

PROFESSOR HULL'S LETTERS.

I.

November 10th, 1883.

This will be my last letter to you for some time. We are just about to drop down the Gulf of Suez in a sail-boat, and then to land opposite "Moses' Wells," where we camp to-night and to-morrow (Sunday).

Our camels arrived here safely on Friday, and are by this time probably in camp at the Wells. We are now all here, some of our party having arrived yesterday, my son and I the day previous, so as to see to everything connected with our journey, and any objects of interest in the geology of the neighbourhood.

As the grand escarpment of Jebel Attakah presented so fine an appearance from the roof of our hotel yesterday morning, we determined to visit it; so we dropped down the bay and crossed over to the pier constructed by M. de Lesseps for bringing stone over here for the piers and harbour of the Ship Canal.

The rock is limestone, exceedingly rich in fossils, of which we carried away some, and with part of our baggage are sending them on to Jerusalem to await our arrival there.

Our Arab boatmen proved right pleasant and hard-working fellows, and when the wind fell, took to their oars with a will, chanting a monotonous, but not disagreeable, refrain all the while.

The Duke of Connaught has just passed through and embarked on board the "Shannon," which has been lying in the harbour for some twenty-four hours awaiting his arrival. A salute of eighteen guns was fired from the fort in his honour this morning.

I think we are fortunate in our conductor, Barnard Heilpern. He is most obliging, and seems to manage affairs well. We have also secured the services of the celebrated cook, Ibn Miriam. We are all well, through God's goodness, and in good spirits, anticipating life in the desert; to-night will be our first under a tent.

Kindly address to the care of Consul Moore, at Jerusalem.

II.

December 2nd, 1883.

I think my last letter was dated from Suez, and I am now able to announce our safe arrival at Akabah on the 27th ult., after a very interesting but somewhat laborious journey across the Sinaitic peninsula. We had every

reason to be satisfied with the conduct of our Towârah Bedouins, who have accompanied us thus far and returned to their homes in Wâdy Feiran yesterday. We spent three days in the neighbourhood of Jebel Musa, and made the ascent of that mount, from the top of which Kitchener took angles to several prominent points, while on the same day Hart ascended Mount Catharina, a feat hitherto unperformed in one day, and was rewarded by finding several plants which are representative of colder climes. From Jebel Musa to this place we have taken the upper or northern route partially explored by the late Professor Palmer, and at an earlier period by Laborde, as recommended in the instructions of the Committee; this has enabled us to add considerably to the accuracy of the geology and topography of this district, while my son has had an opportunity of taking numerous photographs of districts which will be entirely new.

On Saturday week we traversed a magnificent gorge, cut through granite cliffs and extending for several miles, which we believe has not hitherto been described, though it may have been visited by Laborde and Palmer; it commences at the head of the Wâdy el Ain, and on Sunday, 25th, we encamped lower down the same valley. We found the escarpment of the Tih in the district where we crossed much more broken and indeterminate than is generally represented on the maps, owing to the existence of several large faults or dislocations of the strata which traverse that district in a generally north and south direction; and we have finally determined the position of the leading line of fracture to which at least this portion of the Wâdy el Arabah primarily owes its existence. I regret to have to announce that our course towards the Salt Sea by this valley is barred, owing to a blood feud between the Alowyn and Teyahah tribes; this is a serious disappointment to us all, as it may render it impossible for us to visit the southern extremity of that sea. We have, however, entered into a contract with Sheikh Mohammed Ibn Jad (of the Alowyn tribe), by which he undertakes to escort us to the Wâdy Musa and Petra, and one day's march further up the Arabah, after which we shall have to strike off west into the Tih plateau—somewhat in the line traversed by Palmer, Drake, and Robinson—to Gaza, whence we shall make our way by Jaffa to Jerusalem. This will enable us at any rate to explore about two-thirds of the Wâdy el Arabah, to determine the position of the principal elevations, to ascertain the height of the dividing ridge between the Gulf of Akabah and the Salt Sea, and to examine Mount Hor and Petra, from which we hope to be able to bring home for the first time some good photographs. It will also enable me to make a geological traverse of the district bordering the southern extremity of Western Palestine; so that there is some compensation for our disappointment. We are all in excellent health and good form, notwithstanding the heavy marches and considerable fatigue; and we have made excellent collections illustrating the botany, geology, and zoology of the district we have traversed.

III.

December 26th.

My last letter was written at Akabah: I hope it has been received. I expected that my next would be from Gaza or Jerusalem, but a series of unforeseen events has caused me to date from Es Safeh, in the Ghor.

Let me say in the first place that we are all safe and well, and that up to our entrance into the Ghor eleven days since, everything had gone as prosperously as could have been anticipated. In my former letter I stated that our way to Jerusalem was blocked, as Mohammed Jad refused to take us down into the Ghor, and we left Akabah with the full expectation of reaching Gaza, and so on to Jerusalem. Our party was placed under the immediate escort of Mohammed's brother Ali, and after some difficulties with the Arabs we ultimately got off on 3rd ultimo, and proceeded up the Wâdy el Arabah by easy stages, all our party being busily engaged in making observations in their several departments.

On reaching the watershed, on the 7th, Sheikh Ali made an unexpected proposal to the conductor, Bernhard Heilpern, to the effect that for a certain sum he would take us down into the Ghor, to the camp of the Ghawarneh, to within two hours' march of the Salt Sea, and thus enable us to carry out our original intention of marching through the Arabah direct to Jerusalem. We gladly accepted the proposal, and the sum of 100 dollars (about £17) was agreed upon, while the Sheikh promised to remain with us in the Ghor till means of transport should arrive from Jerusalem. This change of route was most acceptable, as it enabled Kitchener and myself to carry out our respective surveys through the whole length of the Arabah, and saved a long and wearisome journey over the limestone tableland of the Tih. With glad hearts we turned our steps up Wâdy Kusheibeh, and pitched our tents at the base of Mount Hor, which we determined, if possible, to climb, and also to visit Petra.

Mount Hor was an important trigonometrical station for Kitchener, and I was also anxious to examine the geology of this district. We were soon visited by a party of mounted Arabs from Petra and Wâdy Musa, who demanded most exorbitant terms for permission to visit these sacred spots, and it was only after long discussion, and striking tents with the determination to leave the spot unvisited, that anything like possible terms could be obtained. On the morning of the 10th, long before daybreak, our party set off, guided by a lantern, and made the ascent of the mountain, where Kitchener was able to make his observations. We then descended into Petra, made a hasty visit of the ruins, and, after passing through scenery of the grandest kind, reached our camp long after sunset. This expedition was attended with the most interesting geological and botanical results. On Saturday, 15th, we reached the edge of the Ghor, and descending next morning, pitched our camp in the valley, where we were visited by Sheikh Arari, and his party of mounted Bedouins, from Wâdy Musa. We consented to pay him 30 dollars for passing through a portion of his territory in the Wâdy el Arabah, but have sternly refused the

repeated demands of some of his followers for further backsheesh. Before arriving at the edge of the Ghor we had sent two Arab messengers to Jerusalem, with intelligence of our arrival, and a request that horses and mules should be immediately sent down by Mr. Cook's agent to the camp of the Ghawarnehs on which to proceed to Jerusalem. You may imagine our disappointment on receiving the intelligence, on the return of the messenger, that a rigid quarantine had been established for all parties coming from the south, and that the Turkish governor had ordered that we should proceed to Gaza, where we must pass fifteen days before being allowed to enter the city, and that the mule-drivers themselves would have to remain with us in quarantine for the same period. Unhappily for us the agent requested further instructions before sending the mules, and notwithstanding that we have sent two sets of messengers with information that we have no means of leaving this spot, we have been now ten days in the Ghor, practically prisoners. Sheikh Ali refuses to cross to the other side of the Dead Sea with us, and the Ghawarnehs have no means of carrying baggage. This delay, with the probable quarantine which may follow at Gaza, is most vexatious; but we have been endeavouring to turn our enforced delay to the best account, by making observations in the neighbourhood. Kitchener has completed his triangulation up to the south shore of the Salt Sea; Hart has added largely to the known flora and fauna of the district; Lawrence has taken a continuous series of meteorological observations; my son has taken about eighty large photos, and a good many small ones; and I have made a tolerably complete geological survey of the Wady el Arabah, on the enlarged map of Dr. Smith's atlas, kindly presented to me by Mr. John Murray. We are in hourly expectation of the arrival of the mules; and yesterday we endeavoured to keep up the traditions of old England by having for our Christmas dinner roast turkey and plum pudding, and we duly remembered our absent friends over our penultimate bottle of claret.

IV.

New Year's Day, 1884.

I left off my letter in the Ghor, and now conclude it from Gaza. Shortly after concluding, an Arab arrived with the happy tidings that he had seen a large party of mules and horses crossing the marsh, and that they would be with us before sunset. A loud hurrah greeted this news, and I *back-sheeshed* the messenger on the spot. Towards sundown the tinkling of bells was heard, and soon after the whole *cortège* arrived at our camp. Preparations were immediately commenced for an early departure on the next day, and the amount of backsheesh to be presented to Sheikh Ali and the Ghawarneh Sheikh was arranged between ourselves and the conductor. We were astir early next morning, and soon after sunrise, mounted on our spirited little horses, we were wending our way through the groves bordering the Salt Sea. That day's march was a long one: we crossed the

marsh, examined Jebel Usdum, and then ascending by Wâdy Suweireh made our way towards our camping ground, in Wâdy el Abd, which we did not reach till three hours after sunset, making twelve hours in the saddle! The following day we camped at Tel-el-Mihl, and the day after at Bir-es-Seba, a spot of peculiar interest to us all, from its connection with the patriarch Abrahâam. The next day brought us to Tel Abu Harari, and yesterday (December 31st) we entered our quarantine ground in the suburbs of Gaza. We entertained hopes to the last that the Pasha of Jerusalem would have relented. But a kind letter from Mr. Moore, our Consul at Jerusalem, informed me that his efforts in this direction had been unavailing, and that our only prospect of getting out of quarantine before the lapse of the fifteen days would be by telegraphing to Lord Dufferin, with the request that he would use his influence with the authorities at Constantinople. This I have done, and we now await the result. This enforced imprisonment will cause a serious loss both of time and money, as we have to bear all our own expenses, and, in addition, those of the muleteers, and even of the soldiers who are keeping guard over us. One advantage, however, has resulted. We have been able to make a complete traverse across Southern Palestine, and in part by a road not hitherto explored by previous travellers. Our quarters here are comfortable and cheerful, and we are all in good health. Kitchener yesterday left us on his return to Cairo. I forgot to mention that on the 24th ultimo a party of four Arabs arrived from Cairo on camels, bringing a letter from the Consul-General, to the effect that he had received a telegram from the Foreign Office expressing anxiety on our behalf, on the part of the Committee, consequent on the defeat of General Hicks's army in the Soudan, the news of which it was supposed might stir up a hostile feeling among the Arabs towards Europeans. We had not before heard of this unhappy event; but it was speedily known among all the Arabs around. We took care to inform them that Hicks's army was composed of Egyptian and not of British troops. The Cairo Arabs determined to remain with us until we moved out of the Ghor, and accompanied us to Tel Abu Harari, from whence they and Kitchener proceeded to Cairo, carrying a reply to the letter of Sir E. Baring. I ought to mention that the Rev. Mr. Shapira, of the Church Missionary Society, met me on arrival yesterday, and has been most kind in giving us assistance in various ways.

V.

January 17th, 1884.

My last letter to you was from Gaza, where we were sentenced to be shut up in quarantine for fifteen days. I telegraphed immediately to Lord Dufferin, on the recommendation of Mr. Moore, Consul at Jerusalem, to ask his Lordship to use his exertions for our release. Owing to his active and friendly interposition, we received notice of our

release on the fifth day. This was on Saturday morning, and we were soon in the saddle to visit Gaza and its environs, and also call on Rev. Mr. Shapira, and thank him for his unremitting attention. Next day, after Divine Service in the tent, we started on our journey to Jaffa, which we reached the day following, and put up at the hotel in the German settlement. This enforced visit to Gaza must not be considered in any way as loss of time, as far as the journey itself is concerned; it enabled Kitchener and Mr. Armstrong to join up the survey to that of Southern Palestine, where it terminates at Beir-es-Seba, and it gave me the opportunity of making a geological traverse of Southern Palestine. The coast journey from Gaza to Jaffa was also of much interest to the whole party. We reached Jerusalem on Wednesday evening (9th), having slept the previous night at Ramleh, at the hotel kept by another German settler, the quarters being clean and comfortable. The ascent into the central tableland of Judæa was most interesting to us all, both on account of the geological and botanical observations it enabled us to make, and connected with our subsequent expedition down to the Jordan Valley has enabled us to make a complete traverse of what may be called the central portion of Palestine. Our journey northwards to Beyrout will complete a third traverse (Sea of Tiberias to Haifa), as well as enabling us to see much of the interior of the country. This exactly falls in with my original plans. We have been most kindly received by Mr. Moore (H.M.'s Consul), Dr. Chaplin, and several other friends of the Palestine Exploration Fund, including the American Consul, Dr. Merrill. On account of pressure of time, we have been obliged to abandon the proposed expedition into Moab, and have contented ourselves with a descent into the Jordan Valley, from which we have just returned. Our plans for the future are as follows:—

We propose to leave this on Monday morning, 21st, for Beyrout, by the Sea of Galilee, Samaria, Mount Carmel, and thence northwards by the coast road. This journey will occupy about fifteen days, and we hope on arriving at Beyrout to find a steamer which will take us to Constantinople. The quarantine, which has now been in operation for several months, has upset everything—paralysing trade, and rendering communications with other countries uncertain. There is now a prospect of its termination, and we have reason to believe that Lord Dufferin's exertions on our behalf have contributed to this much desired result. Under these arrangements we hope to reach London about the middle of February. We have despatched boxes of specimens from Jaffa, and Mr. Armstrong will take charge of some of the instruments which were brought out by us. He is now busily engaged in plotting the triangulation, and, I believe, intends to proceed to Cairo, when it is in an advanced state, in order to confer with Kitchener before returning home.

VI.

23rd January, 1884.

Our expedition has been brought to a stand in a most unexpected manner. We have been snowed up in the Sacred City since Monday, and will be unable to move till the day after to-morrow.

We had returned on Friday from our expedition to Jericho and the Lower Jordan Valley, and had everything prepared for an early start on Monday morning northwards to Beyrout, when Bernhard Heilpern came to our bedroom doors about 7 a.m., saying, "You need not get up, gentlemen; you cannot move—snow is a foot deep already." And so it was; and the fall continued during Monday and part of Tuesday, till it reached 2 feet and over in depth, and rendered all egress impracticable. Even the best road in Palestine, that is, from here to Jaffa, has been closed and the telegraph wire broken. The fall of snow was accompanied on Tuesday by a terrific gale from the west. Trees have been uprooted or broken and much damage done. However, a thaw set in last night, and continued to-day, and the weather now promises to settle. But a fourteen days' journey on horseback, over mountains and valleys, and sleeping in tents by night, is out of the question now. Even if practicable (which is doubtful) I feel I should not be justified in exposing our party to such a risk to their health. The country will be flooded for some days, the rivers swollen, and the air cold and damp in the extreme.

I have arranged, therefore, to proceed to Jaffa the day after to-morrow, when we hope the road will be practicable, and take the first boat we can get to Beyrout—thence return home *via* Constantinople. Even did time permit, there would be little use at the *beginning* of the winter in remaining here with the prospect of completing a survey which could only be properly done in good weather. This we might have done had it not been for our two detentions: one in the Ghor for ten days, waiting for horses from Jerusalem; the other of five days in quarantine at Gaza. This is our third forcible detention since entering Palestine, and perhaps the least to be expected—to be snowed up in Jerusalem!

The results of our expedition, however, are not materially marred by this unlooked-for obstacle. The geology of the northern portion of Western Palestine is already pretty well known, and a *reconnaissance* would not have resulted in any material alterations (as I feel sure) of Lartet's map. Our excursion to Jericho, Mar Saba, Bethlehem, &c., together with our previous traverse of Southern Palestine, have enabled me to obtain a good knowledge of the structure both of Central and Southern Palestine. Of our previous work in the district of the Wady el Arabah and the Sinaitic peninsula I need not say anything here.
