

The 25·12 is already known to be probably the sacred cubit of the Jews ; and 22·5 is the double of the Phœnician foot. I should say that all the results were worked out in metres, in which form I could not recognise the resemblance to known measures, which I am familiar with in inches ; hence I could not have the faintest prejudice or inclination to adapt the results to cubits already known. I hope to obtain more material and work out these results more fully in future.

Future Work required in Jerusalem.—A great deal of clearance has been made in Solomon's stables by the late Pasha here, and the inner ends of the triple gate opened out on the Haram area. Thus much more can be seen of the masonry ; and four periods are traceable, probably ranging from Herod to Justinian. I am told by Professor Lewis that the lowest blocks of the great wall on south-east are dressed with the "claw tool," or *comb pick* as it may better be named. This tooling is, in Egypt, characteristic of Greek work, and is well known early in Greece (Parthenon, &c.) ; hence it gives a strong presumption that the whole of the south-east wall is of Herodian work. If so, it is very unlikely that Solomon's wall occupied that line, as if it did its lowest courses would have been buried in the rubbish, and used by Herod for his foundations. Hence the most urgent question is whether any trace of Solomon's wall can be found *within* the line of the present wall. To settle this, some excavations in Solomon's stables are needed. Probably the best place would be in the internal angle between the great corner tower and the east wall where two sides of the pit would be of masonry, with ledges to fix timbering, &c., upon ; thus we should learn whether the wall is backed (1) with earth, (2) with vaults, or (3) with a rock scarp ; also (4) whether there is any sign of Solomon's wall or foundations. Other pits might be sunk to find the rock, and search for walls or masonry, between this and the outcrop of the rock in the triple gate.

It is also very desirable to open and examine the vaults beneath the raised platform of the Haram, but these are jealously guarded from any chance view.

W. M. FLINDERS PETRIE.

EXPLORATIONS IN PALESTINE.

EARLY in February a vizierial permission was granted for excavations about Khurbet 'Ajlân, and an area of 9½ square kilometres in that neighbourhood. And as soon as the packing of my Egyptian collections was finished, and they had been inspected by the Government, and a bad attack of influenza had been overcome, I left Egypt for Syria, arriving at Jaffa on March 9. The season was unusually late ; no rain had fallen till Christmas, and the spring rains lasted heavily till the beginning of April ; the last day of March there was a furious storm over all south Palestine ; a white squall, which I saw tearing along over Jaffa at the rate of an

express train, breaking shutters and windows there in a way not known for years.

Although the permission was signed, it unfortunately contained a trifling error of description, which for form's sake was rectified ; but this produced so much delay that the paper did not reach Jerusalem, where I was awaiting it, till March 29. For nearly three weeks, therefore, I was unable to forward the business at all, as no steps could be taken until the original document could be presented to the governor, Reshad Pasha. This time was not, however, all wasted, as I was fortunately able to examine and discuss the various buildings and remains of masonry with Professor Hayter Lewis and Dr. Chaplin ; and thus I learnt, I cannot say much, about the antiquities, but rather I found how provokingly little is positively known, and in what a vast uncertainty almost every question still remains. Perhaps to learn our ignorance, at first hand on the best authority, was as useful a preparation as I could have for appreciating scraps of information. It is easy and simple to speak of Solomonic masonry, the Jebusite rock-scarp, &c ; but when the positive proofs of such ages are enquired into, the constant resource must be the answer, "There is nothing certain in Jerusalem." If ever the history of the city is to be clearly settled, it must be by learning the archaeology of Syria in other and less complicated sites, and then applying the knowledge of stone-working, of construction, and of pottery to fix the ages of things in Jerusalem.

But while waiting I began on a fresh enquiry which had not hitherto been opened. The abundance of rock-hewn tombs about Jerusalem is well known, and many of them have been surveyed and published. Much yet remains to be done in this matter, but it would need a considerable time in Jerusalem to work out the subject. The dimensions of those that are cleared are, however, easily taken, and hence we may examine whether they were wrought by measure, and, if so, what measure or cubit was used by the masons. Over fifty tombs I thus measured, from mere single chambers, up to the complex arrangements of the "Tombs of the Kings." From these it was abundantly plain that some measure was generally used, not only from the regularity of the sides of a chamber, but also from the repetition of the same length in ten or a dozen different tombs. The details of the results must be published with reference to the already published plans of several of the tombs : but the general results are that far the commonest cubit is of 22·6 inches, which is evidently the Phoenician cubit of 22·3 at Carthage, and known in the Hauran. Earlier than this, and in the "Tombs of the Kings," there is a cubit of 23·7 ; there is also one tomb of a cubit of 25·1, which is the Hebrew, Assyrian, and Persian cubit of 25·1 to 2·3, and in the valley of Hinnom only are tombs cut to a cubit of 15·5 inches, which seems to be peculiar to Syria. From the workmanship most of these tombs are probably of the Herodian times ; but whether the 15·5 inch cubit of the rude Hinnom tombs is earlier or later cannot be decided yet ; the presumption is that such a near and convenient site for tombs would be early occupied. We have at

least now a basis of accurate information as to the various cubits and their relative use, which will serve to start further studies.

So soon as the permission arrived Mr. Moore and I went to the governor, who was most cordial and willing to facilitate matters in every way. But further delays were due to the official who was deputed to receive everything that might be found on behalf of the Government. So that it was not till April 14 that I could at last begin work, only one week before Ramadan. I had already visited the various sites included in the area of the permission, but found that all but one were of Roman age and unimportant. The only promising place was Tell Hesy, in the Arab country, six miles from the village of Burer, where we had to settle to begin with. But as Umm Lakis had been supposed to be Lachish, and it was the nearest site to the village, three miles off, I determined to just examine it, partly in order to get a body of men together who could go off as far as Tell Hesy afterwards.

My expectations of Umm Lakis from the first view of it, were quite confirmed. We trenched about all over the ground down to the undisturbed native red clay; but there was only 6 or 8 feet of earth, and pottery of Roman age was continually found in it; while, most decisively, a worn coin of Maximian Hercules (circ. 300 A.D.) was found within 2 feet of native clay. On a hill to the north some walls were seen, but they proved to belong to a building with a large bath, probably a Roman villa. That Umm Lakis is the great historic city of Lachish is utterly impossible, after over three days' digging over the site. Khurbet 'Ajlân appeared far less promising than Umm Lakis; there is very little extent of artificial soil, very little pottery about it, and what there is shows Roman age; as it is all under crops I did not think it worth while to dig into it, after the insignificance of the much less unpromising site which we had already settled.

We then moved and established ourselves at Tell Hesy, which appeared to me to be a very important city of early date. In the absence of any inscriptions it might seem very risky to draw a conclusion as to the identification of a town; but we will first notice what reasons there are for believing this to be Lachish, and then we shall see how valuable the literary notices of its history become in understanding the site. Lachish was one of the five strongholds of the Amorites, with Jerusalem, Hebron, Jarmuth, and Eglon (Jos. x, 5). And it continued to be one of the strongest places in the country down to the invasions of Sennacherib and Nebuchadnezzar, to both of whom it was a special object of attack. It must, therefore, have had some natural advantages, and from various other notices (especially Eusebius) it certainly lay in the low country in this district. Now at Tell Hesy is the only spring for many miles around, a brackish brook trickles down from Tell Nejileh, where in ancient times it was confined by a massive dam; and at Tell Hesy it is joined by a fine fresh spring, while the whole of the water is swallowed in the stony wady within a few hundred yards lower, and never reappears. It is certain then that Tell Hesy and subordinately Tell Nejileh must have been

positions of first-rate importance from the time of the earliest settlements. They would thus agree to the character of Lachish and Eglon. The history of Tell Hesy begins about 1500 B.C., and ends about 500 B.C.; while Tell Nejtleh, as far as can be seen on the surface, is of the same age, or ruined even earlier. The absolute point of date is the position in Tell Hesy—some way from the bottom of it—of the thin black Phœnician pottery which is known in Egyptian remains as belonging to about 1100 B.C. While the close of its history is fixed by the fragments of Greek pottery on the top of it, and the total absence of Seleucidan and Roman objects. There are then no sites in the country around so suited to the importance of Lachish and Eglon as these two Tells; and conversely there are no recorded places of such primary value as these must have been, except the two Amorite capitals of the low country, which we know to have been near together.

It will naturally be asked how the names of Umm Lakis and 'Ajlân come to be in places which are some miles from these tells, and are certainly not the cities of Lachish and Eglon. A conjecture may be tolerated that during the captivity the Bedawîn spread over the south country and seized these springs for their flocks; that the "residue of Israel" which returned were not strong enough in this outlying district to dispossess the occupiers,* and that the men of Lachish and the men of Eglon (*see* the local groups maintained in Neh. vii, 25-38) took up lands in sight of their old habitations, on the other side of the Wady Hesy, and gave them the old names. Such a process seems very likely; and the possibility of it must warn us against placing too much value on the position of a name alone. The name Umm Lakis might well be applied to a descendant of the ancient city; Umm Lakis being like Abu Daud in modern Arabic, meaning "his father is David," and so "its mother was Lachish. I will not venture to say whether there is an echo of the old 'Ajlân in the name Nejileh, but the tell is not more particularly grassy than other places; nor will philologists perhaps allow it possible that the name of Lachish may have been formed from that of the Wady Hesy, the town of "Hesy," Le-hesy.

The actual remains of Tell Hesy consist of a mound which is formed of successive towns, one on the ruins of another, and an enclosure taking in an area to the south and west of it. This enclosure is nearly a quarter of a mile across in each direction, and is bounded by a clay rampart still seven feet high in parts, and in one place by a brick wall. This area of about 30 acres would suffice to take in a large quantity of cattle in case of a sudden invasion; and such was probably its purpose, as no buildings are found in it, and there is but little depth of soil. The city mound is about 200 feet square; its natural ground is 45 to 58 feet above the

* The feeble occupation of Lachish is shewn by the phrase "Lachish and the fields thereof" (Neh. xi. 30), while all the other towns occupied had villages dependent on them: this shows that there were not enough settlers to fill up the *Khurbets* all round Lachish.

stream in the wady below, and on that the mass of dust and ruins of brick walls rises 60 feet. The whole of the east side of the town is destroyed by the encroachments of the valley, which here makes a great bend that has enabled the winter torrents to eat away this side. But for this fact we should have been unable to reach anything much of the earlier ages here ; but in the section cut away in a steep slope above the wady, every period is equally exposed. We can thus see the succession of the walls of the town, and trace its history.

The earliest town here was of great strength and importance ; the lowest wall of all being 28 feet 8 inches thick of clay bricks, unburnt ; and over this are two successive patchings of later rebuilding, altogether 21 feet of height remaining. Such massive work was certainly not that of the oppressed Israelites during the time of the Judges ; it cannot be as late as the Kings, since the pottery of about 1100 B.C. is found above its level. It must therefore be the Amorite city ; and agrees with the account that "the cities are walled and very great" (Num. xiii, 28), "great and walled up to heaven" (Deut. i, 28), and also with the sculptures of the conquests of Ramessu II, at Karnah, where the Amorite cities are all massively fortified. So far as a scale of accumulation can be estimated, the foundation of the city wall would have been about 1500 B.C., and thus agrees to the time of the great Egyptian conquests of the land, beginning under Tahutmes I, at that date. The need of defence against such a well-organised foe, probably gave the great start to fortifying in Syria. On both outside and inside of this wall is a great quantity of burnt dust and ashes, with fragments of pottery ; and we can now exactly know the character of the Amorite pottery, and its peculiarities, which are quite different to those of other times or places.

The next period is marked by a stratum of 5 feet of dust and rolled stones out of the valley below, lying in confusion on the ruins of the great Amorite wall. These remains clearly show a barbaric period, when the inhabitants were not skilled either in brick-making or in fortifying, and when rude huts of the nearest materials were piled up, only to fall soon into ruin. This accords with what we glean as to the period of the Judges, and, coming immediately on the ruins of the Amorite city, the historical relation of these remains can hardly be doubted. Above this we meet a period of wall-building and fortifying, which goes on with intermissions and various destructions until the end of the history. The first of these walls is the most solid, being 13 feet thick, and this probably belongs to Rehoboam's fortification of Lachish (2 Chron. xi, 9) ; for, though David and Solomon doubtless did some building (2 Chron. viii, 2-6), yet probably this was more in the outlying parts of the Kingdom, and not so near home, where the strength of the inhabitants was sufficient protection. Rehoboam, on the contrary, found himself with a shattered country, which needed consolidating throughout ; and his fortifications of the inner circuit of towns show how little David and Solomon had thought it needful to attend to them. Probably to this

fortifying of Rehoboam we must attribute the wall which I have traced along the north and west of the town, forming a tower at the north-west corner. But to trace the connection of walls in one part with another is a difficult task, as they need to be cleared all along, and all the rebuildings and patchings tracked out—a most tedious affair. The four rebuildings which may be traced on the east face section must belong to some of the fortifying mentioned as having been done under Asa, Jehoshaphat, Uzziah, Jotham, and Manasseh. That the main building here does not belong to later times than Nebuchadnezzar's destruction is shown by the scanty remains of post-exilic times found on the very top of the mound, a Persian coin and pieces of Greek pottery of the fifth century.

On the south side a different character of walls is found ; one of the later being a massive brick wall 25 feet thick, and still of a considerable height. Probably this belongs to Manasseh's work, about 650 B.C. This was built over a great *glacis* slope, formed of blocks of stone faced with plaster, which can be traced for forty feet height of slope ; perhaps this may be attributed to the hasty defences by Hezekiah at the time of Sennacherib's invasion in 713 B.C. A flight of steps of rather rough stones led up to an ascent of the *glacis*, which has now perished in the valley, and there is the gateway of a building at the foot of the steps, the rest of which has likewise been washed away. As this building may be attributed to about 700 B.C. or earlier, its character is important in the question of stone-working. There is the system of drafted stones, with a smooth edge, and a rough lump on the middle of the face ; but there is no trace of the "claw tool," or rather comb-pick, as it may be more intelligibly described. On the masonry at Jerusalem this is a constant feature, and we will notice later on the importance of this matter. This *glacis* slope overlies the earth, which is piled 10 feet deep around a large building, the line of which I have traced on the east side. This building is 85 feet long, with walls of clay brick, over 4 feet thick. It must be considerably earlier than the *glacis* to allow of ten feet of accumulation ; and as the *glacis* cannot be likely to be earlier than Hezekiah, the building can hardly be of Ahaz ; but it rather belongs to the long and flourishing time of Uzziah. Indeed, on a regular scale of accumulation of deposits, we should need to date it back to Jehoash ; but we can hardly be too early in dating it to 800 B.C. Then ten feet more below this is another clay-brick building, which we should accordingly have to date back to 900 B.C. or earlier—perhaps 1000 B.C. It has, moreover, been ruined and burnt, and then reconstructed out of the old materials, very rudely. Though of clay brick, it had doorways of fine, white limestone, and some precious slabs of these yet remain, turned upside down in the reconstruction. These show us a curious form of decoration by a shallow pilaster, with very sloping side, resting on a low cushion base, and with a volute at the top. We are here face to face at last with work of the earlier Jewish kings, probably executed by the same school of masons who built and adorned the temple of Solomon. We see decoration which

we must suppose to be closely akin to that of Solomon's time—if not, indeed, as early as that itself. We learn that the Ionic volute, which the Greeks borrowed from Asia, goes back to the tenth century in Asiatic art; and we can hardly fail to see its origin from a ram's horn, thus leading us to a pointed suggestion as to the form of the "horns of the altar." Looking downwards from this, to test the scale of its age, we see the oldest Amorite level, of about 1500 B.C., 32 feet below it, a distance which would require us to date it to 1000 rather than 900 B.C., and which shews that the age is under, rather than over, estimated in the successive steps described above. The truth most likely is that this decoration is of Solomon's own time. Beside these wall-slabs there are fragments of a cavetto moulding from the door lintels, exactly like that of the early Jewish monolith shrine at Siloam. Three of these pilasters have been found, and though not thought worth removal by the Turkish officials, not one of them can come to England. I have taken casts and photographs of them, and carefully reburied them in known spots. Beside these, one of the slabs had a graffito on it representing a lion (?) walking; and as it was upside down it must have been scratched in the time of the first building. Unfortunately the remainder of this building is beneath 30 feet of earth, and the small prospect of there being anything else of importance in it, makes it scarcely worth while to undertake such a weighty clearance. No small objects have been found in the ashes so far.

The great scarcity of small antiquities, and the rarity of any regular stonework, makes this excavation seem barren after those in Egypt. Yet every fragment bearing on the history of art in Palestine is of great value from its very rarity, and the present results just described fill a wide space in our architectural knowledge which has hitherto been a blank. Another matter of importance in itself, and of inestimable value for future exploration, is the fixing of a scale of dated pottery. Poor as Tell Hesy is in some respects, it is full of potsherds; and the chance of such a grand section as that of the east face from top to bottom, gives us at one stroke a series of all the varieties of pottery over a thousand years. We now know for certain the characteristics of Amorite pottery, of earlier Jewish and of later Jewish influenced by Greek trade, and we can trace the importation and the influence of Phœnician pottery. In future all the tells and ruins of the country will at once reveal their age by the potsherds which cover them.

The methods of stoneworking are another great key to the age of work. In the Haram wall at Jerusalem all the stones are dressed with the comb-pick (or "claw-tool"), down to the very base as Professor Lewis states. This tool in Egypt is characteristic of Greek work, and it was used in pre-Persian work in Greece, pointing to its being of Greek introduction. Now in the masonry of the period of the kings here we have a strong test of the question; and in no part either of the gateway, steps, or pilaster slabs is any traces of comb pick work to be seen. The evidence, therefore, is strong that this tool is a sign of Herodian and later ages; and we must

ascribe the whole of the Haram wall to Herod. This also strengthens the view that Ramet-el-Khallil is an early building, as no trace of comb-picking is seen on the massive blocks there, but only on the later relining of the building.¹

W. M. FLINDERS PETRIE.

THE WORK AT TELL EL HESY, AS SEEN BY AN AMERICAN VISITOR.

IT is with pleasure that I accept your invitation to send you an account of my visit with Mr. W. M. Flinders Petrie. What you want, I am sure is not any archæological dissertation, or any account of the "finds;" but rather a description of some of the things which would interest one new to the country, and new to the work of excavating.

The trip from Jaffa down the coast, past Ashdod and Ascalon, towards Gaza, was a memorable one. The hedges of prickly pear in full bloom, sometimes twelve feet high and twelve feet deep, which surrounded the village, and the date-palms which lovingly moved their beautiful plumes over the mud huts and queer conical-shaped ovens, made Philistia appear to me more beautiful than any other part of Palestine.

These level sandy roads, though, impress one that the "way of the Philistines" would have been just fitted for the chariots of Egypt, and the worst road in the world for a band of slaves to take when attempting to escape from the Pharaoh.

What could be more romantic than a journey over this historic "high-way," sleeping in a khan at night, having a box for a bed and the sky for a roof, and passing scarcely a town that did not have some granite shafts or marble capitals—sometimes as richly carved as those of Baalbek—built into its mud walls or used as a donkey trough at the village well?

There was constant evidence that I was walking over ancient soil. Not only was the summit of every mound that I visited covered with broken pottery, but at Ascalon I was offered many old coins and an image of a goddess, which I suppose to be Ashtoreth; at Umm Lakis, a fellah tried to sell me a Phoenician *menhir*; and at El Kustneh I descried a raised platform surrounded by mats, and a heap of stones and a lamp, which seemed to hint at the perpetuation of the ancient Canaanitish worship even to this day.

Charming as was all this, however, I was glad when on the morning of the 8th May, I caught sight of the end of my journey—a gashed and broken tell lying by the water-brook like some hurt creature of the

¹ Full detailed reports of the results of these excavations, with plates plans, and sections, will be published later on. Portions of the pottery and other antiquities which have been brought home will be exhibited at Oxford Mansions in September, together with Mr. Flinders Petrie's Egyptian discoveries of the past season.