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ART. I.—REVISION MOVEMENT.

IN entering upon a brief discussion of the revision movement, it is due to ourselves and to those who entertain the same opinions, to say that we hail with pleasure all efforts to disseminate the Holy Scriptures, and all commentaries, translations, paraphrases, notes, and auxiliaries of whatever kind, conducive to a proper understanding of the Scriptures. To spread a knowledge of the truth abroad, is the great duty of all Christians—of all good men. And regarding the Bible as the great chart of all human rights, its moral code as the only perfect summary of all duties, as a guide to all wise legislation, and the principles taught and illustrated in its sacred pages, as the only hope of the peace, perpetuity and prosperity of our nation; we regard it the sacred duty of every patriot to aid in propagating it through the length and breadth of our land. It is worth more than all human constitutions, all political mass meetings, philosophic theories of government, or learned and eloquent political discussions. The fact that every good man loves the Bible and every bad man hates it, speaks volumes. The noble origin and the high destiny it claims for man, is the source of his highest aspirations and of his holiest inspirations. Here is the great secret of his wonderful progress in civilization, in literature, art and science. Substitute for the light of the Bible the dark dreams of Atheism, Pantheism or Infidelity, and man in his own estimation placed on a level with the brute will soon assimilate to the brute. History and philosophy alike verify this fact.

As christians and patriots, then, we stand forth the humble but uncompromising advocates of the Bible. We regard all efforts of

ART. III. — GEOLOGICAL SPECULATION, AND THE MOSAIC ACCOUNT OF CREATION.

What is the real province of Geological Science, and what the true boundary of its researches ?

In answer to these questions, we hope to shew that *speculations*, about the preadamic antiquity of the earth, do not lie within the proper sphere of this Science; that they constitute simply a diseased excrescence upon it, a *fungus growth*, which mars its beauty and justly excites the alarm and opposition of Believers in Revelation.

“Geology,” says Sir Charles Lyell, “is the Science which investigates the successive changes that have taken place in the organic, and inorganic kingdoms of nature; it inquires into the causes of these changes, and the influence which they have exerted in modifying the surface, and external structure of our planet.”

MacCulloch says, “But even the philosophical geologist does not inquire how the great Creator of the universe produced the globe that we inhabit.”

The definition of Geology given by Dana is, “the science which treats of the structure, and mineral constitution of the globe, and of the causes of its physical features.” It is described by Hitchcock as, “the history of the mineral masses that compose the earth, and of the organic remains which they contain.”

“The Science,” says Cleaveland, “of the compound minerals or aggregate substances which compose the earth, the relations which the several constituent masses bear to each other, their formation, structure, position and direction.”

Broad as are these definitions, taken from the advocates of the preadamic theory, they evidently do not cover the ground under debate. All questions, then, pertaining to the *mode* and *time* of the first formations of the earth do not lie along the path, which the Geologist has marked out for himself, and their discussion is extraneous to his proper work. He here departs from the field he has undertaken to cultivate, and unfurls his sail upon the tempestuous seas of Speculation with neither compass, helm nor ballast, and his unstable bark, at the mercy of every wave, is “tossed to and fro by every wind of doctrine,” the more rapid his progress the greater his departure from the haven of true wis

dom. These gratuitous lucubrations of unwise and visionary Geologists, have contributed more than all other causes to the production of that jealousy which exists among thousands of pious persons against the science—and are not of any possible practical utility either in this, or any other department of human knowledge, which strips the abettors of the doctrine of every excuse, and they stand convicted of the unnecessary agitation of questions pregnant only with mischief. We regard this preadamic doctrine as dangerous to religion, and perfectly useless to Geology, and can discover no good reason why it is so tenaciously held by certain religious men. We cannot understand the hallucination which so infatuates them with this theory, that they incorporate it in their very descriptions of phenomena. It has given them new eyes, and taught them a new language.

So MacCulloch, in his strange argument in favor of theories generally, makes a most remarkable confession, "In none," says he, "can the work of observation proceed without general principles; without theory. Not understood, facts are useless; but not understood, they are not seen. He who *knows what to see, sees*; and, without knowledge, the man and the quadruped, equally seeing, see to the same purpose. And if we are ever to wait for future discoveries, the result is, that we neither *know* WHAT WE WANT, NOR WHERE to seek, nor *how* to use what we may have obtained." Vol. 2d p. 382.

Now this is a bold endorsement of that result, which constitutes the great danger of theories, or as he evidently means, hypotheses, in scientific investigations and gives to them a pernicious tendency. Hypothesis can only be of value when it is made to hold a subordinate place, but it is a remorseless tyrant when we allow it such a mastery that *he only can see*, "who *knows what to see*." In the direction of his theory, the shade of a shadow is solid substance, a mere appearance is *demonstration*, and even chasms in the evidence are readily filled up from a fertile and inventive imagination. We must suspect that new vision, for the language of the *SEERS* does not sound like the language of Moses, "who was the first historian of our race, was its divinely Inspired Law-giver, and who spake with God face to face as a man speaketh with his friend."

But, says the preadamic theorist, must I not believe "incontrovertible evidence?" We answer, undoubtedly, you must.—But have you *any* evidence, much less any "incontrovertible evidence" to sustain your doctrine? Are your alleged facts *indubitable*? If so, why then has there been so much controversy among the different schools of Geology respecting those very professed facts? It is a matter of history that the Wernians and Huttonians were mutually opposed to each other in their observation and

description of those facts. While the one class saw every where the marks of water, the other was equally confident that the signs of fire were evidently visible.

Thus from the same phenomena they drew conclusions mutually destructive, because they had adopted different hypotheses, and with their powers of vision thus hoodwinked they only saw such things as the *master* required or allowed them to see. Both schemes cannot be true. And yet they have severally been advocated warmly, and with vast ability by men of learning on either side. Sometimes the one party would obtain the popular favor; and then again the fickle goddess would award the Laurel to the opposite party, and thus Geology vacillated between Neptune and Pluto, uncertain at which shrine it would worship.

The facts do not incontrovertibly establish those points most essential to the Systems of the Theorizers. What confidence then can we place in those facts as to the decision of the present question? If they are equivocal and dubious upon the *foundation* doctrines, why may they not be also *de*-ceptive in this instance? Some one will say that the dispute between these two contending parties has now closed in the permanent establishment of the Plutonian doctrines, which are at the present time entertained by the majority of Scientific men. History admonishes us not to be too precipitate in following the majority. In the days of Cuvier the current was equally strong in favor of the opposite theory.— It was confidently asserted that the “Water theory” had completely quenched the fire doctrines, and the Plutonian was not recognised in Scientific circles. So confident were Geologists in the truth of those doctrines, that they administered sharp rebukes to christian men who opposed the doctrine, yet the admonition was more decorous, than the biting Sarcasm of Mr. Miller against the Antigeologists. However those doctrines passed to the shades, and so may the present theory.

However patent the geological facts may be, on this question the reading of their hieroglyphic characters is obviously conjectural. Different scholars read different lessons from them. Then what right has geology to dogmatize upon such treacherous evidence? Is it not the height of presumption for her upon such grounds to challenge the Inspired Volume? Reason would suggest the utmost caution when theorizing upon such dubious and often controverted facts; especially when our speculations seem to run counter to the word of God. Any science, which makes such high demands as are made by Geology ought to be sustained by indisputable evidence and unanswerable arguments, or be treated with utter contempt. Is Geology thus sustained? Is the chain of its evidence complete, or its argument valid?

Mr. Miller regards his facts as *demonstrated*, and Geology as a *demonstrative* science, ready to take its place by the side of Astronomy and Geometry.

We do not hesitate to assert that the doctrine of the gradual production of the formations older than the fossil strata, is unsupported by even the shadow of evidence; it rests only upon mere assumption, however ingeniously defended it may be, by skilfully constructed sophisms. The narrative in Genesis leads us to believe, that the earth as it came from the hands of the Creator, was in a finished and perfect state, at once fitted to sustain vegetables and animals of the highest orders; and completely adapted to the ends for which it was created; hence, the Lord pronounced it "very good." Geologists should have proven, that the Creation spoken of in Genesis is not an absolute creation out of nothing, but a mere remodeling of matter already in existence: that we have no account of the first or original Creation; before they ventured upon the postulate, that only the ultimate atoms were created, and then left to the operation of material laws, to be developed in their highest forms during the lapse of interminable ages. It is one thing to show that it *might* have been *thus* formed, but quite a different thing to prove that it was actually *so* formed, and this last is the question under debate and assumed in the Geological postulate. Will any one assert that Deity could not create instantly the earth in a perfect state, every way fitted for the abode of his rational creature man. OMNIPOTENCE does not *need* *interminable* ages for the production of desired results. Why then do men exhibit so great a desire to exclude the Great First Cause, and to ascribe all the phenomena in relation to our Globe, to the operation of the feeble agency of *second causes*—the want of requisite energy, being supplied by giving them almost boundless ages for the production of their slow imperceptibly increasing results? A substitution of the INFINITE IN POWER for the *almost infinite* in Time. Who does not feel, when reading "The Mosaic Vision of Creation," by Hugh Miller, that *he* has virtually no place in his Diorama for ЯЕHOVAH. All appears upon the canvass, as the work of natural and material laws developed in the *creeping* ages. His Chapter abounds with all that is beautiful in composition, but its total divesture of the Divine agency in his *imagined* unfolding scenes, would be entirely suited to the tastes of an avowed Atheist. We do not accuse Mr. Miller of any infidel tendency, but admitting that an Infidel was writing that chapter, would there be any necessity to alter a single sentence.

The CAUSE we have postulated being sufficient to produce the effect in an instant of time, it is unscientific to call in the aid of any other cause. If we must admit, at any stage, an *absolute creation* by the arm of Omnipotence of substances out of nothing, can any reason be given why so *much time* must be allowed to Almighty Power for the elaboration of final results? Reason and the Bible alike oppose the doctrine of the *gradual* development of the earth into a *habitable* state for man during the lapse of *interminable* ages.

The advocates of the *almost eternal* existence of the earth, previous to the creation of the human race, rest their theory principally upon three positions: 1st. The nature and order of the formations, usually known as primary and transition; 2d. The absence of human relics in the lower fossiliferous strata; and 3rd. The Great thickness of those formations.

The Geologist postulates respecting the condition of our Globe. "In the beginning," that it was matter in the form of vastly minute atoms widely dispersed; that a nucleus being somehow established, the atoms gravitated, and formed around it as a common centre; that the sudden condensation of the vapory mist liberated such an amount of latent caloric as to bring the whole into a state of fusion; that the refrigeration immediately began by the radiation of heat into space; that a crust was thus formed of "oxidated metals and metalloids, constituting the various rocks of the *granite* series;" that this crust in cooling, cracked and thus numerous depressions were formed, which permitted the granite to disintegrate; that the debris of the granite was deposited in successive layers at the bottom of the seas and lakes, was there crystallised, and then elevated by subterranean fires, and thus formed gneiss—that the gneiss passed through a similar process of disintegration and ignition, for the formation of the schistose rocks, &c. Thus the surface of the earth in all the by gone ages was alternately depressed, disintegrated, deposited in seas, and then elevated by internal fires, until it was finally adapted to the abode of man.

Now, let it be remembered, that this "atomic theory" is of Pagan origin—that the "fire mist" is unsupported by a single fact, and the whole will assume its true character of *wild* speculation; nothing more than "the baseless fabric of a vision." To the whole scheme, the laws of gravitation are fatally opposed. Did the "mist" of all the planets and suns mingle? and are the ultimate atoms of these Heavenly Bodies the same? If so, why are some luminous and others opaque? If they are not, how did they occupy the same spaces in the same time? If they were different yet mingling, how were they separated? Not by gravitation for it would have equally attracted all of each kind in a definite sphere? Nor could the separation have been by chemical affinity for that attraction, only acts at insensible distances. Is gravitation sufficient to overcome the immense antagonistic force of the vast quantities of caloric combined with that "mist," which an eminent philosopher has calculated would have been many times more rare and light, than any gas the Chemist has ever produced in his Laboratory, if, as it is supposed the matter of which our solar system is formed, was originally distributed equally through that vast sphere in space, of which, the orbit of Neptune, supposed to revolve upon an axis, would be the boundary? Is gravity able

to produce such a result? Can *gravity* condense a gas? Can it form a single drop of dew? If a mineral substance is volatilized by immense heat, so that its ultimate particles are sublimated, could either gravity, or chemical affinity reduce it to a mass and give it crystalline form?

Again—insurmountable objections to this geological speculation, will immediately occur to any one even slightly acquainted with the chemical constituents of the granite rocks. It is impossible for granite to be the ultimate basis of all other formations. The elements of granite are not sufficiently numerous,—and even if the elements were sufficiently numerous, it was necessary not only that the granite should disintegrate, but its component parts ought to be decomposed so that the ultimate particles might obey the impulses of cohesive attraction; but even then, what reason could be assigned, for the new arrangement which the particles are supposed to assume. Does the chemist ever attempt to form homogeneous crystals of several kinds by dissolving their various elements in the same menstruum? Would the atomic particles of quartz, feldspar and mica, interpose no obstacle to the formation of crystals of either kind? If the chemical affinity is sufficient to unite the crystals, why not sufficient to combine the minuter particles despite the attraction of cohesion?

If we could obtain diagrams, we could in a few words demonstrate the *absurdity* of this Geological doctrine. Any intelligent person may construct his own diagram, and from it he will find that according to the postulates of this theory, the gneiss and schistose rocks must each, in their separate localities, rest immediately upon the granite, and that it is impossible for the schistose to rest upon the gneiss, or the gneiss upon the schistose rocks; for the debris of the disintegrating granite being carried by the various streams and spread out upon the bottom of the first seas, is there heated by internal fires and converted into gneiss, and then elevated, so that the original beds of the original seas become the dry land, gneissitic continents, and original dry land, the granitic continents are depressed and becomes the granitic beds of the second seas—and the debris from the disintegrating gneiss must of necessity be distributed over the *granitic* beds of those second seas, these by internal heat to be converted into schistose rocks, and be then elevated, as the third dry land the schistose continents resting upon the first granitic continent—which renders the whole theory about these formations, absurdly contradictory.

For the principal geological facts which oppose this theory we refer our readers to the learned and able work of Dr. Boase on "Primitive Geology," where he will find the facts collated and discussed. By most weighty arguments this author proves that granite, gneiss, and the slaty rocks, belong to the same age; and consequently he has removed the very foundations of this specula-

tive theory. Upon this same point, Dr. Charles A. Lée, in his work on Geology, gives with commendation the opinion of a celebrated geologist, he says :

“Bakewell justly remarks that granite, gneiss, and mica slate might with propriety be regarded as belonging to *one* formation, as they are *essentially* composed of the same minerals, varying in different proportions, and accordingly are rather *modes* of the *same* rock, than different species. We often indeed, see them passing into each other, as one of their constituent minerals becomes more or less abundant.” p. 71.

Upon the *order* of the formations Mather states that “When granite rises above the surface, the beds of other rocks, in the same district, rise toward, and lie against it, but there are instances where they appear to pitch under the granite.” p. 92.

So Prof. Tuomey in Geological Report of South Carolina, says : “Table Rock, (a mass of gneiss,) rests unconformably upon the upturned edges of underlying slates.” p. 73.

Thus the testimony of these geologists rebuts their own most cherished speculations, which are thus proved to be a mere chimera of their own imaginations.

On this part of the Geological theory Mr. Miller does not commit himself in any decided utterance that we have noticed, in relation to the earliest condition of the Creation. Even of that portion of which he has written, beginning with the gneiss and mica slate formations, he appears to have confused if not unintelligible notions, and is *apparently*, if not really, contradictory in his enunciations. In his Lecture on The Two Records he remarks that,

“The geologist, in his attempts to collate the Divine with the geologic record, has, I repeat, only three of the six periods of creation to account for,—the period of plants, the period of great sea monsters and creeping things, and the period of cattle and beasts of the earth. He is called on to question his systems and formations regarding the remains of these three great periods, and of these only. And the question once fairly stated, what, I ask, is the reply ? All geologists agree in holding that the vast geological scale naturally divides into *three* great parts. There are many lesser divisions—divisions into systems, formations, deposites, beds, strata ; but the master divisions, *in each* of which we find a *type* of life so *unlike* that of the others, that even the unpractised eye can detect the difference, are simply three ; Palæozoic or oldest fossiliferous division ; the Secondary, or middle fossiliferous division, and the Tertiary, or latest fossiliferous division.” \* \* \*

“That which *chiefly* distinguished the Palæozoic from the Secondary and Tertiary periods was its *gorgeous flora*. It was *emphatically* the *period* of plants,—‘of herbs yielding seed after their kind.’ In no other age did the world ever witness such a



flora; the youth of the earth was *peculiarly* a green and umbrageous youth—a youth of dusk and tangled forests, of huge pines and stately araucarions, of the red-like calamite, the tall tree fern, the sculptured sigilaria, and the hirsute lepidodendron. Wherever dry land, or shallow lake or running stream appeared from where Mellville Island now spreads out its ice wastes under the star of the pole, to where the arid plains of Australia lie solitary beneath the bright cross of the South, a *rank and luxuriant herbage cumbered* every footbreadth of the *dank and steaming soil*. \* \* \* The geologic evidence is so complete as to be patent to all, that the *first* great period of *organized* being was, as described in the Mosaic record, *peculiarly* a period of herbs and trees, 'yielding seed after their kind.'

In a foot note in reply to some strictures of Mr. W. P. Foulke we find that Mr. Miller bounds the Palæozoic from the Secondary division by a line drawn between the Permian period, and the Triassic deposits. And again he writes on page 221 :

"There was a time when life, animal or vegetable, did not exist on our planet, and when all creation from its centre to its circumference, was but a creation of dead matter. \* \* \* Ages pass by, and the Palæozoic creation is ushered in, with its tall araucarions, and pines, its *highly organized fishes*, and its *reptiles* of comparatively low standing."

And again he remarks, on page 222 :

"And now, as yet other ages pass away, the CREATION of the great Secondary division takes the place of that of the *vanished Palæozoic*."

To the same effect he states in his invective against the anti-geologists, page 402 :

"The known fact,—a result of modern science,—that the several formations (always invariable in their order of succession) have their *groups of organisms peculiar* to themselves, \* \* \* that not a *single organism* of the lower beds is to be detected in the middle ones, nor yet a single organism of either the middle or lower in the beds that lie above."

But if we understand his *scientific* reason for the rejection of Dr. Chalmers' scheme, it is because there is no such chasm, no "chaotic gulf," between the earlier and more recent formations, and I confess that his statements on the question are by no means satisfactory. Other points of greater moment are involved in the foregoing quotations.

Mr. Miller contends that the Geologist has to account for only three of the six periods of creation, and yet he attempts in his DIORAMA to explain the work of each of the six days of the Mosaic Record; and that too, in face of his own declaration.

"And respecting the work of at least the first and second days, more especially that of the second, we can still but *vaguely guess*."

The science *necessary* to the right understanding of these portions of the prophetic record has still, it would seem, to be developed, if, indeed, it be destined at all to exist; and at present we can indulge in but *doubtful surmises* regarding them." p. 195.

But are *vague guesses* and *doubtful surmises* to be admitted as legitimate in an argument constructed for the purpose of invalidating that interpretation of the Biblical narrative, which Dr. Hitchcock, himself an advocate of the Preadamic theory, is willing to admit, "is the most natural," though it "makes matter only six thousand years old." (Religion of Geology, p. 45.) In such an argument we have a right to demand the *exclusion* of every postulate or premise that cannot be satisfactorily "proven." If we remove Mr. Miller's *vague guesses and doubtful surmises* we are relieved from the principal part of that *necessity* which these theorizers contend, demands a modification of the ordinary and natural understanding of the language of Moses. Surely in no case can a *vague guess and doubtful surmise* be allowed to take the place of scientific induction and demonstrative reasoning; they are evidently far below "*demonstrated facts*."

Having abandoned his position that his work of reconciling the "two records" only required him to begin with the Polæozoic formations, he has treated us with a very poetic picture of the earlier works of creation, a beautiful play of the *imagination*, but it is all *fancy*, and would be harmless, if it only served to amuse the over curious antiquarian philosopher. We give a specimen of what we mean. The past history of our world he divides into six periods, the first of which he calls the "Azoic period, and he thus describes it.

"During the Azoic period, ere life *appears* to have begun on our planet, the temperature of the earth's crust seems to have been so high, that the strata, at first deposited *apparently* in water, passed into a semifluid state, became strangely waved and contorted, and assumed in its composition a highly crystalline character, such is peculiarly the case with the *fundamental* or *gneiss deposits* of the period. In the overlying mica schist there is still much of contortion and disturbance, whereas the clay slate which lies over all gives evidence, in its more mechanical texture, and the regularity of its strata, that a gradual refrigeration of the general mass had been taking place and that the close of the Azoic period was *comparatively quiet and cool*. Let us *suppose* that during the earlier part of this period of excessive heat the waters of the ocean had stood at the *boiling point even* at the *surface* and much *higher* in the profounder depths, that the half molten crust of the earth, stretched out over a molten abyss, was so *thin* that it *could not support*, save for a short time, after some convulsion, even a *small island* above the sea level. What in such circumstances, would be the aspect of the scene optically exhibited from some point in

space elevated a *few hundred yards* over the sea? It would be simply a blank in which the *intensest* glow of fire would fail to be seen at a few yards' distance. A continuous stratum of steam, then, that attained to the height of even our present atmosphere, would wrap up the earth in a darkness *gross* and *palpable* as that of Egypt of old,—a *darkness through* which even a *single* ray of light would fail to penetrate. And beneath this thick canopy the unseen deep would literally “boil as a pot,” wildly tempested from below; while from time to time more deeply seated convulsion would upheave sudden to the surface *vast* tracts of semimolten rock, soon again to disappear, and from which waves of bulk enormous would roll outwards, to meet in wild conflict with the giant waves of other convulsions, or return to hiss and sputter against the *intensely* heated, and fast foundering mass, whose violent upheaval had first elevated and sent them abroad, such would the *probable* state of things during the times of the *earlier gneiss* and mica schist deposits—times buried deep in that *chaotic night* or “evening” which must have continued to exist for *mayhap* many ages after that beginning of things in which God created the heavens and the earth and which *preceded* the *first day*.” p. 197.

More blunders could hardly have been crowded into the same compass of lines,—our space will not allow a discussion and we must dismiss them with only a passing notice.

1st. In the first sentence of his description of his Azoic period, he supposes that the temperature of the earth's crust, (and be it remembered, that, it is the disintegrating granite from which gneiss is to be formed) was so *high*, that the gneissic strata *deposited in water*, passed into an *igneous* semifluid state by coming into contact with the “*intensely heated*” first crust. Now let any person of common observation say how many degrees of caloric would be necessary to reduce gneiss, or rather the debris of granite, to igneous semifluid condition, and that too *under water* in an unconfined state? While the water was free to combine with the caloric and form steam and pass off into the upper regions, the *requisite temperature* could *never* be obtained.

2nd. In a subsequent sentence, Mr. Miller appears to be ignorant of the power of water to conduct caloric, and thus supposes that the surface of the “circumfluous enveloping waters” may only be at the boiling point, but that a higher temperature might be in the “*profounder depths below*,” and that too while the whole unconfined mass of water is free to “*literally boil as a pot*,” “*wildly tempested from below*.” Does he know any of the facts connected with the smelting of ores, or any of those connected with the conversion of water into steam? Does not the very existence of the circumfluent ocean absolutely *require*, that the crust (if we may be excused for using a word which we believe to convey a false notion) of the globe, which universally, according to Mr.

Miller's *own postulate*, serves as the bed of the shoreless waters, should have passed *far below* the temperature of a half molten state?

Mr. Miller admits in his description of the first day's work that there was then produced a succession of light and darkness, the alternation being caused by rotation of the planet; this we regard as an important admission against his *dioramic* hypothesis; for here is a *regular, ordinary* day, of evening and morning, passing before the *vision* of the Seer, and the presumption is so strong, as to render it certain that the term describes *that* period of time, unless it had been clearly proved that each of the six periods, was separated by such an interval of prolonged night that the backward seeing prophet, would have the attention so absorbed in the contemplation of the greater, as to be insensible of the lesser day, though innumerable times repeated. But the period of darkness separating his "*module*" days he describes as—

"Unreckoned ages, condensed in the vision into a *few brief moments* \* \* \* the first scene of the drama closes upon the seer; and he sits *awhile* on his hill top in darkness, solitary, but not sad, in what seems to be a calm and starless night," p. 207.

And why should the mind of the seer be so impressed with these "*few brief moments*," as to forget the phenomenon so often repeated before him, especially when the creation of that particular, constantly, regularly recurring *light* was the only act of creation which he *then sees*? This point comes up in another part of our Review, and we pass it over for the present.

Mr. Miller's dramatic representation of this first day's work is poor and contemptible in contrast with the Graphic description of Moses; his pencil thus fully, in dubious lines sketches the result of the Omnipotent "*Fiat*."

"At length, however, as the *earth's surface* (?) gradually cooled down, and the enveloping waters sunk to a lower temperature,—let us *suppose*, during the later times of the mica schist, and the earlier times of the clay slate—the steam atmosphere would become less dense and thick, and at length the rays of the sun would *struggle* through, at first doubtfully and diffused, forming a faint twilight, but gradually strengthening as the latter ages of the slate passed away, until, at the close of the great primary period, day and night,—the one still dim and gray, the other wrapped in a pall of thickest darkness,—would succeed each other as now, as the earth revolved on its axis, and the unseen luminary rose high over the cloud, in the east, or sunk in the west beneath the undefined and murky horizon," p. 198.

This tamesentence ignores the Divine Agency and describes the introduction of light as the slowly produced result of material laws: and this omission of Divine Agency is in perfect harmony with the omission of "*Light*" from his rehearsal of the various acts of crea-

tion on his 177th page; but he has improved on that point in a subsequent effort, thus

"The creative voice is again heard, "Let there be light" and straightway a *gray diffused* light springs up in the east, and casting its *sickly* gleam over a cloud-limited expanse of steaming, vaporous sea, journeys through the heavens towards the west," p. 207.

Mark his epithets, "*gray diffused*" "*sickly gleam*" which he employs to describe the effect of *Jehovah's* mandate, and then turn to the mosaic narrative:

"And God said, let there be light, and there was light,  
And God saw the light that it was good."

And you at once feel that you have passed from the fogs and steaming vapors of the seas of speculation which ever "*hiss and sputter* against the intensely heated" rocks of divine truth, into the unclouded effulgence of a God-created light. The *result* of the Divine command was both instantaneous and "*good*," not "*gray diffused* with *sickly gleam*."

Mr. Miller has another epitome of his cosmogony on p. 275, which we regard as at fundamental variance with most important doctrines of both Testaments, which demands exposure but our limits forbid an entrance upon that field, and we shall only use it, so far as it may aid us to understand his language in his other efforts to collate the facts and reconcile the two Records. In the preceding quotations we find him speaking of "the earth's surface," as covered with "the enveloping waters," and that too consistent with "the intensest glow of fire" from the surface of "our present earth, existing as a *half extinguished hell*," (p. 275,) for "the gradual refrigeration" has so far cooled down the "*molten*" globe as to allow a "half molten crust" to be "stretched out over" the "molten abyss, yet "so thin" that it could support "a small Island above the sea level" only "for a short time," and yet as "a thin covering of cloud, prevents the surface heat of the planet from radiating into the *spaces beyond*," much more, "a cloud, thick and continuous, as must have wrapped round the earth" would have *prevented* "the radiation, and consequently the reduction of that internal heat of which it was itself a consequence," and "though the heavens are still shut out by a *gray* ceiling of thick vapor," yet "the heat glows less intensely," and "a low, *dark archipelago* of islands raise their *flat* backs over the *thermal waters*, instead of the *small island* over the "molten abyss," though they are only "inconspicuous and "scattered islets," of "*bare hot rocks*," yet being "covered with smoked glass" they become "a vast green house" for luxuriant vegetation, of "ferns lepidodendra and coniferous trees," and all this before the work of the

third day, when "God said, Let the waters under the heaven be gathered together unto one place, and let the dry land appear;" and before he said, "Let the earth bring forth grass, the herb and the fruit-tree."

But Mr. Miller apologises in a most ungracious manner for the fact that his Seer did not give a full account of the creation as the various representations of the "Diorama" passed before him, by insinuating either that the Archipelago of Islands, their vegetation, and animals were too inconspicuous to be seen from the "hill-top" of observation, or the Seer was so absorbed by other "sights" these escaped observation, pp. 199 and 200. But we are not at all astonished that a *Seer*, placed upon a stand-point "within the cloud" formed by the steam arising from the "unseen deep" as it *hisses and sputters* against "the half molten crust of the earth," producing "a darkness gross and palpable as that of Egypt of old," should see very imperfectly; we wonder how he could see through that "*darkness*" at all, we wonder why the steam did not blind him entirely; we wonder still more that a sane man should require a Seer to see through such clouds of steam, such gross darkness. I am told that in common law a witness is not allowed to depose to things he professes to have seen in the dark; but why should Moses be thus hoodwinked? Was it to destroy his credibility? At any rate the manager of the diorama ought to have thrown more light upon each scene that the spectator might have had such a distinct view of every object, that his description might be literally and specifically true.

Mr. Miller is here hopelessly at variance with the Mosaic narrative, in causing the dry land, and vegetables to appear before the third day, and in causing animals to come into being before the fifth day: and that discrepancy, in his "*reconciliation*" with the cosmogony, caused the majority of learned men to reject the indefinite day theory. The theory has not answered to remove the difficulties of the case and is wholly useless. The idea of our author that the Seer failed to see the dry land, vegetables and animals before the times mentioned in Genesis, was no proof of the non-existence of these things, but only that they were too *inconspicuous* to be observed by the narrator, is too absurd, ever to obtain favor among men of science. We give the account in the author's own words under his description of the work of the second day.

"The invertebrate life of the Silurian period, or even the ichthyic life of the earlier Old Red Sandstone period, must have been comparatively inconspicuous from any subærial point of view elevated but a few hundred feet over the sea level, even the fero islets of the latter ages of the period, with their ferns, lepidodendra, and coniferous trees, forming, as they did, an exceptional feature, in these ages of vast oceans, and of organisms all but exclusively marine, may have well been excluded from a representative diorama that exhibited optically the grand characteristics of the time."

He repeats the same idea in the description of the work of the third day and substantially in that of the fourth, and from the prominence it holds in his "Harmony of the "Two Records" we infer that he considered it, as the master idea which would close the controversy by the removal of all discrepancy. But we ask in all seriousness if that is the only feasible plan, which this renowned Geologist, could devise, "to collate the Divine with the geologic record." If so, then he must have felt that the cause of the inspired record was well nigh hopeless. As far as we can see, Moses has lost more, than he has gained by Mr. Miller's explanation; as the most superficial examination will clearly evince. Moses testifies that at the commencement of the third day; "God said, Let the waters under the heaven be gathered together unto one place, and let the dry land appear;" and it was so." Mr. Miller replies, ah Moses! you have allowed yourself to be so absorbed in the atmospheric phenomena—"the dappled cloud lets" "the beauteous semblance of a flock at rest," that you did not discover that ages before that third day, "God said, Let the waters give place, and let "*the islets*" the "*Archipelago of Islands* appear." Again Moses relates that during that same third day, "God said, let the earth bring forth grass, the herb yielding seed, and the fruit-tree yielding fruit after his kind, whose seed is in itself upon the earth, and it was so." "You are again mistaken Moses," says Mr. Miller, "for long ago in by gone ages, "God said, Let "*vegetable existences*" appear, and it was so." Again Moses ventures to declare that at the beginning of the fifth day, "God said, Let the waters bring forth abundantly the moving creature that hath life, and fowl that may fly above the earth in the open-firmament of heaven. And God created great whales, and EVERY living creature that moveth, which the waters brought forth abundantly after their kind, and every winged fowl after his kind: And God saw that it was good." "Let me inform you Moses," says Mr. Miller, "that you have made another blunder, for the geological record says that in the second period of creation these living creatures were found in the waters, and birds walked upon the shores of the ancient seas of those remote ages.

Moses writes again, "And God said, Let the earth bring forth the living creature after his kind, cattle and creeping things, and beast of the earth after his kind; and it was so." Mr. Miller turns to his geology, and finds that Moses is in fault even here, for land animals existed myriads of years before that sixth epoch. In the narrative next following, the inspired writer declares, "And out of the ground the Lord God formed every beast of the field and every fowl of the air, and brought them to Adam to see what he would call them, and whatsoever Adam called every living creature, that was the name thereof. And Adam gave names to all cattle, and to the fowl of the air, and to every beast of the field." Here is another error in the Biblical record, for, says

Mr. Miller, many of the creatures, in entire genera lived and became extinct ages before man appeared upon earth, and they could not be brought to receive names from Adam, and besides it would have required an "enormous expense of miracle" to *ferry* the sloths and armadillos, the megatherium and glyptodon, the kangaroo and wombat, the macropus and phalcolounys, across the various seas from the different continents and Islands to receive their names, and then to refer them to their native lands." But are such transportations "expensive miracles" to omnipotence? for the narrative declares, that the Lord God brought them together, and the *dispersion* subsequent, was equally easy in his hands.

Moses records thus, "And God said, Behold I have given you every herb bearing seed, which is upon the face of all the earth, and every tree, in the which is the fruit of a tree yielding seed; to you it shall be for meat. And to every beast of the earth, and to every fowl of the air, and to every thing that creepeth upon the earth, wherein there is life I have given every herb for meat; and it was so." Ah, no! says the geologist, it was *not so*, for I can prove that many of these animals and birds, have always been, as they now are *carniverous*, and not *gramniverous*, as their fossil remains indicate; and therefore he scorns the idea that man's fall could have been in any way so connected with a change in the physiology of animals, as that the Lord should for the punishment of man's sin inflict death, and so transform the nature of the lion, that it would no longer be content with primitive food. Of course to the mind of this profound thinker, the prophecy of Isaiah, is all fancy where he declares that in a future age, "The wolf also shall dwell with the lamb, and the leopard shall lie down with the kid; and the calf and the young lion, and the fatting together, and a little child shall lead them. And the cow and the bear shall feed; their young ones shall lie down together, and the lion shall eat straw like the ox. And the sucking child shall play on the hole of the asp, and the weaned child shall put his hand on the cockatrice's den. They shall not hurt nor destroy in all my holy mountain; for the earth shall be full of the knowledge of the Lord, as the waters cover the sea." And if the nature of animals may be changed from *carniverous* to *gramniverous*, and lose all their disposition to hurt and destroy when the ruins of man's sin shall all be retrieved, we see no absurdity in the proposition that their present disposition was superinduced in consequence of man's fall.

Moses represents the whole work of creation as having been accomplished in six days, the word being specifically defined in the narrative, and again the Lord on Mt. Sinia delivered the command, "Six days shalt thou labour and do all thy work," &c. "For in six days the Lord made heaven and earth, the sea and all that in them is," &c., the analogy requiring the word in the



one case to be an exact equivalent of the word in the other ; but says Mr. Miller, the geological evidence is complete, that it was not ordinary days but vast periods of indefinite length, and the command is simply this, "Work during six periods, and rest on the seventh, for in six periods the Lord created the heavens and the earth, and on the seventh period He rested." p. 176. He fortifies his position by the fact that in the fourth verse of the second chapter of Genesis, the word "day" is evidently used to cover the whole time of the six days employed in the work of creation : therefore he assumes "that *each* of the six days of the Mosaic narrative in the first chapter were what is assuredly meant by the *day* referred to in the second—not natural days, but lengthened periods." Now we confess that this appears to us wonderfully unexact to be used in an argument where pretensions to demonstrations are made. Reduced to an illustration from Algebraic quantities it is simply this, the word "day" in chapt. 2nd, being represented by the unknown quantity A, is equal to the sum of all the six days of the 1st chapt., represented severally by the unknown quantities B, C, D, E, F, G, therefore each of the six days is equal to A. That is,  $A=B+C+D+E+F+G$ . Therefore  $B=A$ ,  $C=A$ , and the others in the same way, which is manifestly absurd, for a part cannot equal the whole.

Again, we remark that the narrative contained in the 1st chapter and first three verses of the 2nd chapter of Genesis, is independent of the narrative which begins with the 4th verse of the 2nd chapter, and there is no propriety in displacing the definition of the word "day" given in the first narrative, and substitute instead thereof a meaning which may be attached to it in the 2nd narrative, even if it could be done without the absurd blunder of making a part of a thing equal to the whole.

But Mr. Miller frankly states, "Premising that I make no pretensions to even the slightest skill in *philology*," and yet he again declares, "I would in any such case, at once, and without hesitation, cut the *philological* knot, by determining," &c., that is, he boldly lays down dogmatically, an absolute criterion by which interpretation is to be accepted or rejected.

"In what light," says he, on what principle, shall we most correctly read the prophetic drama of creation? In the light, I reply, of scientific discovery,—on the principle that the clear and certain must be accepted, when attainable, as the proper exponents of the doubtful and obscure. What fully developed history is to the prophecy which of old looked forwards, fully developed science is to the prophecy which of old looked backwards." p. 194.

We shall in the sequel attempt, upon the ground of his own premise, to show that the principles of interpretation are more clear and certain than the preAdamite theory, which theory has no well grounded claim to be one of "the established geologic doc-

trines," nor to be regarded as a "fully developed science;" for the present we only remark that he speaks upon the doctrines of hermeneutics with as much confidence as if he were indeed a master in that science. It is a fact also worthy of notice that the ablest of all those authors, variously and frequently quoted by Mr. Miller, are directly opposed to his interpretation of the word *day* in the 1st chapter of Genesis; among whom we find the names of Chalmers, of Smith, of Hitchcock, and of the German writer, Rev. John Henry Kertz, D. D. While we are unable to consent to many of the positions of this last named author, yet he has some sound and judicious remarks upon the question raised by Mr. Miller, in the foregoing quotation, which we are constrained to give to our readers. In administering friendly counsel to "the *man of science*." Dr. Kurtz says, "Let him not forget that if nature be a book full of Divine lessons and teachings, yet is the BIBLE the lexicon and grammar, whereby alone the etymology and syntax of its sacred language, the form and history, the sense and signification, of the single words, may be learned,—that it alone is the teacher of that criticism, hermeneutics, aesthetics, and logic, whereby the "disjecta membra poetæ" are to be arranged, explained and understood." (The Bible and Astronomy, p. 20.)

"But none the less may the pretended, or supposed contradiction, rest upon an erroneous interpretation on part of the student of nature, in that he, too, may approach the Book of Nature with unwarrantable pre-suppositions, and there read from its pages what he himself put into them." \* \* \*

"It were the gravest possible self-delusion for the student of nature, or any one else, to imagine that the results of his empirical investigations require him to deny the Biblical doctrine of the creation of the world. Not science, but speculation (for error may exist in the magnet or compass no less readily than faith or truth) is to blame for such vain assumptions."

"And here again it is not natural science that is to blame; but unbridled speculation, or rather an already existing tendency of thought or imagination, which carries speculation with it, and thus does violence to the results of scientific investigation, in order to force them to say what is most pleasing to the unbelieving ear." (The Bible and Astronomy, pp. 28 and 29.)

The confidence of the German in the *certainty* of the teachings of the Bible, stands in remarkable contrast with the boasting reliance of the Scotchman in the speculations of his cosmogony; while Mr. Miller is ready to give up the Bible, if the Bible cannot be made to utter the *demandèd* "Shibboleth" of Geology, Dr. Kurtz does not hesitate to declare.

"If he do not succeed in solving the supposed contradiction, let him securely remain in the fortress of the Word, under the

cheerful conviction that the contradiction is either merely an apparent one,—none at all—or that the error lies *upon the side of science.*" Ibid, p. 31.

We find an important division in the ranks of those geologists who attempt to reconcile the dogma of geology, with the teachings of inspiration, by adopting a new interpretation of the sacred volume. We find no two agreeing in all respects; in fact they hold irreconcilable doctrines, and we might leave them to settle their internal disputes before we notice their doctrines; were it not, that those doctrines are of pernicious tendencies. Some attempt to remove the difficulty, by making the word *day* in the first chapter of Genesis mean an indefinite period of time, while others find a chasm of innumerable ages in the beginning of the chapter; the precise place where this chasm is to be found, has not been decided by them. These men hold the speculation about the high antiquity of the earth as absolutely, undeniably, demonstrably true, and consequently suppose that the only remedy is to interpret the scriptures anew, being aided by geology. On the other hand, we most firmly believe that the speculation in debate, is absolutely, ruinously false, a monstrosity in science, and a snare in theology. We regard the promulgation of such speculative opinions with detestation and dread. We have no fears of *scientific* truths, but "philosophy falsely so-called," has always opposed the Bible, openly when she dared or secretly if success was otherwise impossible. Now we attempt to remove the difficulty by proving that this dogma is not a legitimate induction from the *facts* of geology. We shall now proceed to the consideration of those arguments which support the old and set aside the proposed interpretations.

1st. We begin with the indefinite day theory. That the word "*day*" is sometimes used indefinitely we readily admit, but this admission is not a sufficient ground to sustain the new theory; for when the word is used thus indefinitely, its sense is indicated in the context. To assert that it is so used in the present case, is nothing less than to beg the question, or to assume the very point in debate. The obvious, and regular meaning of the word denotes one revolution of the earth upon its axis, and every other sense is metaphorical. We can discover no appearance upon the face of the narrative, which requires a figurative sense in the present case. So far from there being any indication that the term as employed in this narrative, is to be indefinitely extended, we find the word in the fifth verse carefully defined, and specially limited to the time of one revolution, which, upon every principle of just and truthful interpretation, is a demonstrative conclusion against the indefinite extension. Suppose in writing a narrative, you use a new term, and to avoid misapprehension, you carefully state what you mean by the term; would it not be an unwarrantable presumption in an

interpreter in after ages, to substitute a more recent and casual meaning for the one you have given? Would it not in fact so alter the sense of the narrative that it ceases to be your narrative? Precisely such is the result of the case in hand. The advocate of this new doctrine rejects the meaning given by inspiration, and adopts his own. Of course it ceases to be the language of the inspired penman. Moses said that "God called the light day;" but this class of geologists says Moses was mistaken, for it must have been a thousand years or more. Let us read the passage with their definition, "God called the light *a thousand years.*" The sense is changed if not destroyed. Besides, in the text, "*day*" answers as the correlate of night, which relation disappears in the new translation.

2nd. Again, the constant repetition of the phrase, "the evening and the morning," in the narrative of each day's work, shows that a natural day is meant. This particularity, (used no where else) seems to have been designed by the spirit of Inspiration to preclude the possibility of any mistake as to the meaning of the word.

We hesitate not to assert as our opinion, that those geological vagaries were distinctly before the Omniscient mind, when He dictated to Moses the special phraseology of this chapter. The phrase, "the evening and the morning," is wholly unmeaning upon the indefinite day hypothesis, and to admit it, would be derogatory to the scriptures. This, however, is only a beginning of that violence, which is done by these geological interpreters of the word of God. According to their laitudinarian principles of construction, the Bible can be made to mean anything, or nothing at all, just as the exigencies of their theories may require. We feel no sympathy with such licentiousness.

3rd. The meaning of the term day, in the Mosaic narrative of the creation, is determined by other portions of scripture. The reason given in the fourth commandment why men should work six days, and keep the seventh as a Sabbath to the Lord, is thus stated, "For in *six days* the Lord made *heaven* and *earth*, and *sea*, and *all* that in them is, and rested the seventh day; wherefore the Lord blessed the Sabbath day and hallowed it."

I cannot discover how any language can more clearly express, not only the duration of the time, creative energy was employed in bringing all things into existence, but also the extent of that creation. Yet, Dr. Buckland would persuade us that it is no true creation, but only a new arrangement of matter already in existence; and Dr. Pye Smith tells us that the whole work was confined to the south-west corner of Asia. These belong to that class of men, who claim to be the *only* geologists, and the *only* judicious friends of religion; and of course, from the lofty arrogance of their tone, they are infallible. "Verily, they are the men and

wisdom will die with them." Is it not evident that the days we are to work, are precisely such days as those in which the Lord created all things; and this Sabbath day is to be as that seventh day on which the Creator rested from all His works, and which He blessed. But if these days are periods of a thousand years, then the reason of the command fails, and as our lives do not reach beyond three score years and ten, our obedience is impossible. We remark further, that at this very point there is a conflict between the scriptures and this class of geologists, full as serious as that which arises from their dogma of the earth's antiquity.

It is in relation to the causes that have operated in the production of the phenomena which pertain to our globe. These men bastardize our world, remove all agency of the *first cause*, and give a *pro-creative self-generating* power to matter, thus they only see the results of secondary causes. But the Bible speaks of the Omnipotent operation of the great first cause. This discrepancy we must however pass over for the present, and have only alluded to it to apprise our readers, that these men contradict the scriptures in more points than one.

4th. Another argument against the indefinite day theory, is to be found in the division of time into weeks. This division is universal, ancient, and entirely arbitrary; founded on no natural phenomenon such as the rotation of the earth upon its axis, producing day and night; or the changes of the moon, marking the Lunar month; or the revolution of the earth in its orbit, establishing the year. This rotation of time, we may reasonably regard as a *monumental* record of the days of creation, more difficult to explain away than the "foot-prints" in the sandstone. This "medal of creation" is by no means a fanciful "vestige," and requires no critical skill and ingenious talent to decypher. Unlike the facts that are made the basis of geological speculation, it may be read, and clearly understood, by the unlettered peasant.

5th. We argue finally, that there is no necessity to give the word "*day*" a metaphorical sense, so as to make it mean an indefinite period, because it does not remove the difficulties of geological speculation. The quantity of time thus obtained, is not enough to satisfy the wants of the dogma, and the order of the Mosaic narrative does not suit, therefore many of the most able geologists have abandoned this explanation, and have adopted the theory which we shall hereafter notice. Amongst the most learned advocates of this indefinite day theory, is Dr. Keith, to whom our literature is indebted for some works which are valuable. He endeavored to give plausibility to the speculations by supposing the diurnal motion of the earth to have been at first very slow, so as to have been ages in making one revolution. He supported his supposition by reference to the rotary motion of the moon, which takes about twenty-nine days to accomplish one period. This

postulate is not sustained by a single geological fact, and is unscientific. If such had been the length of the day on one side of the globe, the night would have been of equal duration on the other side, and thus there would have been a manifest difference in the strata, or material deposits and fossil remains of the two Hemispheres. The one class growing in the light and heat of the enduring day, would possess the greatest vigor and luxuriance of growth, and attain to vast dimensions; while the other class under the darkness and chill of a night of countless ages, would plainly exhibit the blighting influence of that "deadly night-shade" in their stunted growth and shrivelled forms, even if it were not fatal to both animal and vegetable life. We said that the Doctor's postulate was unscientific. The excess of the equatorial over the polar diameter of the earth, is demonstrative of the rapid rotary motion of our globe, when in a plastic and yielding state. But this is not the only blunder which these geologists have made in their great zeal to sustain their speculations. They have sought aid from the fantastic vagaries of the nebular hypothesis of the distinguished La Place. This speculation of the Astronomer respecting the gradual formation of the solar systems, based upon the telescopic appearance of the nebulous spots in the heavens, would have been treated with the utmost contempt by all men of learning, had not the author's deserved reputation given to it a meretricious importance. It also obtained favor with some, because it seemed to furnish an argument by analogy for the overthrow of the Mosaic Cosmogony. These nebulae are at an immense distance from the earth, and according to the hypothesis are thin vapory "mists," or matter in an "atmospheric state." Now can any one conceive how such bodies can be seen at such distances? A body filling the orbit of the earth, would have no appreciable parallax at the nearest of the nebulae—would appear only as a point. Yet this theory makes us see the ultimate atoms of "atmospheric matter," at that immense distance, even though it is invisible, when in contact with us. Every principle of a sound and sober philosophy would teach us, that every luminous spot in those nebulae is a luminous body of not less dimensions than our own sun. It is said that one of the first effects of Lord Rosse's telescope, (the largest in the world) was to disprove the entire hypothesis by disclosing the fact that these nebulae are cluster of stars, not in a forming state, but actually perfected. Thus failed also the splendid analogy about which Dr. Keith has so learnedly written, as shedding light upon, and giving plausibility to, the speculations of this school of geology. There is a constant tendency on the part of men engaged in the investigation of science, to overleap the bounds of the human mind, and attempt the explanation of those things which lie beyond the province of our reason.

We reject this indefinite day theory, because it conflicts (as we

have shown) with the scriptures, and is also manifestly unscientific.

The arguments we have thus employed against the *indefinite day theory*, may derive additional importance by some quotations from several writers of acknowledged authority on the geological side of the question. Less than twenty years ago a volume was issued from the pen of Dr. Jon Pye Smith, on "Scripture and Geology," in which the author remarks in relation to this theory, that it had been favorably entertained by Parkinson, Cuvier, Jameson, Silliman, and some others; "but," says he, "it is now so generally relinquished, that more than a brief mention of it will not be necessary." Dr. Smith gives four reasons for the rejection of the hypothesis, the third is in the following words:

"Upon the very face of the document, it is manifest that in the first chapter the word is used in its ordinary sense. For this primeval record, (terminating as was remarked in a former lecture, with the third verse of the second chapter,) is not a poem, nor a piece of oratorical diction; but a narrative, in the simple style which marks the highest majesty. It would be an indication of a deplorable want of taste for the beauty of language to put a patch of poetical diction upon this face of natural simplicity. But, one might think that no doubt would remain to any man, who had before his eyes, the concluding formula of each of the six partitions, "And evening was, and morning was, day one," and so throughout the series, repeating exactly the same form; only introducing the ordinal numbers, till we arrive at the last, "And evening was, and morning was, day the sixth." (Scripture and Geology, p. 174.)

Respecting this mode of reconciliation Dr. Buckland remarks: "A third opinion has been suggested, both by learned theologians and by geologists, and on grounds independent of one another, viz: that the days of the Mosaic creation need not be understood to imply the same length of time which is now occupied by a single revolution of the globe; but successive periods, each of great extent; and it has been asserted, that the order of succession of the organic remains of a former world, accords with the order of creation recorded in Genesis. This assertion, though to a *certain degree apparently* correct, is not *entirely* supported by geological facts; since it appears that the most ancient marine animals occur in the same division of the *lowest transition* strata, with the earliest remains of vegetables." (Bridge Water Treatise, vol. 1 page 34.)

Dr. Hitchcock has in a condensed statement given a number of objections against that interpretation, which makes the "*demi-urgic*" days stand for periods of time of vast duration; we give his second, fourth and sixth. He says:

"2. In the fourth commandment, where the days of creation are referred to (Exod. XX, 9, 10, 11,) no one can doubt but that the six days of labor and the Sabbath spoken of in the ninth and tenth

verses, are literal days. By what rule of interpretation can the same word in the next verse be made to mean indefinite periods?

\* \* 4. Such a meaning is *forced* and *unnatural*, and, therefore not to be adopted without urgent necessity. \* \* 6. Though there is a general resemblance between the order of creation, as described in Genesis and by geology, yet when we look at the details of the creation of the organic world, as required by this hypothesis, we find *manifest discrepancy* instead of the *co-incidence* asserted by some distinguished advocates of these views." \* \*

"It appears, then, that the objections to this interpretation of the word *day* are more geological than exegetical. It has accordingly been mostly abandoned by men, who, from their knowledge *both* of *geology* and scriptural exegesis, were best qualified to judge." (Religion of Geology, pp. 65 and 66.)

It is also well known that Dr. Thos. Chalmers rejected this interpretation, but we have not his words by us. We will close this part of the argument, by several quotations from Dr. Kurtz. He says:

"The first and most significant inquiry should ever be, how does the record itself regard the days of which it speaks? If it contain reliable data, from which we cannot but infer that the days are to be understood as natural days, neither astronomy nor geology has a right to a single word in the whole matter. We believe most firmly, that this record, explained, merely on its own merits, and with the aid of other Scripture, and were there no outside, no foreign influences at work, the days could only be regarded as natural days."

"The days of creation were thus measured by the natural advent, and departure of the light of day, by the occurrence of evening and morning. This standard of measurement is given by the record itself, and must be applied alike to each of the six days of creation."

"The record itself, in the description of the first day, points out unequivocally the proper interpretation of the word *day*." (The Bible and Astronomy, pp. 119, 120, 121, 122.)

If we are unprepared to admit the geological interpretation of the word *day* in the Mosaic narrative, we have the consolation to know that we have men of no doubtful authority on our side. That scheme of interpretation which demands an interval of time of myriads of ages between the first and second verses of Genesis, will now be considered, inasmuch as that Mr. Miller's theory embraces both modes of interpretation.

We now turn our attention to the theory of interpretation which professes to find a chasm of almost interminable ages somewhere, in the introduction of the first chapter of Genesis. The advocates of this interpretation, suppose that Moses simply asserted,



in the most general terms, that "*in the beginning*" God created the heavens and the earth, which *beginning*, was countless periods of time antecedent to the creation of man and his congeners, recorded in the subsequent portion of the chapter. Here the wildest and most visionary geologist, has the most unbounded scope for the play of his unfettered imagination, and the most abundant time for the production of his phenomena, (both ideal and real) though only one grain of sand had been deposited in a thousand years.

1st. Our first argument against this plan of interpretation is based on the fact that the interpreters do not agree among themselves as to what place in the narrative the alleged chasm is to be found. Now this is conclusive against the existence of any such violent interruption of the narrative. Each one makes a break in the record where he thinks his theory will best tally. We cannot suppose that a writer, possessing such pre-eminent abilities as Moses, would not be able to make it apparent where so important a pause is to occur in his narrative, and we must therefore conclude that he designed his narrative to be what it appears to be, really consecutive.

2nd. We object to the theory, because it is based upon a violent perversion of the language of inspiration. Nothing in the narrative would lead us to suppose that countless ages had intervened between the beginning of creation, and the creation of light spoken of in the fifth verse, as a part of the work of the first day. "Bereshith," translated, "in the beginning," has the force of an ordinal number, and having a preposition prefixed without a noun, is used as a substantive, and denotes the commencement or beginning of a connected series of events, or order of arrangements, of which it stands at the head. The word occurs forty-three times in the Hebrew Bible. In seventeen places it is translated "beginning," for the most part denoting the commencement of a regular series of events, but in some few cases it has a metaphorical sense, as "the beginning of wisdom." In twenty-one places it is translated by the English word "first," as a regular ordinal, and in the remaining places it is translated chief, as "chief ointment." Thus the "*usus loquendi*" would inevitably connect the first and fifth verses together, and date the act of the first verse as the first act of the first day. The regular use, then, of this word, absolutely forbids the new geological interpretation, which is such a violation of the laws of language, as would, if once admitted, unsettle the meaning of words, and render all language uncertain.

3rd. In the common Hebrew Bible, the pause does not occur until after the fifth verse, which closes the first day's work, and shows that all the preceding verses are to be taken in connexion. Again, we find a rehearsal of the creation in the beginning of the second chapter, in the most emphatic terms, and utterly subver-

sive of the new interpretation. "Thus," says Moses, "the Heavens and the Earth were finished, and all the host of them." What heavens and earth does he mean? Why, undoubtedly the same heavens and the same earth of which he spoke when he said "in the beginning, God created the heavens and the earth." This language occurs immediately upon the close of the sixth day's work, and is followed by this declaration: And on the seventh day God ended his work which he had made," &c. These verses ought to be read in connexion with the first chapter, for the internal evidence shows a continuance of the same narrative, until the fourth verse of the second chapter, at which verse the style is altered, and a new name is introduced, by which to designate the Deity. Now this is a most important fact, bearing upon the subject, which has been entirely overlooked by those who have conducted the controversy. I do not see how we can come to any other conclusion, than that the creation of man was coeval with that of the heavens and the earth.

4th. An attentive consideration of many other passages, will force upon us the same conclusion. We again refer you to the fourth commandment, and remind you that it is there said that the heavens and the earth, and the sea, and all that in them is, were made in *six* days. The allusion to the first chapter of Genesis is too evident to be mistaken, and establishes beyond all reasonable controversy, that the first verse is immediately and directly connected, in point of time, with the transactions of the six day's work. In the one place it is declared that, "in the beginning God created the heavens and the earth," and then follows a detailed specification of that creation, in the work of six days, summed up in the first verse of the second chapter. "Thus the heavens and the earth *were finished*, and all the host of them," and in the other place it is said, in six days the Lord made heaven and earth, the sea, and all that in them is, and rested the seventh day. It seems to me that the language is as luminous as a sun-beam, and that the literal and common understanding of the words is not only true, but also the only possible interpretation.

5th. We argue against this method of interpretation in question, on the ground of the inextricable difficulties into which it has ensnared its christian advocates. Surely that must be a most dangerous, and unscriptural position, which forced the able and learned Dr. Chalmers to attempt the relief of his embarrassment by a suggestive denial that Moses teaches the creation of the world out of no pre-existing materials—which led Dr. Pye Smith to confine the creation described by Moses, to the southwest corner of Asia; and which involved Dr. Buckland in a labyrinth of contradictions. We cannot understand why these men have objected to our translation of the Hebrew word "Bara," rendered "created," in the first chapter of Genesis, if they really believe their own theory, "that

the creation there spoken of, occurred millions of years before the creation of man. Dr. Buckland, in the Bridgewater Treatise, has left the question of the creation of matter, in precisely such a position as would suit the notions of the pantheistic Sir Charles Lyell, President of the London Geological Society, and of the infidel author of the vestiges of creation." In the note furnished by Dr. Pusey, he denies that the word means creation out of nothing; but does not tell us that such is the doctrine of the Bible, nor where it is to be found. To say the least, he has left his remarks in an unfavorable position for the true doctrines of the scriptures.

Now the doctrine that "God created all things out of nothing" does not rest upon the sole meaning of the word, it is clearly written by the pen of Inspiration. The Apostle Paul refers to the Mosaic narrative and says, "Through faith we understand that the worlds were framed by the word of God, so that things which are seen were not made of things which do appear." Of this passage Dr. Bloomfield says, "the sense is that the world we see was not made out of apparent materials, from matter which had existed from eternity, but out of nothing, so that by His fiat the material creation was brought into existence, and formed into the things which we see." According to an Apostle, Moses does teach the creation of all things out of nothing, though Dr. Chalmers constructively denies this when he asks the question, "Does Moses ever say that when God created the heavens and the earth, he did more at the time alluded to than transform them out of pre-existing material?" Upon the authority of the Apostle we answer *he does*. Which authority is best, judge ye?

The criticism of Dr. Buckland, by which he attempts to remove the force of the arguments we deduce from the fourth commandment is a most singular specimen of logic. He says the word there used is "Asah," *made*, and not "bara," *created*, and as it by no means necessarily implies creation out of nothing, it may here be used to express a new arrangement of materials that existed before. But he had before proved by a quotation from Dr. Pusey, that, "making," when spoken of in reference to God, is equivalent to "creating." What then is the evidence against our argument? Just nothing at all. For, according to his own shewing, "making" in this sense is equivalent to "creating;" therefore, the fourth commandment, "Asah," *made*, has the force of "Bara" *created*, and our argument remains unimpaired. But his theory must be supported, even at the expense of his consistency.

As we reject this whole plan of reconciliation of "the two records," it is a reasonable demand that we state how we propose to avoid the difficulty of the alleged discrepancy. Our position is simply this, the *discrepancy* is only *alleged*, it has not been made out, and consequently we are under no necessity to disturb the

ordinary, natural interpretation of the Mosaic narrative. As far as we are able to comprehend the arguments of Drs. Buckland, J. P. Smith, Murphy and Hitchcock, of Messrs. McCulloch, De La Beche, Lyell, Miller, and several minor authors, the dogma of the antiquity of the earth is utterly unsustained, and where such men fail we utterly despair of ever seeing satisfactory proof of the momentous proposition. The geological speculation respecting the condition of our globe previous to the deposition of the fossiliferous strata has already been noticed as far as our limits will allow, and we flatter ourselves with the hope that our readers will conclude with us, that those postulates of the Geologists, not only can never rise above the authority of a supposition, but are also absurdly false. We now turn to the evidence claimed to be derived from the fossil strata, and here we must examine the agents *causing* or producing the deposits, or the conditions under which the various formations were made; the fossil criterion and the real extent of the formations.

I. The argument of the preadamites requires a state of things, in the agents operating, and the materials operated upon, entirely similar and identical with the present order, otherwise we rest upon *conjecture* or *speculation*, and not *fact*, for proof. If the same agents are operating, and upon the same materials, then we must have the same results, and thus the fact is deduced. The chemist says that a certain substance is the result of certain elements or agents, and he establishes the **FACT** by *destructive* analysis, or by *synthetical* reproduction. The geologist lays down his doctrine, his hypothesis, or speculation, but nature's laboratory will not bring forth the required *fact*. The moment any *formation* demands the introduction of a new agent or new element, for its reproduction, that moment we are borne from the stable foundation of *fact*, into the sea of speculation. The different resulting formations have imperiously demanded other agents and other conditions of things, to produce the prodigious changes; but then, to borrow an illustration from De La Beche, the geologist chains a mouse to a heavy piece of ordnance and requires him to drag it, but because the disparity between the strength of the mouse and the weight of the cannon is as one to a million of millions, he gives to the mouse a million of million of years to do the work, whereas if the necessary force had been attached, the resistance would have been overcome in minute. "The proof is incontrovertible that *mighty forces* have been in play under the direction of the Almighty, in producing the astonishing results which appear in the present state of the earth." The Bible narrative leads us to the conclusion, that special and extraordinary agents were called into operation by the Divine Being, for the production of those marvelous changes, and the same Inspired Book informs us why those unusual agents were called into action. They are the attestation of the Divine dis-

pleasure against the apostasy of man. "Cursed is the ground for *thy* sake," is the Lord's language to Adam. Who can limit the malediction of Jehovah, aroused by the rebellion of man, and filled with the irresistible energy of Omnipotence? Here is a cause operating that is fully competent to accomplish the most extensive changes in the condition of our globe; and we should remember that the object of that agency was to *sterilize* the earth, to lessen its primeval fertility. This was probably done by sweeping into the seas the light friable, and highly productive virgin soil of the new world.

We hold that the world on the morn of the first Sabbath day was in the state of the highest perfection when God pronounced it good, and the pure devotions of the sinless pair rose in sympathy with the song of "the morning stars," and in unison with the loud swelling chorus of "the sons of God." That *Paradise* was not the creation of a poet's imagination; it was the *glorious* and *perfect* work of God, and worthy of his infinite perfections. The sun has never since shone upon a more lovely and magnificent scene. How different is the representation of geology. According to the speculations of that science, the new world was in an imperfect condition, and has been ever since improving, so as to be fit for one race of animals after another, until man appears upon the stage, the first species above the baboon tribe, in the order of progressive development. The geologist needs *time*, because he places the earth under the simple and comparatively inert operation of second causes. But the Bible places the world from its first creation under the *special, particular*, and all-powerful providence of the living God, who plans, directs and energetically controls all of its changes, so that even a sparrow falls not to the ground without his notice. This Agent does not need the time of unnumbered ages, and the Bible makes the true, real and proper age of man to be contemporaneous with that of the world; and we think the argument fairly presented on this point, will satisfy every Christian mind that the common and obvious interpretation of the Bible is not only the true one, but also in more perfect accordance with the real phenomena of the world than all the speculations of this school of geology.

The actual preservation of a large portion of the fossils imperatively demand a *rapid* deposition of the various strata. If those organisms, whether vegetable or animal, had been left uncovered for any time, they would have been totally destroyed or greatly injured. They must have been immediately protected from the destructive agencies that now speedily decompose them. And it is reasonable to conclude that these fossil strata under the operation of sufficient agents were all formed since the creation of man.

But it is asked why then are there no remains of man found in those strata? which involves the next point the value of the

evidence of fossils, in favor of a high antiquity of the earth vastly beyond the age of the human race. On this point we remark first, that it is unreasonable to expect to find human fossils in any of the lower formations. How could human bones be buried in those rapidly forming strata, when according to the Mosaic narrative nearly one thousand years elapsed between the creation and death of Adam. Thus those strata had a thousand years to form under circumstances which render it impossible for such fossils to be deposited. We think that the time was sufficient for the formations.

In the second place on this mere negative evidence, we remark that we know nothing about the mode of sepulture practised by the Antediluvians. They may have buried as we do, or have burned the dead as did some of the ancients; and in either case, it is not reasonable to demand their existence in the mud and marsh of seas, and lakes. We cannot suppose the race so devoid of feeling as to cast out their dead upon the open fields, horridly to putrify upon the ground in their sight, and their remains if ever found, will be found in what was the then primitive soil.

Again, Dr. Hitchcock supposes that the phenomena warrant the belief that the continents which once stood above the waters now occupy the beds of our present oceans; under which supposition human fossils should be sought in those beds rather than on the dry land.

It is undoubtedly true, that the lower fossils embrace only the inhabitants of seas, lakes, and rivers, or of such animals as obtained their sustenance upon the margin of water courses. The mere *absence* of other animal remains under such circumstances, is no satisfactory, conclusive proof of the non-existence of land animals, because their habits did not expose them to destruction in water, mud or marsh. The monstrous and unscientific inductions of this class of geologists, their immense and widely sweeping generalizations upon such *merely and entirely negative* evidence, have even alarmed one of their number, whose own speculations bear no impress of the sobriety of humble inquiry after truth. Writing of some recent disclosures, proving the existence of air breathing animals before the formation of the "coal measures," Sir Charles Lyell remarks, "Never, certainly, in the history of science, were discoveries made, more calculated to put us on our guard for the future, against *hasty* generalizations founded on *mere negative evidence*. Geologists have been in the *habit of taking for granted* that in epochs anterior to the coal, there were no birds, nor air breathing quadrupeds in existence; and it seems still *scarcely possible* to dispel the *hypothesis*, that the *first creation* of a particular class of beings *coincides* with our *first knowledge* of it in a *fossil state*, or the kindred dogma, that the first appearance of life on the globe, agrees chronologically with the

*present limits* of our *insight* into the *first creation* of living beings, as deduced from organic remains. These limits have shifted even in our own times more than once, or have been greatly expanded without dissipating the *delusion*, so *intense* is the *curiosity* of man to trace the present system of things back to a beginning. *Rather than be disappointed, or entertain a doubt* of his power to discern the shores of the vast ocean of past time, into which his glances are penetrating like the telescope, into the region of the remoter nebulae, he cannot refrain from pleasing *his imagination* with the idea, that some *fogbanks*, resting on the bosom of the deep, are in reality the *firm land* for which his aching vision is on the stretch." (2nd Visit to the United States, vol. 2, p. 235.)

This is in truth, a virtual yielding of the whole proposition for which we are now contending, viz: that the *mere negative* evidence of the *absence* of human fossil remains, cannot disprove the position that man existed "from the beginning of the creation which God created." We wish the reader to turn back and notice the words we have italicized in the quotation from Mr. Lyell, and remember that he belongs to that school of geology to which we are opposed, and that he is writing of his own coadjutors. He says that their generalizations are *hasty*, founded on *mere negative evidence*, that they have been in the *habit* of taking for granted things not proved; that the clearest proof can scarcely *dispel* their *hypothesis*, or dissipate their *delusions*, that *rather than be disappointed, or entertain a doubt*, they do not refrain from pleasing their *imaginings* with *fogbanks*, which they mistake for *firm land*. Such is the description of these geologists, given by one of their own number, and yet they demand the right to *lead*; denounce all who dissent from their *imaginings*, and even venture to alter and amend the reading of the Divine Oracles to harmonize with their dogmas. Such an invincible inclination to *see* and *believe* according to an adopted hypothesis, totally disqualifies them for the work of *investigation*; such reluctance to *entertain a doubt*, must always produce self-conceit, pride of opinion, and arrogance; such power to *please the imagination* can easily be deceived by "*fogbanks*," if it has not power sufficiently *creative* to supply all defect in phenomena.

We now consider another evidence offered to prove the high antiquity of the earth, viz: the extent of the fossiliferous strata. How little importance is to be attached to this testimony we shall endeavor to show. The claim of its value rests mainly upon the assertion that these fossiliferous strata universally maintain a certain order of superposition, and consequently the true age of the world may be found by piling these several formations upon each other. We meet the argument by proving that the order of suc-

cession which it is said belongs to these formations can no where be found *in fact*. Dr. Buckland, who makes much pretensions to knowledge on this subject, and claims to have studied the science *in the field, and in curious caverns, the caves of hyenas and the dens of bears, as well as in public museums and university cabinets*, has given, in the second volume of his Bridgewater Treatise, a map to illustrate the various formations, and their relations to each other. This map he calls an "IDEAL SECTION of a portion of the earth's crust, "an imaginary section constructed to express," &c. I confess that this language of the great geologist appears to me to be contradictory if not absurd. How can "an *ideal, imaginary* section" be "a *portion of the earth's crust*." Still the words show, that with all the extensive search he could not find any *such* section *really, actually* existing in any portion of the world. Such a regular, consecutive succession of formations has not yet been found; it remains a *desideratum* of this school of geology, and is destined *so* to remain. Dr. Buckland then has virtually given his authority against the doctrine of successive superposition, though he almost invariably assumes it as true. That *assumption* is the main pillar upon which the geological edifice rests; remove that and the superstructure tumbles to the ground. Upon such shadows geologists construct their theories, and venture to assail the common interpretation of the Scriptures. We say that the assault is upon the interpretation, yet we fear that some would sooner give up the BIBLE, than relinquish their *fond theories*.

We bring other authority still from the ranks of the opposition to bear upon the discussion, as such testimony must always have great weight. McCulloch in his chapter "On the particular order of succession among Rocks," says, "It has been so often and so confidently said that a definite and constant order of succession existed among ALL ROCKS, that it had passed into an *axiom* in geology. Time has not dissipated this *phantom*, though it is gradually fading from among the *realities* in which the science abounds. As there are few among the *dogmas* of geologists which have more contributed to *improve the progress of investigation*, it will be useful to examine the grounds on which it still holds its place. The first step in forming a firm foundation is to remove the *tottering materials* of the old one." Vol. 1st, p. 268.

"Every rock, from granite upwards, ought, therefore, to be found in every place unless that branch of the general theory is abandoned, which denies an extensive waste and removal of the superficial rocks. Thus this *hypothesis* is at *variance* with *facts* at the very outset; since, whatever identical or analogous rocks may exist extensively in many parts of the world, no *one* is universally continuous. \* \* \* Hence, wherever any series of similar strata exists in two places, they should be found in the



same order, and no interior stratum should in any place be absent. That this is not the *fact*, will be fully shown in the subsequent remarks on the successions of rocks; and thus the doctrine in question is proved to be in every way unfounded." p. 269. "It is unnecessary to commence these remarks by detailing the *imaginary order* of succession formerly received." p. 270. This "*imaginary order*" to which Dr. McCulloch refers may remind the reader of Dr. Buckland's "ideal section." *Imagination* has indeed had a large share in the construction of geological theories.

Dr. McCulloch has given many examples of great irregularities in the succession of these formations. In fact the irregularities are so numerous, that it is wonderful that any sane man should ever have attempted to establish any order of succession. For the order of Aberdeenshire is not the order of Arran; that of Cornwall is not that of Perthshire. It matters not what section we take, we shall find some neighboring section essentially different. Our author not only proves the *omission* of many strata, but shows that the order is also inverted. He thus writes, "of all these groups, I must now remark, that although any one may be *deficient*, there is no instance, as it is said, of the order being inverted; but it must be *plain* that where an *arrangement* approaches so much to an *artificial* order, it would *not* be very easy to prove an inversion." p. 278.

"There are but three distinct and principal rocks in the secondary series, namely, sand stone, shale, and lime stone; although a variety of circumstances, arising from minute changes of character, relative position, or imbedded fossil bodies, give rise, in them, to many different, and often constant varieties. If these were to be considered merely according to their *fundamental distinctions*, the result would be, that they are *repeated* in every possible kind of disorder, and in *endless alterations*. But to give the subject every advantage, as well as those to which it is really entitled, let all the distinctions, that have been made, be granted, as far at least as these are *constant*, and as far as they are not *merely dependent on place*; in which latter case, it is plain that the whole question would be resolved into a *petitio principii*." p. 273.

"In the case of *individual* strata in a *group*, whether in the primary or the secondary, or in the coal series, as well as in gneiss and quartz rock, an *inversion* is as common as an omission, and to what degree that really does extend among the primary, we can not, for the reasons just given, as yet decide. But in the secondary it is not yet known for example, that chalk does, and it is not probable, that it will, occur beneath the red marl; though from the deficiency of the latter, and of all the intermediate strata, it might be in contact with the coal series, or even with granite. Still, however, we must not establish this as a *canon* in the science; be-

cause, *a priori*, these appears no chemical or physical reason why it ought to be so. To lay down such laws, is to throw obstructions in the way of our own progress, to *fabricate* a science instead of deducing one. To do less, by making rules which apply *only* to the cases whence they are derived, is to do nothing; it is to cheat ourselves with the *shadow* of a science." p. 279 and 280.

These remarks, of this author, do certainly give a sad representation of the manner in which Geologists do reason, not upon *facts*, but upon the "*phantoms*" of a diseased vision, upon the "*dogmas*" of an "*artificial*" system. They do not listen to the instructions of *natural* phenomena, but attempt to say what *ought to be*, rather than what *is*. Some, in order to avoid the conclusive reasoning of Dr. McCulloch upon this point, denominate the formations that are so irregular by the term "subordinate." "Thus," says Dr. McCulloch, "*fidelity* and *logic* are here alike made to yield to an *imaginary* convenience." p. 282.

Having given a minute description of the various formations of England, he further remarks :

"It must now be observed that the series of secondary strata in a complete form, as it is *thought*, by those who have *investigated* this subject *most minutely*, is *far* from exhibiting this succession in any *one* place. It is not merely that the *whole series* terminates at some point beneath the uppermost or London clay, as for example at the coal series, or the red-marl, or the Lias, but numerous members are in many places wanting. This succession must therefore be considered as in some sense as an artificial one; constructed according to some *presumed* principles in the science, and a picture of what nature *might have given*, rather than *what she has actually produced*." p. 293.

Such is the testimony of Dr. McCulloch, a witness placed upon the stand by Mr. Miller and his co-adjutors. They have underwritten for him as possessing a mind of rare endowments, consequently they cannot in law, question his evidence, however adverse that evidence may be to their cause. We think we have conclusively proved that all these formations do not exist in any one single locality in a regular and entire order of superposition; consequently geologists have *no right to assume* it, and upon it claim the knowledge to a great depth of the crust of the earth. But it is replied, that certain criteria exist, by which the ages of these formations may be determined, and thus the right obtained to give the order of superposition. There are two of these criteria; 1st. the mineral contents, and 2nd. the fossils of these formations. If they place any confidence in any other mode of testing these strata, we have not as yet heard of it. We shall then, at once examine the criteria named, and trust to be able to show in the most triumphant manner, that they can establish nothing in favor of the argument of Geologists. We take up the criterion of mineral

contents, that is that the various formations uniformly manifest certain mineral characters, and are thus unequivocally identified. McCulloch, in speaking of this minerological classification, says, "But to render such an arrangement unexceptionable, the Geological order of Nature should itself be *constant*, which *it is not*; while the minerological classification is not only imperfect, even in its own internal mechanism, but at frequent variance with the Geological one, as I have fully shown. It is therefore *useless* for its own declared objects, and *pernicious* when adopted for Geological purposes." Vol. 2. p. 67. Dr. Buckland says, "Indeed the mineral character of the inorganic matter of which the earth's strata are composed, presents so similar a succession of beds of sandstone, clay and limestone, repeated irregularly, not only in different, but even in the same formations, that similarity of mineral composition is but an *uncertain* proof of the contemporaneous origin while the surest tests of the identity of time is afforded by the correspondence of the organic remains; in fact without these, the proofs of the lapse of such long periods as Geology shows to have been occupied in the formation of the strata of the earth, would have been comparatively few, and indecisive. Bridgewater Treat. vol. 1. p. 93. Thus, this celebrated author throws the entire stress of his belief, in the high antiquity of the earth, upon the second of the two criteria we have mentioned, and has virtually abandoned any dependence upon the evidence of mineral character; we shall subsequently show, that the criterion upon which he so confidently depends, is equally "indecisive," and worthless. We quote now a remark from Sir Charles Lyell, and we do so, because he is the great *Apollo* of this school of Geology. "If," says he, "any Geologist retains to this day the doctrine once popular, that at remote periods marine deposits of *contemporaneous* origin were formed *everywhere* throughout the globe, with the *same mineral* characters, he would do well to compare the succession of rocks on the Alabama River, with those of the same date in England." 2nd. visit, &c. These authorities are certainly enough to set aside the first criterion we have mentioned; we now turn to the second.

Upon this subject we remark, that the present mode in which organic beings are distributed upon the face of the earth, and in the waters of the ocean, present at least a violent presumption against this doctrine. In fact the presumption is so strong as to throw the "onus probandi," upon the shoulders of our opponents, and requires them not to guess and surmise, but to prove by the most satisfactory evidence, that the *present* is not the *ancient* order of distribution. They must prove not only that there were no *zones* of climate, but also that the same torrid temperature existed at the poles that now exists at the equator. We feel confident that such positions cannot be proved. It is not enough to find the fossil remains of animals of equatorial regions in high latitudes, for they

may have been transported to those regions by some great overthrow on our planet; that they were thus transported cannot be disproved.

Upon the value of fossils as a test for the identification of on-temporaneous formations, M. De LaBeche thus remarks. "It has even been supposed that in the divisions termed formations, there are found certain species of shells, &c., characteristic of each. Of this supposition, extended observation can alone prove the truth; but it must not be supposed as some do now that in any accumulation of ten or twenty beds characterized by the presence of distinct fossils in a given district, the organic remains will be found equally characteristic of the same part of the series at remote distances. To suppose that all the formations into which it has been thought advisable to divide European rocks, can be detected by the same organic remains, in the various distinct points of the globe, is to *assume* that the *vegetables* and *animals distributed over the surface of the world, were always the same, at the same time, and that they were all destroyed at the same moment* to be replaced by a new creation, differing specifically, if not generically from that which immediately preceded it. From this theory it would also be inferred that the whole surface of the world possessed an uniform temperature at the same given epoch." (Geological manual p. 33.) The opinion of this renowned Geologist, respecting the value of the evidence, to be drawn in favor of the doctrine of superposition of the fossil remains, is easily obtained from the above quotation, while we observe that he has a strong yearning towards the criterion, but dare not trust to it, because he doubts its truth. The Edinburg Encyclopedia contains an article on "organic remains," in which we find a learned, able, and conclusive argument against the evidence to be derived from fossils in favor of contemporaneous formation of strata. The whole argument is too long for quotation, and to quote less, would do injustice to it, we therefore refer our readers to the article itself, and content ourselves with giving the conclusion at which the author arrives. "It seems therefore quite unnecessary to pursue this argument any further, since it must be sufficiently plain, that the evidence in question is worthless or worse." The argument of this writer, if candidly considered, shakes to the very foundation the doctrine under discussion, and in connexion with Dr. Buckland's remarks about the mineral characters, sets aside the criteria which Geologists have adopted to ascertain the age of the several formations. It follows necessarily, that the relative ages of different strata can only be determined by being actually in place, one above the other, and we have already seen, that comparatively but few of the strata are thus super-imposed, and that there is no order that is invariable. Even where there is a succession of strata in any one place, we are liable to be much mistaken in our estimate of the perpendicular

depth of the whole formation, for the strata are liable to "thin out," as geologists term it. Perpendicular sections are unquestionably the only sections upon which reliance can be placed, to ascertain the true depth of these formations. Hence, the secondary formations among mountains are not to be calculated by the height of the mountains, especially if the elevation has been the result of "upheaval," in which case, the real thickness must be far less than the height of the mountain. We repeat our firm conviction, notwithstanding the confident pretensions of some, that no man has any reliable knowledge of the crust of the earth, to the depth of the four thousandth part of the semidiameter of the globe, and we regard all such pretensions as mischievous conceits.

We shall now proceed a step further in our argument, and attempt to show that sufficient time has elapsed since the acknowledged time of man's appearance upon earth, for the production of all these formations which are made the evidence of the doctrine in dispute. And if we succeed in making out the point, the whole question must in all fairness be yielded by our opponents, for they simply claim time upon the ground, that these phenomena could not be produced except in the lapse of interminable ages. We shall now take the geologist upon his own grounds, and reason with him upon his own *facts*, and we will see how the thing will result. The time of man has been enough for his phenomena according to his own showing. The data of our first argument will be extracted from D. Christy's 18th letter on geology. He has taken one species of fossil shell fish, while there are three thousand. He calculates the increase at five for each, each year for two thousand years, while the increase is greater, perhaps more than twice as great. He has taken one whose shell contains only the tenth of a cubic inch of solid matter, while many far exceed that proportion, and the quantity thus produced surprised the professor himself. The question is this, "suppose one female to bear five young for five years, and then cease bearing, each one of the progeny bearing according to the same law for two thousand years, what will be their number? The answer given by a Prof. of Mathematics of a respectable college, makes the quantity of solid matter to be enough to make as many billions of worlds like this, as would be expressed by 1,370 places of figures. If any man doubts the truth or correctness of the calculation, let him ask an answer from some able mathematician, and we will have a confirmation of the answer. Now, with such a scientific fact before us, the wonder is, not that we have so *much*, but that we have so *little* of these secondary formations. Instead of the time being *too short*, it is much *too long*; and it becomes geologists to show why three thousand species have not produced a far greater quantity of depository matter than they have as yet found. So

much for the contribution of shells to the secondary foundations. We shall in the next place give the sediment from rivers.

Numerous streams flow from our high lands into our lakes and seas; some of these are occasionally, some periodically, and others always, charged with sedimentary matter, all however bearing a portion of the dry land into the lakes, seas, or oceans into which they empty. Calculations have been made to ascertain the quantity of matter carried down by some of the rivers. Mr. Lyell gives us the result of certain experiments upon the waters of the Ganges, in which he sets down the *animal* deposit of solid matter to be 6,368,077,440 cubic feet; he thinks that the Burrumpooter conveys an equal quantity, and that the Yellow River in China, daily conveys 48,000,000 cubic feet of deposit, or 17,420,000,000 annually. To give us some idea of the quantity of matter carried down by the Ganges, Mr. Lyell says that 2,000 ships of 1,400 tons burden would be daily loaded with the daily deposit, and the yearly sediment would cover about 660 acres of land, 500 feet high. When we remember the numerous rivers which intersect the earth, it is but reasonable to conclude that 100 times as much matter is carried down by the whole of them; we shall then have every year about 33,000 acres covered 100 feet high, or 660,000 acres covered 50 feet high, which in 2,000 years would cover an area of 1,320,000,000 of acres; a result truly astonishing, and perhaps equal in bulk to the whole secondary series of strata. And we shall find equal cause for surprise if we turn our attention to the work of some of the rivers of Europe. So rapidly does the Rhone form land at its mouth, that the tower of Tignaux, erected on the shore so late as 1737, is already more than a mile from it. The ancient town of Adria, was a seaport in the time of Augustus, but it is now twenty miles inland, in consequence of the deposits of the Po and the Adige. From these particular results, we at once see that our general calculation is not too large. We must not forget that the work of denudation and transportation must have been more active during the first two thousand years of the world, than during any subsequent period of time, in consequence of the first condition of our globe, and because also, that natural agents are, upon philosophical principles, more active in the beginning, than in the subsequent progress of their operation.

From the positions which we have taken, and which we think we have sustained by scientific facts, and arguments based upon the authority of the opposing class of authors, it evidently appears, that the *real* facts and phenomena connected with the earth, do not require such almost infinite lapse of years for their development, as has been contended for by some geologists.

We believe that the Bible and the *REAL* geology are in the most perfect harmony. It is only the "*ideal*," the "*imaginary*"

geology, its *rash, hasty* generalizations—its *phantoms* and forced conclusions, its speculations and hypotheses, that oppose the teachings of Inspiration. That the dogmas of this speculative geology do conflict with the scriptures is admitted by all parties. This collision confirms the Infidel in his infidelity. The friends of Revelation have attempted to reconcile the discrepancy, but have disagreed about the mode of conciliation. One party have attempted to remove the discrepancy by giving a new interpretation to the Scriptures, but they are sadly at variance among themselves, and their very manner of handling the *inspired record*, has excited the fears of many friends of religion. The other party adheres to the common interpretation of the Bible as the true one, and reconcile scripture and geology by lopping off the *excrescences* of the science. This we have attempted in the foregoing pages. We deny none of the *facts* of geology. We deny the conclusions of geologists resting upon mere speculations, theories and hypotheses, or on arguments sophistically drawn from what is only at best *negative evidence*, when no necessity so demanded the contrary, that the non-appearance involved absolutely the non-existence; and especially we deny that geology can in any way give us the chronology of the creation and history of the world. This is no part of her domain. She has no prerogative here, consequently we resist her usurpations, and would confine her labors to her own proper sphere.

The real questions in debate are simply these: Mr. Miller contends that geology furnishes indubitable evidence that this world has existed myriads of ages previous to the existence of man—we deny that any such evidence is logically or rationally derived from the real phenomena of nature. Mr. Miller contends that the doctrine of the high antiquity of the earth can be reconciled with the teachings of the Bible, but rejects the schemes of reconciliation proposed by Dr. Chalmers and Dr. J. Pye Smith, because they run counter to the evidence of geology, and we have endeavored to show that his own scheme of one chasm of vast duration between the primary and secondary formations, of six subsequent chasms or periods of day followed by periods of night is equally opposed to geology and the Bible. We have shown that what he relied upon *as facts* are not *all facts*, some are only "ideal;" that the evidence furnished is not *indubitable*, for different observers have come to opposite conclusions; that there is a wonderful want of uniformity in the phenomena, so much so, as to render null and void all the general conclusions of which they have been made the basis; that this doctrine about the age of the world, is not reached by any of the *facts* in the science, as we have demonstrated, by calculations that may be *tested*, that the human period has been sufficiently long for the production of all the real phenomena, after you have deducted all the errors, that

have been grafted upon the science, arbitrary and unnatural, and all the groundless and unphilosophical assumptions; and that the doctrine is not demanded by any exigency of geology, does not forward scientific investigation, and is of no importance to man. Thus a violent presumption is raised against the doctrine, which its advocates are bound to remove at the very threshold of the discussion; which they do not meet with open and manly argument, but only rail, whine or declaim, against those who will not consent to take fogbanks for firm land.

We had intended to devote a portion of our article to a consideration of Mr. Miller's theory in relation to the Deluge, but we have already exceeded the space we allotted to ourselves, and must only make a few passing remarks. Years ago we had attentively studied the theory propounded by Dr. J. Pye Smith, in relation to the Noachian flood, and supposed we had discovered insuperable objections to it; the theory of Mr. Miller is essentially the same, and we had hoped that he would have given, at least one scientific fact to disprove its universality; or at least to give testimony to prove that such *marks* are left upon the region of his local flood, as are found no where else, and which would prove that the waters could not have passed beyond the barriers he has proposed, for their restraint. He elsewhere remonstrates against an "expense of miracles," and yet his scheme involves as much miraculous agency as the universal Deluge would require, unless, "*mayhap*" he intends to teach that the Divine Being had no direct agency in it, that it was solely the result of second causes, fortuitously acting, that it was not punitive, and that Noah was saved by accident rather than by special Providence. His objections to the size of the Ark, to the numbers of beasts and birds, to the breaking up of centres of distributions, and their re-establishment savors more of the infidel flippancy of Nott and Gliddon than of the sober reasonings of a christian man. If the flood was designed by the Lord to be partial, where was the necessity for the Ark? Why not have allowed Noah to go out from the land devoted to destruction into the adjoining regions of safety? Was it not a miracle which prevented the escape of a single member of the human race outside of the Ark? Especially as some would in all probability have been very near the southern borders? Did the descendants of Cain reside in the same country with the other descendants of Adam? Now we say that not one geological fact proves Mr. Miller's theory, which is nothing more nor less than an attempt on the part of these geologists to escape the argument which a universal deluge would furnish against their chronological geology. But we cannot now discuss the question, and leave it for other hands, or for our own at another time, if our life is spared.

The eloquent language of Dr. Kurtz may be made an appropri-



ate close of our article by substituting geology for astronomy :  
“Such, then, has been the position taken by astronomy, or rather the parasite speculation which has attached itself thereto, to feed upon it, and convert all its wholesome lessons into hostile attacks against the christian faith ; and that noble science which above all others should be an unceasing song of praise to the glory of the Creator, has been degraded to the purpose of casting into the dust, not only the precious jewel of Divine love, and condescension, his incarnation in the person of Christ, but also, the majestic crown of His greatness and glory, His creative dignity.”  
(The Bible and Astronomy, p. 57.)