

Divine. In man they belong to the lower and created order; in God, to a higher and uncreated order. In man any moral perfection may be present or absent without the essential nature of man being thereby affected; in God, the absence of any perfection would thereby rob Him *ipso facto* of His Deity. Whatever the human attribute can perform, the Divine attribute can do in a far more perfect way, and the most exalted exhibition of human perfection is but a faint shadow of the Divine perfection that gave it birth. The most unbounded charity, mercy, gentleness, compassion, in man, is feeble indeed, and miserable, compared with the charity, mercy, gentleness, compassion of God. The Divine perfection is the ideal of human perfection, its model, its pattern, its origin, its efficient Cause, the source from which it came, the end for which it was created."¹

Divine Interference.

Theistic Evolution, in the sense in which it is advocated by St. Augustine and St. Thomas, excludes also Divine interference, or constant unnecessary interventions on the part of the Deity, as effectually as it does a low and narrow Anthropomorphism. Both these illustrious Doctors declare explicitly, that "in the institution of nature we do not look for miracles, but for the laws of nature."²

¹ *The Month*, Sept., 1882, p. 20.

² Cf. "Gen. ad Lit.," lib. II, cap. I, of St. Augustine and "Sum." I, LXVII, 4 ad 3^m of St. Thomas. The Angelic Doctor's words are: "In prima autem institutione naturæ non quæritur miraculum, sed quid natura rerum habeat." Suarez expresses

Only the crudest conception of derivative creation would demand that the theist should necessarily, if consistent, have recourse to continued creative fiat to explain the multifold phenomena connected with inorganic or organic Evolution. For, as already explained, derivation or secondary creation is not, properly speaking, a supernatural act. It is merely the indirect action of Deity by and through natural causes. The action of God in the order of nature is concurrent and overruling, indeed, but is not miraculous in the sense in which the word "miraculous" is ordinarily understood. He operates by and through the laws which He instituted in the beginning, and which are still maintained by His Providence. Neither the doctrine of the Angel of the Schools nor that of the Bishop of Hippo, requires the perpetual manifestation of miraculous powers, interventions or catastrophes. They do not necessitate the interference with, or the dispensation from, the laws of nature, but admit and defend their existence and their continuous and regular and natural action. Only a misunderstanding of terms, only a gross misapprehension of the meaning of the word "creation," only, in fine, the "unconscious Anthropomorphisms" of the Agnostic and the Monist, would lead one to find anything irreconcilable between the legitimate inductions of science and the certain and explicit declarations of Dogma.

himself to the same effect when he tells us, in his tractate, "De Angelis," lib. I, no. 8, that we must not have recourse to the First Cause when the effects observed can be explained by the operations of secondary causes. "Non est ad Primam Causam recurrendam cum possunt effectus ad causas secundas reduci."

Science and Creation.

From what has already been learned, it is manifest that physical science is utterly incompetent to pronounce on primary or absolute creation. This, being by the very nature of the case, above and beyond observation and experiment, it is, for the same reason, necessarily above and beyond the sphere of science or Evolution. The Rev. Baden Powell clearly expresses this idea in his "Philosophy of Creation," when he affirms that "science demonstrates incessant past changes, and dimly points to yet earlier links in a more vast series of development of material existence; but the idea of a *beginning*, or of *creation*, in the sense of the original operation of the Divine volition to constitute nature and matter, is beyond the province of physical philosophy."¹

Again, belief in derivative creation is secure from attack, on the part of natural science, for the simple reason that it does not repose on physical phenomena at all, but on psychical reasons, or on our primary intuitions. Modern scientists are continually confounding primary with secondary creation, and speaking of the latter as if it were absolute creation, or as if it implied special supernatural action. This confusion of terms is at the bottom of many of the utterances of Darwin and Huxley, and is the cause of numerous erroneous views which they ascribe to their opponents. Thus, Darwin asks those who are not prepared to assent to his evolutionary notions, if "they really believe that at innumerable

¹ Essay III, sec. IV.

periods in the earth's history, certain elemental atoms have been commanded suddenly to flash into living tissues?"¹ And Huxley ridicules the notion that "a rhinoceros tichorhinus suddenly started from the ground like Milton's lion, 'pawing to get free its hinder parts,'"² and facetiously speaks of the improbability of "the sudden concurrence of half-a-ton of inorganic molecules into a live rhinoceros."

A grave objection, quotha! As if a belief in creation necessarily connoted the grotesque assumptions which he attributes to those who are not of his mind. Huxley and Darwin set up poor, impotent dummies, and forthwith proceed to knock them down, and then imagine they have proven the views of their adversaries to be untenable, if not absurd. A reference to what has already been said respecting absolute and derivative creation, and a recollection that creation by and through secondary causes is not a supernatural, but a natural act, will show how much ignorance of the elench there is in the difficulty suggested by the two naturalists just named.

Darwin's Objection.

Once more, Darwin speaks of a man building a house of certain stones found at the base of a precipice, and selecting those which, from their shape, happened to be most suitable. And in referring to this matter he writes: "The shape of the fragments of stone at the base of our precipice may be

¹ "The Origin of Species," vol. II, p. 297.

² "Life of Darwin," vol. I, p. 548.

called accidental, but this is not strictly correct, for the shape of each depends on a long sequence of events, all obeying natural laws, on the nature of the rock, on the lines of stratification or cleavage, on the form of the mountain, which depends upon its upheaval and subsequent denudation, and lastly on the storm and earthquake which threw down the fragments. But in regard to the use to which the fragments may be put, their shape may strictly be said to be accidental. And here we are led to face a great difficulty, in alluding to which I am aware that I am traveling beyond my proper province.

"An omniscient Creator must have foreseen every consequence which results from the laws imposed by Him; but can it be reasonably maintained that the Creator intentionally ordered, if we use the words in any ordinary sense, that certain fragments of rock should assume certain shapes so that the builder might erect his edifice?"¹

The difficulty here raised is one of frequent occurrence in the writings of modern scientists. It reposes entirely on the crude and erroneous notions which they entertain respecting the nature and attributes of the Deity, and has its origin in that low and restricted Anthropomorphism, against which they are wont to inveigh so strongly, but into which they are continually lapsing, notwithstanding all their asseverations and protestations to the contrary. The objection, although urged in the name of natural and physical science, is in reality metaphysical in character and should be so treated. Those who urge

¹"Animals and Plants under Domestication," vol. II, p. 432.

the objection seem to think, that in the boundless profusion and multitudinous forms of inorganic and organic nature, in the myriad worlds and systems of worlds which people the illimitable realms of space, there is more than God can provide for or superintend. They forget that He, by His very nature, is omniscient and omnipotent and omnipresent; that for Him there is neither past nor future, but that all is present and bare before His eyes; that far from being conditioned or limited in His actions, He is absolutely independent and free from all limitations; that He is infinite in all His perfections and can attend to a thousand million systems of worlds, and to each according to its proper needs, as well as to a single crystal or a solitary flower; and that He can do this during countless æons of time as easily as He can for a single moment. We have here, in a different guise, the old difficulty of time and space in their relations to God and His Divine operations. It is only necessary to form a proper, if not an adequate conception, of God and His attributes, to refer to the first principles of psychology, in order to realize how puerile is the objection, and what crass ignorance it betrays of the fundamental elements of metaphysics and theology on the part of the objector.

Limitations of Specialists.

In Darwin's case, one is not surprised that he should, in good faith, urge the objection included in the quotation just made from him, because he informs us himself that he was mentally disqualified

for the discussion of abstract or metaphysical questions. "My power," he writes in his autobiography, "to follow a long and purely abstract train of thought, is very limited; and therefore I could never have succeeded with metaphysics or mathematics." But aside from his incompetence as a metaphysician, the very doctrine he championed so lustily seemed to render him nebulous and skeptical even about primary intuitions. Having occasion to give an opinion on the "Creed of Science," he wrote: "The horrid doubt always arises whether the convictions of man's mind, which has been developed from the mind of the lower animals, are of any value, or at all trustworthy. Would anyone trust in the convictions of a monkey's mind, if there are any convictions in such a mind?"¹

One is not surprised, I repeat, to find metaphysical and theological errors in Darwin's works, for, in addition to his acknowledged incapacity in abstract subjects, his mind was so preoccupied with biology in its bearings on Evolution, that he was practically indifferent to, if not oblivious of, everything outside his immediate sphere of research. He is, indeed, a striking illustration of the truth of Cardinal Newman's observations when he declares, that "Any one study, of whatever kind, exclusively pursued, deadens in the mind the interest, nay, the perception, of any other. Thus, Cicero says, Plato and Demosthenes, Aristotle and Isocrates, might have respectively excelled in each other's province, but that each was absorbed in his own. Specimens of this pecu-

¹"Life and Letters of Charles Darwin," vol. I, p. 285.

arity occur every day. You can hardly persuade some men to talk about anything but their own pursuits; they refer the whole world to their own center, and measure all matters by their own rule, like the fisherman in the drama, whose eulogy on his deceased lord was, 'he was so fond of fish.'"¹

But the observations of the learned cardinal are not more applicable to Darwin than to a host of contemporary scientists, who fancy there is an irreconcilable conflict between science on the one hand, and religion on the other. They fail to see that the conflict, so far as it exists, is due either to bias or ignorance, or to the fact that the very nature of their studies has imposed limitations on them, which utterly unfit them for pronouncing an opinion on the subjects which they are often in such haste to discuss.

In one of his thoughtful essays,² the Rev. James Martineau alludes to the injury which is done to sound philosophy by the undue cultivation of any one branch of knowledge. "Nothing is more common," he avers, "than to see maxims, which are unexceptionable as the assumptions of particular

¹"Lectures on University Subjects," p. 322. Nearly forty years ago, in a lecture before the Royal Institution of Great Britain, the noted English writer, H. T. Buckle, adverting to this topic, declared that "an exclusive employment of the inductive philosophy was contracting the minds of physical inquirers, and gradually shutting out speculations respecting causes and entities; limiting the student to questions of distribution, and forbidding him questions of origin; making everything hang on two sets of laws, namely, those of coexistence and of sequence; and declaring beforehand how far future knowledge can lead us." See vol. I, of "Miscellaneous and Posthumous Works."

²"A Plea for Philosophical Studies."

sciences, coerced into the service of a universal philosophy, and so turned into instruments of mischief and distortion. That 'we can know but phenomena;' that 'causation is simply constant priority;' that 'men are governed invariably by their interests;' are examples of rules allowable as dominant hypotheses in physics or political economy, but exercising a desolating tyranny when thrust onto the throne of universal empire. He who seizes upon these and similar maxims and carries them in triumph on his banner, may boast of his escape from the uncertainties of metaphysics, but is himself, all the while, the unconscious victim of their very vulgarest deception."

Evolution and Catholic Teaching.

From the foregoing pages, then, it is clear that far from being opposed to faith, theistic Evolution is, on the contrary, supported both by the declarations of Genesis and by the most venerable philosophical and theological authorities of the Church. I have mentioned specially St. Augustine and St. Thomas, because of their exalted position as saints and Doctors, but it were an easy matter to adduce the testimony of others scarcely less renowned for their philosophical acumen and for their proved and unquestioned orthodoxy; but this is unnecessary.¹ Of course no one would think of maintaining that any of the Fathers or Doctors of the Church taught Evolution in the sense in which it is now under-

¹Cf., in this connection, chap. xii, of the "Genesis of Species;" and chap. xiv, of "Lessons from Nature," by St. George Mivart, where the subject, Theology and Evolution, is very cleverly treated.

stood. They did not do this for the simple reason that the subject had not even been broached in its present form, and because its formulation as a theory, under its present aspect, was impossible before men of science had in their possession the accumulated results of the observation and research of these latter times. But they did all that was necessary fully to justify my present contention; they laid down principles which are perfectly compatible with theistic Evolution. They asserted, in the most positive and explicit manner, the doctrine of derivative creation as against the theory of a perpetual direct creation of organisms, and turned the weight of their great authority in favor of the doctrine, that God administers the material universe by natural laws, and not by constant miraculous interventions. As far as the present argument is concerned, this distinct enunciation of principles makes for my thesis quite as much as would the promulgation of a more detailed theory of Evolution.

The Scholastic Doctrine of Species.

It may, however, be objected, that the authorities so far quoted favor development only in a vague or general way; that the Fathers and Scholastics distinctly maintained certain views which are absolutely incompatible with Evolution as now understood. It is said, for instance, that the scholastic doctrine of species, to which all the Schoolmen are irrevocably committed, completely negatives the view that their principles are compatible with

organic development. We are told that one of the cardinal doctrines of the School is the immutability of species; that species are but realizations of the archetypes, the "grand ideas," which have existed from all eternity in the mind of the Creator; that to affirm the immutability of species would be tantamount to asserting a change in the Divine prototypes, or to predicating a mutation in the Divine Essence itself.

In answer to this objection I shall confine myself to the teachings of the Angelic Doctor alone, as I am perfectly willing to rest my case for Evolution on his certain teachings respecting the nature of species.

It is necessary to premise here, that in the inductive sciences, St. Thomas, like his illustrious master, St. Augustine, teaches that disputed points are not to be settled by *a priori* reasoning, but rather by observation and experiment. No one, therefore, who is even slightly acquainted with the mind of the Angelic Doctor, and who duly appreciates his penetrating and comprehensive genius, would for a moment credit him with binding his disciples and successors to metaphysical formulæ, in matters of experimental science, and thus obliging them to reject the results of experiment and observation when they might happen to contravene the dicta or assumptions of metaphysics. Such an imputation would not be borne out by his teaching and would be as unjust as it would be erroneous.

To remove ambiguity and clear away difficulties, it may be observed that the word "species" may be

envisaged under three different aspects, to wit: the metaphysical, the logical, and the physiological or real. As to the metaphysical and logical aspects, both the Angelic Doctor and the School generally, are one in attributing to species an absolute fixity.¹

With metaphysical and logical species, however, we are not at present concerned. I am quite willing to leave these to the metaphysician to treat them as he lists. The question now at issue regards only physiological species. Is the species of which the biologist speaks variable, or does it belong to the category of immutable metaphysical species? This is a question of science and not of metaphysics. If it can be proven by the sciences of observation and experiment, that species are permanent and invariable, then the real or physiological species of the naturalist, in so far as they are immutable, at once enter into the category of the metaphysical species of the School. If, on the contrary, science can demonstrate that species are variable, then the fancied identity of physiological and metaphysical species immediately disappears. The determination, however, whether living types, plant or animal, are variable or permanent; whether physiological species shall be classed in the same category as immutable metaphysical species, is, I

¹ In his "Summa," St. Thomas thus defines logical species: "Considerandum est quod illud secundum quod sortitur aliquid speciem oportet esse fixum et stans et quasi indivisibile. . . . Et ideo omnis forma quæ substantialiter participatur in subjecto, caret intensione et remissione." "Summa," pars I, quæst. 52, art. 1.

repeat, a matter not of *a priori* reasoning, but wholly and solely one of observation and experiment.

In his "Summa," the Angelic Doctor admits without hesitation the possibility of a new species, for he tells us that: "New species, if they make their appearance, preëxisted in certain active virtues, as animals are produced from carrion under the influence communicated in the beginning to the stars and the elements."¹

More than this, he distinctly admits the mutability of species. To the objection that species must be immutable because they correspond with archetypes in the Divine intelligence, that they must be immutable because their forms are essentially immutable, he replies, that "immutability is proper to God only," and that "forms are subject to the variations of the reality."²

Again, it is erroneously supposed that St. Thomas always attaches to the terms genus and species, the same meaning as is given them by modern naturalists. This is a grave misapprehension. It will suffice to adduce a single instance in disproof of this notion. For example, the Angelic Doctor places man and animal in the same genus. But if, in the mind of St. Thomas, the word genus were in this

¹ "Species etiam novæ, si quæ apparent, præëxiterunt in quibusdam activis virtutibus; sicut et animalia ex putrefactione generata producuntur ex virtutibus stellarum et elementorum, quas a principio acceperunt; etiamsi novæ species talium animalium producuntur." "Summa," pars I, quæst. 73, art. 1 ad 3.

² "Subjiciuntur tamen variationi in quantum subjectum secundum eas variatur." "Summa," pars I, quæst. 9, art. 2 et 3.

instance to be understood in its modern sense, it would, as Père Leroy puts it, be tantamount to admitting the "principle of materialism."¹ Obviously, therefore, the term genus is to be understood in a much more comprehensive sense. For a similar reason, species, the immediate subdivision of genus, must likewise have a much wider signification than it has in a strict technical sense. If we desire to have a measure of the relative amplitude of species as compared with genus, in the passage just quoted, in which genus is made to embrace man and animal, we must, as Père Leroy pertinently remarks, make species correspond to what naturalists now denominate a kingdom. Thus understood, species, in the instance referred to, would be immutable, but not otherwise.

It is a mistake, then, to suppose that the meaning of the term species, in its physiological sense, was fixed by the Angelic Doctor. Neither did it receive the signification afterwards ascribed to it from any of the other Schoolmen or mediæval theologians. Nor does such a meaning find any warrant in the teachings of the Fathers or in Scripture. Whence, then, the origin of the word in the sense so long attributed to it by special creationists? This is a question deserving of consideration, for an answer to it, if it does not remove wholly many difficulties, will at least clear the field for intelligent discussion.

¹ For an interesting discussion of Thomastic teaching respecting the nature of species, see chap. III of Père Leroy's "L'Évolution Restreinte aux Espèces Organiques."

Milton and Ray.

Incredible as it may seem, it was a poet who fastened on science the signification which the word "species" has so long borne. Prior to Milton's time the meaning of the term, as employed by naturalists, was vague and changeable in the extreme. Not so, however, after the appearance of "Paradise Lost." At once the account of creation, as given in this immortal poem, began to be regarded as "a sort of inspired gloss on the early chapters of Genesis," and the botanist Ray, a younger contemporary of Milton, had, accordingly, no difficulty in giving to the word "species" a meaning which became as definite in natural history, as it had long before been in logic and metaphysics. The work of Milton and Ray was complete. What naturalists from the time of Aristotle had been unable to do, was effected in less than a generation by a poet and a botanist. And so universally was their meaning of the word accepted, that it persisted in natural history usage, and almost without any objections being raised against it, for full two hundred years. It was adopted by Linnæus and given wide-spread currency in the numerous works of the illustrious Swede. It was accepted by the great Cuvier and his school, and thus a definition of a single word, the meaning of which hinged on a well-known episode in a celebrated poem, served for two centuries to give permanency to a doctrine which, notwithstanding the progress Evolution has made, still has its supporters in all parts of the world. Species were assumed to be fixed and invariable,

because the definition of the term, not the facts of nature, demanded it. Logical and metaphysical species were confounded with physiological, or real species. For this reason, as is apparent, the foundation of the rival theory of Evolution, special creation, rests on an assumption; an assumption which, in turn, is based on a misconception of terms, on what, in the last resort, is a verbal fallacy pure and simple. Indeed, the history of the word "species" is but another of the countless illustrations of the sage observation of Coleridge, that "errors in nomenclature are apt to avenge themselves by generating errors of idea;" errors which, in turn, generate other errors and retard progress in a way that cannot be estimated.

The scholastic teaching respecting species does not, then, as is so often erroneously imagined, commit us to the doctrine of the immutability of species. Far from it. The question of the mutability or permanence of physiological species, the question of organic Evolution, therefore, is, as just stated, one to be settled by empirical science, by observation and experiment, and not by metaphysics.