Kahun, Gurob, and Hawara.

With Twenty-eight Plates.

BY

W. M. FLINDERS PETRIE,

AUTHOR OF "PYRAMIDS AND TEMPLES OF GIZEH," "TANIS" I AND II, "NAUKRATIS I," "A SEASON IN EGYPT," "HAWARA, BIAHMU, AND ARSINOË," "HISTORICAL SCARABS," ETC.

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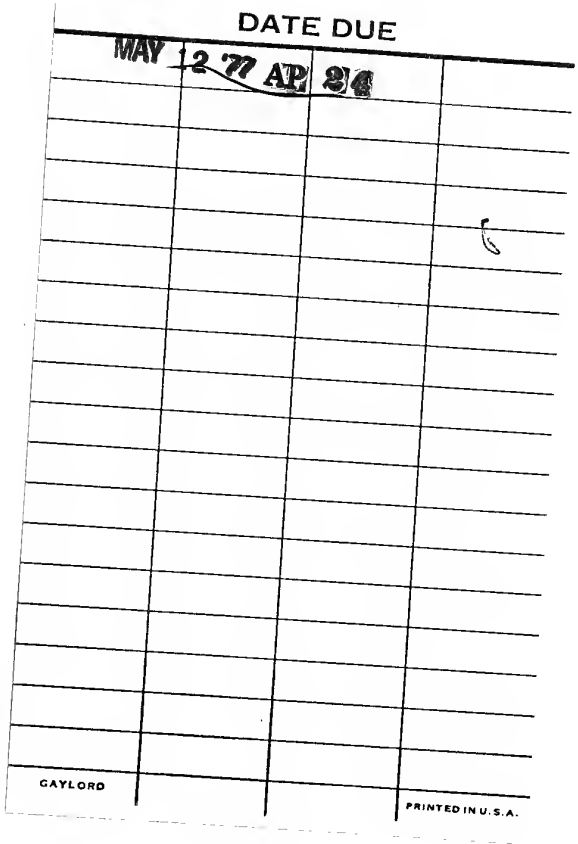

DATE DUE

MAY 12 '77 AP 24			
GAYLORD			PRINTED IN U.S.A.

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LONDON:

KEGAN PAUL, TRENCH, TRÜBNER, AND CO., 57 & 59, LUDGATE HILL, E.C.

1890.

THE EXCAVATOR'S MOTTO.

"*Seek not to have things happen as you choose them, but rather choose them to happen as they do, and so shall you live prosperously.*"

EPICTETUS.

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INTRODUCTION.

1. The past season's work has lain in several sites, and covered every epoch from the XIIth dynasty down to the Arab conquest. On first going out I at once resumed the attack on the pyramid of Hawara, and while thus engaged I also cleared a large tomb of the XXVIth dynasty, and found a few more portraits and cartonnage busts of the Roman age. But within a fortnight of beginning I heard that a German was intending to occupy Illahun, where I was going myself. As this person was quite ignorant of archæology, and was allowed to dig simply for the sake of plunder, I could not tolerate his ruining the results of such an important site. And as his power of working in the Fayum was exactly the same as my own—a permission from the Government—I had to occupy the ground at once if it was to be saved. So for eleven weeks work was just kept alive by a few men at Medinet Gurob and at Illahun, while I was finishing Hawara. It was quite contrary to my wishes to carry on excavations without proper supervision, as I could only go to these places about once a week, and that entailed a walk of seventeen miles: but it was the only means of saving places which proved, when I worked them, to be of the highest historical value.

On leaving Hawara I gave up tent life, and occupied rooms in the inspection house of the Irrigation Department at Illahun, by the kind permission of Mr. Marshall Hewat, whose hearty assistance in many ways forwarded my plans. Indeed, but for such a house to store the antiquities in, the exploration at Illahun would have been scarcely practicable.

2. The sites worked from those quarters were at the north and south ends of the great dyke of the Fayum mouth. On the north there stood the pyramid of Illahun, around which I worked for nearly all the season without entering it; the well-entrance I had partly cleared, when I handed the site over to Mr. Fraser on my leaving; and on clearing the well to the bottom he succeeded in entering the pyramid.

Around the pyramid was a cemetery; begun in the XIIth dynasty; ransacked, and the tombs re-used in the XXI–XXVI; and a number of fresh tombs excavated at the same time; and then largely plundered in later times. To the east of the pyramid was a small temple adjoining it, and a larger one on the edge of the desert, half a mile distant. Both of these belonged to the pyramid, having been built in honour of Usertesen II. To the north of the larger temple lay the town of the builders, Medinet Kahun, scarcely touched since the age of the XIIth and XIIIth dynasties. Beyond this, about a mile and a half to the north, stands a Coptic deir, and in the rubbish heaps of that a large amount of Coptic and Cufic papyri are to be found. I began working at the site, but had to cease as it was just outside the province of the Fayum; therefore I was obliged to leave it to be ransacked by anyone who chose to plunder there, and buy up whatever was brought to me. About the region of the temple was a large Coptic burial ground, from which many garments and other objects were obtained. On the south end of the great dyke lay the town of Medinet Gurob, or "raven's town"; this was founded in the XVIIIth dynasty, and did not survive the middle of the XIXth. Adjoining it was the cemetery of that age, and also of the Ptolemaic times.

We will now turn to a more particular account of the actual work, while reserving the archæological and historic details to the special chapters on each subject.

3. The opening of the pyramid of Hawara proved to be a far longer and more troublesome affair than seemed probable at first sight. When we knew that every pyramid yet examined opened from the north side, and not far from the base, nothing seemed simpler than just to clear the north side, as Belzoni, Perring, and Mariette had done on other pyramids, and then walk in. I accordingly began to clear this side the first thing when I went to Hawara (24th January, 1888). But I saw that some previous excavator (Lepsius or Vassalli) had already made desperate attempts, having cut away all the middle of the north face for some yards in; and had moreover

begun the appalling task of destroying the pyramid, by cutting an open trench down the middle, as many other pyramids have been barbarously opened of late years. This open trench affair was however far too much to carry out, and had been abandoned after hopelessly disfiguring the pile of brickwork. On the north side therefore there was but little chance left, but I cleared and cleaned up the rock and pavement some way in front of it, to settle if any entrance might exist so far out. I also attacked the east side, and cleared the face there to the base, in the middle of the side, but all in vain. The next point of promise was a deep open space on the north of the pyramid, where I worked from 29th January to 10th February. Here there had existed a small temple, of which Lepsius found some blocks remaining with the cartouches of Amenemhat III. This area had not however been cleared about the middle, and it was possible that this building had stood over the entrance to the pyramid. So a deep trench was cut through the hard mass of concreted stone chips, down to the undisturbed paving and the native rock. Here therefore was no entrance. Seeing that the south side was very deeply encumbered, and would require enormous work to clear it, I reluctantly decided on tunnelling to the middle, beginning at the broken north face.

The pyramid being built of mud bricks laid in sand did not offer any serious difficulty, but yet the tunnel was not so simple as it seemed. The sand between the bricks was in very thick layers, usually half to one inch; and being quite dry and clean, it ran out interminably in some parts, coming down as in an hour-glass from the joints. It was needful therefore to board up the roof of the tunnel all along, and as no native would treat the place with sufficient tenderness to avoid loosening the bricks overhead, I had to fix every board myself as the tunnel advanced. The bricks moreover were so large and heavy, being double the size each way of an English brick, and weighing 40 or 50 lbs., that a single one dropped on a person would have settled his moving powers for some time to come. It was needful therefore to use the greatest care in loosening and taking down the bricks. As the tunnel advanced to the middle, I found that the rock had dipped down far below the outside level on which we had begun; and the floor therefore had to be cut lower until the tunnel was so high that I had a false roof above the working roof to support the bricks. Occasionally, falls of the side took place, and the false roof above broke away in parts, and hung in other places as if a touch would bring it down; the lower roof however sustained what actually fell, but the whole region was caving slowly in, and even the lower roof was only supported on a fissured mass which stuck somehow on to the side of the tunnel. In the second season the state of matters was still more dangerous: falls of the sides and roof continually took place, even three times in twenty-four hours. As masons from Cairo were working inside it was needful to clear away all signs of the falls, and re-strut the sides, as quickly as possible; and as happily nothing much fell while they were inside they never knew anything about the state of affairs. One of these falls would bring down tons of brick from the sides and roof, along perhaps 20 feet length. I then at once began clearing the stuff out with some lads, needing to pass all along the unsupported and loose tunnel to get it clear; and then turning everyone out—sometimes at night—I used to re-prop the sides without any interference. The need of listening acutely all the time to detect any sand running down—the prelude to a fall—and the need of having the narrow way quite clear to retreat in half a second if needs be, made it necessary to work quite alone. It may be said why not timber the place thoroughly with thick beams along the sides and roof continuously? To do so however would have needed the widening of the whole passage, to allow of thick supports; and the work would have been risky and very long for one pair of hands, as no Arab would understand it.

4. The cutting of the tunnel occupied from 11th February to 5th April. When near the middle of the pyramid, not having found any sign of a chamber, we deepened the tunnel; but yet were in solid brickwork without any hope even when down on the rock base. While working in the tunnel, however, I noticed that on the east side the bricks were laid with mud mortar, and not in loose sand; and this difference extended for nearly four feet above the base rock. As this mud mortaring continued along the side of the tunnel for forty or fifty feet it was probably a wall. And if a wall had been built on the ground before the pyramid, it would be for keeping out the sand and dust from falling into the pit in the rock where the chamber was being built. So I argued that the chamber must be on one side or other of the dwarf wall. Which side? was the question. On carefully cleaning the rock floor of the tunnel I found that there was a slight slope down to the west, and concluded that the pit must be on the lower side. We therefore turned at right angles

westwards, as will be seen on Pl. II where the dotted line of the tunnel turns toward the middle of the chamber. Soon we found the rock drop straight down, and knew that the pit and chamber were now before us. Then a brick arch was cut through; this gave further proof and fresh hope. And at last by half-past one in a dark night, one of the boys of the night gang came running down to the tents, and shouting, "The stone is found, the stone is found." I went up at once and saw that we had reached the sloping roof stone of the chamber. In the next few days we cleared and examined it, and made a slight trial on it which showed that skilled masons would be needed.

As in all the other pyramids, of which I knew the construction, the sepulchre was covered by three successive layers of gigantic pent-roof stones, I concluded it would be the same here. And as in other pyramids the end walls of the chamber are quite independent of the sides and roof, and bear only their own weight, I hoped that here I might find a thin end wall easier to cut through than the three layers of roof which I anticipated. So the next step was to measure the distance from the dwarf wall to the chamber, and then to find the north end of the dwarf wall, and measuring off a similar distance south of that to make a second branch from my tunnel to reach the end of the chamber. In this I succeeded, and the second branch will be seen in Pl. II, pointing to the well chamber. But in this second cut I met with such immense blocks, that supposing they were buttresses against the end of the triple pent-roof I gave up all idea of cutting through them. I then got over some masons on the 16th April from Medinet, but they were quite helpless in the face of such a job. And as no good ones were then to be had, and the season was late to begin such a task, I reluctantly left it, after earthing over the mouth of the tunnel.

5. On returning there after my exhibition in London of the portraits and other antiquities, I began on the pyramid on the 12th November. But before cutting into the chamber, I made further search on the sides; clearing a long space of the east, west, and south sides, down to the very base. This work went on for a fortnight, but all in vain; and I saw that either the entrance must be at some indeterminate distance out from the pyramid, or else not anywhere near the middles of the sides. Opening the tunnel again, then, I had some Fayum masons over; but they only did six inches depth of stone cutting, and then threw it up in despair. So at last on December 18th I got two masons from Cairo to attack the stone roof. I kept a close watch over them, to see how much they did, and after a few days tried to induce them to take it by contract. But they would not agree, and were evidently intending to make a long job of it. So I announced that the agreement at *per diem* was to stand exactly as settled; and that, moreover, I should make them a present of so many pounds per metre cut through (the fair amount for a liberal contract) less exactly as much as their wages for every day occupied from that time forward. They could not object as the agreement was untouched, but they saw that they would get as much for quick work as for going very leisurely, and mended their rate accordingly.

6. It is, however, slow work in any case to cut with hammer and chisel a tunnel through solid stone; and it was disheartening that we could not find the under side of the beam after cutting seven feet into it. On the twenty-first day, however, a boy ran down with the welcome news of a hole found. I had just been all the morning at work in the water in Horuta's tomb, and had come out for wash and breakfast; but I went up, as I was, to see to the matter. There was a black hole in the floor of the masons' cutting, and they were chipping away the edges scrap by scrap. Soon I managed to squeeze through, and found that I was in a little forced passage cut by ancient treasure seekers, which led to the super-chamber. Searching around it I saw the top of the entrance passage on the north side, on a level with the floor I was on. Jumping down, I found the passage was blocked; but there was a hole under the stone I had been standing on. Into this I squeezed, sloping head downwards, on the mud which partly filled it, and managed to see that there was a chamber beneath with something in it, and a deal of water. Get back I could not, for I was jammed tight at the shoulders; and the masons had to drag me up out of the hole by my legs. Then clearing the mud and earth away, I asked a thin and active lad if he would undertake to go in; and having sounded the depth of water, and found it not more than chest deep, he slid through feet foremost with a rope-ladder to hold by, and I watched him through the hole, which would not let my shoulders pass. I then saw the sarcophagi, the large one in the middle, and the curious added one at the side.

7. Next day, after loosening and bringing down a heap of small blocks of stone which filled up the passage to the well chamber, and part of that chamber itself, I pressed through into the well chamber. Thence

I went exploring through the passages. Up the east passage the muddy earth rose nearly to the roof, and we had to crawl through. At the south end of this there seemed to be no exit, but a slight gap under the S.E. trap-door showed that there was a way; and clearing out some earth I got in far enough to stick tight, and knocked the candle out. Matches had to be fetched, as we were streaming with the heat, so that nothing could be kept dry in the only garment I had on. Under the stone I got into the S.E chamber, and then the south passage was so nearly filled with mud that we had to lie flat and slide along it propelled by fingers and toes. At last I reached the S.W. chamber. The blind passage being level did not promise a way out; the lean lad got up on the top of the first trap-door in an incredibly shallow space, but found no exit; then I slid down the narrow forced hole beneath the trap-door, and waded through the water in the ante-chamber. There at last I found a passage sloping considerably upward, and knew that we were in the entrance passage. The way was worst of all here, as the ground was full of sharp crystals of sulphate of lime, and the walls lined with more crystals which cut like a knife. Scraping a clear way I squeezed up this passage as far as I could, and then began carefully measuring backward through all the passages to the tunnel, so as to know the position of the entrance.

8. While the men were clearing the ground outside I had the forced hole to the sepulchre enlarged a little, so that I could get in. There I spent three mornings in the water, searching the floor, besides employing three lads at it for some days. The chamber floor was covered with blocks, chips, and earth, which had fallen in; but the water was too deep to reach anything by the hand, and too salt and acrid to put eyes or nose beneath it. I therefore first cleared out the sarcophagi thoroughly, as they were shallower, and I could pick out everything by hand. And then the lads gradually picked up the stuff from the chamber, by shuffling it on to the broad blade of a native hoe with the foot, and so lifting up a little at a time. One on the sarcophagus then examined all that came up, and threw what was not wanted into the sarcophagi, so as to keep the sorted stuff from the unsorted. I promised half a piastre for every hieroglyph found, and a dollar for a cartouche. Within a day the cartouche was found on a bit of alabaster vase, Amenemhat III as I expected; also many pieces of vases with inscriptions were found among the stuff, and one piece of lazuli cut in the form of a beard for inlaying. As I had found grains of burnt diorite in the sarcophagi, and charcoal, it was evident that the coffins had been of wood inlaid with polished stones.

Still the question of the second sarcophagus was unsolved; but it was distinctly an afterthought, built after the pyramid was built, when no larger blocks could be brought in, and yet before the death of Amenemhat III and his final interment. In the mass of blocks in the well chamber, however, a splendid table of offerings of alabaster was found (Pl. V), and this was for a king's daughter, Ptahneferu. Besides this were found pieces of eight or nine alabaster bowls in the form of half a trussed duck, mostly inscribed for the same princess: these were generally about eighteen or twenty inches long, but the smallest was only eight inches. As the daughter of Amenemhat that we know of was named Sebek-neferu (the beauties of Sebek), it is just in accordance to find another daughter named — as this princess — Ptahneferu, though hitherto no trace of her had yet been discovered. She seems to have died young, before her father, and to have been buried side by side with him in his pyramid.

9. The finding of the entrance was a long task, as it was covered by a number of fallen blocks of stone. These had to be dragged out of the excavation; or, when too large to be removed, a hole was dug on one side, and they were rolled over into it. At last the doorway was found, more than twenty feet down; and then I set the gang to clear the passage by measure, supplying them with a boy at every three metres length cleared, to form a chain for passing the stuff out. Thus the agreement was simple, and the contract gang kept the chain of day-boys well up to the work. All the passages were cleared out down to the water level; but it was not desirable to go lower, as a dry path is required. Since I left the place I hear that both the tunnel entrance and the true entrance are choked; but it will be easy for any one to reopen the mouth if a visit is desired.

10. The pyramid was not the only object which occupied a considerable time this year at Hawara. Last season I had opened dozens of tomb shafts, though but one of them at all rewarded the labour. That tomb, marked on the plan ("Hawara" Pl. XXV) as the tomb of Tet-bast-auf-ankh, furnished us with two sets of canopic jars, carved in limestone, of fine work, and bearing long inscriptions. Several mummies were found in the chamber; but two which we opened appeared to be destitute of amulets or ornaments, and the remainder were therefore not

examined. At the time I had no rope ladder, and the well being very deep I did not care to trust to the ropes we were using. This season I took two of my rope ladders (made for the Gizeh work originally) and, among other matters, thought I would see the tomb for myself. A small boy went down before me; and, as I followed, he rushed back frantically from the chamber to the foot of the shaft bringing a large amulet coated with gold leaf. In the very first mummy he touched there was a profusion of amulets. And body after body proved to bear a full complement of eyes, hearts, scarabs, figures of gods, and all the other objects of the spiritual armoury, some in porcelain, some in carnelian, lazuli, and other stones.

However delightful such results may be, the circumstances were not attractive. The tomb chambers were very large, as will be seen on the plan (Pl. VII); and the length of fifty feet was nearly all dark, as the walls and ceiling were quite black owing to the water having filled the tomb at one time. There was still water nearly waist deep remaining in the tomb; and to reach the sarcophagi it was necessary to wade cautiously among the fragments of slippery woodwork which lay all about under the water, and to avoid breaking one's shins on floating coffins, while skulls bobbed around on the waves. The two sarcophagi, at the end of the long chamber, we opened; the first had its lid already shifted, and gradually I levered it over until it fell plunge into the water, and sent up such a salt spray over me that I could not look at anything for some minutes. The inner sarcophagus took two or three mornings' hard work to move the lid off. The front sarcophagus being higher than this one, the lid had to be lifted up nearly a foot before it could be moved sideways; and to lift it at all there was only about a foot width at either end where it could be reached, the sides being both inaccessible. To raise two and a half tons thus with a couple of small crowbars was beyond Arab skill, and I had to direct every movement.

11. But a far richer prize still awaited us in this tomb. I noticed on the north side of the long chamber a slight recess, which I could just descry on the black surface by the glimmer of the candle I carried. On looking closer at it I found that the back of the recess showed marks of trowelled mortar, and at the top a small hole led inward some distance. It was evident that something was walled up here. The men were then set to pick away the mortar, and lever out the blocks of stone. These blocks were placed with only the narrow end outward, all the length of the block running back in the masonry. Of course the water covered the lower part of the recess, as of all the chamber. After going in six or seven feet the lad came running to my tent one afternoon in the greatest excitement saying that there were images as long as a candle. I went down at once, and began working at the place. After removing a block I disclosed a rare sight, a recess in the masonry, about two feet wide and four feet back, full of ushabtis standing in regular files, line beyond line. At the sight of all these the lad who worked this tomb yelled with frantic delight in the echoing chamber, dancing about in the water, and snapping his fingers, beside himself with joy. It was a fascinating view indeed, the two hundred bewigged heads and placid faces all rising out of the water which more than half filled the hollow. Baskets were then fetched from the other work, carefully filled, and carried tenderly to my tent, where the figures were all stacked in safety. It was a joyful day for the party in that tomb, for I always give a fair equivalent for everything found, and that night they had what would be a year's wages for an Egyptian, as their reward. The figures moreover were the finest work, and all modelled by hand; so that I had good reason to rejoice, as well as the workmen. But this could not be all, and soon we saw that these ushabtis had stood facing to the side of a great sarcophagus. This had therefore to be cleared of the masonry. And in a few days a boy came up once more, with the news of "more images," and a significant nod. On going down I found a recess on the other side of the sarcophagus with a similar garrison of ushabtis; but these were more difficult to reach, and I had to squeeze into the hole and loosen them with my feet before I could reach them out. Going down Horuta's tomb always reminded me of the descent of Ishtar into Hades; first I left my coat at the top, then took off my hat last thing before descending, then at the bottom of the shaft I had to leave my trousers and boots, and last of all I often had—as for these ushabtis—to finally part with my shirt, and get under the water to reach the work. Of course the tomb was not excavated under the water originally, but the water level has been raised about Hawara by the Arab high-level canal.

12. The sarcophagus now remained to be opened. The lid was too enormous for us to raise it entire, weighing as it did about seven tons. It was only accessible on one side, the rest being blocked by rock or massive masonry, and only the top of its two feet

of thickness was above the water. It was needful therefore to cut it across; and this was a tedious work, as though the stone was but limestone, it was very hard and peculiarly tough, so that only dust could be bruised off it, with hardly ever even a small chip. The men worked at it in relays night and day, and although it was contract work, and they were most anxious to finish it, it was for six weeks that their picks echoed in that tomb every hour of the twenty-four. Then one half of the lid was lifted, and I spent over six hours under the water, with generally only my head out, trying to loosen and extract the coffin. This proved impossible, and it needed some days' work to lift the other piece of the lid. Again I went over to Hawara (for I was living at Illahun then) and got out the lid of the outer coffin, the second piece of the sarcophagus lid having been raised. But to stir the inner coffin was beyond all our efforts. It was set tight in a bed of sand in the sarcophagus; and was so deep beneath the water that only the lid could be reached, the body of the coffin being scarcely touchable at all, even when my head was all but submerged in the salt and acrid water. Of course I had to sit under the water, on the coffin, to do anything at all; and the lid of the sarcophagus, weighing three or four tons each piece, could only be tilted just enough to leave room for my head about the middle of one side, between the water and the inside of the huge stones. Thus the greater part of the coffin could only be reached by the feet. In this way I cleared out much of the sand packing, by scraping with my feet, and lifting out the sand very quietly, for the least current in the water carried it all down again. Still we could not stir the coffin. I then sent for some iron bolts, which were kindly lent me by Mr. Hewat; and another day I drilled holes with a centre-bit in the coffin (there being no inscription on it), and put in the iron bolts. Then tying ropes to these, our party of men hauled with all their might, but could not stir the coffin. Then we tied the ropes to a crowbar, so as to give a better hold, and another sturdy haul was made, while I felt the coffin with my foot to see if it moved. There was a slight shift. On hearing of this they pulled more lustily, and howling and hauling, up the coffin came inch by inch, and at last rose, a vast brown mass out of the water, "like a buffalo" as the Arabs said. With some more desperate hauling we got it out into air, but its weight then proved too much for us; yet we could scarcely raise the lid, because of the low roof of the tomb. So partly by breaking away the feet we at last slid the lid back, and found the inner coffin. This was but slight, and soon removed.

13. On the breast of the mummy, outside all the bandages, was a superb gold *ba* bird with human head, and outspread wings, all encrusted with minute mosaic of lazuli. Then after carefully removing all the beads of lazuli, beryl, and silver, which had formed a network over the mummy, we towed the mummy out to the mouth of the tomb, and at the bottom of the well I cut him up. I fortunately had the help of Mr. Fraser on this day, which was of great use both in extracting the coffin, and in registering the positions of all the amulets. As I cut away the pitch and outer bandages, one after another of the gold amulets came in sight, and our men must have wondered to see me leave them all untouched as I went on exploring in the wrappings, until the whole group of chest amulets were all exposed in position, and we could note all their relative places as a whole. These were the most gorgeous of all such amulets, a dozen being in solid gold exquisitely chased and finished, and several of these inlaid *cloisonnée* with minute pieces of lazuli and other stones, all cut exactly to fit the gold ouches, and polished. Lower on the body long strings of scarabs, hearts, and eyes, curved round, with the group of figures of gods all delicately carved in lazuli, in the midst. A hundred stone amulets finely wrought and polished lay upon this body, besides the gold ones mentioned, gold plates on fingers and toes, gold bands on the wrists, and a gold sheath between the legs. The whole of this unparalleled series is now in the Bulak Museum.

Yet there was something more, for in each corner of the stone sarcophagus, at the shoulders and feet of the coffin, stood an alabaster canopic jar, with inscription for the deceased Horuta. Such was the outfit for the future life of an Egyptian noble of the later times, probably about the end of the XXVIth dynasty. And it is most fortunate that such a series has been cleared scientifically and not plundered by ignorant reises who would have retained the treasure, or by even ruder unlicensed pillagers. That I was able to control this work while living many miles off at Illahun, and to just step in when each stage was ready for my attention, is due to the certainty felt by my men that they would have their fair reward for the value found, so that they had no inducement to pillage or conceal things. I paid that lucky group nearly fifty pounds, besides their wages, for the discoveries in this tomb. But for their trusting to my

giving them such a reward, I should either have had to spend the best part of a season watching their work daily, and hourly almost, or else to run the great risk of their getting out the mummy and pillaging it while I was not present. That all these amulets were afterwards taken at the Bulak Museum, without of course any payment or reimbursement whatever, does not affect the policy of dealing with the Arabs. By firm control, and paying the men so that your interest is theirs, it is possible to do a great deal with small supervision. In this case I left Hawara nearly two months before the prize was reached, and only went over when the men sent to fetch me to direct their work.

14. From Hawara I moved to Illahun, on 11th February, and took up the work there at Medinet Gurob, and the pyramid and tombs of Illahun. Gurob was a place which attracted me last season when I walked over from Hawara to see the neighbourhood. Everything I saw there was of the XVIIIth and XIXth dynasties, and the place had evidently been occupied for only a brief space of time. On clearing a great part of it, the period of the town proved to begin with Tahutmes III, and end with Ramessu II, or possibly Merenptah. Here the most important historical result was the discovery of Mediterranean pottery, and of signs of the Phœnicio-Greek alphabet, and the Kypriote alphabet, marked in single letters, as owners' signs on the pottery. Beside the town there is a cemetery, partly of the age of the town, and partly Ptolemaic. The work here was of the usual character at such places, the chambers being cleared and the earth thrown back into those already examined.

At Illahun the pyramid occupied some men all the season; and large clearances were made upon and about it. But as I hope to fully describe it next year, I will say nothing further concerning it in this volume. The other work at Illahun was much in the well tombs. To find these on the ground surface it is needful to look for the points of native rock cropping out through the sand at intervals; then, on tracking these rock-points areas will be found where they disappear. Such areas may be either natural hollows, graves, or deep tomb wells. But all the tombs of the XIIth dynasty had been rifled, as the mastabas on the surface would in all cases reveal their situation. In one instance, however, nearly the whole funeral stela—a large slab of about 6 cwt.—was found used in the rebuilding of a later age in the bottom chamber. As I had neither ropes nor men convenient then to take it out, I covered it, and left it till I should have a large party working there. Meanwhile a rascal, whom I had to dismiss for stealing from my other men's tombs, got some money from a Greek at Medineh, to draw out the stone, and take it to Medineh. He took seven or eight men at night, and got it from the deep well, carried it—slung from a pole—two and a half miles, to near the bridge of Illahun, and there buried it until they could quietly ship it. He also cut the face off a block at the temple of Illahun, which I had left buried until I could get my chisels, &c., from the Horuta tomb work. On his trying one night to get a boat to remove these, the reis of the fishings at the bridge—a very fine fellow, named M'haisin—heard about it and called the irrigation guards of the bridge, who had charge of my premises. They seized the smaller stone, and took it to the shekh; and next morning we all went and had unlimited talk over the subject. The larger stone the thieves had not unearthed again or revealed, and they wanted me first to pay them for it, then to at least give them something for having brought it over. But I stuck to my position that the only terms I would hear of were showing me the stone at once, and delivering it into my house; otherwise I should call over the police to take all the men implicated. By actually taking a leaf from my notebook as I stood in the village, and giving it to a messenger to take to Medineh to the police, I cut short the discussion, and was led off to where the stone lay buried. In two or three hours the procession of thieves brought the slab up and placed it in my court-yard. It was most fortunate that I was thus able to recover the stones, and impose a penalty all in one; and I thus had the hard work of raising the block from the well, cutting the face from the other, and bringing them two or three miles all performed for nothing.

15. The temple of Illahun and town of Medinet Kahun were worked by the method I usually adopt in such sites. On the temple area, beginning at one edge of the ground, a wide trench was cut down to the native rock; then the earth was taken from one side of the trench, and thrown back on to the other side behind the men. Thus every scrap of soil is turned over, and the ground is not encumbered with any large heaps of waste earth; besides which the site is covered over again to prevent weathering and decay of the rock-cut foundation. Nearly all the stonework had been removed by Ramessu II for building his temple at Ahnas, eleven miles to the south: and the

statues and granite work had been carried away whole.

In the town of Kahun I began by clearing all the rooms of one block of houses along the street front, and emptying them on to the street; then the rooms further in were cleared and the earth thrown back into the rooms already cleared next to the street. Thus the buildings are mostly filled up again, so as to prevent the decay and destruction of the brick walls, while every object was certain to be uncovered. The floors of the chambers were always sounded all over with a rod, to see if there were any pits or hollows filled up. Continually objects, or babies, were found buried thus; and I always was certain of searching the places myself, as the men could not fill up the rooms without inspection, because no pay could be had until I had measured the emptied chamber. The price for this clearing in light rubbish was half a piastre the cubic metre, or a little under a penny a yard: of course there was extra money for everything found, papyri or bronze tools being specially well paid for. Every chamber, when gauged for payment, was accurately measured, and marked in on the current plans which I kept in my note-book. From these plans, aided by a triangulation, the general plan of a corner of the town and the temple site is here given in Pl. XV. Much more was cleared and measured than is here shown, but the plans of other parts are yet incomplete and require more work next season.

16. I should not omit to say that owing to the need of returning to Egypt within three months (in order to keep dealers and plunderers out of my work), I have had very short time for the arrangement of all the collections of this year for exhibition, drawing the plates in this volume, writing all the account, and attending to the innumerable small affairs which such business entails. Hence I have omitted all notice of the tombs of the later times at Illahun and Gurob, which I hope to fully describe in my next volume. In that I expect to include an account of the Greek papyri from Professor Sayce, and of the hieratic and Coptic by other friends. My best thanks are due to Mr. Marshall Hewat for his constant kindness and help, without which I should be often in difficulties. I had with me for some months Maurice, the son of my dear friend the late Professor Sheldon Amos, and with his knowledge of Arabic he was able to look after the work on occasions. When I left Egypt I was so fortunate as to be able to place the sites in charge of Mr. George Fraser, who was disengaged for three months, and could live on the spot. Among other work, he cleared a well which I had begun by the pyramid of Illahun, and so entered the pyramid by a sort of back door. A full account of it will appear next year. I am indebted to Emil Brugsch Bey for the photographs of the frontispiece. In the matter of dealing with the large collections I have had the greatest help from Mr. Spurrell, who has also done some drawings, and has taken charge of the collections to disperse them, after my leaving England; also Mr. Percy Newberry has prepared all the plants, and is engaged in mounting the papyri, besides giving much assistance in other matters. A new friend has joined the work, Mr. W. O. Hughes-Hughes, who has laboured heartily on the preparation of the collections, and will shortly join me in Egypt. Miss Bradbury has again taken in hand the textiles, and for the larger and more important pieces has obtained the careful help of Mr. Wardle, and of Messrs. Pullar. My old friend Mr. F. Ll. Griffith is devoting his spare hours to mounting and reading the hieratic papyri; and I hope that Professor Sayce will work out the Greek papyri during the winter. But for such a circle of friends it would be utterly impossible for me to leave my proceeds of one season so soon, to go and attack fresh ground.

I should say that the title of this volume does not follow the order of the contents, in order to obtain the name of Kahun first, to distinguish it from last year's volume on Hawara. If any question is asked about my authority for the chronology followed here, I can only say that I have followed what seem to be the best data:—the VIth dynasty as fixed by the close of the inundation in the inscription of Una, and the XVIII–XIXth dynasty as fixed by three Sirius festivals of Tahutmes III, Ramessu II, and Merenptah, which are concordant. The XIIth dynasty is fixed by dead reckoning between the VIth and XVIIIth.

CHAPTER I.

The Pyramid of Hawara.

17. As the operations of opening this pyramid have been fully described in the Introduction, we shall only treat here of the construction of the pyramid as far as it can now be ascertained.

The site of it is on a spur or corner of the limestone plateau of the desert, forming one side of the mouth of the shallow depression which leads into the Fayum.

The Nile mud, brought in by the stream which has always run through this valley, is deposited within a quarter of a mile of the pyramid ; thus any amount could be obtained close to hand, for making the mud bricks of which the pyramid is composed. The relation of the pyramid to the labyrinth on the south side of it is shown in the plan, Pl. XXV of last year's volume, " Hawara, Biahmu, and Arsinoe."

The material of the bulk of the pyramid was mud brick, laid in beds of clean yellow sand. This was covered with a casing of the usual fine limestone, weathering with a brown coat outside. Thus the original appearance was exactly like that of the other pyramids of the Memphite district. The fragments of this casing I have found around the pyramid; and one piece shows an angle of $48° 45' \pm 3'$. It can hardly be doubted that this was constructed therefore as a rise of 8 on a base of 7, as that requires the angle $48° 48' 51''$, and would be laid out by a cubit and handbreadth vertically for each cubit horizontally. Two other pieces however give $49° 51'$ and $52° 25'$, so that the angle is not well fixed.

18. The question of the size of the pyramid is not easily settled. The whole of the casing has been removed apparently, as not a single piece was found in position all along the middles of the sides, though that is the most favourable place for its preservation. Not only is the casing all removed, but the pavement also, excepting at the N.W. corner, and in the middle of the north side. At the latter place (see Pl. VI, top corner) it is covered with concreted stone chips so firmly that it is impossible now to cut them away without disfiguring any traces of the place of the casing which might have remained. At the N.W. corner I very carefully cleaned and brushed the paving which remains, and searched for any traces of the casing. At 140 inches from the brick core there was some mortar, showing the casing to have covered that ; and at about 160 there were general signs of a weathering having taken place beyond that point, which suggested that the casing extended up to there. This distance it will be seen (Pl. VI) agrees very well with the position of the slope of the core brickwork ; and it is certain that 30 inches less, or as much more, would have been an improbable thickness of casing. This position requiring 65 inches thickness from the sloping core, while it is not likely to have been either as thin as 35 or as thick as 95.

The matter may be more closely settled if we can see any theoretical reason for assigning a particular thickness of casing. The entrance passage is about midway between the middle and the S.W. corner of the south face (see Pl. II) ; if the axis of it were exactly so the casing foot would need to be only 77 inches, in place of 160 outside of the brick core ; or if the west side of the passage were taken the casing would still be but 115 inches below, which would be impossibly thin on the sloping core. But another connection to examine is the relation of the entrance to the base. On Pl. II it will be seen that the remaining part of the entrance passage slopes so that its floor would emerge at the base level at 157 inches outside of the face of the brick core. This agrees so nearly with the probable thickness of the casing as required by the sloping side of the core, and with the probable trace of the edge at about 160 on the N.W. paving, that I have here adopted it as presumptive truth. The size of the brickwork base, with vertical face in the first six courses, was measured by setting a theodolite near the middle of the south side ; the angles subtended by long rods at the S.E. and S.W. corners were observed, thus showing the distances ; and the distance and direction of a plumb line hung down to the mouth of the entrance passage was also measured. Thus the length of the south side and the position of the entrance were fixed ; and levels were taken through all the pyramid, at the entrance, N.W. paving, N. paving, and Arab canal. The brickwork base was found to be 3692 inches (307 feet 10 inches) in length ; adding 2×157 we find 4006 inches for the original size of the finished pyramid base : and hence a height of 2284 inches. It seems very strange that it should not have been 10 feet longer, and so reach 200 cubits. If there were a flap door of stone, as at Gizeh and Dahshur (" Pyramids of Gizeh," p. 168), the casing may easily have been a few inches larger, and so outside the intersection of the passage floor and pavement. A connection with the size of the sepulchral chamber would thus be possible ; the chamber being 267·5 long, fifteen times this is 4012·5, with an uncertainty of not more than two or three inches. Such a connection with the base would not be without analogy. The pyramid of Khufu is 100 times the outer length of his sarcophagus, and that of Khafra 100 times the inner length of his sarcophagus ; so the pyramid of Amenemhat III may have been fifteen times the length of his chamber.

19. A very curious step in the construction was discovered by accident while cutting the tunnel in the brickwork from the N. face. At a distance of 552 inches from the face of the brick core, or about

709 from the probable casing edge, some signs were found, marked in red paint with a fine brush on the ends of two adjacent bricks, a few courses above the lowest brick. These signs are shown in Pl. IV. They faced northward, *i.e.*, were on the face of the pyramid core while yet it was in process of being built. They evidently refer to a measuring up of the pyramid some time before its completion, in order to test the regularity of the work, and the need of any corrections in the further construction. The meaning apparently is that the vertical line is two cubits (shewn by the two dots and a stroke beneath for the cubit arm) from the *het ha*, or heart of the building. Now, on referring to the measures of the tunnel, it appears that the middle of it (and these marks were within two or three inches of the middle) is 84 inches (or two double cubits of 42 inches) from the axis of the pyramid (see Pl. II). We know that the Egyptians always worked from an axis line, which we may see still drawn along the middle of roofs in the rock cuttings, and down the middle of designs. And we also know that they habitually marked two or three supplementary marks at one or two cubits from any important point (see "Pyramids of Gizeh," pp. 93–4). Hence it appears that when the pyramid was rather more than a quarter built, and the sides were about two-thirds of the ultimate length, a measurement of the work was made, the axis or "heart of the building" was defined, and supplementary marks placed at one or two cubits from it, in case it should be defaced on the bricks. Another noticeable point is that the bricks, when stacked before building, were sprinkled with white or yellow wash (as coals now are), to prevent any being stolen. The splashes and spots are clearly not put on after the bricks were built together.

20. The first stage in the building was the clearing from the ground the pebbles and sand of the desert. Then the rock, which is here only a hardened sand, was excavated to form the central hollow or pit, for the chamber, and the trenches in which the passages were to be built. The enormous monolith chamber of sandstone was brought from Upper Egypt, weighing over 100 tons, and was lowered into the pit: the sarcophagus and the two coffers were placed in it, the roof stones placed—two in position and the third elevated to allow of an entrance—and then the great beams of stone, horizontal, and over those sloping, were set over the whole chamber, resting on masonry which was built in around the monolith. The passages were all built in the rock trenches, and then a great brick arch (Pl. IV) was thrown across the whole of the masonry of the chamber, and the bricks of the pyramid were piled up above it all.

21. We will now notice the details of construction, beginning at the entrance. The plan of all the passages is given on Pl. II, and their sections on a larger scale in Plate III. The present entrance is formed by a broken edge of floor, broken side blocks, and a vertical joint face of the roof. This roof edge is 27 inches inside the line of the brick core base, and 9 inches above the N.W. pavement, or +421 in the system of levels here adopted from an arbitrary zero. The axis of the passage is 961·5 from the middle of the south face. Passage width is 38·4 upper end, 38·6 mid, and 38·0 at bottom. Half of the floor is taken up by a flight of shallow steps, which leave 9·4 or 9·5 width of slope at the sides. These steps were cleared and measured in one part, and hence drawn throughout; they were occasionally seen in clearing the passage, but not measured in other parts. Their average width of the tread is 13·27 on the slope, or 12·5 horizontal. The height of the passage is 70·2, 70·4, perpendicular, or 74·7 vertical. The angle from end to end is 19° 37½′ slope.

At the bottom the roof is +96 and rises to +100 in a short passage 60·3 long on W., or 59·4 E., and 33·4 wide leading to the ante-chamber. This is curiously set askew, the ends and sides being all aslant to the passages. It is 148·6 on W., 146·3 on E., 84·2 wide. Thence a passage continues 67 long, and 31·0 wide, to the chamber under the first trap-door. This chamber is 89·5 wide, and 61·0 long; the trap-door being 70 long and overlapping the chamber side 9 inches at both the south and the west. The trap-door system used three times in this pyramid was arranged by roofing a chamber with a sliding block of stone, the side of which thus covered the end of the high-level passage, the floor of which was on a level with the roof of the chamber. Of these trap-doors only the first had been drawn, the others were carelessly left in their recesses and presented no obstacle to the plunderers who had broken their way past the first. They are all shaded in the plan (Pl. II) and their positions are there seen. The first trap-door is 70 wide, 71½ high, and about 104 long, weighing therefore about 22 tons; all the trap-doors have a groove along the sides to allow of a rope being passed around them whereby to drag them along in their recesses, though in what way 22 tons was to be thus slid along is hard to see. A short passage of 71·3 long and 29·1 wide, leads into the

S.W. chamber. The under side of the trap-door is +87·5, the floor beyond it +97·3, and the chamber roof +171·4.

22. The S.W. chamber is the first turn in the direction of the passages. But a blind passage runs straight forward from it for 1010 inches; this has been all filled up with solid stone, in large blocks the whole height of the passage. A way has been most laboriously forced by breaking away the blocking stones, but all to no purpose. The blind passage is 52·4 wide and level throughout. The S.W. chamber is 105·0 by 85·7, and 74·1 high. The S. passage begins 38·8 wide, and after 20·7 it enlarges by a recess to hold an opened door on the south side with pivot holes at the S.W., and a recess on the north to form a stop for the door when it was closed. Thus it is clear that the true passages were ostentatiously left only closed by a wooden door, while the false passage was entirely filled up solid with stone to occupy the time and attention of the spoilers. After the door recess, 42·6 long, the passage runs on for 33·5, being 38·5 wide, and 76·1 high, the roof level at +173·4. The slope then begins by the roof block being cut away for 38 length, the whole slope being 1044·0 long to where it slopes up again for 34·0 near the S.E. chamber. The horizontal length is 1041·0: level at upper end of roof +173·4, at lower end +94·3; width 38·2, and height near middle 72·1.

23. The S.E. chamber has a short passage of 68·1 long and 31·0 wide leading into it. It is 88·5 wide, with 18·2 of that filled by masonry on the east side; 141·5 long, with 34·5 filled with masonry on the north side; the height 89·7, with roof at +141·0 and floor +51·3. The trap-door, which has not been drawn from its recess to cover the upper passage mouth, is 62·5 by 30, by 136, weighing 11 tons. The east side of the small recess into which the end of it was intended to fit, in the east wall of the passage, has been much broken away by plunderers searching for other passages. They thus broke through into the bed of sand of the pyramid, and the rains having found thus an entrance by soaking through the pyramid, have brought in a great quantity of sand and mud, enough to nearly fill the south passage, quite fill the S.E. chamber, and half fill the east passage and N.E. chamber. The whole of the passages must have been filled with water some dozens of times, as all the surface of the stone is dissolved away to an astonishing extent. The small scraps of the old face which resisted the solution are usually an inch beyond the roughened and pitted face of the water-eaten stone. No trace of sculpture has been seen on any of the portions of the original surface. The east passage runs 16·1 at +203·2 level of roof, then 79·0 at +219·2, and then slopes for a length of 450·2 (or 443·9 horizontal) down to +143·2. The floor at the upper end is +142·4 or 1·4 above the roof of the S.E. chamber. The passage is 71·4 high and 37·6 — 38·4 wide. In all cases the measures are taken to remains of the original face, carefully avoiding the dissolved parts. A short passage of 64·0 and 62·5 high leads to the N.E. chamber. This is 166 long, with 22 filled by masonry at the west end, 90 wide with 19 of masonry on the north, and 86 high. The floor is at +71·7, the roof +158·0 to 156·5, and the roof of the trap-door recess +219·5. The third trap-door is 44 by 61 by 138 inches, weighing 18 tons. It covers 10 inches beyond the west end of the chamber. Thence a passage runs for 17·4 at +219·5 level of roof, then for 319·0 at +229·7 level. The width is 35·3, height 72·5; but at 28·5 before the well chamber, the south wall comes 3·1 forward.

24. The well chamber is so called from the two false wells, which were the only visible features in it originally, made on purpose to deceive plunderers, and to lead them to attack the solid masonry along the side of the real sepulchre. To further mislead the intruder all the north half of the chamber was filled up with solid masonry, which has been mostly dragged out now, and the remaining mass tunnelled through. The chamber is 309·2 long, 89·6 wide, 91·3 high; the floor being +155·7 and roof +247·0 level. The wells will be seen in plan and section on Pl. IV. Across the floor of the well chamber a trench existed, though filled with masonry and so concealed; and this led to a short passage in the south wall, which was thus entirely below the level of the chamber floor. This passage mouth is at 120½ to 146½ from the east end of the well chamber; and is 71·5 long and 36·1 wide. In the well chamber were found the alabaster table of offerings for Ptah-neferu the daughter of Amenemhat III, and the fragments of eight or nine large bowls of alabaster, shaped in the form of half a trussed duck, and mostly inscribed with the name of the same princess. But no trace of Amenemhat was found up here. At the end of the trench in the floor, but above the floor level, was a rough recess in the solid masonry, closed by a slab which was a part of the adjacent stones; it must therefore have been closed in course of building, and it was further covered by the masonry which filled this side of the chamber. The

closing slab is now partly broken away, and the recess is empty.

25. The sepulchre is an elaborate and massive construction. The chamber itself is a monolith 267·5 inches long, 94·2 wide, and 73·9 high to the top of the enormous block, with a course 18·5 high upon that, giving a total height inside of 92·4, the floor being at + 11·3, and the roof at + 103·7 level. The thickness of the upper course is 36 inches from its face; but the chamber itself is about 25 inches, according to the outside seen in the forced passage from the western well. It would accordingly weigh about 110 tons. The workmanship is most excellent; the sides are flat and regular, the inner corners so sharply wrought that—though I looked at them—I never suspected that there was not a joint there until I failed to find any joint in the sides, and the surface so polished that the hard flinty sandstone reflects the light of the candle one carries. The funeral furniture we will describe further on. The total distance from the well chamber to the inside of the sepulchre is 109·5.

The sepulchre is roofed by three enormous slabs of the same hard sandstone, over four feet in thickness, and extending far beyond the chamber walls on each side. The original access to the chamber was closed, after the interment, by lowering one of these slabs—which weighs about forty-five tons—into its place. While the pyramid was being built, and until its final closing, this great mass was supported in a chamber, or space, left for it in the superincumbent masonry, called here the super-chamber (roof + 249½ level). Thus the passage from the well chamber led straight to the top of the wall of the sepulchre, into which anyone could thus descend. When the block was lowered into place it left but a narrow space over its edge, by which the workmen could pass from above it out into the well chamber. The plunderers had not attempted to raise it, but had—probably by fire and water—scaled and broken away the lower edge enough to enable them to squeeze through into the sepulchre.

Above the sepulchre roof there is then, partly a very shallow space left between that and an upper roof of horizontal beams of limestone, and partly the super-chamber. But no pressure whatever bears upon the middle of the sandstone roof of the sepulchre, the beams above it being supported on blocks along the edges of the sandstone roof, and being so deep as to sustain their own weight and any pressure that may come on them. The super-chamber is roofed by longitudinal beams to support the great sloping roof. Above these double roofs then comes the third roof of the slanting beams of limestone, the one which I cut through weighing about fifty-five tons. These beams are well dressed on the joints, and mortared together; along the outer edge the dressing ends in an even cut bevel edge, forming a beautifully straight side to the joint face, and beyond that the outer face of the stone projects roughly about a couple of inches. This pent roof rests on the masonry filling built up around the sepulchre, and the beams would therefore have tended to press against one another, unlike the earlier pyramids, in which the beams always act as cantilevers lying on the walls beneath them. But here such pressure was avoided by resting the beams on the haunches of the horizontal beams below them, thus tending to save those beams from the effect of their own weight; and in truth there need be here no thrust whatever, as the centre of gravity of the sloping beams is within—well within—the line of vertical support of the haunches of the horizontal beams on which they lie, which are again sustained by blocks from the sepulchre roof which rests on solid masonry. So here the pressure of the weight of the great cantilevers was ingeniously placed so as to tend to sustain the horizontal beams and chamber roof by putting weight on their haunches. The butting of the sloping beams was however well provided for, if it should be required, by a wall of fine stones between them and the side of the rock pit. And, as if to try and save even such a roof from pressure, an arch of brick, three feet in thickness, was thrown over the whole structure. The position of this arch, and the nature of the roof, was seen in my tunnelling into the chamber: and the dwarf wall of bricks laid in mud, which retained the sand and dust from falling into the rock pit during the building formed one side of my tunnel.

The second branch from the tunnel showed somewhat of the construction of the roof of the well chamber, as I there reached the ends of some enormous beams of horizontal roofing; the outline of these will be seen on the plan Pl. II in broken line outside the N.E. corner of the well chamber, the course of the tunnel being marked by dotted lines.

26. We will now turn to the contents of the sepulchre. The sarcophagus of Amenemhat will be seen in plan and side views in Pl. IV. It and all the other articles in this chamber are of the same quartzite sandstone as the chamber. There is no trace of inscription visible, and no ornament beside the old

panel-work, or false door ornament, around the bases. The length is 106·0 out, 88·7 in ; the width 48·4 out, 31·2 in ; the height 55·5 out, 41·8 in. The projecting foot stands out 9 inches and is 15·3 high, and the buttresses on it are 10 inches wide, or 6 at the corners ; the ornament is applied on the projecting surfaces, like the panelling on the buttress work of the early brick mastabas and walls. The lid is of the same length and breadth as the body ; it is 14·1 deep, with squared up ends, but cut into a curved top between these ; the side up to the start of the curve is 6·8 high and the flat space on either side of the curved top is 5·8 wide. The position of the sarcophagus is exactly in the axis of the chamber, being 22·9 to 23·0 to either wall ; and it is as near the south end (50·3 inches) as the small coffers there will allow.

But an additional burial has been provided for here by building a second sarcophagus between the great one and the east wall. This was effected by filling up the floor, level with the foot, adding end pieces, which have ten inches length of the new bottom cut all in one with them ; and then supplying a lid, which was let into the side wall a small amount. There can be no doubt that this was for the interment of the princess Ptahneferu, whose altar and ducks were found in the well chamber, and who must have died before her father. Neither of the lids has any ledge, hollow, pins, or other means of fastening ; they are simply flat beneath, and were laid in position ; from which they have been pushed on one side askew, the north ends westward, the south ends hardly shifted. I carefully cleared out all the chips and stuff from the sarcophagi, by groping under the water. I found some bits of bones, and much charcoal, showing the coffins had been burnt inside ; also grains of burnt diorite and granite, which were probably parts of inlaying of hard stones in the sarcophagi, as we found a beard of lapis lazuli for inlaying, among the rubbish in the chamber. The panel work around the sarcophagi I could only examine and measure by feeling, as merely the upper part of it was within arm's reach under the water.

At the south end of the sepulchre stood two coffers, with a slightly projecting foot around them, and lids like those of the sarcophagi. One of these coffers had been broken up, and we took out all the fragments that we could move, and buried them in case they were wanted. M. Grebaut promised to have them fetched, and used to build a pedestal for the alabaster altar in the museum, as I urged him to do. The remaining coffer is 35·4 square, 33·3 high outside, 23·3 inside, and has a foot 10·3 high ; its lid is 7·8 thick. These coffers probably contained the funeral vases, of which the fragments were found among the rubbish in the chamber. All the pieces were closely searched for, but yet none of the vases could be completed, and of some only one or two fragments remain. Every piece from the pyramid was compared with the others, to make as complete a record of the contents as possible. All the pieces of each object were then wrapped together, and the whole of the parcels thus sorted were delivered at Bulak with the altar, in hopes that they may be restored and placed with it as a series. The following are the objects thus noted :—

Altar of Ptahneferu, 26½ × 17 × 9 inches (see Pl. V).

Parts of 9 or 10 duck bowls of Ptahneferu, largest 19 × 8½ × 5 (see Pl. V), smallest 7 × 3½ × 2½ inches.

3 half lids.

2 large jars, inscribed, 1 for Ptahneferu (see Pl. V).

3 bases of smaller jars, 3½, 4 and 4½ inches across.

1 side of small jar with handle, 3 inches diameter.

All the above of alabaster.

1 lazuli beard for inlaying, 2·1 wide, bands on it ·27 wide.

1 Piece of lazuli inlaying ·45 × 1·1.

The most remarkable point about the inscriptions is the innovation of all the birds being without legs, though the leg hieroglyphs *i*, *an*, and *b*, are not avoided. That the altar was so engraved not merely to save space or labour, is shown by the erasure of all the legs of the birds which had at first been engraved on the vase-inscriptions. Some mystical idea must, therefore, be attached to this remarkable change, a change which is quite unknown in later times.

CHAPTER II.

TOMBS OF HAWARA.

27. Last year the Roman cemetery was nearly exhausted, but the position of the early tombs was not then known. On returning to Hawara I began work on the buildings which I had partly explored before, marked as Crocodile Tomb Chapels on Pl. XXV of "Hawara." In mentioning these before I noticed the large hollows adjoining the chapels, usually on the north side. Some of these I had dug in to about twelve feet deep last season, without result. I now determined on clearing one, and the rock was

apparently soon reached ; but on examining it I found that it was only formed of large blocks of the soft sand-rock hardened by sulphate of lime, which had been thrown in : on cutting through these we went down twenty-five feet before finding the real rock, about the position of the man in (Pl. VII, 1). Seeing that this sloped downward toward the chapel we cleared it some way ; but afterwards, leaving this cutting, we sank another pit nearer the chapel, skirting down the edge of the rock, and so reached the top of the entrance to the sepulchre at twenty-five feet down. Inside it was partly filled with sand which had run in, but the chamber at the bottom was nearly empty, with some black mud and water on the floor, and the bones of a boy who had somehow met his end here. This lower chamber has evidently been lined with fine stone, and it lies exactly under the chapel on the surface. A ledge along the E. side leads to a long, low chamber at a higher level in which lay some late burials in wooden coffins, probably of the XXth—XXVIth dynasty.

On attacking the other tombs they proved to be on two systems ; some with a long sloping entrance, such as VII, 1, and others with a well entrance, from which the passage sloped down in the rock. The parts were usually (1) a well or sloping trench ; (2) a passage in the rock ; (3) an antechamber wider above than the passage, but having two level ledges along the sides, so that the floor width is a continuation of the passage ; (4) the sepulchre, sometimes lined with stone, sometimes plain rock ; (5) the sarcophagus, with sides plain, sometimes of limestone, with a lid like that of Amenemhat III in the pyramid, and torus edges, as in (VII, 4), sometimes of massive sandstone, roughly formed outside, as in (VII, 6), sometimes of polished sandstone with engraved inscription, of which fragments were found. These chapels and tombs had all been destroyed at an early date for the sake of the stone. The only fragments of sculpture which remain are occasional blocks of the chapels, which have fallen down the tomb wells and not been drawn out again. In this way three blocks of the tomb (VII, 10) of Ameni-senb-nebuu (XI, 2, 3, 4) were found ; he was an official of the temple at Kahun, for we see just over his head the lower part of the hieroglyph of a building belonging to Semutaui the *ka* of Usertesen II. In another well (VII, 8) were two blocks of the tomb of Ranefankh, one with inscription (XI, 9) and one with his figure, seated. In the wells of tomb VII, 4 were the blocks XI, 5, 6, and 7 together. From these we can form an idea of the fine work of these great chapels, which were grouped together in the desert plain. The general plan is much like that of the Apis tomb of the XVIIIth dynasty still existing at Sakkara. At a later date these tombs were used for burials in wooden coffins, probably between the XXth and XXVIth dynasties. Most of these had perished by the damp and exposure to air, but two finely cut inscriptions in wood were preserved, XXV, 20 on the outside and XXV, 19 on the inside coffin of one burial. After these burials were rifled, and the tombs filled with sand, innumerable crocodiles were buried in the ground around, and in the sand filling of the wells, probably in the Ptolemaic times.

28. About the end of the XXVIth dynasty, judging by the style of the remains, a large tomb was excavated, marked as "Tomb well of Tet-bast-auf-ankh" in the plan Pl. XXV, "Hawara." The well of this is forty feet deep, and the chambers extend more than fifty feet in the rock (VII, 11). When I opened the well last season, the canopic jars for two men, both named Tet-bast-auf-ankh were found standing in the recess just east of Ra-n-ma's chamber : and on raising two of the mummies that were in the place, and examining them we found no amulets. I therefore did not go down, not having a rope ladder at the time. This season I determined to examine it, and on reopening the well the first mummy examined, that of Ra-n-ma, contained amulets. The actual events of this work I have already described in the Introduction, so I shall only here state the details of the tombs.

The canopic jars found last year had probably been taken from some bodies, and brought to the chamber entrance for removal ; they most likely belong to the outer of the two sarcophagi at the end of the chamber, and a body in the chamber of Ra-n-ma : but several other bodies and wooden coffins were floating about in the water in the chamber. The construction of the tomb was a well, down which the sarcophagi were lowered endways ; then next a doorway, built up at the sides after the sarcophagi were taken in, the built parts being marked with cross shade in the plan : then a long chamber, divided in two parts by a wall, in which a doorway had formerly been closed by a wooden door. On the south of the chamber is a recess not as low as the floor, and a chamber next to it, rather lower, containing one stone sarcophagus, of a man Ra-n-ma, identified by his finger ring. At the end of the long chamber are two sarcophagi, one for a man, and the further one for a girl. On the north of the long chamber is another in which stands the

great sarcophagus of Horuta, with recesses for the ushabtis on each side of it; the whole chamber having been filled up with masonry, almost flush with the side of the long chamber. On the south side of the well is another chamber, which contained several bodies, broken.

In the following descriptions of the positions of the amulets the materials are marked by letters, to avoid repetition. B, beryl; C, carnelian; D, diorite; F, green felspar; G, gold; H, hæmatite; J, jasper; K, limestone: L, lazuli; N, black limestone; O, obsidian; P, pottery glazed; S, silver; Y, yellow limestone.

29. The sarcophagus of Horuta is of very hard, tough, browny white limestone; the lid is roughly formed and hollowed away a few inches beneath, its whole thickness being about two feet. On each side of the sarcophagus a recess was built in the masonry which surrounded it; these recesses, or boxes, were about 3 feet long, 2 feet wide, and 18 inches deep. In the southern recess were 203 ushabtis, all standing on end, arranged in 11 files and 18 ranks, the backmost rank being of larger size than the others: they slightly leaned back, facing north, to the sarcophagus. In the north recess were 196 similar ushabtis, two being only broken halves, making 399 in all: these stood in 5 files and 11 ranks sideways to the sarcophagus facing west, and a beginning of 9 files and 10 ranks facing south, but much confused in their order. The placers had probably begun from the back of the recess, and intended them all to face to the sarcophagus, like those in the south recess; but becoming confused in the order, they had changed it, and put the remainder in a fresh manner leaning back on the east side. The lower part of the figures was buried in a bed of sand, and over that the mortar had run in during the building. They were thus so firmly fixed that even with great care, several were broken in extracting them. The water which had risen and filled the tomb, had unfortunately discoloured nearly all the figures, decomposing the blue-green glaze to white. After soaking them in several changes of water for many days, to extract the salt, I then sorted them all according to workmanship, and so determined that seventeen different styles existed in this one lot. Probably these represent the work of as many different men, as every figure is entirely hand modelled, both features, tools and inscription. If then the work had been given out to many different workshops, the examples of each style would be in round numbers; but if made all in a single factory each man would work on until the whole number was complete. The latter is the case, for the numbers are,—large ones (different styles) 15; finest 8; fine, curved lips, 29; fair, straight lips, wiry tie to hoe, 18; good, prognathous, split tie to hoe, 17; short, broad faces, fair, 13; same, poor, 14; flat faces, fair, 45; square face, narrow hoe, 29; small head, poor detail, 37; same, clumsy detail, 7; same thrown back, 25; wide-top head, 49; flat face, brown specks, 11; poor work, olivy colour, 35; poorer, smaller, 42; rough, 5. It therefore seems that these were made by different workmen all in one factory. The order has been for 400; one was lost before burial, and several were injured by rough handling then. The work of the finer ones is of the very best class, and even the bad ones are better than the average of such objects. Inside the sarcophagus were three wooden coffins, one inside the other. These were bedded firmly in sand, which covered over them, and a layer of Chian turpentine was poured over the whole before the stone lid was let down. In the corners of the stone sarcophagus stood four alabaster canopic jars, of which the inscriptions are given in Pl. XXIV, 28 to 31. The jar 28 with the human head of Amset and the speech of Isis was south of the head; 29, with the ape head of Hapi, and speech of Nebhat, was north of the head; 30, with the hawk head of Kebhsenuf, and speech of Selk was north of the feet; and 31, with the jackal head of Tuatmautf, and speech of Neit was south of the feet. The jars were bedded in the sand which filled the sarcophagus, and were quite empty when found, excepting sand and water; they were therefore not actually used for parts of the body.

30. The first coffin was of soft wood a good deal rotted. The next was of hard aromatic wood, the essential oil of which had permeated the whole tomb and given a characteristic smell to everything in it; the face is finely carved, and was removed, but there was no carving elsewhere on it, or inscription. The inner coffin was very thin and rotten. On the second coffin were six tats, Isis and Horus in pottery, and a rising sun, J; there may have been a few others which were lost down in the water during the work. The mummy had a gilt face modelled on its outer wrapping, with inlaid stone eyes, and a wig of sheet silver gilt in alternate stripes; as this was covered with a coat of pitch, it was not perceived at first, and became broken up in the difficult work of extracting the lids. Over the mummy lay a network of long and short beads; these were in rows of lazuli, beryl, and silver-

gilt in rotation, with ball beads of silver-gilt to join the threads ; also square plaque beads of lazuli and beryl. The silver had of course all perished in the salt water. Over the breast of the mummy lay a *Ba* bird, with a human face and outspread wings: this was of solid gold, exquisitely chased, and the wings inlaid with 130 pieces of cut and polished lazuli, beryl, &c., to imitate feathers. On cutting away the outer wrappings of bituminous cloth the series of amulets were found. The arms were crossed, and the hands on the opposite shoulders. On all the fingers and toes were gold plates ; on the wrists were gold bands ; and a gold sheath between the legs. The left hand was clenched, with the thumb up ; on 2nd finger a bezil, P, on the 3rd finger a gold ring with Horuta's name, between the 2nd and 3rd a bezil, F. (These bezils are very flat pyramids, with a loop on the top.) In left hand a seed ; eye, H ; ring, L ; bezil, L. On right hand, ring, F, between 2nd and 3rd fingers ; ring, L, between 3rd and 4th. Around left upper arm beads G, C ; around right upper arm, heart, C ; frog, B ; bezil, L ; 2 eyes, H. On head, 2 eyes C, P ; and sceptre, B. On top of chest, counting from the spectator's left to right, sceptre, Hathor standing with cow head, snake head and part body, hollow model vase, vulture standing, *Ba* bird with human head, another vase, girdle tie, tat, all of solid gold, except the vases. Below that, vulture flying, hollow bulla, *Ba* bird flying, all gold, exquisitely wrought. Below that, hearts C, J ; model collar piece of gold inlaid with stripes of cut stones, pendant form ; hearts B, G, A, sceptre, B, lying on the collar. Below that, another model collar, gold, with stripes of cut stones and gold, ægis form with line of gold grains. At the side of this a hawk of gold inlaid with cut stones. In all sixteen gold amulets, mostly solid ; four inlaid with minute stone work, and all of the finest and most exquisite finish. Below these came five great lines of amulets curving round as pendant necklaces on the body, all of the finest engraving and work. The top line had a small roll of papyrus, rotted, at the beginning, then 4 tats, Tahuti, Horus, sceptre, Isis, Horus, Nebhat, Neit, Selk, Tahuti, 5 tats, all in lazuli, with the details of the features and dress of the figures beautifully elaborated. The next row was of beads, 4 syenite, 7 L, 2 long C, a silver bird outspread, much decayed, and 8 rough-hæmatite beads. The middle row, heart, C ; 4 sceptres, C, C, H, F ; 2 snakes, C ; sceptre, B ; 3 ties, J, J, L ; Ra seated, B ; Ma seated, L ; Shu, P ; hawk, L ; 4 tats, C ; pointed double-feather, and pointed with drooping ends, N ; plaque, B ; rounded double feather, O ; 2 hearts, J, C ; frog, B. Next row, 5 eyes B,B,B,B, O ; 6 scarabs, black syenite, H, P, L, L, L ; hawk-head scarab, L ; vulture, L ; heart, B ; 14 scarabs, L, basalt, syenite, P, L, F, L, F, H. P, L, L, syenite, Y ; 7 eyes, O, O, O, O, L, H, B. Bottom row, 11 eyes, B, C, Y, P, P, D small, C, H, J, J, H. Thus the whole series on the body of Horuta was 18 gold amulets, gold fingers and toe plates, and sheath, about 30 beads, and 109 amulets nearly all in hard stone of large size and the finest workmanship. This set is far finer for both quality and numbers than any that I have seen in museums, and having the exact positions recorded, its value is much enhanced. It was taken altogether for the Egyptian Museum, in which it will form an important feature. I only wish that every official there could have taken his share of the days of sub-aqueous work which it cost me to obtain it.

The other sets of amulets found on bodies in this tomb are less important in numbers, and far inferior in quality. Each set was extracted with the order recorded, as far as possible ; and they have been mounted now in their original sequences. It is hardly desirable to detail these ; but perhaps some day a work on the positions of amulets may be written, in which all such information may properly find a place.

31. During the work at Hawara many small objects of later times were found. A vulture's head finely carved in wood, with glass eyes inlaid, formed of a strip of patterned glass, cut in sections. Some more gilt stucco busts from mummies of the 1st century A.D. ; one bearing a lighted candle, another with modelled earrings inlaid with onyxes and imitation pearls : the jewellery and necklaces represented on these busts is a very interesting feature as dating our collections of unclassified jewellery. Three portraits in good condition were found ; one remains at Bulak ; and two others, a girl and a young man, came to England. Another glass lens found is too conical for magnifying, but a good bullseye. Some glass flasks with the original rush covering are of Roman age. A pair of iron keys, with barrel and ward-slits, a cross-head handle and ring at the end, were found in a box of mud ; one remains at Bulak. A very curious pair of socks was found, with the great toe separated from the others as usual, but entirely made of felt in one piece, without any seams, ridges, or lumps ; how such felting could be done in complex forms is beyond our present workmanship to determine.

32. On the north-west of the pyramid of Hawara where "slag-mounds" appear on my plan I suspected some buildings to have existed. On excavating I found the lower part of a basilica, of which the plan and dimensions in inches are given in Pl. VI. It had been built of small blocks, probably cut up from the labyrinth; it had then been ruined down to three or four feet high; afterwards rough brick walls were built on it, and it was divided into rooms for stables. Two capitals, and some pieces of foliage mouldings of early Romanesque style were found here, now in the FitzWilliam Museum at Cambridge. Probably it was a Christian church adjoining the cemetery, and a piece of the cover of a large book made of Coptic papyri was found here. Its ruin and use as a stable may have been due to the Arab invasion. Three papyri of the Vth or VIth century were found in a curious manner. They are deeds of the sale of monastic property; each was rolled up separately; the rolls were then bound round, along with slips of reed, to prevent their being bent or broken; then tied up in a linen cloth; next in a large lump of old tattered woollen embroidery; and the bundle placed in big jar sunk in the ground. They were thus perfectly preserved until we took them out.

33. Before beginning work this season I went over to the other side of the Birket Kurun with Mr. Hewat. We visited Dimay (pronounced D'māȳ), and the building some miles further back in the desert, at the old lake level or Nile level, standing at the foot of the hills. What age this building is I could not determine. It has no trace of inscriptions, nor any ornament beyond a plain torus border to the inner doorways. It contains first a large hall, see Pl. VI, from which seven chambers open out, each formerly fitted with double doors. Each end of the hall opens into another room. There is also a strange passage in the wall, opening on the outer face of the front. It has been much dug about and tunnelled, without opening any further chamber or pits below. The front is smooth and flat, of massive blocks with irregular sloping joints; the sides and back are rough, as if intended to receive more building, or as if never dressed down. Along the top of the seven chambers is a roof, with the cornice of the chambers forming a parapet wall. Some more excavation might disclose a clue to its meaning.

On the way to it I found scattered over the desert many worked flints of types not found elsewhere, so far. These are shown in the two lower lines of Pl. XVI.

CHAPTER III.

THE CIVILIZATION OF THE XIITH DYNASTY. KAHUN.

34. Having spent some weeks in a town of the XIIth dynasty, having examined hundreds of the rooms, and having discovered all the ordinary objects of daily life just as they were last handled by their owners, I seem to have touched and realized much of the civilization of that remote age; so that it is hard to believe that over four thousand years have glided by since those houses last echoed to the voices of their occupants. The tomb paintings of Beni Hasan show us the people themselves as they lived; and so intimate may you now feel in walking their streets, and sitting down in their dwellings, that I shall rather describe them as a living community than as historical abstractions.

When Usertesen II determined to build his pyramid on the western desert, where the waters flow through the hills to the great lake, that country was waste, and there was no town where his labourers might dwell. It therefore pleased His Majesty that there should be built, joining to the temple where His Majesty was to be worshipped, a town, known by the name of that temple—Ha-Usertesen-hotep. The pyramid was built upon a hill of rock, which was cut into the required shape, and which thus formed its lower part. This stood in the desert, half a mile from the cultivated ground of the Nile. Joining the east side of the pyramid, stood a shrine, where were sculptured all the offerings for the sustenance of Semu-taui, the *ka* of His Majesty. And on the edge of the desert, opposite the east face of the pyramid, stood the temple of His Majesty.

35. On the plan (Pl. XVI) is shown the massive brick wall which stood around the temple on three sides. This wall is about 40 feet thick, and was lined with fine limestone masonry, for which a foundation space is cut into the rock. The whole area of this temple was dug over by my men, but only chips of the sculptured blocks were recovered. In front of it is part of a sloping ascent, built of large blocks, and leading up to the pavement; the two sides and high edge of the slope are shown on the plan. Whether there was a front wall to the building is not certain, but all analogy would show that a façade of stone existed. The frontage, however, did not extend across the front ends of the great brick wall, as there is a porter's lodge remaining on the northern end of

the front. Within the building there was—probably in the façade—a flight of steps leading to the parapet, of which a portion still lies in the ruins, like the flight of steps at Khafra's temple at Gizeh. The greater part of the area appears to have been open, with probably a colonnade around it, while at the W. end, or back, of the enclosure stood a highly decorated chamber. Some sandstone objects stood in the enclosure, and also a seated statue of the king in dark grey basalt, rather over life size. Probably in the back chamber there was a smaller statue in black granite. One piece of each of these statues was found. There was also a large amount of fine wall-sculpture in red granite; and the space where the masons wrought this stone lay on the north of the temple where the ground is still covered with granite chips and dust, and strewn with broken hammers of hornstone.

36. In the middle of the temple area a hole 31 inches square was excavated in the rock about four feet deep, to contain the foundation deposits. Into this the four sets of objects were thrown, without any arrangement or order. Each set of models consisted of a small chisel (Pl. XIV, fig. 1), long chisel (fig. 2), wide chisel (fig. 3), long knife (fig. 4), large pointed knife (fig. 5), small pointed knife (fig. 6), and hatchet (fig. 7), all of bronze; a pair of corn rubbers of brown sandstone (fig. 11); and two strings of carnelian beads (fig. 8), averaging about a foot in length. Two or three pieces of green carbonate of copper ore, and a piece of galena were also thrown in. Over these a quantity of pottery vessels was placed, of which types are shown in figs. 13—17. And some baskets, and straw or fibre, accompanied the deposit. Sand and earth were then thrown in among the pottery. Over all a block of stone was let down by ropes (which passed along grooves in its sides), thus crushing most of the pottery; and on this a second block was let down, each block almost filling the hole, and being about 15 inches thick. Thus the excavation was filled up, and remained undisturbed through all the destruction that ensued; the blocks were noticed in our clearing of the area, broken up and removed by myself and my men, and all the pottery and objects carefully taken out—and their position marked—by my own hands.

The contrasts between this early deposit of the XIIth dynasty, and the later ones of the XXVIth dynasty and Ptolemaic times (which are all that were yet on record) are remarkable. The model tools and corn rubbers continued to be made in later times, and the ores were also deposited. But the carnelian beads quite disappear in after times; while the model mortars which are always found in the later deposits do not occur here, nor any of the inscribed plaques. The reason for burying such objects is yet unexplained; but it seems not unlikely that they were intended for the use of the *kas* of the builders, like the models placed in tombs for the *kas* of the deceased. Whether each building had a *ka* which needed ghostly repair by the builders' *kas* is also to be considered. The carnelian beads are as nearly uniform as may be, of fine translucent stone, well polished; their purport seems mysterious in such a place, and the absence of any variety of size, form, or material shows that they could scarcely be for ornament. It may be that they formed a medium of exchange, or bead-money, at that early period: and if so we may see an explanation of the use of beads for burial with mummies.

37. After the Hyksos times and the XVIIIth dynasty the temple was still standing, probably more or less injured. But the covetous requirements of Ramessu II proved its destruction; and the royal masons removed the materials both of the temple, and of the *ka* shrine adjoining the pyramid, for building the temple of Ramessu II at Heracleopolis (Ahnas el medineh) about ten miles to the south. They removed the granite in almost entire blocks, as very few chips of destruction are found on the site; and the statues appear to have been also carried away whole, since only one fragment of each was found. The limestone was more flaked up in redressing it, and one cartouche of Ramessu in hieratic was found, scrawled on a joint surface in the temple, beside a brief hieratic inscription of his roughly painted on a block at the shrine. Scattered about among the chips were many beads, bits of glazed pottery, rings, &c., of the beginning of the XIXth dynasty, evidently left by the destroyers. While over at Ahnas I saw lying on the surface a drum of a granite column of Ramessu II, with the *ka* name of Usertesen II remaining upon the joint surface of it. After another interval, of slightly longer duration, the place was again visited, in the 7th cent. A.D. by the Copts, who used it as a burial ground: from their interments a great quantity of woollen garments, with woven and embroidered patterns, were found in fine condition, when—after a third interval—we came on the ground, and recovered all that could be traced of its past history.

At the north end of the temple façade stood the

porter's lodge. This seems to have been a place for ablutions, as in the large room (Pl. XV) a square stone trough was let into the ground, 24 inches square outside, and about 4 inches thick, the depth being about 18 inches. Similar troughs sunk in the floor occur in the town, with sloping slabs of stone around them, for the washing water to run down. In this lodge was found a scarab (bottom Pl. IX) and a broken bronze knife (Pl. XVII).

About four feet of the higher walls of the lodge remain, while some are almost level with the ground; the whole of it was covered with a heap of blown sand and disintegrated mud brick. The great wall around the temple similarly varies from only a brick or two, to about three feet high. The back wall may have been of the same thickness as the sides, but it was so much washed away that this is not certain.

38. The temple stood on a prominent point of rocky ground, standing forward just over the Nile plain; while on the north of it the hill swept round forming a sort of bay about a quarter of a mile across. Here the town for the workmen and the stores was built. The outer wall of the town ran from the end of the north side of the temple northward for about quarter mile (only a part of it is shown on Pl. XV), thus skirting along the edge of the bay and then dipping down into the desert behind it, before turning eastward at right angles to enclose the town. Just before reaching the plain on the east, it turned southward for a short way, but—excepting this—the town stood open to the Nile valley on the east side.

The architect not only thus laid out the site with a rectangular enclosure, adjoining the temple, but he also laid out the streets and blocks of chambers, or houses, in regular lines. The plan was to run rows of building about one hundred and fifty feet long, branching from the long west wall, some of which are shown on Pl. XV; and then longer and wider blocks branch from the north wall. Thus the western of the longer blocks nearly closed the entrances to the western streets, and so the whole of the western blocks could be guarded by a single watchman at the end.

39. The rooms are generally grouped together in sets of half a dozen to a dozen with one outer door to the street. They were planned by the architect in round numbers of cubits throughout. Thus—to take a chance example—208, 125, 121, 82, 64, 61, and 42, inches are 10, 5, 4, 3, and 2 cubits of 20·8, 20·9, 20·1, 20·5, 21·3, 20·3, and 21 inches. The dimensions vary so much that no very accurate settlement of the length of the cubit can be made.

The chambers were sometimes vaulted with a barrel roof of brick; but more usually they seem to have been covered with beams and thatch. In one room a massive log of wood remained, about a foot square and 8 feet long, with marks of the attachment of cross pieces let in. All of the doorways were arched over, wherever they are yet preserved; the bricks being spaced apart on the outer side of the arch by chips of limestone, to the same effect as the wedge form of voussoirs. Probably some sort of centreing was employed, as the arch being 42 inches wide inside the whole would be too heavy to lift up in one mass and set into place, as Arab bricklayers will do now. The barrel-vaulted chambers may have been filled up with sand as the arch advanced, and emptied after completion. There can be no question now about the common use of the arch in domestic building of the XIIth dynasty; nor in large structures where it was suitable, as in the pyramid of Hawara, to prevent the brickwork settling down and splitting on the pointed roofstones.

Though it does not appear that upper stories were built, since there was no scant of ground as in a large city, yet stairs were provided to go on to the roof, as in modern houses. Many of these staircases remain as will be seen in the Plan XV; wherever sufficiently preserved they are found in two parts, with a turn in the middle. The flights are 25 to 28 inches wide, and usually of five or six steps each.

The regularity and care with which the rooms were laid out is seen not only by their being in whole numbers of cubits, but by the repetition of the same plan. The general similarity of the design repeated in each block is evident, and in some cases the plan is exactly copied. This is well seen in the south side of rank B. Here I have drawn (Pl. XV) the three sets of chambers superposed in outline, using full line, broken line, and dotted line to distinguish them. The differences are hardly ever more than an inch or two, except in the northern side.

No special place seems to have been set apart for the fire; generally it was against one side, as in modern huts, and somewhat sunk in the floor.

40. In the larger rooms columns were often employed to support the roof. These seem probably to have been of wood shaped octagonally, to judge by the marks left upon the stone bases which remain. The bases are generally from 20 to 24 inches diameter at the under side, and about 3 inches less on the top.

Their centres are either three or four cubits apart, 62 or 83 inches. The columns were about 10 inches diameter, or rested on base plates of that size. In the middle of the town some stone building formerly existed, which was finally cleared away and burnt to lime in the Vth century A.D., late Roman pottery and a coin of Theodosius being found on the surface there. Adjoining this on the east was a building about 24 × 27 feet (285·8 × 333·3 inches), with the roof supported by a square of columns, three one way and four the other, leaving an open space in the midst. Here a square trough sunk in the floor, 16 inches square inside, has a slab of stone sloping down toward it on each side, evidently for ablutions.

In many of the chambers granaries are found. These were of the well known conical form shown in the paintings. They are from 67 to 76 inches across inside, and 5 or 6 inches thick, formed of single bricks laid on their sides, and mud plastered inside and out. These generally stand in chambers, often two together, with just enough space to walk past them. In one case, a grain-floor was laid out by the side of a granary, with slabs of stone and a raised border.

The doorways mostly had wooden doors, and often also door cases. The door bolts found are shown in Pl. IX, fig. 21. The thresholds were of wood also; and the door was pivoted in a socket of stone or a hole in the threshold. Dust and dirt were kept out of the pivot hole by a quadrant of stone ⊓ placed around it; and as the door wore down the surface was raised by laying pieces of leather, generally old sandals, in the socket.

Around the walls in the best rooms there is often a painted dado. Usually this is black or dark around the lower part, with black and red lines on a white ground at about 3 or 4 to 5 feet up, and yellow wash above that. The walls are always smoothly plastered with mud. In some cases paintings have been done in red, yellow, and white. One shows four jars on wooden stands; another is of a house front.

In one room a cellar had been made; the opening was just large enough to pass the shoulders through. Inside it was 40 inches high with a vault roof of brick, 40 inches wide and about 60 long. But in many of the rooms there were burials of objects in the floor, and I always carefully sounded all over the floors and especially around the edges, by striking with my measuring staff, in order to search for any buried things. Many boxes were thus found in which babies had been buried. The boxes were evidently intended for domestic uses, to hold clothes, tools, &c., but babies were put in them, sometimes two or three together, and buried in the rooms. The infants were often of some months old apparently, to judge by the size of the skulls, and by the beads and amulets with which they were sometimes ornamented. The details of the boxes, and the beads, will be described further on.

41. Of furniture there was not much. A stone seat was formed by cutting a large hollow beneath a block, so as to leave two legs, and slightly hollowing the top for sitting on. Wooden chairs were also used, with carved legs. One beautifully made chair is formed of dark wood with ivory pegs in the back. The back part was curved, and formed of vertical slips joined together in a top and bottom bar; this all slanted somewhat backwards, and was maintained in place by two upright strutts behind it which joined it at the top, thus forming an acute triangle in side view. The angles of this, as of other chairs, were strengthened by ⌞ angle-pieces cut out of selected curve-grained wood, and carefully pinned on with a large number of wooden pins.

The small articles in use were kept in boxes, the largest of which were about 22 × 17 × 10 inches outside. They were generally made of hard wood; the corners cut diagonally, except at the top, where usually the sides cross over the ends. The bottom is of strips lengthways, placed between the sides, and held in by a cross ledge near either end. The lid is of strips lengthways, secured by two ledges across the inside. One ledge has pegs along its outer side, which fit into holes in the end of the box, thus the lid cannot be raised at one end. The other end of the lid has a knob on it, which could be tied down to another knob on the end of the box when it required fastening. The only boxes preserved are those which had been used to bury babies in: these sometimes contain beads, which serve to prove their age, by the names of Usertesen II and Amenemhat III (Pl. X; 9, 10, 11).

42. A great variety of pottery was made for domestic purposes. But the styles here used had almost entirely changed by the time of the XVIIIth dynasty: and in only a few cases, such as the pilgrim bottles (Pl. XIII, 61) and the blue painted bands, which very rarely occur here, can be seen the beginnings of the later styles. The most characteristic points of this age are the hemispherical cups (1 to 3), the very short necks (11, 22, 33), the spouts (23, 24), the scollop beaks (89, 90), the double and triple curves (42, 43, 50, 52), the black bands on the neck

(22), the wavy lines incised (39 to 45), the strange dishes with incised patterns (103 to 111), and the trays of offerings (102). None of these types ever occur in the XVIIIth—XIXth dynasties, excepting a very few bits of the incised dishes.

The jars are often washed over with red ochre or rouge wash, especially those with black neck bands (22). These necks are very largely found in the masons' pottery heap just north of the temple outside the town wall. The little dishes (62) are also found there, thus certifying their age. These small dishes and cups (67) are found by the hundred at Gizeh. There I had thought them to be of late date, as I had no opportunity of tomb or town excavation there to prove their age. But having found similar cups and saucers in a heap on the east side of the south stone pyramid of Dahshur, in a similar heap on the east side of the pyramid of Illahun, and now in the masons' rubbish, it is evident that they belong to the XIIth dynasty, if not to earlier times.

Among the peculiar objects there is the pot (12), closed below; this seems to be for a drum like the modern *darabuka*: the jars with spoutless holes (19): the long pipe-like objects, closed below (34), which were also found in the foundation deposit (XIV, 14): the dish with a partition (49) and a peg on the outside: the dishes with two loops in the bottom (58), which are like a large class of roughly cut stone objects, which have similarly two loops (or occasionally only one) in the bottom: the lids (54) which resemble those of the XXVIth dynasty, but are quite unknown in the XVIIIth: the plain cone (92): and the incised dishes, which seem as if intended to serve up food in, judging by the example with a raised centre (107): the patterns of these apparently are derived from basket work.

The regular method of supporting the jars was on a ring stand (28—30, 36—8, 85—8, 99—101); and though anyone not accustomed to Egyptian life may object that such a support was a needless complication, and ask why a flat bottom was not made to the jars, yet the reason of the arrangement is quite clear. If a jar of porous pottery containing any liquid is set on the ground, it picks up dust and grit on its damp surface, and soon looks loathsome; but by placing it on a ring stand it remains always clean. Other forms of supports were used, particularly stone stands, cut in soft limestone. These were generally rectangular slabs with four feet, for one or two jars, with a raised rim, a conical hole for each jar with raised edge, and often a groove to catch and lead away the water which exuded from the jar. Occasionally they were circular, with three feet. Also solid stone blocks were made of a cup shape, like fig. 63 in outline, or rather more upright: with a small hemispherical hollow in the top and a groove around that. Four of these I found in the pyramid of Hawara, and several in the town of Kahun.

43. The material of the pottery differs much from that of any later age. There is not much of the rough red tile stuff common in late times, none of the fine drab of the XXVIth dynasty, and very little of the hard face polished light drab and light brown of the XVIIIth dynasty. A coarse, rough, hard body of brownish-grey is common, also brown softer pottery. The thin cups (1—3) are the finest clay, a smooth brown, rather reddish, and often washed over with red. A very special point in this pottery is the streaking of the inside upward by the fingers, instead of turning it. Some few vessels which were found under special conditions may be noted as positively of the XIIth dynasty beyond any question, namely, the foundation deposit pottery (Pl. XIV), the pottery found in a box with cylinders of the XIIth dynasty (XIV, 18—20) and pottery of the masons' rubbish (XII, 22, 62). The rest of the pottery has the general authority of being found in the town, generally in rooms which had been deserted, and filled up with the rubbish of neighbouring houses.

Some pieces, of eight or nine vases, of the black pottery were found (Pl. XXVII, 199–202) in various parts of the town. One vase is plain; most of the pieces bear the chevron pattern, with the alternate spaces filled with rows of dots; or a double chevron blank, with dots on each side of it. One fragment has figures of three pairs of goats, standing upright, face to face, with a palm or vine between each pair. The design of this is scarcely Egyptian, but looks more Phœnician or Assyrian. This black ware is just what was found by M. Naville with scarabs of the XIIIth dynasty at Khataneh near Fakus, in graves many feet deep beneath accumulations of the time of Seti I, and hence certainly early. Here it is again found associated with objects of the XIIth or XIIIth dynasty, and its date therefore is almost beyond question. The difficult point now is to determine whether we are to throw back to such a date the Italian black pottery with chevron pattern and dots so closely like this. The fact that such pottery is quite unknown in Egypt at any other age, none having been found in the towns or graves of the XVIIIth, XIXth, XXth, XXIInd, XXVth, XXVIth,

XXXth dynasties, Ptolemaic, or Roman, which I have excavated; and the fact that Kahun was certainly inhabited by foreigners, probably Cypriotes; and the similarity of this pottery to the Italian;—all these points agree in throwing the Italian black ware (at least in its origin) back to this early date, though doubtless it was also used in later times in Italy. Some other very strange bits of cups with rows of black and white dots, and a bird in red-brown pottery with white spots, are both unlike anything that I know of later times, and appear to be foreign in idea.

Wooden bowls were common in this time, though rare in later ages. They vary from 3½ to 10½ inches across, and sometimes have a handle carved on the edge. One wooden bowl is ornamented with rams' heads (VIII, 3); and though the style of it looks more as if of Roman times, yet the motive of animal-head handles is seen in the XVIIIth dynasty on the alabaster vase with gazelles' heads (XVIII, 16), so that the date of the bowl need not be in doubt.

44. A curious piece of furniture was a limestone stand, on which offerings of bread paste were made. These stands are usually in the form of a column with a saucer-shaped hollow on the top; the columns are 18 to 21 inches high including a square base, usually with plain capital, but one has a lotus capital as at Beni Hasan (Pl. XVI). Two examples were found of these stands in the form of two men, standing back to back and supporting the cup with raised arms on their shoulders. These are rudely done, one being unfinished; and from the place of discovery may belong to the XIIIth dynasty, as the scarab of Neferhotep was found in the room with one of these. One example occurs of an arm supporting a cup, evidently intended to be built into a wall so as to project.

45. The bricks for the house building were made in a mould exactly like those of the present time (Pl. IX, 23); this mould is of wood, and produced a brick of 11·2 × 5·6 × 3·4 inches. We can now trace the form of brick moulds from this of the XIIth dynasty, the tomb of Rekhmara at Thebes of the XVIIIth dynasty, and the figure of Tahraka making bricks at Medinet Habu of XXVth dynasty. The plummets are of exactly the modern form, and are made of stone (VIII, 19).

After the building the next business was the plastering of the walls. For this the plasterers used tools almost exactly like those of the present time (Pl. IX, 9, 10). The larger float is for the rough coat, and the bevelled end of it projecting far out from the handle is evidently for the purpose of going into the corners of rooms without disturbing the coat on the adjoining wall. The smaller float is lighter and smoother for laying on the facing coat. Both of these are smeared with the mud-plaster just as last used by their previous owner who left them behind. They are carved in one block, and their forms could scarcely be improved in any respect. Wooden cramps were used—as in later times—for stonework; holes for such are seen in the pyramid pavement at Hawara, and the cramps are found at Kahun (IX, 29).

46. The woodwork and carpentry were mainly done with bronze tools and possibly some flints. The type of adze handle, so familiar to us in the hieroglyph *sotep*, is found (IX, 15). The various forms of flint tools are shown in Pl. XVI; and the influence of the forms of bronze tools upon the types of the flint is clear, as in Denmark. The hatchets and chisels are shown on Pl. XVII, the upper half of which gives the XIIth dynasty examples. The basket (fig. 8) was found in the corner of a chamber close to the floor; it is made of rush, and is still strong and sound. Within it was the copper bowl hammer wrought (7), the chisels (4) and (5) and another like (5), the hatchets (6) and (9); while by its side lay the large knife (21). Owing to being buried in dry dust, and without anything in contact with the bronze in the basket, the original polish and hammer marks on the bronzes are perfectly preserved, with scarcely a speck of rust. It is strange that the large hatchet should have been broken across, as there is no sufficient mark of any strain applied to it. The traces of friction of the hafting can be seen on the backs of both the hatchets; but there is no mark of either hafting or hammering on the chisels. Another type of chisel (fig. 3), which has been well hammered on the head, was found with the rough bronze piece (1), probably intended to be hammered into a knife; a bronze mirror, 8·3 inches across, on which some polish is yet visible; and a throw stick of wood (IX, 31); together with some net-work for jars, old sandals, &c. The other bronze tools were found isolated; (2) is the broken-off tip of a chisel; (10) a piercer in its wooden handle; (11—13) fish hooks; (14) a needle, of which many were found; (15) a pin, probably from some fastening; (16) a netting bobbin; and (17) to (21) knives.

The difference of type of the bronze tools of the early age from those of the XVIIIth and XIXth

dynasties will be noticed on the plate. Other carpenters' tools are the socket drills to be worked by a bow (IX, 28), and the adze handle (IX, 15) familiar to us in hieroglyphs and paintings. Several door bolts were also found (IX, 21); some with a groove along the edge. The mallets are of two forms. The club mallet (IX, 2) is that shown on the early tombs as used by carpenters; while the headed mallet (IX, 4) is the type of later times. We now see that the XIIth dynasty was the time when the form changed.

47. Of masons' tools probably the bronze chisels are examples; but one other very interesting article was found among the foundation blocks of the temple of Usertesen, and had been probably left by his masons, as those of Ramessu II would not have troubled themselves to dress on the spot the stones they removed. I had pointed out long ago ("Journal Anthropological Inst.," 1883, Aug.) that the Egyptian method of facing a stone true was by running flat drafts along the edges, and then holding an offset piece on the draft of each side with a string stretched from one to the other; while the trimmer held an offset piece of the same length on the face of the stone, and so saw against the stretched string what excess had to be removed. This was my conclusion from a painting at Thebes. Here, at Kahun, we found the very articles, three flat ended sticks of wood, two of them with holes to insert a string, and the other plain (Pl. IX, 13). But for noticing the painting beforehand, these could scarcely have been understood. Their lengths are 4·96 inches, equal within two or three thousandths of an inch: diameter ·6 to ·7 inch. One stick of a smaller set was found, 2·89 long (palm of four digits of ·72, less than one-seventh of cubit) and ·42 diameter.

48. Of measures three were found at Kahun. But not one of these was the usual Egyptian cubit. One is a bar of wood of the usual form for a cubit, 3·15 wide, 1·6 thick, and one edge bevelled off to a breadth of ·9, on which the cuts are marked. It bears cuts dividing it into six palms, being thus the short cubit of which no other example has yet been found. One end extends beyond the last cut by ·11. The cuts are slightly askew, but very parallel. The successive palm spaces after the end surplus of ·11 are 2·95, 2·97, 3·03, 2·91, 2·96, and 2·78 to the end, which is much decayed and only retains a small part of the original face. From these (properly weighted) the mean palm would be 2·965 agreeing to a cubit of 20·75 inches; or the total length is 17·71 which + the average palm would be a cubit of 20·67. Hence, though this is 6 instead of 7 palms, the length is exactly in agreement to the usual Egyptian standard. Two other measures were found on slips of wood; but both are very rough, and possibly merely arbitrary scales made for some temporary purpose. One scale has seven divisions, but much larger than the regular palm; possibly it was made roughly from a broad hand. The spaces are 3·41, 4·47, 3·64, 3·53, 3·07, 4·08, and 4·23 inches, total 26·43 inches. There is also a mark near the middle at 12·74. The mean value of the spaces, weighted, and excluding the ends which are worn, is 3·63 inches. It is possible that this is connected with the 13·2 inch unit which is already known to have been in Asia Minor, and which may have been introduced by the foreign settlers at Kahun; this measure is divided into two parts averaging 13·2 each, and the seven divisions may have been put on in imitation of the Egyptian cubit of 7 palms. The other scale is of 7½ spaces, the end one being half the length of the others. Their lengths are ·84, 1·24, 1·06, 1·08, ·86, 1·05, 1·03, and ·52. The weighted mean of the cut spaces is 1·04, and this may be the decimal division of the cubit, 1·04 × 20 = 20·8, as this decimal form is already known on Egyptian monuments.

49. In the production of clothing and thread these people were not at all behindhand. The spindles used for making the linen and woollen thread are very common; their usual type is seen in Pl. IX, 26, the size varying from 7 to 15 inches long. The main differences from spindles of the XVIIIth dynasty is the greater depth of the whorl, and the long spiral groove for the thread at the top. These were used like the modern Arab spindles, most probably; the bunch of raw material after carding is loosely bound round the distaff, which is carried tucked under the left arm; the left hand controls the supply of fibre, dragging it out of the loose mass; the fibre as spun into thread is wound on the spindle below the whorl, and passes up the side of the whorl and through the groove at the top (a hook in the modern form) which prevents its unwinding. Then the right hand lays hold of the bottom of the spindle, and giving it a rapid spin between finger and thumb it is dropped, dangling by the thread from its top. While it continues spinning both hands are actively employed in dragging out the fibre (which comes off the distaff) into an equable thinness, which as it passes through the right fingers is immediately twisted into thread by the rotating spindle which hangs from it. As

soon as the spindle has lost its spin, it is picked up by the right hand and respun, and more fibre is drawn out and supplied to lengthen the thread. When the spindle reaches too low to the ground it is taken in the right hand, the thread released from the top groove, and wound on the shank by tossing the spindle round in the hand; when wound up close to the loose fibre it is re-caught in the groove and more spinning is continued.

50. The thread was used single for weaving; and also twisted with two or more generally three—and sometimes six—strands, for string. The string was wound in balls of as much as 2 or 3 inches diameter. It was used mainly for netting, the fishing nets having ½ to ¾-inch mesh; the smallest mesh is ⅛-inch square. Netting needles both of bronze (XVII, 16) and of wood were employed; and it seems very likely that reels were also used for netting, they are found both of pottery, black clay, and of wood (IX, 24, 25). The cloth made was of varying fineness, the closest having 54 threads in the woof and 94 in the warp, and the coarsest about half the number. For sewing, bronze needles were used, which were very common (XVII, 14); the finest are 1/20-inch thick. Wooden bodkins were also used (IX, 27) for the coarser purposes.

Wool was also spun; a handful of weaver's waste is mainly made up of blue worsted ends, and blue wool, with some red and some green ends. A lump of red dyed wool, not yet spun, was found. Bags were made, as in later times, with a drawing cord run through a hem round the mouth. Cartonnage was also made of layers of canvas and plaster, painted externally; this was used for mummers' masks (VIII, 27).

51. Of coarser fabrics rope of flax, palm fibre, and rush was made. It is usually of two strands; but sometimes it was thrice doubled, giving eight strands. Wide network was made of this rope to enclose jars; a ring passed round the lower end of the jar, the net covered the sides, and joined into a handle of rope at the top. Rings of rush rope are found, probably for carrying jars on the head. Small, flat, square baskets of rope were made, about 6 or 7 inches in height and width. And a band, probably for going round the back of a man in palm climbing, is formed of 14 fine ropes parallel, interwoven with strips of linen cloth, and ending in two thick loops for attaching the rope. Baskets were also made of palm leaf; both of the modern round type with palm rope handles, and of the flat, square form; the latter is most thoughtfully designed, with a wooden bottom bar, woven rope corners, six fine ropes up the sides to distribute the pressure, retained in place by a cross rope, and ending in a twisted rope handle, the top edge having a fine rope binding.

For fulling cloth some curious balls of leather appear to have been used. It seems as if the cloth were drawn over a round bar placed horizontally, and beaten upon that by a leather ball held in the right hand. The balls are oval, filled with leather cuttings, and always worn in a line beneath, slightly inclined to the axis exactly as if brought down on a bar in front of the worker.

52. Sandals were very closely and beautifully stitched up of rush, and usually soled with leather. A small bundle of rush was wound round by a rush thread, which at every turn pierced through the edge of a previous bundle. Thus these successive bundles were bound together edge to edge, and a flat surface built up. This was edged round in the same way. In basket making exactly the same principle was followed, with great neatness (see XVII, 8). The rush sandals soled with leather, leather sandals alone, and leather shoes, were all used. The shoes seem to have been just originating at that period: two or three examples are known, but all of them have the leather sandal strap between the toes, and joining to the sides of the heel, to retain the sole on the foot; the upper leather being stitched on merely as a covering without its being intended to hold the shoe on the foot. These soles are compound, of three or four thicknesses.

Rush mats, like the modern *hasira*, appear to have been made, as a weaver's beam was found with thread holes 1½ inches apart, 28 holes in all. Flat sticks for beating up the thread into place, after the shuttle has passed in the loom, are also found. Brushes, about 1½ inches thick and 8 inches long, were made of rush fibre bound with linen cord, and with a loop for hanging up.

53. The fields were cultivated with much the same tools that we see in the paintings of later times. The hoes of the simplest forms (IX, 1, 5); the blade always of wood, and let into the handle. The tie was usually passed around the blade at notches cut in the edge; but it was also fastened sometimes through holes in the blade, as in IX, 3. Some hoes have a curved handle, which is the type more generally copied in the hieroglyph *mer*. Rakes were also commonly used (IX, 14), and have from seven to nine teeth, cut in one piece of wood.

For the harvesting flint sickles were used. The body was made of wood (IX, 22), usually in two pieces joined together, owing to the difficulty of getting a single block suitable for carving the form. In a groove along the inside the flint saws were inserted and held in by a black cement, apparently made of fine mud and glue. This exactly agrees with the finest examples of the hieroglyph *ma*, in which the small teeth of the sickle are shown. The actual employment of the flint saws which are so often found, formed of long flakes serrated at the edge, is now placed beyond doubt by finding this example of the flint in its setting. The high polish on these flint saws agrees with their use in cutting straw.

After the threshing and winnowing the grain had to be scraped up on the threshing floor; and for this wooden scoops were used (IX, 11), which are either right-handed (as in the drawing) or left-handed. One of each occurs in the XIIth dynasty, and four left to one right in the XVIIIth.

Throw sticks were used in hunting, as we see in the paintings; both the asymmetric (IX, 30), which was broken and bound up with thread anciently, and symmetric (IX, 31). Wooden hooks, carved out of bent-grain pieces, were made as now-a-days (IX, 16), probably for *shadoof* hooks, &c.

54. Hitherto we have not known of any ancient Egyptian implements for fire, nor—I believe—how fire was obtained by them. One of the most precious objects therefore is a fire-stick (IX, 6) on which a stick has been rotated to grind fire, as in India, and even in Bosnia, down to the present time. This throws light on the many examples of bow-drills that are found, two at Kahun of the XIIth dynasty, and three at Gurob of the XVIIIth dynasty. To a people accustomed to drill with a bow, as we see in the early Egyptian paintings, it is certain that the use of it to rotate the fire-stick must have been known. A spike of the wood best suited for the rubbing, would be fitted into the drills we find, and twirled by the bow, with the advantage of being able to make friction by a heavy pressure on the drill socket. This again will explain the use of the very common blocks of hard stone with highly polished holes in them, as they would serve for pressing on the top of a plain fire-stick, while it was twirled by the bow-string. The fire-sticks are not likely to be often found, as wood was so valuable in Egypt that they would be burnt up when no longer useful.

55. The metal-worker's skill is shown not only by the forms and fine finish of the bronze implements found, but also in a caster's shop which I cleared out. Here we had left five moulds for bronze casting, two in one block. These were made from pieces of large conical pans of earthenware, 1¾ inches thick, and over 2 feet diameter. The pieces were trimmed square, 9 × 6, 7½ × 3½, and 6 × 2½ inches in size. On the face of the block the mould was cut out, and lined with a coat of fine ash and clay to give it a smooth face. There is no sign of another half to the mould, nor of any ducts; so the casting was basin-ways. The forms are for a flat chisel 6 × 2 inches; a similar chisel, with two lugs at the narrow end; another 6 × 1 inches; a knife 6 × 1 inches, the casting of which was doubtless to be hammered out thin to a much larger size, like the lumpy piece (XVII, 1); and a small hatchet 3·2 × 2, which mould may well have served for the hatchet (XVII, 9) which was found a few doors off. Other possessions of this founder were also left in his room: a socket-head of a drill or fire-stick; a stem of another drill; two pieces of sandstone whetstone; a thin finger-form basalt whetsone; a horn haft, made by softening and flattening the horn, so as to leave a slit for the tang of a knife, after which two holes were pierced for riveting, one near each edge so as to hold the blade as firmly as possible, and the whole surface was rasped partly into shape in Egyptian style, *i.e.*, not by gradual rounding, but by successive truncations. Some shaped pieces of wood of unknown use, a spindle whorl with a sign cut on it, five flint flakes, some half-calcined gypsum, and bits of blue glaze, were also in this room.

A curious implement was made of shell (VIII, 10) serrated at the edge, with a hole cut in the upper part through which rush binding was passed to serve for a handle. What material this could cut is difficult to imagine, possibly it was a fruit scoop for melons.

56. For the toilet the objects were much like those of later times. Bronze mirrors were used, over 8 inches across; and a massive ivory handle of the lotus flower form, 6½ inches high, shows the luxury of even such an obscure town. Another handle is of polished black basalt. The pieces of ivory carving (VIII, 11, 12) have apparently come from some toilet boxes. Combs were made of wood (VIII, 25, 30, 31), generally with a higher back than the later forms. Some beautiful spoons of wood were in use; one (VIII, 17) with a duck's head with red ivory bill, and the bowl carved as a shell. Another exquisite lion's-head handle was found, but the bowl having been supported by a figure was broken away; this, with an amethyst scarab, was found in a hole in the floor of a room in rank A, and is now in the Bulak Museum. Kohl pots were always of

stone, usually alabaster or basalt, of the dumpy vase form, sometimes with dwarf handles at the sides; and almost always with the broad, flat, neck-piece cut from a thin slab and fixed on separately. The tube type, single or compound, is not found at this age. Hair pins of ivory were common, and of various forms (VIII, 4 to 8), some with separate heads, such as (6). Some other upright vases of alabaster (VIII, 29) may also have been for the toilet. Vases and bowls of porphyry (VIII, 28), serpentine, black basalt, and alabaster are likewise found. And pieces of various small vessels in a fine grained bluish-grey marble, which seems to have been brought from the north of the Mediterranean, and which—like the black pottery, apparently of Italian origin—is only known in Egypt in the XIIth dynasty. The rectangular trays for rubbing up paint and ink were as well known as in later times; they are made of syenite, black granite, and basalt; one has a cartouche line around the hollow.

57. Not only was the civilization of Egypt in the useful arts already solidly established in the XIIth dynasty, but amusements were also well known. Of children's toys there was an abundance. Tipcats flew about in the streets merrily, for as many as 11 have survived (IX, 17). Whip-tops were even commoner, 20 having been found (IX, 18, 19, 20). Balls of solid wood, and of leather sewn in six gores, were made. Dolls of wood, with moving limbs, and painted (VIII, 15, 16) consoled the girls; and a large store of dolls' hair, ready to be made up, was left in one room. This hair is constructed just like that made for Theban dolls; five threads placed together, about 6 inches long, had pellets of mud rolled on them by the fingers, 12 or 14 in the length, and a conical lump at the end: this may have been somewhat copied from the actual dressings of girls' hair with pellets of mud at the ends, as in Nubia at present. Clay toys were made of many forms; men (VIII, 23), pigs (21), crocodiles, and other monsters (20), as well as boats (24), little vases, &c., were modelled out of the universal Nile mud. One unique example of a flint toy was made, the hippopotamus (VIII, 22) being chipped in outline from a thin flint flake. Limestone toys were often painted; the hippopotamus was a favourite form, and there is one figure of a boy nursing a monkey. Dolls were also made of blue glazed pottery, curiously truncated at the knees, with the hands at the sides, and ornamented with tattoo marks of spots or lines on the thighs, and a girdle line round the waist.

58. A very remarkable carving, which may be a toy or a symbolic figure, is executed in hard wood (VIII, 14), and was found buried in a hole in the floor of a chamber (middle south side of rank A) along with the pair of ivory clappers (VIII, 13, 13A). This clearly represents a mummer or dancer in costume, with a head-dress or mask and a tail. Strange to say in the next room of the same house I found one of the actual masks which were so worn, made of cartonnage (VIII, 27); three layers of canvas are modelled into the Bes-like face, such as we see in the wooden figure, and painted black with grotesque arches over and under the eyes, spots on the cheeks, band across the head, and red lips. The nostrils and eyes are provided with holes, one eye having been torn larger to see more readily. The knocking about in use had taken off some of the stucco, and it has been repainted black on the canvas base. In the sketch the damages are omitted and the black surface is left plain. This suggests that the head of Bes was intended for a mummer's mask; and as the god is often figured as dancing, playing tambourines, pipes, &c., this is the more likely.

59. A beautifully woven sling was found, 2 inches wide and 6 inches long, tapering to the cords; the cords are nearly 2 feet long, of two strands, each double twists of very thick threads: one cord has a loop at the end to keep it on one finger, while the other is plain, to let fly.

Of games there are two kinds. The well known 3 × 10 squares board is found painted on the inside of the lid of one of the boxes. Counting from the left hand along the top ten, the 2nd is marked 2, the 3rd 3, the 4th ×, the 5th *nefer*; and along the top edge 2nd and 3rd have a line bracketing them, and another line curves round the 5th: the 7th in the bottom ten has a trace of hieratic writing. The squares average 1⅓ inches. No pieces to play with have been found. A totally different game was played, or marked, with pegs in a board of pottery (Pl. XVI). Each of the symmetrical sides has 30 holes, every fifth of which is marked by a cross cut, and the 20th is a common pool at the end in which the lines join before returning; there being an up and down track for each party. No such game is known in Egypt as yet.

60. Turning now to the highest products, in literary work a considerable number of papyri was found; and writing must have been in as common use as we see it represented in the tomb paintings, where scribes record every item of the estates. Many of the papyri are letters, others are accounts; and there is

part of a medical papyrus, written with rubrics, and carefully backed with some fresh papyrus pasted on, where it had become worn and split in ancient use. The account of some of these will be found in Mr. Griffith's chapter, VI. The letters were many of them folded up in vertical folds, about 1½ inches wide; then the folded strip was bent over in half, and the two ends tied round with a slip of papyrus, or string, and sealed with a clay seal impressed by a scarab. These seal impressions have given us the name of the town Ha-usertesen-hotep, as in (X, 23, 24). The cylinders found in the town are all of the XIIth dynasty (Pl. X, 2 to 14), and the historical range of them will be seen in the chronological diagram at the outer side of Pl. XXIV. The worn fragment of Usertesen I was doubtless old when left here, and does not require us to date the town before the building of the temple of Usertesen II. The latest object belonging to the original town is a scarab of Neferhotep, which was found in a room near the middle of the town, with some papyri. The much later scarabs of the XVIIIth dynasty belong to intrusive burials of subsequent times. The scarabs usually found are of the scroll patterns, and we now know that such belong to the XIIth dynasty. One (fig. 30) was dated to the time of Usertesen II, being found in the masons' spoil bank of chips, against the pyramid platform.

61. Of fragments of peculiar materials may be noticed black fibrous hæmatite; obsidian; large pieces of red oxide of iron, for paint; green carbonate of copper ore; ivory, both in mirror handles, carvings, and a lotus capital; hippopotamus tusk in the rough; and ibex horn.

The manufacture of beads was well developed, but judging from the small numbers of any one kind they were made to order and not in large quantities commercially. The quality is in general finer than in any later time, but not so varied. No glass beads are yet known. The hard stones were more generally used than afterwards: and amethyst, garnet, blue glazed quartz, and green glazed steatite beads, though all of them common here, are never found in the town of the XVIIIth and XIXth dynasties at Gurob. Hence they may be accepted as distinctive and characteristic signs of the middle kingdom. Other characteristic types are the thick blue cylinder beads with spiral black lines, the purple beads rolled in chips of light blue glaze, green beads with impressed chevron pattern, small blue and green barrel beads rolled between the finger and thumb, the blue glaze cone-shell beads, and the large class of very rudely cut out hawks and other small figures in green glaze, distinguished from all later types by the sharp angular outlines. All of these varieties are distinctively of the middle kingdom, and are never found in the XVIIIth or any later dynasty so far as I have worked. The animal figures of blue glaze covered with black or purple markings are also characteristic. The hippopotami of the XIth dynasty from Drah abul Negga at Bulak are well known, similar figures somewhat worn are found at Kahun, and also lions (VIII, 1), a rabbit (VIII, 2), Bes, a boy playing double pipe (VIII, 9), dolls cut off at the knees, a crocodile, and other fragments. The blue bowls with black or dark purple lines, differ from those of the XVIIIth dynasty (largely found in the temple at Deir el Bahri) by the fineness of the lines, and the clean bright colour of the glaze. The blue glaze of the XIIth differs from that of the XVIIIth and later ages in its thinness, clearness, and even spread. It is needless to detail the varieties of beads more closely, as specimen sets of all the kinds will be placed in several collections, and perhaps also published in colours.

Similar to the finer ware of the glazed pottery we find also a finer quality of the blue painted earthenware which was so common in the XVIIIth dynasty. Only a few chips have been discovered, so that it was evidently a rare novelty in the XIIth dynasty. One piece is part of a scene (VIII, 26) painted in blue and chocolate lines on a pale red-brown wash, representing a boat on waves, the steersman handling the steering oar, and a kilted man walking down towards it. This pictorial use of the colours itself suggests their greater rarity and novelty, as such paintings are unknown later.

62. During the latter part of the XIIth dynasty, and beginning of the XIIIth, the inhabitants of the town ransacked the tombs for materials and brought away many slabs of offerings, some of them inscribed (XI, 14), also stelæ (XI, 10, 11, 13), statuettes (X, 65, 66; XI, 12), and parts of tombs (XI, 15).

There is no sign of the town having been occupied after the XIIIth or XIVth dynasty (the latest name being that of Uah-ab-ra, Pl. X, 72), and none of the characteristic pottery or beads of the XVIIIth dynasty have been found among the remains of the inhabitants of the town.

63. At later dates, however, some intrusive burials took place, mostly about the XVIIIth dynasty. The bronze Bast pendant (XI, 77) was found with some scarabs which appear to belong to the end of the

XVIIth or beginning of the XVIIIth dynasty. The scarab 78 is of the style of those of the XIIIth dynasty and Hyksos time, and the dark blue glaze of it is like that of the same age: No. 79 is of a dark violet glass, and reading *set-nub* is probably of Hyksos time; No. 80 is of uncertain age; No. 81 is the latest looking object, as it is of violet pottery inlaid with white, like the work of Khuenaten's time. A spirited hunting scene, engraved on a wooden cup, was with these; it is now at Bulak. The other burials of the XVIIIth dynasty had the scarabs 74, 75, and 76 accompanying them.

Another late burial, of great value to us, had the bodies wrapped in rushes, and accompanied by two scarabs of the style of the time of Amenhotep II or Tahutmes IV (XXIII, 66, 67); with these were a bit of blue painted pottery, a smooth white jar, like that of the end of the XVIIIth dynasty at Tel el Amarna, and an ushabti of wood of perhaps the beginning of the XIXth dynasty. Hence the whole burial may be dated to the time of Seti I with tolerable closeness. With these were two wooden head-rests with fluted stems, a false-necked vase of the early Mykenae type, and a blue glass vase with yellow lines, usually called Phœnician. Hence these objects are closely dated, the age agreeing with that of other examples of each found at Gurob.

Another late burial, from the style of the yellow-faced coffin heads, and a head-rest of wood, I should date to about the XXth dynasty. With this was a wooden rake of 12 teeth, and a spindle of the Ramesside type; also two wooden reels 2·8 across, with a central spot and five others around it, inlaid with ivory; part of a strong sieve of rush; a strange piece of woodwork of unknown use, like that in (VIII, 18) but ending in a swelling out of the stem; a stick, 25 inches long, with a knob at one end, and a hole through the other, use unknown; and an ostrich egg 6·1 long, 5·2 diameter, which had been attached to a handle of wood; this handle is 5·2 long, 1·6 wide at the end, tapering to ·8 in the middle and expanding to 1·8 at the shell; it is turned hollow, ending in trumpet mouth, and painted green inside and out; it was attached to the egg by an oval knob which went through a hole in the end of the egg, and was keyed in place by turning quarter round, and so catching the shell in grooves under the knob. What can have been the ceremonial or other use of such an egg and handle we do not yet know; but that it was valued is evident from it having been broken some time before its burial (as shown by the fly-marks on certain pieces) and having been nevertheless carefully interred.

In Roman times the town was dug into for limestone, and in one part about the middle there is much slag lying about and some late Roman pottery on the surface. A coin of Theodosius picked up here shows the age of this disturbance.

CHAPTER IV.

MEDINET GUROB.

64. At Kahun, the town of the XIIth dynasty, the history is comprised within about a century; special causes having led to the foundation of the town, it fell into decay when no longer required.

At the other town, Medinet Gurob, on the opposite side of the Fayum mouth, we can trace a history almost as brief. As at Kahun, the rise of the town may be very closely dated, and we may probably fix the time of its fall almost to a year. Its history covers the end of the XVIIIth dynasty and the beginning of the XIXth, as will be seen in the chronology on Pl. XXIV.

Until the time of Tahutmes III the edge of the desert along this district appears to have been bare and uninhabited. For some unknown reason, probably in consequence of some works executed by Tahutmes at the Fayum dyke, he erected here a temple of some considerable size. Rows of pedestals of columns yet remain to show its former extent, and one piece of the sculpture (Pl. XXII, 2) gives the king's name; another block bearing his name was also found two or three years ago in this town. Doubtless some dwellings also existed here for the workmen, and a town had sprung up, but there is little evidence of that; and—common as the scarabs of Tahutmes III usually are—only six have been found in this locality, no disproportionate number to the length of his reign. The early town lay probably outside of the temple enclosure, away on the north continuation of the desert edge; as, about a quarter of a mile to the north, we found a bronze jar (XVIII, 26) and two scarabs (XXIII, 7, 8), one of which is of Amenhotep III. Under the succeeding kings the site seems to have still been inhabited, as we find a plaque of Tahutmes IV (XXIII, 9), and rings and scarabs of Amenhotep III (XXIII, 10 to 14) as well as a kohl vase in ivory with the cartouches of Amenhotep III and his daughter Aset, now at Bulak. We find next that the temple of Tahutmes III was entirely ruined, and removed (all

but some foundation stones) before the close of the XVIIIth dynasty: and it is therefore almost certain that it was thus cleared away by Khuenaten, in the general religious revolution which he effected. Where the stone was removed we have now no clue; Ahnas (Herakleopolis) would be the most likely place, or Medineh (Crocodilopolis), as these lie on the canal; but no buildings of Khuenaten are yet known anywhere in this region. Over the remaining blocks of the temple some houses were irregularly built, beginning doubtless with the habitations of the masons who destroyed the temple. In these houses rings of Khuenaten are found (XXIII, 16–18); and the silver ring (XXIII, 15) can hardly be attributed to any king but Amenhotep IV by the attitude of the monarch crouching before Ma and Ra; this was found with the ring of Amenhotep III (XXIII, 10).

65. From the time of Khuenaten to the reign of Ramessu II the town appears to have been continuously occupied; only there is a dearth of objects of Seti I (see Chronology, Pl. XXIV), which is not in accordance with the probable length of his reign. That the inhabitants were principally foreigners we shall see further on, from the names, the foreign weights, the abundance of Greek and Kypriote pottery, the Kypriote alphabet, and their light hair; here we need only mention this alien race in connection with the history of the town. We find that the reign of Ramessu II is the last age of this settlement, his long rule providing nearly 30 examples of his cartouche. But here the history suddenly stops. Of his successors there is but a single trace coeval with the town; of Merenptah but one scarab was found, and that probably an early one, as it honours Tahutmes III, merely adding the title of Merenptah, *Hotep hi ma*, apparently as claiming his descent from the great ancestor Men-kheper-ra. The only later object is a ring of Seti II, which was found on the top of the ruins of a chamber, the walls of which had fallen in and filled it up: over the middle of this large chamber, above all the fallen *débris*, lay this ring; conclusively showing that the town was ruined and the walls overthrown into shapeless heaps, within a generation after the close of Ramessu's reign. When we look to the foreign character of the inhabitants, and then see that the evidence of the cartouches discovered dates the fall of the town to about the beginning of the reign of Merenptah, the cause of this ruin is at once manifest in history. In his fifth year Merenptah led his great campaign against the Lebu, the Libyans or Riff people, who headed the alliance of foreigners which had gradually eaten their way into Egypt from the West, during the closing years of Ramessu II. Merenptah records in his triumphal inscription that the foreigners—the Tursha among them—"stand and remain in Egypt days and months, seated in the country. They reach the mountains of the land of Ut (*i.e.*, just south of the Fayum), ravaging the circuit of Taahu." Their slaughter, however, was complete and the spoil vast, when Merenptah drove them out of Egypt; and "the whole land shouted to heaven, the villages and homes were delighted at the prodigies which had happened." This expulsion precisely accords with the statistical result of the chronology of this foreign settlement, as fixed by its remains.

From the time of Merenptah this site has stood desolate, and no man has dwelt there. But somewhere in the cultivated land a town existed in the Ptolemaic times; and the inhabitants were buried in this same region, though at a little distance from the old town and the old cemetery.

66. Leaving the historical outline we will now turn to the details of the objects. The town differs wholly from that of Kahun; without regular order, casually built amongst and over the ruins of the temple, it shows none of the precision of the architect's style, in which the earlier dwellings of the XIIth dynasty arose. No granaries are found, no coloured dados, no stairs leading to the roofs. Of furniture there is none; neither chairs nor boxes remain, and only a sort of fire-box or stove of very rude pottery has survived.

The pottery is of the quality and style so familiar to any one who has wandered over the great area of the town of Khuenaten, at Tel el Amarna. All the characteristic features of that series, which is certainly of the end of the XVIIIth dynasty exclusively, are found here at Gurob. The same blue paint and chocolate lines (XXI, 41, 42, 43, 46), the same smooth polished, drab-white surfaces (42–44), the same very flat, conical base to the jars, produced by the palm of the hand while the pot is upside down on the wheel (XX, 32; XXI, 42, 43, 56); the same thick, very hard, light paste, with spiral lines inside dragged out in the turning on the wheel when closing in the base of the jar; the same long jars (32, 56), which also lasted to the time of Ramessu II as No. 32, with its inscription is identical with the inscribed pieces of jars, so common at the Ramesseum barracks; all these very characteristic tokens, which are never found in the pottery of the XIIth, or the later ware of the XXIst and onwards, are found at Gurob in common with Tel el Amarna.

The coarser and poorer pottery was found in the town, shown on Pl. XX; while the finer portions (Pl. XXI) are from the cemetery. The numbers at the lower right-hand corners of the vases show the number of the find or tomb from which they come. It should be noted that the concentric band decoration belongs to the XVIIIth–XIXth dynasties; while the collar decoration on one side appears to develop in the XXth dynasty. None of the latter is found here.

67. Turning to the tools employed in this age, we see that a complete change has passed over the country. In the XIIth dynasty flint chipping was an art, highly skilled, producing on the fine, translucent material very beautiful work (Pl. XVI); and, though influenced by the forms of bronze tools, yet far commoner than metal work. In the XVIIIth dynasty all this is reversed. Very few flints at all appear; what there are show unskilled work on poor material (Pl. XVI). The art was expiring. Whereas bronze tools had emerged from the stage in which flat-backed knives were made—such as we see on all the early sculptures—and the double-edged blades, well known in the Ramesside times, are the completely-established type (XVII, 29—33). The forms of the chisels had also been modified. The flat head of No. 4 has always a notch later on, Nos. 23, 25, as if to give it a better seat in the handle (such as No. 22) and prevent the wood splitting so readily. The thin, flat chisel (No. 26), which was made to be bound on the *sotep* handle (IX, 15), has a much deeper cut at the head than the earlier form, No. 5. The hatchets, 27, 28, have longer backs, less carefully wrought, and are deeper in proportion than the early ones, 6 and 9. The fish-hooks are more rough, and not well barbed like the early ones. The knives are all double-edged and rounded at the end; except the peculiar one with a bent handle in the form of a gazelle's leg, cast in one piece with the blade: this, No. 32, and another, No. 31, are now in the Bulak Museum. Other tools also appear for the first time in the XVIIIth dynasty. The rasps (36), which are in principle the same as the iron rasps of the XXVIth dynasty, being formed of a sheet of metal, punched and coiled round into a cone. The strange knives, No. 42, the purpose of which is unknown, and the stranger knives with a hinging pointed piece on the back, No. 43, are both well known at Thebes, but hitherto were undated. The bronze arrow and lance heads, 37, 38, also appear for the first time; in the XIIth dynasty probably flint was used, and in the XXVIth dynasty the socketed type with three edges had nearly superseded these. The bronze nails, 34, and 35 with a washer on the end of it, are like those of Tel el Amarna, but unknown earlier; and the bronze kohl stick is also new here, and probably came into use with the tubular kohl pots, which were unknown in the XIIth dynasty. Bow-drills are found of the same type as in the XIIth dynasty (XVIII, 14). A piece of a cubit of wood was found in the town 1·2 wide, 0·6 thick, and with one edge bevelled. It is much worn, and was originally made from a piece of furniture, the pegs of which remain in it. There remain four palm spaces and a half space; the spaces from the butt-end are 3·02, 3·07, 3·07, 2·90, and 1·65 inches. Omitting the last, which from its excess is probably a rough half, and the butt-end which is probably less accurate, the palm averages 3·01, and the cubit of seven palms would be 21·09, which is remarkably long. Three balance beams are 9, 9, and 16½ inches long, the holes for the pan-cords being as in modern Arab beams; but only the longer has a middle hole.

68. In spinning and weaving there are some changes since the XIIth dynasty. The spindles are of a different type. The whorls being thinner and wider in general (XVIII, 24), or else of the new conical form (XVIII, 22, 23). The groove for the thread is also altered, being only a short portion of a spiral ending in a turn-up notch, or even a notch alone. This, again, gave way in Roman times to a little hook of bronze or iron stuck into the top of the spindle stem. The thread is very fine, not more than 1/200th of an inch thick sometimes, and also very even. Some of it is dyed blue, some dark red. The string found in balls and also used for nets is of odd numbers of strands, three or five. Nets were made for fishing as of old time, but not so varied in size, the mesh being 0·4 to 0·6 square, and of thicker string. The netting was done by means of bone needles (XVIII, 20, 21), which are very common. The reels of black clay (27, 28) may also have been used for netting. Netting needles with clip ends were rare: but one very fine large one, with the clips at right angles one to the other, was found, and is now at Bulak. The sinkers used for the fishing nets were of lead (XVIII, 18) or of water-worn bits of hard limestone with natural holes (XVIII, 19). Of woven stuffs the texture was very close and regular. Two sleeves of a child's jacket were found, quite new and unused, in the clean sand filling of a tomb of the XIXth dynasty (Tomb 25, see vase

XXI, 44). Probably they had been lost by the labourer's wife when sitting on the sand-heap thrown out while digging the tomb. The linen has 42 threads of woof and 94 of warp in the inch; the hemming is very regular, 22 stitches to the inch, and about 10 stitches in the seaming. From being lost while new, and buried in close, fine sand, the cloth is of the most perfectly fresh condition, as tough and sweet as when made. Another piece of linen has 52 in the woof to 100 in the warp. Coarser stuff was also made, some of it only 2 and 4 threads to the inch. Rope was made of flax, of rush, and of palm fibre; and the skill with which it was worked in joints is not exceeded by the modern sailor. Baskets were made of the square, flat, form in palm-fibre rope, bound round with rope; and also of palm-leaf in the modern circular form, and with palm-rope edging. A comb for carding fibre, 4 inches wide, cut into 18 teeth, and also wooden stampers for smoothing leather, like the modern ones of brass, were both found in the town. A large quantity of balls of waste thread occurred in various houses; they seem to have been the cores on which thread was wound, probably for the use of weavers.

Of agricultural tools, only two blades of hoes were found, and one rake; but a model hoe occurred in one of the tombs (XVIII, 15). Grain scoops are common, four being left-handed and one right.

69. The toilet and personal articles are commoner than in the XIIth dynasty; perhaps because we have the tombs as well as the town of the XVIIIth. A remarkable mirror was found in a tomb, XVIII, 4; the handle is Egyptian in idea, but yet foreign in the details; the motive of the female holding a dove is essentially Asiatic, the type of face, the treatment of the hair, and the lengthy limbs are not Egyptian. We probably see here the work of a Phœnician or Kypriote artist trained in Egypt, but retaining his foreign feelings. It is particularly valuable to obtain such a prototype of the great class of figure handles (which became so general in the west in subsequent centuries), now dated back to the foreign colonies in Egypt during the thirteenth century B.C. Another mirror of the same outline but without a handle was found with beads of the beginning of the XIXth dynasty in another tomb. Also a third one in the town. The combs (XVIII, 2, 3) have shallower backs than in the earlier age: and no double combs are known. The kohl vases are always of the tubular form, sometimes double and with a lid; they are commonly of wood, sometimes merely a reed, and once of ivory, with cartouches of Amenhotep III and his daughter, now at Bulak. Hair pins are of wood with decorated heads (XVIII, 7, 8, 9), and very seldom of bone or ivory.

The head-rest, or wooden pillow, which plays such a constant part in later times, seems to have been scarcely known in the XIIth dynasty, though one or two royal ones of alabaster have come down from the old kingdom. In the XVIIIth, however, it is very common, and is often found in the tombs, generally broken. I have taken out a fine head-rest, broken in two, from the inside of a coffin of the XIXth dynasty: it was laid by the head of the body. Sometimes the stem and base are finely fluted in true Ramesside style. One folding head-rest (XVIII, 17) comes from a tomb. A fan handle (XVIII, 29), split and tied together anciently, was found in the town; and a model fan and feather of painted wood comes from a tomb. A piece of a toilet jar of wood is carved with a spirited field scene (XVIII, 31) with piebald calves galloping and reposing amid the herbage. A similar carving, with a hunting scene, was found in the later burials at Kahun of this age, and kept at Bulak.

Small boxes of the duck form are well known; one in ivory (XVIII, 10) was found with a mirror and Ramesside beads above mentioned. The lid of another in wood has the lotus pattern (XVIII, 11). And a third of duck form, with double-leaf wings, held by a swimming girl, was found in the Sadi-amia tomb, No. 20: this was of beautiful work and condition, and is now at Bulak. A large alabaster jar, of which some pieces were found in a tomb, has the cartouches of Tutankhamen and his wife Ankhs-amen (XVIII, 25). The small, alabaster vase with gazelle-head handles (XVIII, 16) was found in the town, as also the alabaster bottle (XVIII, 1). And the alabaster jar and saucer (XVIII, 5, 6) belong to the Sadi-amia tomb; together with the ushabti (inscription, XXIV, 2), which is of fine work in the dark grey limestone of the time of Ramessu II. The very curious bennu painting (XXIV, 3) belongs to the same; this is executed by hollowing out a block of rock crystal, like a watch-glass, polished inside and out; the painting of "Bennu son of Ra" was then done in black on the inside, lined with gold leaf, and filled up solid with resin and plaster. This belonged to a wooden pectoral, on the other side of which was the lazuli plaque (XXIV, 4), as I believe: the tomb had been disturbed, and the lazuli was found by some boys subsequent to our clearance.

A necklace of red and blue glass bugle beads accompanied one of the bodies here.

In the opposite chamber of the same tomb was the coffin of Anen-tursha (Pl. XIX), apparently one of the foreign Tursha race, formerly identified with the Etruscans, but perhaps rather to be connected with the Turseni or Tyrrhenians of Lemnos and the Dardanian coast. The face is certainly non-Egyptian. In the same chamber was a coffin of one Nefer-mennu, and a tall, wooden box with sliding lid, inscribed for one Sunuro (XXIV, 1), kept at Bulak.

70. In a tomb, the scribe's palette, with a figure of Hershef "king of the north and south," was found (XXIV, 5); the figures had been sketched with an able and firm hand by the scribe, in a leisure hour, on the back of his palette. Another scribe's palette with six ink holes (XVIII, 13) is just a cubit in length, like one already known, the pen slit being at the half-cubit; the length of the halves is 10·27 and 10·34, total 20·61 inches.

A very curious group of figures from a tomb is in Pl. XXIV, 6 to 12. These are absolutely dated by a glass ring of Ramessu II, which, by its good style and transparency is probably early in his reign. Some years ago I bought in Cairo a steatite triad of Roman age, consisting of Isis, a so-called "Canopic" figure, and Horus with his finger to his mouth. This almost proved these canopic figures, known on the Alexandrian coinage, to be of Osiris. Here we have such a figure (XXIV, 7) in the characteristic Ramesside black limestone; and inscribed *Asar*, proving the Osiride nature of such figures, and also the antiquity of the idea. Does this represent the heart of Osiris? or is it a jar in which his scattered remains were collected by Isis? Perhaps rather the heart, as a very similar figure (XXIV, 8) accompanies it, made of blue-violet porcelain with green inlay. With these there were sixty or seventy ushabti figures (XXIV, 11) in violet and green glazed pottery; having cross holes and vertical holes also, these were probably threaded in a kind of rectangular pectoral, like the mimusops leaves.

71. Some remarkable examples of bronze work were found. At the north end of the town, among the almost denuded remains of houses were two scarabs (XXIII, 7, 8) and a bronze jug (XVIII, 26) which is thus dated to the time of Amenhotep II, or a little later. It is of a form seldom, if ever, found; the handle is made from a strip of wrought bronze, bent into shape, and attached in the casting of the jug. The thinness is so uniform that it must have been cast by the *cire perdue* method; though now entirely rusted to oxide and carbonate of copper, the metal may be estimated at certainly not more than 1/20 inch thick originally. The breakages which it has suffered are not noticed in the drawing. In the town we found, beneath a rubbish-heap piled against a wall, two bronze pans, one 9 and the other 14 inches across. They were placed one in the other, the face of the larger against the wall; and thus only the bottom of the large pan was in contact with the earth. The result is that the greater part of the surface has retained the original polish of the metal, just as when buried. So perfect is the metallic state that either pan can be buckled in and out by the thumb and finger as if new. The workmanship is masterly; the bottom almost flat, with a raised ring beaten up around the centre; and the side rising with a graceful swell and a stiff edge, about 1½ inches high. The handles are of lotus pattern, admirably formed, and riveted on with round-head rivets. Each pan is inscribed, the two inscriptions being given in Pl. XIX, bottom: both of the pans were kept at Bulak. A finely-formed bronze strainer found in the town was also kept at Bulak.

Of papyri a few were found, but none in such fine state as those of Kahun. The only royal name is that of Ramessu II. None of the rolls were sealed, and many were crushed up as waste paper.

72. A considerable number of scarabs and rings were discovered in the work, and still more in the searching of the surface of the whole site by the children of the village. All of these—excepting duplicates of the rings—are drawn on Pl. XXIII. Those with names are placed in historical order in the left-hand half of the plate; among them No. 8 is included, being found with 7; 15 is apparently of Khuenaten by the crouching attitude of the king, as on a glass ring (Historical Scarabs 1331); and 51 and 52 are evidently of Ramessu II by their style. On the undated, right-hand, side the scarabs are placed in chronological order by their style. The dates approximately are 55 Hyksos; 56—59 Amenhotep I; 60, 61, Tahutmes I; 62—63 Tahutmes III; 64—8 Amenhotep II; 69—73 Tahutmes IV; 74—89 Amenhotep III; 90—96 Amenhotep IV; 97 Tutankhamen; 98—99 Horemheb; 100—2 Seti I; 103—113 Ramessu II; 114—117 probably chance examples of about XXIInd dynasty, perhaps not from Gurob, as they were bought. These attributions cannot, of course, be reckoned as certain; but they are probably correct within one reign either way.

73. Beads were found like the scarabs, both in the work, and much more in the surface of the site, left by the denudation of the soil. These beads, though very varied in material and style, are so different to those of the XIIth dynasty from Kahun, that it is seldom any example appears which could be confounded with those. If a mixture of the two series was made, not more than 1 or 2 per cent. would be dubitable as to their origin. A difference was noticeable, moreover, between those found in the town founded over the temple ruins, and those in the external town to the north. From all the data I should conclude that the north town was founded when the temple was built, as a scarab from Amenhotep II was found there. Then the site of the temple became inhabited after its ruin, and objects of the Khuenaten time were the most usual there. The north town was partly deserted, and burials took place close to it, the tombs of Anen-tursha, Sadiamia, Res, and others being in that sand ridge. Early in the time of Ramessu apparently the town over the temple site was left, and the north town extended over the graves, as rings of Ramessu II are common there, and a great quantity of yellow glass beads which are unknown in the temple site, and therefore subsequent; moreover, a burial just within the wall of the temple site had a string of yellow glass beads, and this must have been when that part of the town was uninhabited. Then when the north town thus extended, graves were made more in the hill to the west, where great quantities of Ramesside ushabtis are found, and a ring of Ramessu II (XXIV, 10). We will therefore notice the beads in two divisions, those of the end of the XVIIIth and those of the beginning of the XIXth dynasty.

Among the beads of the XVIIIth dynasty glass is rare, and it is always opaque green, opaque violet, and opaque or transparent blue, light or dark. There is a great variety of glazed coloured pendants, in the form of various fruits and leaves: thistles, grapes, lotus, palm leaf, &c., usually in more than one colour; and the brilliancy and variety of the reds, blues, yellows, greens, and other tints is unrivalled at any other age. This style was a part of the great artistic revolution of Khuenaten, and died out under the XIXth dynasty entirely. Another speciality was the delicate pierced work of figures, cartouches, &c., in blue glazed pottery; this only lasted in a coarse form in the XIXth dynasty, though a revival in the very broad, thin, finger rings—sometimes three-quarters of an inch deep—occurred about the XXIInd dynasty. The thin, flat, blue disc beads, and the pendants of figures of gods—especially Bes—were introduced by Khuenaten also, and died out after becoming much coarser under Ramessu II. The very small and brilliant beads of glazed pottery, less than half a diameter in length, coloured red, yellow, green, and violet, belong essentially to the XVIIIth dynasty, and perhaps the beginning of the XIXth. The stone beads are almost all of opaque carnelian, and lotus pendants are common of the same stone.

On coming further down to the time of Ramessu II, the varieties which survive are all coarser and poorer. But a very great development of the glass beads took place. Instead of only plain green, violet, and blue, we find clear brown, opaque brown, and bright opaque yellow, which is common and characteristic. The designs also are very different. Instead of small cut figures for pendants, the eyed beads become general. The general type is a black spot, white ring, black ring, and then a general mass of yellow, blue, or black; the forms are either barrel beads or thick disc pendants, pierced through from edge to edge, and also through a loop on the top edge. Some of these eyed pendants are very small, but an eighth of an inch across, and others are found up to half an inch. Beside these are small blue globular or barrel beads with a white spot on each side, and sometimes a black middle to the white. Some disc beads have a blue body, white circle, and brick-red spot. Another curious class of glass beads are short bugles, one to one and a half diameters long, of clear light green glass, coated around with opaque brick red. Glass earrings are found, of blue, yellow, or brown body, with a rim of twisted black and white attached or embedded. No example of the blue globular beads, with brown and white veining around the spots, has been found; these are probably of the XXVIth—XXXth dynasties.

The multiple beads are common. Those of conjoined tubes were used to insert in necklaces, particularly at the ends, to keep the several threads in order. Slips of pottery and bone pierced with a row of holes were used for the same purpose. The conjoined beads of several short ones in a line were made sometimes intentionally for threading to save the trouble of dealing with so many, being merely ribbed tubes; otherwise they are short beads left joined in manufacture, and not yet broken apart. The beads and amulets were actually made here, as several moulds for rings and amulets, and beads stuck together in the baking, were found.

The so-called Phœnician glass is common in the XIXth dynasty; not only was a perfect vase of it found in a burial of this age at Kahun, but many pieces occur in the town of Gurob. The basis is generally blue, but also brown, green, and black, and the threads and streaks on it are generally white and yellow, but also blue and black. These vases were always made on a sand core, and with apparently a metal mandril in the neck.

Of glazed pottery bowls, &c., many fragments were found; they are always blue. One bowl is nearly completed from pieces found scattered in several rooms; the design is unique (XVIII, 35), boys climbing palm trees or knocking down the dates. A serpent's head in blue glaze, 2¼ long, 1¾ wide, intended for applying to a wooden figure, explains many pieces of such heads that I have seen.

74. A class of figures which was numerous at Naukratis is also found at Gurob, and must therefore be as old as the XIXth dynasty. These represent a woman lying on her back on a couch, frequently with a child beside her. There is never any drapery or ornament, except in some a girdle and a large wig. Palm branches are placed by the side of the figure. These figures are usually of limestone, at Naukratis, in the XXVIth dynasty; here, in the XIXth dynasty, one is of limestone (XVIII, 37), and others of pottery (XVIII, 32, 33); one example in pottery is so graceful and characteristic in features, and in the large disc earrings, that it cannot be of later date than Ramessu II; the others are dated by the town and surroundings, but not particularly by their style.

The two stamps are one in pottery (XVIII, 34), and one in wood (36). No. 34 appears to be of Bast, and 36 might be read as two cartouches, Sem-en-ptah and Ra-neb-ka, but this is hardly likely.

Of materials found in the town may be noted copper ore and copper slag in a crucible, showing that smelting was done in the town; hæmatite, fine, fibrous, satiny, brown, and also red amorphous, for colour; green felspar and quartz; orpiment; graphite, a large block of the best quality, from a matrix of brown fibrous quartz mixed with white glassy lumps; white steatite; pumice; white coral; pitch; ivory; and ibex horn.

75. It now only remains to catalogue the various special lots of objects found together, as all notice of the foreigners and their alphabet is reserved to a separate chapter on that subject.

In the ridge of ground close to the cultivated land, beneath the later town of the time of Ramessu II, were several tombs. These were cut through the gravelly top bed down to a layer of sand about 8 to 10 feet under the surface, in which a rough space was scooped out. These tombs are as follow:—

Tomb 20. Wooden figure of swimming girl holding a duck, wings separate and fastened on, turning on wooden pins: good work. (Bulak). Wooden figure of priestess standing, holding sistrum, drapery smooth, large wig; white painted inscription partly defaced (XXII, 7), the name ending in ——amens (Bulak). Ushabti of Sadi-amia (XXIV, 1). Another in grey limestone, uninscribed. An ushabti of limestone, spaced with lines, but not yet inscribed. Alabaster jug and saucer (XVIII, 5, 6). Bronze ring, *Ptah-neb-ma* (XXIII, 78). Reeds with kohl inside, and kohl sticks of wood. Crystal case, hollowed out of a block and polished (XXIV, 3), with figure of *Bennu* painted inside in black outline, and inscription "Bennu son of Ra." This probably belonged to a pectoral, and the lazuli plaque (XXIV, 4) fitted at the back of it. Necklace of large glass bugle and ball beads, red, dark blue, and light blue. Of pottery there were five jars painted red and blue (XXI, 41, 65), four red jars (XX, 15, smaller). The coffins were rotted away.

Tomb 21. On opposite side of same shaft as tomb 20. Tall box with sliding lid, with fine inscription down the lid and the front, for a scribe of the palace Sunuro (XXIV, 1), kept at the Bulak Museum. Five ushabti of wood, painted black, yellow inscription, varnished, for a governor of the *pa-khent* in the Fayum, Nefermennu. Coffin of Nefermennu, black with yellow inscription, the name filled in later on a blank space left for it; too much broken to remove. A black and yellow ushabti for a *nebt per* Ta-kema-ti. A pectoral plate of wood, gilded and inlaid with cut stone, with jackal, &c. Coffin of Anen-tursha (Pl. XIX), yellow on black, made expressly for him. Four blue striped vases (41, 46, two of 48), eight red jars (15 small), dish (5), white faced cup (61).

76. Tomb 22. Shaft near that of 20—21. On east side of shaft. Coffin head east. A jar (XXI, 62) on each side of feet. Coffin with pale yellow inscription: so much rotted that the inscription could only be found sign by sign; each part so soon as unsupported by the sand filling dropped to dust. This rotting is mainly due to white ants having eaten away nearly all the wood. I traced the title "of the temple of Amen, Amenemapt," proving that it was the same

inscription as I found on the base of the statuette (XXII, 8). This statuette is a foot high, of a female figure in the Ramesside ribbed drapery, holding a lotus flower, a large wig on the head, and the eyes formed of glass inlaid. The work is exquisite, the limbs and form being indicated by broad curves underlying the narrow ribbing of the drapery. It represents Res, the daughter of Amenemapt. I discovered this figure lying on the breast of the mummy, embedded in the sand filling; the base on the stomach, and the statuette up the right side. It is now at Bulak. Behind the head in the coffin was a head-rest broken in two. The coffin was inlaid with eyes of cut alabaster and black stone, in blue glass edging. On the fore finger of the left hand was a bronze ring (XXIII, 76), laid over the pubes.

Tomb 23. Opposite side of shaft to 22. Head east. Two red jars (XXI, 49), stood on the south side of the coffin head. By the side of the head in the coffin, bedded in the sand filling, was a false-necked vase of the Mykenæ type (XXVIII, 1), lying on its side. Beneath the head were two reeds with kohl and a kohl stick. On the left fore finger was a bronze ring (XXIII, 77). At the feet a wooden ushabti, quite rotted. On the head of the mummy was a copious wig of black hair, reaching down to the waist; but beneath this on the scalp was yellow or light brown hair. The causes often supposed to produce the light hair on mummies cannot be granted here: fashion could not have induced the dyeing of the hair hidden under a wig; the soil cannot have changed hair beneath a hair wig which is unaltered; treatment of the mummy can scarcely have affected the hair, as the body was apparently not mummified, but only dried, and had gone to dust; and old age would have made it white or grey, and not brown. We must, then, conclude that the person was light-haired during life, and wore a wig of black, hiding the foreign token.

77. Tomb 24. Head of coffin to the east. On the north-east of the head a white-faced jar (XXI, 45), and on the south-east a vase (44) and dish (XX, 8). On the first finger of the left hand was a ring (XXIII, 13), reading "Ra-ma-neb, meri-amen," and therefore of Amenhotep III. The hair of this body was likewise yellow.

Tomb 25. The grave lay north and south, the body cased in rushes; a young man, with light skin but dark hair. Vase (XXI, 44) was placed beside the body.

On looking at this group of tombs, all near together, it seems evident that they must be dated to the close of the XVIIIth dynasty. They are clearly all of much the same period. The black coffins with yellow inscriptions, the bronze finger rings, the mode of burial, the pottery, and the close grouping of the graves, all these points show that no change of fashion had taken place between one burial and another. The positive signs of age are—(1.) The rings, one of which bears the name of Amenhotep III, while two similar rings found elsewhere are of Amenhotep III and of Khuenhaten (XXIII, 10, 15). (2.) The pottery, which is of the late XVIIIth or early XIXth dynasty. (3.) Wooden statuettes, the style of which is too fine to be likely to belong to any time after Ramessu II. (4.) The black limestone ushabtis, which are like those of the early XIXth dynasty. (5.) The position of the graves, which would probably not be placed there while houses occupied the ground; they cannot be later than the houses, as the sand filling of them was clean and not mixed with earth, and as the houses were probably of the time of Ramessu II, there is no period for the tombs subsequently. From all these data I should assign them to the reign of Seti I, with but small uncertainty: on the one hand, there is nothing distinctive of the late XVIIIth dynasty in the way of beads, &c.; and Amenhotep III would be probably too early in view of the ribbed drapery, black ushabtis, and pottery; while Ramessu II would be too late a date for the rings and the position of the graves.

78. Of other series of objects may be noted also:—

Tomb 31. Two blue painted jars (XXI, 42, 43); white-faced small jug (XXI, 51); dish containing resin and charcoal, evidently burnt as incense (52), two pieces of the lid of a terra cotta coffin with ink-drawn figures; three pottery ushabti of Admes wrapped in cloth, of very rude work; and wooden kohl pot.

Tomb P. Vases, XX, 15, 21; XXI, 63.

Tomb N. Rude limestone stela, name illegible; half another stela; two female figures in wood, with wigs curling round on the shoulders, hands at the sides, no drapery; one wooden female figure draped, left leg advanced (headless); one wooden figure of Bast, seated (all these damaged and somewhat decayed); a pair of sandals, upper sides dyed red; painted jars (XXI, 41, 54), and five plain jars and dish (XX, 5, 15; XXI, 56, 64); pieces of a false-necked vase of Mykenæ ware; two sticks. Two of

the jars were sealed up with mud stopping, but were quite empty.

Just inside the south wall of the town enclosure at Gurob were four bodies buried: they must have been placed there after that part was deserted, and before the wall had been effaced as it now has by denudation. From the style of the beads they appear to be of the time of Ramessu II. One had a necklace of blue and brown and green glass tube beads, short brown glazed pottery beads, blue and green glazed pottery Bes figures, and blue glazed pendant of Bast and monkey; the style of these pendants shows that they cannot be far removed from Khuenaten's period, but being coarser than his, the age of Ramessu II may be well assigned to them; earlier the town would not be deserted there, later the amulets would not be used. Another body had a necklace of blue and yellow tube beads of glass, and eyed pendant beads in black and white on a yellow body. Another body was unadorned. And the fourth had a wooden ushabti of Pa-ran-a.

In another tomb, in the cemetery behind the town, was the ivory duck box (XVIII, 10); bronze mirror; pair of alabaster ear-studs; three split rings of carnelian; and necklace of pale blue pendant beads, small blue beads, and carnelian beads. Probably of Ramessu II.

The series of objects found with a glass ring of Ramessu II have been already described all together (XXIV, 6 to 12). The sets of objects found with Greek pottery will be described in the chapter on the foreigners.

CHAPTER V.

THE FOREIGNERS.

79. The presence of foreigners in the towns of Gurob and Kahun has been alluded to in the previous chapters, as a necessary element in dealing with the history of these settlements. But the details of their remains have been passed by, in order to give a connected view of the civilization shown to us by the XVIIIth and XIIth dynasties. Here we shall accept what has been stated already on the history of the towns, as shown by the dated Egyptian remains, and deal solely with the question of the foreigners in the district.

At the time of Seti I—about 1300 B.C.—we have already noticed that a high official, the manager of the palace (or *pa-khent*) in the Fayum, was named Anen-tursha (Pl. XIX). The name Tursha is followed by both the ethnic and the country determinatives, as the name of such people usually is; and we have therefore no hesitation in referring it to the Tursha race, the Turseni of Greek ethnology. Whether these were the Etruscans, as Lenormant, Chabas, and others have held; or whether they were a race of Asia Minor, as Sayce and others believe; or whether we are to reconcile both of these views, in counting the Etruscans as the western branch, and the Turseni of Lemnos and the Dardanian region as the eastern part of the same race; whatever view we take of their exact position, it is certain that this man, Anen (or An, or Anu, as some would read it) the Tursha, was of the people who, allied with the Libyans, Akhaians and others, came into collision with Egypt in the Ramesside period. The name is formed, like many others known to us, with ethnic elements such as *Pa-khar* the Syrian, *Pa-nehesi* the negro, &c. That such a man should hold high office, and be buried with all the honour and ceremony of a native Egyptian is not surprising. Foreigners were largely employed at the end of the XVIIIth and beginning of the XIXth dynasty; and in this particular region of the country they had settled, and were eating out the native population very seriously by the time when Merenptah entered on his great war of expulsion.

Another foreigner meets us at the same date, in the opposite grave of the same tomb as Anen-tursha's. Here an ushabti records the name of Sadi-amia; this is certainly not an Egyptian name, but twice in the Assyrian annals do we find this same word, Sadi, in the names of Hittites; Sadi-anteru, who was defeated by Tiglath Pileser at the same time as Kili-anteru, in Comagene; and Sadi-halis, conquered by Menuas in the north Euphrates district. We must therefore add the Hittite to the Tursha among the settlers at Gurob. At a later date, probably, we find at Illahun the three coffins, one inside the other, of another foreigner, named Iualhana, or Iualhan (XXV, 21, 22, 23), followed by the ethnic sign indicating a foreigner.

80. On turning to personal characteristics, as well as the names, we see the evidence of foreigners. The face of the coffin of Anen-tursha (XIX) is far from Egyptian in the type of it; the long nose, and the close, slightly sloping eyes come from abroad; further, the pierced ears do not belong to Egyptian men, nor is the piercing of the lower lobe an Egyptian custom, as their ornaments belonged to the outer or upper

edge. Another figure of a foreigner was found at Gurob (XVIII, 38), carved in wood; it represents a harper, whose hair is dressed in the pigtail, which is a well-known characteristic of the Hittites, and is not found with any other race represented on the Egyptian monuments. This must therefore be a carving of a Hittite harper, and such an instrument is not unknown in Hittite sculpture. A third work which betrays the foreign hand is the bronze mirror with figure handle (XVIII, 4). The mechanical part of the design, a figure handle, the form of the mirror, and the lotus at the socket, are all Egyptian; but the idea of the female holding the dove in the hand comes altogether from abroad—no figure holding a bird is known in pure Egyptian design—it is the characteristic of the Phœnician Venus; and when we look at the details, the lankness of the limbs, the features, and the style of the hair, we again see the tokens of a foreign hand. To assign the manufacture of this to a Phœnician or Cypriote workman living in Egypt, solves all the peculiarities of it; and we may add it to the foreign elements of Gurob. The actual remains of the bodies found in the tombs show that the race came from abroad; in tomb 23 was a body with a copious black wig, and beneath that a scalp of yellow or light brown hair; the juxtaposition of these proving the unaltered condition of each: in tomb 24, again, yellow hair remained on the skull, and in tomb 25 was a young man with dark hair, but a light skin.

81. We now turn to a very different evidence, that of weights. At Gurob fourteen weights were found: and of these only half are on the Egyptian standard —the kat—in place of the great majority of the kat weights found in the weights of Memphis. On looking at the material of these weights we see that two of the seven are of alabaster, a material never used for purely Egyptian weights, which are almost all of basalt, granite, or hard stones. On looking to the forms we find that not one of the fourteen is purely Egyptian of the most typical form, widening to the top with a dome head. Only one of all the weights is properly Egyptian, and two of rounded cubic form are passable as Egyptian in origin; the other eleven are entirely marked off as foreign by the standards, the forms, and the materials. I here publish them on the same plan as previous weights, the numbering being consecutive in the series of publication, and the types of forms referring to those plates of types in "Naukratis," "Defenneh," &c.

Egyptian Kat (6).

No.	Material.	Form.	Present.	Ch.	Original.	×.	Unit.
4899	Syenite, gy.	117—174	1412·0	...	...	10	141·2
4900	Basalt, br.	38—43	1416·6	...	...	10	141·7
4901	Alabaster	79—110	284·6	...	...	2	142·3
4902	Syenite, gy.	2—10	3592·8	...	...	25	143·7
4903	Syenite, gy.	54	5748	...	...	40	143·7
4904	Basalt, br.	48—49	1472·3	...	...	10	147·2
	Assyrian Shekel (4).						
4905	Hæmatite, bk.	49	363·9	...	...	3	121·3
4906	Hæmatite, bk.	52—82	62·7	...	...	½	125·4
4907	Lead	63	2523·2	30	2530	20	126·5
4908	Hæmatite, bk.	49	127·3	...	...	1	127·3
	Attic Drachma (3).						
4909	Syenite, gy	54	2625·8	...	2626	40	65·6
4910	Alabaster	16	3305·8	...	...	50	60·1
4911	Lead	52—108	415·6	12	408	6	68·0
	Æginetan Stater (1).						
4912	Lead	108	179·0	16	192	1	192·0

No. 4905 has three lines on the top, showing three shekels. No. 4911 has three lines on the top showing a unit of the double drachma or stater. Of course the names Attic and Æginetan are only retained for convenience, the standards being older than Athens or Ægina. Besides these, four more kat weights have been found since I left Gurob, all of them of the un-Egyptian material, hæmatite.

On looking to the older town of Kahun, of the XIIth dynasty, the same evidence of the weights meets us there. Of eight weights, half are on the Egyptian standard, but not one is a pure Egyptian weight; of the forms two are rectangular, one a dome, another a disc; of the materials two are alabaster and one limestone, only one being of hard stone; and of the multiples one is 30, one 12, and one four, none of these being Egyptian multiples.

Here then there is not a single regular Egyptian weight. Two weights occur of the Æginetan standard, which is already known as far back as the XVIIIth dynasty, on a weight in the British Museum.

No. 4914 has four strokes on it, showing a super-

EGYPTIAN KAT (4).

No.	Material.	Form.	Present.	Original.	×.	Unit.
4913	Sandstone, br.	44	17675	...	120	147·4
4914	Alabaster	63—166	2951·3	...	20	147·6
4915	Alabaster	15	151·8	...	1	151·8
4916	Limestone	166—171	22235	22860	150	152·4
	ASSYRIAN SHEKEL (1).					
4917	Limestone	62	3708	3760	30	125·3
	ATTIC DRACHMA (1).					
4918	Syenite, gy.	9	6878	...	100	68·8
	ÆGINETAN STATER (2).					
4919	Limestone	54—66	9625	9670?	50	193·4
4920	Limestone	171	12040		60	200·7

unit of 5 kats. It will be seen how the Gurob weights are all of the light kat 141–144, only one being 147; whereas at Kahun the heavy kat, 147–152, was in use: this shows a change, due to the period. Nos. 4916 and 4920 are both marked ∩∩∩ = 30; one being of 30 super-units of 5 kats, like No. 4914; and the other 30 units of the double stater. Another weight found since I left Kahun is of 3960 or 20 Æginetan staters of 198.

82. Two other traces of foreign intercourse occur at Kahun. The bluish marble of the Ægean is found in many examples there; the only dated one that I know of before being a piece with the cartouches of Usertesen I (Loftie Collection). And many pieces of the black pottery, like that found by M. Naville at Khatanah with scarabs of the Middle Kingdom, were scattered in different chambers of the town. Most of it is decorated with vandykes, filled alternately with a spot pattern impressed by a comb (XXVII, 202), some is plain (XXVIII, 201), and two pieces have incised designs (199, 200). This pottery is unknown in Egypt hitherto in any period but the XIIth and XIIIth dynasties; but it is the same as the black Italian pottery, which bears similar patterns. Moreover, the designs incised are certainly not of Egyptian work, but rather Babylonian in arrangement. Some Phœnician trader, therefore, we may suspect of importing such foreign pottery (probably Italian), and decorating it with designs copied from those of his Asiatic neighbours.

At Gurob the pottery at once arrests us by its completely foreign nature. In paste, in colour, in design it is indistinguishable from the earliest pottery found on Greek soil, at Mykenæ, at Thera, and at Mitylene. The false-necked vases (XXVIII, 1, 7) are repeatedly found; one (fig. 1) was taken by my own hands from the sand filling of a coffin (Tomb 23) which contained a yellow-haired person with black wig, and which, from the similar tombs around it, may be dated to 1300 B.C., as we have seen above. The other (7) was found in a house with a piece of wood carving of the early XIXth dynasty, and a blue glazed ring of the end of the XVIIIth dynasty, thus fixing it to just the same age. A similar one was found with scarabs, pottery, and an ushabti which requires us to date it to the beginning of the XIXth dynasty again. Others were found beneath the walls of a house probably built in the end of the XVIIIth dynasty; and also in a tomb with glass beads exactly like those found with a ring of Ramessu II in

another tomb. Here, then, in three cases different evidences require us to take 1300 B.C. as the date, and in one case a rather earlier and the last a rather later age. Each discovery is entirely independent, and is dated by different classes of objects, yet all agree closely in the age to which we are to assign this pottery. Nor is this age so very different to what is already proposed by Furtwaengler, and which is shown by the metal work of Egyptian fabric found at Mykenæ. It will be noticed that this pottery is like the earliest of Mykenæ, and not the later and more ornate styles ; and hence we may now feel that firm ground has been reached for dating the beginning of the pottery of Mykenæ and Thera to about 1300 B.C.

The other styles of pottery here are also instructive. The pilgrim bottle of early Cypriote make (18), the handle with lines (13), and the bands with wavy lines between (11, 14), which are both characteristically Cypriote: the only two bits of animal figures (9, 12); and the remarkable rude figures (2, 3, 5, 6, 16, and XXI, 47 from a tomb), like those of Mykenæ. All of these well-known types are found intermingled in the town which we have seen good reason to date between 1400 and 1200 B.C. So far as a difference in age can be detected it seems as if the later—north—town, which we have seen is more likely to be of the time of Ramessu II, contained but little of the buff (figs. 1 and 7), and mostly the white pottery with black lines, the Cypriote (figs. 8 to 14, and 18). So this may point to a first settlement of Ægean races, and a later influx of Cypriotes. At Kahun also some fragments of Mediterranean pottery were found, all dissimilar to those of Gurob ; but as they were none of them on the floors of the chambers, or in unequivocally early positions, they may be later intrusions, and dropped by chance passers, and some are almost certainly late. It is a fair question, however, if some of them may not be of the XIIth dynasty, a question which we may hope to settle in further work there.

83. Finally, the most important remains of foreign influence here are the signs found scratched on the pottery, some done by the potter before baking (marked P in the copies), others marked by the owners, probably with flint scrapers. Those found at Kahun are on Pl. XXVII, those from Gurob on Pl. XXVIII. First, with regard to the age of these marks. At Kahun on a large jar sunk in the floor of a chamber, to store corn or water in, one sign (141) was found; above it in the room were tools (find 53) and a papyrus of the Middle Kingdom. Hence the mark must be as old as the use of the house in the XIIth dynasty. In a pit in the floor of a room was found a beautiful spoon-handle with a lion's head, and a plain amethyst scarab, both of the XIIth dynasty style, and a potsherd marked (21). In a pit in the floor of another room was broken pottery, with the marks 42, 95. In another place with two pieces of glazed figures of the style of the XIIth dynasty, were found pots with the marks 39, 53, 132. And in the temple foundation deposits of Usertesen II were potter's marks on the jars, 125, 126. These cases are all proved by these evidences to be of the XIIth or perhaps XIIIth dynasty. But a far stronger kind of proof, though not so individual, is given by the character of the pottery on which the marks are found. All the pottery of the XIIth dynasty is characteristically different from any later kind, both in forms, in paste, and specially in the streaking upward inside by the fingers. And these marks are incised on this class, which cannot be mistaken for that of any subsequent age. No stronger proof—or less open to casual error—could be given for the age assigned to these marks.

At Gurob two marks were found on potsherds in a rubbish-hole, which had been built over when the houses were begun on the ruins of the temple, probably by Khuenaten: these marks (XXVIII, 23, 42) therefore date from about 1370 B.C. The same kind of proof is given here, as at Kahun, by the pottery. The sherds on which the marks are found are exactly like the pottery at Tel-el-Amarna of the end of the XVIIIth dynasty, and quite different in form and material to the pottery of the XXIInd or any later age.

84. I do not propose now here to enter on an analysis of these characters. That is a research which would occupy weeks or months; but my present duty is to place them before those who can discuss them, with all the collateral information, while I hurry back to rescue whatever else may remain in these towns. It may clear the subject to briefly point out what the existing beliefs and theories are ; as we can then see in what way the apparent evidence of these discoveries agrees or disagrees with our expectations, and what we should accept as probable, or regard with doubt.

It has been generally agreed for many years past, that De Rougé's theory of the origin of the Phœnician alphabet—and with it the Greek and Western alphabets—from the Egyptian hieratic writing, is the

most probable truth: and that the hieratic from which it is derived is expressly the hand of the XIIth dynasty, and not that of the XVIIIth, or later times. If so the Phœnician alphabet must therefore have been developed before 2000 B.C., as in later centuries its prototype was not seen or known, and could not be imitated. Next, those who have considered the subject agree that the Cypriote syllabary with its numerous signs could never have come into use in the face of the compact and simple Phœnician alphabet, in its close neighbourhood. And therefore the Cypriote forms must have been in use before the Phœnician alphabet. Therefore, although no Cypriote or Phœnician inscriptions are known that require us to date them before about 900 B.C.; yet the historical development, as at present generally accepted, shows that at least we must expect to find the Phœnician alphabet in course of evolution at or before 2000 B.C., and the Cypriote alphabet already established then.

On turning to the discoveries of this year, it is seen at once that—startling as they may seem at first sight—they are only two stages, exactly such as we should expect according to the accepted theory of the alphabet. The mixture of well-known signs, and of others which have not survived, is only what would be probable during the course of natural selection which was going on during the centuries in which the later order of things was being established. And the mixture of signs known in diverse alphabets of later times is also what we should expect to see at a time when the various alphabets were very likely unseparated, and still in one confused use. In fact, the very confusion of these marks is the best proof of their age being anterior to the clean division into the separate well-defined alphabets that we know in later ages.

85. But these marks do not stand alone, they must be taken with the many proofs of foreign inhabitants in both Kahun and Gurob which we have just detailed. So far as a temporary working hypothesis may be permissible, it seems most likely that during the war of S-ankh-ka-ra, the last king of the XIth dynasty, with the Ha-nebu, or "lords of the north"—a name which always means the Ægean peoples, at least in later times—the Egyptians became acquainted with the Mediterranean races. Perhaps at first as captives, they employed them in their public works, but certainly commercial intercourse was maintained with the northern home, as the weights are foreign and not Egyptian. These labouring foreigners were very probably not educated to the complex Egyptian system of writing, but lived only with Egyptian masons. From these masons they may have learned the use of masons' marks, which were originally formed from hieroglyphs, and to which many of the signs here bear a resemblance. Then these marks came to be used for the sounds attached to them, and so at last words—such as that on the wooden cylinder (XXVIII, 85)—were written down in the new signs. These signs were carried out into the Mediterranean in the commercial intercourse which went on, and then rose from a mere workman's convention into the sole mode of writing, and thus founded the alphabetic system. It is plain that similar causes may have been at work with Cypriotes and Phœnicians in Babylonia, and that some of the signs found here may have been brought in from similar developments there in progress.

The problem then stands thus. Given as elements the Egyptian hieroglyphs, hieratic, and mason's marks, and the cuneiform, and perhaps Hittite characters. Given as final products the Cypriote syllabary, the Phœnician, Lycian, Celtiberian, Lybian, and other alphabets. What relation do these intermediate stages of sign-writing in the 26th century and the 13th century B.C. bear to the elements and the products? And in what way can a connection be traced between the beginnings and ends of these chains of development, by means of the intermediate links here brought to light?

86. *Catalogue of special finds* which serve to guarantee the age of the Greek pottery and signs. Burial, intrusive, in the ruined town of Kahun, without any objects later than the XIIth–XIIIth dynasty around it; bodies wrapped in palm sticks; sandals of leather; 2 head-rests, fluted stems, good work; wooden knife?; 2 scarabs (XXIII, 66, 67) about Tahutmes IV period; piece of blue painted pottery of the end of the XVIIIth dynasty; 2 vases, types XXI, 13, 15, the former of white smooth flat-faced pottery; wooden ushabti, probably XIXth dynasty; false-necked vase, like XXIX, 1, but rather smaller; dark blue glass vase with wavy yellow and white lines, the so-called Phœnician glass. Date of the burial about the beginning of the XIXth dynasty, say, 1300 B.C.

Find in a house at the north town of Gurob: spindle; basket-work; copper foil; half a wooden tray, with carving of a girl playing a guitar amid the water plants, style of XVIIIth–XIXth dynasty; blue ring (XVIII, 96), style of late Khuenaten, or

Tut-ankh-amen ; pieces of blue glass, colour of end of XVIIIth dynasty ; alabaster earring and ear stud ; comb ; bit of green glazed pottery with violet inlay, style of Khuenaten ; and a false-necked vase, XXIX, 7, of Mykenæ type.

Find beneath the wall of a house built on the temple ruined by Khuenaten, and probably therefore about his age : alabaster cup and lid ; small round-top tablet of sandstone ; carved chair leg ; carnelian earring, style of XVIIIth dynasty ; alabaster plug ; blue painted pottery, XVIIIth dynasty ; two pieces of pottery of XVIIIth dynasty, with signs incised (XXIX, 23, 42), and two false-necked vases, like XXIX, 1, but broken.

Top of a Cypriote pilgrim bottle (XXIX, 18, but smaller) in a tomb of XIXth dynasty.

Top of a false-necked vase, like XXIX, 1, with beads glazed exactly like those found with a ring of Ramessu II, in a tomb.

False-necked vase, XXIX, 1, taken out by myself from the coffin of Res ; one of a group of tombs which I date to the time of Seti by the objects found in them.

Besides these evidences at Gurob, the general evidence of the nature of the Egyptian pottery debars our dating the town or signs found later than the XIXth dynasty. The absolute chronology given by the rings and scarabs found has been detailed before, and can be seen in Pl. XXIV.

At Kahun the special finds are pottery with marks in the foundation deposits of Usertesen II (Pl. XIV) : pottery with cylinders (Pl. XIV, 18—20) found in boxes buried with babies : marked pottery (XXVIII, 42, 95) found in a hole in the floor of a room : marked pottery (21) found with spoon and plain scarab of XIIth dynasty ; marked pottery (39, 53, 132) found with glazed ware of XIIth dynasty ; and a lot of objects found with papyrus of the Middle Kingdom, a *sotep* handle (IX, 15), grain scoop (11), hoe blade (3), hoe handle, rake (14), axe (?) handle, fire stick (6), two pieces of sickles like (22), shoes, leather ball, a pottery spout from a jar, and a pilgrim bottle (XIII, 61) of smooth, drab-faced ware, full of some dark brown fatty matter : all these were about halfway down in the filling of the chamber, and beneath them in the floor was a jar sunk up to its brim, with the mark XXVIII, 141, incised upon it.

CHAPTER VI.

THE HIERATIC PAPYRI OF KAHUN.

By F. Ll. GRIFFITH.

87. Fragments of a large number of papyri have been brought home by Mr. Petrie, from the XIIth dynasty town of Kahun ; and some are sufficiently complete to be intelligible without much study. The hieratic of the Middle Kingdom admitted the use of vertical columns as freely as of the horizontal lines which alone were used in later times. The most complete and satisfactory series is that which was first found, consisting of six sheets all in fair preservation, and all apparently relating to the same persons.

First in importance is a large sheet with hardly a sign missing. (ENDORSEMENT.) "Settlement made by the sub-priest Uah." (RECITAL OF WILL.) "Copy of the will* made by the *Sahu*, the *peh ab* of the architect, Ankh-ren, | year 44, Payni, day 19 (probably of Amenemhat III, by the length of reign) | Will made by the *Sahu*, the *peh ab* of the architect, Shepset Ahi-senb, called Ankh-ren of the northern quarter ? | All my property in the garden and in the town ? (shall belong) to my brother the sub-priest of Sepdu, lord of the east, Shepset Ahi-senb, called Uah. | I commend all my friends (?) (lit. all my friends (?) belong) to this my brother. A copy of this was deposited as a document in the hall of the second reporter of the king in the year 44, Payni, day 19." (SETTLEMENT, subsequent to the death of the above testator probably). "Year 2, Paophi, day 12. | Settlement made by the sub-priest of Sepdu, lord of the east, Uah. I make a settlement to my wife, | a woman of the eastern side (of the Nile ?), Sit-sepdu-sheftuf, called Teta, of all property which my brother | the *Sahu*, the *peh ab* of the architect Ankh-ren gave to me, each thing according to its place (*i.e.*, wherever it is to be found ?) from among what he gave to me. She may give it | to any whom she pleases of her children whom she shall (?) bear to me. (Also) I give to her the servants (*Amu*), three persons | which my brother the *Sahu*, the *peh ab* of the architect, Sekhemren, gave to me. She may give it (*sic*) to any of her

* One word is here rendered "will" or "settlement," or "transfer," according to the sense, in order to make the arrangement plainer. Possibly the later document is also in the nature of a will.

children she may wish. | Verily, my tomb, I will be buried in it with my wife, without allowing any person at all to reach it (be buried there). | Verily my houses which my brother the *Sahu*, the *peh ab* Sekhemren built for me, my wife shall be in them, without allowing that . . . . . should be put upon the ground there | by any one. (Added in a different hand.) It is the lieutenant Sibu who shall train (any ?) child (there may be ?) and not my son." (ATTESTATION.) "List of names of those in whose presence this document was drawn up | the scribe of the . . . . Kemen The porter ? of the temple Ankhfi son of Apu. | The porter ? of the temple Senb son of Senb."

88. Another legal document is as follows:— (ENDORSEMENT.) "Will made by the . . . . . Antef meri to his son Meri Antef surnamed Iu senb." (WILL.) "Year 29, Khoiak, day 19. Will made by the. . . . . Antef meri, called Keba, to his son Meri Antef, called Iu senb, I give my (naming his priestly ? office) to my son Meri Antef, called Iu senb, saying I am growing old now that I have become aged in it. Let him enter upon it immediately (?). Verily my settlement which I made to his mother remains to her from end to end (lit. front and back). Verily my house which is in the 'desert of the house' and on which my hand (still) remains, it is for my children whom Sit-ama . . . has borne me, namely:—. . . . . ; Sebek . . . ; Nebt Henn-suten ; together with all it contains." (ATTESTATION.) "List of the names of the witnesses in whose presence these (dispositions) were made. The . . . . . ; . . . . Usertesen Senbubu" (and a third).

89. A letter is endorsed with the address, "my LORD, the superintendent of the establishment Iaab, life, wealth, and health to him :" above the address are the words "from Ana." The letter reads "The workman of the establishment of eternity (for the services of the dead ?) says to the superintendent of the establishment Iaab, L.W.H. May this rejoice the heart of my lord, L.W.H., in that all the affairs of my lord, L.W.H., entirely are prosperous in their several places, by the favour of Sepdu, Lord of the East, together with his cycle of gods, and of all the gods, even as his humble servant would wish. May this please the heart of my lord, L.W.H., in that he has placed his desire on the house of Uah thus, I congratulate you upon it for thou hast done entirely well, so thou hast obtained thy good fortune. Behold the superintendent of the temple Teta said to me 'Behold ! I congratulate him, that he has secured it (or 'I grant him his wish so that he will secure it') for lo, it has been done according to the very words (or 'at the moment it was spoken about') for the *ka* of the prince has been gracious to thee: there is pleasure of the heart in it. May this please the heart of my lord, L.W.H. It is good. May my lord, L.W.H., listen."

The same phrases occur in most of the letters, even when there is no good fortune to chronicle.

The earliest date I have yet found is in the reign of Amenemhat III, and the latest that I can identify is in that of Sebekhotep I. One document is dated in the third year of an unknown ? king, Ra ka ? ankh ?.

CHAPTER VII.

THE ANCIENT BOTANY.

By PERCY E. NEWBERRY.

90. The funeral wreaths discovered by Mr. Flinders Petrie during the second season's work in the cemetery of Hawara, though of many different types from those found during the first season's excavations, are mostly composed of the same kinds of flowers. For instance, there are some thirty-five made of twigs of sweet marjoram, celosia, and chrysanthemum flowers ; also many made of immortelles, roses, lychnis, matthiola, narcissus, and several other sorts which have already been described in detail in my paper on the plant-remains discovered in 1888, which was published in Mr. Petrie's memoir "Hawara, Biahmu, and Arsinoë." The duplicate kinds do not call for any further notice, as they do not present any points of difference from those of the same species which were found in 1888. There are, however, thirteen other species of plants that were used in the manufacture of the wreaths which are not included among the specimens of the first season's "find." Of these thirteen species, seven are not indigenous to Egypt. These seven are :—

(1.) The mignonette (*Reseda odorata*, L.), a plant whose origin was long unknown but which Griffith asserts to be a native of Affghanistan (Boissier, "Flora Orientalis," i, p. 423). It is still cultivated in the gardens of the Fayûm.

(2.) The lime-tree (*Tilia europæa*, L.), a native of middle and southern Europe. Only two flowers of this species were found, but these prove that the tree must have been grown in Egypt in Græco-Roman times.

(3.) The jasmine (*Jasminum sambac*, L.), a native of India. It must have been introduced into Egypt prior to the time of the XXIst dynasty, as its flowers have been found among a few fragments of wreaths of that age preserved in the Natural History Museum of Milan (F. Woenig, "Die Pflanze im Alten Ægypten," p. 344). Three flowers alone occur in Mr. Petrie's collection.

(4.) A Nubian species of heliotrope (*Heliotropium nubicum*, L.). One wreath was found made entirely of the twigs of this plant bound together by strips of the leaves of the date-palm. It is still cultivated in the warmer regions of the Upper Nile for its flowers, which are intensely aromatic.

(5.) A species of convolvulus (*Convolvulus spinosus*, Burm.). This species, one flower of which was discovered, is now only found growing in Lower Belutchistan, in Affghanistan, and in the deserts of Southern Persia (Boissier, "Fl. Or.," vol. iv, p. 87).

(6.) A species of iris (*Iris sibirica*, L.). Two petals of this lovely plant were found bound into one of the sweet marjoram wreaths, and their blue colour when fresh must have contrasted admirably with the pale green of the marjoram twigs. The plant is a native of Northern Anatolia and of the Caucasus (Boissier, "Fl. Or.," vol. v, p. 126). It was known in Egypt as early as the times of Thothmes III, for a representation occurs of it among the plants depicted on the walls of that monarch's plant-chamber at Karnak. (See Mariette's "Karnak," Pl. XXX.*)

(7.) The ivy (*Hedera Helix*, L.), a native of the South of Europe. It was introduced into Europe by the Greek colonists and is still cultivated in the gardens of Middle and Lower Egypt.

The remaining six species of "garland-plants" not included in my former list (see p. 53 of "Hawara, Biahmu, and Arsinoë") are all natives of Egypt. They are: —

(1.) The white Egyptian water-lily (*Nymphæa lotus*, Hook.).

(2.) The common field-poppy (*Papaver Rhœas*, L.). According to Dr. Schweinfurth this species is not found in Upper Egypt and also appears to be absent from the whole Nile Valley. It is, however, he says, still to be met with in abundance near Alexandria as a weed growing in cornfields. In ancient Egypt the plant seems to have had a wider distribution. Its flowers have been found by Dr. Schweinfurth in wreaths of the XXIst dynasty from Beir-el-Bahari, and its seeds have been detected among barley of the XIIth dynasty discovered at Kahun (see § 91).

(3.) *Conyza Dioscoridi*, L., a plant belonging to the natural order *Compositæ*, and which still grows wild in abundance in the Fayûm..

(4.) *Cressa cretica*, L., a plant widely distributed in the East from Peloponnesus to Belutchistan (Boissier, "Fl. Or.," vol. iv, p. 114). Several wreaths were made entirely of the twigs of this species.

(5.) A species of *Convolvulus* (*C. hystrix*, Vahl.) which is still to be found growing in the Egyptian deserts.

(6.) A species of Euphorbia (*E. ægyptiaca*, Boiss.), widely distributed at the present day throughout Middle and Upper Egypt.

Several fruits, fruit-stones, and seeds, of species not included among the plant-remains found in 1888 have also been discovered by Mr. Petrie during the second season's excavations at Hawara. These are:— (1) Several seeds and fragment of leaves of the cabbage (*Brassica oleracea*, L.); (2) ten seeds of the *Moringa aptera*, Gaertn.; (3) four fruits of the nebak-tree (*Zizyphus spina-Christi*, L.); (4) two pods and several seeds of the carob-tree (*Ceratonia siliqua*, L.); (5) a large quantity of lupins (*Lupinus termis*, Forsk.); (6) five flat peas (*Lathyrus sativus*, L.); (7) four almonds (*Prunus amygdalus*, Hook.); (8) three small fruits of the cherry (*Prunus cerasus*, L.); (9) several shrivelled fruits and leaves of the mulberry (*Morus nigra*, L.); (10) one hazel nut (*Corylus avellanus*, L.); (11) one onion (*Allium cepa*, L.). The first of these plants—the cabbage—was extensively cultivated in Egypt in Græco-Roman times. Athenæus ("Deipn.," I, i) tells us that among the Egyptians it was the custom to eat boiled cabbage before all the rest of their food, and the same author adds that they esteemed it as one of the most delicate of all the vegetables known in ancient times. The *Moringa aptera*, though probably a native of Egypt, was also cultivated in ancient times. Its seeds were collected and from them was extracted the Ben oil often mentioned in the old Egyptian chemical receipts. The occurrence of pods and seeds of the carob-tree are interesting, for Pliny ("H. N.," xiii, 16) says that the tree did not exist in Egypt, but grew abundantly in Syria and Ionia, "in the

* Over fifty species of plants are figured on the walls of this chamber of Thothmes III, and many of them are so exquisitely carved that there is no difficulty in determining the genus, and even in some cases the species, of plant represented. As Mariette's drawings, however, do not at all do justice to the original bas-reliefs, Mr. Petrie took in 1887, paper casts of the originals, and these he has placed in my hands for publication.

vicinity, too, of Cnidos and in the island of Rhodes" (*cp.* also Theoph., "H. P.," i, 11; Diosc., i, 158; Strabo, xvii, 2, 1). The truth of Pliny's statement, however, may be doubted, for pods and seeds of the tree have been discovered also at Gurob and at Kahun (see § 91), and Mr. Greville Chester has found some in tombs at Thebes. From the quantity of lupins found and from several remarks on them made by the old Greek authors, it would appear that they were extensively cultivated in Egypt in Græco-Roman times. The lupin was formerly supposed to be a native of Egypt (Schweinfurth, "Plantæ Nilot. a Hartmann," col. 6), but this Schweinfurth and Ascherson now consider doubtful ("Aufzahlung," &c., p. 257). According to Boissier ("Fl. Or.," ii, 29) its natural habitat is Syria. The *Lathyrus sativus*, L., was probably introduced into Egypt by the Greeks, who probably cultivated it from an early period for use as fodder and also for its seeds (Theoph., "H. P.," viii, 2, 10, &c.). It is, according to Alph. de Candolle, a native of Western Asia. The four almond stones found by Mr. Petrie belong to two distinct varieties. One is very similar in shape (though somewhat smaller) to the Jordan almond of the present day. The other three stones are much rounder in shape and much more like those of the variety now known as the Smyrna almond. It has been suggested that these stones reached Egypt by way of commerce, but, from the fact that they were all still enclosed in the fleshy mesocarp when found, this may be doubted. It is hardly likely that the stones would not have been separated from the fibrous and coriaceous covering before being packed for exportation. At the present day the almond-tree is often to be found under cultivation in the gardens of Egypt, but it has nowhere been discovered wild in the country. It was at an early period known to the Greeks (Theoph., "H. P.," i, 2, &c.) and to the Hebrews (Jer. i, 11, &c.). Several varieties are mentioned by the old botanical writers of Greece and Italy as having been cultivated in ancient times, but those that were grown in the Island of Naxos, in the Ægean Sea, were, according to Athenæus (ii, 39), superior to all others. The cherry, a native of Southern Europe, was probably introduced into the Fayûm gardens by the Greek colonists. The mulberry, a native of Armenia and of Northern Persia (Alph. de Candolle, "O. of Cult. Plants," p. 151), must have been introduced previous to the XIXth dynasty, for it is not unfrequently mentioned in the hieroglyphic inscriptions of that date. The hazel nut found was probably not a product of Egypt; it is more likely to have reached Hawara by means of trade, perhaps from Pontus, in Asia Minor, where, Pliny tells us ("H. N.," xv, 24), it was in his time extensively cultivated. The onion found at Hawara, on the other hand, was undoubtedly grown in the country; indeed, it was one of the principal vegetables of the Egyptians. The Greeks and Romans also extensively cultivated it, but of all the varieties known in early times, the "Egyptian" variety was the most esteemed (Athen., ii. 65).

The following twenty-four names complete the list of species which have been determined from among the plant-remains discovered at Hawara:—

Nymphæa lotus, Hook.
Papaver Rhœas, L.
Brassica oleracea, L.
Moringa aptera, L.
Reseda odorata, L.
Tilia europæa, L.
Zizyphus spina-Christi, L.
Lupinus termis, Forsk.
Lathyrus sativus, L.
Ceratonia siliqua, L.
Prunus amygdalus, Hook.
Prunus cerasus, L.
Hedera Helix, L.
Conyza Dioscoridi, L.
Jasminum sambac, L.
Heliotropium nubicum, L.
Convolvulus hystrix, Vahl.
Convolvulus spinosus, Burm.
Cressa cretica, L.
Morus nigra, L.
Euphorbia ægyptiaca, Boiss.
Corylus avellanus, L.
Allium cepa, L.
Iris sibirica, L.

In glancing over the above list, and also the former one printed in "Hawara, Biahmu, and Arsinoë," we cannot help being struck by the fact that the majority of plants named are not natives of Egypt, but of Greece, Asia Minor, Mesopotamia, Persia, Central Africa, Ceylon, and other distant countries. They are, moreover, nearly all "garden" flowers, fruits, and vegetables, and among them, it is interesting to note, occur many species which are still cultivated by the gardeners of the present day. Thus there is the rose, myrtle, jasmine, mignonette, convolvulus, celosia, narcissus, ivy, lychnis, sweet marjoram, iris, henna, bay laurel, poppy, acacia, willow herb, purple cornflower,

and the small yellow chrysanthemum. Among the fruits, we have represented in Mr. Petrie's collection, the almond, peach, cherry, currant, grape-vine, mulberry, fig, pomegranate, olive, carob, and walnut. And among the vegetables we have the cabbage, onion, peas, beans, flat peas, lupins, chick peas, and coriander. This remarkable "find" of plant-remains at Hawara well illustrates the passage in Strabo's "Geographia" relating to the extreme fertility of the Fayûm. "The Arsinoite Nome," he writes, "is the most remarkable of all, both on account of its scenery and its fertility and cultivation. For it alone is planted with large, perfect, and richly productive olive-trees, and the oil is good when carefully prepared; those who are neglectful may, indeed, obtain oil in abundance, but it has a bad smell. In the rest of Egypt the olive-tree is never seen, except in the gardens of Alexandria, where under favourable circumstances they yield olives, but no oil. Vines, corn, podded plants, and many other products also thrive in this district in no small abundance."

91. Besides the plant-remains from Hawara, Mr. Petrie has also discovered a considerable quantity at Kahun. These, though they date from the remote period of the XIIth dynasty (and are, consequently, among the oldest vegetable remains which have yet been found in Egypt), are in a remarkably good state of preservation. They are chiefly interesting from the fact that they tell us the species of plants and fruit-trees which were grown in the gardens and orchards, and the cereals which were cultivated in the fields, of Egypt prior to the time of Abraham.

The fruit-tree which appears to have been the commonest (for several hundred of its fruits and fruit stones have been found) was the *Balanites ægyptiaca*, Del., a small tree, now known in Abyssinia by the Arabic name of Heglig. At the present day this tree is widely distributed in North Tropical Africa, from Senegal to Abyssinia, but it does not now occur in Egypt in the wild state. Indeed, but very few cultivated specimens are now to be found in Egypt, and these are only to be met with in the gardens of the larger towns. (See Ascherson, "Garten Flora," 1876, p. 70; Delile, "Déser. de l'Egypte," Hist. Nat. vol. ii, p. 223; F. Unger, "Sitzs. der K. Akad. der Wissenshaften in Wien," Naturw. Classe, xxxviii, Bd. No. 23; "Revue Horticole," 1889, p. 187.) In early times, however, the tree must have had a far wider distribution, for stones of its fruits have been frequently found in the ancient tombs at Gizeh, Thebes, Dakhel, and various other sites in Lower and Upper Egypt. (See "Zeits. für Ethnologie," 1877, s. 308; and "Sitzs. der Berl. anthropol. Gesellschaft," 1875, s. 58; Fr. Woenig, "Die Pflanzen in Alten Ægypten," p. 48.*) At the present day great quantities of the fruit are consumed by the different tribes of Central Africa, though, according to Rohlfs ("Quer durch Africa," Bd. ii, p. 11; see also "Botan. Zeitung," 1874, spatte 617), the fruit has a by no means pleasant taste. Another fruit esteemed by the Egyptians of the XIIth dynasty was that of the Dellach palm-tree (*Hyphæne argun*, Mart.). Thirty stones of this palm were discovered at Kahun, and, that they belong to this species and not to the allied form *H. thebaica*, Mart., is clearly shown by their oval shape and by their possessing a ruminated albumen. This palm is not now grown in Egypt, and, so far as it at present known, only inhabits a few valleys of the Nubian desert within the great bed of the Nile between Korusko and Abu Hamed. "Its present range," says Magnus, "is touched by the desert road, traversed from the earliest times, which connects Lower Nubia with that tract of the Nile Valley in which the ancient kingdom of Meroë flourished, the relations of which to Egyptian culture are well known." ("Journal of Botany," February, 1877.)

The Dom palm, though not uncommon in Egypt at the present day, appears (if we may judge from the number of its fruits which have been discovered at Kahun and elsewhere in Egypt) to have also had a wider distribution in ancient times. It was called the *mama*, and it is often mentioned in the ancient literature of Egypt. It sometimes grew to a height of sixty cubits (see "Sallier Papyrus," No. 1, Pl. VIII, l. 4), and its fruit, called hŭkŭ or hŭkt (Lepsius, "Denkmäler," vol. iv, Pl. XXIII, e), was much esteemed. The *Mimusops Schimperi*, Hochst., perhaps the persea of the ancients, was also grown in Central Egypt in XIIth dynasty times, for both its fruit and leaves have been identified among the Kahun remains. At the present day it is not known in Egypt, only occurring in Central Africa and in Abyssinia. (See "Hawara, Biahmu, and Arsinoë," § 59.)

Besides the above four kinds of trees, which were probably far more widely distributed in Egypt in early times, the remains of a few other species occur in Mr. Petrie's Kahun collection, which are still to be

* Mr. Greville Chester found two stones, each of which had been pierced by some species of weevil in a tomb at Thebes. These he gave me to examine, and ney are now preserved in the Museum at Kew.

found in Egypt growing in abundance. The sycamore fig (*Ficus sycomorus*, L.) is represented not only by a large number of its fruits, but also by its wood and fragments of its leaves. Nearly all the wooden boxes which Mr. Petrie found under the floors of the workmen's dwellings at Kahun were made of the wood of this tree. The fruits, though not much shrivelled, are very small, much smaller in fact than those found at Hawara (see "Hawara, &c.," § 66). The nebak (*Zizyphus spina-Christi*, L.), a tree now widely distributed in Egypt, was also to be met with in the Central Provinces in early times. Fruits of this tree are likewise in Mr. Petrie's collection, and, though they somewhat vary in size, they are not smaller than the fruits of the same species which are grown in Lower Egypt at the present day. The Nile acacia (*Acacia arabica*, Willd.), which is, next to the date-palm, the tree most frequently seen in the villages of the Egypt of to-day, must also have been very common in ancient times. Its wood was largely used, as is shown by the great number of wooden objects manufactured out of it, which have been found at Kahun. The pods were also collected, and were probably used for tanning purposes, as at the present day. Another tree represented in Mr. Petrie's Kahun collection by its pods, and which is still found in Egypt, is the carob (*Ceratonia siliqua*, L.). Only one pod and six seeds of this tree were discovered. They are very much shrivelled with age, but do not appear to differ in any other respects from the pods of the same species collected in Egypt at the present day (see also § 90).

The Kahun plant-remains also throw some light on the vegetables cultivated in the kitchen-gardens of Egypt prior to the time of Abraham, for a number of peas and beans, fragments of leaves and stems of the cucumber (*Cucumis sativus*, L.), and two small radishes (*Raphanus sativus*, L.) have been identified. The peas belong to a small variety of the common garden pea (*Pisum sativum*, L.), and the beans to the ordinary form of *Faba vulgaris*, L. The two radishes are extremely interesting, for, although Herodotus states ("Euterpe," ii, 125) that in his time a hieroglyphic inscription was extant recording that radishes (*συρμαία*) were cultivated in the time of Cheops (IVth dynasty), it has been generally doubted that they were known in Egypt till a very much later period. Herodotus, too, mentions that this root, together with onions and garlic, was supplied by the State for the sustenance of the workmen who were engaged in building the Great Pyramid. It is interesting to note that the town of Kahun was built for the accommodation of the workmen employed in constructing the Kahun pyramid and temple: perhaps the XIIth dynasty monarchs, like the IVth dynasty ones, also allowed their workmen a certain quantity of radishes for their sustenance, and these two shrivelled radishes may be the only relics to tell us of the old custom.

The only cereal grain that has been found at Kahun is a small variety of barley, and of this Mr. Petrie brought over to England a large quantity. The grains are smaller than those at present grown in Egypt, hardly any of them exceeding 1 cm. in length, whilst most of them are considerably smaller. Among the barley grains were found a large number of weed-seeds, and these show that the barley fields of XIIth dynasty times were infested with many of the same weeds which trouble the tillers of the soil at the present day. Among the weed-seeds I have succeeded in identifying the following:—

(1.) One hundred and sixty-seven seeds of the Egyptian clover (*Trifolium alexandrinum*, L.). In a few cases the calyx tubes were still remaining around the seeds. These tubes are oblong in form, and strong 10-ribbed, with triangular subulate and spinescent teeth, which are about one-half the length of the calyx tube.

(2.) One hundred and thirty-three seeds of a small species of flax (*Linum* species ?).

(3.) Twenty seeds of the cultivated flax (*L. humile*, Mill.).

(4.) Four seeds of an oat (*Avena strigosa*, Schreb.).*

(5.) One seed of the spiny medick (*Medicago denticulata*, L.).†

(6.) Eight seeds of the small garden pea (*Pisum arvense*, L.).

(7.) Five seeds of another species of pea (*Pisum* species ?).

(8.) One seed of the Egyptian dock (*Rumex dentatus*, L.).

(9.) Two flower-heads of a species of Compositæ.

(10.) Four seeds of a species of Poppy (*Papaver Rhœas*, L. ?).

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* Seeds of this species were also found among the Barley grains from Hawara, see "Hawara, Biahmu, and Arsinoë," § 60.

† Compare *ibid.*

INDEX.

NOTE.

The final clearance of the two towns of Kahun and Gurob has taken place while this was in the press. The general conclusions are fully confirmed; and the age of the Mykenæ pottery, in particular, has been amply fixed by many further finds. The only modifications in the history are that the temple of Gurob was not destroyed until after Tutankhamen, instead of by Khuenaten; and some few traces of residence as late as Ramessu III have been found there. At Kahun there is much more evidence of the XIIth dynasty age of the Ægean pottery found there. An account of these later discoveries will appear next season.—W. M. F. P.

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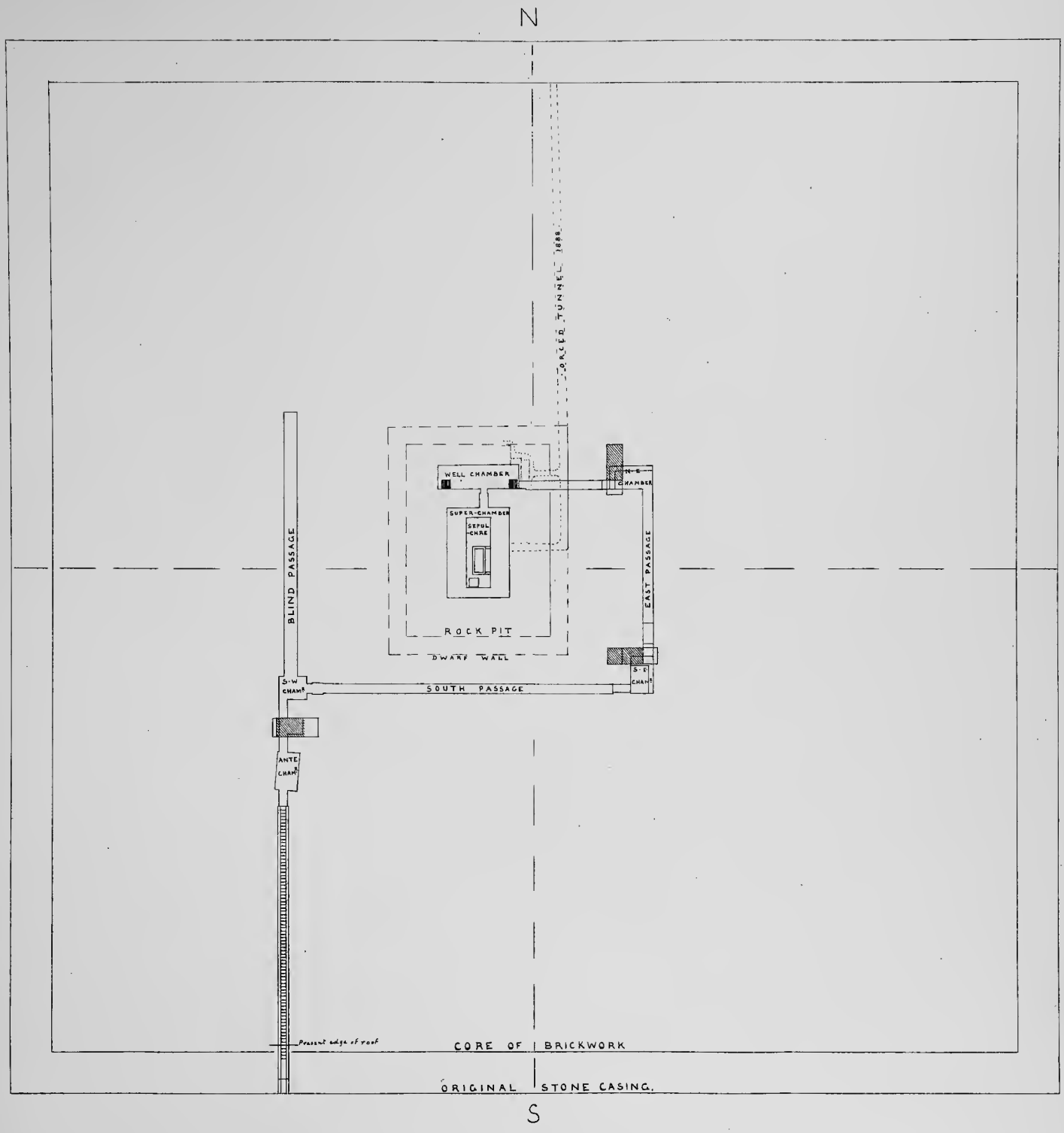
PORTRAITS FROM HAWARA, KEPT AT BULAK MUSEUM 1889.

1:500 PLAN OF HAWARA PYRAMID. II



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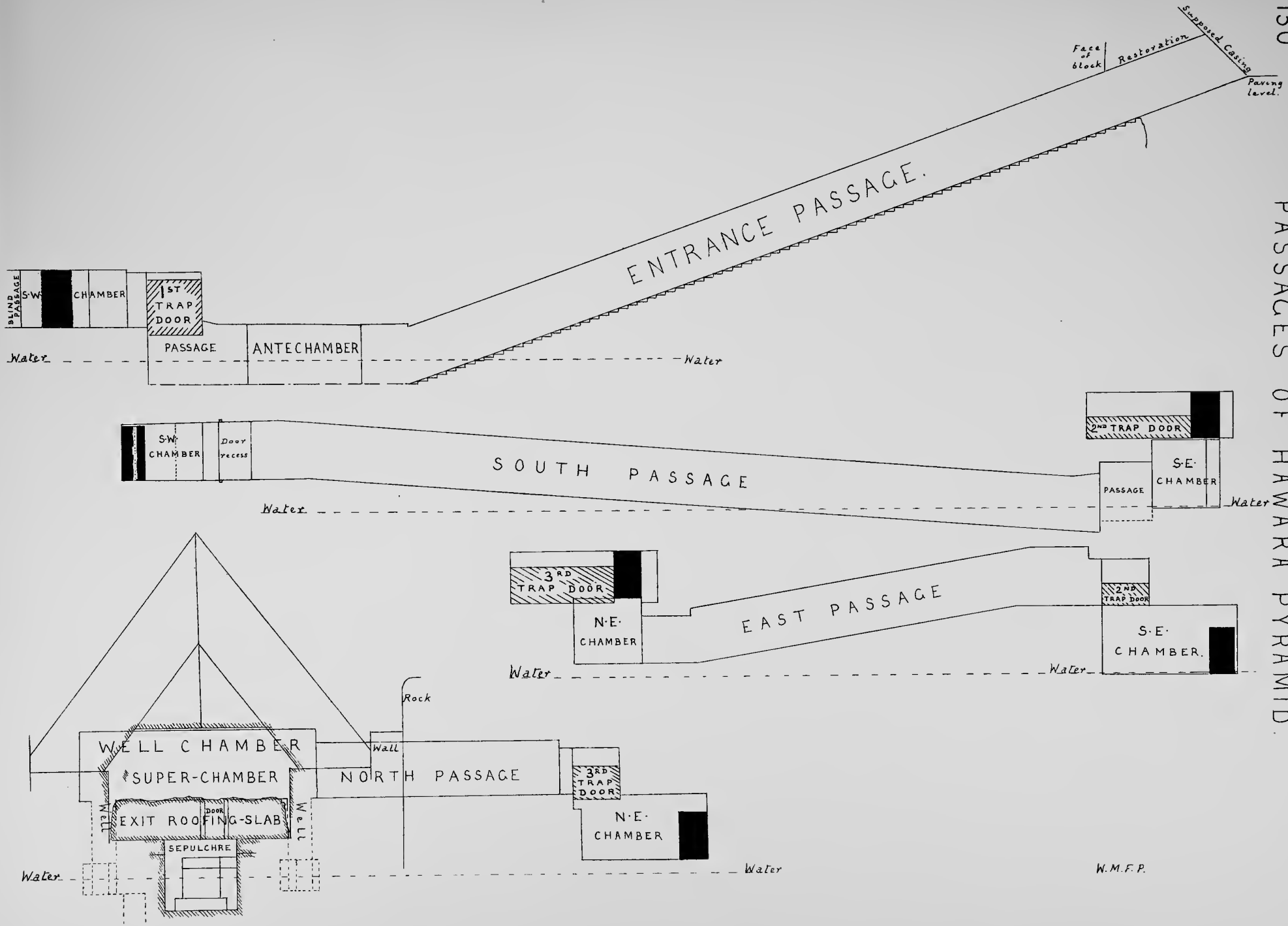
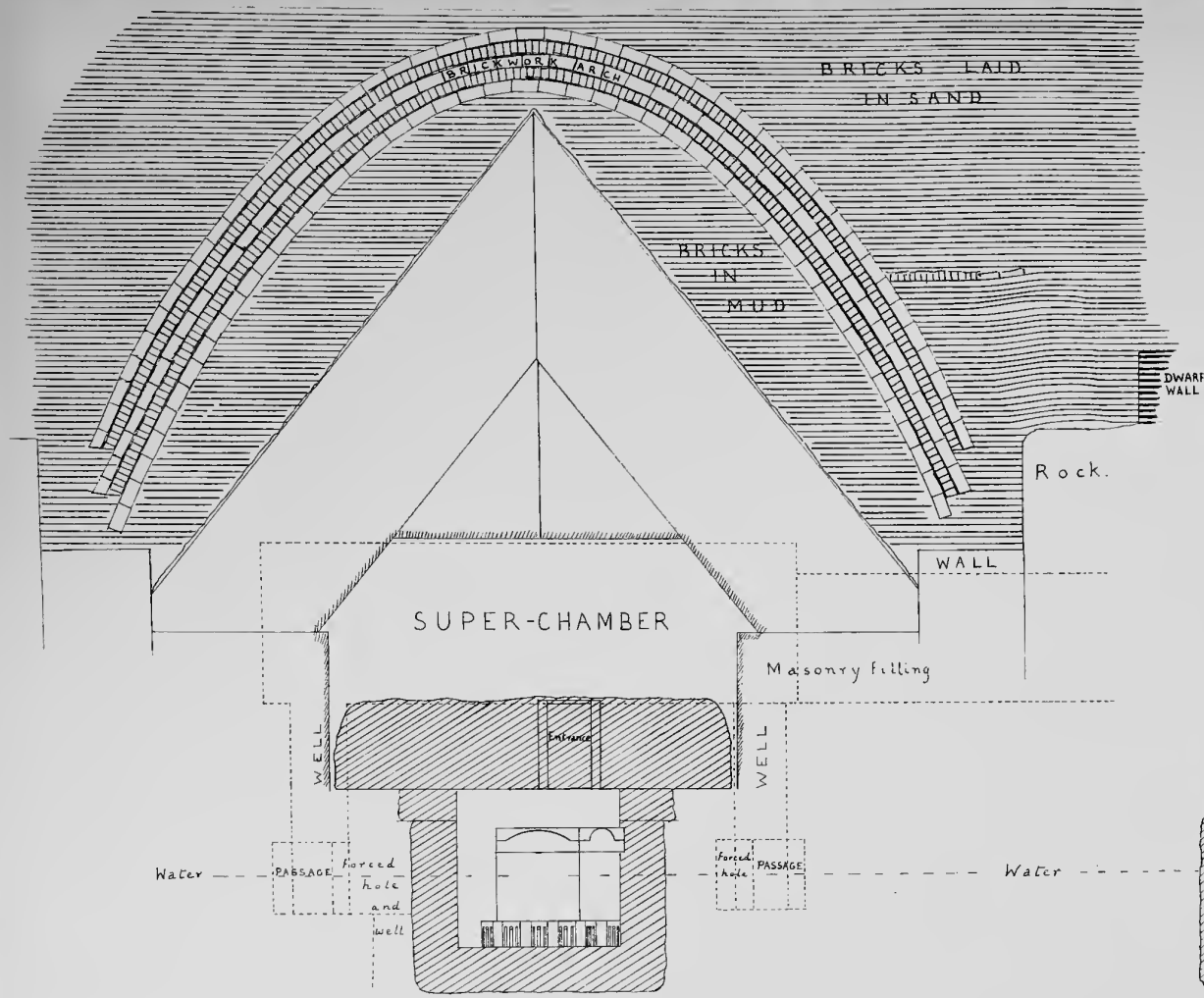
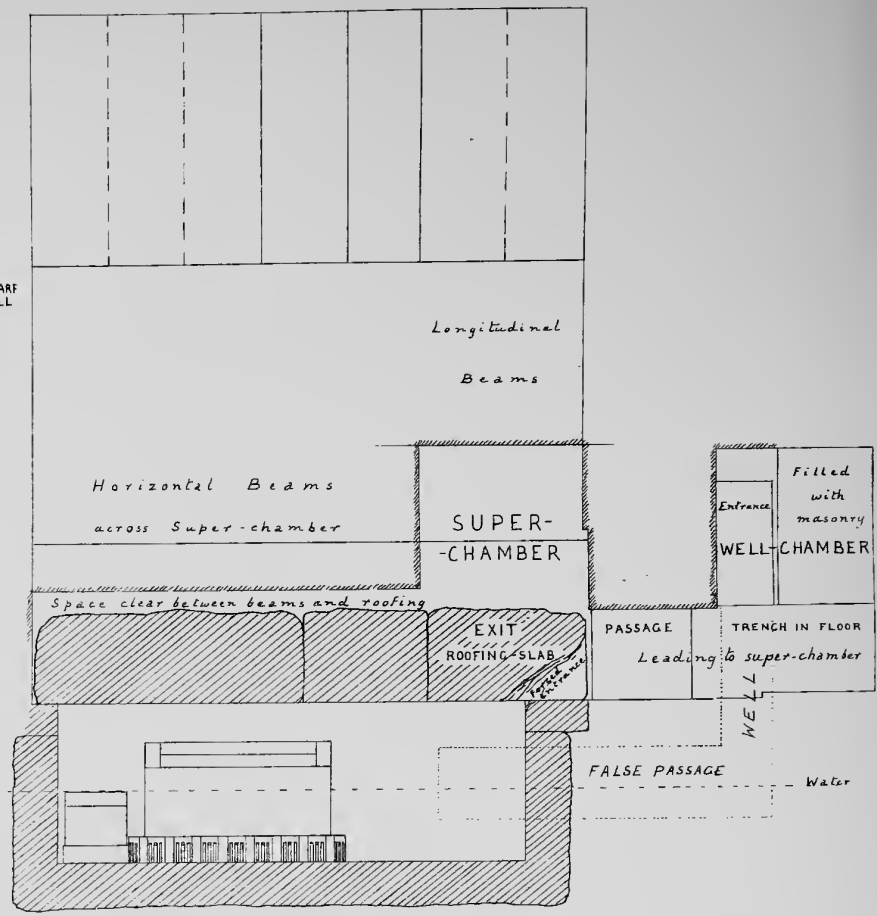
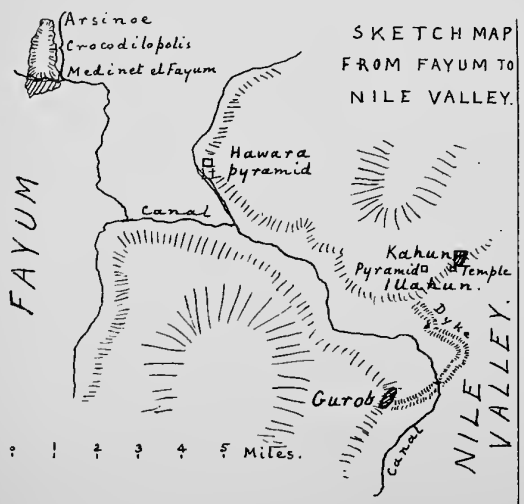
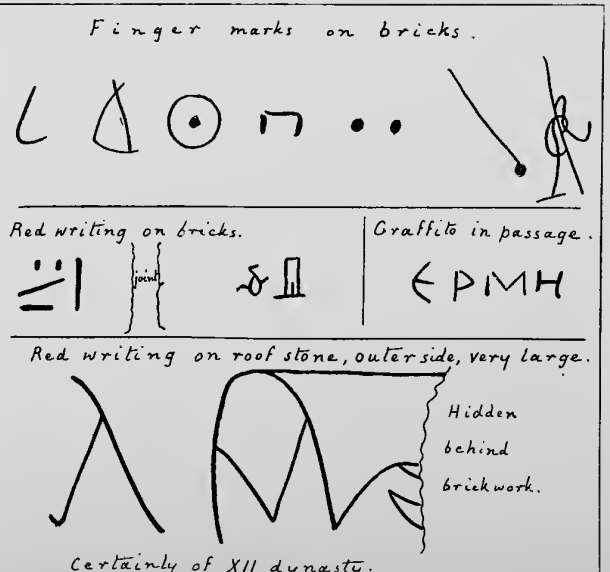

1:150
PASSAGES OF HAWARA PYRAMID.
111
ENTRANCE PASSAGE.
Face of block
Restoration
Supposed Casing
Paving level.
BLIND PASSAGE
S.W. CHAMBER
1ST TRAP DOOR
PASSAGE
ANTECHAMBER
Water
Water
SOUTH PASSAGE
S.W. CHAMBER
Door recess
2ND TRAP DOOR
S.E. CHAMBER
PASSAGE
Water
Water
EAST PASSAGE
3RD TRAP DOOR
N.E. CHAMBER
2ND TRAP DOOR
S.E. CHAMBER.
Water
Water
WELL CHAMBER
SUPER-CHAMBER
EXIT ROOFING-SLAB
DOOR
SEPULCHRE
Well
Well
Rock
Wall
NORTH PASSAGE
3RD TRAP DOOR
N.E. CHAMBER
Water
Water
W.M.F.P.

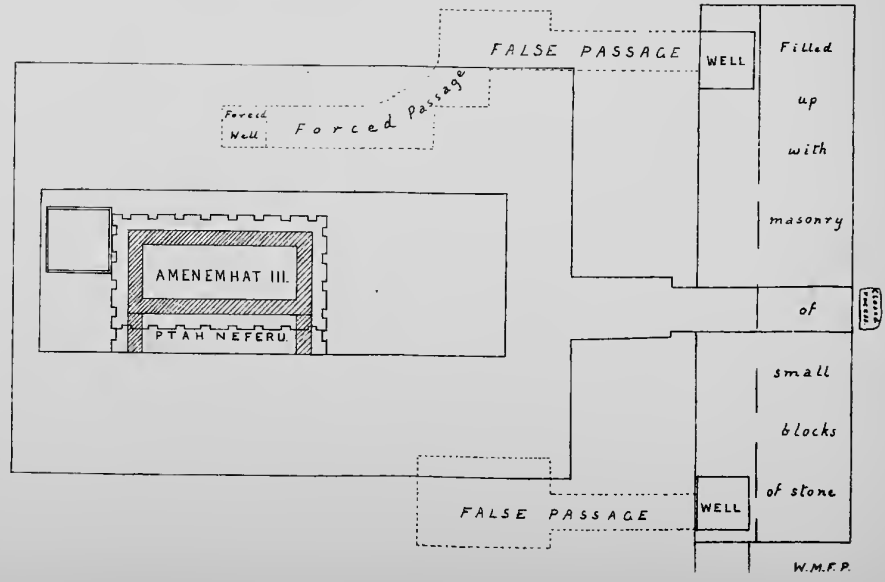
1:100 SECTIONS AND PLAN OF SEPULCHRE. HAWARA PYRAMID. IV.





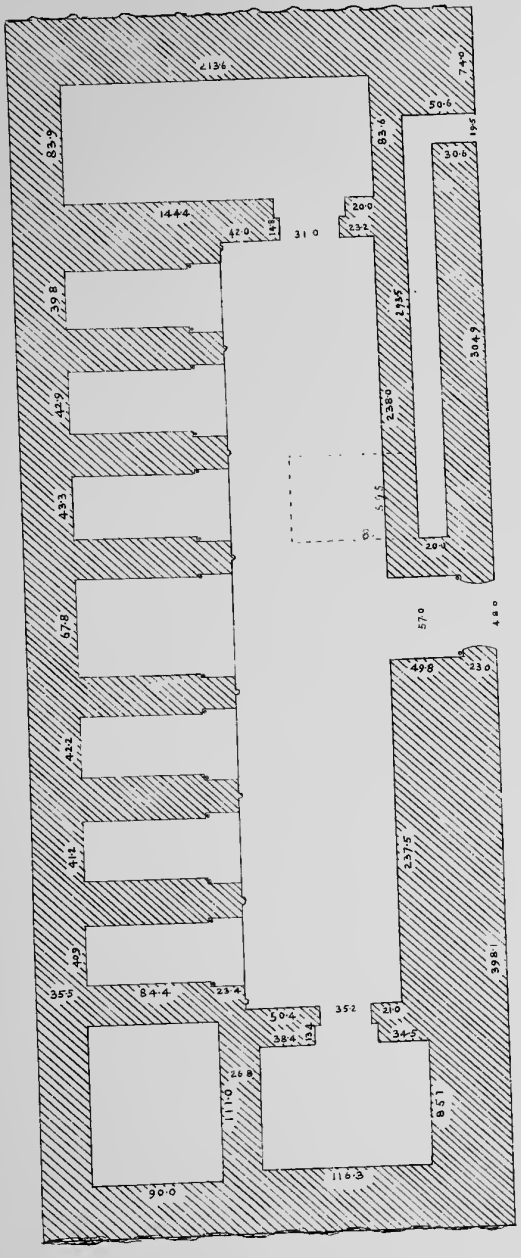




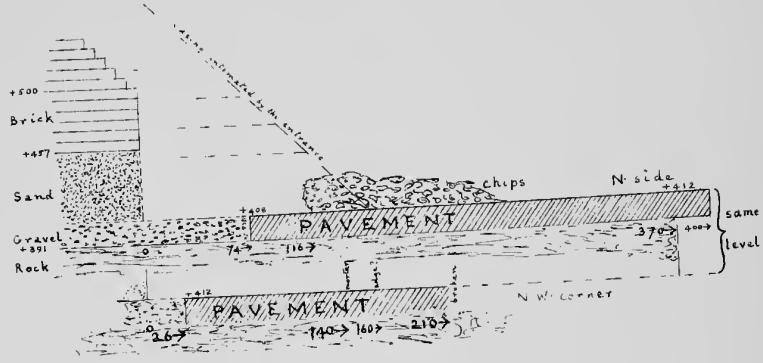


1:120

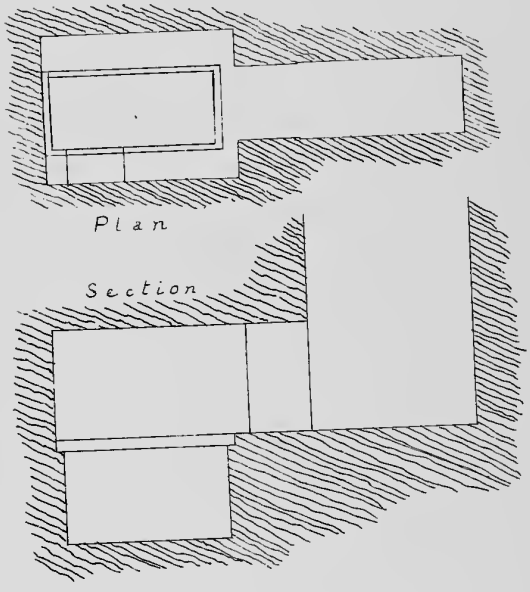
BUILDING IN DESERT, W. OF BIRKET KURUN.



CASING OF HAWARA PYRAMID.

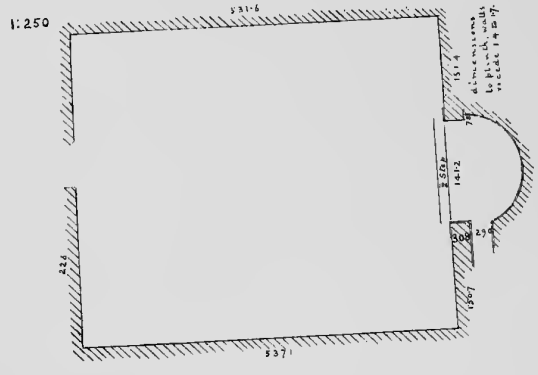


TOMB. XII DYN. ILLAHUN.



BASILICA, ROMAN, HAWARA.

1:250



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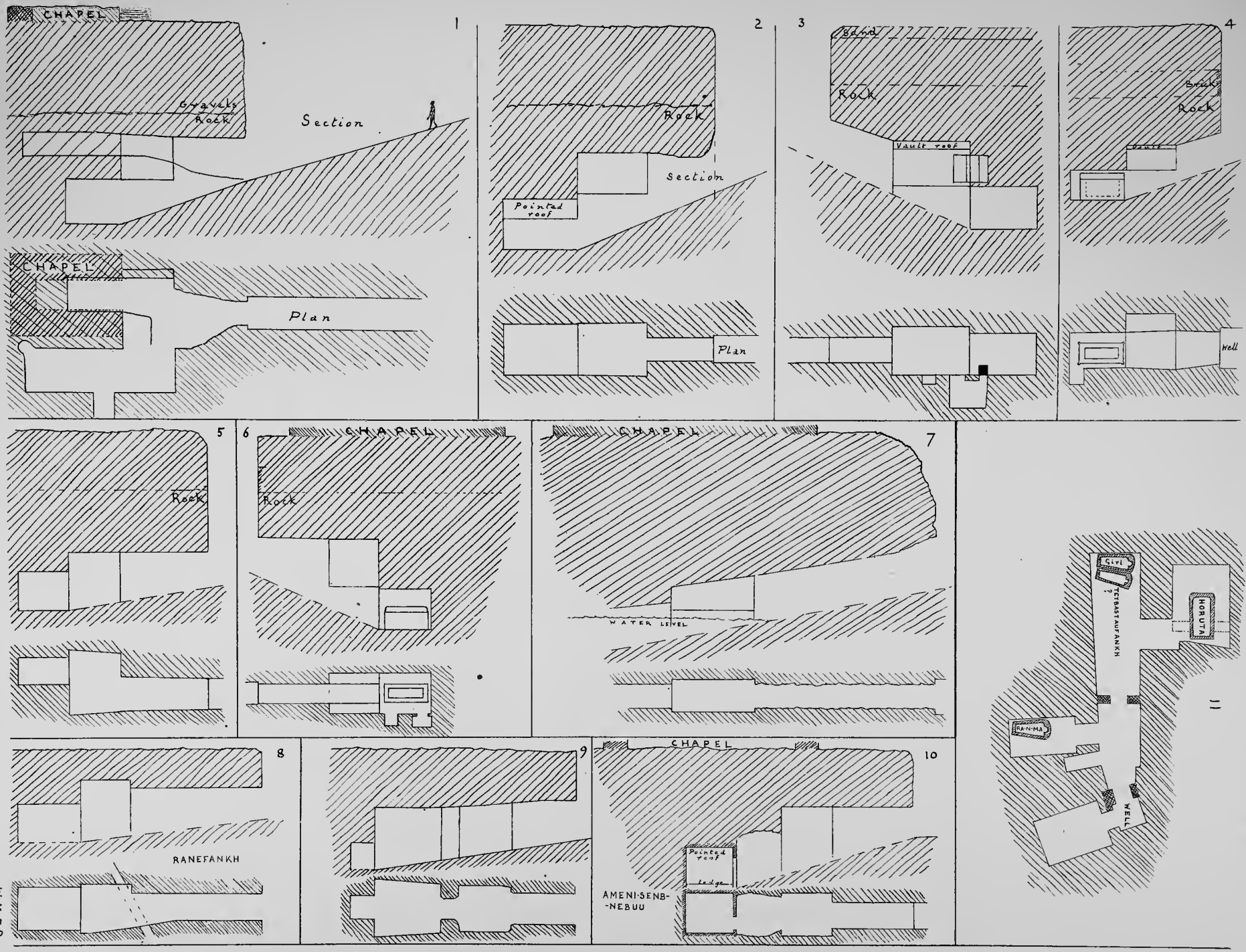
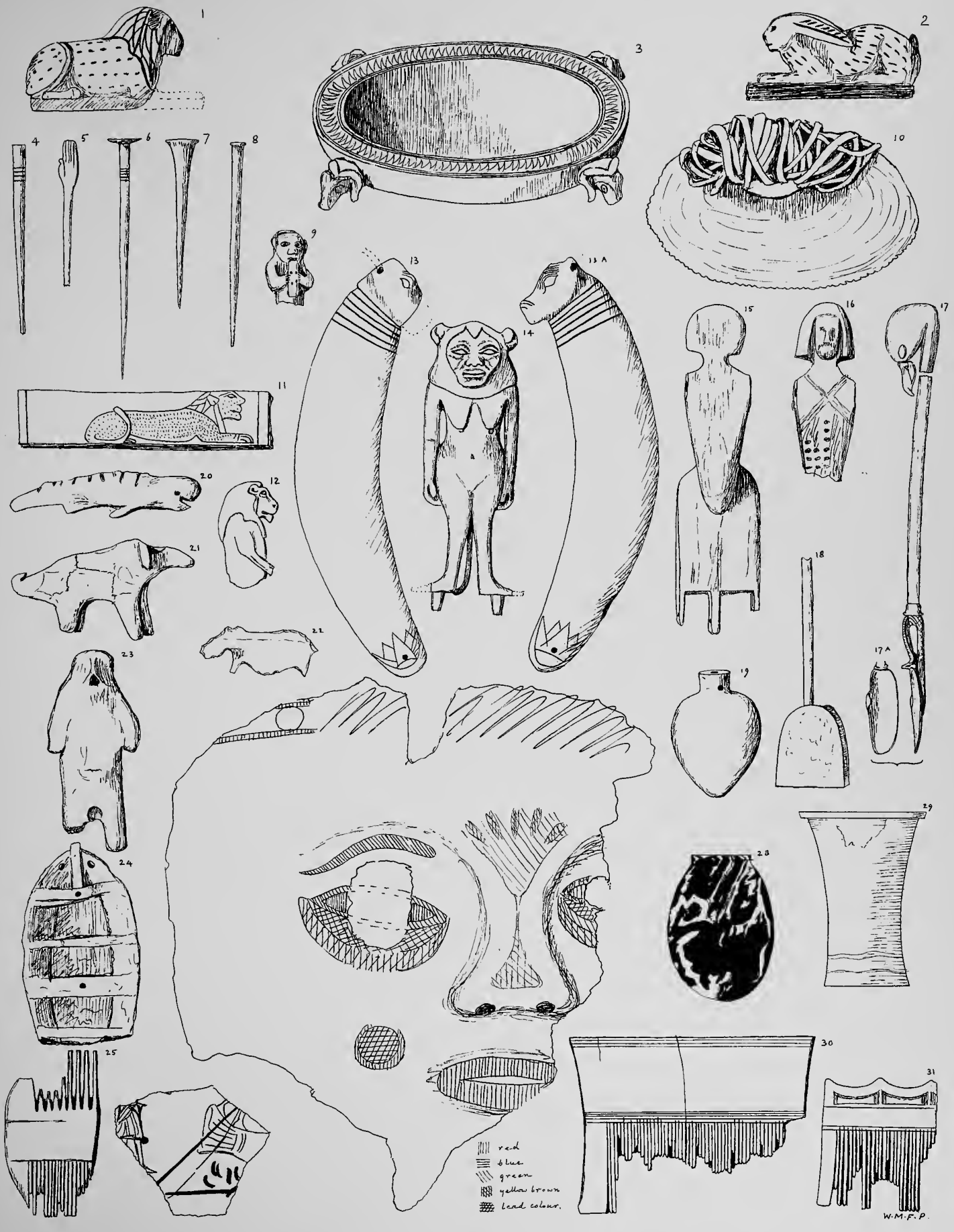

1:300
HAWARA. ROCK TOMBS, XII & XXVI DYN.
VII
CHAPEL
Gravels
Rock
Section
Plan
1
Rock
Pointed roof
Section
Plan
2
Sand
Rock
Vault roof
3
Brick
Rock
Vault
Well
4
Rock
5
CHAPEL
Rock
6
CHAPEL
WATER LEVEL
7
Girl
?
TCHASTAUFANKH
HORUTA
RA-N-MA
WELL
11
RANEFANKH
8
9
CHAPEL
Pointed roof
ledge
AMENI-SENB-NEBUU
10
W.M.F.P.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17 A
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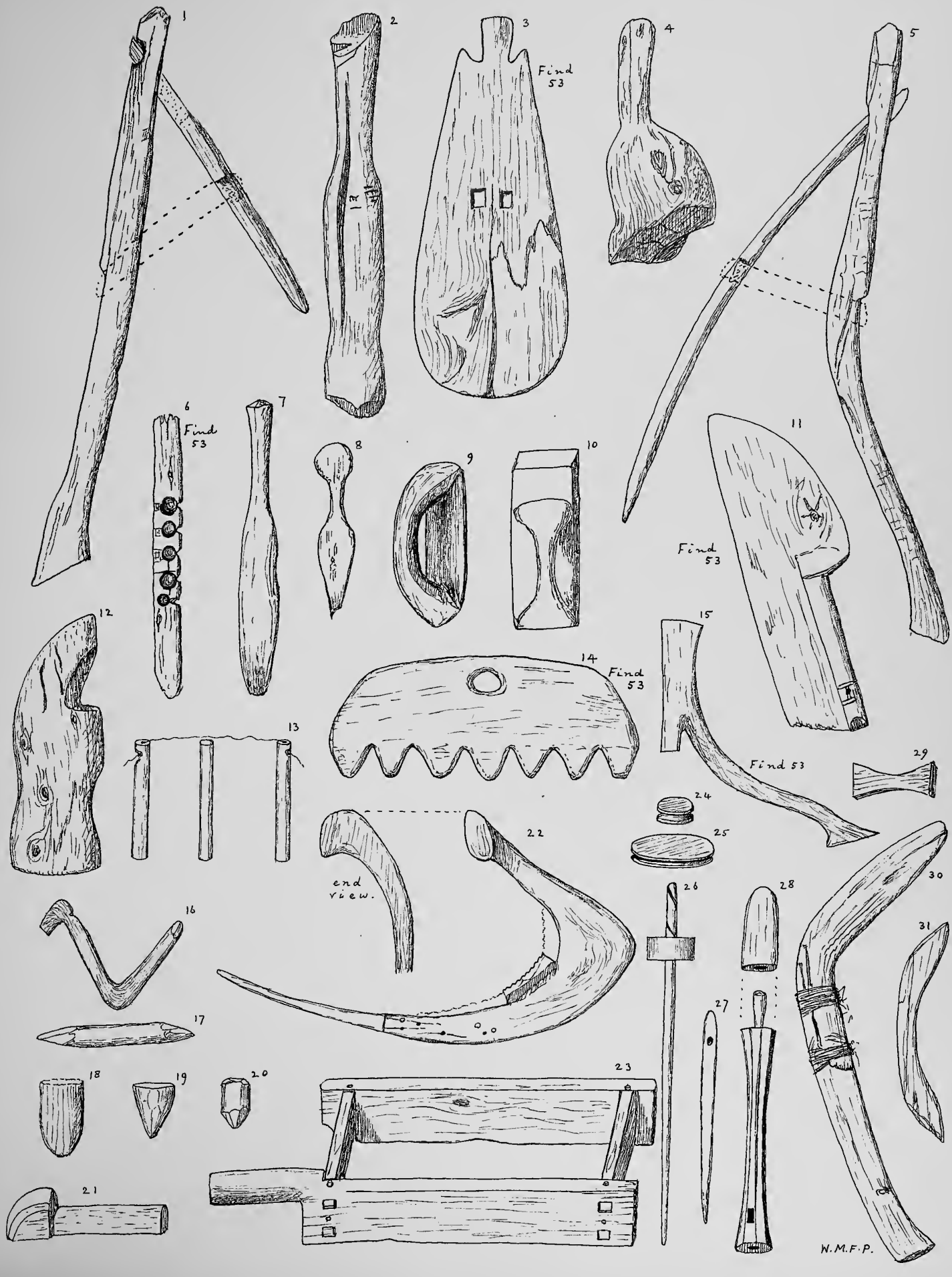
30
31
red
blue
green
yellow brown
lead colour.
W.M.F.P.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Find 53
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Find 53
29
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end view.
16
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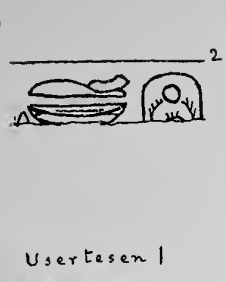
W.M.F.P.

1



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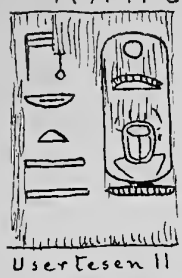

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Usertesen I

Usertesen II

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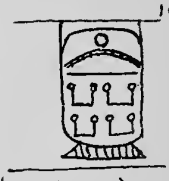


10

(in box with pottery)
Usertesen III

11

(hieratic on box lid)
Usertesen III & Amenemhat III

12

13

14

Amenemhat III

15

Neferhotep

16

limestone

17

wooden seal

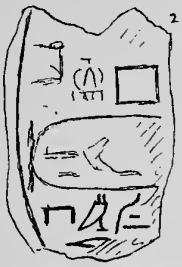
18

jar sealing

19

20

From papyri



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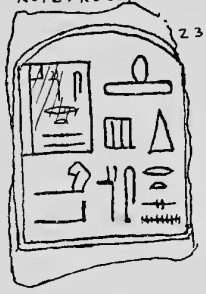

23

24

Seal impressions from papyri.

25

limestone

26

27

28

29

30

in mason's chips
Illahun pyramid.

31

32

33

Impressions.

34

35

36

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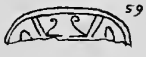


59

60

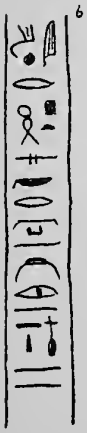
61

62

63

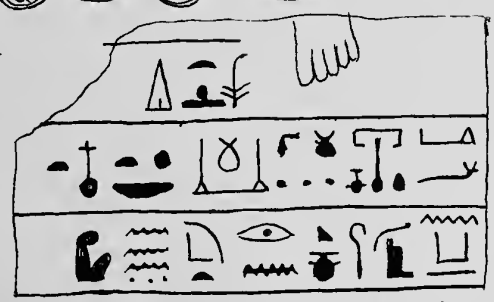
64

XVII or early XVIII Dyn.
Intrusive burial.



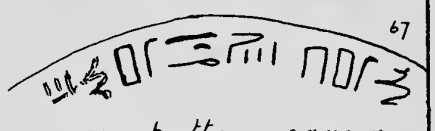
65

On seated figure of limestone



66

Base of alabaster statuette

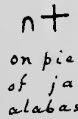


67

on pottery saucer

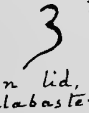
68

from a box. (many others in the town.)



69

on piece of jar. alabaster.

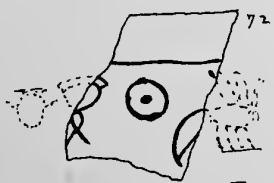


70

on lid, alabaster.

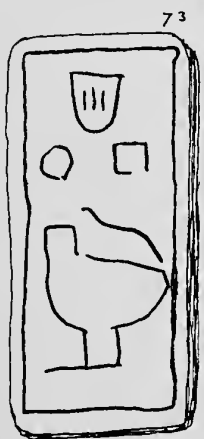
71

from porter's lodge in front of temple.



72

Uah-ab-ra, a-ā-ab
XIV Dyn. Blue glaze cup, brown lines.



73

Incised on mud plaque.

Found with intrusive burials of XVIII Dyn.

74

XVIII Dyn

75

Amenhotep III & Thi

76

Amenhotep IV.

77

78

blue pottery as of XIV Dyn.

79

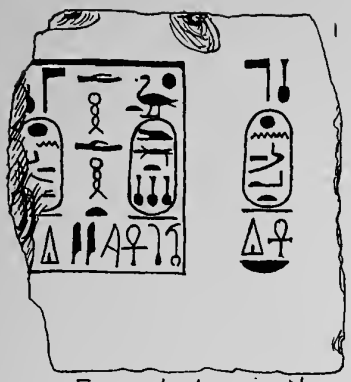
blue glass cut.

80

blue green.

81

violet and white
Rev. I
W.M.F.P.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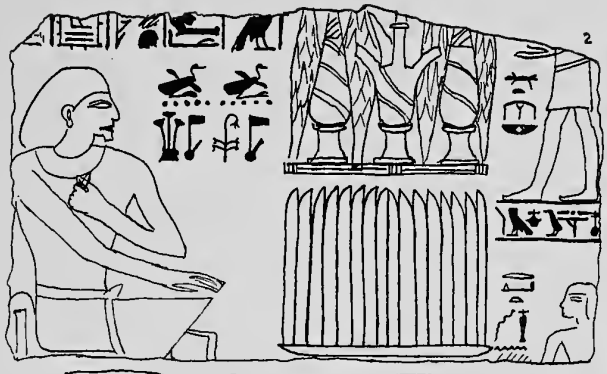
From Labyrinth.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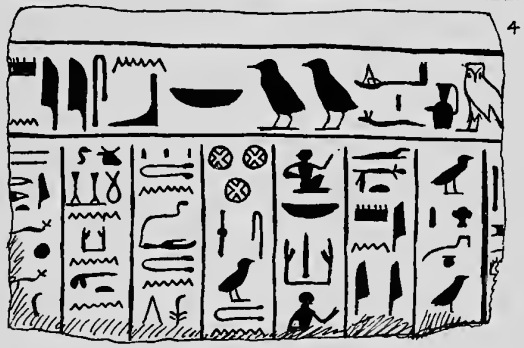
corner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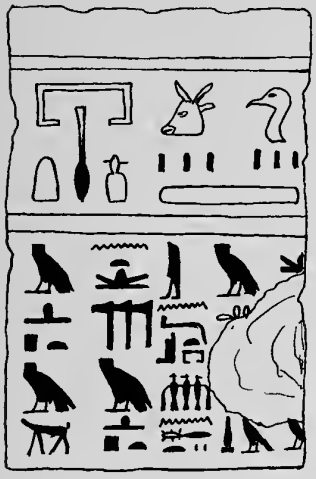
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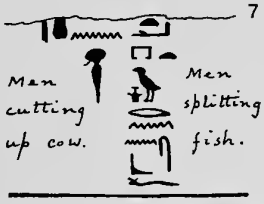
Man leading bull.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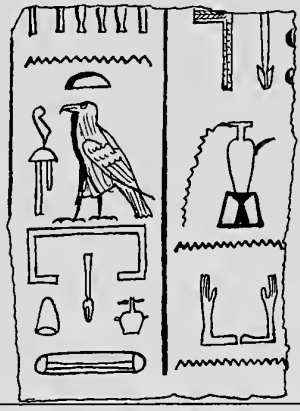
Man cutting up cow.

Men splitting fish.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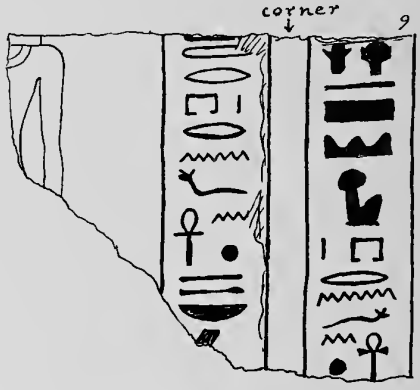
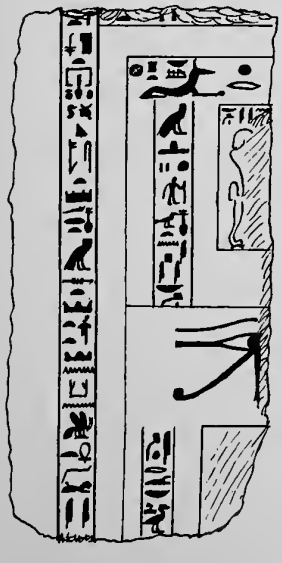

9

corner

KAHUN. FRAGMENTS IN TOWN.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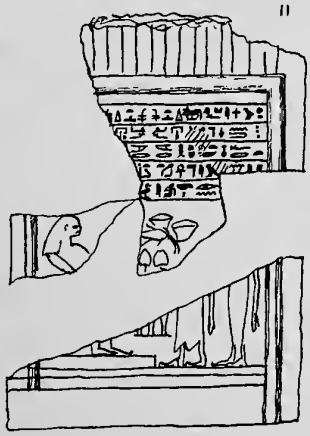
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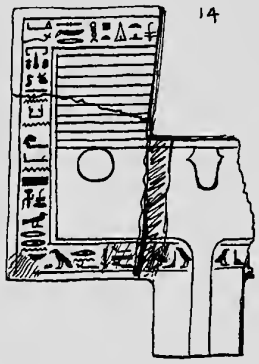
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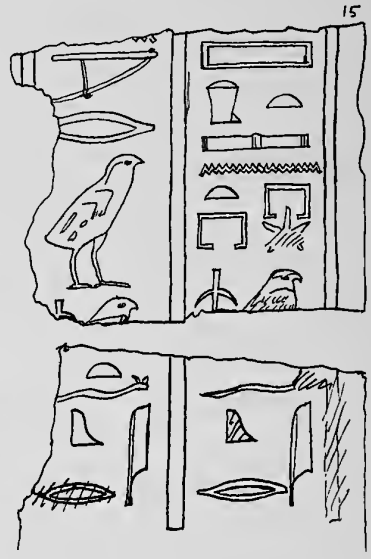
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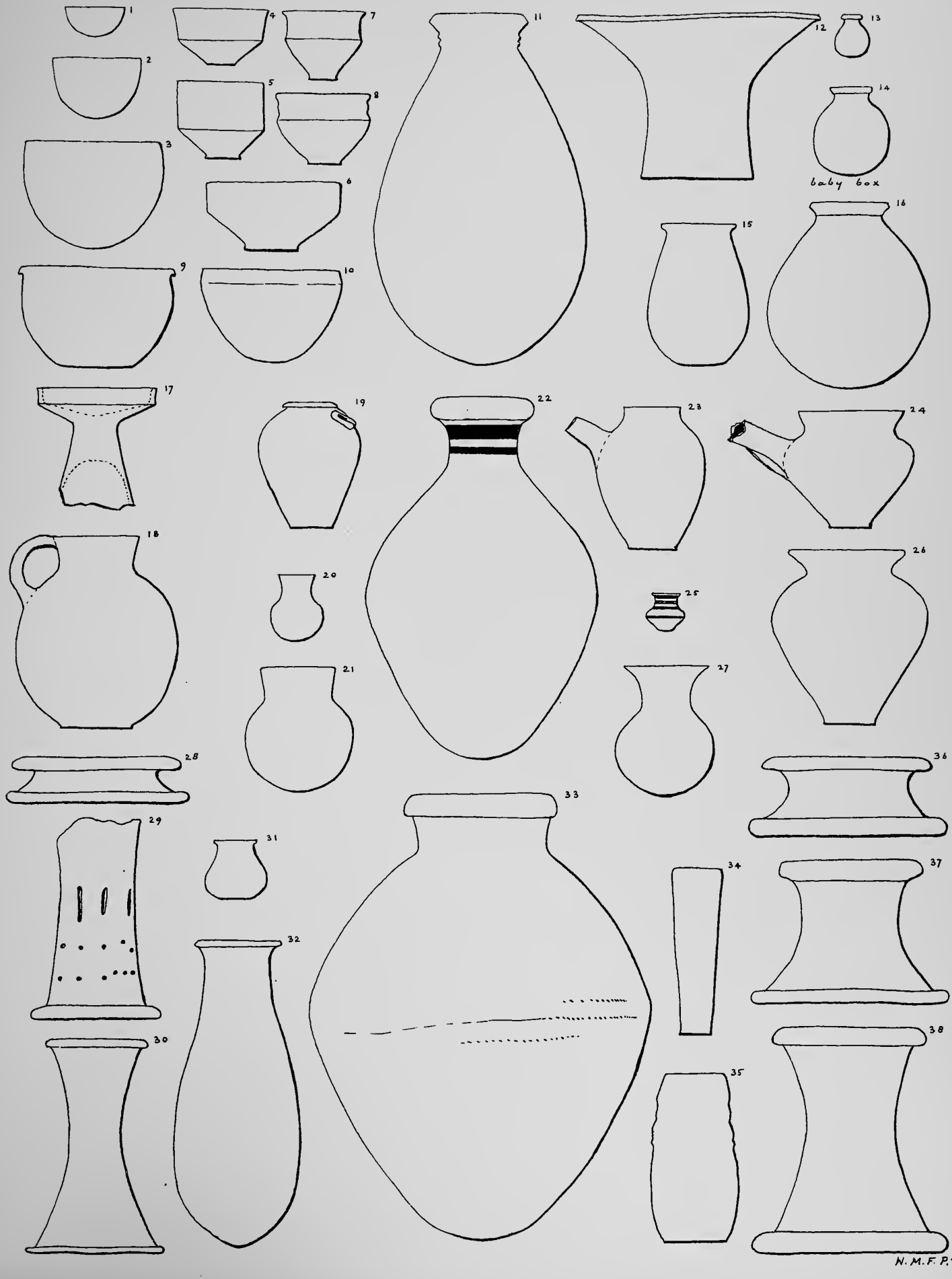
W. M. F. P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baby box
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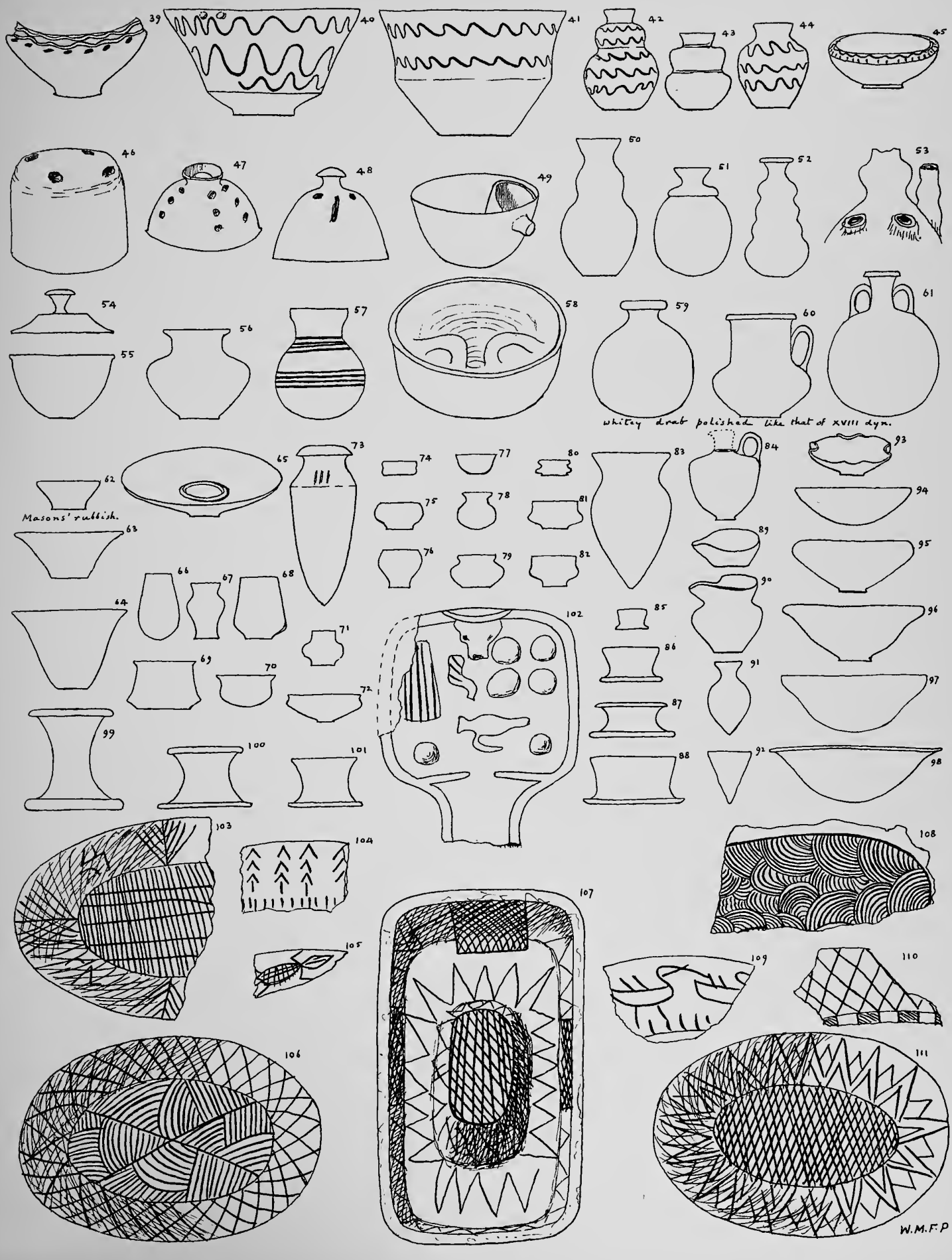
N.M.F.P.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whitey drab polished like that of XVIII dyn.
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Masons' rubbish.
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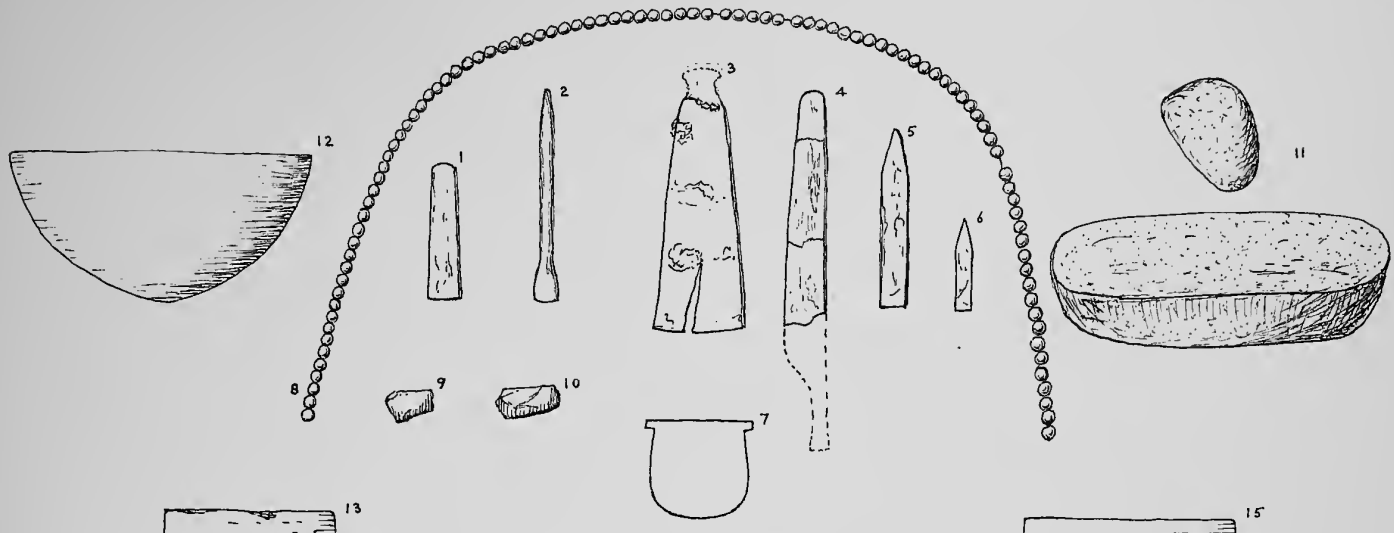
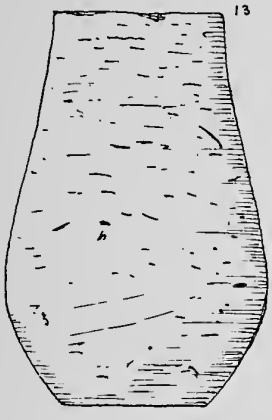
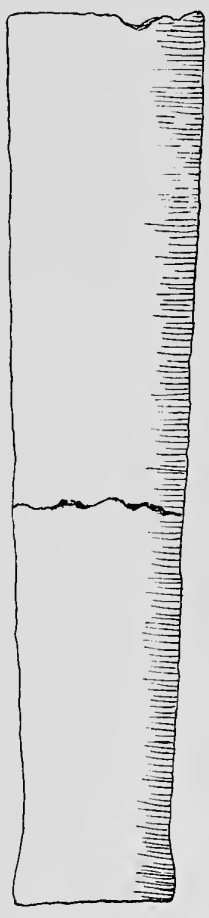
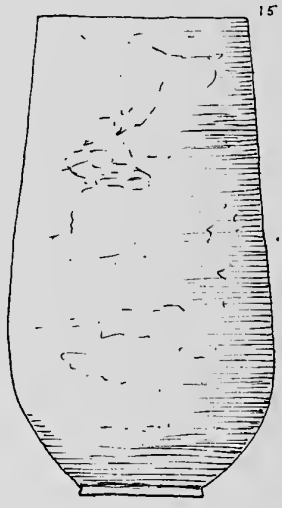
W.M.F.P



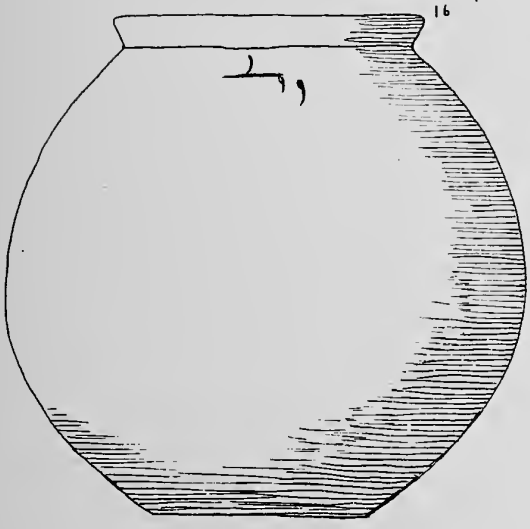


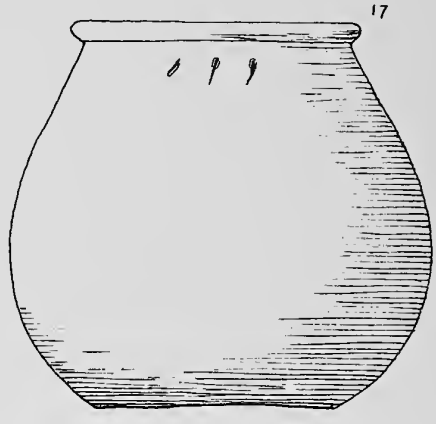




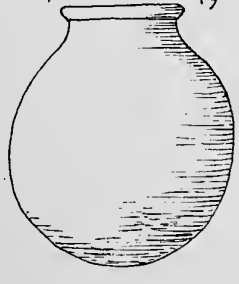
potter's mark.

potter's mark.





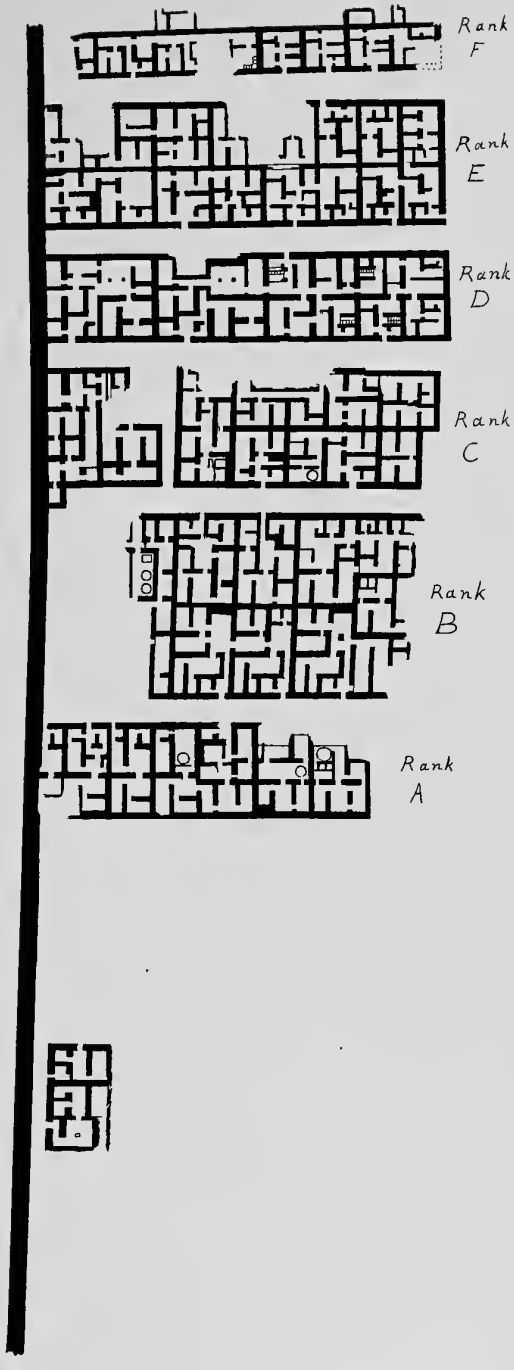
Pottery and cylinders of Usertesen III, from a box.

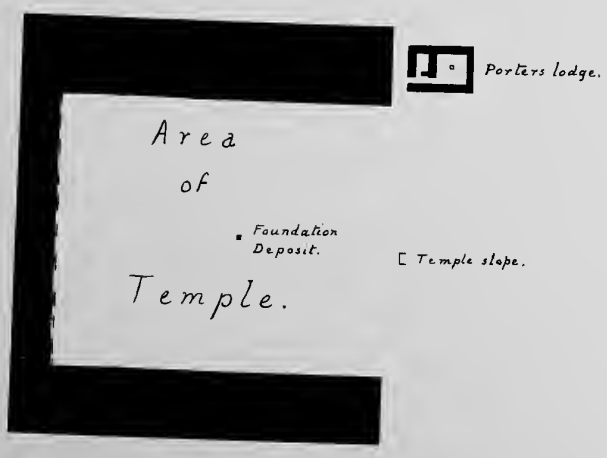


W.M.F.P.

1:1200 KAHUN.

PLAN OF S·W· PART OF TOWN.





Porters lodge.

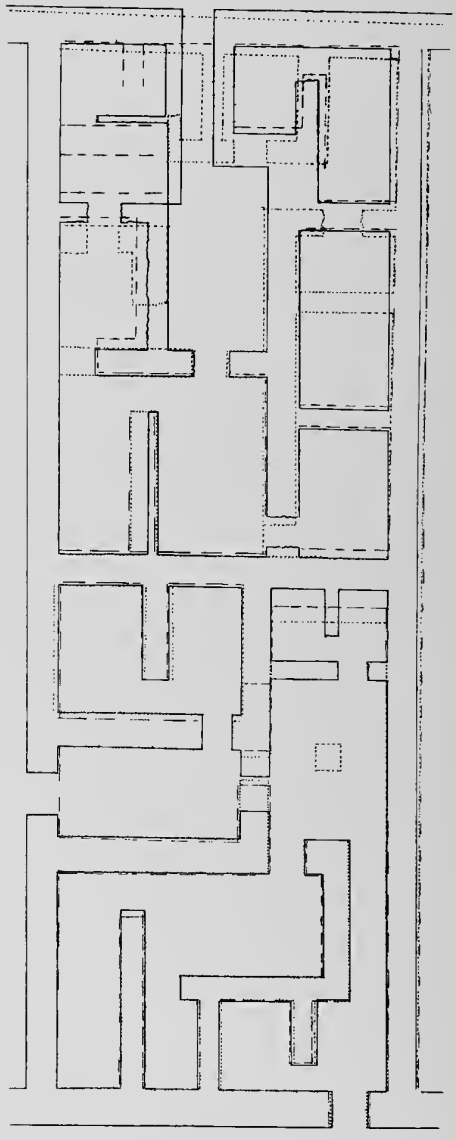
Foundation Deposit.

Temple slope.

1:200

PLANS OF THREE PAIR OF HOUSES
IN RANK B
SUPERPOSED TO SHEW DIFFERENCES

West pair Middle pair East pair.



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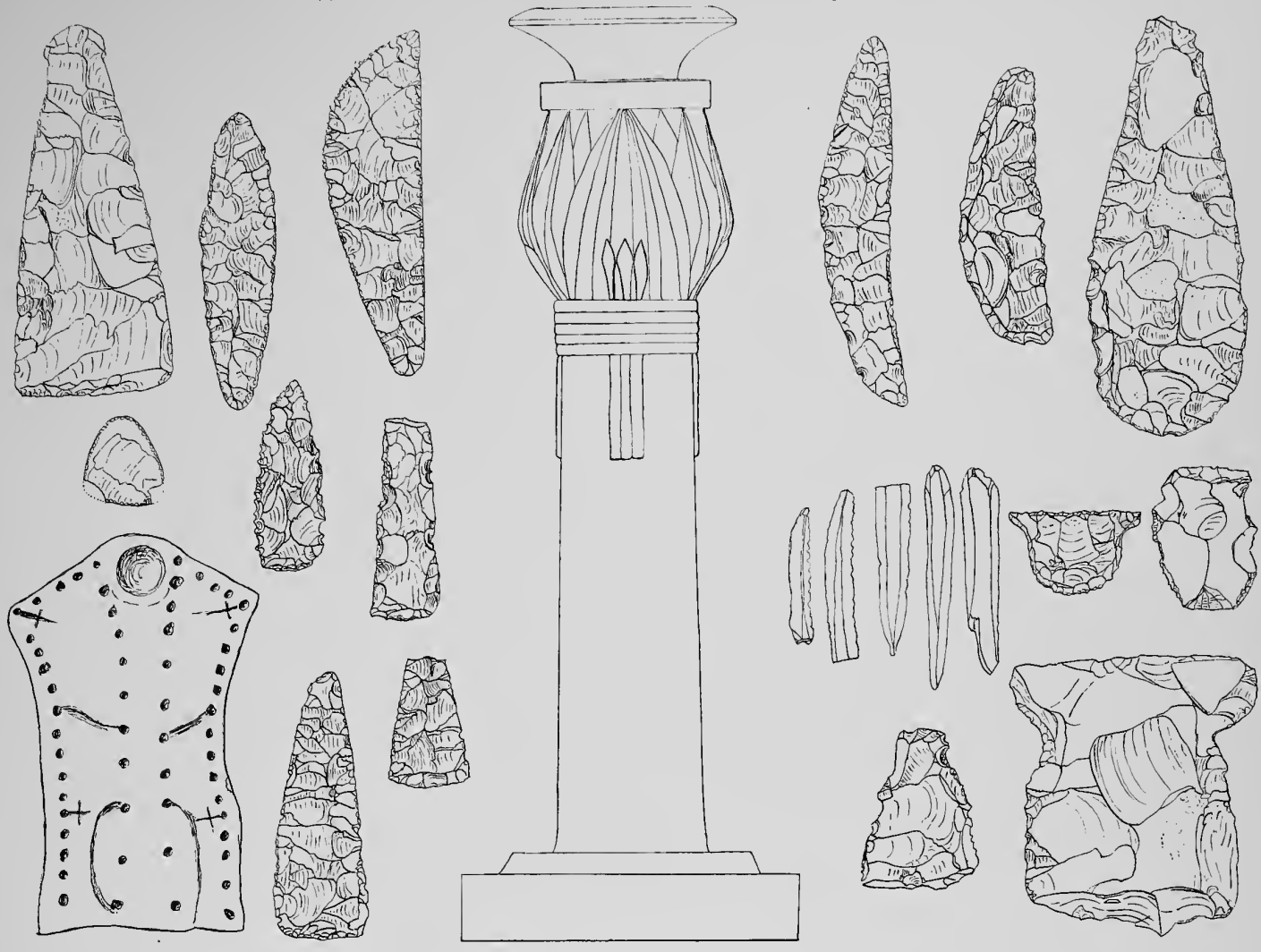
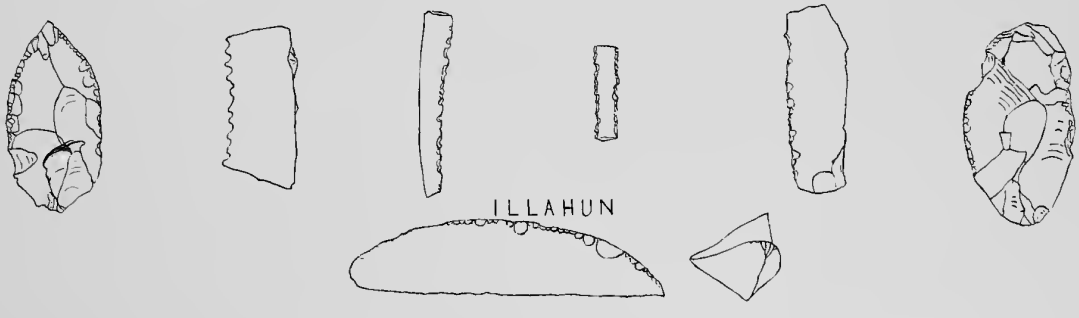
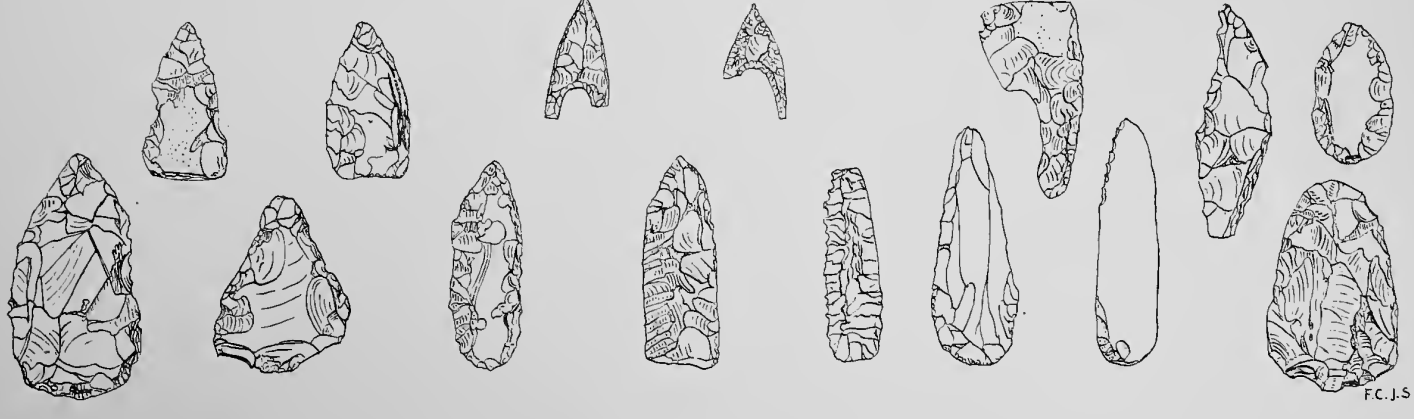


GUROB. FLINTS. XVIII DYN.

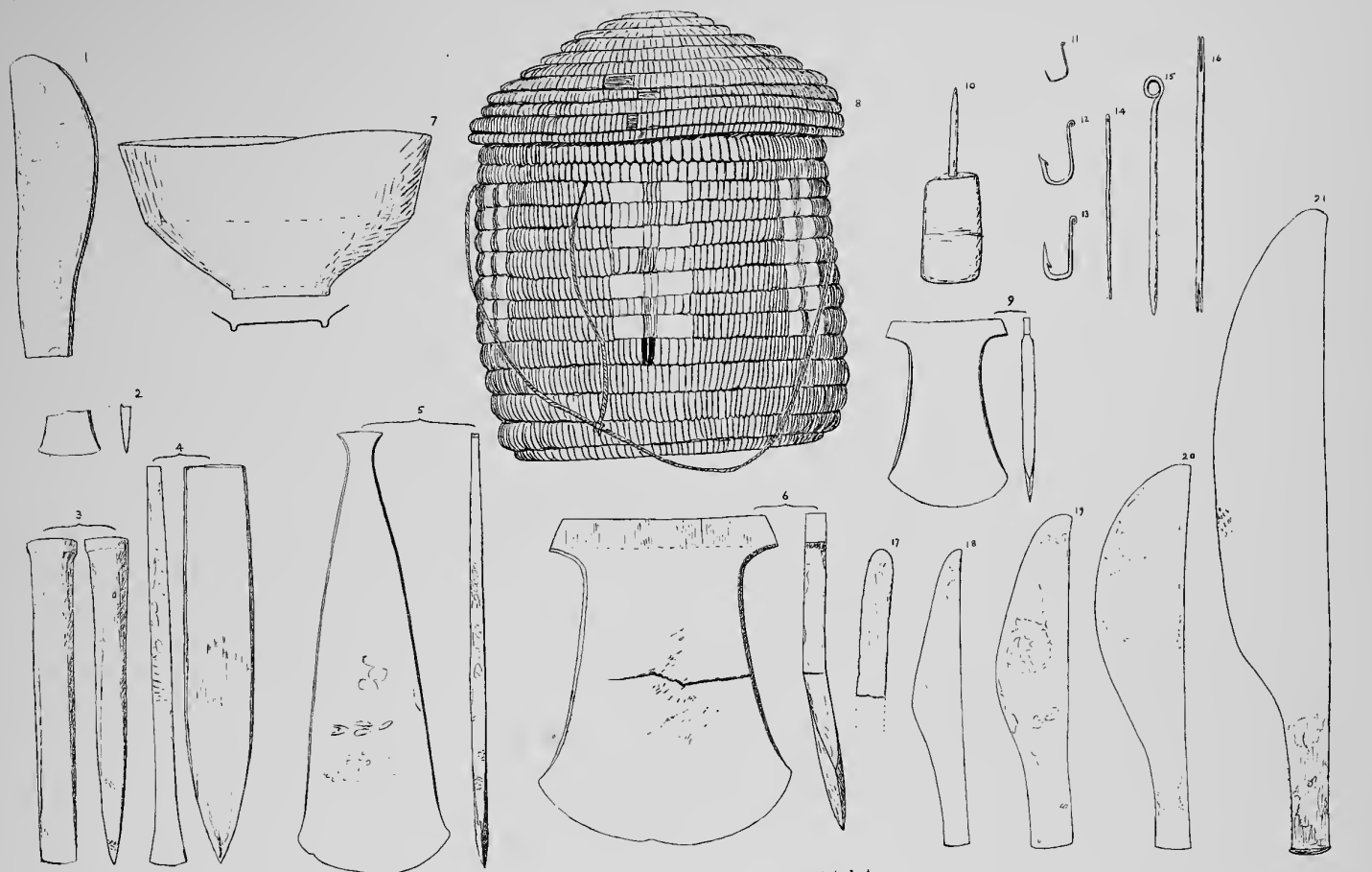


ILLAHUN

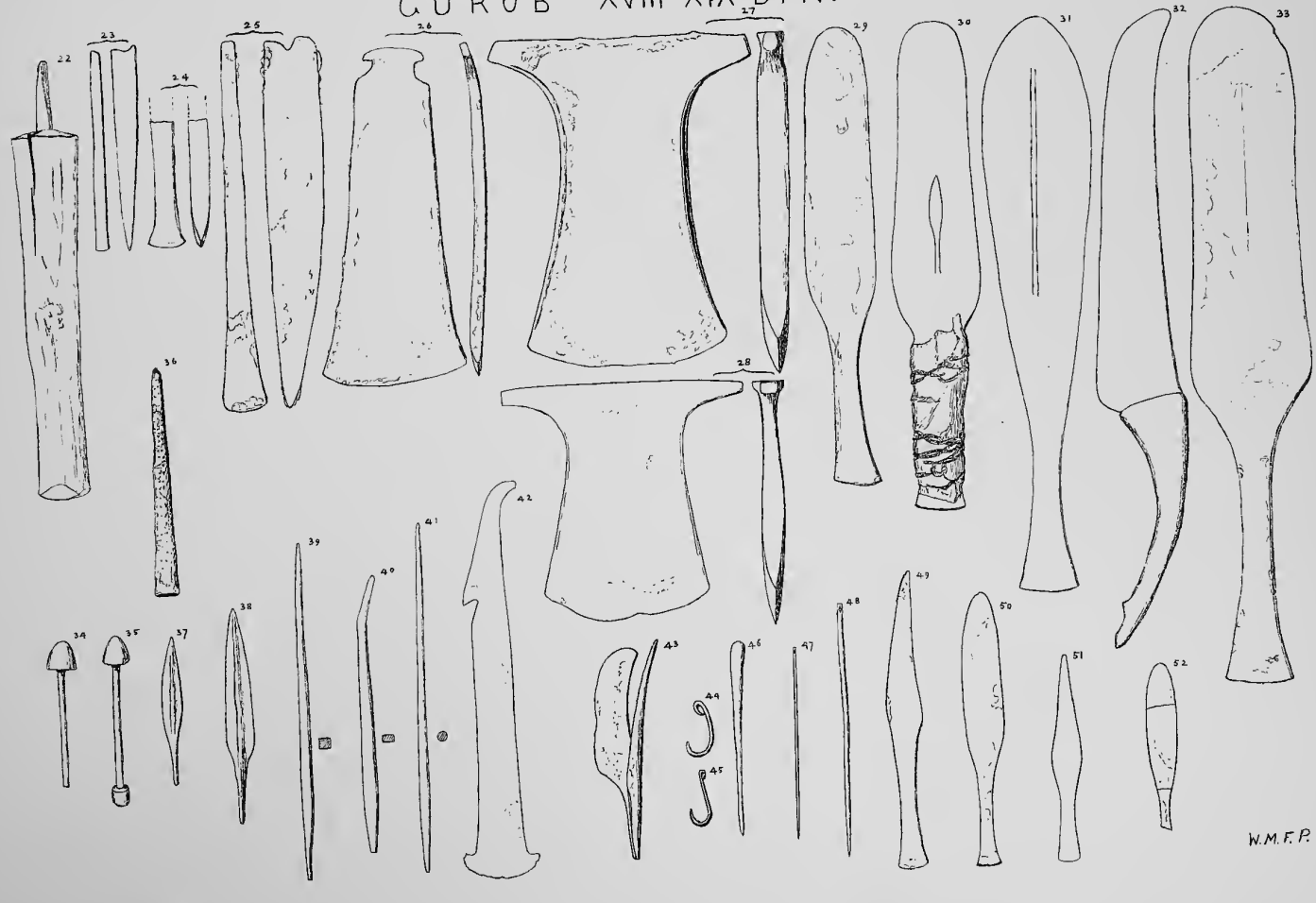
FLINTS FROM DESERT W. OF BIRKET KURUN, AGE UNKNOWN.



F.C.J.S



GUROB XVIII-XIX DYN.



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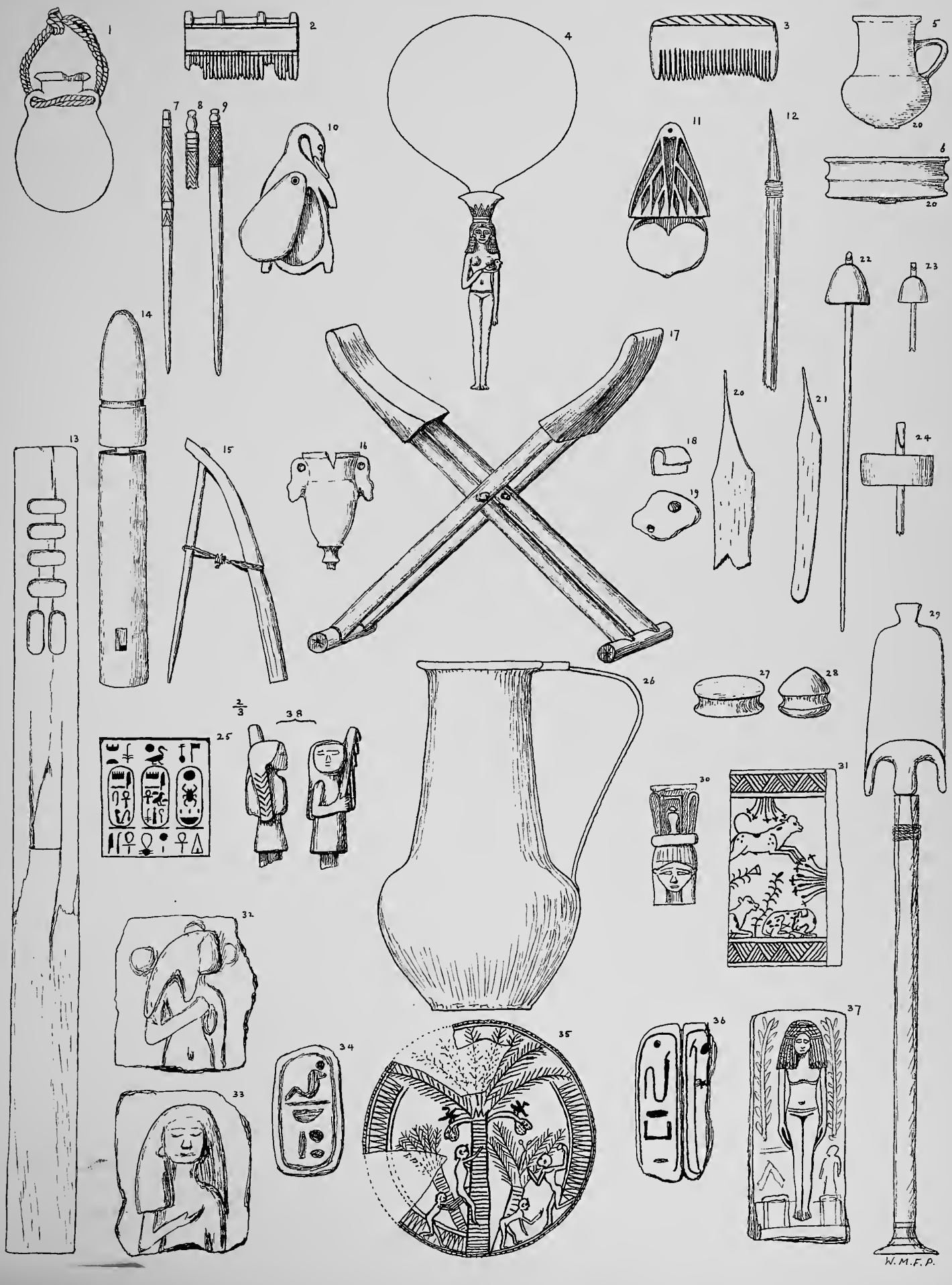
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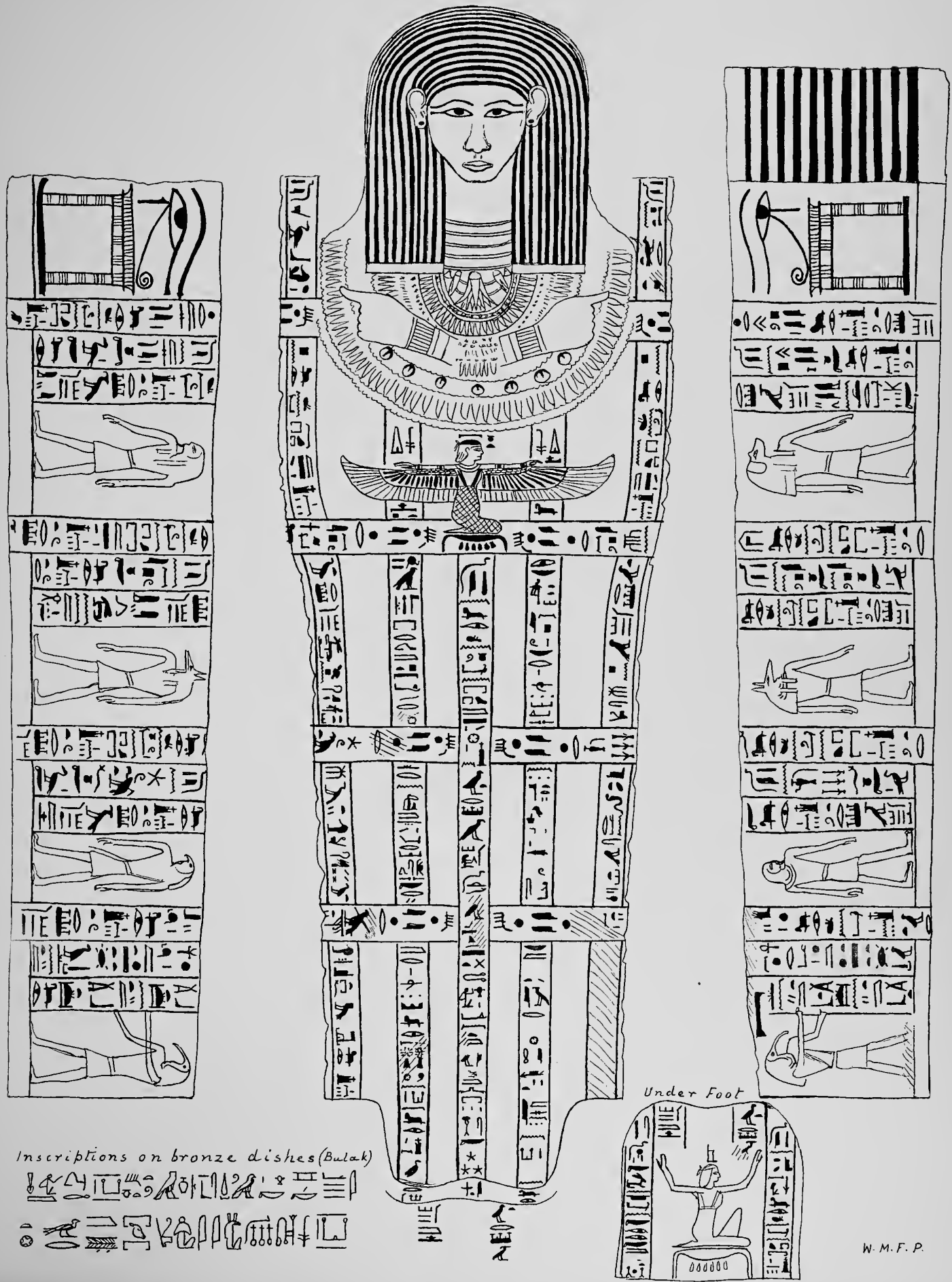
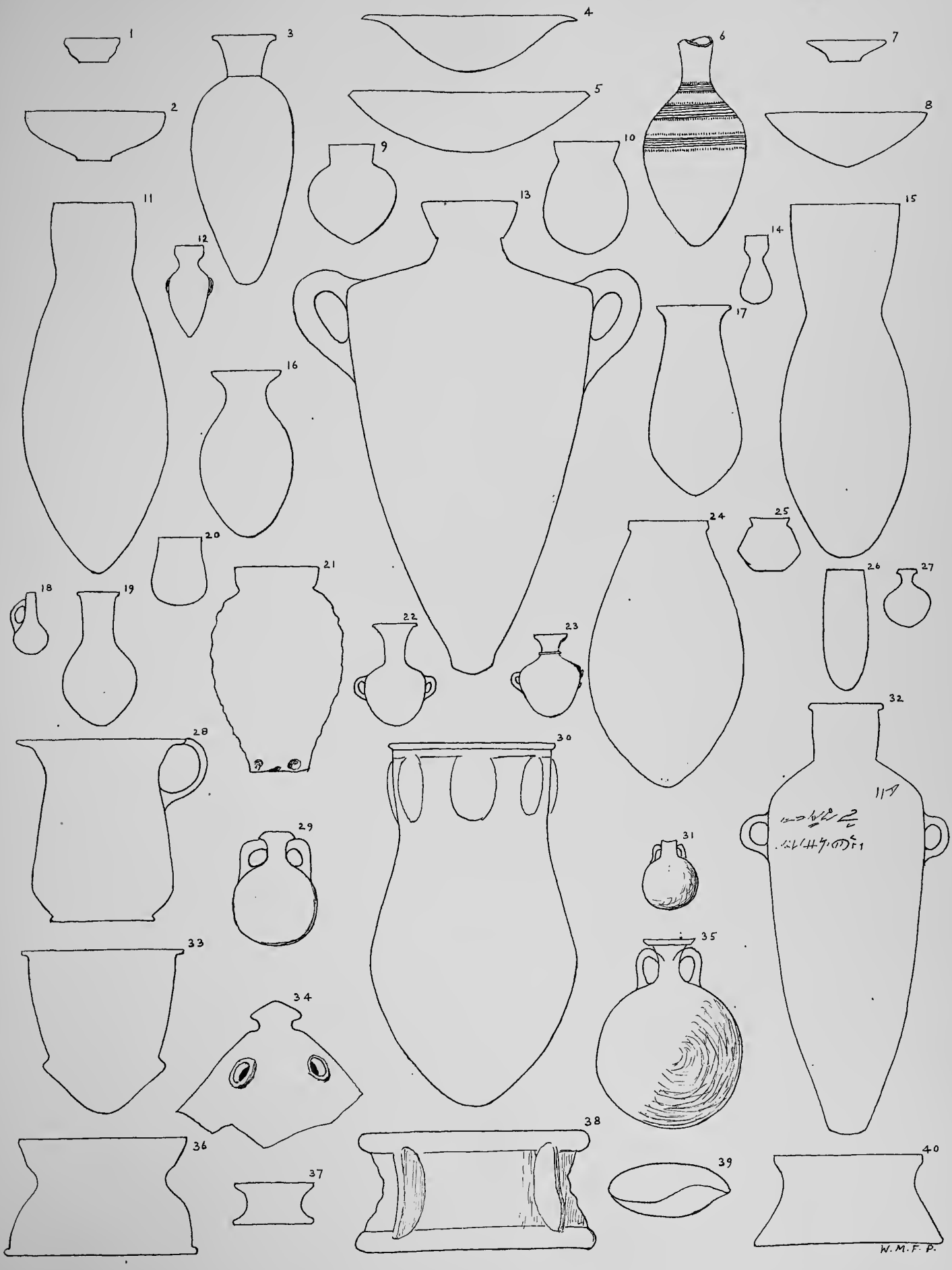
W.M.F.P.



Inscriptions on bronze dishes (Bulak)

W. M. F. P.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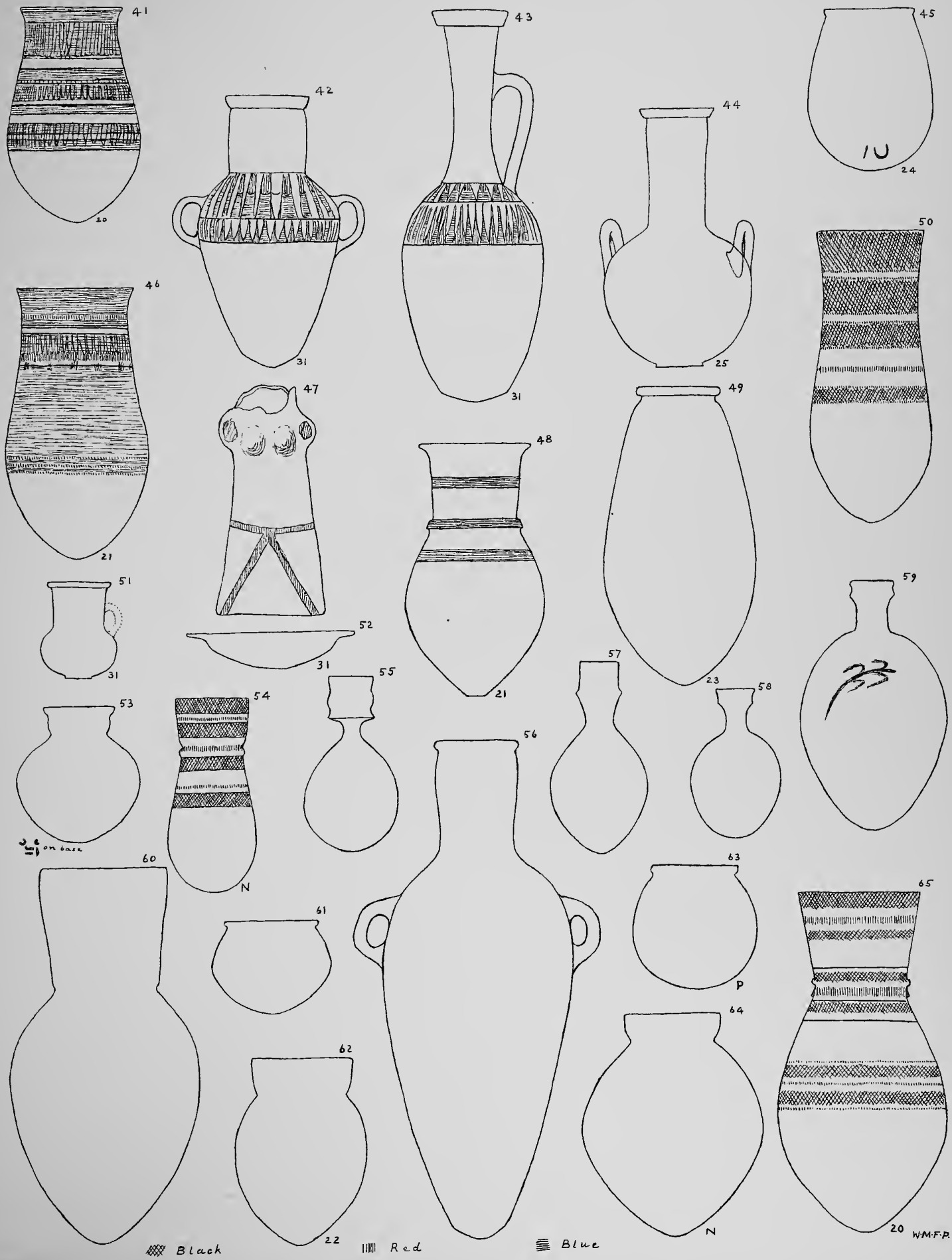
W.M.F.P.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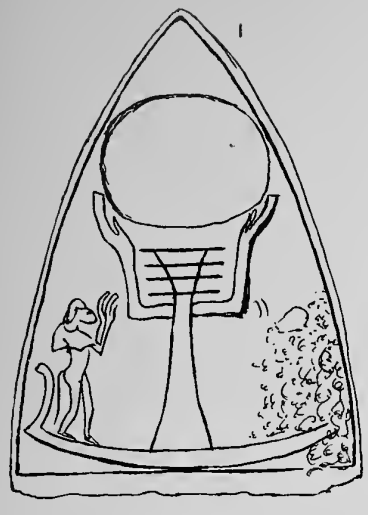
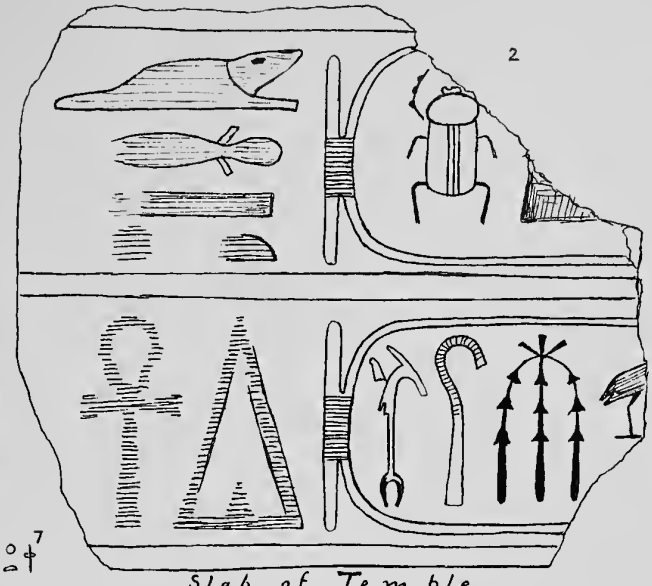
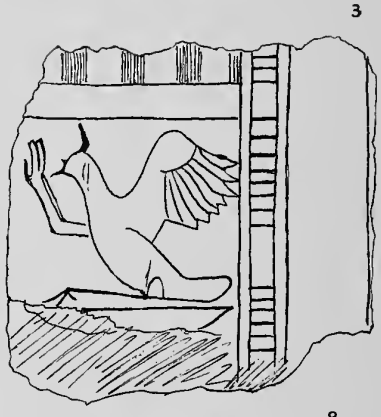
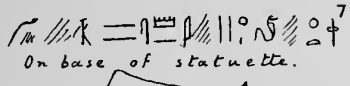
WMFP
Black
Red
Blue



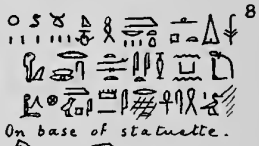


Slab of Temple.



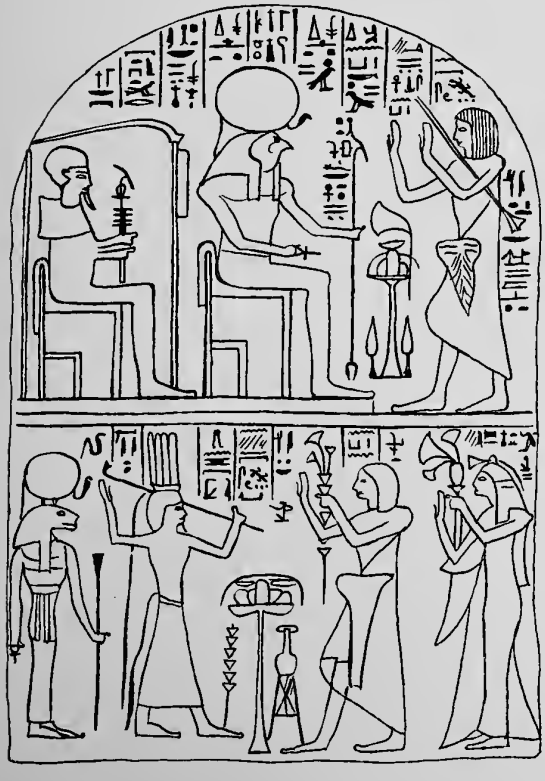


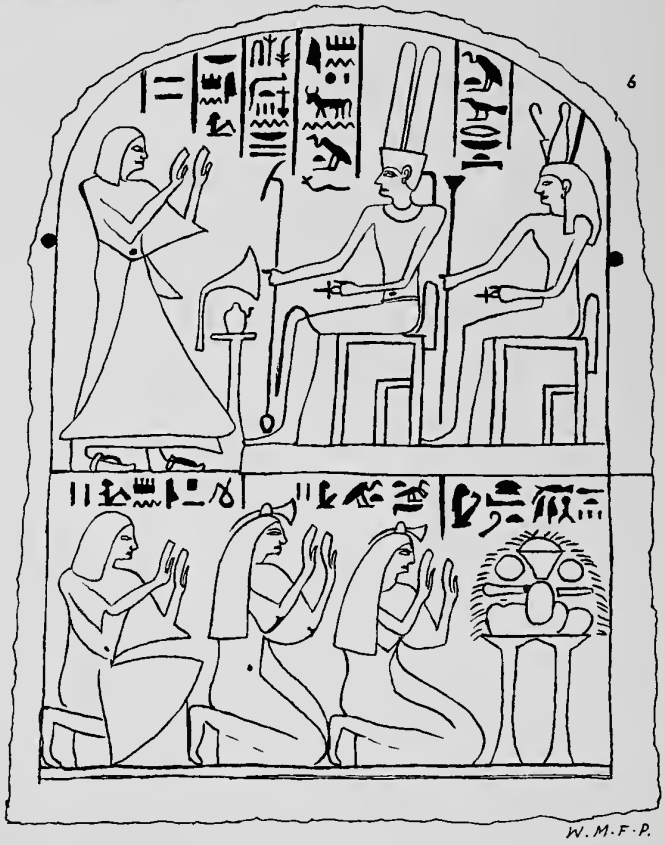
On base of statuette.



On base of statuette.

Pyramidions, XIX Dyn. tomb Gurob.





W.M.F.P.

TAHUTMES III

1 faded bl. pot
2 bl. paste
3 steatite
4 bl. on wt.
5 clay seal

TAHUTMES IV.

AMENHOTEP II

6 ddkll dark gn.
7 bl. gn. on wt.
8 bl. pot. Found with 7 by bronze jar.
9 br. glaze pot

AMENHOTEP III

10 silver ring. found with 15

KHUENATEN.

11 bl.
12 bl. pot impressed
13 bronze ring — see No. 77 Tomb 24
14 gn. on wt. broken eye in necklace.
15 silver ring. found with 10

NEFER-ARI

16 violet ring
17 blue ring
18 blue ring
19 blue pendant
20 bl. ring

RASAAKAKHEPRU

21 blue ring

TUTANKHAMEN

22 blue ring
23 blue ring
24 carnelian.
25 blue ring

ANKH-N-S-AMEN

26 blue ring

AI

27 blue ring

HOREMHEB

28 blue ring
29 bl. ring
30 bl. gn. ring

RAMESSU I

31 blue gn. ring
32 blue ring
33 bl.

SETI I

34 blue ring
35 blue ring

RAMESSU II.

36 dark gn.
37 bl.
38 clay seal.
39 blue on wt
40 wt. schist
41 bl. on schist
42 blue glass ring
43 blue glass scrb
44 blue glass scarab.
45 lt. bl. ring
46 bl. burnt br. ring
47 blue ring
48 blue pot scarab.
49 blue ring
50 bl. on wt
51 gn. on wt.
52 wt schist

MERENPTAH

53 bl. gn. on wt

SETI II.

54 felspar ring — found above the ruins of a room in Gurob.

55 gy. schist
56 dark gn.
57 gy. gn.
58 gy. gn.
59 gy. gn.
60 gy. gn.
61 gy. bl.
62 bl. paste
63 dark gn
64 wt. pot.
65 blue pot
66 blue pot found with Mykenae vase.
67 blue on sch. blue glass vase
68 bl. gn. 68-70 N. end of Gurob
69 dark gn.
70 lt. bl. pot
71 bl. gn.
72
73 bl. gn.
74 bl. gn.
75 black steatite ring.
76 bronze ring Amenemapt.
77 see No 13 bronze ring Tomb 23
78 bronze ring Tomb 20
79 dark bl. pot
80 gy. schist.
81 gn.
82 gn.
83 gn. bl. eye Ra
84 gn. bl. fish
85 gy. bl. reverses.
86 gn.
87 gy. steatite
88 gy. gn.
89 bl. pot.
90 dark bl. glass.
91 bl. pot
92 rich bl. pot.
93 bl. pot
94 bl. pot
95 bl. pot
96 blue ring Found with Mykenae pot
97
98 blue ring
99 gn. bl. ring.
100 dark gn.
101 blue gn.
102 gn. on wt. in gold setting
103 bl. on wt.
103 bl. on wt
104 bl.
105 bl.
106 bl.
107 wt.
109 bl.
110 gy.
111 bl. pot. stamped.
112 dark gn.
113 gy.
114 gn. pot
115 bl. pot
116 lt. br
117 lt. gn. gy. pot.

W. M. F. P.

1 Ushabti

Painting in crystal from pectoral.

2

3

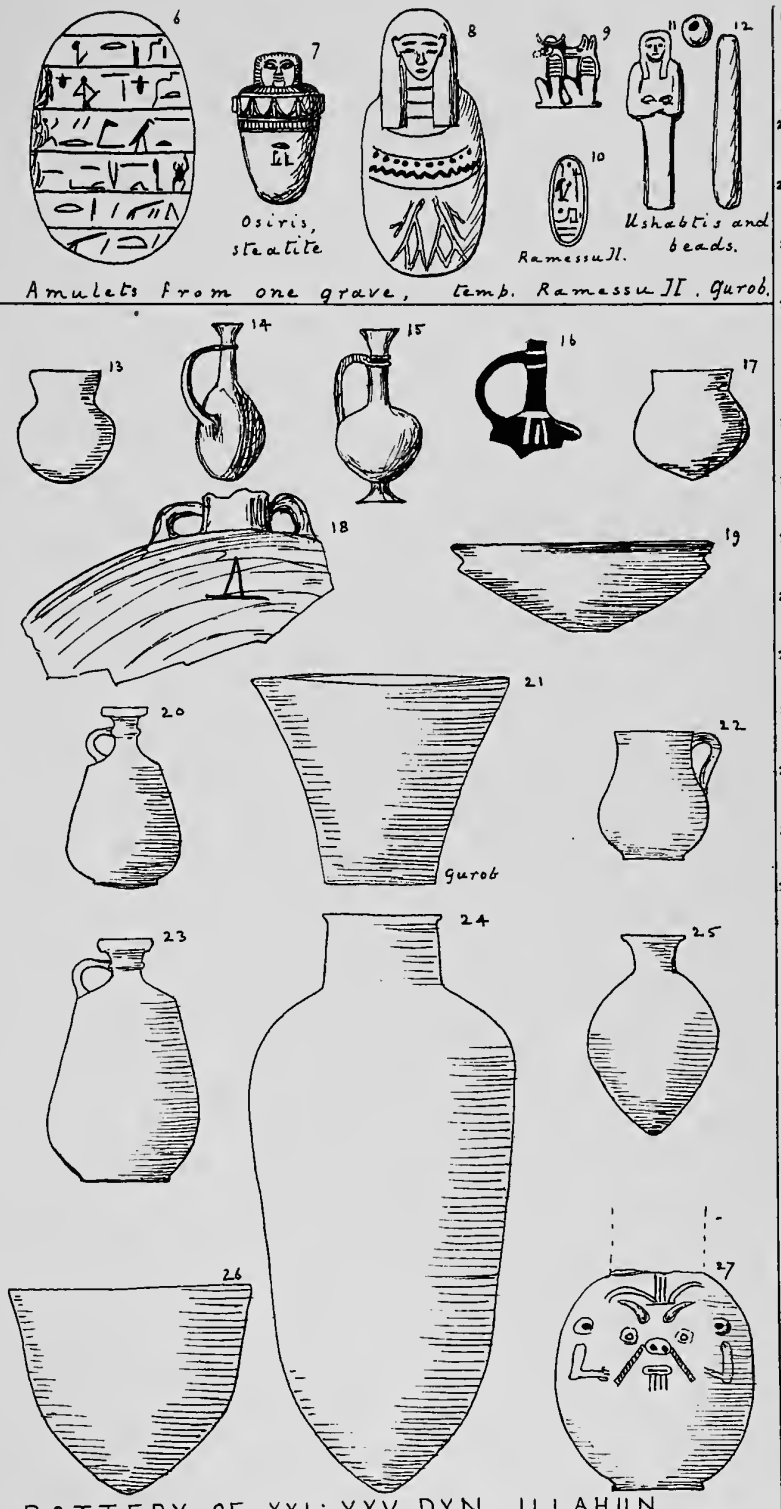
Lazuli back plate

4

20 Tomb of Sadi amia gurob.

5

On scribe's palette



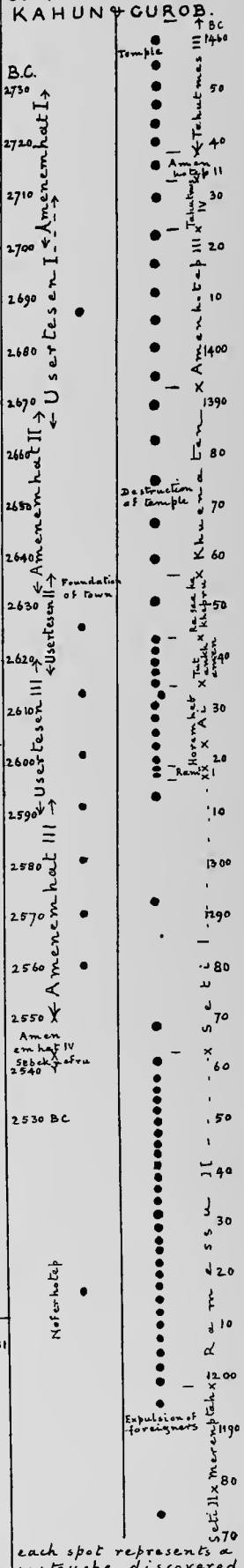
Amulets from one grave, temp. Ramessu II. Gurob.

POTTERY OF XXI-XXV DYN. ILLAHUN.

Inscriptions on Canopic jars of Horuta. Hawara.

28 29 30 31

CHRONOLOGY OF KAHUN & GUROB.



each spot represents a cartouche discovered in these towns.

W.M.F.P.

Pink faces. XX–XXII | Yellow face | Cartonnage coverings. | Coffin lids | Sarcophagus lid | with | Sarcophagus lid | Engraved lids H'awara | 3 coffins, one in other. | Ptolemaic

Gilt band

Corner post

On feet of very fine stuccoed coffin, too rotten to move.

Two others as the above down to *, lower parts

Demotic endorsements

1st on coffin A
2nd on pectoral B

W.M.F.P.

down top

see below

see below

on top edge.

Head.

see below

Side.

on top edge.

Foot

from above.

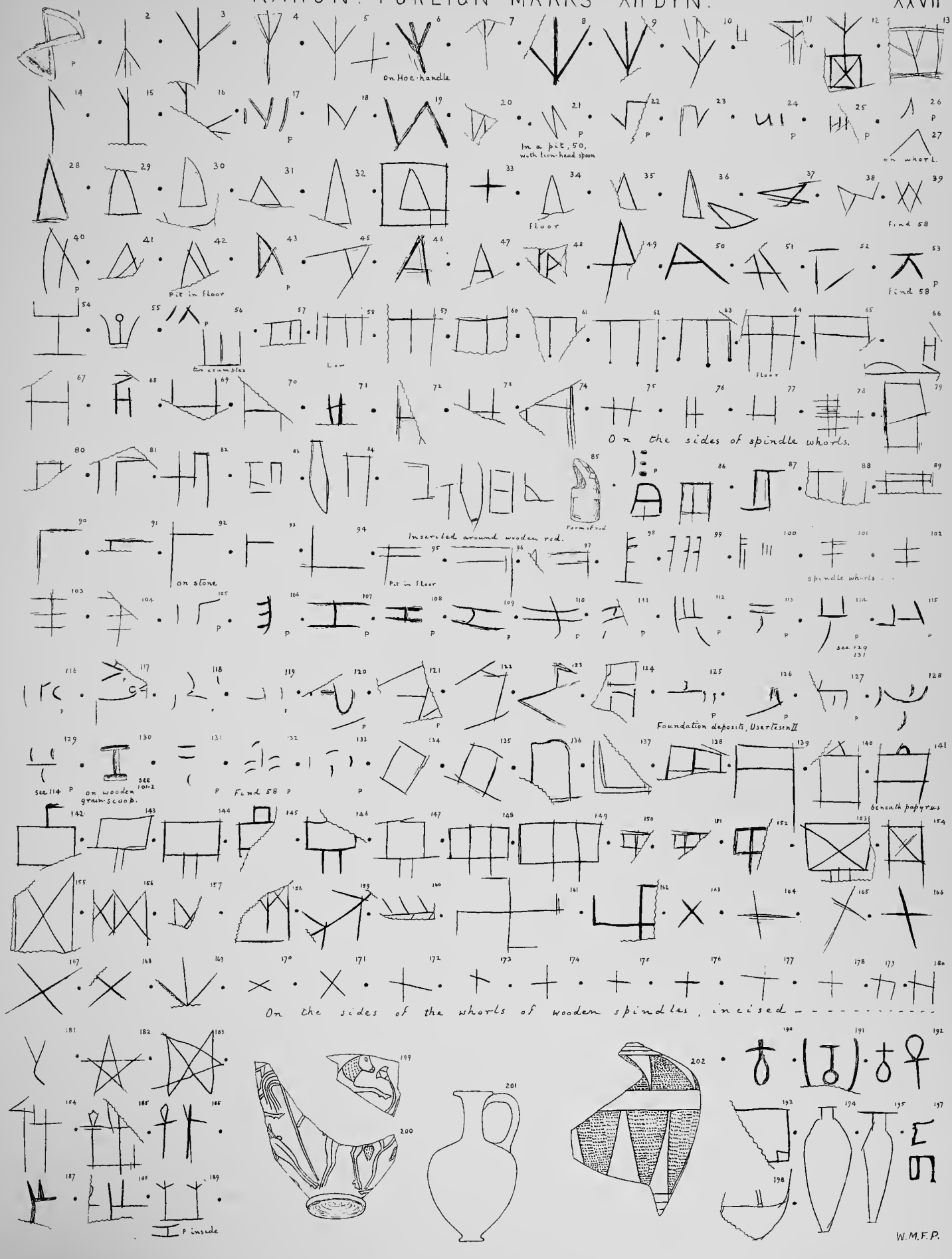
see below

Side.

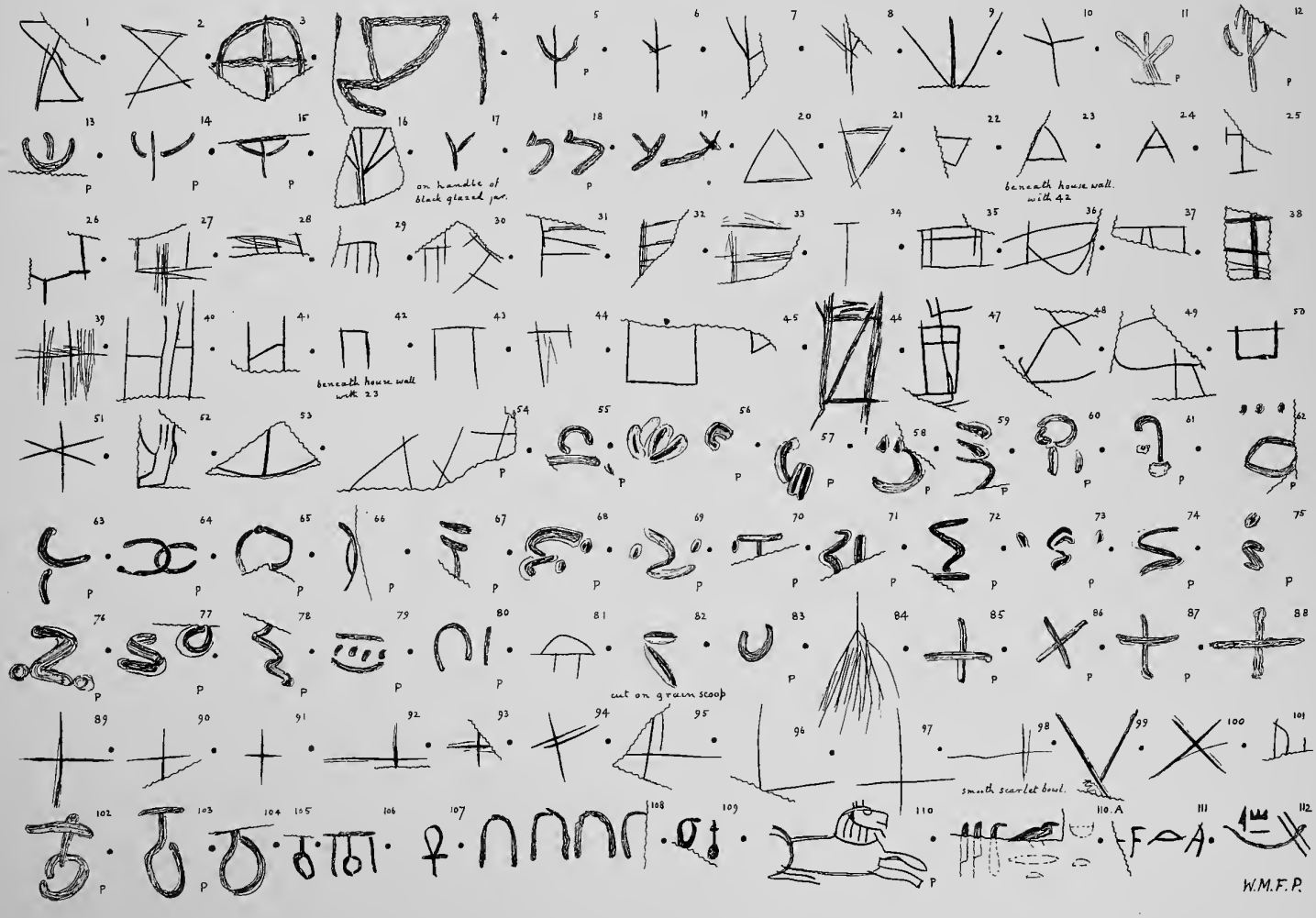
1:3

KAHUN. FOREIGN MARKS XII DYN.

XXVII



F.C.J.S.


on handle of black glazed jar.
beneath house wall with 42
beneath house wall with 23
cut on gruem scoop
smooth scarlet bowl.

W.M.F.P.