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ARTICLE IV.

THE RELIGION OF GEOLOGY.¹

By Rev. J. Jay Dana, South Adams, Mass.

NOT a few regard the science of Geology with distrust. They doubt whether it is a *science*, but consider it a monad undeveloped as yet; and whether it will have arms or legs, or both, or neither, is to them highly problematical. Some go so far as to call in question its facts; while others who do not doubt these, consider the inferences drawn from them as mere vapors which have arisen from a quagmire of uncertainty; either light and airy nothings, or clouds full of water, which, when it falls, shall only make the earth more prolific in scepticism. One reason for this distrust is, that some of those who have prosecuted geological inquiries, have promulgated hypotheses full of error; but which have no special connection with geology, and for which she is in no wise responsible. We do not deny that some have endeavored to use this science as an auxiliary in the overthrow of Revelation (and what science has not thus been abused?), and this doubtless has been the occasion of leading many Christian minds to look upon it with suspicion.

Some may be surprised at the title given to this Article; and will inquire whether there is Religion in Geology? and if so, what are its tenets, its articles of faith?

There can be no doubt that the two lights, science and revelation, instead of being set up as rivals, can be so arranged that their flames shall coalesce and form one which shall be of greater splendor than either of them alone. Science may thus become the handmaid of religion, and assist her in obtaining conquests over the minds and hearts of men.

Scientific truth is, in an important sense, religious truth; because it makes us acquainted with the character of God. We can take no cognizance of mind, except our own, only as it becomes manifested in speech or in act. It is interesting to notice that God's manifestations

¹ The title of this Article is derived from the work of Rev. Dr. Hitchcock, President of Amherst College. To his book the writer is also indebted for many valuable thoughts. Yet it is deemed desirable to present these thoughts without any direct reference to the order pursued by Dr. H.

of himself to his creatures have a certain similarity to those of the human being. As the child acts before it speaks, and discovers its intelligence by deeds sooner than by words, so God revealed his existence by acts of creation and of providence ages upon ages prior to his utterance of his revealed will in the ears of men. While there is no evidence of puerility in the manifestations of God, before he "made known his will unto Moses and his acts unto the children of men," yet they furnish a very important field of investigation to one who would acquire a full knowledge of his Maker. As well might the reader of the Gospels and Epistles of the New Testament take the position that the Old Testament is of no use because the relations of later days are more full, as for one who has the Bible to say to the works of nature, "I have no need of you." Everything in nature is a manifestation of God, and has a relationship to Him more or less intimate, and needs to be studied before we can claim that we have the fullest knowledge of Him. We do not claim that an individual cannot be made wise unto salvation without a full knowledge of science; but that an accurate acquaintance with scientific truth will give him more exalted conceptions of the Deity, and will make him more eloquent in the praise of his Maker.

But we are detaining the reader from the main inquiry: What is the Religion of Geology?

We answer that Atheism is no part of the creed of geology, when correctly understood. The sacred writer says: "The fool hath said in his heart there is no God." He says this when he has the Bible in his hand, as promptly as when ignorant of revelation. No man becomes an Atheist without a gross perversion of evidence. He does not become so by the legitimate use of the powers with which he has been endowed by his Creator. We consider the ground perfectly tenable, that there is nothing in the teachings of geology that tends to lead any man to look up to the throne of the Most High and declare that there is no God; nay, further, we think it can be shown that she is not one whit behind the chiefest of the sciences in the boldness and clearness with which she proclaims the existence of a Supreme Being. We will not say that no geologist claims to be an Atheist, but if such an one can be found it has yet to be proved that a legitimate use of the teachings of this science has made him so. We do not hold that there is in the contemplation of the rocky strata such superhuman power as to remove all moral obliquity from the human heart; nor do we believe that there is a fact in this stony revelation which gives any one the least liberty to doubt the existence

of God. One may be an infidel in spite of this science, but not in consequence of embracing it.

We obtain proof of God's existence from the light of nature by looking at the impress which he has made of Himself upon his works. If we find marks of design, we see the designer. The same marks of design which are found in the heavens, are found on the earth; the same that we find now, we find in every portion of the earth's history with which we are made acquainted. The astronomer turns his glass to the heavens and finds immense bodies upon which God has left the impress of his power, and admires the evidence which they furnish of the existence of the Most High; but though they may be on a scale of grander magnificence, they are no more demonstrative of the Divine existence than the solitary flower which blooms upon the desert, or than the desert on which it blooms. There is evidence of an intelligent mind in the construction of a watch as well as in the creation of the heavens, but not the same in degree; for the maker of the watch is only the arranger of substances created to his hand, while God has formed the substances which he has arranged with infinite skill. The *creation* of an atom is demonstrative of Divine power. It is a higher exhibition of power than would be the *arrangement* of a world. One of the favorite dogmas of the Atheist is, that all things continue as they were, or are parts of a series of things which never had a beginning and never will have an end; and by a resort to this he hopes to do away with all necessity for the existence of a personal God. It is certainly as indicative of credulity for one to believe in the eternity or self-creation of matter, as of mind; and far less consonant with reason to hold that inert matter came into existence self-caused than to consider it the offspring of an intelligent intellect.

If the world, as now viewed, gives proof of the Divine existence, then certainly the teachings of geology confirm this view, for they transport us back to a period when the changes occurred which conspired to make the earth what it now is. They show us rocks destitute of all traces of organic life, and upon these, strata deposited which indicate that at that remote period living beings were upon the stage of action. And as we rise (geologically), we find forms of life more nearly like those of the present day. If the fauna and the flora of the historic period evince marks of design so consummate that only the fool can say there is no God, so do the forms of life displayed in the paleozoic strata. Their organic remains are conclusive proof of their former existence, and present evidence of

Divine wisdom as clear as any forms of life now known. They show that, in every period of the world's history, the forms of life have been adapted to the state of things which for the time being existed.

Of all the phenomena with which we are conversant, there is none which so clearly bears the impress of Divine power and wisdom as life. Geology points us to a period when there was no life, and shows us several extinctions and renewals of life since the foundations of the earth were laid; and this gives us an argument against Atheism which is well adapted to put those who advocate this theory to silence. If the phenomenon of life cannot *now* be accounted for satisfactorily without resort to a belief in the Divine existence, no more can it be accounted for in former times where the work of death has made the evidence of life so apparent. Genera and species of plants and animals have become extinct; but their organic remains are as sound an argument for their former existence and as evincive of the Divine existence, as if now, under the wide-spreading foliage of a noble forest, those forms were to be seen. It is the privilege of the geologist, in looking for evidence of God's existence, to summon the past before him and array those ancient sepulchres side by side with the living. Paleontology is a field as fruitful in this respect as the science of living beings; and when these fields of investigation are brought into contact and surrounded with the same enclosure, they furnish a wide range for thought and a place where can be gathered a rich harvest of fruit which clearly proves the Divine existence. We doubt not that the various bodies composing the solar system teem with organic life, but there is no proof of it except from analogy; but in the earth we have proof of this fact, not only in what we now see, but in the exhibitions of it recorded in the rocks of the earth. "If then geology can clearly demonstrate the present state of the globe to have had a beginning; if she can show us the period, by fair induction, when one liquid, fiery ocean enveloped the earth; if she can show us five or six economies of organic life successively flourishing and passing away; if she can trace man back to his origin at a comparatively recent date; if, in fact, she can show us that the most important operations on the globe, and the most complicated and exalted organic races, had a beginning; and if astronomy affords glimpses of similar changes, — then why may we not safely leave the subject of the world's eternity an undecided question, consistently with the most perfect Theism? . . . What doctrine of natural religion is thereby unfavorably affected, if we can only

show the interposition of the Deity in all the important modifications of matter? Such an admission would not prove matter to be eternal, but only that science has not placed within the reach of man the means of proving its non-*eternity*.”¹

The same author says further: “We present ten thousand examples of exquisite design and adaptation to the Atheist. He admits them all; but says, it was always so, and therefore requires no other Deity but the power eternally inherent in nature. At your metaphysical replies to his objections he laughs; but when you take him back on geological wings and bid him gaze on man just springing with his lofty powers from the plastic hands of his Creator; and then, still earlier, you point him to system after system of organic life starting up in glorious variety and beauty on the changing earth; and even still nearer the birth of time, you show him the globe, a glowing ocean of fire, swept of all organic life, he is forced to exclaim: ‘A God! a personal God! an infinitely wise and powerful God!’”²

The argument against Atheism drawn from geology is in many respects more conclusive than from any other science. The interpositions of God have been so clearly defined that no one can well doubt. There are evidences of the exercise of power which cannot be accounted for, except by admitting the existence of an infinite being. She demonstrates that “all things do not continue as they were” at the beginning. She proclaims unfalteringly that changes have taken place in every age of the world. True, she tells us not the precise hour when the earth commenced her existence, nor how long a period elapsed between this time and the first appearance of life; nor how long it was before some form of life became extinct, and was superseded by others; but she teaches facts which cannot be explained except on the principles of Theism. He who would bring to light facts which will discomfit the Atheist, has only to enter the great storehouse of nature and exhume some fossil and ask him to explain how it was formed. He can defy him to do it without denying his own principles. Suppose a traveller in his explorations enters the streets of Ancient Nineveh, and as he removes the soil, he finds the remains of houses and temples, and sees winged bulls, and tablets covered with hieroglyphics; he is convinced at once that these things never were placed there by chance. He is satisfied that they exhibit marks of design. Though he may not be able to decipher a single symbol, yet he sees proof enough to satisfy him

¹ See Hitchcock's *Religion of Geology*, pp. 172, 178.

² *Ib.* pp. 175, 176.

that mind conceived and executed these designs. He cannot tell when, nor for what purpose, they were erected; for there is nothing in these revelations which he can read. He does not suppose for this reason that these inscriptions on the rock were self-engraved, nor that the various forms of idolatrous statuary sprang into their present forms from the prolific womb of nature, unassisted by human art. He sees mind in everything. If such evidences satisfy him that these images were "graven by art and man's device," he certainly cannot discard the evidence of design in an ancient fossil. He finds it deposited in rocky strata so ancient that they bear no evidence of having been contemporary with man, and so situated that it could have been placed there only by Divine power. He finds upon it marks of design as clear as any living thing exhibits; and it cannot be accounted for except on principles at variance with those by which he professes to be influenced.

The religion of geology is not that form of scepticism known as the "development hypothesis." We do not declare every one to be an Atheist who adopts this theory, for it may be held by him who admits Divine existence; but its practical bearings on the minds of those who embrace it, are tantamount to Atheism. If, as the abettors of this hypothesis declare, "No organism is, nor ever has been, created, which is not microscopic; whatever is larger has not been created but *developed*; man has not been created but developed;" it must be evident that the relationship which individual men sustain to God, is so slight and tenuous that it will scarcely be recognized in its influence upon the mind. What in effect is the difference whether a man declares himself an Atheist, or admits that thousands or millions of ages ago God called into existence a microscopic point through the influence of a spark of electricity, which happened to be passing by in a vapor which had exhaled from some swamp, and fell upon a particle of dead gelatinous matter and caused it to become a living point, infinitesimally minute; and this point developed into an animalcule so small that a half a billion of them could sport in a drop of water with as much sea-room as a leviathan has in an ocean; and this becomes developed into something else with a shade of difference for the better incalculably small; and thus the gradation goes forward with steps so slight as to be imperceptible, till finally it becomes a monkey, and ultimately a man. He must either admit that immortality is an essential and inherent attribute of the Infusoria, or that there was some special act of God by which this that was merely mortal, became endowed with mind which can never die, or else that

he is destitute of immortality. He must also take the ground either that Jesus Christ did not make an atonement, or that this atonement implies immortality and the consequent salvation of the microscopic original. The Bible teaches that Christ died for the sins of men; but he who believes the development hypothesis, must include, within the scope of the application of his blood, all those generations of animalculæ from which man has descended, just as, on the Christian theory, this atonement embraces in its provisions all that have descended from Adam as their federal head. He must look for the virus of depravity far back of Adam, and hold that it was imbibed from some abnormal state of the fluids or solids with which the embryo man came in contact, or with which it was necessarily endowed, long before the garden of Eden was planted, or the luscious fruit became a temptation to the mother of all living. We do not speak too strongly when we call such belief as this highly prejudicial to all Theism. It removes all those religious tendencies so deeply rooted in the human mind, and overthrows everything which constitutes any solid basis on which to build any sense of responsibility to God. It virtually proceeds on the principle that the only thing in the universe is *matter*, differently arranged, and compounded, and of different degrees of purity, but all matter. The bodies of men are matter, and it would make us believe that the mind is not anything superinduced, but only the natural product of the operations of matter in some of its nicer combinations.

Some such persons can readily believe in all the transformations indicated above, from the infusorial point to the full grown man with an intellect which can measure the heavens, and determine the laws of the universe; while, because the Bible asserts the common origin of the race, they affect to see difficulties in the various physical conformations of the inhabitants of the different portions of the globe, so great as to lead them to discard the teachings of the Scriptures. If "consistency is a jewel," it is not one that sparkles very dazzlingly in the case of any such.

If by the development hypothesis were merely meant that, in fitting up the earth for a human residence, God has introduced changes which have gradually prepared it for the reception of man, we should find no fault with it; but when it teaches the doctrines above stated, and lays down principles from which such deductions have been made, we feel bound to oppose it.

There is no other science which so completely overthrows this hypothesis as geology. She gives us an insight into the condition of

things in ages long since past. She lifts the curtain so that we can inspect those periods, when, according to the development hypothesis, there ought to be nothing but the most minute forms of organic life, and these in the lowest possible scale of development. She points us to a time when there was an abundance of matter but no life. There was silix in great quantities, and other minerals, but destitute of all organic structure. The advocates of the development hypothesis, to substantiate their theory, ought to be able to show that life is a normal state of matter; and that there never was a period when organisms did not exist. Geology declares that there was a period when there was no organic life; this we prove by a reference not to the primary and metamorphic rocks merely, but to the older deposits of sedimentary rocks, whose strata, undisturbed by causes adapted to obliterate the traces of organic life, indicate that at the time of their deposition there was no life on the globe. Does life depend on the organism, or the organism upon the principle of life? There may be a perfect organism without the vital principle, and be like Adam before God breathed into him the breath of life. Each race of plants and animals had its distinctive origin, though there was no pen to record the period when this took place. When the time came for the production of organic life, whence did nature obtain this power, never before possessed, of taking the silix and phosphate of lime and the iron and incorporating them into an organized body, capable of self-perpetuation according to its own peculiar laws? Thus geology teaches us that life is not a normal state of matter, because she shows us the time when there were neither organisms nor life.

If the development hypothesis is true, it would be natural that we should find the earlier forms of organic life exceedingly small, and destitute of anything which would indicate that nature had made more than a bare *commencement* in a series of processes which were to have their completion in a system of development peculiarly grand. But on the contrary we find the older forms of fossils intricate in their organization. We find that so far as geology teaches anything, she teaches that in past ages of the world there were fishes (as those in the Old Red Sandstone) of an organization peculiarly intricate. Everywhere, also, she presents for our inspection organic remains of plants and animals which were gigantic compared with those now on the globe, and thus indicates that nature has retrograded, rather than advanced in her series of developments, in those cycles which have rolled away since God spake her into existence.¹

¹ See Foot-prints of the Creator.

It cannot be denied that some geologists are sceptical, but we hazard nothing in saying that their infidelity is not the natural result of the facts of geology. Neither from those ancient forests, which have now become our coal-beds, nor from those ancient rocks once covered with the ocean, and which are now filled with organic remains, comes there anything which can by an unperverted process lead to scepticism. Among all the strata there cannot be found anything which savors of infidelity, even in the form of an embryo; nor is there anything which could develop this, even into any form of scepticism which now stalks abroad in the earth. If infidelity is the product of this science in any form, it is only so of its perversions and not of its true teachings. It grows as luxuriantly under the light of revelation as in those more sombre shades of an ancient past, when the material works of God were the only records of his existence. Wherever it exists, under the light of revelation or of philosophy, it is something which has been foisted in; and which like the parasite lives by the destruction of something else. Where shall the place of scepticism be found? Astronomy saith it is not in me, and rolls on her orbs of light in their courses. Botany saith it is not in me, and she opens the petals of her beautiful flowers to the light of the sun. Mineralogy saith it is not in me, and she holds up her brilliant jewels, from whose polished faces the image of Jehovah is reflected. Geology saith it is not in me, as she exposes to view the upturned strata of the earth, and asks the student to place his finger on the point that does not proclaim a God. Paleontology says it is not in me, as she brings before us some ancient organism more intricate in form and gigantic in size than anything now to be seen. There is not a science which does not blush when charged with being a teacher of Atheism or Infidelity; not one which does not recoil instinctively from the polluting touch of the sceptic who would make her minister to his work of obscuring the manifestations of God to a world of intelligent beings.

Geology does not set aside or conflict with a written revelation, but takes us back to a period when the Bible was unwritten, and reveals the operations of God in that long period which intervened between the commencement of the creation and the advent of man. She thus opens a page not recorded in any other science, and a storehouse where are garnered evidences of the Divine existence, with which the natural theologian cannot well dispense in making his attacks upon Infidelity, which is a natural development of the principles of a false philosophy.

If neither Atheism nor scepticism find a place in the teachings of geology, what light does she throw upon the character of God? She points us to exhibitions of power greater than any now to be seen on the face of the earth. When speaking of Divine omnipotence, it is natural to point to the heavens; and when we have weighed those vast orbs in the balances, and calculated the velocities with which they move, we see at a glance that nothing short of Omnipotence can cause them to revolve in their orbits. Yet when we look at the system of attractions and repellances which God has formed between them, we find them so exactly poised that in a degree at least we cease to wonder. But geology gives us exhibitions of power which excite our wonder as strongly as anything in the heavens. The various upheavals of the strata, by which chains of mountains have been formed, and by which all the various substances most needful for the use of man have been placed within his reach, are not more indicative of benevolence than of Omnipotence. The belching volcano, from whose bowels hot lava and rocks are ejected by internal forces whose greatness no human dynamics can measure, is an object which excites emotions as sublime as does the rolling of a heavenly orb in its pathway of light. The roaring cataract, for whose formation there have been upheavals and subsidences of strata over vast extents of surface, and through long periods of time, gives us impressions of Omnipotence which never would be ours without some knowledge of the teachings of geology. We do not wish to become special pleaders for geology by disparaging the claims of other sciences. It is enough for us to show that in this respect there is a correspondence between her teachings and theirs.

Geology also brings to light indications of Divine wisdom. In this she is in no wise behind other sciences. If there is wisdom displayed in the present constitution of things, there was none the less in those changes through whose operation this system has been introduced. If physiology and anatomy reveal the wisdom of God in the formation of the existing races of the earth's inhabitants, geology and paleontology can point to strata long since deposited, rich in the remains of plants and animals of a growth vastly greater and of an organization, man alone excepted, vastly more intricate than many now upon the stage. Paleozoic organisms display most consummate wisdom, and by presenting this field to man's inspection geology does much to inspire him with exalted conceptions of the wisdom of the Creator. Comparative anatomy has taken those organic remains and clothed them anew with flesh, and presented to the eye of the

imagination those forms of life which once ruled the animal kingdom. They stand before us adapted to their appointed rank, either as herbivorous or carnivorous races, and to their appointed element, either as land animals or as monsters of the deep. They assist our conceptions respecting the greatness of the changes which have taken place since the Saurian dynasties held the sway of empire on the globe. Thus the dead are made to praise the Lord, by becoming grounds for praise in the estimation of the living, unfolding to them the impress of the wisdom of God. All the organic remains discovered by the geologist add another to the catalogue of evidences of Divine skill. Every such manifestation speaks to us of life, because it indicates that it was once a living thing and in its mode praised the Lord. Every such discovery adds to our stock of knowledge as really as does the discovery of a telescopic planet. What new wonders geology has to disclose, we are not able to say; but each discovery that shall be made will only more and more fully display the handiwork of Jehovah. The fossils are not displays of creative genius misapplied, and thrown away as rubbish to make room for other species displaying greater wisdom, but each was perfect in its kind, answered the purpose for which it was created, and was deposited in nature's rocky cabinet until a being with intellect could investigate them, and compare them with genera and species that had preceded or should follow them in the order of time. Thus man has an opportunity of beholding the earth in her various modifications and forms of life in the several periods of her history. If the present aspect of the earth, teeming with her myriads of plants and animals, imparts impressions of Divine wisdom, no less clearly is the same attribute discernible in those ancient mementos of Divine power.

Geology declares God to be *good*. By this it is not meant to assert that she reveals, in any of her strata, a state of things in which there was no admixture of evil. Were she to do this, she would not coincide in her teachings with the other sciences.

The Psalmist says: "O that men would praise the Lord for his goodness, and for his wonderful works to the children of men." Were there anything in nature which militates against Divine goodness to such an extent as to be irreconcilable with it, it would be in vain for Jehovah to call upon his created intelligences to praise him on account of his *goodness*. Unless the moral attributes of God stand exhibited so fully as to be beyond a doubt, men might stand in awe of God for his power, or might praise him for his skill, but they would not *love* him. He must show himself to be actuated by love before

he can secure the love of his creatures to himself. Unless he can secure their love, he cannot secure anything which an ingenuous, not to say an infinite, mind regards of any value. Without this principle, their praise would be but unmeaning flattery, and their worship but the heartless genuflections of a fawning sycophant. When He requires us to love him for his own sake, and to take complacency in all his attributes, he does so on the ground that there is nothing in his character which cannot be loved consistently with the general good; and that He has made no manifestations of himself, complacency in which does not tend to make men holy and happy.

Various exhibitions of Divine benevolence, both towards man and beast, have a connection with geology, some of which it may be well to mention. The production of soils from the constituent portions of rocks, so that an abundance of food may be had for the supply of the natural wants of man and beast; the upturning of the earth's strata so that all the variety of scenery which excite such pleasant emotions in the human mind, are evidences of his benevolence. The vast deposits of all that is needful for art and science, comfort and luxury, within the reach of man, are another proof.¹

No one can attentively consider the evidence of Divine benevolence indicated by geology, without profound admiration. True, she has recorded, that in former ages devastation and death have ruled, and that floods and fires have raged; and yet, amidst all these things, she shows that God has arranged everything on the earth so as to set forth, in the strongest light, that goodness has controlled his mind. If he can *now* be good, and permit the whirlwind and the storm to rage, the volcano to belch forth her fire, ashes and lava, and the work of death to go forward in the world, then the revelations of geology do not militate against his goodness when they teach that in former periods similar catastrophes occurred. An omnipotent God might have so constituted things that the past should never have come up in review, because he could have annihilated all those forms which now reveal the work of death in the past; but he has displayed evidences of his benevolence in permitting them to be known and read of all, so that they might know all manifestations of himself which have been made to men. Men conceal actions which they think would bring odium upon their characters; and the fact that God has taken pains to conceal none of the changes which have taken place on earth, though they involved the destruction of vast

¹ For a lucid and candid statement of the proofs of Divine benevolence in geology, see Dr. Hitchcock's *Religion of Geology*, Lectures 6 and 7.

numbers of genera and species of animated existences, displays a consciousness on his part that there is nothing in these exhibitions which furnishes any intelligence with just ground for complaint against his goodness or any other attribute.

Here we might leave this point, content to have shown that geology has a general correspondence with other sciences in her teachings respecting Divine benevolence, were it not that she has discovered some things hard to be understood, which some wrest, as they do other sciences, from their legitimate bearings into an argument against the goodness of God. We refer here to the pre-Adamic death of animals. With respect to this we remark, that the death of an animal before the time of Adam is no more prejudicial to Divine benevolence than a similar occurrence afterwards. The position was formerly taken that the death of the lower orders of creation was one of the penal consequences of the sin of Adam, and the evils which they endure, were considered reconcilable with Divine benevolence on the ground that punitive justice is one of the modes in which Divine benevolence exhibits itself. Geology has rendered a modification of this theory necessary, because it has shown that, long before there were the least traces of human existence, the work of death in the lower orders of creation had commenced. Their death cannot therefore be regarded as an exhibition of punitive justice on account of Adam's sin, unless we consider the punishment to have been inflicted prior to the commission of the offence. Even admitting that this death came as a punishment for Adam's sin, we cannot readily see how it can be an exhibition of benevolence to punish the inferior races on account of a sin of which they had not been guilty, and in which, owing to their inferiority in the scale of being, they could not be participators.

We would call attention to the fact, that it is not necessary, in order to prove the benevolence of God, that there should be good unmixed with evil. So long as the preponderance is in favor of the good, it is indicative of benevolence. It cannot be shown that even infinite benevolence required God to create a world into which, by no possible contingency, evil could find admittance. Unless some evil could find entrance, there would have been no opportunity for God to make a display of those higher features of benevolence inherent in his character.

Existence is of itself a pleasure. And unless this existence is accompanied by circumstances which are so evil as to overbalance the pleasures, then a constitution of things which admits of existence,

even with some alloy of pain, is better than a state of things which absolutely forbids existence. Unless the death of such a being is attended with distresses which outweigh all the pleasures of life, the existence is on the whole a blessing, and a proof of benevolence. The ephemera has its day, and in its day its pleasures; and to it these are as important as greater enjoyments and of longer duration are to other beings. Where is the man that can take it upon himself to declare that benevolence does not on the whole predominate in the ways of God to the inferior races, merely because to all their other blessings he has not added the endowment of immortality? If it be admitted that the fact of death does not overbalance the pleasures of life, and thus God's benevolence be freed from stain, then geology, by taking us to the resting-places of the countless dead, furnishes us with exhibitions of this attribute which would never have been known except through her instrumentality. While they lived, God exercised a benevolent care over them, and when they died, he so arranged it that his benevolence was still conspicuous.

It is not needful further to show the bearings of geology upon natural theology. Every one of its facts proclaims the existence of God; and every one is a manifestation of some of his perfections; and, when correctly understood, becomes to intelligent creatures a ground of praise to their Maker. The infidel may be challenged to find in the domain of geology a single fact which militates against a known attribute of God.

Here another and very important inquiry arises: Is the religion of geology the religion of the Bible? This is only tantamount to the inquiry whether natural theology harmonizes with revealed theology, or whether the works of God correspond with His Word. He deemed it necessary for the promotion of his own glory to manifest himself through physical media as well as through those strictly moral; and to proclaim His existence and perfections in a mode discernible by the senses, as well as in those more subtle modes in which he could be appreciated only by those of well-trained intellects. It would be impossible to believe in His infinite wisdom and at the same time believe that He would make two revelations of himself which would contradict each other. It would also lead us to call in question his moral integrity, were it true that the light of science, correctly understood, indicated his character to be different from what revelation asserts it to be. If the religion of geology is not the religion of the Bible, then intelligent minds will make their election between the written and unwritten revelations, and choose that which

best accords with their predilections. Some will take their stand upon the rocky revelations of science, and judge every Biblical truth by its appearance as seen through gneis, or mica-slate, or some paleozoic stratum, and will deny their obligation to obey it because it does not correspond with the teachings of science. Others will stand upon the Bible, and have an honest dread lest scientific men shall bring to light some fact which cannot be explained without impugning the Scriptures. The hammer of the geologist, the retort of the chemist, the telescope of the astronomer, and the microscope of the entomologist, will be regarded as only so many weapons of war. Ranged in battle-array, philosophers on one side and theologians on the other, they will hurl their anathemas at each other with defiance. Thus they will be driven further from each other.

But until we lose confidence in the first principle on this subject, *that God has revealed Himself for his own glory*, we never can be made to believe, by any course of reasoning however plausible, that there is a single fact of a scientific nature that conflicts with revelation. That there may *seem* to be collision need not be denied; but that there is a real collision we never can admit, and at the same time consider either or both of these revelations from God. We may not be able in a moment to find the key which will fit every ward, and open the lock, and let in the light; we can afford to wait with confidence in God, till it shall come to hand. We cannot but think that theologians have betrayed too much trepidation on account of the discoveries of the learned, and have sometimes been in too great haste to denounce the abettors of science.

There is no more reason for scouting geology on the ground of its collision with Scripture, than any other science. Some have opposed it because it is asserted that its discoveries conflict with the Mosaic cosmogony. When geologists assert that the sedimentary rocks are from seven to ten miles in thickness, and must have consumed a period of time immeasurably great, their facts are called in question, and they themselves compared to "gnats on the back of an elephant," who know about as much of the organism of this vast animal as they do of the constitution of the globe. If it be admitted that geologists are correct in their opinion respecting the antiquity of the earth, there is nothing in this which contradicts the statement of Moses, that the earth had a beginning and a creator. Moses by no means fixes the period of time when this beginning occurred, nor do they. Certainly the collision between geology and revelation is not greater than between astronomy and the sacred writings. Sir John Herschel asserts

that there are stars "twelve millions of millions of millions of miles from our earth ; so that light which travels with a velocity of twelve millions of miles in a minute, would require two millions of years for its transit from those distant orbs to our own ; while the astronomer who should record the aspect or mutations of such a star, would be relating, not its history at the present day, but that which took place two millions of years gone by." If such statements as these are consistent with the Mosaic cosmogony, then there is not a fact of geology which cannot be reconciled with Genesis.

The theory which interposes an indefinite period of years between the initial act mentioned by Moses, and the events which followed, of which he gives a more detailed account, is one abundantly satisfactory to all, whether geologists or not. Scientific accuracy in the statement of facts was not the design of the sacred writers. They assert that God made the heavens and the earth, but how long periods of time he consumed, or by what processes it was accomplished, they do not state. Nor was it needful that their revelation should contain this kind of knowledge.

The greatest objection which has been urged against geology, is its supposed conflict with the Bible respecting the subject of animal death. It militates, however, more against some favorite *theories* respecting the penal consequences of the sin of Adam than against a single fact of the Word of God. It takes away the arguments of some who, in speaking on this subject, have been ready to point to the brute creation as suffering the vengeance of God because our first parents partook of the forbidden fruit. They would fain have us believe that, by man's fall, the anatomical and physical structure of many of the lower orders of creation were entirely changed, so that herbivorous became transmuted to carnivorous animals through the transfused and permeating influence of the sin of our first parents. They would bind not only the sons of men, but all the animals of the globe, to Adam as their federal head ; and have them sin in him and fall with him.

It remains to be proved that man was created with the intention of his having an immortal existence on the earth, and that immortality was an endowment of the brute creation belonging to them by natural right but forfeited on moral grounds merely. Had man been designed for immortality on earth, we cannot suppose God would have created him with an earthy constitution ; and were temporal death the grand thing threatened as the consequence of sin, we should suppose that the "Saviour of them who believe," would in some way

interpose to prevent the curse from falling on those by grace renewed. But temporally, "one event happeneth to them all," whether righteous or wicked; and one event, so far as its physical properties are concerned, is promised to all — they shall all rise from the dead, "they that have done good to the resurrection of life; they that have done evil to the resurrection of damnation."

The true solution of this question we think is this: We are not to regard sin as an accident which came unexpectedly upon the world, but as a thing which was foreseen. The whole constitution of things was formed in view of the fact that sin would enter the world. Men were created with bodies fitted to a world of probation, and inferior animals were also adapted to a world where they should meet with death. Says Dr. Hitchcock: "Death, therefore, entered into the original plan of the world in the Divine mind, and was endured by the plants and animals that lived anterior to man. Yet, as the constitution of the world is, doubtless, very different from what it would have been if sin had not existed in it, and as man alone was capable of sin, it is proper to regard man's transgression as the occasion of all the suffering and death that has existed on the globe since its creation."¹ If it be said that, by adopting this theory, we deny the Scripture doctrine that the death of animals did not take place till after the sin of Adam, we reply that the Bible makes no such assertion. If it be said that, by making the sin of Adam the *occasion* of the death of animals before he appeared on the stage of action, we make the consequent precede the antecedent, the only reply we care to make is this: We ask the Bible reader how the pardon of sin was obtained under the Old Testament dispensation? The answer will be, through the merits of Jesus Christ, and in virtue of a sacrifice to be offered on Calvary. If sin could be pardoned in view of a foreseen offering which should atone for its guilt, then a foreseen offence may be made a reason for accommodating the physical conformation of things to such an event.

In comparing the religion of geology with that of the Bible, we have thus far spoken only of those points on which there is a supposed collision between the two revelations. Had we space, we should like to look at the subject in another light, and show the various points where there is an admitted similarity in their teachings. These points are many, and not unimportant; and we indulge the fond hope that the readers of the Bible will also read the other reve-

¹ Religion of Geology, p. 104.

lations of God, with a feeling that they all bear the impress of the same Master mind.

Especially is this subject worthy of the attention of those who minister at the altar. Says Hugh Miller: "The battle of the evidences will have as certainly to be fought on the field of physical science as it was contested in the last age on that of the metaphysics." If so, it certainly becomes those set for the defence of Zion to gather their munitions of war and hold themselves ready to do battle for the Lord of Hosts. They cannot do this effectually without a general knowledge of the mode of attack and of the means of resistance. They cannot do it without a thorough acquaintance with the natural sciences.

ARTICLE V.

ON THE USE OF THE PREPOSITION *εἰς* IN THE PHRASES *εἰς κατάκριμα* AND *εἰς δικαίωσιν ζωῆς* IN ROM. 5: 18.

By Rev. Owen Street, Ansonia, Conn.

THE difficulty that has been felt in the interpretation of this passage has been to render it in simple accordance with those teachings of Scripture which affirm that a portion of mankind will fail of justification and eternal life. Commentators who have dealt with it, may be ranged in three classes.

1. Those who hold with McKnight, that the "condemnation" (*κατάκριμα*) is limited to temporal death, and that the "justification" (*δικαίωσις*) is simply antithetic; extending no further than to that respite which mankind enjoy from immediate death, and that restoration from the dominion of death that awaits them in the resurrection.

2. Those who maintain with Chalmers, that the *πάντας ἀνθρώπων*, here said to be involved in the calamity of the fall, are not identical with the *πάντας ἀνθρώπων* upon whom "came the free gift unto justification of life;" the former denoting "all men," in the widest sense, as represented by Adam; while the latter is restricted to the "all men" of all nations and kindreds and people and tongues who were represented by Christ, i. e. the elect.

3. Those who maintain with Calvin, that whatever is affirmed in