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## ORDINARY MEETING, JUNE 1, 1868.

THE REV. WALTER MITCHELL, M.A., VICE-PRESIDENT, IN  
THE CHAIR.

The minutes of the last Meeting were read and confirmed.

The election of the following Member was announced :—

John Poyer, Esq., 13, St. Mary's Road, Westbourne Park, W.

Mr. Warrington then read the following paper :—

*THE BIBLICAL COSMOGONY SCIENTIFICALLY CON-  
SIDERED.* By GEORGE WARRINGTON, ESQ., F.C.S.,  
*Mem. Vict. Inst.*

THE history of creation is the only part of Scripture which can be said to involve direct scientific teaching. Elsewhere, indeed, the facts and phenomena of Nature with which Science has to do are frequently alluded to; but inasmuch as these are never the object of Scripture teaching, but only the accessories or illustrations of it; inasmuch, also, as in all such cases there existed a natural knowledge of the matters referred to, on the part both of writers and readers; it is open to the interpreter of Scripture to repudiate all scrutiny or objection of science, on the ground that scientific accuracy was wholly unnecessary to accomplish the end that Scripture had in view, and general fairness of use all that the analogy of Scripture-history would lead us to expect. Whether this twofold plea be considered sufficient or not in the cases referred to, it is clear that in regard to creation it is of no avail. For here no natural knowledge of the facts could exist, to whose partial and phenomenal character any scientific inaccuracy in the record might be ascribed. The knowledge of nature possessed by the original writers and readers of the Bible (revelation being put on one side) could plainly have extended

at most no further than the first appearance of man upon the earth. But the Scriptural cosmogony deals in the main with nature as it was before man's appearance. The narrative which it contains must either, therefore, be a mere string of fancies, the product of human imagination; or, if true, it must be the result of Divine revelation. But, again, the object which this cosmogony has in view is far too intimately connected with the facts it details to allow these to be regarded as non-essential or unimportant. Its design is not merely to use the history of creation in illustration of spiritual truth, but *de novo* to set forth what that history was, and so convey that teaching which creation rightly regarded is intrinsically fraught with. These considerations show at once the unique position and exalted claim of the Biblical cosmogony, as a professed revelation of otherwise unknown natural facts, whose narration as facts is an essential part of the purpose in view. Whatever may be said, then, of other parts of Scripture, where scientific matters are more or less distantly and indirectly touched upon, this opening section not only allows but demands the keenest scientific investigation. To bestow such investigation is the object of the present paper.

In comparing together the conclusions of inductive science and the statements of Genesis, it is of prime importance that we exclude, so far as possible, the interfering element of *theory*; and this on both sides. That we exclude, that is, on the one hand, all mere hypotheses concerning the past history of the world, which are unsupported by facts; and, on the other hand, all notions concerning the Biblical cosmogony which are unwarranted by the original text, read as those would have read it for whom it was at first designed. To accomplish this, it will be inevitable that we enter somewhat into exegesis. This, however, will be done as slightly and briefly as may be, since our main object is not the interpretation of this part of Scripture as such, but the comparison of what it says with the discoveries and inferences of modern science. Only, to make such a comparison fairly, it is indispensable that we rightly understand both sides. But for that interfering element, human theory, there need scarcely have been any observations on exegesis. Well-nigh all that is said on this score will be said to put aside the false and artificial crusts with which successive generations of commentators have covered the original text, and so get back once more, if it may be, to its simple and natural meaning. To this end, three fundamental propositions may be laid down, which, when duly weighed, will be found to furnish nearly all that we need.

1. The Biblical cosmogony was intended primarily for those unacquainted with natural science.

2. It was intended for no one single nation or place, but for the whole world.

3. It was intended to exhibit, through the medium of facts in creation, the relation of God to Nature, and Nature to God.

Few, if any, would be prepared to dispute these propositions thus broadly stated. They need no defence, and but little argument in their support. Our main business will be to trace out the important consequences which are involved in their admission.

1. *The Biblical cosmogony was intended primarily for those unacquainted with natural science.*—Then must its interpretation also be altogether independent of the conclusions and researches of science. If the meaning of its language, or the significance of its statements, is made to depend upon modern scientific investigations, in such a way that until these were carried out its purport could not rightly be perceived, then it becomes at once, to all past ages, an enigma waiting for solution. With this, however, its simple language, its historic character, and its didactic purpose, are altogether inconsistent. A plain, natural sense, moreover, it certainly has throughout on its face. If, then, this be a false sense, it must be regarded not only as an enigma, but an enigma whose enigmatical character no one could perceive until the solution came; whose function, meanwhile, should be to mislead and deceive upon those very points where it was meant to instruct. The mere statement of such a conclusion is a sufficient refutation of the premises on which it rests. We conclude, therefore, that the true meaning of the narrative must be that which those would have assigned to it for whom it was first written. And inasmuch as these were altogether independent of, and unbiassed by, the discoveries of modern science, so also must our interpretation be. By this proposition, then, we sweep away all theories which would give a forced or unnatural meaning to the language of Genesis, in order to bring it into accordance with science.

2. *The Biblical cosmogony was intended for no one single nation or place, but for the whole world.*—This is evident from the fact that similar cosmogonies—some, indeed, grievously distorted, and all markedly inferior in simple sublimity—are found among many other ancient nations also. The partial, fragmentary character of most of these, as well as the notable differences existing between them, and other circumstances, preclude the idea that they are the result of later borrowings from the Hebrew Scriptures. Rather must all alike be re-

garded as diversified descendants of a common and exceedingly ancient stock ; in one, as we believe, preserved in all its primeval purity ; in the others, more or less lost, degenerated, and mixed up with heathen mythology. The wide range of these traditions—stretching, as they do, from India, Persia, and Chaldea, on the one hand, to Etruria, Greece, Egypt, and Phœnicia, on the other ; perhaps to be found even in ancient Mexico, in China, and among Scandinavian tribes—the wide range of these traditions sufficiently evidences the extreme antiquity of their source. If, then, the Biblical cosmogony be, as it implicitly claims to be, a Divine revelation, it clearly must have been one intended for mankind generally, given before the dispersion, and of equal value in every part of the world. By this proposition, then, we dispose of all theories which would limit the creation spoken of to a particular portion of the earth's surface, or would confine the significance of its form—the six days' work and seventh day's rest—to the Jewish Sabbath. Everywhere, and at every time, must its statements hold good and be of force, if its Divine origin is to be maintained.

3. *The Biblical cosmogony was intended to exhibit, through the medium of facts in creation, the relation of God to Nature, and Nature to God.*—The most cursory inspection of the narrative is sufficient to show this. From first to last every item of information is linked to some act of Deity. It is God who creates, God who commands, God who names, God who arranges, God who approves, God who blesses. Principles of natural theology, embodied in the work of creation, rather than mere facts of natural science, are the things mainly intended to be taught. True, the facts are there also, occupying a prominent position as the proper vehicles for conveying the truths in view ; but, just because vehicles, subordinate, having no intrinsic importance, but one strictly dependent on the use to which they are put. By this proposition, then, we exclude all theories which would import a distinctly scientific, rather than theological, significance to the narrative of Genesis, or which profess to find in it anticipations of scientific discoveries, having no very close connection with theological truth. To have introduced such would have been altogether inconsistent with the purpose of the cosmogony.

These propositions are of value, not only as excluding and disposing of the vast mass of unsound theories with which the Biblical cosmogony has been obscured, but also as showing what amount and kind of scientific teaching we have a right to expect from it.

Thus, in the first place, we have plainly no right to expect

scientific *language*, since this, to people unacquainted with science, would have been unintelligible and misleading. Scientific language, moreover, is subject to serious modifications, if not radical alterations, as science progresses; while the narrative of Genesis was intended, as we have seen, for all time, and therefore must be couched in language not liable to such changes. The only language which possesses these two requisites of general intelligibility and non-liability to change, is the language of appearances. The facts set forth must be described as they would have seemed to be to the eye of man; that is, in a word, phenomenally, or the cosmogony would fail in its purpose. All scrutiny or objection in the matter of unscientific, or scientifically inaccurate language, then, must be put on one side at starting, as altogether irrelevant. The only thing that we have a right to demand of the cosmogony scientifically, is that the facts it asserts should be really facts, described in language phenomenally correct.

Then, secondly, we have no right to expect more of nature to be treated of than was naturally known to men. The aim of the narrative was not to enlarge men's views of nature as such, but, through nature, to teach them concerning nature's God. Since, now, this was to be done independently of science and scientific discoveries, it was plainly essential that only those parts of nature should be touched upon with which unscientific men everywhere were sure to be acquainted. To have introduced anything beyond this would have required as a preliminary some amount of strictly scientific teaching, to make the subjects sufficiently familiar to be thus adopted as vehicles for conveying theological truth. But such scientific teaching is not pre-supposed; while, to include it in the cosmogony would have been wholly inconsistent with its design. We conclude, therefore, that the only parts of nature which we have any right to expect to find treated of in the Biblical cosmogony, are those ordinarily known and familiar to the human race.

Lastly, in dealing with these well-known parts and aspects of nature, we have no right to expect any scientific information from the cosmogony, except in respect to points of theological importance. Matters of pure science we should expect to find avoided rather than dwelt on, because irrelevant to the proper end in view. It cannot be too often insisted on that the Biblical cosmogony was never intended to be a manual of natural science, but only of natural theology. All objections, therefore, on the score of partial or deficient views of nature, should be met at once with the frank admission that such exactly was what we had every reason to expect. The only thing that can be demanded under this head is, that the

facts in regard to nature which *are* alleged should be scientifically irreproachable. That there are not more facts is no valid objection.

A moment's glance at the details of the cosmogony is sufficient to show how exactly these anticipations are realized. Take a couple of examples by way of illustration. Among the natural objects finding place in the history of creation are, of necessity, the celestial bodies—sun, moon, and stars. In what aspect are these regarded? Exclusively in their relation to the earth, as luminaries. Nothing else is said of them, or hinted concerning them. And why? Plainly, because thus only were they familiarly known to those for whom the narrative was intended. It was no part of the design of the cosmogony to teach men more about the sun, moon, and stars scientifically, than they already knew; but only to determine the relation of these bodies to God, that so men, in beholding them, and enjoying the benefits they conferred, might learn from them certain lessons in natural theology. Within the limits of men's ordinary views concerning these heavenly bodies, then, does the cosmogony necessarily move. So, once more, the narrative treats of the various living things inhabiting the earth. How does it denote them? Precisely according to those natural divisions which, without making the slightest claim to scientific character, are familiar to everybody. The "sprouting things" or plants, are divided into "herbs" and "trees"; the inhabitants of the waters into "swarming things" and "monsters"; the terrestrial animals into "cattle," "wild beasts," and "creeping things." Not the slightest pretence to scientific classification anywhere, but simply the natural groups into which living things would be sure to fall in the human mind everywhere, and throughout all time. To teach zoology or botany was no object of the cosmogony, but only to exhibit the position and relations of plants and animals as creatures of the one true God. To have introduced scientific ideas here would have been altogether beside the mark.

To all such limited and non-scientific views, then, Science is wholly incompetent to make objection, since, so far as they go, they are plainly correct enough; while that the cosmogony goes no further is attributable to the close and exclusive attention everywhere bestowed upon its proper aim.

By these preliminary remarks, the field of inquiry before us has been very materially narrowed, the points of contact between science and Genesis much diminished in number, a large proportion of the matter ordinarily brought into the discussion rejected as irrelevant. Still, however, some points



of contact remain, and these of great importance. To their consideration we now proceed.

Our inquiry may be conveniently divided into two heads.

1. What are the principles of natural theology enunciated in the cosmogony, and how do they agree with those deducible from independent scientific investigation? 2. What are the facts in creation alleged in connexion with these principles, and how do they agree with those discovered by natural science?

First, then, of the principles of natural theology taught, for the sake of which, we conceive, the entire cosmogony was constructed. They may be briefly summed up as six. 1. The dependence of all things upon God. 2. God's independence of His creatures. 3. God's government by fixed law. 4. God's method of gradual development. 5. God's principle of subordination. 6. God's rest.

1. *The dependence of all things upon God.*—Each stage of progress, from the first calling into existence of the heavens and the earth, to the minutest detail in the process of furnishing and perfecting the latter, is exhibited as depending directly upon an act of God as its originative cause. In some cases, indeed, natural materials, and possibly natural forces also, are spoken of as taking part, as in the generation of plants and animals from the earth, or fishes from the sea, which are described as "the earth sprouting forth sprouts," "the sea swarming forth swarms," "the earth bringing forth beasts." Still, even here the relation of all to God as their sole proper cause, is carefully maintained; for not only do they arise at His word, but before any life arises there has been in the first place a "hovering" (equivalent, probably, in idea to "brooding") of His Spirit over the empty and desolate abyss of the primeval waters. This, then, is the first and fundamental doctrine of the Biblical cosmogony. There is but one First Cause, to Whom every step of creation from first to last is to be ascribed. What has Science to say to this?

Positively, Science can simply say nothing. The instruments of investigation at her command are wholly inadequate to discern the spiritual cause asserted by the Bible to lie behind all natural phenomena. She deals exclusively with the actual now in existence, and however keenly she may examine this, however thoroughly she may understand its constitution and powers, nay, however perfectly she may even trace its historical development in the past, or predict, if it may be, its future destiny, still of the *origin* of this actual world of existence, either in respect to the matter composing it or the forces enduing it, Science

knows, and can know, nothing. The most advanced scientific generalization yet put forth—the doctrine of continuity—fails confessedly to touch this great question of origin. It may be pushed back so far as to be for a time lost sight of, but it is not solved, and ever and anon springs up again, the greatest problem of all, which Science would most delight to unravel, yet before which she stands ever hopelessly silent and baffled.

Science knows nothing of the destruction of matter or force; she knows equally nothing of their creation:—the dogma is often hurled in our teeth as if it involved the disproof of the possibility of either. Yet, in truth, it is a dogma essentially harmonious with the belief in creation as taught by Scripture. Could Science point to physical origination as a possibility, either in matter or force, the necessity for referring these to a spiritual cause would be at an end; the fundamental doctrine of the dependence of all things on God would be shaken well-nigh to overthrow. But she cannot. It is admitted that there is not in all the world of nature which Science has examined any power or principle capable of creating. The Biblical doctrine remains, then, not only untouched, but confirmed and supported by the negative testimony of Science.

2. *God's independence of His creatures.*—Most carefully is this complementary truth set forth in the cosmogony. It is not enough to say that God created each successive member of the universe; but having created, He “beholds” them, approves of them, gives them “names;” thus implying in the most forcible way their absolute distinctness from Himself. In respect to life, where confusion between creature and Creator was most liable to occur, the narrative is especially guarded. All such ideas as emanation, all pantheistic notions of the one Divine Life appearing under diverse forms in every variety of creature, are forbidden at once by the terms of the narrative:—“the earth brought forth,” “the waters brought forth,” not “God brought forth.” While with respect to man, not even the expression of the second chapter (added by a later hand) of God “breathing into his nostrils the breath of life,” is tolerated; but it is strictly “in God’s image,” “after His likeness”—resemblance of nature merely, not participation. To Israel, where God’s personality was sufficiently guarded in other ways, the intimate connexion of man’s life with God’s might be freely, because safely, spoken of. But for the world at large God’s absolute independence of all other life or existence must be strenuously insisted on in every particular.

The entire agreement of Science with Scripture on this

head has been already implied in our remarks on the preceding one. Science recognises and avows that in no created things, either animate or inanimate, is there to be found any force or influence, latent or active, which can account for their primal origin. In other words, the energy and life of Nature is not a creating power, but a created. Even in the wildest theories as to the origin of life, where the vital principle is held to be a mere modification of physical force, the admission is made, however unnoticed or concealed, that life also is not a self-originated power; for does not Science perpetually proclaim that of the creation of such force she knows nothing?—that there is no physical cause, either in itself or elsewhere, to which it can be ascribed? The creature in all its parts, then,—matter, force, and life,—is admitted to be independent of, and different in nature from, its Creator. Pantheism and Atheism are alike alien to Science, so as Science be but heard impartially and fully.

3. *God's government by fixed law.*—This appears in the cosmogony in many ways. Thus, in the first place, every creative act is accomplished by word of command: God says, "Let it be," and it is. Then, again, there is the still more important point of the assignment to each element in creation of its particular province and work: the light shall "divide day from night;" the expanse shall "separate waters above from waters below;" the luminaries shall be "for signs and for seasons, and for days and for years;" the herbs shall be "for food" to man and beast. The same idea appears in another form in the *names* which are given to certain members of the universe, designating their place and function—"day," "night," "heaven," "earth," "seas." In yet other cases special commissions are given; as, to the animals, "Be fruitful and multiply;" and to man, in addition, "Subdue and have dominion." Nothing is left to adjust itself, or even find out its proper office, but all is arranged beforehand by the great Designer. And this arrangement is fixed and immutable. For all time, as much as for the present, everything is subject to law. "He commanded, and they were created; He hath also established them for ever and ever; He hath given a decree, and it shall not pass."

How completely Science is in accordance with Scripture on this point it is unnecessary to insist on at any length. The reign of law throughout every department of Nature is the best established of all the larger generalizations of science. And this in both the particulars implied in the Biblical doctrine;—(1) the existence of a distinct function and purpose in every created thing, to which its constitution and properties

are exactly adapted; and (2) the stability and invariableness with which the laws governing all things are maintained. It is impossible to imagine two testimonies more absolutely agreed than are the voices of Scripture and Science on these points.

4. *God's method of gradual development.*—He does not create a perfect universe at once, but slowly builds it up step by step. As He first creates it “the earth is empty and desolate,” and only at the close of a whole week of progress does it become fully ordered and peopled after God’s mind. Nor is this all. At every stage of the work God surveys the steps already taken, and pronounces them “good.” It may seem strange to say so. What good, men might say, is the light with no eye to see it? What good is the sea, or the dry land, or the expanse, with none to inhabit them? What good are the plants, with none to use them? But God thinks differently. To Him, who foresees and designs their purpose, they are “good” already. His plan is perfect, and each element in it also perfect in its kind. But He is in no hurry to carry it out all at once, so that its perfection may be seen, but will rather develop it slowly and in order.

It needs but few words to point out the concurrent witness of Science on this head also. The whole science of geology,—what is it but one overwhelming testimony to the fact that the furnishing and perfecting of the earth has been a gradual process, not accomplished all at once, but slowly, step by step? The same principle has of late been applied to another department of Science, and the multiplication of species both of plants and animals has been ascribed to a similar process of gradual development. To cite this example as established Science would be certainly premature. It is only mentioned here to show how fully the *principle* set forth in Genesis is recognized by the most advanced leaders of Science as a true one in regard to the order and manner of creation.

5. *God's principle of subordination.*—Not only are there successive stages of creation, not only successive additions to the sum of being; but each stage, each addition, is necessary for that which is to follow, and is introduced in preparation for it. This is very beautifully and subtly expressed in the arrangement of the work under the six days. Attentively considered, these six days are found to fall into two corresponding and parallel halves, the first, second, and third answering severally to the fourth, fifth, and sixth. Thus on the first day, light is called forth; on the fourth day, luminaries or light-bearers. On the second day, the expanse is formed, and the waters divided; on the fifth day, expanse and waters are peopled with appropriate creatures. On the

third day, the dry land appears and is clothed with vegetation ; on the sixth day, beasts and man are made to dwell on the land, and consume the vegetation. In this way the universe is made to appear, both in past and present, as an organized whole, in which every member depends upon those below, and has obligations to those above. While the crowning point being plainly man, to whom dominion over the whole is given,—man, however, as God's representative—the grand truth at once beams forth, that man's office and obligation is to use and govern all things in subordination to his Maker ; and hence, that faithful occupation, not selfish enjoyment, is his part and mission on the earth.

Once more it is an easy task to show the harmony of Science. How marvellously has Science exhibited the intricate web of mutual dependence which links together being with being, member with member, so that none can exist and flourish without the other, and each by filling its own place, and obtaining that which itself wants, at the same time ministers to and supports others ! While for the crowning feature of all, what truth has Science more repeatedly and emphatically enforced than this—that all things in the earth are under the dominion and for the use of man ? These things are too familiar to need insisting on. We pass therefore to the last item in our list.

6. *God's rest.*—The work of creation is not carried on continuously, nor is it carried on for ever,—there are pauses, and there is a final rest. At the founding of the earth the "morning stars sing together," light dawns upon the empty waste of waters, brooded over by the Breath of God, and rapturous expectation might anticipate a speedy development of life and order. But no, there comes "evening ;" the work is suspended ; and not until "morning" also comes, closing the first day by ushering in a second, is the work resumed. Creation is advanced another stage, then another pause ensues ; again "evening" comes, and again "morning" comes, before the third day's work begins.\* So it goes on until

\* This would seem to be the true meaning of the six times reiterated clause, "And there was evening and there was morning." The A. V., indeed, by its mistranslation "the evening and the morning were," &c. represents these as *constituting* the day just described ; which, however, makes their mention meaningless and inexplicable, and would also require, if true, not "evening and morning," but "night and day." The only place in Scripture where evening and morning appear to be spoken of as making up the whole day is Dan. viii. 14, where, however, the reference is not to days simply, but to the daily sacrifice, which was offered every evening and morning. To say that sacrifice should be suspended for 2,300 "evening-mornings" was hence a natural

the end, when in addition to the nightly pause there comes a whole day's rest, holy and blessed. What meaning now are we to assign to these successive rests? That they are introduced merely as a sort of framework to the narrative, is an idea so utterly inconsistent with the dignity of the cosmogony that it may be set aside at once. Like every other detail, they must be regarded as the embodiments and visible manifestations of principles of natural theology. Nor when we examine them carefully is there much difficulty in discerning what these underlying principles are, for the sake of which they were introduced. These rests express, in fact, the results now apparent in nature of those principles of creation already considered—*independence, government by law, gradual development, and subordination.* Thus, first, of independence. The act of creation is an act done once for all; the creature once made, though still in a certain sense dependent, yet exists henceforth quite distinct from its Creator. But, secondly, mere existence is not all. Every creature has besides some work assigned to it, to ensure the performance of which a law has been imposed upon it, to be observed not now only, but always; to which also all its parts and faculties are exactly adapted. Creation, then, once accomplished, the law once given, and the Creator not only may, but plainly must, so far as that item of His work is concerned, *rest.* As Ruler and Governor He doubtless works always, but as Creator—the only view of God here regarded—His work is of such a character that He works once only, and then rests. This is the fundamental idea to be set forth. Since now, thirdly, it is a principle of Divine action to create gradually, step by step, it follows at once that each of these steps of creation must be succeeded by a corresponding rest. To represent which idea adequately it was manifestly necessary that as there were six stages of progress, six days of work, so there should be also six pauses, six

expression for 2,300 days. But no such explanation manifestly can be given for the use of such a periphrasis here in Genesis. The main points to be observed, however, as decisive of the whole question, are (1) that the verb is invariably inserted *twice*—"there was evening, and there was morning; a second day," &c.; and (2) that this verb is the very same, and in precisely the same form (עָרַב) as is used throughout the chapter to describe the successive events of creation. "There was light" and "there was evening" are precisely parallel expressions; and just as the first requires us to regard the light as coming *after* the command which called it forth, so does the second require us to regard the evening as coming after the light, the morning after the evening, and the day therefore as not complete until both evening and morning had thus *succeeded* the creative acts previously described. Nothing but a nightly rest, then, bounded in this way by evening and morning, will satisfy the plain requirements of the language.

nights of rest. Since, lastly, it is the crowning principle of all to subordinate member to member in such a manner that to man shall be committed the dominion of the earth and all things in it, it follows that directly this system of organization is complete there succeeds not only the proper rest consequent upon the particular act of creation last accomplished, but also a final and lasting rest belonging to the whole—an idea represented in the cosmogony by the Sabbath, a day on which no work is done, because all is finished and complete. This seventh day is pronounced to be blessed and holy, because in it God rests from all His work. A most important point. For, observe, God does not rest because the day is holy, but the day is holy because in it God rests. It is the peculiar character of the rest that makes the day blessed. And what is the peculiarity of this rest? It is a rest, not only from work ended, as before, but from work perfected, from work so perfected as to need no further addition or interference from the worker's hand. Since, now, such perfect work belongs in native right to God only, and none else, so the rest which that perfection brings is also His peculiarly, and is hence fitly called holy and blessed,—holy and blessed just because it is Divine,—the perfect rest resulting from perfect labour.

It would be an interesting task to examine how this view of the Sabbath of creation explains its use as the type and model of the Sabbath of men, both on earth and in heaven. The subject could scarcely, however, be considered relevant to the present paper. We pass it over, therefore, to inquire once more, what has Science to say to this principle of natural theology, enunciated in the Biblical cosmogony?

The fact of God being at the present time resting from creation, is one to which Science abundantly testifies. Minutely as she may examine Nature, whether animate or inanimate, no trace of creation as a process now going on can she anywhere detect. Changes, transformations, developments, reproductions, there may be in abundance, but no creation. Creative force is not now in action. It can only be inferred from its results. No other token of its existence is perceptible. The Creator is resting. Nor does Science stop here, but boldly comes forward with a reason for this inactivity. There is no need for creative power, for all things in the universe are so constituted, so governed by law, so fitted into one another, that by mutual action and reaction the whole machinery of the world is kept in unceasing motion, self-guided, self-adjusted, self-energised. The wonderful spectacle thus presented has afforded a pretext to some to deny that there is any Creator at all. The world exists and

goes on without one,—why may it not always have done so? Neither the question thus put, nor the answer by which it must be met, are properly any part of demonstrative science, and need not therefore be here discussed. Two remarks only shall be made. First, in the analogical case of man's works the principle here contended for certainly does not hold good. A watch is a wonderful piece of mechanism, but it requires constantly winding up. Could man make a watch that should be ever winding itself up as fast as it ran down, would this be considered an article *less* evidently the result of skilled workmanship than an ordinary dial? Would it not rather be considered to involve proof of far greater and more perfect skill? Just so the universe, ever returning on and sustaining itself, is intuitively felt to be a greater evidence of creative power and wisdom than it would have been if so constituted as perpetually to need its Creator's interfering hand to keep it in action. Secondly, had the case been indeed thus, and the world been less self-reliant than it is, the doctrine of the cosmogony would have been proved false; for the rest into which God entered at the close of creation would have been shown to be not final, not lasting, not perfect. As it is, Science in this very doctrine, which has been hailed by some as getting rid of the Creator altogether, has but borne a powerful, though unknowing testimony, to the Scriptural truth of the perfection of that creation which such have thought to ignore. God has rested from His work and does rest, and His rest is not only the cessation from labour ended, but the satisfied beholding of a perfected design; a sabbatical rest, holy and blessed.

It is needless to summarize the results of this comparison in respect to principles. The absolute concord of Science and Scripture throughout has been too self-evident to require insisting on. We proceed, therefore, at once to the second division of the subject—the *facts* in creation alleged in connexion with these principles, and their agreement with those discovered by natural science.

Here especially is it necessary to bear in mind the warning given at starting, to distinguish between scientific conclusions based upon facts, and scientific theories, since it is with the former only that the statements of Genesis can fairly be compared. We shall consider—1st, a few detailed facts asserted in the cosmogony; 2nd, the *order* of creation there set forth; 3rd, the *time* of creation; concluding, 4th, with a few remarks on its testimony as to the *manner* of creation.

1st. *The detailed facts.*—But few of these come in contact with science, owing to the principles on which the cosmogony



is constructed (see p. 342). Two may, however, be mentioned as presenting points of some interest.

(a) It is asserted in Genesis that the whole earth was originally covered with water, and that out of this water the dry land made its appearance. To say that Science has absolutely endorsed this statement would perhaps be too bold an assertion; but, so far as she is in a position to give judgment on the point, the evidence of geology certainly tends very strongly in that direction. The vast majority of existing rocks have unquestionably been formed under the sea, which has consequently, at one time or another, covered nearly, if not all, the surface of the earth. That the whole was originally under water is a proposition, then, at all events very accordant with the analogies and spirit of geological science.

(b) It is asserted in Genesis that there exists an "expanse" above the earth, which divides the waters below from the waters above. This statement has been much criticised: first, on the ground that the expanse is described as something solid, which the air or sky is not; secondly, on the ground that there are no such waters above it as are alleged. For the first point, it suffices to say that it is admitted by all competent scholars that the Hebrew  $\text{רָקִיעַ}$  does not signify anything massive, but, on the contrary, something which is stretched or beaten out. While, for the quality of strength, which is in some places ascribed to it, and mistaken by sceptics for solidity, *this* the atmosphere certainly has, or it could not bear up the clouds, and resist the course of projectiles, &c., as it does. The second point is one which must detain us for a moment, as the answer in this case is purely scientific, and not by any means so familiarly known as it ought to be. It is asserted that the presence of clouds in the upper regions, separated, as they undoubtedly are, from the terrestrial waters by the intervening air, is insufficient to justify the language of Genesis, which requires a quantity of water, generally diffused over the upper part of the expanse. For the sake of argument merely, we will grant that the clouds are not sufficient, and proceed to demonstrate the existence of other waters also, universally diffused in the manner described.

It is a fundamental principle in optics that light can only travel in straight lines. The light which reaches our eyes, then, when we look upwards at the sky, has travelled to us straight from the sky at which we look.\* Now, whichever part of the sky we look at, whether near the sun or far away

\* The minute refraction arising from passage through the atmosphere, is omitted as too trivial to affect the argument.

from it, we still see this light; it is diffused everywhere. Whence has the sky this light? Undoubtedly from the sun. Yet it is not the direct rays emanating from the sun which we behold, for we see it equally when the sun is out of sight, and in directions altogether different from the path of its beams. In what manner, then, has the sky become possessed of this power of diffusing the sun's light? It certainly does not come from the clouds, for the phenomenon is as noticeable on a cloudless day as at any time. It has its origin, moreover, above the clouds, since, if the clouds be thin enough, this luminous sky can invariably be seen through them. How comes it then? The only power with which we are acquainted which can thus diffuse light is *reflection*. There must be a quantity of reflecting matter in the upper regions of the atmosphere. But, then, for matter to be able thus to reflect, it must be either liquid or solid. What matter, then, is there which can exist in these regions thus diffused in a liquid or solid state? The only matter that we can conceive is water. We know that large quantities of water are constantly being carried into the air as vapour; we know that it condenses as it rises, owing to the diminished pressure and consequent fall in temperature; we know that it forms clouds, and into clouds the whole of this condensed water has generally been considered to be gathered. It would seem, however, that this is not the case, but that some of the vapour rising above the cloud region becomes condensed there in a far looser form, and there acts as the great diffusing agent of the sun's light. It is an interesting confirmation of this explanation, that the light from the open sky referred to is invariably found to be more or less polarized, as it inevitably would be by reiterated reflection from the surfaces of minute globules of water.

Thus in the most literal and extended sense is the statement of Genesis shown to be true, that there are waters above the expanse as well as below, both gathered into clouds and diffused over the whole atmosphere.\*

2nd. *The order of creation*.—Here several points present themselves for notice, which will require careful consideration. The order of creation is known to Science in two ways—(1) from observations of the necessary relation in which different

\* It was, of course, no part of the design of the cosmogony to teach this fact in meteorology. The natural fact known to all men, which this part of the narrative takes into account, was undoubtedly the existence of *clouds*. The case is one of those often-occurring ones, where a deeper meaning lies in inspired language than at first sight appears—a meaning not perhaps essential to the significance of the passage, yet whose discovery enhances its significance very wonderfully.

members of the universe stand to one another, which involves that some must have been in existence before others; (2) from the order in which living beings make their appearance in geological strata. Of which the former may be regarded as a certain ground of argument; the latter as an uncertain. The several items of information contained in the cosmogony will be reviewed according as they fall under the one or other of these heads.

(1.) The narrative places "light" as the first thing called forth by God in the process of transforming the waste and desolate abyss into the perfected earth. By this "light" we are certainly not to understand light in its narrower technical sense, as distinguished from heat, but rather the two in combination as we meet with them in nature in the light of the sun.\* The creation of "light" must be taken, therefore, as equivalent to what we should now call the creation of radiant force. Now, what is the teaching of Science on this point? It has shown us most abundantly that on such radiant force, imparted to the earth by the sun, and by the earth once more scattered into space, depends in the first place well nigh the whole of the phenomena of meteorology. That it is the cause not only, as we readily perceive, of the temperature of the earth, but also of the moistness of the atmosphere, of winds, of clouds, of dew, of rain, of ocean currents,—in a word, of every one of the elements which, variously combined and conditioned by the earth's external features, go to make up climate. Further, that on this climate, so produced, very many of these same external features themselves not a little depend; the action of rain and its consequent rivers, of winds, and ocean currents, being in particular largely instrumental in actually altering the surface of the earth. Once more, that this radiant force supplies the physical power needed for the life and growth of plants, and through them indirectly of animals also; so that without it there could exist no life upon the earth at all. Next, therefore, to the materials of which the earth is composed, there is no element in its constitution of such paramount and extensive importance as "light;" while, from the relation in which it stands towards other parts of creation, it plainly must have preceded them in order, since without it they could not be. Before there could be expanse or clouds, plants or animals, there must be light. So Science teaches,

\* How closely the ideas of light and heat were united in the Hebrew mind is shown by the same word being used for both, with merely a slight difference in pronunciation, אור and חום.

and so Scripture also lays down the order of creation ; first, the materials ; then, as the first step in developing and arranging, " Let there be light."

Among living things, the narrative of Genesis places plants before animals. Here, again, it is plain that Science is perfectly agreed. The food of animals is derived entirely from the vegetable world ; by some directly, by others (the carnivora) indirectly, through the consumption of those who have fed upon the plants. The power, from the simpler substances, as carbonic acid, water, and ammonia, to build up the more complex organic bodies ; the power to render latent in such compounds the heat-force derived from the sun ; these alike appear to be peculiar properties of the plant. The animal can only break up and take down, more or less completely, that which the plant has put together ; can only let out and use the force which the plant has stored up. In the order of creation, then, the plant must have come before the animal, since without it the animal could not exist.

(2.) Passing over the point already touched upon, of the precedence of water to land (p. 351), we notice that in Genesis the animals do not all appear at once, but on two consecutive days, the fifth being occupied with those that inhabit the waters and the air, the sixth with those on the land ; viz., first, animals, and, last of all, man. So far as Geology is able to give judgment on this point, her testimony is in accordance with Scripture, the remains of man being confined to the very newest strata, land animals stretching much further back, birds it would seem further still, and inhabitants of the waters certainly furthest back of all. If these successive formations of rock do, as many think, correspond to the gradually-progressive creation described in Genesis, we have certainly here a remarkable parallelism. It would be, however, most hazardous to insist upon it strongly, not only from our imperfect acquaintance with the contents of geological strata all over the world, but especially from the fact that a vast majority of these strata were, as already remarked, formed in the sea, and therefore could only be expected to contain the remains of aquatic creatures, though there may have been contemporaneous land ones also, unknown to us simply because their remains had no such opportunity of being preserved. To lay any stress upon the parallelism under such circumstances would be both unwise and unscientific.

The confirmations of the cosmogony which have been drawn from various popular theories of the past history of the earth, and especially the nebular, in this matter of order, we pass over, as altogether beside the limits laid down for the

discussion at starting. For the like reason, it is unnecessary to say anything upon the purely hypothetical objection as to the creation of light, the expanse, the dry land, and the plants, *before* the celestial bodies. Science knows nothing of the past history of these latter, nor even of any epoch beyond the history of man when their existence can be certainly demonstrated. That there was light in the pre-human ages, is, no doubt, most fully proved; that there was day and night and seasons, is extremely probable; but that these necessitate the existence of the sun, moon, and stars which we now see, this we have yet to learn.

3rd. *The time of creation.*—Here we are brought face to face with the greatest of all the difficulties which beset our subject; difficulties which it is hopeless to attempt to solve without in the first place clearing away the conflicting exegetical theories which have been their principal cause. Two questions have to be answered:—(1) Do the six days spoken of embrace the whole history of creation, or only its latest stage? (2) Is the word “day” to be taken in its ordinary sense, or otherwise? To an unprejudiced reader of Genesis, knowing nothing of modern controversy, both questions would seem to be so trite and simple as not to require a moment’s consideration. The former alternative in both instances appears the only one tenable for a moment. Not thus lightly, however, can we venture to dismiss their discussion. However decisive may be the verdict of such an unbiassed mind, there has been too much ingenuity expended on behalf of the contrary opinions to allow us to rest on common sense merely as a sufficient ground for their rejection. We must examine the evidence in detail.

First, then, of the question, Do the six days embrace the whole of creation, or only part? No one will dispute that the cosmogony as a whole embraces the entire history of creation. Its opening clause—“In the beginning God created the heavens and the earth;” and its closing subscription—“These are the generations of the heavens and the earth in their creation,”—are alike conclusive on this point. At the close of this whole work of creation, then, we find the sabbath of rest. This sabbath, we are repeatedly told, was a rest from *all* God’s work,—“Thus the heavens and the earth were finished, and *all* their host. And on the seventh day God ended His work which He made; and He rested on the seventh day from *all* His work which He made. And God blessed the seventh day, and hallowed it; because that in it He rested from *all* His work which God, by making, created.” The stress upon the “all” here is unmistakeable. But the seventh day’s rest

being thus a rest from *all* the work of creation ; to suppose, as some have done, that the preceding six days, where the gradual process of creation is described, include but a portion, and that a very small portion, of creative work, is plainly to destroy the proportion and symmetry of the narrative altogether. God's sabbath, on this view, becomes a sabbath not after six days' work, as the narrative distinctly implies, but after six days' work and a great deal more, of which great-deal-more the narrative makes simply no mention and gives no hint whatever !

But at least, it is said, there is a point in the narrative where the earlier stages of creation can without difficulty be slipped in ; an indefinite blank space between the first and second verses, which the interpreter can fill up at pleasure. But what we want to know is, not how it is possible to fill in such earlier stages without doing violence to the context, but what reason there is for imagining such stages to exist at all ? To point to scientific discoveries as the reason, is beside the mark, since it has been already shown that all honest interpretation of this chapter must be independent of Science. If it be admitted that Science has cast such a new light upon the history of creation as to make the natural significance of the six days' work, as all-embracing, untenable ; and a new interpretation is required, altogether alien to the spirit of the cosmogony ; a blow has been struck at the authority and divinity of the latter even more formidable than direct rejection, for it has come from friends, not foes. And whereas also the bolder course of rejection ascribes no more than ignorance to the author of the narrative, the weaker one of altered interpretation in effect asserts his *cunning*, in so framing his account as that, while bearing one meaning plainly on the face, there should still be a loophole for escape in case facts should eventually prove that natural meaning to be a false one.\*

But what, after all, are the facts with regard to this imaginary space, of indefinite dimensions, between the first and second verses ? 1st. The state of the earth described in the second verse is distinctly spoken of as a condition in which

\* It has not been lost sight of in thus speaking that there were some who, before the discoveries of Geology, held a similar view in regard to a space between the first and second verses. But whence did this idea originate ? Simply in the difficulty where else in the cosmogony to place the creation and fall of angels. The *principle*, therefore, on which these ancient interpreters acted was the very same as that of their modern followers—the solution of imaginary difficulties by ignoring the natural meaning of the text and introducing ideas altogether out of harmony with its structure.

the earth *existed*, not into which it *passed*. True, the same verb (יָרַד) is used here which elsewhere throughout the chapter undoubtedly signifies succession or becoming (see note, p. 347); but then it is used in a totally different form and construction (יָרַדְתָּ not יָרַדְתָּ), such as is *not* elsewhere used to express succession or becoming, but rather existence or state. So far, therefore, from the text countenancing the idea of the chaotic condition of the earth being subsequent to its original creation, it rather, by rejecting the form of the verb which would have naturally expressed this, and adopting another, distinctly discountenances it. 2nd. No one who attentively reads the description itself can fail to see that in every particular it has reference to what is to follow, not to anything that may possibly have gone before. Thus "empty and desolate" is contrasted with the fulness and order about to come "darkness" with the light, "the deep" with the divided waters and dry land; while the "hovering" of "the Spirit of God" is the natural preliminary to the creation of life. Of any previous order, fulness, light, or land, we read nothing. Lastly, on this point we have not only the clear language of Genesis, but the if possible still more conclusive words in the fourth commandment, whose importance as an authoritative re-statement of the main outlines of the cosmogony none will dispute. Here it is stated categorically, "In six days Jehovah made the heavens and the earth, the sea and all that is in them" (Ex. xx. 11); and, again, "In six days Jehovah made the heavens and the earth" (Ex. xxxi. 17). Anything more precise than this can hardly be imagined. This point being settled, then, we turn—

Secondly, to the question, Is the word "day" to be taken here in its ordinary sense, or otherwise? If the word "day" be used of a period of time, we find in Scripture, as everywhere else, but two meanings which can be assigned to it—a period of twenty-four hours, or a period of twelve. True, occasionally in prophecy days are made the symbols of longer periods, as years (*e. g.* Ezek. iv. 4-6); but this in no way affects the question at issue, since (1) the natural sense of "day" is not even here in the least put aside, but merely used as a type or emblem of something else; and (2) the cosmogony is not a symbolical prophecy, but an historical narrative. True, further, that not unfrequently "day" is used in a loose, indefinite sense, as in the phrases "day of judgment," "day of the Lord," &c. This also, however, is useless for our present purpose, since we have not here any longer or different period of duration spoken of, but rather the whole idea of duration put out of sight, and "day" used merely in the sense of epoch, as is evident from

the fact that in such expressions we can invariably substitute a general term, as "time," without in the least affecting the sense. In this way we may speak of "the day of creation," as, indeed, is done in Gen. ii. 4, v. 1; but this plainly means no more than "the time when God created," the duration of this time being wholly left out of account. But that the six days are not to be thus taken is evident,—(1) from their being successive days, following one another in an orderly and natural manner; (2) from the mention of "evening" and "morning" as the limits of the working portion of each; and (3) from their being in the fourth commandment paralleled with the days of human toil, which unquestionably are periods of definite duration, and unquestionably of twenty-four hours' length. The notion, therefore, advocated by some that the word "day" here is to be taken as intended to denote a period of long duration, must be met by the counter-assertion that nowhere in Scripture or elsewhere has the word "day" any such significance. To assume such a meaning merely to get over difficulties, is unwarrantable.

Are we, then, to conclude that it was the intention of the cosmogony to teach us that in six literal days of twenty-four hours each the whole of creation was accomplished, from beginning to end? Surely not. Such a doctrine would be wholly foreign to the spirit and design observable throughout. This may seem a somewhat paradoxical assertion, after what has just been said. A little consideration, however, will show that the paradox exists only in appearance.

These "days" spoken of are not human days, but Divine; not days of man's work, but of God's. Now, upon what principle does all Scriptural description of God's being and God's acts proceed? It is upon that of accommodation. Human members, human feelings, human actions, are freely attributed to God, though literally most incongruous, just because in no other way could the human mind grasp the reality of that which was intended. To speak under the imagery of such ideas was no doubt to speak most inadequately and inaccurately, but at least the kind of notion was engendered which was required, and it was felt as a real thing. To have spoken abstractedly might have been theoretically more correct, but it would have been practically far more inadequate and faulty, because not only would the notions conveyed have been far more misty, but especially the all-important element of reality would have been wanting. The former method, therefore, rather than the latter, is that invariably adopted (of course, carefully guarded against misconception) by Scripture. Now, what effect has this upon inter-



pretation? When we come to such expressions as "God's arm," "God's eye," "God's mouth," how do we deal with them? We assign no new sense to the words themselves; "arm" as much means arm, "eye" eye, "mouth" mouth, here as anywhere else. But we say that while the words are to be taken in their literal sense, the ideas they convey are yet not to be pressed literally, but only by way of accommodation. These terms, "arm," "eye," "mouth," are the best human representatives of the Divine realities denoted; their fitness as such representatives depending upon their relation literally to man being the same in *kind* as the relation of these Divine realities to God. So in exactly the same way we treat such statements as that "God went down to see," that "God smelled a sweet savour," or that "God repented." We do not say that "go down" means anything but go down, or "smell" anything but smell, or "repent" anything but repent. Yet we do not ascribe any one of these actions literally to God, but we assert that there were actions of God having the like relation to His nature, which these actions, taken literally, have to our nature. The natures are widely different, and therefore the parallelism must not be pressed too closely, but still it remains the truest representation of the actual verity which the imperfection of human thought will allow of.

Before proceeding to apply this principle of interpretation to the case immediately in point, it may be well to notice that it is upon this method of accommodation that the entire cosmogony is constructed. When, for example, we read there of God *speaking* in order to call things into being, we do not understand by that a literal utterance of audible words, but that the power or influence by which He created was not a physical or material one, but a spiritual or moral one, of which the fittest representative was the human word-of-command. So, when we read of His giving names, we do not take that to mean a literal bestowing of verbal titles, but a defining of character and position, answering in His sphere to what the giving of names is among men. So, once more, when we read of God's resting, whether we take this in the sense of "leaving off" (שָׁבַת Gen. ii. 2-3), of "sitting down" (יָרַח Ex. xx. 11), or of "taking breath" (נָפַשׁ Ex. xxxi. 17), we do not understand a literal resting, but only an act which, judged by the standard of God's nature, was like what such resting is to man. The words still bear their ordinary sense, and no other, but in their application to God, they are felt to be only representatively true, not literally to be insisted on.

If, then, this be the principle on which God's acts and attributes are universally spoken of in Scripture,—if it be the principle on which the whole of this very passage is constructed,—is it not also the principle, rather than that of literal force, on which we should interpret the word “day”? Days, then, in the cosmogony, are not to be understood as literal periods of twenty-four hours each, albeit the literal sense of the *word* remains the same as ever; but as periods of such a length as, in their relation to God, occupy the same position that days do towards men. The whole work of creation is presented to man under images drawn from man's own work; the time of creation is no exception to the rule; its image is a week's work. The creation of a universe is to God no greater task, no longer or more arduous labour, than a week's work to His creature. This is the doctrine of the cosmogony in respect to time. Observe, now, how exactly it harmonizes with the whole tone and purpose of the history of creation here given.

(1.) It was laid down at starting that the true aim of the cosmogony was not to teach natural science, but natural theology; not to give new information concerning the facts and phenomena of nature as such, but to exhibit the relation in which these stood towards God. Had, now, the cosmogony informed us precisely how long creation took according to the standards of human chronology, this would have been an exception to the rule. For any absolute measure of time could only be compared with other measures known to man, among which the measure of the life of God was of course not one. The only idea of relation which such an absolute measure would give, therefore, would be its relation to human life, to human history; but of its relation to God, no idea whatever would be given, because there was no other measure in regard to God with which it could be compared. Yet the latter relation, rather than the former, was plainly that which the cosmogony must have been designed to set forth. This latter relation precisely it is which the six days, taken on the above view, indicate; and that in the most vivid and accurate form which the human mind was capable of comprehending. On this ground also, then, as well as the general principle of Scripture language, is the representative view of the six days to be infinitely preferred to the literal one.

(2.) It was further laid down at starting that the cosmogony was designed for all time and every place, and was to convey its teaching quite independently of scientific knowledge. Had, now, an absolute measure of time been given, with a variable knowledge of the work done in

it, it is plain that very different impressions would be given at different times of the proportion between this time and work, leading, of course, to different conceptions of the energy of creative power. To those who knew little of the extent of creation, the time stated might seem superfluously large, creative activity therefore small; and so a certain knowledge of science would have been indispensable to a right understanding of the teaching of the cosmogony on this point. But if the other view be adopted, and the measure of time be taken as relative and representative only, then no such knowledge is necessary. Of course, a better acquaintance with creation must enlarge our conceptions both of the work and the worker, and was meant to do so; but the character of our conception remains unaltered, the relation set forth being no longer, as before, that between so much work and so much time, but between the time spent on this work and the whole time of the worker's being.

(3.) Not only does this view leave untouched the parallelism insisted on in the fourth commandment between the days of creation and the days of man's labour, but it makes it even truer and fuller than on the literal view. "Days" are not the only things thus paralleled, but also "work" and "rest." That in the two latter items the comparison is of an accommodative character, none will deny: God's "work" is not the same thing as man's work, nor His "rest" the same as man's rest. If, then, the "days" of work and rest are yet insisted on as identical in both cases, it is plain that the parallel halts; since why, amidst such difference in the character of occupation, should the same absolute limits of time be observed by both parties? But if "days" are also representative terms, on the same scale as "work" and "rest," then the parallel is perfect, since all alike denote Divine realities, answering to human ones in precisely the same manner. As truly as God's work is similar to our work, and His rest to our rest, so are His days to our days. We can and ought to copy Him, because, although the actual character of each of these items is different in Him from what they are in us, yet the relation which each bears to the other (the essential point of the parallel) is the same.

So far, then, as the principle of the matter goes; so far as the design of the cosmogony, and its worth throughout all ages, is concerned; so far as its use in the fourth commandment bears witness, the testimony of all is strongly in favour of the representative view of "day" rather than the literal. One thing more only can be demanded before this view be finally accepted as established. If what has been urged is

sound, it ought to follow that in this representative sense was the expression actually taken by those for whom the cosmogony was originally intended, *i. e.*, those unacquainted with and unbiassed by the discoveries of Science. Evidence that it was so taken may appear in two ways:—(i.) In general expressions indicative of the conviction that human measures of time, when predicated of God, are only representative, not literal; which testify to the familiarity of the principle in question. (ii.) In particular applications of this principle to the divisions of time named in the narrative. The cosmogony being not confined to the Hebrew race, we unhesitatingly include among our witnesses testimonies from other nations as well.

(i.) *General expressions.*—The first to be noticed is Job x. 4–5, where the inadequacy of human expressions as applied to God is strongly brought out. “Hast Thou eyes of flesh, or seest Thou as men see? Are Thy days as man’s days, or Thy years as the days of man?” Here the expressions as to time are placed upon exactly the same footing as those concerning “eyes” and “seeing,” which every one admits to be representative. So plainly Job also regarded “days” and “years.” The same thought is expressed in another form in Psalm xc. 4—“A thousand years in Thine eyes are as yesterday when it is passed, and as a watch in the night;” and again, in 2 Peter iii. 8—“One day with the Lord is as a thousand years, and a thousand years as one day.” Here the idea is not the inadequacy of human time-measures when applied to God, but the still more fundamental one of the different relation in which the same absolute measures stand when applied to God and to man; this difference being the cause of the inadequacy of which Job speaks. With such general conceptions there could be no difficulty in the way of rightly understanding the days of cosmogony. Rather we may say that, with such principles of thought firmly impressed upon their minds, it was impossible for one spiritually vigorous to take these “days” in any other than a representative sense.

(ii.) *Particular applications.*—The original form of the cosmogony having been strictly preserved among the Jews, we are obliged to look for information on this point to the traditions preserved by other nations. Of these the Chaldæan, Grecian, Egyptian, and Phœnician have lost all trace of the element of time. The remaining three, the Indian, Persian, and Etruscan, all afford the clearest testimony to the way in which these “days” were understood in ancient times. The Indian has lost, indeed, the six-fold division, but still, how-

ever, speaks of "days" in regard to creation. For 360 days, or one year, it says, Brahman lay concealed within the world-egg. But what are these days? The same tradition tells us that Brahman's days are not days of twenty-four hours each, but are equal each of them to 12,000,000 years. Such was the Hindu conception of the meaning of a human measure of time as applied to God's creation. The traditions of Persia and Etruria are still more to the point, for here the partition of creation into six equal divisions of time has been preserved, as well as a general similarity in order. But what divisions? Not days, but six successive 1,000 years, each of which answers in character and scope to a day in Genesis. Nothing can be plainer than this testimony. The days of creation were felt by ancient nations, knowing nothing of geology or scientific difficulties of any kind, to be but representative terms, really indicative of far longer periods. They could only have felt this from the principle of the representative character of all human terms as applied to God having been, at least at first, so thoroughly familiar as to need no explanation to make it apparent. But if so, then doubtless after this manner were the days understood by all those for whom the cosmogony was originally designed.

It seemed necessary to go thus fully into the principle and evidence of the view here advocated, from the immense confusion of opinion which has hitherto prevailed upon this question of the time of creation, and the perpetual conflict in which what is thought by one or another to be the doctrine of the cosmogony is brought with the discoveries and conclusions of modern science. It is the old story over again,—men have put their theories in regard to Scripture in the place of its real teaching, and then are alarmed and angry to find them opposed to the plain witness of facts. The narrative has been twisted and turned, this way and that, to make it harmonize with Science, but still discord has reigned triumphant. Interpretations have been altered, Science abused, Science perverted, and still no better result. And no wonder, since all this while it was not the Bible that was clashing with Science, but the mistaken fancies of exegetical theorists. Putting these aside, and getting back at last to what has been shown to be the simple original meaning of the passage itself, what becomes of this much-vaunted contradiction between Genesis and Geology? It has dissolved into thin air, and vanished altogether. Let Science pursue her way unmolested; let her examine the records of the past, written in the rocks, with all possible assiduity; let her deduce, on purely scientific grounds, the time which these have taken in formation; let her fix, if

it may be, the precise duration of each stage of creation, the grand sum of the whole; let her make it as vast as she will,—we have nothing to fear from such researches and conclusions, but rather everything to hope. Whatever may be the result arrived at, it cannot in the least touch the doctrine of time contained in the cosmogony. This only it can do—it can, by giving us a truer, grander view both of what creation was, and in what time wrought, enhance our conception of His greatness to whom the whole vast work was but as one week's labour.

4th. It remains now only, lastly, to make a few remarks on the teaching of the cosmogony in regard to the *manner* of creation. Most of the points here to be noted have been already touched on in the earlier portions of the paper. It may be well, however, briefly to group them together so as to present in one view their scientific bearing. Creation, then, in general must be defined as a series of spiritual acts whereby new existences were called into being. The first of such acts, recorded in the first verse, was without doubt the creation of the matter of the universe; the second was the infusion in some way of living power by the Spirit of God; the third was the calling forth of radiant force; and so on. At each such stage of progress in the narrative, being a stage of creation, we are bound to regard some altogether new impulse as having been given, some new influence introduced; something done, in fact, which while potent in effect upon what was to come after, was not the result of that which had gone before, but of God's immediate spiritual action. At the same time, we are as clearly forbidden to imagine that all the effects described arose from these new impulses. Part, doubtless, in every case arose from the natural action of these elements in creation already in existence. In some instances this is distinctly stated, as in the successive stages of created life, which though called into being by special fiat, and so certainly involving some new impulse in their origination, yet are described as "brought forth" by the "earth" and "waters," thereby as clearly implying that earth and waters, as well as the new impulse, had part in their creation; while for other cases where this is not distinctly asserted, we have the general statement of Gen. ii. 3, that God's method of creation was throughout "by making;" *i.e.*, it was a fashioning process, rather than a series of creations totally *de novo*. Keeping these two complementary truths clearly in mind, and observing the steps of progress indicated by the order and divisions of the cosmogony, and we have all that it has to tell us concerning the manner of creation. The precise measure in which the two elements referred to were respectively concerned in any par-

ticular item, is plainly an open question. We are merely required to accept both, to ignore neither.

At the present moment it cannot be said that Science is in a position to give any decisive opinion upon this great question. It is one, however, to which her thoughts and energies have already been largely directed, and will be still more largely in the future. Nor is there any doubt that the tendency of the most advanced scientific thought is strongly towards the fashioning theory rather than the creating *de novo* one. In the face of this fact, it is of the utmost importance for the advocates of the Bible to remember that Genesis presents us with both principles ever co-working together. Looking back over the whole of this paper, we may boldly say that the doctrine of the manner of creation is the only part of the field where war is possible between the Biblical cosmogony and Science. In respect to principles, in respect to detailed facts, in respect to order, in respect to time, there is peace. A better understanding on both sides has led to union where before there was hostility. This point alone remains debateable ground. The issue here, also, cannot be doubtful; but it may be retarded, as it has been most unhappily retarded in other quarters, by the ignorance, prejudice, and blindness of those who, professing to stand up for the truth, yet, by their countenance of self-invented errors, prove too often its direst enemies. May a timely warning prevent the occurrence of the like disasters in the present case.

The length to which this paper has already run renders it imperative to hasten to a close. It is impossible, however, to conclude without a few remarks on the general result at which we have arrived by the detailed comparison of Science with Scripture now completed. It is not their concord, in the particular case in point, to which we would refer: that needs no further comment. It is rather their relative spheres, their proper scope. We have seen how simply, yet how profoundly, how briefly, yet how comprehensively, the narrative of Genesis lays the foundation of all natural theology; yet withal how exceedingly sparing it is in distinctly scientific information. The contrast between this and the teaching of Science is very striking. Here, on the contrary, are detailed facts in abundance, facts of the greatest value as illustrations and confirmations of the Scriptural doctrines in all their lower and more phenomenal aspects; the clearest testimonies possible to their truth in relation to Nature. But as the doctrines take a higher flight, and rising from Nature soar ever nearer and nearer to Nature's God, the testimony of Science becomes meagre, her voice falters, grows indistinct, and soon is

altogether silent. She is of the earth, earthy; and no effort can make her rise to the heavenly. Left to herself, she is like those ancient miners so eloquently described in the book of Job (xxviii.). She has found indeed the source of silver, the place of fine gold; has drawn forth iron out of the dust, and melted brass out of the stone. She has put an end to darkness in her deep searchings of all hidden things. Far from all common paths, in ways unknown, in depths profound, she has carried on her course, turning up the earth and all earthly things as it were with fire. In her researches she has found all manner of precious gems, and won the wealthiest reward for her labours. Surpassing in keenness the eye of eagles, in strength the pride of lions, she has gone down even to the roots of mountains, has hewn paths through the solid rocks, has stayed and controlled the very springs, has brought forth the most secret things to light. It is her pride and glory thus to have done. Yet is there somewhat beyond her reach. Where is wisdom?—where shall she find that? Where is the place of understanding? She appeals to Nature, but there is no answer. Yet is it this which is of all things most to be desired. Beside this, all earthly spoils are valueless. All the rich fruits of her labours cannot equal this. Her search with all its glories has been in vain, for wisdom is still concealed from the eyes of all living. Only in death and destruction is there a whisper of another world whence wisdom may come—they have heard the sound thereof with their ears. Then steps in God. He understands, He knows; for all Nature is open to His eyes, and the work of His hands; and under Nature He can see the deep hidden wisdom which man has sought for in vain, even the testimony to Himself. He can make it known, and He does make it known; for, stooping to man, He says, “Behold, the fear of the Lord is wisdom, and to depart from evil is understanding.” The cosmogony of Genesis, standing as it does at the very head of Scripture, is the first utterance, the first syllable, as it were, of this great message, beginning as was fit with the revelation of that part of hidden wisdom which lay in “the heavens and the earth in their creation.”

On the motion of the **CHAIRMAN**, a vote of thanks was passed to Mr. Warrington for his valuable paper.

Rev. J. H. **TITCOMB**.—I have been extremely pleased with the valuable paper which we have just heard read; but there are one or two points contained in it on which I should like to offer a little criticism. The first thing that strikes me is, that I think Mr. Warrington has not distinguished with sufficient accuracy between the rest of God at the creation from His created



work, which was indeed the fulfilment of it, and the ordinary working of His providence ; for in a certain sense the Scripture teaches us that God still works. We read in the Evening Service of yesterday, in the 104th psalm, "Thou sendest forth Thy spirit, and Thou renewest the face of the earth ;" indicating a present renewing power under the action of God's providence—

The CHAIRMAN.—I think you have omitted to notice a passage where Mr. Warrington says : "As ruler and governor, God doubtless works always."

Rev. J. H. TITCOMB.—That I think puts one part of the paper in collision with another part, where we have it distinctly set forth that God has ceased altogether from all work. I was going to quote another passage from the New Testament where our Lord says, "My Father worketh hitherto and I work." But with the exception of that point, I have the greatest pleasure in expressing my approval of the paper. There are, however, one or two things which occur to me as worth adding in a supplementary fashion to Mr. Warrington's essay, as they are connected with the paper. The paper appeals principally to natural science ; but there is another science, if I may so call it,—the science of comparative mythology,—which, though not touched upon by Mr. Warrington, may, I think, be brought in in support of the argument. I refer to the evidence which we may gather from the mythological romances and from the cosmogonies of heathen nations in India, Persia, Greece, Scandinavia, and other places, as being in full harmony with the statements contained in Genesis. Mr. Warrington points out, as one of the leading features in the Mosaic cosmogony, the pause or rest which occurs at the end of each day's work in the creation. I have read that a Mr. Lord, who was in the East Indies in the course of the last century, had considerable intercourse with the Parsees, and he gathered from them a statement of their mythology in reference to the creation. Their cosmogony was after this fashion : God, the unmade and self-existent Creator, created the world in six labours ; and between each of these labours they describe Him as resting for five days. Here you have a pause between each of the six successive labours, in strict harmony with the Mosaic cosmogony, and with the line of argument in Mr. Warrington's paper. If I wanted to make you laugh, I could tell you that the same cosmogony goes on to describe how God then made a man and a woman, the latter of whom gave birth to twins every day for a thousand years, after which, the world becoming very wicked, God destroyed it by a flood—still carrying out, you see, the Mosaic narrative. Mr. Warrington notices that part of the Mosaic cosmogony from which we learn that the world was originally wholly submerged in an ocean of water—in a universal flood. Homer made Osiris, the ocean, the mother of the Gods ; and Hesiod made Chaos the father of Gods, or the first God, and Ovid follows Hesiod. I was looking at Cudworth's *Intellectual System* this morning, and I found there a quotation from a traveller in Japan of the last century, who speaks of the Sintoists, one of the oldest sects in Japan, and says they hold this idea, that at the beginning of all things chaos was placed, as fishes swim, in water ; out of which chaos came a race of men, and from which creation started. There you have a notion of the world starting its existence in water. Scan-

dinavia has been referred to as containing some evidence, though rather problematical evidence, in favour of the Scriptural narrative. I have been looking at some of my old note-books, and I find that in one of them I have gathered from one of the Icelandic Eddas, which represent the most ancient form of Scandinavian learning, the following account of creation :—

“In the day-spring of the ages there was neither earth below nor heaven above to be distinguished. The whole was one vast abyss. The sun had no palace, and the stars knew not their dwelling-place.”

The “abyss in darkness” describes chaos well, and harmonizes with the statement of Moses as to the primitive condition of the world. In India, according to the Hindoo philosophy, the Eternal Being, Brahm, after creating the world, destroyed it on several successive occasions, and reproduced it again after repeated submersions under the ocean. In the *Manava Shastra*, quoted by Sir William Jones in the *Asiatic Researches* (vol. i. p. 245), it is said :—

“The world was all darkness till the self-existent God (Brahm), making it manifest with the elements, perfectly dispelled the gloom. Desiring to raise up creatures by an emanation from his own essence, he first created the waters, and impressed them with a power of motion. By that power was produced a golden egg, blazing like a thousand stars, in which was born Brahma, the great parent of all rational beings. That divinity, having dwelt in the egg for revolving years, himself meditating on himself, divided it into two halves, from which he formed the heavens and earth, placing in the midst the subtle æther, the spirit of the world, and the permanent receptacle of the waters.”

That also harmonizes with the statement of the Mosaic narrative. The Hindoos also use their word which signifies day as expressing the same thing as our day, and yet when spoken with regard to the Creator, it expresses something totally distinct and different from it. Let me add a quotation on this point from Maurice’s *History of India* :—

“A day of Brahma is a Kalpa. According to Major Wilford, there are five great Kalpas, at the end of each of which all things are annihilated, or absorbed into the essence of the Supreme Being. Every Kalpa, except the first, is preceded by a universal cataclysm of water.”

Here you have also a statement of universal deluges, or the earth entirely covered with water ; and also Mr. Warington’s theory as to days is retained. The quotations I have made do, I think, harmonize with the line of thought and with the arguments which we find in Mr. Warington’s paper.

REV. JOHN MANNERS.—The more we consider the matter involved in this paper the more we shall see the perfect agreement and harmony between science and that which is given to us in Genesis in reference to the creation. I should render the first verse of Genesis, “In the beginning God created the heavens and the earth,” in this way :—“By the beginning God created the heavens and the earth.” Some may ask, “But what would you make of that ?” Simply this, that it gets rid of the point of time, and would go to show that at the beginning all things were brought into

manifestation by the Word—the *λογος*, the living Word. Then we are told that the earth was without form, and darkness was on the face of the deep, whatever we may understand by the word deep—something very profound, as it is beautifully and truly stated. We come then to this point, that there was a period when what we call the earth was empty and void, and darkness was on the face of the deep. I take it for granted that our darkness is the type and outbirth of that darkness, and our light is the outbirth of that other light. So with the waters—indeed we could run through the whole of these terms and show that you do find something anterior to the creation, or to the manifestation of creation in our external world. We therefore come to perceive that time has nothing to do with our account of the world. The writer of this paper has touched upon some very important subjects, which we should do well to develop, and I am sure he deserves our best thanks for the essay he has given us.

Rev. C. A. Row.—I cannot understand how the last speaker manages to translate the words *εἰ ἀρχῆς*, “by the beginning;” and I for one entirely deny that you can render *εἰ*, “by.” I would also say that all the renderings of the Greek Testament which would anywhere translate *εἰ*, “by,” are wrong. I may observe, further, that I did not at all share Mr. Titcomb’s conclusion that Mr. Warington in his paper meant or implied that the Creator ceased working after the creation. I understood Mr. Warington simply to urge that the Creator ceased merely from His creative working, but by no means from His providential working. I understood Mr. Warington to express himself strongly upon that point, and very properly. The point is one which leaves room for the Darwinian theory, if it is true. I do not hold that theory myself,—indeed I think it is open to very serious objection,—but still it is one which if true admits the existence of creative power. There is one point on which I have some little doubt, and that is as to the precise value of these traditional evidences. We are perfectly devoid of any real knowledge as to the laws by which traditions are formed, and nothing is more difficult in historical studies than to arrive at a certain conclusion on the point. The only English works which have attempted to discuss the real character of traditions, and how they are formed, are Sir George Cornewall Lewis’s *Roman History* and his *Astronomy of the Ancients*. There the subject is dealt with in a philosophical manner. Where we deal with traditions about the cosmogony, we may have some degree of doubt as to how far they represent traditions fairly handed down to us. Another point where I had a little doubt is one in which Mr. Warington seems to me to be rather obscure. Mr. Warington seems to me to have laid it down too broadly that if philosophy should discover that there is any defect in the cosmogony of Genesis, divine revelation falls to the ground—

Mr. WARINGTON.—But only the divine revelation of that chapter or that part.

Rev. C. A. Row.—Then I have misinterpreted you.

The further discussion of the paper was then postponed to the next Ordinary Meeting.