

BRIEF NOTICES OF BOOKS.

Relics of Primeval Life. By Sir J. William Dawson, K.C.M.G., LL.D., F.R.S. Hodder & Stoughton.

This volume of the well-known Christian scientist will be warmly welcomed by all devout students of the Word of God. It is refreshing to find one who is now advanced in years fresh and vigorous in his defence of the Biblical account of the creation. The author has already produced several volumes bearing upon the subject of "The Dawn of Life," and here we have the substance of a course of lectures on pre-cambrian fossils delivered in the Lowell Institute, Boston, so recently as November 1895. The success which attended these lectures has led to the publication of the present volume, in which the chain of life is traced backward in geological time. It is a fascinating subject, and in the hands of Sir William Dawson, is treated both scientifically and reverently, while the language employed is as simple as the subject permits. It is, in fact, a deeply interesting treatise, but we have not space here to do more than quote a passage or two from the concluding chapter, entitled "Some General Conclusions." Our author says:—

"At present the production of the living from the non-living seems to be an impossibility, and the suggestion that at some vastly distant point of past time conditions may have been so different from those at present existing as to permit spontaneous generation is of no scientific value. Reason, in short, requires us to believe in a First Cause, self-existent, omnipotent, and all-wise, designing from the first a great and homogeneous plan, of which as yet little has been discovered by us. Thus any rational scheme of development of the earth's population in geological time must be, not an agnostic evolution, but a reverent enquiry into the mode by which it pleased the Creator to proceed in His great work. . . . Even in relation to man himself, he is still man in all the deposits in which we can find his remains, and as remote from the apes of his time, in so far as we know, as he is from those now his contemporaries. It would seem, in short, as if, ashamed of his humble origin, he had carefully obliterated his tracks in ascending from his lowly parentage to the dignity of humanity. But in this he is only following the example of other animals, his predecessors. We may, as is now constantly done by evolutionists, fill up these gaps by plausible conjectures; but this is not a scientific mode of procedure, unless we are content to regard these conjectures as working hypotheses in aid of researches as yet without result.

"It is important that general truths of this kind, impressed upon us by our descent to the ascertained beginnings of life, should be generally known as counteractive to the confident statements so frequently put forth by enthusiastic speculators and caterers of sensational popular science. In point of fact, we still occupy the

position so long ago defined by the Apostle Paul that 'God's invisible things from the creation of the world are clearly seen, being understood by the things that are made, even His eternal power and divinity'; and the rational student of nature must still be a pupil in the school of the Almighty Maker of all things."

Relics of Primeval Life. By Sir J. William Dawson, K.C.M.G., LL.D. (London: Hodder and Stoughton.) Sir William Dawson has done a great deal of independent work in the field which has interested Mr. Miller. No scientist of equal reputation has done more to uphold, in an intelligent way, the conclusions of tradition, and these lectures of his (delivered in the Lowell Institute, Boston) will continue to help us to maintain our footing in the old paths. The language is technical to a considerable extent, so that the lay reader has some difficulty in following it at times; but on the whole the subject is dealt with in a popular way, and much light, accessible to all, is thrown upon a very interesting subject.

Free Church of Scotland Monthly June 1897

Evangelical  
Magazine  
Chesham

Relics of Primeval Life. By Sir J. William Dawson, LL.D., F.R.S. (6s. Hodder & Stoughton.) A fascinating inquiry into the dawn of life, up-to-date as science, and lucid as a narrative of discovery. For in this department of inquiry Sir William Dawson has taken a leading part, and he tells the story in that sober and God-conscious spirit that is apparent in all his writings. He has found Eozoon in the Laurentian limestones; he leaves others to suggest a connection with some antecedent form of vegetable life, or to link Eozoon with any of the mollusks, radiates, or crustaceans of the succeeding Palaeozoic age. He cautiously says:—"What may be discovered in the future we cannot conjecture; but at present these stand before us as distinct creations."

CHRISTIAN 24/1897

Museum Street, London, W.C.

from Christian

24 5 1897

Address of Journal

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IN HIS MODERN SCIENCE IN BIBLE LANDS Sir J. W. Dawson discourses pleasantly and learnedly on primitive man, on the geology of Egypt and Palestine, with special reference to the Deluge, on the topography of the Exodus, and on "The Resources and Prospects of Bible Lands." Attempts to bring into correlation the fragmentary data of physical science with the fragmentary historical record preserved in Holy Scripture, are, in the present state of our knowledge, of necessity somewhat premature, and the best that can be said of books like the one before us is that they serve a temporary purpose. But such a purpose they do serve in helping to dispel the idea that the researches of modern science have reduced the earlier chapters of the Bible to the category of mere myths. The particular solutions proposed by the author may not be the true one, or may fall short of the full truth; but in the meanwhile they are entitled to the benefit of a greater or less measure of hypothetical probability. We quote one or two passages:

The duration of the Deluge in round numbers [as described in Gen. vi-x.] was about a year, but this, no doubt, represents its culmination in the district occupied by Noah and his family. We have a right to assume (?) that for at least the whole term of one hundred and twenty years between the first announcement and the final catastrophe, there may have been a gradual encroachment of the waters and disappearance of the land, culminating in a great submergence, which must certainly have been very general, though not universal. If we are to take the loess and other post-glacial deposits as its measures (?), all the countries between the Mediterranean and Indian Ocean, and great interior mountain chains of Europe, Africa and Asia, must have been submergently; and the remnant of the animal population that survived, independently of the selected creatures in the Ark of Noah, must have been small, though enough to replenish the earth with that diminished fauna which it possesses at present (p. 137).

The construction of the last sentence leaves it doubtful whether the author means to assert the post-glacial submergence of the "great interior mountain chains," or only of the "countries between" them. Probably he means the latter. But, however this may be, he will, we think, find few to agree that "the loess and other post-glacial deposits" may be taken as "the measures" of the Noachian Deluge. Perhaps the view, if we rightly understand it, of Sir H. H. Howorth is more probable, viz., that the Noachian Deluge was the last of a series of more or less extensive post-glacial submergences to which the loess deposits are to be ascribed. There is force in Sir J. W. Dawson's remark, following the passage just quoted, that the grounding of the Ark in the mountains of Armenia, necessarily followed by a migration southwards, serves to account for the existence of two conflicting traditions concerning the original home of the human race, one locating it in Southern Babylonia, the region of the Biblical Eden, the other placing it in the Armenian highlands.

Speaking of the "Chabiri" with whom the Tel-el-Amarna Tablets show of the vassal King of "Urusalim" to have been habitually at war in the age immediately preceding the Exodus, the author writes:

Some have supposed these Chabiri to have been the people of Hebron, but Zimmer suggests that they may have been Ibrim or Hebrews, supposing, however, that in this case they must have been Israelites. Since, however, at the time in question the Israelites were probably in Egypt, and since there were several other Hebrew nations in the east and south of Palestine, who, as the Bible shows, were aggressive and warlike, it is much more likely that some of them are intended. It seems curiously enough, to have escaped the attention of most historians that all the Abrahamite, including Edomites, Moabites, Ammonites, Ishmaelites, and Midianites, were just as much Hebrews as the Israelites (p. 393).

Elsewhere the author calls attention to the extended meaning of the race name as probably accounting for the continued presence of "Aperiu" in the Nile Delta after the Exodus of the Israelites.

Sir William Dawson has done good service in insisting on the geological evidence which seems to tell in favour of the relatively small antiquity of the oldest human remains, and in calling attention to the very numerous and minute topographical details—confirmed with ever-increasing force by recent explorations—which stamp the narrative of the Exodus as a genuine contemporary record.

The Tablet 14/1897

And 46, Museum Street, London, W.C.

Extract from

Hall's Gazette

Date

8.5.1897

Address of Journal

"Relics of Primeval Life." By Sir J. William Dawson, F.R.S. (London: Hodder and Stoughton.) There is no indication of hidden purpose in the title of this book, yet before opening it we know what to expect. It is the old story of Eozoon Canadense, the tubular inhabitant of the pre-Cambrian or Laurentian formations, which Sir William has helped to invent, and has been ever since trying to induce other men to accept. The argument is really no more convincing now, albeit lengthier than it has been any time these forty years, and as Sir William Dawson uses his pages for propagandizing on such other hobbies as the fallacy of evolution and the divine creation of species, he can perhaps hardly expect his reasonings to be taken very seriously. For those who can ignore or skip the controversial element in this book there is a groundwork of really valuable and sound information on the composition of primitive rocks and the traces of the earliest forms of life to be found in them.

Relics of Primeval Life. By Sir W. J. Dawson, LL.D., F.R.S. For more than thirty years the story of the 'Eozoon Canadense' has been a congenial centre for geological discussion. The author was associated with the discovery of those supposed earliest traces of life, and his researches in connection with the Laurentian Group are familiar to all students of geology. This vast group of stratified rocks is over thirty thousand feet in thickness, lying just above the igneous foundations of the earth's crust; its antiquity is such that the distance of time which separated it from the Upper Cambrian period may be equal to the time which elapsed between the latter and the nummulitic limestones of the Tertiary period. This volume consists of the substance of a course of lectures delivered in the Lowell Institute, Boston, in November, 1895, and the impression produced on us is more assured than before, that those gigantic protozoa are the earliest known representatives of animal life in our planet. Whether we shall ever discover traces of the primitive protozoa that preceded them only future exploration can decide. The objections to the theory of the organic origin of Eozoon are set forth fairly and discussed lucidly by Sir William Dawson, and his arguments appear to us to be very strong. We do not forget that some distinguished British geologists still regard these deposits as inorganic and Eozoon as a pseudo-fossil. The volume is elaborately illustrated, and some of the diagrams are particularly good. (Hodder and Stoughton. 6s.)

Extract from "Christian World" London  
Date 17-6-1897  
Address of Journal

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at uncinous  
 reme than those represented by these remains  
 and rocks. What that life may have been is  
 ceasing to be wholly a matter of conjecture, for  
 various parts of the northern hemisphere are  
 giving up fragmentary animal remains from rocks  
 of older date than any in which life has ever been  
 found before. The full significance of these dis-  
 coveries can only be determined when this new  
 fossil evidence has been thoroughly sifted, and as  
 a means to this end Sir J. W. Dawson's book is  
 welcome. The author has made the oldest known  
 sedimentary rocks of Canada a lifelong study, and  
 now seeks to present his conclusions in clear and  
 rigorous language. Much of what is here written  
 may be challenged by workers in other countries;  
 nevertheless it stands as a general summary of  
 what is believed and known by a famous worker  
 in this difficult field. Sir J. W. Dawson's re-  
 searches lead him to believe that several groups  
 of rocks lie below the Cambrian, in each of which  
 he finds clear evidence of lowly animal life belong-  
 ing to the mollusca, worms, corals, and foraminifera.  
 Closely allied to the last group, if not a  
 member of it, is placed the form Eozoon, the  
 structure of which is described in detail with the  
 help of illustrations. The history of its dis-  
 covery and of the arguments for and against its  
 origin is narrated somewhat fully. The Algon-  
 quian system favoured by American authors is  
 rejected, whilst in the adopted classification a  
 new system termed "Etcheminian" forms the  
 earliest division of the Palaeozoic (or ancient life)  
 period. Sedimentary rocks older than the Palaeo-  
 zoic are placed in three groups under the head of  
 Eozoic (dawn of life) period, a term evidently  
 meant to replace the older Azoic (without life)  
 period. The fossils yielded by the Eozoic rocks  
 are described in considerable detail and figured;  
 their organic origin is seemingly unmistakable.  
 In short, the book is a valuable testimony to the  
 marvellous development of geological research,  
 whereby the history of life on the earth is being  
 unravelled and carried further and further back  
 towards the as yet unknown dawn.

Extract from Manchester Guardian  
 Date 4-6 1897  
 Address of Journal.....

*Relics of Primeval Life.* By Sir J. W. Dawson,  
 F.R.S. London: Hodder and Stoughton.  
 8vo, pp. 336. 6s.  
 One of the most fascinating problems with  
 which the geologist has to deal is that of the  
 character of primeval life, and of the physical  
 conditions of the earth when life first became  
 possible. The more the subject has been pro-  
 ceeded, the further has the origin of life appeared  
 to recede. Between the then and the now  
 stretches a measureless period in which the oldest  
 water-formed rocks have suffered strange vicissi-  
 tudes. It is no wonder, then, that the relics of  
 early life are scanty and difficult to decipher.  
 The oldest known rocks hitherto accepted as  
 possessing unmistakable evidence of animal life  
 possess that evidence in great abundance and  
 variety. It has long been a truism in geology  
 that the further back we go, the more

And 46, Museum Street, London, W.C.  
 Extract from Church Times  
 Date 23-4 1897  
 Address of Journal.....

*Relics of Primeval Life.* By Sir J. W. Dawson,  
 F.R.S. London: Hodder and Stoughton. Pp.  
 336. 6s.  
 SCIENCE hath her fairy tales no less re-  
 nowned than Grimm's. The story of the  
 gradual bringing out of the testimony of the  
 rocks is a marvellous instance of the power of  
 the discursive reason to look before and after.  
 The particular story that Sir J. W. Dawson  
 tells here is, no less interesting, if only the  
 reader have first a little general knowledge  
 of geology. His main object is to strike a  
 blow at the attempts of some men of science  
 to dismiss creation as an exploded category  
 whose place is now firmly occupied by evolu-  
 tion. Accordingly he passes under review  
 the discoveries made in recent years of early  
 animal life in the oldest rock formations.  
 "Hypotheses respecting the introduction and  
 development of life are sufficiently plentiful;  
 but the most scientific method of dealing with  
 such questions is that of searching carefully  
 for the earliest remains of living beings which  
 have been preserved to us in the rocky store-  
 houses of the earth." Sir J. W. Dawson then  
 proceeds to carry out this thesis by beginning  
 his backward investigation in the very  
 middle of the palaeozoic geological system,  
 putting on one side the later evidence  
 of even the Devonian and Silurian, and  
 penetrating to what he has called the Eozoic  
 period, when animal life, so far as we yet  
 know, began to dawn on the earth. It is an  
 interesting story he tells, and all the more in-  
 teresting because of the modesty with which  
 he refers to the part he played in events of  
 which he can justly say, "*Quorum magna pars  
 fui.*" So long as he does not forbid students  
 of comparative anatomy to formulate their  
 own theory of the origin of life from the data  
 put before them, no one can quarrel with the  
 method pursued by Sir J. W. Dawson, or  
 complain of any dullness in the exposition of  
 his views. It is somewhat curious to find the  
 author, on p. 273, affirming that his primitive  
 Eozoon "bears some negative though  
 damaging testimony against evolution," and  
 then on the next page adding that this same  
 "dawn animal" shows "that the plan of  
 creation has been progressive, that there has  
 been an advance from the few, low, and  
 generalised types of the primeval ocean to  
 the more numerous, higher, and more  
 specialised types of more recent times."  
 There is many a modern disciple of Anaxi-  
 mander who would accept this latter descrip-  
 tion as a sufficiently adequate account of the  
 origin of species.

Extract from General Post Office  
 Date 15-5 1897  
 Address of Journal.....

**SIFTINGS.** 63

**SIFTINGS OF THE STUDY.**

*Relics of Primeval Life.*  
 HE would be difficult indeed to please, who failed to appre-  
 ciate the charm of these fascinating studies in primeval life. Sir  
 J. William Dawson, LL.D., F.R.S., is, perhaps, the only  
 distinguished geologist who remains a recusant of the Darwin-  
 ian faith. He is utterly unable to accept the idea of evolution  
 by natural selection; we are, he thinks, destitute of any real  
 evidence that species are other than permanent and independ-  
 ent, the result of several separate creative acts.  
 In remarkably vigorous and picturesque English he traces  
 the history of life back through the long geological ages  
 down to the Cambrian period: and thence, standing on the  
 lowest Cambrian Zone as a platform of purview, peers into the  
 still deeper abysses of past time. Searching among these com-  
 paratively unexplored geological formations, "exploring"—  
 as he puts it—"this dim and mysterious dawn of life," he lights  
 upon that much-debated, long-suffering fossil, *Canadense*  
*Eozoon*.  
*Eozoon* is generally accounted a specious "pseudo-fossil" of  
 nongenic structure, but Sir William is well convinced of its  
 genuine animal nature and organic origin. For him it is the  
 Dawn-animal, probably the first living organism introduced on  
 the earth. Endeavouring to evolve some plausible picture of  
 the dawn of life, Sir William puts *Eozoon* into the witness box;  
 and it must be confessed he makes out a remarkably good case  
 for himself, that is, for *Eozoon*.  
 This handsome volume is liberally interlarded with fine  
 illustrations; and whether we agree with his opinions or no,  
 Sir William's chapters are an unalloyed pleasure to read.  
 (Hodder and Stoughton: 6s.)

Telephone No. 2898 Gerrard.  
 Press Cutting for..... No.....  
**ROMEIKE & CURTICE,**  
 Press Cutting & Information Agency,  
 359, STRAND,  
 And 46, Museum Street, London, W.C.

Extract from Spectator  
 Date 4-1897  
 Address of Journal.....

**REVIEWS.**

*RELICS OF PRIMEVAL MAN.* By Sir J. W. Dawson, K.C.M.G.,  
 LL.D., F.R.S. With sixty-five illustrations. Pp. 336. 6s.  
 (London: Hodder and Stoughton.) 1897.  
 This valuable contribution to the stores of our palaeontological  
 knowledge is the outcome of a course of lectures on Pre-Cambrian  
 fossils, delivered at Boston, by the eminent Christian scientist  
 whose name the volume bears. It is now more than thirty-five  
 years, Sir William Dawson reminds us, since the announcement  
 was made of the discovery of remains supposed to indicate the  
 existence of animal life in the oldest rocks known to geologists.  
 That announcement was hailed at the time as involving the dawn  
 of a new era in geological science. Some respectable authorities,  
 however, expressed scepticism on the point, and the ground that  
 the alleged fossils were of a doubtful nature, and because of the  
 great interval in time between the oldest animal remains previously  
 known and the new claimants to recognition. During the period  
 named no small amount of attention has been given to this  
 interesting subject by leading scientists, and various new facts  
 have been brought to light. The learned author, among his  
 many distinctions in the prosecution of science, was asso-  
 ciated with the original discovery and description of these  
 supposed earliest traces of life in our planet, since which  
 time he has carried on his researches, the results of which  
 have been published. He has also given attention to fill  
 up the gap between the Laurentian fossil and its oldest known  
 successors. The fruits of such researches, when approximately  
 matured and critically tested, cannot fail to be of the highest  
 importance. Hypotheses respecting the introduction and develop-  
 ment of primeval life are, as all average readers know, sufficiently  
 plentiful. But, as our painstaking author observes, the most  
 scientific method of dealing with such questions is that of  
 searching for "the earliest remains of living beings which have  
 been presented to us in the rocky storehouses of the earth." On  
 these common-sense, logical, and purely scientific lines, Sir  
 William Dawson has pursued his deeply interesting studies, and  
 in the volume under notice—produced with admirable care and  
 good taste by Messrs. Hodder and Stoughton—he gives us, in read-  
 able, popular form, the results he has so far secured. The author's  
 known reverence for God's written Word inspires his book with  
 special interest for Christian readers and students.

**RELICS OF PRIMEVAL LIFE.\***

This book reproduces the substance of  
 a course of lectures on Pre-Cambrian  
 Fossils, delivered in the Lowell Institute,  
 Boston, in November, 1895. It expounds  
 its eminent author's conclusions as to the  
 Dawn of Life on the planet in that lumi-  
 nous and charming style of which he is a  
 master. Sir J. W. Dawson is distinguished  
 among leading geologists by his firm belief  
 that the beginning of things implies a  
 Beginner. Behind the fossil Eozoon of the  
 Laurentian rock he discerns a Living  
 Author of life; and he sums up his posi-  
 tion in some very impressive sentences:  
 "It is plain that scientific investigation can  
 never bring us within reach of the abso-  
 lute origin of life, otherwise than by the  
 action of a Creative Will. Had we stood  
 on the earliest shore, and had we seen  
 living things appear in the waters, where  
 before had been merely inorganic sand or  
 rock, we should have known as little as we  
 know to-day of even the proximate cause  
 of this new departure in nature. If  
 agnostics, we might have said, 'This is  
 spontaneous generation'; but such an ex-  
 pression would convey no distinct idea of  
 the nature of the change which had  
 occurred. It would be merely a cloak for  
 our ignorance. If theists, we might say,  
 'This is creation'; but we would have  
 heard no audible fiat, nor seen any pro-  
 cess or manipulation, nor known by what  
 subordinate agency, if any, the result was  
 produced. We could have given no further  
 explanation than that of the ancient writer  
 who tells us that God said, 'Let the waters  
 swarm with swarms.' We are told that  
 when these great creative changes  
 occurred, they were witnessed by higher  
 intelligences than man. 'Then the morn-  
 ing stars sang together, and all the sons of  
 God shouted for joy'; but even they could  
 perhaps know little more than we, though  
 they might be better able to trace the future  
 development of the wonderful plan, com-  
 menced in the humble Protozoa and  
 culminating in man and immortality."

*British weekly  
 mail*

6, Museum Street, London, W.C.

Extract from Rock  
 Date 16-7 1897  
 Address of Journal.....

**NOTICES.**

*Relics of Primeval Life.* By Sir J. William Dawson. With sixty-  
 five illustrations. (Hodder and Stoughton.)—Sir William Dawson  
 out of the fulness of his great research, has given us many volumes,  
 many of a strictly scientific character, although addressed to the  
 people, others illustrating the relations of science and religion in a  
 most helpful way. Of these two categories, the work now before us  
 comes under the former. He begins with "The chain of life traced  
 backward in Geological Times," and proceeds to discuss life in the  
 early Cambrian, and the probabilities of the existence of life in the  
 Laurentian formations. "The History of a Discovery" is peculiarly  
 interesting, and looking to the authority which Sir William Dawson  
 has so unhesitatingly established his claim to, we are sure that  
 our readers will be thoroughly interested in his conclusions.

6, Museum Street, London, W.C.

Extract from ATHENAEUM, LONDON  
 Date 4-8 1897  
 Address of Journal.....

*Relics of Primeval Life.* By Sir J. William  
 Dawson, F.R.S. (Hodder & Stoughton.)—  
 Two years ago Sir William Dawson delivered  
 a course of lectures at the Lowell Institute in  
 Boston, and it is the substance of these lectures  
 which is here presented to the reader. The  
 primeval relics with which the author deals are  
 the oldest-known traces of life, or structures  
 regarded as such, in the pre-Cambrian rocks;  
 and these by virtue of their exceptional anti-  
 quity have a peculiar fascination to most students.  
 On this subject the author has a right to speak  
 with high authority, since he was largely re-  
 sponsible for introducing the famous eozoon to  
 the scientific world. Whether the curious  
 structure on which he bestowed that name is truly  
 organic or not is a subject on which geologists,  
 mineralogists, and zoologists have had many a  
 warm dispute, and on which the last word has  
 not yet been said. Sir William, however, dis-  
 cusses rather lightly the evidence of the oppo-  
 sition, holding that the objections have been  
 answered again and again, and clinging as fondly  
 to his fossil as he did five-and-thirty years ago.  
 That there were forms of life upon our globe  
 in pre-Cambrian days no competent thinker  
 doubts; and one of the most interesting geo-  
 logical quests at the present day is the search  
 for these remains. The Olenellus fauna, which  
 is held to characterize the base of the Cambrian  
 system, contains forms so highly organized that  
 the conviction is forced upon the inquirer, if he  
 believes in evolution, that they must have been  
 preceded by simpler types of life, though relics  
 of these early forms may be too obscure for  
 recognition. Sir William Dawson's work,  
 though containing much which has appeared  
 elsewhere, is an acceptable contribution to the  
 literature of the oldest rocks, from the untiring  
 pen of a scientific veteran.

THE LITERARY WORLD.

EVERY FRIDAY. PRICE ONE PENNY.

The affixed cutting from the current issue of THE LITERARY WORLD.

AGAINST EVOLUTION.\*

The two books we have grouped together in the footnote have this in common, that they emanate from opponents of what are commonly called the Darwinian theories. Sir J. William Dawson is, perhaps, the only distinguished geologist who still adheres to the old views current before Charles Darwin and Alfred Russell Wallace published their epoch-making paper on Natural Selection. In Relics of Primeval Life the antagonism to Darwinism is latent over much of the work; in Is Natural Selection the Creator of Species? Mr. Duncan Graham from the outset announces his design to be to upset the views that have now become orthodox among men of science. Sir J. W. Dawson has a stronger claim to be heard than Mr. Duncan Graham. The labours of the former in the field of geology have been long pursued and productive, and, apart from his inability to accept evolution as a working hypothesis he has earned the respectful attention of his fellow-geologists. As a writer, Sir J. W. Dawson is lucid and persuasive; his style reminds us sometimes of the late Professor Huxley's. In his present work he returns to studies of animal remains in the oldest rocks, which were begun by him thirty-five years ago. He recounts the circumstances under which Eozoon Canadense was discovered by Sir William Logan, a discovery with which he was himself associated. The student of geology is aware that in England the organic character of Eozoon has not been generally accepted. The late Dr. Carpenter seems to have been persuaded that it was the skeleton of an organism having affinities to the Foraminifera, of which he had made such a profound study, and Professors Ramsay and Rupert Jones took the same view. But Sir Joseph Prestwich and Sir Archibald Geikie did not put much confidence in the characterisation, and in the latest edition of 'The Student's Lyell' Professor Judd dubs it a pseudo-fossil which has deceived many able naturalists. 'In spite of many striking resemblances, the most recent investigations of microscopists and mineralogists leave little room for doubt that the structures are all of inorganic origin and of an imitative character.' Although, therefore, Sir J. W. Dawson has again stated the case at great length and with the utmost personal confidence in its strength, we can hardly suppose that the last word has been said in a controversy of nearly forty years' standing. To the

\*Relics of Primeval Life. By Sir J. William Dawson, K.C.M.G., LL.D., F.R.S. (Hodder and Stoughton, 6s.)

student who approaches the subject for the first time in Sir J. W. Dawson's work demonstrations will probably appear convincing, but experience should warn him to exercise caution in accepting theories, however plausible, and however high the authority with which they are propounded. If, as Sir J. W. Dawson seems to expect, a veritable specimen of a living Eozoon should some day be dredged up in the Atlantic or Pacific, the question would, of course, be satisfactorily solved.

But, whatever may be the ultimate decision regarding Eozoon, Sir J. W. Dawson's Relics of Primeval Life is a valuable work on other grounds. He has given a very clear and interesting account of the chain of life traced backward in geological time, followed by a résumé of all that is known regarding Cambrian and Pre-Cambrian life. These chapters and those on the Foundations of the Continents may be read with profit and interest, even if the conclusions in the later chapters are not accepted. The strong anti-Darwinian bias of the author comes out in his later discussion of 'The Origin of Life.' Over and over again he insists on the view that species are permanent, and arise from fresh creative acts. 'All attempts to construct genealogical trees of the descent of animals are,' he holds, 'so far as at present known, quite visionary.' 'Reason, in short, requires us to believe in a First Cause self-existent, omnipotent, and all-wise, designing from the first a great and homogeneous plan, of which, as yet, but little has been discovered by us. Thus any rational scheme of development of the earth's population in geological time must be, not an agnostic evolution, but a reverent inquiry into the mode by which it pleased the Creator to proceed in His great work.' It seems to Sir J. W. Dawson that the idea that the Creator may have elected to proceed by way of evolution is utterly unthinkable.

And 46, Museum Street, London.

Extract from Natural Science

Date Aug 1897

Address of Journal "PALAEOGEOGRAPHICA" AMONG CRIMINAL LITERATURE

RELICS OF PRIMEVAL LIFE. By Sir J. W. Dawson, K.C.M.G., F.R.S. 8vo, pp. ix. 336, with 67 figs. London: Hodder & Stoughton, 1897.

SIR WILLIAM DAWSON'S book on "The Dawn of Life" having been for some time out of print, he has prepared the present volume to take its place. A good deal of the old matter and many of the illustrations therefore naturally reappear. The familiar story of the discovery of Eozoon, and of the spread of the belief in its organic structure, is again told, and Sir William Dawson refers to the principal criticisms on the other side. On pp. 273-274 Eozoon is made to tell the story of its own existence in an imaginary autobiography. It candidly admits its low intelligence and that it did not know whence it came; but "at length a change came. Certain creatures with hard snouts and jaws began to prey on me." Apparently the most objectionable of the hard-snouted generation was Möbius, whose work, in spite of its "large and costly figures" (p. 161), is described as valueless, owing to "that narrow specialism and captious spirit for which German naturalists are too deservedly celebrated." Möbius, according to Sir William Dawson, "did his best;" but so bad is his best that the publication of his memoir "was a crime which science should not readily pardon or forget on the part of the editors of the German periodical" in which it appeared.

Sir William Dawson does not give his opponents a very cordial invitation to continue the discussion, for he remarks in reference to the honest way in which Eozoon did his duty, that those who "dispute as to his origin and fate" are "much less perfectly fulfilling the ends of their own existence." So we will try to fulfil the ends of our own existence by discussing subjects in which an adverse verdict is not a "crime."

BOOKS.

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Relics of Primeval Life, by Sir J. Dawson (Hodder and Stoughton, 6/-). "It is well," says Professor Dawson, "to take stock of what we do know and of what we may reasonably suppose, keeping always in view the fact that some parts of the problem of the origin of life are at present insoluble, and may possibly ever continue in that condition." This, briefly put, is the object of Professor Dawson's book. He gives us the chain of life traced backward in geological time. He concedes that, in the reduction of living things in the pre-Cambrian ages to few and synthetic types, evidence may be found of a natural approach to the beginnings of life, and to a condition of the earth in which life would be impossible. But he is at variance with the evolutionists in their demand for a practically infinite space of time, say four hundred millions of years, for the occurrence of that infinite series of chance interactions which is supposed to have resulted in the highest developments of life with which we are acquainted. In a word, Professor Dawson considers that we cannot arrive at a time so remote or a form of life so elemental as to obviate the necessity for a Cause. Even if regarded merely as a summary of geological discoveries, confined to relics of primeval life of however low a type, this volume is very interesting and instructive.

Studies of Lakeland Birds, by Mary L. Armit (Middleton, Ambleside

NOTICES.

Relics of Primeval Life. By Sir J. William Dawson. With sixty-five illustrations. (Hodder and Stoughton.)—Sir William Dawson out of the fulness of his great research, has given us many volumes, many of a strictly scientific character, although addressed to the people, others illustrating the relations of science and religion in a most helpful way. Of these two categories, the work now before us comes under the former. He begins with "The chain of life traced backward in Geological Times," and proceeds to discuss life in the early Cambrian, and the probabilities of the existence of life in the Laurentian formations. "The History of a Discovery" is peculiarly interesting, and looking to the authority which Sir William Dawson has so unhesitatingly established his claim to, we are sure that our readers will be thoroughly interested in his conclusions.

The Roer 16/11/97

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THE SOUTH

NEW BOOKS.

"Relics of Primeval Life," by Sir J. W. Dawson (6s.) London: Hodder and Stoughton; Melbourne: M. L. Hutchinson.

This is a handsome volume, enriched with sixty-five illustrations, from the pen of a very distinguished man of science who is also a simple-minded and very earnest Christian. Sir J. W. Dawson finds no conflict betwixt his knowledge as a scientist and his faith as a Christian; and in this he belongs to the school of Faraday, of Agassiz, and of Drummond. In this book he discusses the earliest forms of life in the oldest geographical strata and finishes with a summary of the ultimate facts and principles of the whole matter. "However simple," he says, "we imagine the first possessor of animal life to be, we can have no scientific evidence of its origination either as an embryo or as an adult." But the scientific law that life can only spring from antecedent life holds good through all ages. To assume that this law did not obtain in some vastly distant past is absurd. "In assuming this," says Sir J. W. Dawson, "we either elevate a law from the animal life into the role of Creator, or fall back on indefinite chance, with infinite probabilities against us." Reason, in short, "requires us to believe in a First Cause, self-existent, omnipotent, and all-wise, designing from the first a great and homogeneous plan, of which as yet but little has been discovered by us. Thus any rational scheme of development of the earth's population in geological time must be, not an agnostic evolution, but a reverent inquiry into the mode by which it pleased the Creator to proceed in His great work." Sir J. W. Dawson, of course, holds the doctrine, equally scientific and Christian, that all forms of life and energy are produced by an almighty and eternal Will, and that a rational student of nature must still be "a pupil in the school of the Almighty Maker of all things." We very heartily commend the volume as an admirable example of a fine school of literature.

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Extract from Guardian

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Address of Journal

Relics of Primeval Life. By Sir J. WILLIAM DAWSON. Hodder and Stoughton.

In this book, a reproduction of lectures delivered at the Lowell Institute, Boston, the author returns to his championship of "Eozoon Canadense," and generally of the discovery of traces of organic life in pre-Cambrian strata. Interwoven with this, however, is a good deal of very speculative philosophy on the origin of types; and it is necessary to distinguish carefully between the scientific and the speculative conclusions in estimating its value. The array of scientific evidence is convincing, and, judging from it, Eozoon appears to be making way. The evidence is not very clearly given in this volume; there is a good deal of overlapping in the lectures, and to the British geologist the classification of Canadian pre-Cambrian strata is unfamiliar and confusing. We recommend him to master the table on page 76 and read Appendix C first of all. Occurring, however, as it does, in obscure forms in metamorphosed rocks, Eozoon is essentially a subject for the skilled microscopist; in fact, as the author remarks upon certain ill-informed critics, only a specialist, with immense knowledge of Foraminiferal forms, is qualified to give a verdict upon it. The rest of us, who have not access to specimens, nor the skill to prepare them for the microscope, can only estimate its authenticity by the reputation and authority of its supporters. But the testimony of the author and Dr. Carpenter, reinforced by the admirable nature-prints which illustrate this volume, will probably satisfy the majority of students.

On the other hand, numerous readers, rightly or wrongly, will feel quite ready and competent to entertain views upon the "Dawn of Life." Sir J. W. Dawson pauses, now and then, to remark upon the permanence of types, the gaps that divide them, and the dearth of "missing links." He also indicates, *passim*, his belief in distinct creations of successive types. Certainly the old Darwinian evolutionists demanded an unreasonable amount of time for their hypothesis, an amount which is not endorsed either by geological research or the estimates of the physicists; and, after all, they were bound to face eventually the alternatives of creation, or spontaneous generation, which appears to be simply creation from the spectator's point of view. Sir J. W. Dawson argues that, as his Eozoon occurs in the lowest strata of sedimentary formation (which is an assumption), and already presents a complex organisation and tubular structure, therefore the origin of life were not so simple as is imagined; though he admits that simpler bodies, with no hard calcareous skeleton to survive, may have co-existed with it. We must say, however, that after we have traced the simplification of organisms so far back, it would be disappointing to find several complex types at the beginning; to have the apex broken off the pyramid of evolution. And, while agreeing with Sir J. W. Dawson in seeing in the world the handiwork of a Creator, we think it would be more consistent with the highest conception of such a Creator to assume that He works always, and not by periodical interventions—that He did not find it necessary to break off and begin again. Thus, though the author rightly rejects the catastrophic theory of the natural selectionists, with its vast aeons of time, we regret that he seemingly ignores a view now often held—namely, that, while the inherent stability of types prevails under normal conditions, there have been what Mr. Le Conte calls "critical periods," when great changes of climatal and other environment produced a tendency to aberrations or "sports." These changes would naturally coincide with stratigraphical breaks, and account for diversity of types in successive epochs.

In any case, it was unwise to take the gap between Eozoon and the Cambrian fauna as a text on which to preach against gradual evolution, seeing that less is known of that type and the length of time that elapsed before the "Olenellus" zone was deposited than of succeeding types. We advise students of this problem to begin at the nearer end of the chain of life. This work, however, is full of interest, and all the more fresh because the subject is discussed with the enthusiasm natural to its discoverer, so that the book contains, as it were, the latest news direct from the seat of war.