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JOURNAL OF
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CAPTAIN F. W. H. PETRIE, F.G.S., &c.

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1899.

ORDINARY MEETING.*

SIR J. WILLIAM DAWSON, C.M.G., IN THE CHAIR.

The Minutes of the last Meeting were read and confirmed, and the following Elections were notified :—

ASSOCIATES :—Rev. S. Plantz, D.D., Ph.D., Pres. Lawrence Univ., United States ; Rev. John B. Devins, United States.

HON. COR. MEMBER :—Prof. G. Macloskie, D.Sc., LL.D., Prof. Biology, Princeton Coll., United States.

The following paper was then read by the author :—

HERODOTUS. I.—HOW FAR HIS REMARKS BEARING ON EGYPTIAN GEOLOGY ARE RELIABLE IN THE LIGHT OF RECENT EGYPTIAN RESEARCH. By the Rev. F. A. WALKER, D.D., F.L.S.†

Λίθου Αιθιοπικοῦ ποικίλου.

Hdt., Lib. II, c. 127.

O^F *variegated*, or *many coloured* Ethiopian stone, if we adopt the rendering of Rawlinson who translates *ποικίλος* by many coloured, Herodotus here informs us that the lower tier or basement of the Second Pyramid τὸν πρώτον δόμον was composed of red granite of Syene, and Professor Rawlinson rightly remarks that the historian appears to be correct in saying that the lower tier was of that stone, or at least the casing, which was all that he could see, and the numbers of fragments of granite lying about this pyramid show that it has been partly faced with it. The casing which remains on the upper part is of the limestone of the eastern hills. One of the chief noticeable differences between the three pyramids, irrespective of their size, is in the said various casing of their exterior, that of the first and largest pyramid erected by Cheops consisting altogether of limestone; that of the second pyramid next to it in point of size, erected by Chephren, consisting in the upper part of limestone, and in the lower tier of red granite; and that of the third and smallest pyramid, erected by Mencheres (or Mycerinus) altogether of red granite. There are certain points that we must carefully bear in mind. The first being, that when Herodotus refers to the variegated stone of Ethiopia, he alludes solely to *red* granite, not to granite of another tint or hue. Second, that this red granite

* Subject first introduced at 12th of 31st Session.

† Paper and discussion revised and passed for press 1899.

was obtained for the most part from the time-honoured quarries of Syene or Assouan, which had been worked for centuries for the purpose of obtaining material wherewith to construct the greater part of the colossal edifices of Egypt. Thirdly, that red granite was far more frequently and extensively employed in these buildings than either blue or black granite. Fourthly, that the red granite of Syene must on no account be confounded with the syenite of geologists, which is composed of different minerals, and probably likewise in different proportions, as the syenite of geologists also derives its local habitation and its name from the vale of Syene. Fifthly, that the modern name of Assouan stands in relation to the ancient appellation of Syene precisely as Stasthe does to the older name of Athens. A prefix has been added in each case, and the ultimate syllable has been dropped. Stasthe, in point of fact, is a corruption of ἐς τὰς Ἀθήνας ("To the Athens.") Sixthly, that the famous red granite quarries of Syene are situate at the north end of the valley, just outside the modern Arab town of Assouan, though strata of the same may likewise be noticed throughout the extent of the valley, and that the true syenite occurs in the middle of the vale, and is not nearly so common, plentiful, or generally distributed as red granite. Seventhly, that whereas in Cornwall, or at Peterhead, as I understand, it is impossible to obtain a monolith of red granite without a flaw (or what geologists term a fault) intervening of greater length than 30 feet. Some of the monolith obelisks, certain ones standing, others now fallen, reach, or did reach, a height of upwards of 100 feet, and even of 110 feet, in Upper Egypt. The grain, the colour, and the pattern of the granite will of course vary somewhat according to its particular quarry and country, whether Cornish, Shap, or Aberdeen—whether brought from Sweden, or collected on the banks of the Nile. The Shap granite would seem to present a notable variation, the red preponderating therein, and occurring in large patches or blotches. There are some specimens, again—and I think I recollect coming across such in Sweden—wherein an almost imperceptible gradation of tint is manifested, and the black and white are just suffused with the palest pink.

It would be superfluous, tedious, and in point of fact impossible, to enumerate all the creations of Egyptian art for which, throughout the centuries, the variegated stone of

Ethiopia (*alias* red granite) has been employed. Some of the monuments have always remained *in situ* close to the rock whence they were hewn, notably about the largest obelisk of all, still lying prostrate in the time honoured quarries of Assouan for some unexplained cause, either a flaw in the stone, or from the reverses or death of the monarch who ordered its construction. The real reason will now never be certainly known. Other colossal busts, statues, obelisks, sarcophagi, linings of corridors, &c., &c., still adorn such ancient sites as Karnak, Luxor, Rameseum, Memphis, Mitrahenny, Geezeh, Heliopolis, &c. Other relics of red granite, and of sandstone as well, have long since been removed far away, and now adorn the proudest capitals of Europe, as London, Paris, Rome, and even transatlantic cities as New York. And the Thames Embankment, the Place de la Concorde, the Piazza of St. Peter's, the Mosque of St. Sophia, Constantinople, and other public places in the last named city alike testify to the presence of the spoils of the East, and in the transfer of right ancient monuments from the land of bondage to captivity itself led captive.

Why red granite should have been so extensively chosen in preference to blue, when stone of the latter tint likewise so plentifully occurs in Syene, Philæ, Kalabsheh, it is hard perhaps to say. My own idea is that the effect of the rosy surface when lighted up by the warm glow of the rising sun in the eastern heaven, especially in the case of such edifices as were erected on the west bank of the Nile, or on the plateau of the Pyramids, likewise on the Libyan shore of the great river, was one calculated to excite great admiration on the part of the procession of monarch, white robed priests, and people winding up in solemn procession to the carefully modulated and plaintive strain of flute and of sistrum from the valley of the Nile beneath. That the red granite should have been selected for incised hieroglyphics instead of sandstone is by no means hard to perceive when regard is paid not only to the particular hue, but to the durability of the material.

The structures along the Ethiopian Nile, wherein friable sandstone is, as a rule, more frequently made use of than in Egypt proper for the rough and ill-executed, and not unfrequently coarsely designed, carvings afford striking evidence of the comparative inutility of that stone to resist the effects of the weather, as well as of *tempus edax rerum*.

Yet the sunlit boulders of blue granite show to great advantage, glistening withal as washed ever now and again by the river's spray in the famous gorge of Kalabsheh, where the Nile is only a thousand feet across at the narrowest part. If we imagine the Nile to be introduced through the Valley of Rocks at Lynton, Devon, with an accessory fringe of palm trees, we shall better realise the aspect that one particular portion of the gorge presents; but anon the river widens, and numerous islets, some studded with acacias and palm trees, other smaller ones consisting of mere heaps of granite boulders, meet our view in mid-stream.

A stratum of the granite is also passed at the further end of the valley of Syene before reaching the village of Mahattah, with its swarthy Nubian children.

Description by Dean Stanley.

“The smooth casing of part of the top of the Second Pyramid, and the magnificent granite blocks which form the lower stages of the Third, serve to show what they must have been: all, from top to bottom—the First and Second—brilliant white or yellow limestone smooth from top to bottom, instead of those rude disjointed masses which their stripped sides now present; the Third all glowing with the red granite from the First Cataract. As it is, they have the barbarous look of Stonehenge; but then they must have shone with the polish of an age already rich with civilization, and that the more remarkable when it is remembered that those granite blocks which furnished the outside of the Third, and inside of the First, must have come all the way from the First Cataract.”

Temple of the Sphinx, Nine Hundred Miles up the Nile, p. 89.

“Its walls and vestibules all consist of huge blocks of red granite from Assouan.”

L'Orient, p. 40.

“A building constructed of immense blocks of red granite from Assouan, one even measuring upwards of 18 feet in length and seven in height. The skill, the labour, the cost it must have taken to transport these massive and weighty stones such a distance, and to polish their surface, and dovetail them into position with such perfect exactness and precision, compel the tribute of our admiration.”

Subjoined is a list of the antiquities in red granite that came under my own notice :—

Nubia.

Dakkeh, Temple of,—

Large broken block of polished red granite, possibly part of the original shrine.

Dabod, Temple of,—

One of the smaller chambers contains a broken monolith of red granite that no doubt was originally set up in the adjoining sanctuary.

Great Temple of Isis, Sacred Isle, Philæ,—

On the wall of the north side of the court between the first and second propylon is a large rounded slab of red granite, still forming part of the native rock, whereon is a hieroglyphic inscription, setting forth how Ptolemy Philadelphus assigned the Sacred Isle to the priest for the building of the temple.

Close to the double portico above mentioned are three chambers, of which the innermost contains a granite shrine.

Black granite.

In front of the propylon of the Rameseum is a large sphinx of black granite likewise mutilated, and with the head severed from the body, and on one side of the great hall are the remains of a statue of black granite of Rameses II.

Blue granite.

On the pavement at the north end of the great hall of the Temple of Horus at Edfou is lying a broken statue of a colossal bird in blue granite. In the second hall is the prostrate pedestal, of blue granite, of the gigantic bird above mentioned, and which, with the bird, was discovered by Mariette in the great hall.

Colossal statue of Rameses II,—

In front of the Rameseum (*alias* the Memnonium of Strabo, owing to the title of Mianum, attached to the name of Rameses II, being corrupted by the Greeks into Memnon) are the shattered fragments of the colossal statue of Rameses II, that when entire weighed over a thousand tons, and was the largest statue in Egypt, carved out of red granite.

Karnak,—

Outside the great hall, a few yards further east, were once two obelisks of red granite sculptured all over, and each 75 feet high, and having the name of the founder, Thothmes I of the 18th dynasty. One of them is still standing, but the other is thrown down, and all its huge *débris* lie strewn around. The red granite employed here was all brought from Gebel Sibsileh.

The red granite obelisk known by the name of Hatasu, about 100 yards further east, measures 108 feet 10 inches, and is altogether more massive than those of Thothmes, being the largest obelisk known. It also had a companion, now, alas! thrown down likewise, and in fragments.

Covering of Second and Third Pyramids, Temple of Second Pyramid, Temple of Sphinx and Sarcophagus, Geezeh.

Specimens of red granite.

From

Temple of Second Pyramid,—Karnak.

Medinet Haboo,—Assouan.

Casing of Second Pyramid,—Colossal statue of Rameses II.

Temple of Sphinx.

Specimens of black granite.

Sphinx at Rameseum.

Portion of cover of Sarcophagus, Apis Mausoleum, Sakkarah.

“SHELLS UPON THE HILLS.”

Κογχύλια τε φαινόμενα ἐπὶ τοῖσι οὐρεσι.

Hdt., Lib. II, c. 12.

The whole of the rocky platform whereon the pyramids of Geezeh are situate, westward of the Nile, and also the range of the Mokattam hills eastward of the great river, owing to the prevalence of nummulite limestone everywhere affords evidence of the accuracy of the description given by the father of history. The said fossils, which are termed nummulites by reason of their supposed resemblance to coins owing to their circular shape, constitute by far the

larger proportion of the rock of magnesian limestone wherein they are so numerous imbedded as to be a conspicuous object deserving the epithet of *φαινόμενα* here employed. When placed edgewise or sectionally, their appearance resembles that of lentils, so as to mislead Strabo the historian into the belief that these were the petrified residue of the workmen of the Pyramids. This particular species is denominated by scientists therefore, *Nautilus lenticularis* or *mammilla*, from its supposed resemblance to another well known object. Fossil Echini likewise occur in the Mokattam hills, but the above named nummulites being by far the most numerous, are therefore doubtless the ones that attracted the historian's attention, and furnished the subject of his description.

Whereas the soil of Libya is, we know, more of a reddish hue, and more sandy :—

Τὴν δὲ Λιβύην ἴδμεν ἐρυθροτέρην τε γῆν καὶ ὑποψαμμοτέρην.

And that of Arabia and Syria inclines to stone and clay :—

Τὴν δὲ Ἀραβίην τε καὶ Συρίην ἀργιλωδεστέραν τε καὶ ὑπόπετρον εὐόσαν.

Hdt., Lib. II, 12.

If in the district of Arabia Herodotus included the territory situate between the east bank of the Nile and the Red Sea, while he designated as Libya the land on the west bank of the Nile, even as in modern times the east and west banks are termed the Libyan and Arabian respectively, his description can be abundantly verified.

There is, as a rule, much more golden sand of very fresh and recently drifted appearance, and that looks as if it had been finely sifted on the western bank, and the *débris* of volcanic shale are commonly far more numerous on the eastern bank.

Compare as evidence of the above the following passage from *Nine Hundred Miles up the Nile*, p. 192, and in reference to the panoramic view enjoyed from El Ghawarnee in the rear of Korosko, Nubia, about 827 miles distant from Alexandria : “ The golden sands across the western bank contrast beautifully with the blue river ; and the dark volcanic shale, that forms the surface covering of eastern and western hills alike, and on the eastern hills and ravines among which we are now standing, is so plentifully strewn as to give the nearest intervening basin between us and the next range

completely the appearance of an extinct crater." In the above paragraph, it is true, volcanic shale is observed and spoken of as occurring on both sides of the river, but far more plentifully on range beyond range, fold within fold of the amphitheatre of hills on the eastern side. Then, again, the golden sands on the Libyan side are a far more prevalent feature in the landscape, and are noticed as such. Or, to quote again from *Nine Hundred Miles up the Nile*, p. 174, in reference to Assouan at the south limit of Upper Egypt, distant, say, 713 miles from Alexandria, "The golden sand of the Libyan desert presents a very fresh and recently drifted appearance as we approach Assouan." And again, on same page 174, "A very fine contrast of colour is produced by the Libyan sands on one side, the Arabian granite on the other." And, again, from *Nine Hundred Miles up the Nile*, p. 172, in reference to Silsilis, distant in round numbers 650 miles from Alexandria, possibly rather more: "Where also the freshly drifted sand contrasting with that of a dark tint, brings back memories of the aspect of the desert on the banks of the Suez Canal." Of course there are exceptions to this rule. As on the east bank at Luxor, where the shores are low, I have myself noted sand to the amount of many barrow loads, if not carts full, fall with a great swish into the river, and the Nile is making great inroads on Luxor and its neighbourhood, and the gardens and fields once in front of the American Consulate have also vanished and gone. And when gaining the summit of the mountain of Lycopolis, which is on the western bank and at the rear of the town of Assiout, we find it to consist of a perfectly desolate and slightly undulating plateau, covered everywhere with flinty stones. Still, in the majority of instances, as first pointed out by Herodotus and corroborated by the traveller in his steps at the present day, there is Afric's golden sand on the western side and the ejectamenta of long bygone volcanic action on the Arabian.

Efflorescence of salt to such an extent as to injure even the pyramids.

"*Ἀλμην ἐπανθέουσιν, ὥστε καὶ τὰς πυραμίδας δηλέεσθαι.*

Hdt., Lib. II, c. 12.

"That salt exuded from the soil."

Efflorescence of salt.

How far borne out by modern research as correct.

HELWÂN SULPHUR SPRINGS.

The sending of the leprous persons to the sulphur springs, east bank of Nile, by Amenophis III, B.C. 1403 (last king but one of 18th dynasty) is a misrepresentation of some real event, not a mere fable, as proved by recent discovery of the springs at Helwân.

There is a small ancient column that is now walled in, and may have dated from the establishment of the baths in the days of old, with palms, tamarisks, and pepper trees growing around.

A considerable tract of ground here on the edge of the desert is covered with beds of rushes, and its sand is damp and spongy, with here and there a patch of saltpetre. These facts point to the existence of other sulphur springs below the surface, and by the limit of the waters we may form a probable conjecture of their extent.

Lower Egypt.

Helwân, *Nine Hundred Miles up the Nile*, p. 103.

“Here and there a patch of saltpetre.”

Ditto.

Ditto.

Ditto.

Here and there strewn about are flints, quartz pebbles, lumps of saltpetre.

Nine Hundred Miles, p. 139.

Upper Egypt.

Karnak. The central area of the large court of the temple is encrusted with a great deal of saltpetre, which crops up through the sand.

p. 142.

Ditto. The hollows in the vicinity are filled with a thick coating of saltpetre.

Ditto. p. 143.

The Sacred Lake may be about 200 yards in extent, and derives its water from infiltration of the Nile, strongly impregnated, however, with nitre and saltpetre, owing to the character of the surrounding soil, so that no fishes are found there.”

The CHAIRMAN (Sir J. W. DAWSON).—We shall be happy to hear remarks, by any present, upon this paper. It raises a great many curious and interesting points in Egyptian geology.

Rev. Canon GIRDLESTONE, M.A.—Perhaps our Chairman would open the subject for discussion. We are all anxious to hear him. (Applause.)

The CHAIRMAN (Sir WILLIAM DAWSON, C.M.G., LL.D., F.R.S.)—I may say, that having studied most of the rocks referred to in Dr. Walker's very charming and suggestive paper, I find that he has brought before my mind a great many things that I noticed when in Egypt, and to which I perhaps gave less attention than I should have done; and further, his remarks have given, I think, a very clear proof of the close observation of the old Greek father of history when he visited Egypt. He lived in days before the rise of modern geology; but nevertheless he had the natural gifts of a geologist, and he noticed many points which have escaped the attention of most travellers, except where, like Dr. Walker, they have been bent on following up the notes he made.

Dr. Walker referred to the celebrated granite of Syene or Assuan, a magnificent material which the Egyptians utilised to the utmost. I think anyone who has seen the obelisks (I do not refer to the somewhat smoked one on the Embankment here) in the eastern sunlight, with their beautiful rosy colour, would easily understand why the Egyptians made choice of so beautiful and durable a stone as this of Syene, which is like that we have from Peterhead in the North of Scotland.

In regard to the differences of these granites, I may say that the term "syenite" has now been restricted to the granitic rocks which contain only two of the ordinary constituents of granite, viz., felspar and hornblende. The older geologists, however, called the hornblendic granites by this name, and I am not sure that they were not right, for these have a very varying quantity of quartz, and this is the case with the granite of Egypt as well as that of other countries. The great broken statue of Rameses II, on the southern side of Thebes, is composed of gneiss, a laminated variety of granite. When polished you can see the lines of lamination, whereas true typical granite is a perfectly uniform stone, and has no such lamination. Whether that lamination is a sign of stratification, or whether it is merely the effect of com-

pression when the granite was in a semi-liquid state, is a matter of question amongst lithologists at the present day. I examined a section of the little railway at Syene which cuts through this rock. It shows the laminated varieties we call gneiss, and others which could be distinctly called granite, but both were quarried by Egyptians, who used indifferently true granite and the allied rock to which we give the name of gneiss. The grey granite to which the paper referred contains a considerable amount of mica, and was used by the Egyptians, but not to a great extent, partly because it is difficult to procure in large blocks, and partly, also, because it is a less attractive stone and is less easily dealt with in taking a fine polish. When they used a dark stone they preferred another rock consisting of hornblende and white felspar of a distinct species, a white and black stone with a uniform grain, or sometimes with white spots of felspar in it. This is a Diorite, and is found at Assouan near the granite.

Some of the largest and finest of the older statuary, such as that of the statue of Chephren, the builder of the Second Pyramid, is made of another stone (Anorthosite), composed of a peculiar glistening felspar with small quantities of dark hornblende in it, and which, when polished, has much the aspect of a grey marble, though more lustrous and much harder.

There is another question which is of interest, and which no doubt attracted the attention of Herodotus, and that is the success of the Egyptians in cutting the immense blocks of this refractory stone, and engraving on them their hieroglyphics in such a beautiful way. As the author has pointed out, the quarries at Assouan afforded large blocks of stone without joints or flaws, but there was connected with this property the labour—so patiently and carefully performed in drilling holes in these great stones and driving wedges into them and breaking them off little by little and carrying them on rollers down to the banks of the river at times of inundation, and then working them up into their beautiful obelisks. If you look at the obelisk on the Thames Embankment you may wonder how they cut such deep and beautiful carving on it, and you may wonder more when you hear it was set up by Thothmes III, one of the greatest of Egyptian kings, and pro-

bably a contemporary of Joseph, who according to the best chronology, lived at that time and not at the time of the Hyksos kings, as you are often told. Thothmes engraved the characters on the middle of each face. Those on the two sides were cut for Rameses II, the oppressor of the Hebrews, and whose sister or daughter was foster-mother to Moses.

I think Professor Petrie has shown how the work was done. The Egyptians used hollow drills, and so worked holes into the granite and these drilled holes corresponding with the figures or hieroglyphics, they broke away the cores and connecting pieces, and thereby cut these deep and enduring inscriptions. No doubt Rameses' workmen went up to the top of the obelisk, held up by stages and ropes, and so drilled the characters without taking it down.

One of the pieces on the table is from one of the pair of obelisks at Karnak, which are the largest in Egypt, and were set up by the great Queen Hatasu. One has fallen and the other is standing. I looked at the top of the fallen one, and I can assure you that the surface of that stone is most carefully worked and polished, and in that fine climate it remains so to the present day. There is no scamped work about it. At the top of the monument, which no one could see closely, the whole surface is beautifully cut. That is the style of work that these people carried out. No wonder that Herodotus was astonished at it! and we, too, when we see this monument on the Embankment, which, I believe, is the largest quarried stone in Great Britain, and yet it was probably quarried at a time when Joseph was Prime Minister of Egypt, or perhaps before. So you see it is an illustration of what these people could do with their comparatively small mechanical means. It is also commemorative of two of the most important points where, according to Bible history, early Israel came into contact with Egypt.

The author has made some remarks of great interest on other things as well: amongst them, the fossil shells of Egypt. These attracted the attention of Herodotus, as well as of later students. The greater part of them belong to the lower tertiary, of the same age as the London clay. These fossil shells are very abundant on the banks of the Nile, and especially near Cairo. But other

specimens that have been passed round belong to a later formation—the pleistocene formation. Herodotus may have seen these also, for on the hills near the pyramids are raised beaches, piled up with shells of a modern species of oyster, and these oysters lived there at a time when the sea extended over the pyramid plateau.

Dr. Walker also referred to the sulphur springs. These sulphur springs of Helwân are very curious. The phial which Dr Walker handed round is a strong solution of sulphuretted hydrogen, which any one can smell for some distance, and it was no doubt used for cutaneous diseases in the old times as it is to-day. These very strong sulphur baths and springs are connected with the occurrence of gypsum in the neighbouring rocks, and were no doubt known from time immemorial.

Soda is commonly found, as carbonate, in the desert waters of the region, and was largely used by the Egyptians and other ancient people for detergent purposes, for preparing mummies, and also in the manufacture of glass, which was probably first made by the natives of Egypt. You see this good old traveller, 450 years B.C., noticed a great many of these things. He was not so excited by the evidences of art that he saw in Egypt as to fail to notice the works of nature in Egypt. I think we also should consider what these people had to do with, and the natural gifts of that wonderful country, while admiring what they did. There are few countries in the world so richly endowed, and perhaps no country in the world where those natural endowments were turned to such wonderful account as by those industrious, thoughtful, and careful old Egyptian people, who, in early times, were much secluded from intercourse with other nations of the world, and yet developed for themselves an original civilisation different from that of any other part of the world. (Applause.)

Between Herodotus and our friend here, there is a great temptation to speak on a subject so large and curious as this is, and especially with reference to the supposed volcanic phenomena at Jebel Ahmar near Cairo, as to which some of us might differ in some respects from both Herodotus and the author of the paper, but there are others present who may be prepared to take up these points.

Rev. S. KINNS, Ph.D.—May I refer to the perfection which the Egyptians attained in cutting stones? In the British Museum we have, in red granite, a magnificent arm of Thothmes III, the cutting of which manifests great skill, and apparently the use of excellent tools. There is also, in that Museum, a very fine bust and head of Seti I, sculptured in that black granite which Dr. Walker has mentioned, and also some very fine specimens in pink granite. A visit to the Museum after this excellent paper would enable one to see illustrations of the various coloured granites in which the monuments are chiselled. [After some remarks involving an earlier date for Joseph's time, Dr. Kinns said]:—I would suggest that the princess who was Moses' foster-mother was not the daughter of Rameses II, but of Seti I, for the monuments tell us that Rameses II died at the age of 79, and that he reigned for 69 years. Now Moses was 80 years of age when he returned to Egypt, and Rameses, who had just died, was one year younger than Moses.

Canon GIRDLESTONE, M.A.—I think we owe a debt to Dr. Walker for rehabilitating Herodotus, the father of history. I need not remind you that Herodotus lived about the time of Malachi, so that he was the father of Greek and Hebrew history. It reminds us how far back Old Testament history runs, seeing it closes at the beginning of what we ordinarily call the Greek historical research period. One other point in the paper I should like to mention. People are often surprised that there are not more monuments in Palestine. The reason is simply a geological one. Palestine has not got the kind of stone which is calculated to be monumental. The stone of Palestine is limestone and of a very crumbling nature; so that the old statues and carvings there have, for the most part, perished. You have to go north-east of the Jordan to get basalt, and that class of stone out of which such monuments as the well-known "Moabite stone" might be made. One word more and I have done. About twenty-five years ago the truth of the Old Testament was contested in certain quarters. The whole story of Creation, of the Deluge and other events, and the treatment of history in connection with what is usually called the spiritual, was scoffed at *by some* as impossible. In consequence, the Old Testament, which is the foundation of the New, seemed, in the eyes of some inquirers, to be in a perilous position. There was wanted some one who would stand up boldly, a man of science, an archaeologist, a geologist, a theologian,

and a Hebrew scholar, one who had the courage of his opinions, and one who had Christian experience and common sense. Now it was not easy to find such a man; but there was such a man in Canada, the discoverer of the earliest form of life amid the rocky deposits of that vast continent. We remember him as a few years ago the President of the British Association, and we welcome his arrival amongst us again to-day, as that of one who by his many valuable works has done more than almost anyone else to confirm the faith of doubters. (Applause.)

[Sir William Dawson was among the first to join the Victoria Institute, of which he has now been a leading member for twenty-seven years, and to him the Institute is specially indebted for many papers and communications.—Ed.]

Dr. MACGREGOR.—I desire to congratulate my friend, Dr. Walker, on his interesting and instructive paper. Though I am not, perhaps, an Egyptologist, I can corroborate everything that he has said, having lived for some time in Egypt.

The CHAIRMAN.—Allow me to thank Dr. Walker for his excellent paper. In regard to the remarks made by Canon Girdlestone, I think I may return them with interest, for if there is anyone to whom I am indebted for guidance in Biblical matters, it is to Canon Girdlestone. I think he is a very earnest and successful defender of the Old Testament. With regard to Dr. Kinns' remarks, I am quite prepared to concede the parentage of the finder of Moses—that she may have been Rameses' sister and Seti's daughter; but it would take a somewhat longer argument to induce me to yield to the earlier date of Joseph. My own idea is that the earlier date has been breaking the link of connection unnecessarily between Egyptian and Hebrew history; but if that subject be brought up at some future time, it may be an opportunity for arguing a somewhat important question. I finally ask those present to testify, by a vote of thanks to the author of the paper, their interest in what he has read to us, and their appreciation of the value of this rehabilitation of Herodotus, as it has been very properly called to-day.

The Author, having expressed the great pleasure it had afforded him to read his paper, the Meeting was then adjourned.