

reader is referred to works which treat of these topics *ex professo*.<sup>1</sup> It suffices for our present purpose to know the relation of Agnosticism to Evolution; to know that a particular phase of Evolution is so intimately connected with Agnosticism, that it cannot be disassociated from it, to realize that Agnosticism, and agnostic Evolution, are practically as synonymous as are Atheistic Evolution and Monism. It is enough for us to appreciate the fact that Agnosticism and Monism are fundamentally erroneous, to understand that both monistic and agnostic Evolution are untenable and inconsistent with the teaching of Theism and with the doctrines of Christianity; that they are illegitimate inductions from the known data of veritable science, and utterly at variance with the primary concepts of genuine philosophy. We need, consequently, consider them no further. Evolution, in the sense in which it is held by the Monist and Agnostic, is so obviously in positive contradiction to the leading tenets of Theism, that it may forthwith be dismissed as not only untenable, but as unwarranted by fact and experiment, and negatived by the incontestable principles of sound metaphysics and Catholic Dogma.

<sup>1</sup> See especially: "Agnosticism and Religion," by the Rev. George J. Lucas, D.D.; chaps. III and IV of "The Great Enigma," by W. S. Lilly, and the succinct and philosophical "Agnosticism," by the Right Rev. J. L. Spalding, D.D. The reader will likewise find many valuable and suggestive pages in Balfour's "Foundations of Belief," and in a review of this work by Mgr. Mercier, in the *Revue Neo-Scholastique*, for October, 1895.

## CHAPTER IV.

### THEISM AND EVOLUTION.

#### Evolution and Faith.

HAVING eliminated from our discussion the forms of Evolution held by the divers schools of monists and agnostics, there now remains but the third form, known as theistic Evolution. Can we, then, consistently with the certain deductions of science and philosophy, and in accordance with the positive dogmas of faith—can we as Christians, as Catholics, who accept without reserve all the teachings of the Church, give our assent to theistic Evolution? This is a question of paramount importance, one which is daily growing in interest, and one for an answer to which the reading public has long been clamoring. And with it must also be answered a certain number of cognate questions, of scarcely less interest and importance than the main question of Evolution itself.

I have elsewhere<sup>1</sup> shown that the principles of theistic Evolution—the Evolution, namely, which admits the existence of a God, and the development, under the action of His Providence, of the universe and all it contains—were accepted and defended by some of the most eminent Doctors of the early Greek and Latin Churches. It was a brilliant

<sup>1</sup>"Bible, Science and Faith," part I, chaps. III and IV.

luminary of the Oriental Church, St. Gregory of Nyssa, who first clearly conceived and formulated the nebular hypothesis, which was long centuries subsequently elaborated by Laplace, Herschel and Faye. The learned prelate found no difficulty in admitting the action of secondary causes, in the formation of the universe from the primal matter which the Almighty had directly created. According to Gregory and his school, God created matter in a formless or nebulous condition, but impressed on this matter the power of developing into all the various forms which it afterwards assumed. The universe and all it contains, the earth and all that inhabits it—plants, animals, man—were created by God, but they were created in different ways. The primitive material, the nebulous matter, from which all things were fashioned, was created by God directly and immediately; whereas, all the multitudinous creatures of the visible world, were produced by Him indirectly and mediately, that is, by the operation of secondary causes and what are commonly called the laws of nature.

Teachings of St. Augustine.

St. Augustine not only accepted the conclusions of his illustrious Greek predecessor, but he went much further than the Bishop of Nyssa. He was, likewise, much more explicit, especially in what concerned the development of the various forms of animal and vegetable life. According to the Doctor of Hippo, God did not create the world as it now appears, but only the primordial matter of which it is composed.

Not only the diverse forms of inorganic matter, rocks, minerals, crystals, were created by the operation of secondary causes, but plants and animals were also the products of such causes. For God, the saint insists, created the manifold forms of terrestrial life, not directly but in germ; potentially and causally—*potentialiter atque causaliter*. In commenting on the words of Genesis: "Let the earth bring forth the green herb," he declares that plants were created not directly and immediately, but causally and potentially, *in fieri, in causa*; that the earth received from God the power of producing herb and tree, *producendi accepisse virtutem*.

In his great work on the Trinity, the illustrious Doctor tells us that: "The hidden seeds of all things that are born corporeally and visibly, are concealed in the corporeal elements of the world." We are unable to see them with our eyes, "but we can conjecture their existence from our reason." They are quite different from "those seeds that are visible at once to our eyes, from fruits and living things." It is indeed from such hidden and invisible seeds that "The waters, at the bidding of the Creator, produced the first swimming creatures and fowl, and that the earth brought forth the first buds after their kind, and the first living creatures after their kind." They lay dormant, as it were, until long æons after the creation of matter, because "suitable combinations of circumstances were wanting, whereby they might be enabled to burst forth and complete their species."

"The world," he avers, "is pregnant with the causes of things that are coming to the birth;

which are not created in it, except from the highest essence, where nothing either springs up or dies, either begins to be or ceases." But the Creator of these seeds, the Cause of these causes, *Causa causarum*, is at the same time the Creator of all things that exist. He carefully distinguishes "God creating and forming within, from the works of the creature which are applied from without." "In the creation of visible things it is God," he affirms, "that works from within, but the exterior operations," that is, the operations of creatures or those of divers physical forces, "are applied by Him to that nature of things wherein He creates all things." "For," the Saint continues, "it is one thing to make and administer the creature from the innermost and highest turning point of causation, which He alone does who is God, the Creator; but quite another thing to apply some operation from without, in proportion to the strength and faculties assigned to each by Him, that that which is created may come forth into being at this time or at that, or in this way or that way. For all things, in the way of origin and beginning, have already been created in a kind of texture of the elements, *in quadam textura elementorum*; but they can come forth only when opportunity offers, *acceptis opportunitatibus*."<sup>1</sup>

<sup>1</sup>"Aliud est enim ex intimo et summo causarum cardine condere atque administrare creaturam, quod qui facit, solus creator est Deus: aliud autem pro distributis ab illo viribus et facultatibus aliquam operationem foris secus admovere, ut tunc vel tunc, sic vel sic, exeat quod creatur. Ista quippe originaliter ac primordialiter in quadam textura elementorum cuncta jam creata sunt, sed acceptis opportunitatibus prodeunt." "De Trinitate," lib. III, cap. ix. In his great work, "De Genesi ad Litteram,"

God, then, according to St. Augustine, created matter directly and immediately. On this primordial or elementary matter He impressed certain causal reasons, *causales rationes*; that is, He gave it certain powers, and imposed on it certain laws, in virtue of which it evolved into all the myriad forms which we now behold. The saint does not tell us by what laws or processes the Creator acted. He makes no attempt to determine what are the factors of organic development. He limits himself to a general statement of the fact of Evolution, of progress from the simple to the complex, from the homogeneous to the heterogeneous, from simple primordial elements to the countless, varied, complicated structures of animated nature.

Has any modern philosopher stated more clearly the salient facts of organic Evolution? Has anyone

lib. IV, cap. xxiii, the saint beautifully develops the evolutionary idea, when he exhibits the analogy between the growth of a tree from the seed and the Evolution of the world from its primordial elements. Speaking of the gradual growth of the tree—trunk, branches, leaves, fruit—from the seed, he declares: "In semine ergo illa omnia fuerunt primitus, non mole corporeæ magnitudinis sed vi potentiaque causalium." After asking the question: "Quid enim ex arbore illa surgit aut pendet, quod non ex quodam occulto thesauro seminis illius extractum atque depromptum est?" he continues with rare philosophical acumen: "sicut autem in ipso grano invisibiliter erant omnia simul quæ per tempora in arborem surgerent; ita ipse mundus cogitandus est, cum Deus simul omnia creavit, habuisse simul omnia quæ in illo et cum illo facta sunt, quando factus est dies; non solum cælum cum sole et luna et sideribus, quorum species manet motu rotabili, et terram et abyssos, quæ velut inconstantes motus patiantur atque inferius adjuncta partem alteram mundo conferunt; sed etiam illa quæ aqua et terra produxit potentialiter atque causaliter, priusquam per temporum moras ita exorirentur, quo modo nobis jam nota sunt in eis operibus, quæ Deus usque nunc operatur."

insisted more strongly on the reign of law in nature, or discriminated more keenly between the operations of the Creator and those of the creature? Has anyone realized more fully the functions of a First Cause, as compared with those of causes which are but secondary or physical? If so, I am not aware of it. Modern scientists have, indeed, a far more detailed knowledge of the divers forms of terrestrial life than had the philosophical Bishop of Hippo; they have a more comprehensive view of nature than was possible in his day, but they have not, with all their knowledge and superior advantages, been able to formulate the general theory of Evolution a whit more clearly, than we find it expressed in the writings of the Doctor of Grace, who wrote nearly fifteen centuries ago.

Views of the Angelic Doctor.

The Angelic Doctor takes up the teachings of St. Augustine and makes them his own. He discusses them according to the scholastic method, and with a lucidity and a comprehensiveness that leave nothing to be desired. He carefully distinguishes between creation proper, and the production or generation of things from preëxisting material; between the operations of absolute Creative Energy, and those which may be performed by secondary causes. Indeed, so exhaustive and so complete is his treatment of the origin and Evolution of the material universe and all it contains; so clear and so conclusive his argumentation, that his successors have found but little to add to his brilliant proposi-

tions respecting the genesis of the world and its inhabitants.

The primordial Divine act of creation, according to St. Thomas, following St. Augustine, consisted in the creation, *ex nihilo*, of three classes of creatures; spiritual intelligences, the heavenly bodies and simple bodies, or elements. According to the physical theories of the time, the composition of the celestial bodies was supposed to be different from that of the earth. They were supposed to be incapable of generation or corruption;<sup>1</sup> to be constituted of elementary matter, indeed, but matter unlike that of sublunary bodies, in that it is incorruptible. We now know that mediæval philosophers were in error on this point. Spectrum analysis has demonstrated that all the celestial bodies have the same composition as our earth, and that the constitution of the material universe is identical throughout its vast expanse. Eliminating this error, which was one of physics, and not one of philosophy or theology, and one which in nowise impairs the teachings of

<sup>1</sup> The scholastic use of the words "generation" and "corruption" must carefully be distinguished from the ordinary meaning of these terms. "In its widest sense," as Father Harper tells us, "generation includes all new production even by the creative act. In a more restricted sense, it includes all transformations, accidental as well as substantial. In a still more restricted sense, substantial transformations only. Yet more specially, the natural production of living things; most specially, the natural production of man." Corruption, as understood by the Schoolmen, means, not "retrograde transformation, such as occurs, for instance, in the death of a living entity," but "the dissolution of a body by the expulsion of that substantial form by which it had been previously actuated. In the order of nature, it is the invariable accompaniment of generation." Cf. "Metaphysics of the School," vol. II, glossary, and pp. 273-279.

the Angelic Doctor regarding creation, we have, according to St. Thomas, the creative act terminating in elementary matter and spiritual substance.

But here we must clearly distinguish between elementary matter, properly so called—the elements of which St. Thomas speaks—and primal matter, *materia prima*, which was given such prominence in the philosophical works of the Schoolmen. According to Aristotle, who follows Empedocles, there are four primitive elements, earth, air, fire and water; and from these, by suitable combinations, all other material substances are derived. The Scholastics, in accepting the philosophy of the Stagirite, naturally adopted his theory of the four elements. Chemistry, however, has long since exploded this theory, as spectrum analysis has disproved the mediæval view regarding the composition of the heavenly bodies. But whether there are four elements, as the Schoolmen imagined, or some sixty odd, as modern chemists maintain, or but one only, as some of the old Greek philosophers believed, and as certain men of science still contend, it is quite immaterial so far as our present argument is concerned. What is necessary to bear in mind is, that the elementary matter of which the universe is composed, whether it be of one or of many kinds, was, in the beginning, created by God from nothing. For it is manifest that it was not the intention of the Angel of the Schools, to commit his followers to any mere physical theory respecting the number and nature of the elements, especially when the ideas entertained

regarding these subjects were as vague and diverse as they are known to have been in his day. Neither he nor his contemporaries had any means of throwing light on the questions involved. Even now, after all the splendid triumphs which chemistry has witnessed since the epoch-making achievements of Lavoisier, we are still in ignorance as to the exact number of elements existing, and are yet debating whether all the so-called elements may not be so many allotropic conditions of one and the same kind of matter. But what the Angelic Doctor did wish to insist on, what he wished specially to bring home to his hearers, was the great dogmatic truth according to which God is the Creator of all things, material and immaterial, visible and invisible.

*Materia prima*, however, as understood by the Scholastics, is quite different from what we know as elementary matter. In all bodies subject to generation and corruption, it is, they tell us, numerically one—*una numero in omnibus*.<sup>1</sup> It is one and the same in all the components of the earth, and in all the constituent orbs of space. Of its very nature it is “un-generated, ungenerative, indivisible, incorruptible, indestructible.”<sup>2</sup> But this *materia prima*, although an entity, is not a complete substance. It cannot exist by itself, but must be actuated by some form. For it is form which determines matter and gives

<sup>1</sup>“Sciendum est etiam, quod materia prima dicitur una numero in omnibus.” Opusc. XXXI, “De Principiis Naturæ,” ante med.

<sup>2</sup>“Sciendum est quod materia prima, et etiam forma, non generatur neque corrumpitur.” Op. cit.

it being.<sup>1</sup> An element, accordingly, is a composite entity, a *compositum*, constituted of matter—which is the subject, potentiality or inferior part of the composite—and form, which is the act or superior part. And although there is but one matter, there are many forms.<sup>2</sup> And it is because this one matter is actuated by diverse forms, that we have the manifold elements which constitute the material universe.

#### Seminales Rationes.

But these elements, composed of matter and form, required something more, in order to be competent to enter into combinations and to give rise to higher and more complex substances.

<sup>1</sup> "Simpliciter loquendo, forma dat esse materia. . . . Sciendum etiam, quod licet materia prima non habeat in sua ratione aliquam formam, . . . materia tamen numquam denudatur a forma. . . . Per se autem numquam potest esse; quia cum in ratione sua non habeat aliquam formam, non potest esse in actu, cum esse actu non sit nisi a forma; sed est solum in potentia." Ibidem. The whole of this masterly and interesting treatise should be carefully pondered by those who desire to know the mind of the saintly Doctor respecting the nature of matter.

<sup>2</sup> The words "matter" and "form," it will be observed, are here employed in a strictly metaphysical or technical sense. Matter is that element in an entity which is indeterminate, passive, potential, "of all real entities the nearest to nothingness." It is one of the two essential constituents of all bodies. The other element or constituent of bodies is form. It is that which differentiates and actuates matter; which determines the specific nature of any composite. "The matter in which form adheres," according to Aristotle, "is not absolutely non-existent; it exists as possibility—*δυναμικῶς*, *potentia*. Form, on the contrary, is the accomplishment, the realization—*ἐντελέχεια*, *ἐνέργεια*, *actus*—of this possibility. For an elaborate explanation of these terms, see chaps. II and III, vol. II, of Harper's "Metaphysics of the School." Cf. also, § 48, vol. I, of Ueberweg's "History of Philosophy."

This something more, the Angelic Doctor designates seminal forces, or influences—*seminales rationes*. "The powers lodged in matter," he tells us, "by which natural effects result, are called *seminales rationes*. The complete active powers in nature, with the corresponding passive powers—as heat and cold, the form of fire, the power of the sun, and the like—are called *seminales rationes*. They are called seminal, not by reason of any imperfection of entity that they may be supposed to have, like the formative virtue in seed; but because on the individual things at first created, such powers were conferred by the operations of the six days, so that out of them, as though from certain seeds, natural entities might be produced and multiplied." The physical forces—heat, light, electricity and magnetism—would, doubtless, in modern scientific terminology, correspond to the *seminales rationes*<sup>1</sup> of the Angelic Doctor, as they are efficient in producing changes in matter and in disposing it for that gradual Evolution which has obtained in the material universe.

In the beginning, then, God created primordial matter, which was actuated by various substantial forms. With the elements thus created were associated certain *seminal influences*—certain physical forces, we now should say—and the various compounds which subsequently resulted from the action of these forces, on the diverse elements created, were

<sup>1</sup> For an elaborate explanation of the meaning of *seminales rationes*, according to the mind of the Angelic Doctor, see the "Metaphysics of the School," vol. II, appendix A, nn. III and IV, and vol. III, part I, glossary, sub *vocibus*.

the product of generation and not of creation. There was development, Evolution, under the action of second causes, from the simple elements to the highest inorganic and organic compounds; from the lowest kinds of brute matter to the highest bodily representatives of animated nature; but there was nothing requiring anew creative action or extraordinary interventions, except, of course, the human soul.

After this primordial creation, God continued and sustained His work by His Providence. Matter was then under the action of secondary causes, under what science calls the reign of law, and under the action of these secondary causes, under the influence of forces and laws imposed on it by God in the beginning, it still remains, and shall remain, until time is no more

#### Creation According to Scripture.

This teaching is in perfect harmony with the declarations of the opening chapter of Genesis, which speaks first of the creation of matter, then of the production from matter of plants and animals. It is consistent, too, with the teachings of science, which affirm that the material universe was once but a nebulous mass, which in the course of time condensed into solid bodies, the stars and planets, and which, after countless ages and by a gradual Evolution under the action of natural laws, generated those myriad objects of passing beauty and marvelous complexity which we now so much admire.

Matter alone, insists St. Thomas, in speaking of the visible universe, was created, in the strict sense of the term, and in this he but follows the indications of the Mosaic narrative of creation, and St. Augustine's interpretation of the work of the six days. Plants and animals were generated or produced from preëxisting material—"were gradually developed, by natural operations, under the Divine administration."

"In those first days," he tells us, "God created the creature in its origin and cause—*originaliter, vel causaliter*, and afterwards rested from this work. Nevertheless, He subsequently, until now, works according to the administration of created things by the work of propagation. Now, to produce plants from the earth belongs to the work of propagation; therefore, on the third day plants were not produced in act, but only in their cause—*Non ergo in tertia die productæ sunt plantæ in actu sed causaliter tantum.*"<sup>1</sup>

Elsewhere, in defending the opinion of St. Augustine, he writes: "When it is said, 'Let the earth bring forth the green herb,' Gen. i, 11, it is not meant that plants were then produced actually in their proper nature, but that there was given to the earth a germinative power to produce plants by the work of propagation; so that the earth is then said to have brought forth the green herb and the tree yielding fruit in this wise, viz., that it received the power of producing them—*producendi accepisse virtutem.*" And this he confirms by the authority of

<sup>1</sup>"Summa," Iæ, LXIX: 2.