

For the Pearl.

## GEOLOGY AND REVELATION.

No. I.

DR. PYE SMITH'S LECTURES.

The general subject of geology is occupying an increasing share of public attention. The attempt to put an extinguisher upon geological research, or to denounce the doctrine of the immense antiquity of the material world as subversive of revelation, is now too late, and may be placed in the same category with the alarms felt on the first broaching of the Copernican theory of the Solar system.

Whether the doctrine referred to may be regarded as an acknowledged truth, or be absolutely denied, or admitted to rest on the strongest presumptive evidence, the testimony of Scripture, which stands on its own basis, is unaffected by it. We do not mean to affirm, that two contradictory representations can be both true,—that the God of nature and the God of the Bible can be at variance; but we mean to say, that, if an example be wanted of rash and daring dogmatism asserting a supremacy over revealed religion, it will not be more certainly found in the case of the man who displaces it, to make room for a favourite theory in physical science, than in the one who will not suffer that revelation to speak but through his lips, and assumes Scripture truth and his interpretation thereof to be one and the same thing.

It is true, that individual interpretation, whether original or adopted, must be the guide to individual opinion on all subjects affected by it; and it is equally true, that Scripture statements are often so obvious as to admit of but one opinion of their meaning; but if one portion of it is more obscure than another, and more calculated to suggest to a thinking mind the necessity of waiting the aid of future developments before its meaning can be fully comprehended, it is that part which briefly speaks of the "beginning" of all things. And while we have an example in the writings of Moses of a space of 1400 years, from the birth of Enos to the 500th year of Noah, being passed over with little more than a genealogical line commencing with Adam, and a further instance of 400 years dismissed in the 7th verse of Exodus, we need not be surprised at the brevity which marks the record of any portion of existence not immediately connected with man, or the direct relations of his being.

We have been much pleased to find that Dr. Pye Smith has lately been delivering in London, a course of lectures, on "Revelation and Geology, or the relations between the Holy Scriptures and some parts of Geological science;" a subject with which the venerable lecturer is peculiarly competent to deal. The lectures have been delivered to immense audiences, and have excited much interest. The following outline of the 3rd and 4th lectures we copy from the *London Christian Advocate* of March 25th, 1839. It gives a different view of the deluge of the Scriptures from that which theologians have generally entertained. The fifth lecture, which treats at large of the great antiquity of the globe, we shall present our readers with a notice of, in our next number.

Our readers are already aware that Dr. Pye Smith is delivering a course of lectures on the bearing of Geological Research upon Divine Revelation. The first lecture was delivered on Tuesday the 12th, and the second on Thursday the 14th instant. The former was entirely of a preliminary description, and, though the latter was a detail of interesting facts, yet they were not easily susceptible of being presented in the concise form to which a weekly newspaper is inevitably confined. We therefore commence our sketch of this very important course of lectures with the third. The literary reputation of Dr. Smith, conjoined with his singular transparency of character and deep and unadulterated piety, has secured for this course of the Congregational Lectures an unprecedented attendance, which has been sustained with increasing interest.

The third lecture was delivered on Tuesday the 19th instant. The Rev. Doctor, having said up a short prayer, and read Rom. xi. 33, as the motto of his lecture, adverted to certain glosses on the sacred volume, which were directly opposed to the facts mentioned in the preceding lecture; and, while he craved the candid and patient attention of his audience, he especially impressed upon their notice the obvious distinction between Scripture testimony and human interpretation of the same.

I. The Rev. gentleman then brought forward many facts illustrative of the great antiquity of the material world, and of animal and vegetable life, as opposed to the inference drawn from the statements made in the first and the commencement of the second chapter of Genesis (which ought to have been included in one chapter), also in Ex. xx. 11.

He presented evidences of the vast periods of time which must have elapsed between the several changes in animal and vegetable existence, indicated by the peculiar character of stratified deposits. He called the attention of his auditors to some facts in the departments of chemistry, natural history, and mechanical forces, of which many well-educated and sensible people could not possibly be cognizant but through a reliance upon the testimony of men whose profound knowledge of various branches of science, united to unblemished integrity of character, and tested by the severest scrutiny, both of a friendly and adverse nature, entitled them to the credit and honour which no one dreamed of withholding from NEWTON, LA PLACE, or HERSCHEL. Among these, was the fact sufficiently known to every chemist and physiologist, that the atmosphere of the earth must at one period have been essentially

different from what it had been since the creation of man and contemporary animals. Before the deposition of the early secondary strata, the mean temperature must have been equal to the greatest heat of which tropical climates are now the subject, which was incompatible with the existence of any animals breathing through lungs. An extract from Mr. BABBAGE'S Bridgewater Treatise was then read, showing the necessary antiquity of a large portion of the gravel and plastic clay of the tertiary strata, and confirmed by observations made upon the sandstone at Arthur's Seat near Edinburgh.

II. The Rev. lecturer then opposed a certain popular notion of chaos founded upon a vague interpretation of the sacred writings, which affirm the earth to be without form, and void, etc., viz., that it consisted of a heterogeneous medley of water and muddy earth, in a condition of darkness prior to the creation of man.

In opposing this notion, the Rev. Doctor not only referred to certain facts in a former lecture, but read a passage from Professor PHILLIPS, of King's College, London, of whom he spoke in terms of the highest eulogy. A reference was made in this extract to animals, (which, with the exception of some coal formations, constituted the first deposits.) An analogy was discoverable between those of earlier formations and the present race, but it was only the analogy of genus, not of species; nor could it be imagined that the continuation of these genera, under the present condition of the earth, was the result of procreation; their generic resemblance, however, proved their origin from the same wisdom and power.

III. Reference was then made to the supposed creation of the sun and other heavenly bodies, on the fourth day, and of light, as a mass of amorphous matter which, in its condensed state, formed the sun. The necessity, however, of Solar heat for vegetable production on the preceding day, rendered such an arrangement impossible in his opinion, without resorting to the intervention of a miraculous agency, which he strongly denounced as a gratuitous severance of a knot which those who suggested it were unable to untie. The Rev. gentleman most strenuously advocated the doctrine of a Divine plan, carried into effect through natural agency, as the only ground on which we can rest in our investigations—that to assert, or even suppose, a miracle where none was recorded, was a presumptuous attempt at wielding an Omnipotent power, or holding the prerogatives of the ALMIGHTY at our disposal. The principle obviously developed, as the great law of the universe, was gravitation, and even miracles themselves were not to be regarded as violating this rule, but as provided for in harmony with it, and, as far as we know, only used to attest the validity of Divine revelation.

IV. The prevailing impression of the creation, not of man only, but of animal and vegetable life, having taken place in one locality, and dispersed themselves to the various parts, was opposed, on the ground of varieties in climate and adaptation, as unfavourable to their temporary residence in one place, and as supplying no obvious means for their transfer to distant regions.

V. The notion of animal decay and death having been the result of the fall of man, was then adverted to as apparently countenanced by the statement, that "by one man sin entered into the world and death by sin." Without attempting at present to explain this, or any other portion of Divine writ, a reference to established facts showed a necessary relation between life and death, and the dependence of the former on the latter, through all the successive operations of nature; and moreover, that a destruction of life on a large scale was absolutely inevitable in the supply of the body with food, even where the diet was apparently wholly of a vegetable character.

VI. A topic now engaged the attention of the Rev. lecturer, to which considerations of the greatest importance were attached, viz., that of the Noachian deluge. He, however, did little more than read the Scripture account of that awful event, and comment on the universality of tradition respecting it, and concluded with declaring the anxiety with which he looked forward to the resumption of a subject possessed of so many important bearings.

During the lecture, frequent allusions were made to the characters and writings of eminent geologists and other scientific individuals, in which the Rev. gentleman indulged in a feeling of generous enthusiasm, as characteristic of himself as it was gratifying to his hearers.

The Fourth Lecture was delivered on Thursday the 21st instant. After an introductory prayer, Dr. SMITH resumed the subject with which he concluded the last lecture; and, after again adverting to the traditional testimony of all nations to the event of the deluge, he remarked, that just views had but recently been entertained of its physical character. Even when the Reformation had succeeded the dark ages, the minds of great and good men were too much occupied with passing events to find sermons in stones or science in ravines. The present was a time peculiarly fitted for the study of this subject. Geology could not take its place as a science till the exact sciences were brought to the perfection at which they had now arrived. Formerly every bene, every layer of sand, gravel, etc., was called an antediluvian relic, without any examination of their character or investigation of their relations.

It was scarcely a matter of surprise that this determination not

to examine into physical causes, should produce in many minds a directly opposite tendency. Thus many went to the other extreme, and asserted that no traces of such a deluge were discernible: "The truth, in my judgment," said the Rev. Doctor, "lies between these extremes." The earth had evidently been subjected to a revolution not more than five or six thousand years back. Preceding ones had buried legions in the waters, but none of the last had deposited remains beneath the Tertiary strata. The diluvium or alluvium which covers so large a portion of the immediate surface of the earth, was regarded as one formation, and the flood was the supposed cause of all the drift, gravel, and collections of bones. If a cavern were found with groups of animal remains in it, the flood had driven them there. But it was necessary to the discovery of truth, to classify and compare organic remains as well as the places they occupied; that the cause of every variety in organic structure and the formation of rocks, should be traced out and demonstrated. A copious reference was then made to the structure and position of boulders, and their relation to the native rocks from which they had been broken off, from which they occupied distances varying from one to many hundreds of miles. The abrasion also, which both had undergone in the entire rounding of their edges, and in the formation of deep and long grooves, indicated not only the immensely protracted action of currents, and that in one particular direction, but the submersion of ages, and subjection to action and re-action.

The attention of the meeting was then directed to the Silurian formations described by Mr. MURCHISON, and so called by him, in allusion to the *Silures*, ancient Britons who inhabited the country where these strata are most distinctly developed, comprising the present districts of South Wales, part of North Wales, with part or all of the counties of Salop, Hereford, Worcester, and Monmouth, and constituting the most ancient sedimentary rocks, exhibiting also great numbers of distinct formations, and entirely differing in their character from Lancashire and the districts south and east of it.

From the indications already alluded to, several conclusions were drawn; viz., That the most ancient deposits had been raised by volcanic action above the sea, whose bed they formerly occupied, evincing among other proofs which he adduced, that they were more ancient than the Noachian deluge; that they were not deposited by any transient deluge covering land that had before been dry, since the parts east and south of the Silurian deposits had been inundated at different and distant periods.

Allusion was made to the Alps, which the Rev. Doctor described as newer mountain formations than those of Wales, and as having by volcanic action been raised from the level of a vast marshy plain. Also to partial deluges, the traces of which were observable in the neighbourhood of the Alps, Sweden, and Lapland.

The Rev. gentleman then entered upon a question involving most important and serious considerations, the weight of which evidently pressed very strongly upon his mind. It was obviously painful to him to encounter long-established opinions, which had been in the minds of great and excellent men identified with the statements of inspired writ; and, if those which he presented appeared to contradict those statements, he protested against such a construction, while he expressed a decided opinion that the flood of NOAH was not universal, nor resulted in the destruction of all animal life. He was aware that this would seem to some a perilous position to place himself in; but his regard to truth prevailed over every other consideration. Nor ought it to be considered as an attempt to sacrifice the testimony of inspiration to the speculation of modern science; for the testimony of Bishop STILLINGFLEET and MATTHEW POOLE to the same effect sufficiently evinced that such an interpretation of scripture was not made at the demand of modern geologists, but arose from a very different source.

Connecting the question with physical causes, it appeared to him, that, unless we resorted to miraculous agency (against the gratuitous appropriation of which he protested, as both unphilosophical and presumptuous), it was impossible to imagine the Ark capable of containing pairs of all the animals, whose existence must entirely depend on their exemption from inundation. He knew many had, in calculating the capacity of the ark for such a purpose, reduced the number of animals to some four to five hundred species; but individuals moderately acquainted with natural history, were not satisfied with such incorrect representations. The species of mammalia alone were already known to consist of 1300. Of reptiles, which could not live in a flood, a vast number, and some of large bulk. Of birds also, which would need the same protection. And when it was considered that these were in pairs, and in some instances seven pairs,—that food also must be provided adapted to the organic structure of each,—that ventilation suited to the congregating of such vast numbers of animals must be supplied, as far as we knew, by means of one window,—add to this the fact, that more than 66,000 species of plants would require the same protection, an obstacle was presented to this conclusion which nothing but miraculous interference could surmount.

Nor was the case of the inhabitants of seas and rivers to be overlooked. Either the additional water supplied was salt or it