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## ARTICLE III.

## REVELATION AND SCIENCE.

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THE present schism between religion and science is acknowledged on all hands to be productive of very deplorable consequences. In fact, the scepticism and infidelity of modern times seem to find in it their strongest defences and support. Hence it is a matter of the greatest importance that it should be healed; and that whatever may contribute in the least to this result should be clearly exhibited and universally recognized. For science and religion cannot remain forever at feud with each other. There must be some common ground where they can meet as twin sisters, and where reasonable people can stand without prejudice against either, but with their minds equally open to both of these two grand sources of truth and human well-being. For it seems plain, from the past history and from the present state of this controversy, that it could never have arisen unless either scientists or theologians had transcended their own legitimate department of knowledge, and invaded the province or domain of the other. As a matter of fact, this error seems justly chargeable upon both parties, inasmuch as science is constantly presuming to question, and even to deny, the truths of religion, and religion the truths of science. A thousand examples on either side might easily be given, such as the assumption — for it is no more — by many scientists, of absolute uniformity in all the operations of divine power, such that miracles and answers to prayer become impossible; and, on the part of many theologians, such interpretations of scripture as are opposed to the most certain truths of science. Hence it is evident that this baleful schism can never be healed until religion and science

shall come to recognize each other as original and independent sources of truth, and as ultimate authorities, each within its own sphere. But this of itself would not be a final solution of the problem, for the results accepted as truths might still be inconsistent with each other. It is necessary, therefore, that a principle of interpretation be established which, consistently applied to the whole Scripture, would leave no ground for science to stand upon for denying the truths of revelation, nor for religion to call in question the truths of science. It is the object of the following discussion, then, to establish such a principle, which — not as anything new, but only as requiring a more rigorous verification and a more extended application than it has hitherto received — may be stated as follows :

The Holy Scriptures were given to reveal moral and spiritual truth, and it was no part of their object to teach the truths of science, upon which, consequently, they are no authority.

A very slight acquaintance with the origin, style, and contents of the Christian records is enough to satisfy any one that it was no part of their object to reveal the truths of science. For they originated, and were communicated to the world, through the seed of Abraham, than whom no people of their time were more destitute of scientific culture. If their object had included precise or infallible statements on matters of science, probably the Greeks would have been chosen for this purpose ; for scientific tendencies and adaptations were as characteristic of the Greek mind as they were foreign to the Jew. Their style, moreover, which will require to be more fully exhibited hereafter, is never scientific, but always and eminently popular. And their contents are chiefly great moral and spiritual truths, such as the being and personality of God ; that his moral laws are of eternal and immutable obligation ; that he created the universe, and man in his own image ; that man has fallen from the estate wherein he was created ; and that God has redeemed the world from sin and misery by the sacrifice of his only-begot-

ten Son. These truths are the great burden of the Christian Scriptures, the great object of Christian faith; and whatever there may be in the Bible which does not bear upon them must be regarded as of secondary importance.

Yet the failure to recognize this — or the notion that the Scripture must be taken as an infallible authority, not only upon moral and spiritual, but also upon scientific questions; or, at least, that its allusions and statements with respect to physical phenomena, must somehow be harmonized with the results of science — extensively prevails, and is productive of the most disastrous consequences. Not only does it put into the hands of sceptical science its most dangerous weapons, but also it vitiates and poisons theology itself. For, standing on this ground, the theologian is under a necessity to defend all scriptural allusions to physical phenomena as scientifically accurate, and his own interpretation of them as essential to a true faith in the word of God. Hence, whenever science establishes any new truth which bears upon them, so that it can no longer be doubted by reasonable people, he is sorely tempted to foist into the words of Scripture a sense in harmony with it which they were never intended to bear. In this way, all true principles of exegesis are confounded, in order to make God's revelation teach whatever human science, in its progressive development and unceasing changes, may, at any time, be thought to require. But where this expedient would seem to lead too far, theologians have often brought themselves to deny the most certain results of science, in order to maintain their faith in the revelation. They have even been heard to say to the scientist, "If you prove your point, we must give up our Bible." But after the point has been proved, and universally accepted, the scientist replies, "Why do you not give up your Bible, as you said you would?" Thus faith in the Scriptures becomes an object of mockery.

As an example of this last case, we may be allowed to recall here the well known story of Galileo, the significance of which, as it would seem, has never yet been fully ap-

preciated. For surely it is a most instructive fact, that in former times the Scriptures were universally understood to teach the geocentric system of the physical universe ; namely, that the earth was the immovable centre of motion to the sun, moon, and stars. But when Galileo had come to see that this construction of cosmical bodies was no longer tenable, and substituted in its place the heliocentric system, that the earth and other planets revolved around the sun, it is hardly possible for us at this day to conceive of the alarm which was awakened in the minds of theologians by this revolution in astronomical science. Consequently they resisted it with all their immense influence ; and having “ the powers that be ” on their side at the time, they compelled this foremost advocate of the new theory to repudiate his heresy, in order to save his life. Now who can estimate the enormity of this scandal ? Yet the lesson which it ought to have inculcated has been very imperfectly learned. For similar, though not such extreme, results have been witnessed in our day ; we have had the most embittered discussions of the age of the earth, the length of time during which it has been inhabited by man, and other matters of science, which theologians long ago had determined by the authority of Scripture.

In allusion to these scandals, the venerable Archibald Alexander, Professor of Theology in the Seminary at Princeton, was accustomed to say to his classes : “ Young gentlemen, you should never say to the men of science, ‘ If you prove this, or that, we must give up our Bible. ’ On the contrary, you ought to say, ‘ Go on, gentlemen ; make all the discoveries you can ; for we are not afraid of the truth. But you will please to remember that whilst you are disputing among yourselves we are not obliged to accept the views of any party. It is our place to wait until you have come to an agreement ; and when you have established any new truth, so that you yourselves no longer dispute about it, we will accept it without fear lest it should have a bad effect upon our faith. For if, as we hold, the Author of nature and of

revelation be one and the same infinitely wise and good Being, true science and true religion can never have any quarrel with each other.' ”

Now this beautiful rule of practical wisdom, if it were consistently followed, would leave no ground of controversy between science and the word of God. The most perfect harmony would be manifested in the future history of these two great and co-ordinate factors of Christian civilization, between which there never was any opposition except that which arose either from “ science falsely so called ” or from unsound interpretations of Scripture.

The principle of interpretation which has been thus enunciated and developed we shall find abundantly confirmed, and its applications illustrated, if we consider more particularly the scriptural style of allusion and statement with respect to physical phenomena. For there was a necessity that such allusions should occur on almost every page, in connection with every physical object which required to be mentioned. These objects had to be spoken of by name long before scientific nomenclatures had been formed, before there was any such thing as science in the world. In what forms of expression, then, ought we to expect that these unavoidable allusions and statements with respect to legitimate subjects of future scientific investigation would be made — whether in language scientifically correct and adequate, such that no subsequent progress should ever be able to criticize it; or in popular language, such as prevailed at the time the revelations were given, and such as the most illiterate and ignorant people could understand? It will be easy to demonstrate, which we now undertake to do, that the former method or procedure was impracticable, and that the latter was the only one that could be followed.

In the first place, then, if the scriptural allusions to physical phenomena had been made in forms of expression scientifically correct and adequate, the Bible would have been unintelligible to all the generations of mankind who lived and died before the birth of science, and still such to the

great masses who are destitute of scientific culture. In proof of this, we need only consider that such an expression for the phenomena of the sun's rising and setting would be something like this: The earth, revolving on its own axis, reveals and hides the sun. But no one at the time the Scriptures were given could have understood what was meant by these words; and the expression is so clumsy that we ourselves cannot use it; we continue to say, "The sun rises and sets," knowing that it is as far as possible from being scientifically correct. Hence we cannot infer from their use of such popular expressions that the sacred writers were ignorant of the Newtonian or Copernican theory of the universe, although it would be absurd, no doubt, to suppose them acquainted with it. Since, then, these physical phenomena had to be mentioned or referred to on every page, and almost in every sentence, if scientific language had been employed, the Scriptures would have been unintelligible at the time they were written, and would, no doubt, have been rejected as the ravings of insanity. If they could have been preserved, which is hardly supposable, no one could have understood them until they should have come to be interpreted by modern science.

Nor would they have been any more intelligible to us, at this day, than to those of former ages. For science is not yet perfect, nor ever indeed can be. It is constantly making progress, and changing its nomenclature, its modes of conceiving and expressing physical objects; and doubtless it will always continue to do so. Thus, what lately it called by the name of caloric, it now calls a mode or form of motion; and light, which was formerly a fluid, is now the result of vibrations. Consequently the time may come, nay, is sure to come, when many of our now current forms of expression in science will be found to be incorrect, or inadequate, involving more or less of erroneous conception and theory, and will be superseded by others, in accordance with more advanced knowledge. Thus we see that these allusions in the Scriptures to physical phenomena, in order that they

should be absolutely correct and unchangeable, must have been made in forms of expression corresponding not to the present, but to the still future and last developments of science; in which case they would have been unintelligible to us, and to how many of the coming generations of mankind we cannot tell.

Since, then, it is obviously impossible to understand a scientific expression of any great physical phenomenon, such as that the rotating earth reveals and hides the sun, without the knowledge of the cosmical theory to which it belongs, it would have been necessary, in order to meet this difficulty, that the Scriptures should have revealed, not only the truths of religion, but also a perfect system of science. But, evidently, this was not the object for which they were given; and the attempt would have introduced inconceivably greater difficulties than it could have removed. For, in the first place, it would have made the Bible of such enormous bulk that, it is safe to say, no one person could ever have read it through. In the second place, such a revelation of science would itself have been unintelligible. For that vast and complex system of knowledge which is only symbolized, not expressed, by the word science, however clearly it might have been revealed, could no more have been understood in the early stages of human development than it can be now by little children. If, for example, all that is signified to our minds by modern naval architecture, steam navigation, the mariner's compass, and other similar forms of expression, had been revealed from heaven with the utmost possible fulness and clearness to Cimon, or Themistocles, or some other old Greek admiral, whose most daring voyages hugged the shores of the Mediterranean, and who had hardly ever been out of sight of land in his life, is it conceivable that he could have comprehended it? For the human mind is the subject of development. It has had to grow up through a long course of ages in order to become capable of mastering that vast system of ideas which modern science includes. It is impossible, even by the aid of any conceivable revelation,

that it should bridge the great ocean of thought which lies between its knowledge at any given period, and that to which it arrives, step by step, in the progress of thousands of years. But, in the third place, if we suppose that such a revelation of science could have been understood, it would have superseded that laborious exercise of the human faculties in experiment, research, and reasoning, which, according to all experience, is indispensable to their development and growth. For the search after truth has been held by some of the greatest minds the world has ever seen, to be more conducive to mental power than the truth itself. In the words of Lessing, "If you place the truth before me, on the one hand, and on the other the search for truth, I take the search." This may be an overstatement, but there lies in it this much of truth at least, that, as man is constituted, his intellectual faculties could not have been developed so as to comprehend science otherwise than by means of that strenuous exertion and exercise of them through which all his discoveries have been made, and all his progress achieved.

Hence it appears that there were the best of reasons why the revelation did not, and could not, make the necessary allusions and statements with respect to physical phenomena in scientific language. There was an absolute necessity that they should be managed in some other way. We pass on now to the consideration of this other method, which was actually adopted, and which, it is here claimed, is followed out with perfect consistency from the first chapter of Genesis to the last of the New Testament.

Here, then, recurring to the typical expression, the sun rises and sets, we see that it is derived from the impression which the phenomena make upon the sense of sight—from that which appears, and not at all from the scientific truth which underlies the appearance. This impression, let it be observed, is necessarily the same for all persons at all times and places on the earth. Consequently the expression which is derived from it must always have been, and must forever continue to be, universally intelligible. In whatever lan-

guage it may be said, the sun rises and sets, the most ignorant and stupid people will always understand what is meant. Hence we may safely predict that this expression will continue to maintain its ground through all possible changes in the scientific exploration or comprehension of the phenomena which it represents. For human language itself originated in, and draws its perennial nourishment from, the impressions which the phenomena of the world make upon the senses. In the original Hebrew of the Old Testament, however, the corresponding expression is slightly different, being in this form, "The sun goes forth and enters in." In this case, the impression made upon the senses is somewhat modified by a philosophical conception in explanation of the phenomena, which seems to have prevailed at the time, and which is more fully expressed in the words of the Psalmist: "The sun, which is as a bridegroom coming out of his chamber, and rejoiceth as a strong man to run a race." For the Hebrews, as other ancient peoples, seem to have conceived of the sun as having his sleeping chamber under the earth, from which, at one door, he came forth in the morning, and into which, at the opposite door, he re-entered in the evening. Closely analyzed this expression is found to be in part sensuous, and in part philosophical; which, no doubt, is the reason why it has not been able to maintain its ground, but has given place to the purely sensuous expression which we employ. If, now, we could examine all the allusions and statements with respect to physical phenomena, which occur in the Scriptures, we should find that they are made in forms of expression similar to this by which the sun's apparent motion was represented; that is to say, in forms originally derived from the impressions which the phenomena make upon the senses, but often modified by philosophical conceptions in explanation of these phenomena, which prevailed among the people to whom the revelation was immediately communicated. It remains now to furnish the proof of this statement, which will consist of a few examples, taken almost at random from literally thousands precisely similar.

First, then, the inspired writers, whether of the Old Testament or the New, certainly had no knowledge of the true relations of the sun to the planetary system, nor of those which the heavenly bodies in general bear to each other. For it did not enter into the purely moral and spiritual object of the revelation that this knowledge should be communicated to them; and the attempt to reveal a complete science would, as we have seen, have met with insuperable difficulties. Consequently they, like other people of their time, conceived of the earth as the greatest and most important of all the cosmical bodies, and of the sun, moon, and stars as dependent upon it, and as created for the benefit of its inhabitants. In strict accordance with this conception, they never allude to the sun as the centre of attraction or motion to the planetary worlds; but everywhere they speak of the heavenly bodies as created and placed in the firmament "to give light upon the earth," and to "be for signs and for seasons and for days and years."

In the second place, the sacred writers evidently conceived of the earth as a solid, immovable body, with a plane, or perhaps a slightly convex surface. This, indeed, was the conception of it which universally prevailed in ancient times; and, as was inevitable, speculation abounded as to what it rested on, or by what its weight was supported. Some imagined one thing, and some another, but no satisfactory account of the matter could be given, for obviously, in accordance with this conception, the difficulty did not admit of a final solution. In order to illustrate this point, which has important relations to others which are to follow, we subjoin a description of an old Hindoo scheme of the universe.<sup>1</sup>

In this we have, first of all, a triangle, from which a glory is streaming in all directions, and which among the Hindoos was an ever-recurring symbol of the *Trimurti*, or three-form, ineffable nature of the Deity. For, after all that has been written in explanation of this mysterious symbol, it is more

<sup>1</sup> See diagram in *Religions De L'Antiquité*, par J. D. Guignaut, Vol. vi. pl. 115.

than probable that a dim shadow of the Triune Jehovah had fallen upon the mind of this wonderful heathen people. Immediately below this triangle we have seven heavens,—each of the superior ones resting on the next under it,—which were believed to be the abodes of their inferior divinities, and of those *rishis*, or sages, who, by their knowledge and austerities rather than by their virtues, had raised themselves to an equality with the gods. The lowest heaven rests upon celestial clouds; the clouds upon a supernal ocean; this ocean upon a solid sky, or firmament; the firmament upon the backs of a troop of elephants, which stand with their feet upon the earth; the earth, which is convex above, but flat beneath, rests upon four other mighty elephants—one at each of the four cardinal points of the compass—the space between them under the earth being *patala*, or the hells; these elephants stand on the back of a tortoise, which, finally, rests upon the folds of a serpent, which, after furnishing this support, forms a circle around the whole vast scheme, with its extremities meeting above the triangle, on which it seems to hang, and by which the weight of the universe is supported. In this way these old thinkers, grappling with this difficulty, represented all the spiritual and material worlds as depending ultimately upon one triune, ineffable, divine being. The whole scheme, as we see, combines the puerile with the sublime in a truly wonderful manner.

Now, it is very remarkable that the Christian Scriptures are free from all such puerilities. They leave the whole matter in that insoluble mystery which is inseparable from this conception of the earth as an immovable body. In many passages of great sublimity they represent the question of its foundations as among the mysteries of God. In one of these God is introduced rebuking the rebellious spirit of Job in the following words: “Where wast thou when I laid the foundations of the earth? Declare, if thou hast understanding, who hath laid the measures thereof, if thou knowest. Or who hath stretched the line upon it? Whereupon are

the foundations thereof fastened? Or who hath laid the corner-stone thereof?" Surely, the attempt to explain such expressions as mere figures of speech, or in any way consistent with the knowledge that the earth has no foundations, is worse than idle. It is a perversion of the most certain laws of language, such that, if similar methods be applied to the revelations of moral and spiritual truth, the result must be that we shall get out of the word of God just what we please. Nor are the representations which occur elsewhere, such as "He hangeth the earth upon nothing," to be interpreted in opposition to the plain sense of the preceding quotation, and to innumerable other passages of similar import, as if they were intended to harmonize with our knowledge that the earth is a globe suspended in space by gravitation; but they are to be understood as simply expressive of the mystery of the thing, as it lay before the minds of the sacred writers.

A third conception to explain physical phenomena, which prevailed among the early Hebrews, was, that a great body of water existed under the earth. It was by this supposition that they accounted for the phenomena of springs and wells. For this rising of water out of the earth, even in the tops of hills and summits of high mountains, was a great mystery to the ancient world, and is frequently alluded to in the Scriptures as a wonderful manifestation of the power of God. Thus, in the following words: "He sendeth the springs into the valleys, which run [literally, which break, or rise] among the hills." Now, the sacred writers make no attempt to correct this erroneous notion in science, because that was not included in the object for which they were inspired. On the contrary, they express themselves in accordance with it in a great multitude of places and variety of connections, as in the following instances: "The earth above the waters" . . . "The deep that lieth under" . . . "The waters under the earth" . . . "The fountains of the great deep."

A fourth conception was that of the sky as a solid substance, or firmament; and this seems to have prevailed universally

in ancient times, as it still does wherever science has made little or no progress. Children always have this notion before they are otherwise instructed, and savages cannot be convinced to the contrary. The reason is, that the deep blue color of the sky makes this impression upon the sense of sight. For how can mere void space have any color? We know that this is due to the atmosphere which surrounds the earth; for the writer has seen and handled a transparent gas, similar to the atmospheric air, condensed and frozen solid by an experiment in the laboratory, and its color was precisely the deep blue of the sky on a clear day. Hence it is that its oldest names in many languages, and probably in all, either signify or imply solidity. Our word "heaven" means primarily that which has been heaved up by the exertion of force, and which, therefore, has solidity and weight. The word firmament, in the Mosaic cosmogony and elsewhere, is the exact equivalent of the Greek *στερέωμα*, and of the Hebrew *רָקִיעַ*, which it is used to translate. Each of these words signifies that which is solid, compact, firm. They cannot be soundly interpreted in the sense of a void expanse, as some scholars, in their excess of zeal to harmonize the scriptural allusions to physical phenomena with science, have maintained. This interpretation is inconsistent not only with the proper meaning of the words, but also, as we shall see hereafter, with the connections in which they stand. For the Hebrew word, of which the Greek and English are, of course, mere translations, is derived from a root which signifies to expand by hammering out, as iron or gold or other metal is expanded into thin sheets. Hence it is translated in the Greek version of the Scriptures by the word *στερέωμα*, and in the English Bible, by firmament, neither of which has any meaning apart from the idea of solidity. Accordingly, we find allusions or statements expressing or implying this conception on almost every page of the Scriptures, such as the following: "Hast thou with him spread out the sky, which is strong, and as a molten looking-glass?" For this molten mirror here, as elsewhere, must of course

be understood as being of polished metal ; and we shall see directly why this quality of strength is attributed to the sky. Again : " They saw the God of Israel, and there was under his feet, as it were, a paved work of a sapphire stone, and, as it were, the body [literally, the bone] of heaven." The manner in which the firmament is spoken of in the Mosaic cosmogony will require to be examined hereafter, and need not be further referred to here, except to state that the words which represent the birds as flying " in the open firmament " are now recognized by all Hebrew scholars as a mistranslation ; " the open firmament " should have been rendered " in the face of the firmament," that is, under it.

Still another conception which prevailed among the Hebrews and other ancient peoples was, that above the firmament, in which it is expressly stated that the stars were set or fixed — and this, by the way, is the origin of the expression " the fixed stars," which we still retain, though in a different sense — that above the sky there was another great body of water, corresponding to " the waters under the earth," and identical with the supernal ocean of the Hindoos. This seems to have been their explanation of the phenomena of rain. As the water in springs and wells was supposed to come from " the deep that lieth under," so the rain fell from " the waters which were above the firmament." The relation which the clouds bore to the rain in this conception does not fully appear. Perhaps they were regarded as a kind of sieve, by which the water, as it fell from the firmament, was separated into drops, and sprinkled over the earth, in order to its more effectual fertilization. There may be a reference to this idea in the words : " He maketh small the drops of water . . . . which the clouds drop and distil."

The allusions and statements in the Hebrew Scriptures which either express or imply this conception are almost innumerable. The following are examples : " Praise him, ye heaven of heavens, and ye waters that be above the heavens " . . . " And God said, Let there be a firmament in the midst of the waters, and let it divide the waters from the

waters. And God made the firmament, and divided the waters which were under the firmament from the waters which were above the firmament." Here, now, is one of those cases previously alluded to, in which, if it be possible to determine the sense of a word from the connection in which it stands, this word firmament cannot have the meaning of a void expanse. For it is here represented as that which divides the waters below from those above it, which gives us the reason why the quality of strength is attributed to it, as in a previous quotation, namely, because it was supposed to sustain the weight of a superincumbent ocean. But there are no waters above the void expanse which it can be supposed to divide from those below it. Besides this, God is represented as being occupied the whole of the second day in creating the firmament; but how can a void expanse be spoken of as a work of creation? And this difficulty is greatly enhanced by taking these six days in the sense of geologic periods of immense duration.

But some of the most striking and significant allusions to these waters, both above the firmament and under the earth, occur in the account of the deluge, where it is declared that "all the fountains of the great deep were broken up," so that the waters under the earth burst up in great floods; and that "the windows of heaven [literally, the flood-gates] were opened," so that the waters which were above the firmament came down in mighty torrents. In this way the deluge is accounted for; and if we fail to recognize the conception of the physical universe to which these expressions refer, the sublimity of this whole picture is well nigh lost.

Besides such allusions and statements as these, with respect to great cosmical phenomena, we find similar references to minor particulars, of which it must suffice to reproduce here one or two examples. Thus, in the Book of Job, we have the following allusion to "the ostrich, which leaveth her eggs in the earth, and warmeth them in the dust; and forgetteth that the foot may crush them, or that the wild beast may break them. She is hardened

against her young ones, as though they were not hers. Her labor is vain, because God hath deprived her of wisdom, neither hath he imparted to her understanding." Now, it is quite true that the ostrich sometimes leaves her nest in the heat of the tropical day, as do other birds; but this passage does not exhibit her true character and habits, such as we know them to be from a great number of perfectly trustworthy eye-witnesses. For the ostrich, in fact, is a most affectionate and prudent mother. She broods on her eggs, like other birds, with the utmost assiduity. When she leaves them to procure food or water the male bird commonly takes her place on the nest until she returns. They both fight desperately, even to the loss of their own lives, in defence of their young; and they resort to the most cunning stratagems to deceive the hunter. Like the lapwing and some other birds, they pretend to be wounded or crippled, and go fluttering and floundering along upon the ground in order to draw the hunter away from their young ones after themselves. In all this we do not see a creature whom "God has deprived of wisdom and understanding," nor "hardened against her young ones, as though they were not hers."

Again, we find that animals of the pachyderm and rodent classes are prohibited as unclean by Moses on the ground that, though ruminants, they are not cloven-footed: "The coney, because he cheweth the cud, but divideth not the hoof — he is unclean unto you; and the hare, because he cheweth the cud, but divideth not the hoof — he is unclean to you." Now the word  $\text{קָנָא}$ , which is here erroneously translated coney, designates, as is generally agreed, a little pachyderm animal resembling the coney, which last, as also the hare, are rodents. Both the *shaphan* and the hare are still believed by the Arabs to be ruminants, though neither of them has the fourfold stomach, or other traits of physical organization, which are characteristic of all animals that chew the cud. This popular error originated, no doubt, from the fact that the rodents have a peculiar motion of the mouth and cheeks, which is produced by rubbing the edges of their cutting-teeth

upon each other, and which gives them a striking appearance of chewing the cud. But Moses speaks of them, as in all similar cases, according to this appearance, as if they were ruminants, and not according to the scientific truth which underlies it. For the distinction between clean and unclean animals was one which all classes of the people had constantly to make, judging from outward signs; and if they had been allowed to disregard these signs here, it would have been well-nigh impossible to have kept up the distinction in other cases.

To these may be added the case where the doing of certain things is claimed as the exclusive prerogative of God, but which science has since brought within the reach of human power. Thus the question is addressed to Job: "Canst thou send lightnings, that they may go, and say unto thee, Here we are?" But it seems impossible to choose words which should more exactly describe what we are now doing every day by means of the electric telegraph. The lightnings now say to us, with the utmost docility, Here we are, send us; and we send them with our messages from continent to continent, and from pole to pole.

These few examples are all that we have room for, to illustrate and verify our main proposition, that the Scriptures always speak of natural phenomena in forms of expression originally derived from the impressions which they make upon the senses, but often modified by philosophical conceptions in explanation of them, such as prevailed at the time among the people to whom the revelation was communicated. For certainly it was no part of their object to correct these impressions or conceptions however erroneous they might be. The limitations imposed upon them by their great moral and spiritual object made it absolutely indispensable that they should never concern themselves with the scientific truths which underlie the phenomena of the physical universe, but should leave all these to be discovered and expounded by science. For if they had spoken of natural objects otherwise than in free and popular language; if they

had undertaken to correct all the errors in science which prevailed, there would have been no end of the Bible, neither could it have been understood; but, as we have seen, it would have been a sealed book to those who first received it from God, also to us at the present time, and to how many of the future generations of mankind no one can tell.

We do not claim, however, that the view for which we here contend is free from difficulties. For it may be objected against it that, in the attempt to distinguish between what is of moral and spiritual import in the Scriptures and that which is not, we must be liable to very deleterious errors; that the two spheres of faith and science are not absolutely exclusive of, but, to some extent at least, do interpenetrate and overlap each other; that our principle implies a low view of inspiration; and that it cannot be applied to the Mosaic cosmogony without impairing its claims upon our faith as a divine revelation. It must be conceded that these are grave objections, and require to be fairly appreciated.

First, then, we frankly admit that some matters of faith do come within the purview of science; but this is a difficulty which cannot be wholly avoided whatever view be taken of this subject. For, in any case, science within her own legitimate sphere, which is that of determining the laws of nature, may have something to say upon the question of miracles, and in sifting the evidence upon which they rest, as also upon superstition, and other similar matters. But the principle which we advocate has this great advantage over all others, that it greatly reduces the number of these questions in which it may be claimed that faith and science are equally concerned. In fact, it leaves very few, and these such as are most easily defended, wherever the most sceptical science can have any temptation to deny what a true faith in the word of God must ever maintain.

Secondly, our liability to error in distinguishing between that in the word which is moral and spiritual and that which is not does not seem to be any greater than it is in the distinction, which we have constantly to make, between

fundamentals or essentials to salvation and matters of secondary importance. For some things "the Scriptures principally teach"; other things are not principal, but subordinate. But, whatever be our liability to error in either case, the sole question for us here is, whether God has not laid upon us the responsibility of making this distinction. In proof that he has, we have the whole preceding argument, the force of which, however, we cannot fairly appreciate without putting ourselves on our guard against that universal temptation which arises from our natural dread of responsibility. For we have the most sorrowful evidence that there is a deep longing in the human heart for a more comprehensively infallible revelation than that which God has seen fit to give us. Great moral and spiritual truths do not satisfy this depraved longing. We want a Bible alike infallible in matters of science as in matters of faith. We want an infallible church to determine for us what the Bible teaches, and to decide all our perplexing cases of conscience. This is human nature; and it is the claim to such infallibility by the Romish church which, as much, perhaps, as anything else, attracts the ignorant multitudes who submit themselves to her authority, and follow her banner. For she releases them from the painful responsibility of thought in deciding for themselves, from the teaching of the word, what they are to believe concerning God, and what duty he requires of them. We shall err if we think ourselves exempt from this temptation; and it is indispensable that we guard ourselves against it, if we would appreciate at its true value the evidence that God has laid upon us the solemn responsibility of distinguishing between that in his word which is moral and spiritual and that which is, so to speak, the material framework in which his saving truth is exhibited to our minds.

In the third place, all that has just been said is of equal force against the objection that our principle of interpretation implies low views of inspiration. For the question for us, surely, is not one of high or low, but simply, what is the

true view. Yet neither the highest nor the lowest is probably the truest. The former, indeed, would relieve us of the greatest amount of responsibility, but the latter would go far to rob us of the word of God. The antecedent probability would seem to be in favor of a middle ground, which proverbially is the safest :

"In mediis tutissimus ibis ;"

in which, as we think, the most thoughtful and judicious have ever been found. But, however this may be, it seems both unphilosophical and unfair to hold the Scriptures responsible for infallible accuracy of statement and allusion in matters which they were not given to teach. The consistent application of the principle here advocated to all similar cases, cannot affect our views of inspiration in any other way than as they are necessarily affected by the interpretation which is always given to the phrase, "The sun rises and sets," or "goes forth and enters in." And upon what rational grounds can we expect the word of God to harmonize with the results of modern science in other similar allusions with more precision than we find in this typical expression ?

Finally, the difficulties we meet in applying this principle to the cosmogony, which has been so often assailed and defended by arguments alike unsound, are, no doubt, the greatest of all. Yet it seems most unreasonable to require that the Bible, in this first chapter, should speak of physical phenomena in language scientifically correct and adequate, when it does this nowhere else. Nor is it possible so to interpret its words without imposing upon them a sense which they were not intended to bear, nor without peril to important moral and spiritual interests ; that is to say, this method of procedure cannot fail to introduce far greater difficulties than those which it claims to remove.

For the interpretation which is now commonly adopted, and which is the most ably defended, for the purpose of reconciling the cosmogony with science, includes the following particulars : Moses exhibits the creation, not as it actually

took place, but as it appeared, or would have appeared, to an observer stationed upon the earth; what he calls the six days of creation were, in fact, geologic eras of immense duration; by the word firmament we are to understand the void expanse; the words create and make are to be distinguished from each other, the former as signifying creation, properly so-called, and the latter, formation out of pre-existing material, or simply, causing to appear. In support of this view, much stress is laid upon the order of creation, which, it is claimed, agrees with the results of modern science.

Now, against all this, we urge the following counter objections: first, the harshness and incongruity of the supposition that the creation is here represented not as it actually took place, but as it would have appeared to an observer upon the earth; inasmuch as when it commenced there was no earth; and if there had been, there was no observer to occupy it as a point of observation. Next, the order of creation here given does not agree with that which science requires, in that it represents the sun as having been created on the fourth day, and the plants on the third; whereas we know that the plants depend for their existence upon the light and heat of the sun, and could not have lived and flourished through a whole geologic age before the sun was created. Besides this, we have the cosmical dependence of the revolving planets upon the sun as their centre of attraction and motion, which renders it impossible to conceive of the earth as having been created three or four geologic ages before the sun. It was chiefly for the purpose of meeting this difficulty the supposition was devised, that the sun was not actually created, but only made its first appearance through the clouds during the fourth period; and this supposition its advocates would confirm by the fact that the word make, to which they give the sense of causing to appear, and not the word create, is here applied to the heavenly bodies. But this distinction cannot be maintained—it is perfectly arbitrary—for the two words with all their derivatives are used as equivalent, both in this account and throughout the

Hebrew Scriptures. Of this innumerable examples might be given, such as the following: "God created the heaven and the earth" .... "The Lord God made the earth and the heavens" .... "Remember thy Creator" .... "Let us kneel before the Lord our Maker." Also, on the fifth day, God created the living creatures, where, according to this distinction the word made ought to have been used, as it is in the case of vegetable life. Since, then, these words are used as equivalents, if one of them be thus limited to the sense of forming or causing to appear, the other may be also; in which case, for aught that appears in this account, there may never have been any true or proper creation, but matter may be eternal. The objections to understanding the word firmament, in the sense of a void expanse, have been already given. It remains only to point out that the word day is here clearly defined in its common meaning by the explicit statement, that each of the six days had its morning and evening; and with still greater precision by the consecration of the Sabbath on the ground that God himself, after the six days of creation, "rested on the seventh, and was refreshed." For if this seventh day be understood as of a different kind from the preceding six, the most fundamental law of logical analysis — that all the parts into which any given theme is analyzed must be obtained by one and the same principle — is violated. For if the first six days be taken as geologic eras, and the seventh as a period of twenty-four hours, we have seven parts which cannot be obtained from the theme by the application of any one principle of analysis. The force of this objection cannot fail to be appreciated by all students of logic and rhetoric, especially when their attention is called to this Mosaic account of the creation as, beyond comparison, the most perfect and beautiful specimen of analysis to be found within the whole compass of literature. In fine, that this word should have a different meaning, in other connections, where it occurs without any such definition, as "In the day that the Lord God made the earth and the heavens," is in strict accordance

with all the laws and usages of language. But to impose such a meaning upon it, in disregard of its connection, and in the face of this definition, is a violation not only of the nature of language, but also of the necessary laws of analytic thinking, such as tends to unsettle and confound all received principles of interpretation, and of thought itself.

These are some of the objections which lie against this method of harmonizing the Mosaic cosmogony with the results of modern science. Is it not evident that it imposes upon the words a sense which they were never intended to bear, imperils some of the most important of revealed truths, and thus introduces far greater difficulties than those which it claims to remove? But this is not all; for who can foresee where this procedure, applied to other parts of Scripture, may ultimately lead us? For it is not physical science alone with which we have to do. Anthropology, also, and psychology and biology, to say nothing of the science of historical criticism, are now putting in their claims to govern our interpretations of the word of God—sciences which have a direct bearing upon its moral and spiritual import. And when we come, for precisely similar reasons, to impose upon it every meaning which the sceptical tendencies of these sciences may seem to require, what is likely to become of the fall of man, of human depravity, of the incarnation, and the atonement?

These difficulties seem to us immeasurably greater than any which can arise from the principle of interpretation for which we here contend. For by it nothing in this cosmogony, or in any other part of the Bible, which can possibly be claimed as of any moral or spiritual import, is in the least affected. No such claim can be made for the length of time during which the work of creation was going on, nor for the order in which it took place, nor for any other forms or details of the picture, provided that God be understood to have created all things which are included in the universe. For evidently it was the object of the particularization given by Moses to cover this ground. But in these specifications

he speaks of the physical world, as it is spoken of everywhere else in the Scriptures, in free and popular language, in accordance with the impressions which it makes upon the senses, and with the conceptions of it which prevailed when he lived, and which he, no doubt, shared with all others of his time. All this, therefore, is to be taken as the material framework, so to speak, of this sublime picture of the creation of the world, in which it is revealed to our faith that there is but one only living and true God; that he is a free, personal Being, of infinite wisdom, power, and goodness; that he created all things that exist by the word of his power, especially man in his own image, and male and female; that he consecrated one day in seven as holy unto himself; and whatever else there may be in this account which is of any moral or spiritual significance. It would seem that these revealed truths are enough for one short chapter in the Bible; for they lie at the foundation of all true religion, in direct contradiction to atheism, materialism, pantheism, dualism, polytheism, idolatry, and fetichism—those great and deadly errors which have always dominated over the human mind wherever they have not been driven out by the revelation of himself which God has given us in the Holy Scriptures.

In conclusion, by the adoption and consistent application of this principle of interpretation, the malignant enemies of true religion—that seed of the serpent who are permitted to bruise the heel of the seed of the woman whilst he crushes their heads—would be deprived of their deadliest fangs. For, although they should find innumerable allusions and statements with respect to natural objects which are not in accordance with the scientific truths underlying the phenomena, what would it all amount to, more than is contained in the expression, “The sun rises and sets”? Science, moreover, would be left free to do her own great and blessed work, unimpeded by fear or misgiving lest her ever-multiplying discoveries might come into conflict with revealed truth. And as many of her votaries as are at all sensible of their

spiritual wants — who, no doubt, are as numerous as they are among any other people — would be relieved from their peculiar difficulties and temptations to unbelief, and would find that peace and joy which the gospel brings to the heart of every true believer. The aid which they would then bring to the defence of the Scriptures, and of our holy religion — who can estimate how great and effectual it would be? Also, the readers and interpreters of the word of God would be delivered from that sore temptation, with which they are now beset, to impose upon it meanings which it was never intended to bear, and which, without abuse, it cannot be made to bear — a procedure which must greatly injure the conscience, and mightily confound the science of hermeneutics. But that which is, perhaps, of greater importance than all other advantages is, that these “oppositions of science” would no longer dwarf and well-nigh paralyze the faith nor mar the peace of God’s dear children, as in a multitude of cases they now do. Delivered from this incubus, the faith of the church might be expected to grow up to “the measure of the stature of the fulness of Christ,” and go forth to conquer the world.