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Art. I.—DOGMA AND DOGMATIC CHRISTIANITY.

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THERE is a class of thinkers both in Britain and America who assert that the time has come for recasting all the issues of our theological thought, and for seeking a more thorough reconciliation of our religious aspirations with the higher criticism and advanced culture of the age. They admit that the old creeds were good things in the past, and especially at the Reformation, when the ferment of new spiritual life needed guidance, consolidation and restraint; but they have now outlived their original use, and earnest minds can be no longer content to dress themselves out in the faded garments of forgotten speculation, but must seek, by a fresh and catholic study of truth, to work out the *renaissance* of modern theology, and secure the energy and triumph of a lofty spirituality. The creeds are worse than useless. They have become prolific sources of evil to the church. They have arbitrarily arrested the development of Christian thought, and restrained the free play of the higher reflective energies on which the continued existence of Christianity, as a living and progressive power, depends. We have now, therefore, to restore living thought to its due place, and allow it to operate freely as a modifying dynamic force amidst the statical energies of modern ecclesiastical life. Besides, the concessions must be made to satisfy the demands of science and philos-

ART. VI.—THE INDUCTIVE SCIENCES OF NATURE AND THE BIBLE.

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NATURE and the Bible are objects in the study of which the thoughtful minds of Christendom are, to a greater or less extent, engaged. Christians believe that both are the works (either mediately or immediately) of a personal God; multitudes who admit that Nature proceeds from such a Being deny that the Bible does so; others deny, or at least do not affirm, the existence of a personal Creator. Of those who, while they admit that Nature is the work of a personal Being, deny that the Bible also proceeds from him, there are many whose denial arises from what they regard as erroneous utterances of the first chapter of Genesis concerning the origin of Nature; and many who still profess to hold the Christian faith are, for the same supposed reason, either shaken in their belief as to the Divine origin of Scripture, or are disposed to regard the entire (so-called) Mosaic cosmogony as a myth. This article is written from the Christian standpoint, in full recognition of the doctrine of the inspiration of the Holy Scriptures, and in complete opposition to the alleged mythical character of the first portion thereof. One of the ends designed is to show that there is no vital contradiction between the established facts of Nature, and the established facts of Scripture.

It seems to be taken for granted by the opponents of the Divine origin of the Bible, that there cannot be an inductive science of that Book in all respects similar to the inductive sciences of Nature. On the contrary, we affirm, not merely that there may be such a science, but that to a certain degree it already exists.

Perhaps there is no term in the English language used in more variant though allied senses than the word *Science*. To this variance in use, often by the same writer and in the same paragraph, are largely due, in our judgment, much of the confusion that now exists in the public mind on the subject of science, and many of the conflicts between (so-called) science and (so-called) religion. Science properly means *knowledge*,

which, in its highest sense, is possessed only by God. By common consent, however, it is used to designate human knowledge only, and not merely human knowledge, but such knowledge systematized and unified in accordance with the rules of right reason. This is, in substance, Webster's second or technical definition of the term, viz., "In *philosophy*, a collection of the general principles or leading truths relating to any subject, arranged in systematic order." It is, however, by multitudes subjected to the further restraint of designating only the inductive sciences, and by many of these to the still further restraint of designating only the inductive *physical* sciences. That the term is mainly used in the most restricted of the above senses by Dr. Draper, in his work entitled *Conflict between Religion and Science*, is manifest from the concluding paragraph of the first chapter. He writes (the italics are ours): "The Museum of Alexandria was thus the birthplace of modern science. It is true that, long before its establishment, astronomical observations had been made in China and Mesopotamia; the mathematics also had been cultivated with a certain degree of success in India. But in none of these countries had investigation assumed a connected and consistent form; in none was *physical* experimentation resorted to. The characteristic feature of Alexandrian, as of modern science, is, that it did not restrict itself to observation, but relied on a *practical interrogation of Nature*."

The last mentioned restraint of the term, the effect of which is to produce largely in the popular mind the idea that Nature is the only field of science, is measurably due to the widespread influence of Whewell's *History of the Inductive Sciences*, and still more largely, we think, to the fact alluded to by him in what may be styled his apology for the misnomer of his work. He wrote in the preface to his first edition (italics his own): "To some it may appear that I am not justified in calling *that* a history of the inductive sciences which contains an account of the *physical* sciences only. . . . And if there be branches of knowledge which regard morals or politics or the fine arts, and which may properly be called inductive (an opinion which I by no means gainsay), still it must be allowed, I think, that the processes of collecting general truths from assemblages of special facts, and of ascending from propositions

of a limited to those of a larger generality, which the term induction peculiarly implies, have hitherto been more clearly exhibited in the physical sciences which form the subject of the present work, than in those hyperphysical sciences to which I have not extended my history." The facts that the processes of induction have hitherto been more clearly manifested in the realm of Nature than in any other field, and that they have achieved their greatest triumphs therein, are freely admitted; and, further, we believe that to these facts is due, mainly, and in measure excusably, the restraint of the terms *science* and *inductive science* to the inductive sciences of Nature. We cannot, however, admit the propriety of the restriction.

That the phrase *inductive science* is as properly applicable in other fields as it is in Nature, will appear from a consideration of what inductive science implies, and what it is. It implies an object in which unapparent truths are concealed beneath phenomena with which they are connected—which unapparent truths are discoverable through the study of the individual or special phenomena. It is the result of a complex process of investigation, conducted on established principles of reason (the scientific process), which consists in, *first*, the careful observation of the phenomena of the object; *secondly*, the imagination (hypothesis) of a possible truth which will give unity to the phenomena observed; *thirdly*, the deduction from the hypothesis of certain facts, which, if the hypothesis be correct, must exist; *fourthly*, the determination by investigation (in Nature, by physical experiment) whether such facts do exist, resulting in, *fifthly*, the confirmation of the hypothesis, or its modification, or its total abandonment and the imagination of a new one; *sixthly*, continued investigation by deduction and investigation (experiment), resulting, *finally*, in the establishment of some original or modified hypothesis as a theory;—the theory thus established, it should be noted, may be itself but an elaborated hypothesis, liable to be displaced by a more extended investigation.* In the use of the inductive process, many positive facts are arrived at which no subsequent investigation can overthrow, as, for in-

* The so-called *theory of gravitation* is now generally regarded as unsatisfactory, and will probably ere long be supplied by another more in accordance with the demands of established facts.

stance, in astronomy, that the earth revolves around the sun ; the highest possible reach of that process, however, is still more advanced *theory* until complete knowledge is attained. Now, the inductive science of any department of inquiry, at any given period, is the complex of knowledge, positive, theoretical and hypothetical, arrived at by the inductive process at that period.* Manifestly, such a science may exist in reference to any conceivable object, such as was above declared to be implied, "in which unapparent truths are concealed beneath phenomena with which they are connected—which unapparent truths are discoverable through the study of the phenomena." It matters not whether these phenomena be physical, as in Nature, or the words and phrases and figures of a Divinely inspired Book.

It should here be noted that the phenomena of the Bible, viz., words, phrases and verbal figures, may be as obscure as the phenomena of Nature. The most common terms are frequently the most ambiguous. The word *science*, for instance, as we have seen, is one of the most ambiguous terms in the English language. It is often a difficult problem to determine in what sense it is used in the writings of even such men as Herbert Spencer and Professor Huxley. And thus, manifestly, is it with some of the terms employed in the Scriptures. The Hebrew יום (*yom*), translated *day* in Gen. i: 5 and ii: 4, has, like the term that translates it, several meanings ; it indicates sometimes a period of twenty-four hours, sometimes the period of sunlight as distinguished from night, and sometimes a period of indefinite length. That it is used in the last of these senses in Gen. ii: 4 is manifest, for there it includes the *six creative* days of the first chapter. As to the meaning of the term in the first chapter, it is a problem for the inductive scientists of Scripture to solve. And, still further, a word having a fixed and definite meaning according to its derivation and in the mind of him who employed it in writing, a meaning discoverable through study of its derivation or the context (*i. e.*, through scientific investigation), may, through the ignorance, often unavoidable, of the reader, have an entirely errone-

* Such a science, manifestly, must be ever growing until it reaches completeness ; it casts aside to-day as fallacy that which yesterday it set forth as theory, and will possibly adopt as theory to-morrow what to-day it ridicules as unfounded fancy. It is not *science* in the most absolute sense.

ous interpretation put upon it. Every student, in reading scientific works, has often placed upon terms meanings which, after further study, he has found to be erroneous; and then, after still further investigation, he has discovered that the true, though obscure, meaning was etymologically correct. Such a term is רַקִּיעַ (*rahkiah*) in Gen. i:6. We do not wonder that the Septuagint translators, in the light of the apparent teaching of Nature, rendered it στερέωμα, and that the English translators, after the Vulgate, rendered it *firmament*; the inductive science of Scripture, however, has shown that it properly means *expanse*, and now the Scripture scientist may meet with confidence the student of Nature, and affirm that if the nebular hypothesis of La Place be elevated to the dignity of a theory, it has been for ages casketed in that old Hebrew term. It seems here in place to remark that had Prof. Huxley recognized the fact of almost essential obscurity in the writings of inductive scientists of Nature—even of masters of language and inductive science—he would have foreborne uttering the sneer against the Bible: “A person who is not a Hebrew scholar can only stand by and admire the marvellous flexibility of a language which admits of such diverse interpretations.”

Before proceeding further, it is proper to call attention to another concealed, and often confusing, ambiguity in the use of the term science or inductive science. By it may be indicated, and often *is* indicated on the same page without the distinction being noted, either *subjective* or *objective* science; the former having respect to knowledge as it exists in the mind, the latter to a system reduced to writing and published for the information of others. It is specially in the former application of the term that it will be employed in this article.

It is, of course, legitimate for us to hypothesize the existence of a personal God, and that he is the author (immediately or mediately) of Nature and Scripture. Now if, upon this hypothesis, it can be shown (1) that it is rational to suppose there should be an inductive science of Scripture similar to that of Nature; (2) that the preceding conclusion is measurably supported by facts; (3) that the past and present postures of these (so-called) inductive sciences toward each other is that which is demanded by the hypothesis; (4) that the advance of each has,

in its publication, thrown light upon the other, causing therein, to a greater or less extent, a corresponding advance ; (5) that the tendency of both is toward unity ;—if these things can be shown, then certainly much has been done toward the establishment of the truth of the hypothesis that there is a personal God, the author of both Nature and Scripture, and its corollary that there should be an inductive science of Scripture. The effort will be made to establish (on the basis of the hypothesis) all the above mentioned points, although not in the exact order indicated.

Nature and Scripture differ in many respects, three of which will be specified as proper to the following discussion :

1. Knowledge is to be derived from Nature by the study of physical phenomena ; it is to be derived from Scripture by the study of discourse, as presented in words, phrases, verbal figures and symbols.

2. The knowledge to be derived from Nature has respect principally to man's physical necessities ; that to be derived from Scripture has respect principally (as alleged by theologians) to his spiritual needs.

3. Nature nowhere *directly declares* the existence of a personal Creator ;* Scripture begins with the assumption that such a Being exists.

Not only do Nature and Scripture differ in the foregoing respects, but they also resemble each other in two important particulars :

1. All of knowledge *essential to life* in the realm of either lies at or near the surface respectively of one and the other. In the realm of Nature it is patent to every intelligent observer what is essential to the support of *physical* life. The savage, as well as the sage, knows that fire will warm him, that corn will nourish, and that water will quench thirst. In Scripture it is equally apparent what is essential to *spiritual* life. It is a noticeable fact that, on the fundamentals of Christianity, all Christians, who regard the Scriptures as the only divinely inspired rule of faith and practice, agree.

2. Upon all subjects not *essential* to the ends specified, both Nature and Scripture are full of hidden truths. This is, con-

* We hold of course, that it *impliedly* declares it, in accordance with the teaching of Psalm xix.

fessedly by all, the case in the realm of Nature. and that it is so in the realm of Scripture is acknowledged by all students of the Bible, and is made manifest by the differing opinions of confessedly honest and able students of the Word of God in matters admitted to be non-essential.

It should also be remarked, as involving both a resemblance and a difference between Nature and Scripture, that, within certain narrow limits, and within those limits only, both occupy a common field. Nature, according to theologians and many inductive scientists of Nature, implies under its phenomena, to a certain extent, religious truth ; and Scripture, confessedly by all, contains a brief account of the origin of Nature.

It is manifest that it is the fact of the existence of hidden truths in the realm of Nature that affords ground for the existence of an inductive science of Nature—*i. e.*, the continual advance in knowledge of the hidden truths that underlie apparent phenomena by rational observation and investigation. Were nothing *hidden* there could be no *search*. And further, it is held by many inductive scientists of Nature that the concealment of truths under phenomena was designed by the intelligent Creator to meet the demands of man's nature for continual increase of knowledge, and also by exercise in patient investigation to develop his intellectual powers. That such development is the result of such investigation no one can deny. The search after truth is the most potent means of intellectual growth. Upon the hypothesis of an intelligent Creator (which is the hypothesis on which we are now proceeding) the opinion that such a result was designed is most rational. On the one hand we have a being capable of unlimited development, and on the other we have not only an unlimited, but an attractive, gymnasium to give him that development.

Now, upon the supposition that the Bible also is from God, it is but rational to conclude that it also will contain, under the phenomena of *words*, hidden truths ; and especially is it rational to conclude that that portion which contains an account of the origin and development of Nature will contain such hidden truths. It cannot be supposed that an intelligent God would spread out before man in Nature a field of mystery, in order to his attraction unto study and his development thereby, and at the same time place in his hand a book which, by clearly explain-

ing the mysteries of Nature, should preclude the developing study. And here is to be found the explanation of that much misunderstood and misapplied, but, in a right sense true, saying, "The Bible was not given to teach men science." It was not given as a text-book of completed science, and far less as a text-book of any one stage of the ever-advancing inductive science of Nature. And still further is it rational to conclude that that portion of the Word of God which speaks of the origin and development of mystery-embosoming Nature should itself contain mysteries; that, in the similarity of workmanship and in the light of their harmony as the mysteries of each should be unraveled, evidence should be given to his intelligent creatures that both proceeded from one all-wise and beneficent Creator.

It is but rational to suppose that if Nature and Scripture are placed before the observation of man by the same personal God, while all that is *essential* to the physical and spiritual life of man will lie on the surface respectively of one and the other, there will be in Scripture, as in Nature, those hidden truths which will not only afford ground for, but demand, an inductive science of Scripture similar to that of Nature. Thus rational considerations lead us to suspect what becomes evident upon investigation—that there are hidden truths in the written Word of God as well as in his physical kosmos. Possibly in both Nature and Scripture there are masses of undeveloped truth hidden under phenomena, physical or verbal, to which all that has been brought to light bears as slight a proportion as does the exhumed coal bear to that which lies unmined in its native beds. We as little believe that the Westminster Assembly of Divines formulated all of Scriptural truth as that Copernicus systematized all of natural truth included within the field of his gigantic researches. In the declaration that there are hidden truths in the Bible no new theological doctrine is announced. The Church in all ages has acknowledged it; her creeds and confessions, elaborated, modified and extended in successive periods of her history, are the manifestation of her acknowledgment. More than two hundred years ago the great pastor of the Pilgrim Fathers declared, just before the embarkation on the *Speedwell*, that "he was very confident that the Lord had more truth and light to break forth out

of his holy Word." Doubtless it was in recognition of this truth that the Great Master exhorted his disciples, "*Search* (examine, investigate) the Scriptures."

It should here be remarked that the inductive scientist of Nature does not regard it as a slur upon Nature—as manifesting that she could not have come from the hand of a personal God, or that she is unworthy of notice—that he reads her teachings differently, in some points, from the inductive scientists of a former age. Why then should a similar fact in reference to the past and present interpretations of the Bible prove that it is not from God or that it is unworthy of notice? In connection with the foregoing, it should be carefully noted that the Latin, French, German and English *versions* of the Scriptures are not the Scriptures. Every version is to a large extent a commentary; it presents the translator's interpretation of the Scripture. No more is the English version the Bible itself than was the Ptolemaic interpretation of Nature Nature itself.* Had Prof. Huxley recognized this fact he would not, in his recent lectures in New York, have made as a point against the Bible that the word *whales* occurs in the account of the fifth period or day of creation (Gen. i:21). Had he been acquainted with Hebrew, of which language he confessed his ignorance, he would have known that the Hebrew תַּנִּינִים (*tanninim*), translated *whales*, means properly *sea-monsters*.

It should now be remarked, and also be carefully noted by the reader, that naturally the portion of Scripture that would be last subjected to scientific investigation by theologians is the account of the origin of Nature. This forms but the portico to the great work which the inductive scientist of Scripture has to study. His main duty is to investigate those portions which immediately relate to man's condition, duty and destiny. Beyond the bare statements that God created the world, and that he created man in his own image, the first chapter of

* This remark has reference to identity of substance, not to comparative correctness of representation (or interpretation). It is in recognition of the fact set forth above that the Westminster Confession of Faith declares (Chap. I. Art. 8) "The Old Testament in Hebrew (which was the native language of the people of God of old,) and the New Testament in Greek, (which at the time of the writing of it was the most generally known to the nations), being immediately inspired of God, and by his singular care and providence kept pure in all ages, are therefore authentical; so, as in all controversies of religion, the Church is finally to appeal unto them."

Genesis has no primary interest for theologians *as theologians*. It was perfectly natural that their attention should not be specially directed to it, until the progress of the inductive science of Nature had rendered it probable that the popular interpretation of that chapter was erroneous; and, when their attention was called, it was perfectly natural that the old interpretations, which had for ages been embalmed in systems of theology, should be reluctantly abandoned. It has been remarked that no man in England over thirty years of age adopted the conclusions of Newton's *Principia* on the first publication of that great work; certainly but few adopted them. The general diffusion of a newly promulgated theory of physical inductive science is not so much in the minds of the leading existent scientists as in those of the uprising generation. Is it strange that a similar state of things should exist on the first promulgation of a new conclusion of inductive scriptural science? Here, however, it is proper to call attention to the fact that the first promulgation of the idea that the processes of creation (or, as it may be styled, kosmical development) occupied immense periods of time was by the great Augustine, an inductive Scriptural scientist of the fifth century, as the result of his study of the first chapter of Genesis.* Augustine, however, was, in many respects, a man before his time; his conclusion seems to have effected no change in the views of his contemporaries, and it remained for the inductive scientists of Nature to incite the inductive scientists of Scripture to investigations in what was to the latter an outlying field.

It is but natural, as appears from the consideration presented above, that in the field common to Nature and Scripture, so far as the origin of Nature is concerned, the main and inciting advance of scientific research should be made by inductive physical scientists. There is another reason for this which should be mentioned. The great object of the theologian is to act upon the *popular* mind in reference to spiritual things. Not only to him as a *theologian* and to the people, is it of no mo-

* *De Genesi ad Literam*, Lib. ii: ch. 14; *Contra Manicheos*, and *De Civitate*, referred to by Prof. Tayler Lewis in his "Special Introduction to the First Chapter of Genesis," in the American edition of *Lange on Genesis*, p. 131. We are under the impression that Origen, in the end of the *second* or beginning of the *third* century, preceded Augustine in the publication of this idea. We have been unable, however, to verify the fact.

ment whether the universe was created and developed in six natural days, or in six indefinite periods, but the mooted question in the pulpit, unless forced upon him in the defense of the inspiration of the Scripture, would accomplish evil rather than good. He would naturally and properly turn aside to the study and presentation of other topics.

But the progress of the inductive science of Nature did force this study upon theologians, and the result was, not merely an increased knowledge of the hidden truths of the Word of God, but a beneficial reaction upon the study of Nature. More than seventy years ago Dr. Chalmers, then a young man, made the following utterance in a lecture at St. Andrew's: "There is a prejudice against the speculations of the geologist which I am anxious to remove. It has been said that they nurture infidel propensities. It has been alleged that geology, by referring the origin of the globe to a higher antiquity than is assigned to it by the writings of Moses, undermines our faith in the inspiration of the Bible and in all the animating prospects of the immortality which it unfolds. This is a false alarm. *The writings of Moses do not fix the antiquity of the globe.*" Other distinguished students both of Scripture and of Nature came to the same conclusion, so that Hugh Miller, not himself inferior to any whom he mentioned, declared fifty years later*: "Even in this late age, when the scientific standing of geology is all but universally recognized, and the vast periods of time which it demands fully conceded, neither geologist nor theologian could, in any new scheme of reconciliation, shape his first proposition more skilfully than it was shaped by Chalmers a full half century ago. It has formed since that time the preliminary proposition of those ornaments of at once Science and the English Church, the present venerable Archbishop of Canterbury, Dr. Bird Sumner, with Drs. Buckland, Conybeare, and Prof. Sedgwick; of eminent evangelistic Dissenters, too, such as the late Dr. Pye Smith, Dr. John Harris, Dr. Robert Vaughn, Dr. James Hamilton and the Rev. Mr. Binney—enlightened and distinguished men, who all came early to the conclusion, with the lecturer of St. Andrew's, that 'the writings of Moses do not fix the antiquity of the globe.'" It is beyond question that these men, who were among the

* Testimony of the Rocks, Lect. III.

most efficient workers, in their day, in the upbuilding of the inductive science of geology, preparing the way for further advance, were both beneficially restrained and directed by their study of the Divine Word. A similar beneficial reaction might be shown to have taken place in other fields of Nature, especially in astronomy, did space permit. In the hyper-physical inductive sciences, however, of psychology, morals, law, ethnology, history, philology, the influence of the study of the Scriptures has been most widely and beneficially felt.

There is still another important fact to be considered, namely, that the independent investigations of the inductive scientists of Nature and Scripture begin not merely at different, but at opposite standpoints. The student of Nature (the completed work) labors *ab extra ad intra*, from the circumference, so to speak, to the centre; the student of the book of Genesis (the description of the formation of the work) labors *ab intra ad extra*, from the centre to the circumference. The final results of their completed studies may perfectly agree; the first results of independent studies must necessarily be variant and opposed. Were the inventor and manufacturer of some strange instrument to place in the hands of two equally intelligent men for study—in those of one the instrument, and in those of the other a brief description of the mode of its manufacture;—in the first conclusions of these students there would be variance of opinion as to the construction and use of the machine. Years might elapse before they would arrive at unity in judgment; probably never would they so arrive, if neither consulted the other. Such differences would exist as now exist between those students of the Bible who refuse to consider the conclusions of the students of Nature, and those students of Nature who refuse to consider the conclusions of the students of the Bible. If the one to whom was committed the description should also study the instrument, whilst the other should persistently refuse to look at the description, differences would still exist, though in a less degree—such differences as now exist between the more liberal inductive scientists of Scripture who recognize that an inductive science of Nature does exist, and mere inductive scientists of Nature who refuse to seriously examine the Bible, denying its Divine origin because, in their judgment, it does not, at first glance, support in all respects what they regard as

the established facts of Science.* The existing differences are precisely what might be expected (on the hypothesis that both Nature and Scripture come from God) between the mere inductive scientists of Nature who deny the Divine origin of the Bible, and those students of Nature and the Bible who admit that both are the workmanship of God.

But while there are still differences between the apparent teachings of Nature and the Bible, as interpreted by the inductive scientists of each, a wonderful harmony has already been made manifest in the reaction of one inductive science upon the other. Both Nature and Scripture seem to agree in teaching the truth of what is known as the nebular hypothesis; that the work of forming the existing kosmos was carried on throughout several immense periods of time; that light was first evolved from chaos through motion; that the separation of the sun and stars as "light-holders" was not in one of the first periods of development; that the order of appearance of fish, reptiles and mammalia, as set forth in the first chapter of Genesis, is substantially correct; that man was the last created (or developed) of the mammalia. Many other harmonies might be mentioned. All *apparent* differences between the books of Nature and Scripture are not yet reconciled, and that for the sufficient reason that the inductive scientists of Nature and Scripture have not yet reached their goal.

The tendencies of both inductive sciences, however, are toward still greater harmony. May we be permitted to forecast two or three probable future coincidences?

The trend of the inductive science of Nature is toward the theory that what we now call *elements* are but modifications of one primal substance.† We have long believed this to be a truth set forth in what we regard as a mistranslated word in Gen. i:2, viz., בהוּ (*bohn*), translated *void*. The whole passage, as it seems to us, should be translated: "The earth (there, *the material universe*) was formless and *pure* (or *simple*)."[‡] The term is derived from the obsolete root בההי (*bahah*), defined by Gesenius as probably, *to be clean, pure*.

* As well might we reject Nature as veracious because, at first glance, she seems to declare that the sun revolves around the earth.

† See *Popular Science Monthly*, Feb. 1876, p. 463.

The pureness, uncompoundedness, homogeneousness, of the primitive mass is, we think, referred to.

Again, inductive scientists of Nature are now divided into what are styled evolutionists and catastrophists—the present trend being toward the adoption of the doctrine of evolutionism (or development). In the *status* of the existing controversy, we are reminded of the old struggle between the Neptunians and the Plutonians. The result of that struggle was the establishment, within limits, of the probable truth of both hypotheses. Such, it seems to us in the light of God's Word, will be the result of the present controversy. Within limits, we ourselves hold the doctrine of development, upon what seems to us Scriptural and natural foundations; but, upon the same grounds also, we hold the doctrine of catastrophe. The march of Nature has not been in one unbroken development. In the beginning there must have been a catastrophe which began development, and the book of Nature seems to us to teach that, like the setting and rising of the sun, there have been a series of catastrophes, ending the old and beginning the new light and life periods. In the end, as it seems to us, the inductive scientists of Nature will agree with those of Scripture in declaring that the evenings and mornings formed the days of development; and, further still, that the days of natural *development* were six, followed by a *resting* period, the seventh—the day that now is.

And yet again, inductive scientists of Nature look forward to the time when the existing light and life period shall cease to be. Scripture long ago foretold, ere modern (so-called) science had existence, that the existing heavens and earth shall pass away; and still further, that the coming night shall be followed by another morning, that from the bosom of the new chaos shall arise another kosmos—even the new heavens and the new earth wherein shall dwell righteousness.

In conclusion we would remark,

1. For obvious reasons this discussion has contemplated only those portions of Scripture which treat of the origin, development, and final destruction of the existing kosmos. It can hardly be denied that the facts set forth (not including, of course, our own forecastings) are true, and that they are in strict accord with the hypothesis that there is a personal God,

the author of both Nature and those portions of the Bible that have been referred to. We will now ask if any other hypothesis can be imagined that will satisfy the demand of the facts?

2. The discussion brings prominently to view another concatenation of facts, which not only supports but demands the hypothesis of a personal Creator and Author, and its corollary that there must be an inductive science of Scripture.

The book of Genesis is confessedly one of the oldest in existence. It was gray with antiquity long before the Museum of Alexandria, which Dr. Draper declares to have been "the birthplace of modern science," was dreamed of. Of all the ancient cosmogonies it alone continues to hold the respect of any of the learned. The modern rigid and concurrent criticisms of Nature and the Book have but served to bring out unimagined harmonies between them. Far more accurately does the first chapter of Genesis represent the established conclusions of the inductive science of Nature of the present day, than do the writings of (so-called) scientists—in astronomy before La Place, and in geology before the present century. Whence came that Book, written in the unscientific period of human history, which is so analagous to Nature in its embosoming, and so concealing unessential truths under apparent phenomena, and which is the verbal counterpart of Nature in the character of the truths which it embosoms?

3. Whilst this article has respect to the inductive science of Scripture in reference to one of the fields common to Nature and Scripture, it is not to be supposed that the researches of the inductive scientist of the Bible are confined to that field. Scripture, in its théology, anthropology, ethnology, history, ecclesiology, prophecy, spreads out before its students, as before hinted, fields as broad and rich in as yet hidden truths as are the natural fields of astronomy, geology, physics, chemistry and biology. In continuance and limitation of this remark, it should be said that there is as little danger that the surface facts of Scripture, those that are essential to spiritual life, will be shown to be false by scientific investigation, as that such investigation in the realm of Nature will ever show that water and corn are not the essential elements of physical nourishment, that arsenic does not destroy life, and that fire does not warm.

4. Between inductive science (Natural or Scriptural) and religion, *properly* so called (*i. e.*, the activity of the human soul in reference to God), *conflict* can no more exist than between such science and the activity of mind and body in reference to Nature. Between inductive science and religion, *improperly* so called (*i. e.*, a human systematization of supposed Scriptural truth), there is no more *conflict* than between the natural inductive science of the present age and the objective systems put forth by the natural inductive scientists of a former age. In the accepted systems, both of Biblical and Natural (supposed) truths, there are grand surface doctrines, comprising all that it is necessary man should know in the realm of either, — doctrines, as declared in the preceding paragraph, that no investigation can overthrow; in both, there are hypotheses concerning embosomed truths—the knowledge of which *truths* is interesting, essential to the completeness of knowledge, more or less important it may be, but not essential to either physical or spiritual life—some of which *hypotheses*, doubtless, will be modified while others will be overthrown. The march of the inductive sciences of both Nature and the Bible will ever be, like the curve of the hyperbola toward its unchanging asymptote, toward SCIENCE, rightly so called, *i. e.*, completeness of knowledge.