connection with each other, than with the soil ; and by a constant and successive springing up, at length form a kind of rough mat several feet thick. In these uncultivated and desolate regions, there is no road, no communication, and no vestige of intelligence. Man, when seeking to destroy the wild beasts, is under the necessity of following their tracks, and is obliged to be on the constant watch, lest he should become a victim to their savage fury ; alarmed and terrified by their frequent roarings, and even awed by the profound silence of those dreary solitudes, he shrinks back and exclaims ;

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“ Uncultivated

“ Uncultivated Nature is hideous and unflourishing ; it is I alone who can render her agreeable and vivacious. Let us drain the marshes, and give animation to the waters, by converting them into brooks and canals ; let us make use of that active and devouring element, whose power we have discovered ; let us apply fire to this burthenfome load of vegetables, and to those decaying forests which are already half destroyed ; let us complete the work by destroying with iron what cannot be dissipated by fire ; and then instead of coarse reeds and water-lillies, from which the toad is said to extract his poison, we shall soon behold the ranunculus, truffles, and other mild and salutary herbs spring up ; that land, which was formerly impassable, will become a flourishing pasture for flocks of cattle, where they will find plenty of food, a never-failing supply, and where, by the excellence of their sustenance, they will increase and multiply, and thus reward us for our labours and the protection we have given them. Let us still go farther, and subject the ox to the yoke, let his strength and weight of body be employed to plough the ground, which acquires fresh vigour from culture. Thus will the operations of

Nature,

“Nature be assisted, and acquire double strength and splendor from the skill and industry of man.”

How beautiful is cultivated Nature! How beautiful does she appear when decorated by the hand of man! He is himself her chief ornament, her noblest production, and by multiplying his own species he increases the most precious of her works. She even seems to multiply in proportion with his attention, for by his art he develops all she has concealed in her bosom. What a source of unknown treasures has been brought to light! Flowers, fruits, and grains, matured to perfection, and multiplied to infinity; the usual species of animals transported, propagated, and increased, without number; the noxious and destructive kinds diminished and driven from the habitations of men; gold, and iron, a more useful metal, extracted from the bowels of the earth; torrents restrained, rivers directed in their courses and confined within their banks, and even the ocean itself subdued, investigated and traversed from one hemisphere to the other; the earth rendered active, fertile, and accessible, in every part; the vallies and plains changed into blooming meadows, rich pastures, and cultivated fields; the hills surrounded with vines

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and fruits, and their summits crowned with useful trees; the desarts converted into populous cities, whose inhabitants spread from its centre to its utmost extremities; roads and communications opened, established, and frequented, as so many proofs of the union and strength of society. There are also a thousand other monuments of power and *glory*, which clearly demonstrate that man is the lord of the earth; that he has changed and improved its surfaces; and that from the earliest periods of time he alone has divided the empire of the world between him and Nature.

It is by the right of conquest, however, that he reigns, for he rather enjoys than possesses, and it is by constant and perpetual activity and vigilance that he preserves his advantage, for if those are neglected every thing languishes, changes, and returns to the absolute dominion of Nature. She resumes her power, destroys the operations of man; envelopes with mofs and dust his most pompous monuments, and in the progress of time entirely effaces them, leaving man to regret having lost by his negligence what his ancestors had acquired by their industry. Those periods in which man loses his empire, those ages in which every thing valuable perishes, commence with war, and are

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completed by famine and depopulation. Although the strength of man depends solely upon the union of numbers, and his happiness is derived from peace, he is, nevertheless, so regardless of his own comforts as to take up arms and to fight, which are never-failing sources of ruin and misery. Incited by insatiable avarice, or blind ambition, which is still more insatiable, he becomes callous to the feelings of humanity; regardless of his own welfare, his whole thoughts turn upon the destruction of his own species, which he soon accomplishes. The days of blood and carnage over, and the intoxicating fumes of glory dispelled, he beholds, with a melancholy eye, the earth desolated, the arts buried, nations dispersed, an enfeebled people, the ruins of his own happiness, and the loss of his real power.

Omnipotent God! by whose presence Nature is supported, and harmony among the laws of the universe maintained; who seest from thy immovable throne in the Empyrean all the celestial spheres rolling under thy feet without deviation or disorder; who, from the bosom of repose, every instant renewest their vast movements, and who alone governs in profound peace an infinite number of heavens and of earths, restore, restore tranquillity to a troubled

world!

world! Let the earth be silent! Let the presumptuous tumults of war and discord be dispelled by the sound of thy voice! Merciful God! author of all beings, whose paternal regards extend to every created object; but man is thy principal favourite; thou hast illuminated his mind with a ray of thy immortal light, penetrate also his heart with a shaft of thy love; thy divine sentiment, when universally diffused, will unite the most hostile spirits; man will no longer be apprehensive of the aspect of man, nor will his hand any longer continue to be armed with murdering steel; the devouring flames of war will no longer stop the sources of generations; the human species, which are now weakened, mutilated, and prematurely mowed down thereby, will germinate anew, and multiply without number. Nature, groaning under the pressure of calamity, sterile and abandoned, with additional vigour will soon resume her former fecundity; and we, beneficent God, shall aid, cultivate, and incessantly contemplate her operations, that we, at every moment, may be enabled to offer thee a fresh tribute of gratitude and admiration.