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A table of contents for *Journal of the Transactions of the Victoria Institute* can be found here:

https://biblicalstudies.org.uk/articles_jtvi-01.php

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1907.

ORDINARY GENERAL MEETING.*

LIEUT.-GENERAL SIR H. L. GEARY, K.C.B., V.P., IN THE CHAIR.

The Minutes of the General Meeting held on June 13th were read and confirmed.

ELECTIONS.—The following candidates were elected :—

MEMBERS :—Professor J. Dyneley Prince, Columbia University, New York; Rev. Chas. T. Townley, M.A., Christ Church Rectory, Wisbech; Leonard Sutton, Esq., F.L.S., Hillside, Reading; J. M. Peebles, Esq., M.D., Michigan.

ASSOCIATES :—Rev. H. C. Thomson, D.D., Albuquerque; Miss Caroline Tindall, Beyrout; Heywood Smith, Esq., M.D., London; John H. Roscoe, Esq., London; R. Tilden Smith, Esq., Clapham; A. C. Furse, Esq., Highgate; Mrs. Theodore Bent, London; George A. Stonier, Esq., London; C. Wallington, Esq., London; Rev. Forster Ashwin, M.A., Bury St. Edmunds; Henry B. Bilbrough, Esq., London; Rev. A. R. Cavalier, London; Colonel W. Sidebottom, Manchester; Rochester Theological Seminary, New York.

The following paper was then read by the author :—

“RESEARCHES IN SINAI.”

By Professor W. M. FLINDERS PETRIE, D.C.L.

(Review by the Secretary.)

OF Professor Petrie's numerous works the last is certainly not the least important. The "Researches in Sinai" is the outcome of a vast amount of laborious observation, resulting in throwing fresh light on the cult and character of the very early Egyptian monarchs and their subjects, especially in connection with the search for minerals in a region not forming a portion of Egypt proper, but adjoining it, and incidentally throwing light on parts of O.T. history. Having myself travelled through the Sinaitic region in 1883-4 when accompanying the expedition sent out by the Palestine Exploration Committee, it affords me special interest to read the narrative recorded, and examine the numerous photo-illustrations with which this fine work is embellished. Almost every page contains a surprise; and the remarkable knowledge of the ancient hieroglyphics which the author has acquired in his researches in Egypt and the Nile valley are here happily applied in deciphering tablets dating back over 5,000 years B.C. and more ancient even than those of Tel el Amarna and of Abydos. Professor Petrie is to

* Monday, December 10th, 1906.

be congratulated on the success of his labours, supplemented by those of his wife and trained Staff.

It was a happy thought when the author determined to transfer his work to the wilderness of Sinai from "the green plains of Egypt." The hope of doing so existed from the time of his first visit to Egypt twenty-six years previously, and while engaged in his excavations in the Nile valley, he often cast a wistful eye towards that mysterious mountain region lying to the east of the Nile and the Gulf of Suez described in more or less detail by previous explorers, of which the late Sir C. W. Wilson, Professor Palmer, Captain Raymond Neill, and others, including the writer of this paper, had published reports of discoveries. As the land of the Exodus, the region received an additional interest; and it is gratifying to know that the author is able to throw fresh light on the Biblical narrative of that wonderful migration of the early Israelite host, and to clear up some doubtful questions connected with the numbering of the Tribes, which have hitherto given rise to adverse, though not unfair, criticism. To this subject the author devotes an entire chapter (xiv), in which he shows that the large number of the Israelites at the time of the Exodus, as given in the Authorised Version, results from a probably incorrect translation of the Hebrew word *Alf*, which has two meanings, either a "thousand" or "a group or family"; so if we adopt the latter meaning, that of a "family" or tent, each tent holding on an average 9·3 persons, the total number is reduced to about 5,550 persons, a number which is quite consistent with the events both before and after the crossing of the Red Sea.*

While on this subject it is gratifying to know that Professor Petrie holds the view that at the time of the Exodus the Red Sea extended northwards from Suez so as to include the Bitter Lakes, a view which I have advocated ever since my visit to this country.† There has, therefore, been a slight elevation of the land since this historic period, owing to which the sea has receded to its present limit at Suez. The "passage," therefore, was made to the north of this place, in a position now cut

* This explanation has been contested by an able writer in the *Saturday Review*, July 21st, 1906. The statements of that writer are incorrect. The exact meaning of *alf* in modern Arabic, where we can enquire the meaning, is a *group of persons, united, but not numerous*, which agrees well to a tent group of family and servants. The same root is in Hebrew and Assyrian.

† This view is advanced by Sir W. Dawson (*Modern Science in Bible Lands*) and by the writer. See "The Passage of the Red Sea," by Major-Gen. Fullock, *Trans. Vict. Inst.*, vol. xxviii, p. 277, etc.

through by the great canal between Migdol and the sea over against Baal-Zephon (Exod. xiv, 2).

There were three localities at which special investigations were carried out by Petrie, namely, the Wady Nasb, Maghareh and Serabit el Khadem. The search for ancient Egyptian monuments in the vicinity of Jebel Musâ (the traditional Mount Sinai) was entrusted to Mr. C. T. Currelly, without any important results beyond those previously recorded by earlier observers. This mountain, which takes such a prominent position in the history of the Exodus, had apparently been left unnoticed, and perhaps unvisited, by the Egyptian monarchs during their occupation of the country. As far as we know, it contains neither gold, copper, nor turquoise. The Wady Nasb was a place of great importance owing to the occurrence of copper ore, which has been worked by Egyptian miners from very ancient times. It was visited by Mr. H. Bauerman some years ago, who made a discovery very interesting to geologists. This discovery consists of a terrace of Carboniferous Limestone rich in marine fossils (*Q.J.G.S.*, xxv, p. 17). Some years afterwards (1883) it was visited by the party sent out by the Palestine Exploration Fund, and we brought away a considerable number of fossils, of which a list is given in the Geological Memoir.* Up to this time no Carboniferous strata had been recognised, and their discovery enabled the writer to determine the existence of two great sandstone formations, namely, that newer than the limestone, which is of Lower Cretaceous age and known as the "Nubian Sandstone," and that on which the limestone rests, and which is therefore in all probability of early Carboniferous age, and named by the writer "the Desert Sandstone." † To this older formation the great red sandstone beds of Serabit and Magharah are probably referable. The masses of slag from the copper mines at Wady Nasb show the extent of the ancient works; and, through the aid of Mr. Lintorn Simmons, Professor Petrie was able to find a rock inscription dating from the 20th year of the reign of Amenemhat III. (3300 B.C.); under whose authority the mines were doubtless worked. The copper vein probably owes its origin to a large fault bringing up the ancient schistose and granitic rocks; and to the same agency the important spring of water around which the camels encamp and get their supplies is probably also to be attributed.‡

As Professor Petrie was not in search of minerals but of

* *Phys. Geol. Arabia Petraea*, etc., pub. by P.F.S., pp. 48, 49.

† *Ibid.*, p. 44 et seq.

‡ *Mount Seir*, ch. iv, p. 41.

inscriptions, there was not much to detain his party at Wady Nasb, and he was satisfied with a stay of one day. Proceeding to the Wady Maghareh, important discoveries were awaiting them in the form of tablets dating from Semerkhet of the Ist Dynasty, 5291 years B.C., and onwards; being the memorial works executed during the expeditions of successive kings when opening mines in search of the precious turquoise. This mineral occurs in the Carboniferous Sandstone, consisting of a solid mass of horizontal strata three miles wide, set in between the granite of Wady Sidreh on the south and that of Tartir el Dhumi on the north. The rocks of this district are very ancient, probably of Archæan age. From the photographic pictures it is seen to be a ridge of rugged heights culminating in a peak 3,531 feet above the sea. Farther to the south, at a distance of 25 miles, rises the serrated ridge of Gebel Serbal, perhaps the most striking of all the Sinaitic mountains, reaching to 6,734 feet above the Gulf of Suez, visible from on board the ships when sailing down the Gulf of Suez, and is often mistaken for Mount Sinai (G. Musâ). Further towards the S.E. is Mount Sinai itself, amidst a group of heights, some exceeding it in elevation, such as G. Katharina-Zebir (8,551 feet).*

The turquoise occurs in thin veins, generally under a stratum of "iron-stone," situated near the top of the formation, and this is also the level of the tablets, seven in number, connected with the mines; except that of Semerkhet, which is 400 feet above the valley floor, while the others are at a level of 170 feet.† The ages of the tablets range downwards to that of Tahutmes III. of the XVIIIth Dynasty (1481–1449 B.C.). The author gives us elaborate accounts of the excavations, and of the huts for the miners placed at the edge of a cliff 200 feet high and protected by blocks of stone against the wind, or possibly against the intrusion of wild beasts, such as hyenas and jackals, which still inhabit this region. Of the tablets, the most striking are those of Semerkhet (Plates 45, 46, and 47). In this last the King is represented as smiting with his mace an unhappy Bedaway chief, who crouches at his feet and tries to defend himself with his right arm—in vain! The King carries a dagger in his girdle, and is preceded by two figures, one of whom is the general of the expedition. The tablet is cut out of a face of sandstone, the figures shown in relief; and considering the great age of this

* "Researches," Fig. 36.

† Iron-stone varies from ferruginous sandstone up to pure fibrous hæmatite in various localities.

work of art (over 7,000 years), it is in a state of marvellous preservation and seems to have been scarcely injured by weather action. Happily the face of the rock is here inaccessible, and records the conquest of Sinai by a King of the 1st Dynasty of the Egyptian monarchy. The tablet just described is the only one remaining at Maghareh, the others having been removed to Cairo—some in a broken and defaced condition due to a lamentable episode which the author records with just indignation. It appears that previously to the visit of Professor Petrie's party, a company had been formed to develop the turquoise mines and had received a concession from the Government at Cairo. No care seems to have been taken by the department which gave the concession to prevent injury to the monuments, and (to use the words of the author) "ignorant engineers destroyed what was, in the European market of museums, worth far more than all the turquoises which they extracted." He then goes on to detail the damage which was done by these modern Vandals to monuments remaining after thousands of years of freedom from injury: "The Khufu sculptures were smashed up; the Assa inscriptions were destroyed or buried; the Pepy inscriptions were annihilated, as were also those of Amenemhat; the Sneferu scene was brutally defaced with a hammer, and the only portrait of Sneferu has been destroyed. The Sahura scene and the Men-ken-hor tablet have both been partly blasted away, and pieces have been knocked off the tablet of Ra-n-user." Thus have European workmen of the 19th century, A.D., under the protection of the Egyptian Government, wantonly destroyed works of art which have descended to us intact through thousands of years;—the loss of which is irreparable!

The next important locality, and the richest in historic records, visited during this memorable expedition is the valley of Serabit el Khadem, situated some miles to the north of Maghareh and visited by the members of the Expedition of 1883. As in the case of the latter, the mines of turquoise were worked in the same sandstone formation, and to a very thorough extent by means of galleries opening out at the face of the cliffs and carried far into the solid mass beyond. Excellent pictures of these galleries are given in Figs. 72 and 73.

Before commencing operations at Serabit, Professor Petrie made a trigonometrical survey of the valleys with their included terraces by means of the sextant and prismatic compass and plotted the work on the spot. The area surveyed is about one and a half miles from east to west, and three miles from north

to south, and is bounded by the Wady Serabit on the east and that of Bateh on the west. This locality is remarkable, not only for the turquoise mines, but also for numerous stelæ and memorial stones or "Bethels"* which it contains, and especially for the temple containing the shrines of the goddess Hat-hor, "Mistress of Turquoise," of whom we have a bust representation in Figs. 130 and 132. A much later head, represented in Fig. 140, is said by the author truly to be one of the most baffling of faces!

Amongst the monumental treasures of Serabit is the statuette of Queen Thyi, the consort of the magnificent monarch Amen-hotep III. of the XVIIIth Dynasty (1414-1383 B.C.)†. Petrie pays a high tribute to the noble character of the features and the beauty of execution of the statuette itself, and says that it is one of the most striking portraits ever carved by an Egyptian (p. 126). She is shown wearing a crown of gold, carrying in its centre her cartouche, by which she has been unmistakably identified.

The restoration in plan of the temple of Serabit el Khadem is one of the most remarkable achievements of this expedition. We have this restoration presented to us in three distinct pictures (Figs. models 93, 94 and Map 4), the last being an architectural plan on a scale of 20 feet to the inch. Here we have the earliest shrine, consisting of the sacred cave of Hat-Hor in the highest point of the platform, of an age apparently as early as Sneferu, 4750 B.C. From this the temple grew outwards until it reached a total length of 230 feet, and ultimately consisted of a sanctuary, two chambers ("greater and smaller Hanafiyeh"), the court, pylon, shrine of the Kings and cubicles for sleepers. The walls are frequently covered by inscriptions, and the whole surrounded by enclosures of broken rock and rubble. The shrine of the Kings lay outside the walls of the temple on the north side, and on this side was a line of stelæ, or sacred upright stones, so-called "Bethels," to which we shall refer again. At the entrance there formerly stood two tall stelæ, the northern one of Ramessu II. (1300-1234 B.C.), the southern one of Set-Nekht (1203 B.C.); the former was complete, though cracked from top to base, when the Expedition of the Palestine Exploration Fund took their photographs.‡

* Referring to the pillar set up by Jacob, Gen. xxviii, 19.

† Fig. 133.

‡ This was the first expedition under the late Sir Charles W. Wilson. Those acquainted with the temples of the Valley of the Nile will recognise the resemblance of the plan of the Temple of Luxor to that of Serabit el Khadem. See Dr. Budge's handbook of *The Nile*, p. 284, in which the plan of the Luxor Temple is given.

We have referred to the light which some of the discoveries are calculated to throw upon Old Testament history, and Professor Petrie draws attention to the familiar account of Jacob's dream and the stone which he set up for a pillar as a memorial of God's presence. In Gen. xxviii, 10-19, we read, "And Jacob rose up early in the morning and took the stone that he had put for his pillow, and set it up for a pillar, and poured oil upon the top of it, and he called the name of that place Bethel" (The House of God). The district of Serabit el Khadem is replete with such Bethels—single pillars, some surrounded with a circle of stones, others standing by themselves. In some cases they are sculptured with hieroglyphics, in others they are plain. In these memorial stones Petrie recognises representatives of Jacob's monument, as it is clear from their surroundings that they had a religious object and bearing—and he refers to illustrations drawn from other countries, chiefly Oriental, with a Semitic system of religion. Numerous plates illustrate the frequency of these Bethels in the Sinaitic region.*

The author thus sums up the character of the worship at Serabit el Khadem, p. 192: "We have before us a Semitic cave-shrine older than the Mosaic system. We see in it a great goddess, probably Ishtar, worshipped alone, and later on associated with a god. Her ritual was that of burnt sacrifices and incense offerings; many ablutions were required of the worshipper; sacred conical stones were dedicated in her temple, and oracular dreams were sought, and memorial stones (Bethels) were erected where the devotees slept. The essential features of Semitic worship are here shown in earlier use than in any other instance, and we see how much of Mosaism was a carrying on of older ritual; how that movement was a Monotheistic reformation of existing rites, and how the paganism of the Jews was but the popular retention of more than was granted in the state religion."

It was no part of Professor Petrie's object in visiting the Sinaitic peninsula to "follow the track of the Israelites," but it is personally gratifying to myself that he appears in general agreement with the views of Wilson, Palmer, and the members of the Palestine Exploration Fund Expedition (1883-4) as stated in the narrative of that Expedition.† I am unable, however, to

* On the name Bethel see Mr. Tuckwell's remarks in the discussion: it seems an error to call the stone a "Bethel."

† *Mount Seir, Sinai and Western Palestine*, ch. vi. p. 51. The opinion of Professor Palmer, supported by Sir Charles Wilson, ought to be quite conclusive on the subject.

agree with Mr. Currelly in his view that Gebel Serbâl is the mount from which the Law was delivered (Ch. xvii, p. 247). I am in accord with him, and the distinguished travellers above named, in supposing that after the Israelites left their camp by the Red Sea, on the plain of El Markha, they took the route through the Wady Feirân, even to this day well watered and green with palms and herbage: but I fail to see why, if this were the case, Jebel Serbâl was the mount of the Law, or Horeb. The Wady Feirân, although it passes along the northern spurs of Serbâl, was not, as Mr. Currelly supposes, the camping ground of the host, but only their line of march towards the Mount of the Law, or J. Musâ. When our party visited it in 1883, we encamped in the valley at its base and ascended to its summit; and it appeared to present all the conditions required by the narrative, of which, as Mr. Currelly remarks, water supply is the most important. This is here practically abundant. There is not only the fine cascade descending from the little natural basin of water below the summit, but four or five perennial streams fed by the melting snow of winter.* Perhaps the most striking point of identification is the Ras Sufsafeh, the lofty vertical cliff at the head of the valley of encampment called the W. el Deir, and answering to the "Mount that might be touched," as it forms the base of Sinai, and shuts off the view of the summit from occupants in the plain; conditions which literally agree with the narrative in Exodus.† As I have more fully dealt with this subject in *Mount Seir*, and also in my paper read before this Institute, I will not further discuss this position, but will only add that nothing has been written which I have seen, including the essay by Professor Sayce, "Where is Mount Sinai?" which induces me to change the opinion formed on the spot, that Jebel Musâ, the traditional site of the Mount of the Law, is the true site.‡

* *Phys. Geol. of Arabia Petraea*, pp. 25, 26; *Mount Seir*, pp. 58, 59.

† Sayce tried to prove that the Mount of the Law was situated somewhere amongst the Edomite mountains, east of the Arabah. This view is still more improbable than that of Currelly.

‡ The impression produced on the writer's mind by the scene may here be quoted: "We marched up the wide plain of W. es Sheikh, and afterwards turning to the right, entered the W. el Deir, when we came in front of the grand cliffs of Ras Sufsafeh, rising abruptly from the plain and intersected by several deep clefts. . . . I felt satisfied that here was the camping ground of Israel, and in front 'the Mount of the Law.'" *Mount Seir*, p. 51.

I have replied to Professor Sayce in a paper read before this Institute, so need add nothing further on the subject.*

Mr. Currelly has decided in favour of Gebel Serbâl being the Mount of the Law as against the traditional Gebel Musâ. Before doing so he might have consulted previous authorities of greater weight and knowledge of the Sinaitic region than himself, such as Professor Palmer, Sir Charles Wilson and the Rev. F. W. Holland. To these I may be allowed to add the conclusion arrived at by the members of the Expedition of 1883-4.

What foundation, therefore, is there for the statement of Currelly that "the view that Gebel Musâ is Sinai is supported by tradition alone" ?† He himself recognises in the same page that Professor Palmer held the view which coincides with that of tradition, but explains that he was "carried away by the idea that the great plain of Raha was the only place in the peninsula where such a vast assembly could have witnessed the giving of the Law." This is a very poor objection: Palmer had better reasons than this for his decision. The Bible narrative does not support the statement that the people "witnessed the giving of the Law"; on the contrary, the summit of Sinai, where the law was delivered to Moses, is expressly stated to have been invisible from the camping ground of the Israelites, and the prophet was lost to sight. The statement is, "As for this Moses . . . we wot not what has become of him." Ex. xxxii, 1.

How little weight ought to be attached to Mr. Currelly's conclusions may be gathered from an event which occurred while crossing the watershed into the Wady Berrah. It appears that some flakes of snow fell, and, lighting on the black cloaks of his attendant Egyptian fellahin (who had never seen snow flakes before), they ran up to him enquiring what the flakes were, in a state of much excitement. Currelly adds quite seriously, "May not this be the manna which fell from Heaven when the children of Israel moved along these valleys" ?‡ and he deliberately discusses the question, arriving at the conclusion "that snow answers all the attributes of [manna] described except that it is not food," truly a splendid inference, arrived at by much careful comparison with the description of manna in Exodus! Mr. Currelly might have been supposed to be joking, but this was not so; it is clear from the statement that he is perfectly serious.

* See *Trans. Vict. Inst.*, vol. xxxi.

† p. 251.

‡ p. 230.

It is strange that Professor Petrie should have allowed such a wild idea to be printed in his book, and it is only inserted here to show the extent of his companion's reasoning powers.

This work will prove of the greatest interest to Oriental scholars and Egyptologists as tending to throw additional light on the events of Egyptian history, and the succession of the "Dynasties"—although drawn from a region outside and beyond the Valley of the Nile; and the learned author is to be congratulated on the success of his explorations and the able manner in which he has placed the results within reach of the public.

DISCUSSION.

The CHAIRMAN.—Ladies and Gentlemen, I think I shall be expressing your wishes in thanking Professor Hull for the interesting paper read to us this evening. We have had the advantage of the comments of one who has travelled over the ground in question and formed an opinion on the spot—the opinion of a skilled observer.

In an audience like this, I cannot conceive a more interesting subject for consideration and discussion than that which has to do, not only with the journeyings of the Israelites after the Exodus, but the remains of a religious cult going back, as I understand it, authentically to between 5000 and 6000 B.C. These seem to me to be the two directions into which the paper divides itself. I have not read Professor Flinders Petrie's book, so I do not feel justified in taking up more of your time. I would only express the hope that some interesting comparison may now be possible between the memorial stones or "Bethels," which Petrie describes with those which are to be found in other countries, more especially in Northern Africa, the West of Europe and our own Islands.

Rev. JOHN TUCKWELL, M.R.A.S.—I desire to express my appreciation of the value of the paper which has been presented to us by our Secretary. We cannot all hope to possess the expensive volume on which the lecture has been based. I feel, however, that I must take exception to the use of the term "Bethel" which has been made by Professor Petrie. The Scripture narrative tells us plainly that

it was the "place," and not the stone which Jacob called a "Bethel." It was in that place that Jacob became vividly conscious of the presence of God, and the stone was erected as a memorial of his experiences there. This misuse of the term "Bethel" is the more to be regretted because it is used by infidelity as the origin, in the supposed evolution of Christian doctrine and practice, of the more modern temples and other places of sacred service. I should like to add also that the number he assigns to the Biblical narrative of the Israelites based on the use of the term "alf" is equally at variance with the history of the journeyings of the Israelites through the desert. The number of the men according to Professor Petrie's calculation would be quite incommensurate with the number requisite to carry on the wars which are described in the Biblical narrative. It appears, therefore, that we must rather accept Professor Petrie's theories and reject the plain narrative of Scripture or we must accept the Scripture narrative and reject Professor Petrie's theories. I confess that I prefer the latter.

Deputy Surgeon-General PARTRIDGE.—May I say a word about what is said by Professor Petrie regarding the number of the Israelites who left Egypt being only 5,550 persons. The Bible tells us (Exodus xxx, 11-16), that when the people were numbered every man (above 20) gave a ransom for his soul *a half-shekel of silver*, the rich not more, the poor not less. We know what was done with this silver; it was made into silver sockets for the boards of the Tabernacle, and the four pillars of the vail (Exodus xxxviii, 27), and for the silver hooks, fillets and chapiters of the Court (Exodus xxxviii, 28). *Each socket* weighed a talent (Exodus xxviii, 27) = 3,000 shekels or 6,000 half-shekels. There were two sockets to each board, and there were 48 boards, so there were 96 sockets, also there were four sockets for the four pillars of the vail. Total, 100 sockets, each socket = 6,000 half-shekels. Total, 600,000 *half-shekels!*

For the silver hooks, fillets, and chapiters of the Court, 3,550 *half-shekels* were used (Exodus xxxviii, 28).

So then the amount of silver used was $\left. \begin{array}{r} 600,000 \\ 3,550 \end{array} \right\} \text{half-shekels}$

603,550

Now Exodus xxxviii, 26, tells us that the number of men numbered (above 20 years old) was 603,550, which is the exact number of half-

shekels used for the court and boards, so the Bible estimate is proved to be absolutely correct, and Professor Petrie's estimate of 5,550 absolutely wrong.

The Levites were numbered separately, and they numbered 22,000 over one month old (Numbers iii, 39).

It is interesting to notice, that at the end of the 40 years' wanderings the new generation which entered Canaan, numbered 601,730 (over 20) Numbers xxvi, 51, and the Levites numbered 23,000 (over one month) Numbers xxvi, 62, or 1,000 more altogether than came out of Egypt.

Mr. JOSEPH OFFORD.—Professor Hull in his interesting review of Professor Flinders Petrie's work upon the Sinaitic remains of Egyptian occupation there, has not treated of some important evidence they afford as to certain peoples mentioned in the Old Testament. In reading the Egyptian Sinaitic inscriptions it is curious to notice that two of them relate to XIIth Dynasty expeditions, an echo of which is preserved in the memorial of a certain Khonsovkou found by Mr. Garstang, in Egypt, in 1900.

The new texts which throw light upon the Old Testament, however, are still more interesting because they show that the Egyptians were well acquainted with three tribes which appear in the geographical and ethnographical list contained in Genesis xxxvi. Those are the Lotanu or Lotanu, the Horites, and the Aiah. Moreover the inscriptions, or a certain papyrus, connect them racially and territorially as does the Old Testament. The first of these valuable inscriptions records a campaign against the Sakimim country and the tribe or people of the Lotanu, who were encountered during an expedition to the land of Monition-Sati which in early Egyptian times denoted near Asia, or rather South Syria.

Immediately the text was translated it confirmed a previous supposition of Professor Max Müller that the people read "as named Tanou" upon the celebrated papyrus relating the travels and adventures of Saneha, should be read Lotanu.

Saneha tells us they occupied two districts which he terms Lotanu simple, and Higher, or Upper Lotanu. The Sinaitic inscription of Senofrit mentions a chief, or Sheikh, named Khehta, or Khebtata, who he says was brother to the Lotanu king. This Sinaitic prince was evidently an ally, if not a sub-official, of Egypt,

his name appearing in several lists of their officers and superintendents.

It will be seen that these monumental records and the Saneha papyrus all assign the Lotanu to the Sinaitic district in "Middle Empire" times. Later, however, under Thothmes III., for instance, they were stated to be farther away to the north, a matter which need not be explained here. But in Saneha's time some of the Lotanu had evidently gone further away from Egypt, and thus had become to his mind the Upper Lotanu.

As mentioned these early monuments also speak of the Horu or Horites as contiguous to the Lotan. This second tribe the Egyptians also subsequently located elsewhere, for the Golenischef papyrus of a voyage to Phœnicia calls the Mediterranean near Byblos "the sea of Hor." However, in Egyptian records, up to the XIXth Dynasty, Horu signified a district close to the Egyptian frontier, and Seti I. says that leaving Zaru, a place near Ismaeliyeh, and marching to Kanana (Canaan), he traversed Horite territory. Therefore at his epoch the north-west angle of the Sinaitic district commencing at Zaru "the gate of Egypt" was Horite land, and perhaps stretched as far, at the date of Thothmes III., as Gaza. So about 2000 B.C. Horu and Lotan were between South Palestine and Sinai, projecting somewhat into each, and not many days' journey from the Egyptian delta.

This quite coincides with Genesis xxxvi, 36, where Lotan is identified as "first" born of Seir, a people lying between South Palestine and the Akaka Gulf. Hori, son of this Lotan, like all nomadic pastoral people, pushed out from the Lotan area to further fields and pastures, settling, according to Egyptian evidence, in the districts of the Sinaitic region towards Gaza.

It is evident that the Egyptians in their Sinaitic inscriptions faithfully transcribed the local tribal names, subsequently using these ethnic titles as geographical ones. This is further confirmed by the Saneha papyrus mentioning the Aiah of the Bible, the nephew of Lotan, Genesis xxxvi, 24; and also either Qedem, or Adema-Edom; the correct reading of these two names is not quite certain. Saneha speaks of Aiah as being an oasis famous for its vineyards. It is certainly remarkable that two names of Asiatic neighbours to Egypt should be found in Genesis, and that a little later under the XIIth Dynasty there should be associated a papyrus

with a third Biblical name: all these three being, in the Old Testament records, placed in the region between Palestine and Egypt, and that the proof of this should be elicited as soon as ever Egyptian texts situated in the proper region beyond their frontier where they might be anticipated, are scientifically examined. Of course there are scores of other Biblical places and peoples also mentioned in Egyptian records.*

Professor LANGHORNE ORCHARD.—While very sensible of the great value of Professor Flinders Petrie's work, I must associate myself generally with the criticisms to which we have listened. We cannot go back in human history to 5000 B.C. Dr. Petrie's chronology, apparently following that of Mahler, is not his strong point. Borchardt has shown its unreliability.†

The number of the Israelities at the time of the Exodus, as computed by Professor Petrie, is surely too small. If we are to translate *alf* in this connection by "group," the group must have been a very large one; for when in Egypt the Israelites had increased exceedingly and filled the land, so that Pharaoh was afraid of them. When we consider that the population of America increased in rather more than 120 years from the Declaration of Independence to 60 times its original number,‡ we need feel no surprise that in 210 years the number of Israelites had multiplied into something very great.

In investigating the site of Mount Sinai, account should be taken of the fact that "the people encamped before the Mount" (Numbers xix). This at once negatives the idea that Sinai is Jebel Serbal. Serbal, though a magnificent mountain, has no plain before it suitable for such a camping ground. A fair review of available evidence points to the conclusion that Sinai is at the rear of Ras Sufsafeh. Ras Sufsafeh, with its two valleys—the immense Wady

* For the Asiatic people known to the ancient Egyptians, see four articles by M. Ballerini in the Italian *Journal Bessarione*, 1901, "*Le Tribu Nomadi della Palestina o del Sinai, Seconda Memorie dell' Egitto Antico*," and an essay by M. Isidore Lévy upon the "Horites of Seir and Egyptian records" in the *Revue des Etudes Juives*, January 1906.

† *Proceedings of the Society of Biblical Archaeology*, vol. xx p. 264.

‡ But was not this largely due to immigration as well as natural increase from births?—Ed.

Er Rahah to the north-west, and the Wady Esh Sheikh to the north-east—satisfies *all* the conditions. It has been remarked by Urquhart that the Israelites would, in this case, be enclosed in an almost impregnable mountainous fortress, assailable from only two directions and easily defended.

We shall concur with Professor Hull that “Professor Petrie is to be congratulated on the success of his explorations and the able manner in which he has placed the results within reach of the public.” We shall cordially thank Professor Hull for the concise, clear and interesting manner in which he has brought the more important of those results before us this afternoon.

Mr. ROUSE.—There can be no doubt that in the interpretation just dealt with Professor Petrie desired to bring the Bible statement within the bounds of common experience. But the expedients will not assort with other facts in the sacred story. Nor is there the cause that he imagines for lengthening the Berlin chronology. In order to make room, as he says, for the XIIIth and XVIIth Dynasties* as well as for the Hyksos, he finds it needful to add a whole Sothic period to the apparent difference in date between an astronomical observation made late in the XIIth Dynasty and another made early in the XVIIIth. But that this is needless is evidenced by the list of kings whose monuments he has found in and around the mines of Sinai; for whereas the XIIth Dynasty has a continuous record of its seven kings on these monuments, and from the second king of the XVIIIth, who acceded in 1562 B.C., down to the fourth king of the XXth, who acceded in 1156, there is only one break and that of only 55 years (which we know to have been troubled ones), on the other hand no king of either the XIIIth or the XVIIth Dynasty is represented at all. The inference is natural that the kings of the intermediate native dynasties were contemporary with and subordinate to the Hyksos kings; that, when the Hyksos invaded Egypt, the miners who, as appears from the Sinaitic records, were Semites, fled back to their distant homes; and that the Hyksos, having during their conquest of Egypt let the mines slip, were never powerful enough to renew Egyptian ownership over them. It is indeed strange that Professor Petrie should reckon the XIIIth and

* Manetho assigns three dynasties to shepherd kings; but he calls them the 15th, 16th, and 17th.

XVIIth Dynasties as preceding and following the Hyksos, when the tablet of Abydos, which gives a list of the predecessors of Rameses, passes straight from the XIIth to the XVIIIth Dynasty, omitting all mention of ancestors in between. Moreover we know that in the latter part of the domination of the Hyksos in the north of Egypt there were kings in the south, three of whom bore the name of Ra-Sekenen, for we have a list of these in a record of the rifling of tombs, besides a fragmentary correspondence between one of these and Apepa, the Hyksos king; while the naval captain Aahmes, son of Abana, who, among other feats, tells us that he shows great courage in the siege of Avaris, the Hyksos capital, under King Aahmes I., founder of the XVIIIth Dynasty, records also that his father had been "a captain of the deceased King Ra-Sekenen" (Brugsch, *Hist. Egypt*, English Translation, vol. i, pp. 282, 283). And we may add that Manetho, in his story of the Hyksos, preserved by Josephus (and abundantly confirmed by Professor Petrie in his discovery of Avaris last year), says that "the kings of Thebes and other parts of Egypt finally raised a revolt against the Hyksos, which led to their departure from Egyptian soil."

The Egyptians fixed their New Year's Day originally by an astronomical event which falls at the time of year when the inundation of the Nile begins to be felt in their country, namely, the rising of the dog-star (Sothis) with the sun, or as closely before the sun as it can be seen, which takes place on July 21st,* as Censorinus tells us.† But because the Egyptian kalendar year was always exactly 365 days (no leap years being used), the New Year's Day (the 1st of Thoth) went back nearly a quarter of a day in each successive year until it had made the whole circle of 365 days; and the time taken to effect this was known as the Sothic period. This is usually accepted as 1,460 years, and Petrie so accepts it, while hinting that this falls somewhat short of the mark, but it really was 1,506 years. The precise length of the solar year in 1900 A.D. was 365·5·48·45·975; and, since it has shortened itself in every century by only 5305, it is easy to calculate that in Petrie's second Sothic period (1322 B.C. to 139 A.D.) its average length was 365·5·48·56, and in the next period before that only 8 seconds longer. The 8 seconds make no

* Of the Julian Kalendar or 22nd of the Gregorian.

† Petrie, pp. 164 and 165.

difference, and the time required in each case to turn this fraction of a day into 365 days is certainly 1,506 years.

Thus the 25 days' recession* that Censorinus remarked had taken not 100, but 103 years to bring about :

and the date of his account being 239 A.D.,
 the last previous Sothic period had ended in 136 ,,
 and the next previous one 1,506 years earlier = 1369 B.C.

Now, since in the ninth year of Amenhotep I., the 1st of Thoth fell 57 days after the heliacal rising of Sothis

and $\frac{57}{365} \times 1,506$ years = 235 years,

his ninth year is brought to 235 years before 1369 B.C. = 1604 B.C.

and his first year to 1612 ,,

and since Aahmes I., his immediate predecessor and founder of the XVIIIth Dynasty, reigned 25 years, he acceded in 1636 B.C. †

Again, in the seventh year of Sennsert III. the 1st of Thoth fell 139 days after the heliacal rising of Sothis,

and $\frac{139}{365} \times 1,506 = 574$ years,

which brings his seventh year to 574 years before

1369 B.C. = 1943 B.C.

and his last, or 38th year, to 1912 ,,

Amenemhat III.'s last, or 44th, year, to 1869 ,,

Amenemhat IV.'s last, or 9th year, to 1861 ,,

Sebeknefern's last, or 4th year, closing the XIIth Dynasty,
 to 1858 ,,

Seeing, then, that the XIIth Dynasty ended in 1858 ,,

and the XVIIIth began in 1636 ,,

there remained for the Hyksos kings in the north and for their contemporaries, the under-kings of the XIIIth and XVIIth Dynasties in the south, 222 years instead of the 30 years that Petrie leaves to the Hyksos as sole monarchs.

[In one important matter, Petrie, both by discovery and inference, utterly confutes the rationalists. In the mines and the many-

* It appears to be 26 days; but June 25th Julian=June 26th, Gregorian, which is one day nearer to July 21st.

† In nearly every case the "last year" of one king is the "first year" of his successor.

chambered temple of Maghareh and Serabit he has found many examples of a non-Egyptian writing akin to the Phœnician, or early Hebrews, in the mines upon squares marked out side by side on the walls, also in the temple upon rough images—too rough to be of Egyptian design, and he concludes beyond doubt that this was the writing of Semitic labourers. And further, he asks, in view of this evidence and that of the Tell-Amarna letters, “Can it be supposed that the” Israelite “officers, who were responsible for the amount of work” (done at Ramses and Pithom—Exod. v, 10, 11) “were left without any of the training in writing and registering which was essential to every Egyptian ?”]

Professor HULL, in replying, expressed his pleasure at the interesting discussion which his paper had called forth, and asked to be allowed to convey to Professor Petrie the thanks of the meeting for the loan of the lantern slides which had helped so much to elucidate the subject of the paper.

The CHAIRMAN put the question, which was carried unanimously. The meeting then terminated.

