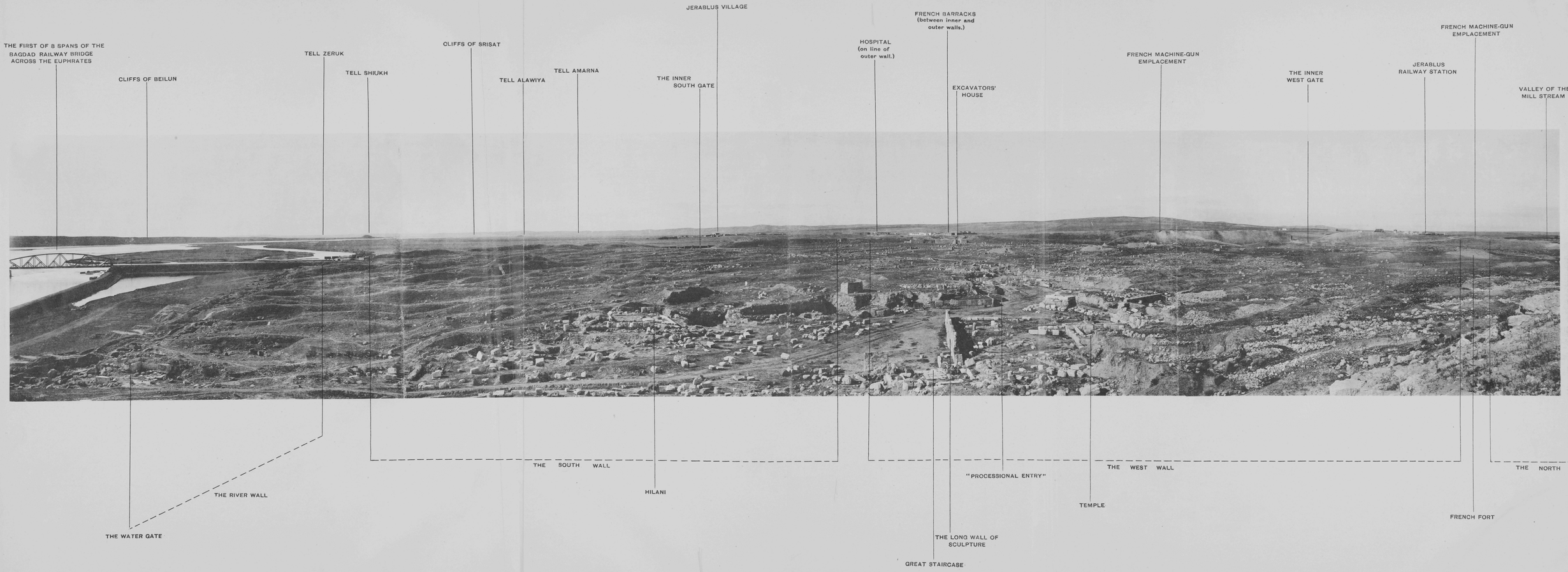

PANORAMA OF CARCHEMISH FROM THE CITADEL MOUND

CARCHEMISH

REPORT ON THE EXCAVATIONS AT JERABLUS ON BEHALF OF THE BRITISH MUSEUM

CONDUCTED BY

C. LEONARD WOOLLEY, M.A.

WITH

T. E. LAWRENCE, B.A., AND P. L. O. GUY

PART II

THE TOWN DEFENCES

BY

C. L. WOOLLEY

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PREFACE

THE British Museum excavations on the site of Carchemish commenced in March, 1911, under the direction of Mr. D. G. Hogarth, who had some years previously examined and reported on the site for the Trustees. He had as his assistants Mr. R. Campbell Thompson and Mr. T. E. Lawrence, by whom the work was continued after his return to England. The five following campaigns, in the spring and autumn of 1912 and 1913, and the spring of 1914, were conducted by Mr. C. L. Woolley and Mr. Lawrence.

Then came the interruption of the war, when the knowledge of the East possessed by all these gentlemen was placed at the service of the Intelligence Branches of the British forces operating in Egypt, Arabia, Palestine, and Mesopotamia, so that they became known in wider fields than those of archaeology as Lieut.-Commander D. G. Hogarth, C.M.G., Lieut.-Colonel T. E. Lawrence, C.B., D.S.O., Major C. L. Woolley, and Captain R. C. Thompson. Meanwhile the site at Carchemish and the sculptures that had been uncovered in the preceding seasons were protected by the native staff who had worked there, and suffered only from a little minor looting by Turkish officers. At the conclusion of the armistice, Mr. Woolley (who had had the misfortune to be a prisoner during the latter part of the war) was again employed in the East, and at once took the opportunity of preparing for the resumption of work. Jerablus was within the area that was placed under French administration, and it was with the permission and assistance of the French authorities (notably General Gouraud) that excavations were carried on in the spring of 1920. Mr. Woolley was again in charge of the work, but Mr. Lawrence's services were required elsewhere, and his place was taken by Capt. P. L. O. Guy.

Much still remains to be done, but the autumn of 1920 found the Kemalist

Turks in occupation of the area, and by the agreement drafted between them and the French the site of Carchemish lies just on the Turkish side of the boundary. Consequently, until the changes and chances of war and politics have brought about a definite settlement in this region, archaeological work remains in abeyance.

The work that has been done has been financed in part by the Trustees of the British Museum from funds at their disposal, but mainly through the munificent liberality of a friend of the Museum and of archaeology, who prefers to remain anonymous, but to whom the grateful thanks of scholars and historians are due.

Part I of the Report of the results of the Carchemish excavations was published in 1914. The text was purely introductory in character, describing the site and its previous history; but the plates made public the most important of the sculptures and inscriptions discovered up to that date, so that no time might be lost in enabling scholars to study them. Use has been made of them in the attempts at decipherment of the Hittite hieroglyphs which have since been made by Mr. Campbell Thompson and Dr. A. Cowley and also in M. Edmond Pottier's articles on 'Hittite Art' in *Syria*.

Part II, which is now offered to the world, contains Mr. Woolley's detailed study of the Hittite fortifications, with his conclusions as to Hittite methods of building; but once again the illustrations publish additional material, which does not appear in the text. A few house sites also are described, and Mr. Campbell Thompson has contributed an account, with transliteration and translation, of a cuneiform tablet found in one of them. Much, including notably the description of the sculptures and of the pottery (so important for the establishment of Hittite chronology), still remains to be published; but it is hoped that the publication may be made more complete and instructive by further excavations as soon as circumstances permit.

FREDERIC G. KENYON.

British Museum,
August 22, 1921.

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SERIES A.—INSCRIPTIONS

A. 12, *a, b, ab**. Basalt.

Large block, pedestal for a relief of which part of a human foot only remains, bearing on two sides very finely cut inscription in relief. Found (with many fragments) in front of the great Lion slab at the foot of the Staircase. Front originally bore at least six lines of script, of which only four remain: the side had five lines.

Height of register, 0·17 m.

Inscribed area measurements: front face, 0·60 × 0·80 m.; side face, 0·77 × 0·80 m. Frs. 2 and 3 join up with 1: 9 and 11 are from the corner of the stone, showing two faces: 4 is from the top register: position of all other frs. doubtful.

A. 13, *a, b, c*. Limestone, hard shelly.

The base of the great seated figure from the South Gate. Three sides of the square were inscribed in linear characters practically in *relief en creux* showing elaborate internal detail. Text restored from some twenty fragments; one side (*c*, frs. 1, 2, and 3) still very imperfect. A further line of inscription was carved in the drapery: of this only a few fragments remain, of which the largest, *c* 4 and 5, are figured.

Sides of base, 0·75 × 0·25 m.

A. 13, *d, d**. Basalt.

Slab with long inscription and introductory figure enlarged to full height of stone.

Size, 1·05 × *c*. 0·70 m.

Found low down near the foundations of the west wall of the Processional Entry, to which probably it belongs.

A. 14 *a**. Basalt.

Fragments of a great lion, inscribed on left flanks and shoulder with finely cut inscription in relief. Eleven fragments of script remain, most of which fit together. The remaining four (unplaced) frs. cannot come nearer to the main part of the inscription than they are put in the illustration.

Cf. **B. 30**, *c*.

Inscribed area, *c*. 1·10 × 0·86 m.

Found below the Water-Gate.

A. 14, *b*, *b**. Basalt.

Fragment of colossal lion, bearing on the flank inscription in relief. The lion is earlier in style than that on Pl. **A. 14**, *a**.

Inscribed area, *c*. 0·95 × 0·65 m.

Found on the river bank below the Water Gate.

A. 15, *a*, *a**. Basalt.

Stela: front flat, back curved to make almost a half-drum. A large piece has been cut out from one side, and the top is missing. Lower part plain: upper part was covered with inscription in relief all round, front and back; of this remain six lines and part of seventh: much weathered and rubbed, and characters hardly legible.

Circumference, 1·42 m.; inscribed surface, ht., 0·46 m.; total ht., 0·77 m.

From SINSERI I.

A. 15, *b*, *b**, *b***. Basalt.

Half of a circular drum having a rectangular depression on the top: probably a statue-base. Inscribed with four lines of text round the sides and one round the top edge.

Ht., 0·43; diam., 0·80 m.

Found high up in Roman soil south of the great block of concrete foundation that lay west of Hilani area, between that and the Herald's Wall.

A. 15, *c**. Basalt.

Lower portion of large (life-size) relief of a human figure in profile l. On the ground in front of relief remains of a linear inscription: parts of three lines remain, the lowest being the concluding line.

Inscribed area, 0·40 × 0·15 m.

Found in the Yunus graveyard.

A. 15, *d**. Basalt.

Fragment of large relief showing front part of human face, nose to neck, in high relief: in front of this, the concluding characters of a linear inscription.

Inscribed area, 0·10 × 0·09 m.

A. 15, *e**. Basalt.

Stone stolen during war.

Inscribed area, 0·28 × 0·24 m.

From Lower Palace area.

A. 16, *a**. Basalt.

Nine fragments of a small lion bearing on its side an inscription in relief, four lines of text; small well-formed characters.

Frs. 1 and 2 join; frs. 3–6 join; fr. 7 may not belong to the same inscription.

Height of register varies from 0·055 to 0·075 m.

A. 16, *b*, *b**. Basalt.

Fragment. Top line of inscription: both ends complete, the stone showing squared sides.

Size, 0·26 × 0·16 m.

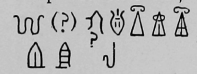
Found in Lower Palace area.

A. 16, *c*, *c*[1], *c**. Basalt.

Stela; a rough obelisk, four-sided in section and inscribed on front and on one or both sides with linear text. Text on front face surmounted by winged disk, *c.* 1. Stone broken into three parts and numerous small fragments: the whole face of the right side has disappeared. Text, nine lines of varying heights, very shallowly and roughly incised, and hard to read when preserved.

Height, 1·65 m.; front width, 0·33 m.; sides, 0·25 m. Inscribed surface, 0·94 m. high.

Lower Palace area, near and on surface.

The front and left side of the stone preserve each a part of the whole vertical length of the inscription: the angle between them mostly filled in by fragments: of the right side of the stone nothing remains and it may not have been inscribed. All frs. which fit together are comprised in *c** 1; for fragments *c** 2–6 no position is suggested. In the top register read  : for the sign in fourth register suggest

A. 16, *d*, *d**. Basalt.

Two fragments (fitting together) of a slab bearing relief inscription. Characters remarkably badly cut, with no internal detail, being little more than shapeless protuberances on the stone. Readings are therefore rather doubtful.

Size, *c.* 0·40 × 0·30 m.

Found re-used in modern cemetery outside West Gate.

A. 16, *e*, *e** 1, 2. Basalt.

Fragments of a large bowl; outer surface covered with a decoration of human fingers: outer rim inscribed with incised script.

Width of inscribed rim, 0·11 m.

Lower Palace area, and surface.

A. 16, *f*, *f**. White limestone.

Fragment of Altar inscribed with linear text, one line of very small characters. Both ends of the inscription are cut away and the stone surface is deeply pitted, making text almost illegible. Characters shaded in drawing are doubtful.

Inscribed area now 0·49 × 0·092 m.; original length (both ends being lost), probably 0·70 m.

Brought in from YARIMJE (=YUNUS).

A. 17, *a* 1, 2, 3, *a** 1, 2, 3. Basalt.

Upper part of boundary-stone. On face, figure of king, right, surmounted by royal emblem of winged disk; figure broken away at knees. Linear inscription on both sides of the stone and in front, on the ground on either side of figure. King shows Assyrian influence in style.

Size, 0·60 × 0·35 m.; thickness, 0·20 m.

Brought in from SHAMAK.

Inscription.—A groove has been cut down the left face of the block (probably to break it), obliterating the centre of the text. The characters are rather careless in style: the surface of the stone has suffered a good deal, and as the text was carried to the very edges of the block, and these have been worn away, a number of signs are imperfect or doubtful.

*a** 1: near bottom very indistinct, but probably correct reading: next sign also much rubbed, probably : lower part of stone pitted and difficult to read.

*a** 2: Two god names clear: third name apparently .

*a** 3: First sign apparently hand. In fifth line, the right-hand character very confused, may be , though the tang is unusual with this sign. and the sign next to it give what can be made out on the face of the stone, but are not certain readings.

A. 17, *b*, *b**. Basalt.

'Boundary-stela.' On face, two figures (fragments of), rt.: smaller figure holds the hand of the larger. Incised inscription, three lines, on one side and back. Top rt. corner and all lower part of stone with splinter off l. side (smaller fig.) missing: of the inscription, top l. corner and bottom rt. corner missing.

Size, 0·50 × 0·30 m.

Found in foundation of Roman wall crossing Lower Palace area.

A. 17, *c* 1, 2, *c** 1, 2. Limestone.

Boundary-stela: on front, figure of king rt.; oval back: incised inscription on part of face and all round back, much of it worn away, the stone having been used as a door-sill.

Size, 0·70 × 0·35 m.

Found in a house in Upper Jerablus.

A. 17, *d*, *d**. Limestone, hard shelly.

'Boundary-stone'? very roughly inscribed with five lines of linear script. Unshaped river boulder.

Size, 0·90 × 0·40.

Lower Palace area.

Surface very bad and deeply pitted, making inscription illegible. Much visible on photo is quite misleading: hand copy preferable.

A. 18, *a*, *a**. Basalt.

'Boundary-stone' from Lower Palace area, very roughly cut: several letters illegible.

Size, 0·57 × 0·45 m.

A. 18, *b*, *b**. Limestone, soft chalky.

Fragment showing a decorative border of rosettes and part of a linear inscription in remarkably small characters. Probably parts of a sepulchral stela

Size, *c.* 0·08 × 0·04 m.

Found in Yunus graveyard.

A. 18, *c**. Basalt.

Fragment of a circular (or semicircular) drum very roughly inscribed with linear script: of this there remain parts of two lines, of which the second shows the end of the text.

Ht. of register, *c.* 0·10 m.

A. 18, *d**. Basalt.

Fragments of a lion carved in low relief and having two lines of linear script along the back. Fragment 1 shows the root of the tail and the start of the building-block supported by the lion: ends of two lines preserved.

Size of fragment 1 over all, 0·43 × 0·40 m.

Register, 0·06 m. high; length of inscription preserved, 0·22 m.

A. 18, *e*, *e**. Basalt.

Fragment of inscription in linear script, bold and well-formed characters. Parts of three lines remain, including last line.

Size, 0·58 × 0·41 m.

Brought in from CHARKAROGHLU, where it was found re-used in the modern cemetery.

In lowest register, perhaps should read , &c. (with tang).

A. 18, *f**. Limestone.

Part of altar with beginning of linear inscription.

Inscribed area, 0·18 × 0·14 m.

Brought in from MERJ KHAMIS.

A. 18, *g**. Basalt.
Part of a circular (or semicircular) drum inscribed with linear script, small characters carefully cut. A section of the last line of the text and of the lower part of the last line but one remain.
Diam. of drum, *c.* 0·90. Size, 0·20 × 0·12 m.; ht. of register, 0·10.

A. 18, *h*, *h**. Basalt.
Altar with one line of incised inscription. Crockets cut away by Roman builders.
Size, 1·25 × 0·64 m. Inscribed surface, 0·64 × 0·09 m.
Found built into a Roman house outside the walls near the Station.

A. 18, *i**. Basalt.
One leg of a shallow bowl, inscribed on outer face.
Inscribed surface, 0·12 × 0·10 m.

A. 18, *j*, *j**. Basalt.
Lower part of a cone standing on bevelled base, inscribed on face.
Ht., 0·47 m.; diam., 0·22 m. (at top).
Found high up in top Roman soil east of the Hilani area, not far from the Water-Gate.
N.B.—Inscription reads horizontally, but when the stone stands on its base is vertical. Inscription apparently complete except for part of three signs .

SERIES B.—SCULPTURE

B. 17 *a*. View from south-west showing the Processional Entry (slabs **B. 19,** *a* to **B. 23,** *b*), the Musicians' slab (**B. 17,** *b*), and the Royal Buttress (**B. 8,** *b*).
b. Limestone. 1·50 × 1·12 m.
In the Staircase recess.

B. 18, *a*. Limestone. 1·30 × 0·73 m.
In the Staircase recess.
b. Basalt. 1·30 × 0·90 m.
In the Staircase recess.

B. 19, *a*. Basalt. 0·30 × 0.90 m.
End face of **B. 18,** *b*. Processional Entry, No. 1.
b. Limestone. 1·53 × 1·05 m. Processional Entry, No. 2.
*b**. The same slab treated with a mud wash.

B. 20, *a*. Basalt. 1·30 × 1·05 m. Processional Entry, No. 3.
b. Limestone. 1·38 × 1·00 m. Processional Entry, No. 4.

B. 21, *a*. Slab **B. 20,** *b* treated with a mud wash.
b. Basalt. 1·28 × 1·00 m. Processional Entry, No. 5.

B. 22, *a*. Limestone. 1·32 × 1·00 m. Processional Entry, No. 6.
b. Basalt. 1·18 × 1·00 m. Processional Entry, No. 7.

B. 23, *a*. Limestone. 1·45 × 1·00 m. Processional Entry, No. 8.
b. Basalt. 1·28 × 1·00 m. Processional Entry, No. 9.

B. 24, *a*. Limestone. 1·30 × 1·00 m. Processional Entry, No. 10.
*a**. The same slab treated with a mud wash.

B. 25. Basalt.
West of the doorway at the end of the Processional Entry.

B. 26, *a.* Basalt. Ht., 0·82 m.
The base of **B. 25.**

b. Basalt.
In the back wall of the Processional Entry, No. 11.

c. Limestone.
In the back wall of the Processional Entry, No. 12.

B. 27, *a.* Limestone.
Head of great statue from the South Gate of the Inner Town.

b. Limestone.
The lion of the South Gate of the Inner Town.

B. 28, *a, b.* Limestone. 0·80 m. and 1·50 × 1·10 m.
End and side faces of the Water-Gate slab No. 1. See p. 110.

B. 29, *a.* Limestone. 2·15 × 1·10 m.
Water-Gate slab No. 2. See p. 111.

b. Limestone. 1·67 × 1·36 m.
Water-Gate slab No. 3. See p. 111.

B. 30, *a.* Limestone. 2·30 × 1·35 m.
Water-Gate slab No. 5. See p. 112.

b. Limestone. 2·30 × 1·35 m.
Water-Gate slab No. 6. See p. 113.

B. 31, *a.* Limestone. 1.36 × 0.90 m.
Water-Gate slab No. 4. See p. 112.

b. Basalt. 1.60 × ? m.
Water-Gate (?) slab No. 7. See p. 114.

c. Basalt.
Reconstruction from fragments of inscribed lion; cf. Pl. **A. 14,** *a.*
Water-Gate (?) slab No. 10. See p. 116.

B. 32, *a, b.* Basalt.
From north-west end of Citadel mound. See p. 116.

CHAPTER III

THE TOWN DEFENCES. GENERAL INTRODUCTION

§ 1. The Site.

North-eastwards from Aleppo there stretches a great limestone plateau. To the north-west and west it is bounded by the hills of Aintab, the mountains of Marash, and the snow-clad barrier of the Taurus. Broken only by the Euphrates valley, it extends eastwards almost to Nisibin; to the south-east it merges into the vast Arabian plain. A small-scale map shows this area as a level plateau, and such it essentially is, but seen in more detail, or to one who walks over it, it is a rough undulating country; flat valleys give place to ridge after succeeding ridge, from which one catches, only to lose again, glimpses of a far-off horizon; gentle hollows break down into small but steep-sided wadies; it is a land of rounded hills and rolling downs, with no very distinct contours, no outstanding features, but with a variety of subformations so great as to produce an almost monotonous uniformity.

It is a limestone plateau; but here again a description which is essentially true is not always exact. Limestone of every sort, ranging from what is almost marble through coarse highly fossiliferous stone to pure soft chalk, is the general formation which underlies the red loam of the plains and gives to the hills their characteristically rounded outlines. But over this there once lay a crust of dolerite or basalt, which, surviving in the west mostly as caps to some of the higher hills and as boulders strewn about the fields, is thicker and better preserved to the east; there are hills of solid basalt near Arab Punar, and on the so-called road between Severek and Viranshehir the black rocks lie so close that a horse can scarcely find foothold between them. In the Euphrates valley we find another and a more recent deposit, a water-laid bed of flint and gravel conglomerate, or pudding-stone, which on the higher beaches has crumbled away under exposure and has left the ground covered with a grey litter of flint, but lower down remains as a stratum of varying thickness which here and there crops up to the surface in little shingly knolls, and breaks down in low abrupt cliffs to the river's edge. For the rest there is an outcrop of alabaster farther east, near Ras ul Ain, and obsidian and quartz occur in the form of water-borne pebbles.

The soil of the district varies from the thin chalky soil of the stone-strewn hillsides to the red loam of the central plateau and to the light but rich alluvial brown earth of the river valley. There are good clays along the tributary streams, and sand upon the islands of the Euphrates.

The feature of the country which most strikes the new-comer is its treelessness. To the north and east the mountain regions still preserve something of their ancient forests; as far down as Nizib there are olive-yards like those of Aintab and Killis, and stunted wild trees dot the hillsides; the northern part of the rich Seruj plain can boast a fair modern growth of trees, enough to make quite a show of heavy greenery when seen from the distance; and that is wellnigh all. A few villages possess orchards, fewer still small clumps of close-set poplars grown for roofing-poles; one

or two islands above Jerablus are covered with wild brushwood and scrub which sometimes may attain sufficient size to be dignified by the name of trees. But the land as a whole is bare and shadeless, and from Jerablus to the gardens of Aleppo, and eastwards again as far as Harran and Ras ul Ain and all to the south, the rolling downs and wide plains stretch on unrelieved by a single tree or by any green thing higher than the wiry liquorice.

This was not always the case. An English traveller of the seventeenth century could lose himself in the interminable forests between Aleppo and Bab, where not a tree grows now. Only a hundred years ago, they say, olive-yards stretched all along the north bank of the mill-stream of Jerablus and as far as Merj Khamis, though there is no trace of such to-day. There is no doubt that a vast amount of deforestation has taken place, and it is probable that in Hittite times the Carchemish country was a well-wooded one.

To some extent the building methods of the Hittites may be taken as evidence in support of this view. Wood was with them a common feature of house construction and decoration: not only were roofs and columns of timber, but whole walls, even external walls, were sometimes covered with panelling, and wood as an ornamental if not a constructural feature might be introduced into the fabric of their buildings. Nowadays those who want wood, other than poplar poles, must get it floated down-stream from the mountain districts of the upper Euphrates, where forests have not yet been eradicated by the Turk; consequently timber is costly and men are as sparing of it as may be. In a Kurd house, with its beehive dome of mud brick, there is scarcely any wood other than that of the door or doors; and an Arab house, outside the towns, boasts but little more. Man is conservative in his economies, and had wood been as far to seek and as dear to buy then as now, the Hittite would hardly have been so lavish in its use.

The total disappearance of forest is only too easy to explain when Turkish lands are in question. The Turk destroys everything, but trees seem to incur his peculiar hatred, and if he can find no reason to warrant the toil of cutting them down he will light fires against their trunks and kill them so: if he does cut them down he will probably leave a metre of the trunk standing, with the result that a good part of the wood is wasted and the tree instead of sprouting again from the root dies outright. Five centuries of such practice will account for a disappearance of forest even as thorough as that demanded by the theory that Jerablus was once a well-wooded region.[1]

Yet another change must be borne in mind when from the ruins at Jerablus one tries to reconstruct the Carchemish which once was.

Below Birijik the Euphrates divided its waters among a long chain of islands, some of which are permanent, while others disappear in flood-time and rise again with ever-shifting contours when the river level falls in the summer months. The main stream, some 300 metres wide, sweeps along the foot of the citadel mound; the farther channels are shallow, almost dry when the river is at its lowest, but in the spring they fill up and unite over the submerged islands in one turbid hurrying race, one from the pudding-stone cliffs of the west shore to the crumbling earth-banks of Zormaghara. South of the new railway bridge the main current crosses to the east and runs under high stone brows to Beilun village and Tell Shiukh, and then back to the west past Lower Jerablus and Amarna to the mouth of the Sajur. In this reach the river

[1] Campbell Thompson makes the cuneiform tablet found in House D refer to oak and sumach woods: v. appendix to ch. VI.

passes through a valley wider than its wont. Level with Jerablus the limestone hills fall back in a great arc, leaving between themselves and the Euphrates a plain some nine kilometres long by five wide; on the opposite bank a similar wide plain opens out between Tell Shiukh and Tell Ahmar; the river bed itself is full of large islands, many of them standing above the reach of even the highest floods, islands which, as the eastern channels are mostly very shallow, might almost be reckoned as part of the Tell Ahmar plain.

But once, and that not longer ago than in Hittite times, one of the main branches of the Euphrates ran far to the east of the river's present course. The flat land between that and the hill-face of the eastern plateau consists of two distinct terraces separated by a steep slope which is the old river bank. What is now the lower plateau was in Hittite times a great island or islands, and the tells which lie along the edge of the upper terrace, now two or three kilometres inland, were then riverine towns.

The whole of North Syria is dotted with tells, artificial mounds which consist of and conceal old settlements. So little has been done in the way of excavating these mounds that it is dangerous to theorize too much about the nature of what lies beneath them; but certain features which are common to all, or which distinguish one from another, may, with such more sure information as digging has afforded, serve to throw light on the conditions of life which brought them into being and shaped their history.

The neolithic folk, the original founders, undoubtedly, of all these tells, built their huts of mud and rubble either on some slight knoll or, where none such lay to hand, on an artificial platform laboriously piled up with basketful after basketful of earth,—piled just high enough to raise them above the damp of the level soil. The huts fell in ruins, and these ruins raised the ground level on which new houses were built, and that at a goodly rate, for mud-brick walls tend to be thick, and their cubic contents are very great in proportion to the area they enclose, and as the bricks can scarcely be used a second time the whole material of the fallen house was let lie where it fell and was merely levelled for the foundations of the new. Year after year went on this accumulation of débris and of house rubbish (there are sites in the Near East where the rubbish-heaps outside the walls are nearly as extensive as and much higher than the ruins themselves), and the original platform reached a height at which it commanded all the surrounding country. Then a wealthier generation, perhaps more warlike, or more timorous, walled the hill-top round, turning their village into a stronghold. The chance of an asylum would attract new-comers, whose houses huddled together on the slopes of the mound and spread over the low ground at its foot, and this in its turn began to heap itself up above the level of the plain around. After a while the outsiders, too, might demand protection for their homes, not content to leave them in war-time to the mercy of the enemy while themselves taking refuge in the fort: they built a wall round the new outer town. In proportion as the whole town was thus made defensible, the original settlement, the tell, tended to become less a place of general residence, more and more the centre of administration and of worship; here the princeling might live in isolated state, here were the barracks of his regular retinue, here the temples which from of old had been the houses of gods or heroes deified. At the same time the defences of the tell were kept in good repair, for whatever might be its use of every day, it was still the inner stronghold, the last resort in case the rest should fall; from a military point of view the outer town and its high citadel within might be compared to the mediaeval castle with its bailey and its keep.

Of course tells differ one from another in form as they differed in their history. There are low mounds scarcely noticeable above the level of the plain, short-lived villages whose ruins, scanty at their best, may have grown even less distinct through the gradual raising of the ground about them—the natural effect of long cultivation and often too of the ploughing of the nearer hillsides, whence little by little the rain carries the loosened surface soil down to the valleys. There are small steep-sided cones which, one thinks, can hardly be other than keeps or watch-towers, not the outgrowth of village settlements but military foundations to secure frontiers or trade-routes.[1] There are rather larger whale-backed mounds, higher and more abrupt at one end and tailing off fanwise at the other, where one can almost see the cluster of domed or flat-roofed single-storied mud huts with, at the outskirts, the effendi's two-storied house of stone dominating them from its higher ground. Again, on a larger scale, we have the steep-sided C-shaped tell with a broad channel running down it at a gentler slope between the horns of the letter, like a volcano's crater with a gap in the rim; it looks as if, on the older mound's flat top, a huge ring wall had been built with a gateway and an approach thereto between flanking towers. In other cases the main tell is more or less pyramidal in form with, on one side, the lower rounded mound of the outer town, its flimsier walls indistinguishable now from the heaped mass of house ruins which they enclose: in a few, the outer walls stand out clearly as a ring of earthworks overtopped only by the great bulk of the acropolis within.

But all tells, large or small, have one feature in common; they all lie upon low, or at any rate upon flat ground. There may be natural hills very close by, but the primitive settler never took advantage of what Nature might seem thus to have offered to him ready-made: the two facts, apparently contradictory, are equally obvious, first, that he did require a raised platform for his building, so much so that he would go to the trouble of heaping one up for himself at the cost of infinite pains, and secondly, that he preferred his platform, whether natural or artificial, to be based on the lowest level which the neighbourhood afforded.

This peculiarity may, perhaps, find its explanation in the theory already put forward that northern Syria, now so bare of trees, was heavily wooded in antiquity. Highlands thick with forest or scrub do not offer eligible building sites for agricultural or for pastoral folk. Such would naturally wish to live as close as might be to their tilth-lands and to their fatter pastures, which lay in the valleys and low plains; the corn-fields had to be protected, so it was as well to be on the spot; the herding of flocks is difficult if they have to be driven home at dusk through woodlands; and heavy timber gives an enemy a chance to get near without being seen. Moreover the roads certainly ran as far as possible along the valleys, avoiding the difficulties and the dangers of forest and hill, and settlements would naturally be founded by preference along the lines of communication and of trade.

The domestic economy of the time would be in favour of homes in the valleys or on the plains. Here, however, the ground might well be swampy in the winter months, and this made it more wise to build upon some kind of eminence. If Nature did not provide such, man must needs make one; and so either he found, if he was lucky, a slight knoll or rock outcrop which gave the desired platform, or he piled up earth.

In the Jerablus district these characteristics are clearly marked. Carchemish stood at the north end of the plain which stretches down the right bank of the river. From the Euphrates

[1] We have as yet no evidence for funeral tumuli in North Syria.

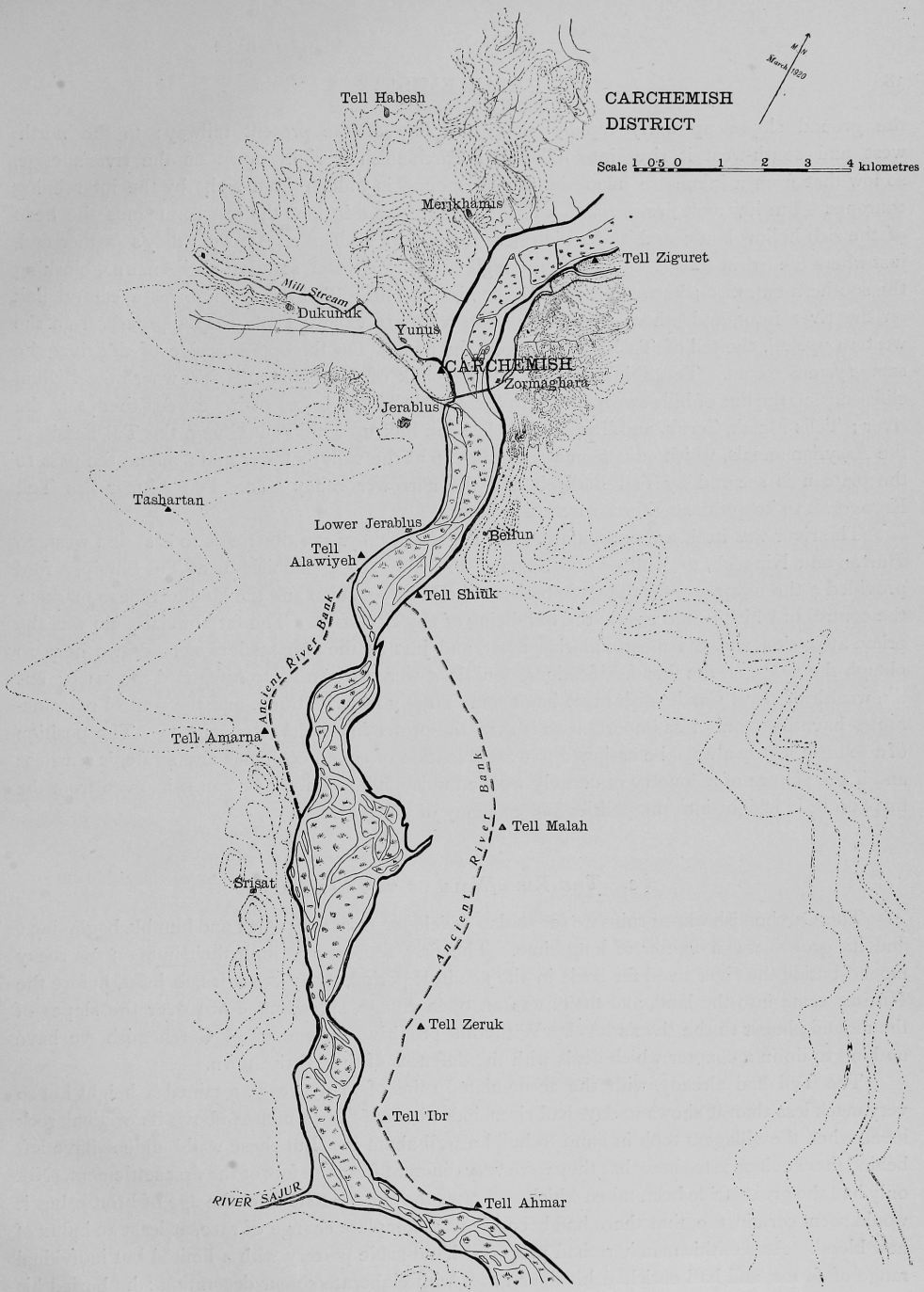


Fig. 5. This sketch-map is compiled, with additions by P. L. O. Guy, from two military field surveys, one of the district north of Jerablus by the 1/3 Sappers and Miners, one of the south by the Euphratswasserabteilung, both kindly left behind by their authors on quitting the district.

the ground slopes up fairly rapidly along the line of the present railway; to the north-west and south-west it rises into hills: but Carchemish is right down on the river's edge, so low that from a kilometre inland its citadel mound is hidden from sight by the intervening contours. But low as it lies in relation to the main plateau, it none the less commands the head of the rich hollow land; and its position here is no mere accident. At the valley's farther end, just where the Srisat hills close in to fall in high cliffs to the water, stands Tel el Amarna, blocking the southern entrance; between it and Carchemish, the little Tell Alawiyeh forms a central link on the river front, and, where the chief of the tributary valleys gives easy approach from the western upland, the tell of Tashartan protects the flank. On the opposite side of the river the same system recurs. Tell Shiukh stands on the bank of the Euphrates just where the Beiluni cliffs end and the line of hills sweeps back to the east, leaving a broad plain between them and the river; Tells Malah, Zeruk, and 'Ibr on the old bank link up with Tell Ahmar, the Tul Barsip of the Assyrian annals, which stands on a rock outcrop at the valley's lower end; inland the pass to the plateau is secured by Tell Badiyeh, and the narrower valley below Tell Ahmar has Tell Karagozak to keep the southern marches.

The river was itself a thoroughfare. Up the side valleys ran the roads to east and west, to Harran and Nineveh, to Khilupi and Šamal. Probably at Carchemish, as at Tul Barsip, a ford provided a through route for the trade between the Mesopotamian and the Mediterranean markets, the control of which would assure the well-being of any city state. The fat alluvial plain was the prime attraction and the most enduring asset, and just as the first settlers were drawn here to plough the fields, so the first fortifications, doubtless, were thrown up to safeguard the same; but the wealth of royal Carchemish must have come largely from its trade, and the control of trade-routes have been only less important to it than the protection of its food sources. The position of a tell can nearly always be assigned to a combination of sound economic and strategic reasons; and if the picture of a country of densely wooded uplands be allowed, we can gain, even from the map, no little insight into the politics and economy of the time.

§ 2. The Ring Wall of the Citadel.

The Carchemish whose ruins we see to-day developed from very small and humble beginnings, and its growth was a matter of long time. The first settlers who built their huts on the rocky mound beside the river lived far back in the neolithic period, many centuries, at least, before the Hittites came into the land, and theirs was an open village, spreading down over the slopes of the mound almost to the river's level. With this primitive forerunner of Carchemish we have nothing to do in a chapter which deals with the defences of the Hittite town.

The Tell had already, with the accumulated ruins of many years, attained a height not so very much less than it shows to-day, had risen, indeed, some fifteen metres above its original rock level, when the villagers took in hand to build a wall about it. But these wall-builders have left behind them evidence to show that they were very different from the folk of the first settlement. Not only had the great stride been taken which separates the age of stone from the age of bronze, but it would seem certain, too, that there had been, if not a complete change of race, at least an influx of new blood. Aeneolithic man here had produced hand-made pottery with a limited but individual range of forms, and had enriched his finer wares with elaborate colour decoration: he buried his

dead in pots under the floor of his house, doubling their bodies up (perforce) in the embryonic position, and made no provision for the soul's material needs in another world. At first the introduction of metal does not seem to have brought with it other very radical changes, but at a later time, not very long before the fortification of the Citadel, far-reaching innovations were introduced. The bronze-age man who built the wall turned his clay vessels on the wheel in shapes unknown before—the most characteristic of which is the 'champagne-glass' type which has induced us to nickname this 'the champagne period'; he seldom used paint, and then only in the simplest and rudest ways. He buried his dead in stone-lined cists, at full length, with an elaborate tomb furniture of vessels, arms, and ornaments. These cultural innovations, affecting just those customs which are most conservative, would seem to denote a new race. On the other hand they do not appear to have been either sudden or violently enforced, for the two burial-customs overlap and sometimes combine, whence it may be argued that the change in population was at most but partial, and that the old stock continued to live on side by side with the new-comers, dominated by their superiority, driven to imitate their higher culture, but still hankering always after their own traditions. Indeed, there is much to be said for the theory that throughout all history the Hittites were in a minority in North Syria, like the Spartiates in Laconia, a fighting aristocracy alien to the land who led and lorded it over the aboriginal serf.

That the appearance of the 'champagne' graves marks the arrival of the Hittites at Carchemish, and that therefore they were Hittites who built the citadel wall, is probable but not yet proven. There was, later on in the town's history, another change which might possibly signalize the Hittite advent, but it would seem to have been gradual—a development rather than a revolution. The graves of Tell el Amarna,[1] which belong to the later bronze age, do, indeed, show new types of weapons and a wider range of more finely made pottery, from which those forms most characteristic of the 'champagne' period are wholly excluded; but none the less there is in many respects a strong continuity, and in this case the differences are scarcely striking enough to demand the theory of a wholly new race having been their authors.

Unfortunately we cannot yet fix even an approximate date for either of these changes, nor do we know from external sources when we might expect to find Hittites first at Carchemish. Some graves at Hammam, published in the article referred to below, would seem to carry back the 'champagne' period into the third millennium before Christ.[2] The Babylonians were familiar with the name Carchemish as early as 2000 B.C.—but was the Carchemish they knew then already a Hittite town? The invasion of Babylonia by the Kheta about 1750 would imply that before that date the Hittites had got a firm footing in North Syria: for they would hardly have embarked on an expedition so far afield had they not possessed a good advanced base on the southern side of the mountain barrier which cut them off from their homes. The Biblical references to Hittites in South Syria in the time of Abraham, a couple of hundred years before, would confirm this: the sons of Heth are spoken of rather as individuals than as an occupying people, but such single spies would not have out-distanced unduly their battalions, and we should suspect these in the Euphrates or even the Orontes valleys rather than in far-off Pteria.

On the whole we may be justified in regarding the earliest copper age as a direct continuation of the neolithic, and the 'champagne' period as marking the introduction of a new element; this

[1] Vide my article 'Hittite Burial Customs' in *Liverpool Annals of Archaeology*, VI. 3, p. 87.

[2] But v. Hogarth, *Hittite Seals*, p. 50, who would put them just after 2000 B.C., early in the Middle Hittite period.

we may call, at least provisionally, the 'Early Hittite'; the 'Middle Hittite Period', succeeding to it we do not know when, will last down to 1200 B.C.; and the term 'Late Hittites' will cover the city's history from its rebuilding after the great northern invasion, when the King of Carchemish, no longer a subject of the old Halys monarchy, was *primus inter pares* of the North Syrian Hittite confederacy, through the last hundred years of intermittent vassalage to Assyria until its final overthrow by Nebuchadnezzar in 604 B.C.

Only a small part of the Acropolis has as yet been excavated, and any description of its defences must therefore be summary and provisional. The great mound was divided into two parts, each of which would seem to have been surrounded by a ring wall, with, probably, a fortified communication between them. The north-west sector is found to be the site of a fortress, Hittite in origin but remodelled by Sargon after his capture of the city in 718 B.C.; that part of it which has been cleared is shown on our general plan, Pl. 3. The south-east sector, part of whose area was later occupied by palace buildings, had along its river front a stout wall, without any considerable towers or salients, running from the north corner of the enclosure almost to the extreme end of the mound; here it turned inland at an angle, following the contours, while from the same point another wall was carried downhill to the water's edge, thus defending the extra-mural slope of the Tell. A little north of this wall a narrow brick-lined passage, starting well down the slope, is cut horizontally into the mound, deepening as it goes; where it comes against the foundations of the town wall it is vaulted with mud brick, and so passes below these into the heart of the mound. This must be a kind of water sally-port.

A second angle of the main ring wall carries it across the width of the mound, and thence apparently it runs straight, except for one slight turn due to the contour of the hill, up to the gap between the two sectors of the Acropolis. Along the river front the wall is of mud brick, usually resting on stone foundations, but sometimes, where it crosses the site of a house, demolished for the purpose of its construction, the builders took advantage of such brickwork as was left standing to lay their new work directly upon the old. At the south end of the mound the wall, as being more liable to attack and therefore requiring greater solidity, rested on massive foundations of unhewn stone; here a few scattered orthostats occur which may have been part of an ashlar facing to the lowest courses of the wall, but may equally well have belonged to the palace within it, and in either case are as likely to date from the Middle as from the Early Hittite period. The inland wall was of a character not yet remarked elsewhere on the site, being built not of brick but of a kind of *terre pisée* (v. p. 144).

The evidence for assigning the ring wall of the Acropolis to the Early Hittite period is quite conclusive. In houses lying beneath the foundations of the wall and undisturbed by it, as in the ruins outside the wall but well below the surface of the slope, i. e. in the ruins which helped to build up the mound to the height it had attained before the ring wall was begun, we find under the floors aeneolithic pot-burials which in the higher strata give place to cist graves of the transition period and then to fully developed Early Hittite ('champagne') graves. These precede the wall. In other cases Early Hittite burials are found in connexion not with the house ruins but with the wall itself; they lie in niches or pits scooped out under its foundations or dug down behind it into the pockets of made soil between it and the old Kala'at slope. These are later than the wall.

But the best proof is given by the water sally-port, which is the most peculiar feature of the ring wall. Its narrow entry driven into the hillside (v. Pl. 17 *b*) cuts right through the piled-up

ruins of which the hill is made and then in the form of a vaulted passage burrows through the wall foundations. Of the ruins cut through by it three complexes of superimposed walls (marked C, D, and E) represent three successive building periods of which the uppermost immediately precedes or is contemporary with the 'champagne' graves; in the rubbish supported by the vault we found an undisturbed 'champagne' cist grave, visible in the photograph, which can only have been put there after the passage was built.[1] It is quite certain that the date of the ring wall falls within the Early Hittite period; we cannot as yet define it more closely. The number of tombs found is not great—the Tell was not the regular cemetery—and it would be absurd by counting up those which clearly precede and those which clearly follow the wall's construction to estimate at what stage in a period whose length we do not know that construction may have taken place.

3. The Inner Town-Wall.

This first wall served its purpose and satisfied its holders during many years: for by the time a second line of defence was required the Early Hittites had given place to the Middle Hittites, and the city of Carchemish had grown enormously in area, in wealth, and in its ideas of what was required of it. So far as we have been able to find out, the early defences were limited to the Citadel, and any buildings that may have lain outside that were left undefended: when an innovation was made it was a sweeping one, and the new walls were designed to include a lower town which had extended far beyond the slopes of its parent mound.

It is clear that two factors mainly influenced the plan of the defence: one was the presence of the river and its tributary, which on two sides set necessary limits to the city: the other was the position of the buildings which had to find shelter behind the walls; the architects were innocent of any town-planning ideals, and disregarded, if they knew them, the principles of strategy.

It is not fair to criticize a building unless one attempts first to realize the character of the site on which it was put up, as well as the purposes it had to serve. To look at the ruins of Carchemish to-day is not necessarily to understand what the lie of the land was when the city was first planned; levels have risen by ten and by twenty metres in some places—torrents have denuded others until the lowest foundations of Hittite buildings have disappeared; what now strikes the eye most is precisely that which was non-existent then. We have tried, by our sketch-map on fig. 6, to reconstruct the terrain with which the town architects had to deal.

The citadel rock, by nature some ten metres high but already raised by the deposits of the aeneolithic village, was connected with the high ground inland by a long bridge or saddle. This saddle fell away on its north side to the mill-stream which for the last hundred metres of its course ran well to the south of its modern channel and washed the rock wall of the Tell. Below the saddle to the south-east gently sloping ground stretched from the rocky south end of the Tell almost as far as the present railway; along its riverine edge a sandbank had formed which, increasing in width to the south, ended just above the railway in a low dune extending inland and forming the north bank of a marshy torrent-bed. South of this was the flat alluvial plain, lying between the Euphrates and the foot of a little irregular cliff of pudding-stone rock which from the

[1] A large number of objects were found in the filling of the passage, amongst them the steatite boxes illustrated on Pl. 28, 3, 3*, 4, 4*, and seals and glaze-amulets, Pll. 25, 26.

spring of the saddle connecting plateau and Tell ran south-east and south, broken by two small wadies, to enclose the mound whereon stands Jerablus village. Above the cliff the ground rose gently but steadily to a brow of disintegrated conglomerate—little more than hard gravel—which

Fig. 6.

soon thinned off and failed, and the limestone took its place, either to rise more steeply to the hills on the north-west and south-west or, beneath a varying depth of light soil, to stretch westwards along the valley of the railway.

It is remarkable that the land defences of the inner town on the west side run right across the downward slope and just below the north end of the rock bluff. Strategically therefore their line is as badly chosen as it could be, for the area enclosed by them was commanded from the

higher ground immediately outside, and to obviate this the rampart had need to be of an extravagant height. This was certainly not due to any preconceived idea on the builders' part, for the form of Carchemish is irregular in the extreme. On the north and east the builders had no choice in the matter: they had to follow the water line; but their landward defences obey no canon. On page 1 of this book D. G. Hogarth describes the mound as a horseshoe embankment pierced by two main gaps. R. Koldewey would make the town a circle, on the analogy of Sinjerli (*Sendscherli*, p. 179: 'rundlich scheint auch der Stadtgrundriss von Dscherabis zu sein . . . Zweifellos steht die Stadt der Zeit und dem Culturkreise nach Sendscherli ausserordentlich nahe'). Hogarth's description applies but loosely to a line which did not contain a single curve: what Koldewey says is quite wrong. The weathering of the mounds has rounded their angles rather deceptively;

FIG. 7. Looking along the mound: west wall of Inner Town.

but the walls originally ran in straight stretches and with as few turns as circumstances would allow. It does appear, from what irregularity there is, that the designers had to enclose certain buildings not too conveniently placed, but would not from regard for symmetry enlarge their area beyond the minimum required: where a right angle meant a greater length of wall with an empty space behind it they preferred an oblique short cut.

But if the plan of the Middle Hittite defences seems to take no account of natural conditions, their construction is entirely dependent on these, reflecting them at every point. The city was fenced by a combination of builded wall and earthwork. Where an earthwork was feasible, it was thrown up: where it was not, a wall was built instead. Along the Euphrates bank there was little soil other than unstable sand, and a mound made of such would not have stood against a single high flood; along most of the north side of the city the rock lies just below the surface, and soil was far to seek: consequently on the east and north there rose a wall of mud brick on stone foundations. But on the two landward sides there was deep soil, or at worst, and then at a fair depth, the soft half-decomposed chalk of the upper limestone strata; here therefore, just where height was most essential, it was easiest to throw up an earth rampart.

The economy which has been suggested as influencing the line chosen for the rampart was perhaps of a military rather than of an economic sort: the people may well have wished to have as short a wall to hold as might be, but they spared no labour on building it. The mound rose twenty metres above the original surface; outside it was a fosse, some five metres deep, the borrow-pit of the builders; along its broad top ran a mud-brick wall, of no great height, probably, but a respectable and solid breastwork if no more. Even now, when the wall has vanished and much of the mound has slipped down and filled up the moat, it is hard to realize that what seems a range of hills is really the laborious work of men's hands. (See fig. 7.) There were three gates to the city. The south gate was the most elaborate, and naturally so, for it opened on the

Fig. 8.

plain which gave life to Carchemish, and through it passed the main road, that which led to the Euphrates crossing. The east gate gave upon the river, and was the most ornate, for here defence was a secondary consideration and the gate was little more than an apanage of the palace building lying just inside it. The west gate as being the most vulnerable was the strongest.

The gates will be described hereafter separately and in detail: but of the walls it is proposed to give a general description here, reserving for a separate section the duller and more minute details of their construction. The line of the rampart prior to excavation is approximately given by R. C. Thompson's sketch-map of the Kala'at, p. 30. Our plan on Pl. 3 shows the general

scheme of the defences, and the plans on Pls. 6, 7, and 14 give their details as brought to light by excavation or reconstructed with the minimum of fancy.

The Water-Gate lay at the very foot of the citadel mound, in such wise that approach to it was absolutely commanded by the old ring wall itself and by the stepped-up wall which joined that to the northern of the two gate-towers. From the gate southwards stretched the long irregular line of the river wall. The excavation of this was no easy matter. The state of the wall's preservation was curiously capricious: at one point the whole height of the stone-work would be preserved, the ashlar masonry thereof as sound and truly jointed as when the huge stones were first levered and coaxed into place: a few metres farther on the very foundations had been carried away and only by a few scattered boulders could one with some misgivings trace their probable course.

Torrential rain-floods have swept down across the site to the river, and scoured out deep channels, taking a straight course where, perhaps, a road made easy going, or twisting and dividing as the waters encountered heavier ruin-masses; so that the whole eastern side of the

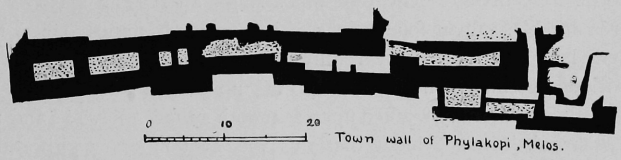


FIG. 9.

city is a chaos of steep ridges and deepening wadies. Where these torrents have passed, the river wall has fallen before them, and little or nothing of it is left: between the wady mouths it may yet be standing many courses high. The almost paradoxical effect of the rains' work can well be seen in the photograph on fig. 8. In the foreground the town wall should be, but it has vanished and the present ground surface is lower than were the lowest stones of its foundations. A little way back, poised in mid-air, appears the threshold of a Roman door, still *in situ*. The débris which, accumulating since early Hittite times, had raised the ground level by several metres, has again been swept away on either side of the few stones which chance and their own weight have kept in place. In view of this it is not surprising that, as the plan (Pl. 14) shows, the river wall was only too often conjectured rather than found.

The plan shows another thing also. The wall had in its long history suffered many and unkind vicissitudes. It had been pulled down and rebuilt, mended here and altered there; ashlar alternated with the coarsest rubble, and either of these might give place as suddenly to mud brick. One was almost tempted to believe that the original work itself had been a patchwork as different contractors, each engaged on his so many cubits of building length, had dealt fairly or had cheated the State.

The patchwork effect due to changes of material was emphasized by the peculiarities of the ground-plan. The wall was not built in a straight line between its two extreme points (the curves of the river bank would in any case have made this difficult), nor was there any regular system of salients; short stretches of varying length and thickness, by no means always in the same line,

were built end-on to each other, set back or brought forward by perhaps no more than a metre and a half. Occasionally there was a bolder projection, fit to be called a wall tower, but for the most part the wall consisted of an irregular series of shallow recesses and salients not to be explained by any principle of military architecture. An interesting parallel to this is found in Aegean work, and we give here for purposes of comparison a plan of the Late Minoan town wall at Phylakopi in Melos, fig. 9; the patchwork system of construction, with its purposeless little re-entrant angles and compartment walls, is curiously like that of Carchemish.[1]

Sometimes, as just south of the water-gate tower, the river wall was a double one: two rubble walls of no great thickness ran parallel, connected at irregular but frequent intervals by cross-walls. It is likely that the latter were but sleepers, supporting the floor of the rooms: above floor level, the inner and outer walls, rising in brick, were possibly of greater thickness than their foundations: the rooms, one would imagine, were occupied by the soldiers who in case of need would man the walls; and the whole structure is not so much a wall as a long, narrow building forming a part of the wall line. In places where ashlar masonry was preserved the wall was always solid and of much greater thickness, but not sufficiently thick to allow of chambers in the upper brickwork: here therefore the wall was a single one. The masonry of these sections of the work was remarkable. Over foundations of heavy rough stones, one or two courses deep, were laid stretchers, long low blocks of carefully cut and finished stones, on which stood great facing-slabs as much as two metres high and anything up to four and a half metres long: these were admirably joined and carefully worked up to a smooth surface (Pls. 13*b* and 15). Sometimes, when brickwork occurred, it was evident that this was contemporary with and a substitute for the facing-slabs of other sectors, and the bricks lay on the well-worked stretchers which are characteristic of the best masonry. In other places the foundations of the brickwork were both shallow and shoddy, a mere layer of cobbles bordered with undressed stone fragments; this could hardly be original, and often one suspected a radical change of ground-plan rather than a mere patching of old work. In a few instances new features of defence had been introduced: thus at the south end an awkward corner formed by the projection of a tower had been filled up with a solid mass of rubble masonry which turned an acute into an obtuse angle. Again, the original wall seems to have been unrelieved by buttresses or projecting towers, but at a later period this seems to have been thought insufficient, and at the south end (evidence elsewhere was lacking) small rectangular brick towers were built on to the wall face. That the towers were of late date is shown by their foundations; these are laid more than half-way up the masonry, which by this time had been almost hidden by sandbanks deposited against it by the river.

The actual river bank would seem to have been strengthened by a stepped revetting wall of massive quarry-dressed stone. This was found by us at the south-east corner, deep underground; it was not traced farther north. General Chermside's plan (Fig. 4) shows a line of masonry which may be this revetment; the ground level is higher now than in 1879, and two successive revetments built by German engineers have confused things so that it did not seem justifiable to

[1] 'Excavations at Phylakopi,' *Hellenic Society's Supplementary Papers*, No. 4, 1904. The excavators describe the wall as follows: 'In construction the fortification consists of two parallel wall seach about 2·0 m. thick and 2·0 m. apart. These are connected by cross-walls of varying thickness and height, dividing the space between the two main walls into a number of cells or chambers. Most of these chambers appear to have been from the first filled with loose stones, for in many places the main walls had outer faces only and were left rough towards the chamber. Thus a single wall with a total thickness of 6·0 m. was formed. Other spaces were undoubtedly built as rooms in the thickness of the wall.'

incur the great cost of trenching deeply the whole area on the chance of confirming an inherent probability supported by Chermside's evidence.

At the south-east corner of the town was a large and strong fort or tower which linked the river wall with the earth rampart of the south front. As this corner was built on a sandbank it was convenient to use sand for the construction of the mound; but it was an unsatisfactory material, and required containing walls on either side. From the tower, therefore, brick walls ran back inland with a sand packing between them, and on this was laid a stepped-up foundation of rough stone supporting the brick wall which crowned the rampart. But as the nature of the soil farther from the river improved, and containing walls were no longer necessary, the character of the mound-construction changed. It is possible that even at the south-east corner the lower brick walls were masked to bring them into harmony with the rampart farther west; but it is clear that farther west there were no such walls at all and that the mound was really a mound. But it was a mound of a peculiar type. The builders wanted to have from the bottom of the fosse, or at any rate from its lip, to the foot of their wall, a glacis slope much steeper than the natural line of earth-fall; so they cast up a mound not haphazard but on a system; they took the material which came to hand, but they used it scientifically. Between layers of shingly gravel, or of soft limestone chippings, were spread layers of brick clay, and sometimes heaped lines of such seem to have divided the strata of less solid stuff into compartments; in this way the mound was not so much thrown up as built up. The face of the slope, which made an angle of about 30 degrees with the horizontal, was revetted with brick-clay to protect it from disintegration by the weather; it is noticeable that there is no black ashy layer above this clay face such as would have been formed by the decay of vegetation: grass grows but thinly on the mound to-day and rain-water would run at once off a facing of hard clay, smooth and so steeply sloped. From the outside the mound must have been almost indistinguishable from the brick wall above it.

Of the wall along the mound's top nothing is left except, isolated here and there at the highest surviving points, a few rough stones which may or may not be part of its foundations. One must imagine it of great width but no very great height, with a front battered, though not so steeply as the mound's face, with a breastwork along its outer edge and, perhaps, with pointed battlements such as one sees in Assyrian reliefs, e.g. at Tell Ahmar.[1] This was the character of the defences along all the rest of the southern and western sides of the town, the bold slope of mound and wall being broken only by the two gates. At the north-west corner, close to what was then the bank of the little stream, the mound came to an end, and from here to the Citadel there was again a builded wall of masonry and brickwork which with its towers, its double wall-line and intramural chambers, reproduced in many respects the character of the river wall.

The transition from mound to walling was marked by a great fort which on one side abutted on the earthwork and upon the other looked down upon the north gate of the town. It had been at different times altered and rebuilt, so that the oldest work lay deeply buried in the débris of its successors; but its massive walls still stood three or four metres high. In the ruins of the latest period was found a tomb containing fine gold jewellery probably much older than the date of the burial itself.

From the fort there ran towards the Citadel a double wall whose outer member at its eastern

[1] See p. 151.

end rose straight from the edge of a low pudding-stone cliff. Below it stretched a great cave, partly natural but enlarged by quarrying, whose mouth may have been masked by masonry. Behind the town wall square shafts cut in the rock gave access to the cave: they were closed by huge covering stones far too heavy to be often moved, but possibly they were emergency exits, a kind of sally-port which would be used but rarely and in case of grave need.

Immediately beyond this stands the Tell, and up its steep side ran a double wall connecting the town wall with that of the Citadel. But the old ring wall of the early Hittites could no longer satisfy the ideals of the defenders of Carchemish, and under their hands the north-western part at least of the mound underwent a radical transformation. Along the landward side here its whole slope was hidden by a terraced wall or series of walls which ran in tiers from the base to the summit, giving to this part of the Citadel a stepped appearance not unlike that of the Babylonian *ziggurat*. This construction does not seem to have extended to the south-east of the Citadel; probably there the slope was already occupied by the palace with its terraced rooms and noble stairway whose ruins, or the ruins of a later restoration of it, are still one of the main features of the site.

On the river face of the mound, where defence was easy and appearances counted for little, the old simple wall was deemed sufficient and suffered no change of plan.

The material for dating the inner town-wall is abundant and as conclusive as could be hoped. Wherever the mound-filling is of mixed soil, such as would have been scraped up from the then surface, it contains numerous pottery sherds which are all characteristic of or might belong to the same period. We find here the ring-burnished red and black wares most typical of the Tell el Amarna graves, the plain tumbler shapes and the simple rimmed pots and thin-necked vases common in those tombs, while neither the 'champagne' cups and other forms characteristic of the early age nor the painted vessels of the Late Hittite time ever occur. Moreover, in connexion with the north wall and actually in the river wall itself we find graves (v. p. 133) containing plain or burnished pots with horizontal bands of black or brown paint exactly similar to some found in the tombs of Hammam which we can fairly confidently assign to the beginning of the Middle Hittite period.[1] Taking these two pieces of evidence together we may safely say that the walls were built during the Middle Hittite period and at a fairly early date within it.

§ 4. The Outer Town-Wall.

Such, briefly, were the defences of the town until about 1200 B.C. Then came disaster. We know from Egyptian sources that when, at the close of the thirteenth century, the great wave of invasion from the north-west burst over Asia Minor and swept on through Syria to the borders of Egypt, Carchemish fell before it. There is evidence on the site to confirm this. Everywhere where we have dug there are signs of wholesale destruction—clearly more or less contemporaneous. The city, however, did not long remain desolate, and over its ruins new buildings arose which not less clearly show uniformity in manner and in date. The builders had little regard for the old structures: they built anew, for the most part, and did not restore, and the sculptured stones of the earlier town they re-used haphazard as building-blocks with the carving hacked away or turned ignominiously to the wall. But they none the less carried on

[1] *Liverpool Annals*, VI. 3, p. 93.

the architectural ideals of their predecessors, had the same canons of art, and employed the same script on their monuments: they were then essentially Hittites. On the other hand, we now for the first time find iron taking the place of bronze for tools and weapons; the dead, instead of being buried at full length in stone-lined cists, are burned, and their cremated ashes deposited in urns; new types of figurines too witness to a modification of religious beliefs; a new fashion of dress is fastened with bow fibulae; not least important, the plain finely turned pottery of the Middle Hittites is replaced by a pottery coarser in texture but enriched with geometric designs in black paint which recall Cypriote types, and actually imported Cypriote vases are found as well as Greek island and Mycenaean wares. The Hittite soldiers at this late period wear armour (v. Pls. B. 2 and 3) which anticipates almost exactly the Athenian panoply of the fifth century—itself, as the Greeks said, derived from the Carians of south-west Asia Minor. It would seem that when the great invasion was broken up at the gateway of Egypt, and the tribes who had joined in it turned back to settle on the lands they had passed through, when the Philistines seized the Shephelah plain, and Ziklag was taken by the Cherethites and Dor by the Cretan Tjakaray, Carchemish, so lately ruined, was resettled by a folk who were attracted to it by ties of common origin perhaps, certainly of common civilization and traditions. Whether these were the Mushki, who about this time occupied Kummukh and Alshe, districts not so far away, or whether they were some other branch of the old Kheta stock, we do not know as yet; they appear, from their culture and trade connexions, to have come from the west, from Lycia or Caria, and more than that it would be rash to say; but though they may on their advance have joined in the sacking of the city, they returned to settle therein as friends, and so well do they preserve the continuity of its traditions that we need not hesitate to give to the six hundred years which followed the title of the Late Hittite period.

The invasion which for the moment laid Carchemish in ruins had permanently destroyed the old Kheta power. When Carchemish rose again it was no longer a vassal of the old parent city on the Halys, but independent, free to carve out a future for itself. And the new stock who helped to rebuild the town were not content to sit still; they had marched east and south to win an empire, and if they could not find such in the Nile valley they would build one up in North Syria. The time was not unfavourable, for the Great Powers were passing through a time of weakness and internal dissension and had little inclination to meddle with an upstart kingdom so far afield; Carchemish could develop undisturbed by adversaries of other than her own calibre, and could so strengthen herself as to resist even the arms of Tiglath-pileser I when in a spasmodic access of energy Assyria raided westwards to the Mediterranean littoral and up into Anatolia.

The resettlement of the city probably took place very soon after its destruction. The old defences must have been repaired and probably sufficed for some fairly long period. But as the kings of Carchemish consolidated their power and extended their frontiers, the capital also waxed in importance and in size, until the old walls would no longer serve for the protection of the growing city. How long the interval was we cannot yet say, but a time came in the Late Hittite period when the buildings of the town had outgrown the circuit of the ramparts and its people must needs embark upon a more ambitious work of fortification. The old walls and earthwork were retained in service, but outside them a new girdle wall was built enclosing a new quarter of the town.

It is obvious that on this occasion the builders were actuated by principles very different from those which had informed the original defences. Their work was less grandiose in execution, but far more scientific in plan; they were not hampered by exigencies of a town casually grown up, nor did they sacrifice efficiency to economy, but they seized on every point of strategic value to determine the right line for their fortifications. Instead therefore of running athwart the pent of a dominating slope, the walls enclosed or capped every rise of ground which gave command over the westward flats, and took advantage of every rock ledge which could raise and reinforce their footings. Unfortunately, we found the wall of the outer town so destroyed that it was often impossible to trace its course with accuracy or to determine its character in detail. Where on the high ground it ran over hard gravel its foundations had naturally not been laid at any great depth, and since here there was, apart from the débris of the wall itself, little chance of the soil's accumulating to protect its ruins, the stones had been at the mercy of whoever might require them. On much of the high ground Roman villas had been built, and the builders had readily availed themselves of so convenient a quarry—their walls are largely composed of Hittite blocks: the same process of despoliation has gone on through the ages, and German engineers and Turkish soldiers have in the last few years followed the classical example, and wellnigh completed the destruction.[1]

When the wall ran over low ground, and the lighter soil had demanded deeper foundations, the work of the excavators was even more difficult, for here the indignant ploughman had set himself of intent to root up the obstacles to his labour, and the rapidly accumulating earth buried deeply what little he had left. Between the rock bluff and the end of the river wall, on the south side of the town, and from the mill-stream almost to the railway cutting at the north end of its western face, hardly a stone could be found to support our conjectures. On the barren high land we could follow what remained of wall, and cut experimental trenches wherever surface signs failed us; but on the lower ploughlands little could be done; the cost of regularly excavating the whole line of wall would have been prohibitive and not repaid by its scientific results; even cross-trenching on a large scale would have been as expensive as unsatisfactory, and not really fair to the landowners. Having then traced the greater part of the wall we decided to be satisfied with probabilities for the rest, though the evidence of a few trial trenches cut on these lines was quite inconclusive. Our general plan, Pl. 3, distinguishes between what was actually found (marked in solid black) and what was conjectured in default of evidence (marked in plain hatching).

The new defences dispensed with mound, moat, and earthwork, and consisted of two parallel walls about nine metres from each other, running as far as might be in straight lines relieved by rectangular salients. Each wall was between 5·00 m. and 5·20 m. in width: the salients, if our restoration is correct, occurred on the outer wall at regular intervals of about 40 m. and themselves had a frontage of half that length. The inner wall was apparently less regular still. At certain points, especially near the gates, there were buildings abutting on the outer wall and either connecting this with the inner line or altogether replacing the latter; probably these were buildings of a military sort, barracks or guard-houses; the comparative slightness of their

[1] Our foreman, Hamoudi, was able during the war to save two monuments, found in the Outer Town, which were about to be broken up for use in the foundations of a new barrack. One of these, an inscribed altar, is figured on Pl. A. 18 *h*, *h**; the other, a chariot relief, will appear in a later volume.

walls tends to show that they did not rise as towers above the wall line, but were rather sheltered by it.

The western gateway, the only one which was excavated, was of the normal plan, differing from the south gate of the inner town only in its relative proportions and in its greater simplicity: the flanking towers were simple, not possessing the double re-entrant angle of that more elaborate example, the masonry was rougher throughout, and the spaces between the outer piers, though laid out in ground-plan to the same full depth, were in construction filled in with solid packing so as to give greater strength to the towers; only a recess 0·30 m. deep was left into which the doors could fold back flush with the side masonry of the entrance. The southern gate-tower served to join the outer and the inner lines of wall, which abutted on it, a door in the tower's side giving on the intramural space: north of the gate we could find no inner wall at all. The position of the south gate could be determined with tolerable certainty both from the lie of the ground and from the character of the wall on either side; but as the site was covered by a modern building the gateway itself was not dug. The existence of a north gate in the outer wall is problematical.

One must needs strike here a somewhat controversial note. In spite of wide differences both in general plan and in detail, there is a striking similarity between the defences of the outer town of Carchemish and those, probably of a not much later date, at Sinjirli: there too there were two walls running parallel to each other and only a few metres apart round the whole town. The excavators of Sinjirli were of opinion that their two walls were different in date, that the inner wall was already in ruins when the outer was built, and that the latter therefore did not supplement the former but replaced it. The technical evidence adduced in favour of this view was not very strong, and it is inherently improbable that a later generation faced with the necessity of constructing a new line of defences should follow so closely both the course and the character of the old, but at the same time should not have employed the old materials for their new work; either, one would imagine, they would have repaired the damaged but still existing wall, or they would have pulled it down before building a new one only a few metres away, or they would have put up their new defences elsewhere. This improbability becomes more manifest when we find Late Hittite people of Carchemish building for the protection of their town two parallel walls, a few metres apart and of similar character. If one can assume that at Šamal as at Carchemish the two walls are contemporary and interdependent, forming part of a single defensive system, an interesting light is thrown on the development of the science of fortification not in one city only but throughout North Syria. At Sinjirli the oldest defences of the citadel seem to consist of a single wall; then this is strengthened by the addition against its inner face of a second wall connected with the first by cross-walls, producing the 'casematten' which correspond to certain sections at least of the inner town-wall at Carchemish; and, finally, we have at both places the double wall line, which can be taken as being the last word in Hittite military architecture. The Late Hittite wall more than doubled the area of the old city; it enclosed about 580,000 square metres as against the 420,000 odd within the earth rampart. For the reasons already given to explain the destruction of the wall itself, the greater part of the outer town area would ill repay excavation, but two or three buildings lying on the wall and probably connected with it have been cleared (see Ch. VI), and inside the town one richly built and well-preserved house (D), which attracted our attention through being partly exposed by the cutting of the Baghdad Railway, was also thoroughly

dug. These houses were of interest as yielding a fair number of uniformly Late Hittite objects; two at least seem to have been directly related to the wall, and one of them (C) may well have antedated it and have been as a standing building incorporated in the scheme of fortification. As we do not contemplate any further work in the Outer Town, these buildings, though they do not properly come under the heading of 'defences', are described in this volume together with the outer town-wall.

In this general introduction the historical order of the walls' construction has been observed; in the detailed description which follows, that order is reversed: we begin with the outer line, describe the house sites within it, and deal thereafter with the inner town-wall; the interior defences of the Citadel, the exploration of which is as yet far from complete, are reserved for a future volume.

The whole of the work on the wall and buildings of the Outer Town was carried out in 1920, as was all work on the River Wall of the Inner Town. The south and west gates of the Inner Town were partly excavated in 1912 and 1913, and completed in 1920; the east end of the North Wall was dug up in 1914, its west end together with the north-west fort in 1920; the Water-Gate was cleared in 1912. Work on the citadel wall was carried out by degrees up to 1920. From 1912 to 1914 I had T. E. Lawrence with me as assistant: Gregori Antoniou of Cyprus was working foreman, with Hamoudi of Jerablus as his chief subordinate: another Jerablusi, Dahum, was trained by Lawrence to act as photographer and as such did excellent work. In 1920 Lawrence's place was taken by P. L. O. Guy, to whom also fell the task of photography, Dahum having died during the war, and Hamoudi succeeded Gregori, with Abd es Salaam and Khalil id Jadur as sub-foremen. In this publication all plans are initialled by those mainly responsible for them; drawings are by myself, and photographs by various members of the expedition.

CHAPTER IV

THE OUTER TOWN

§ 1. The Outer Wall, North Section.

The north part of the wall is practically non-existent: its course had to be guessed from the contours of the ground, and that guesswork supported by such scanty evidence as could be obtained; but none the less the line given on the general plan (Pl. 3) can be taken as at least approximately correct.

The point of junction of the built wall and the earth rampart of the Inner Town was fairly distinctly marked by an excrescence in the latter hardly to be explained in any other way. 100·00 m. from this, a modern irrigation trench had been dug and, just where the wall would be expected to run, had cut through a mass of fallen and decomposed brickwork clearly to be distinguished from the mixed soil and lime on either side of it. Between the point thus established and the inner rampart excavations could not be carried out, as the land was under crops, but half-way across there was visible above the surface a large and long limestone slab, lying on the presumed wall line but at right angles to it, which must have belonged to the wall and may possibly mark the site of a north gate.

Beyond the irrigation trench the wall took a turn, and here digging brought to light traces of the outer wall and a considerable stretch (40·00 m.) of the inner line: the foundations only, of small stone, were preserved. Against the wall were found a jug of drab clay (Pl. 20, fig. *c*. 4) and a broken bowl, both typically Late Hittite.

The next angle had wholly disappeared. The railway cutting ran across the wall line, and on either side of it the ground surface, which here sloped down to the head of a little wady tributary to the mill-stream, had been so denuded by constant ploughing that nothing whatsoever could be found. The existence of House A showed that the town's limits must have been west of this line, but there was no more evidence than that. 70·00 m. from the supposed corner a fragment of rubble foundation *c*. 2·00 m. long lined up with the well-preserved section of walling which abuts on the west gate. Here there was no inner wall, but a few foundations remained of a building which may have replaced it. Near the West Gate the outer wall is of the normal thickness, 5·00 m. wide, with very flimsy foundations of small rubble and pebbles one course deep. This is all that is required on the hard gravelly soil (decomposed pudding-stone), over which the line of the wall here runs. But it is quite possible that along the whole of the wall's length there was a facing course of orthostats, or at least of good hammer-dressed blocks such as were found *in situ* by House C on the south side of the town: the total disappearance of these would be quite natural seeing how convenient a quarry the wall offered to later builders. Along this west front it was noticeable that even when the rubble gave a more or less straight edge it seemed as if we were dealing less with an actual wall face than with the filling from behind such.

In the north section, as to the south of the West Gate, no trace of brickwork survived.

§ 2. The West Gate of the Outer Town.

(See Plate 4.)

The masonry of the gateway had been despoiled, in most places, down almost to foundation level, so that only the lowest course of rubble remained: the exceptions to this were the back wall, where three and four foundation courses still survived, and some of the orthostats of the pier-ends: the end of the outer pier on the north side was destroyed as recently as 1916. But originally the gate was very far from exhibiting the technical excellence of the South Gate of the Inner Town; much of its lower walling had never been of anything better than large rubble, and when ashlar was employed—and it was not always employed even in conspicuous places—it was of comparatively poor quality and rough finish. The gateway was intended for use, not for show.

In plan the normal type was adhered to with but slight modifications. There were the usual square flanking towers, unrelieved by any buttress or re-entrant on the front face: on either side of the entrance were three piers whose ends formed the three gateways proper, and between these, on each side, were recesses. But whereas the inner recesses were of the full, indeed of disproportionate depth, the outer two, though laid out originally to the same scale, had in construction been filled in solid, leaving only a thirty-centimetre recess into which the doors could fold back flush with the pier-heads. The evidence was not sufficient to determine whether this blocking was only a platform of moderate height, as in the West Gate of the Inner Town, or was carried up by a front wall to the ceiling of the entry; the absence of any strong foundations at the point where the inner end of the recess should be seemed to favour the latter view.

A certain irregularity in the plan was due to the fact that whereas on the north side the city wall was single, on the south side the two parallel walls of the double line abutted on the gate-tower, or, more exactly, while the outer wall abutted on the tower, from the south-east corner of this a projection was run out to join up with the end of the inner wall. This angle was so destroyed (see plan) that the actual junction had to be imagined. Between the two town-walls was a cobble-paved space, and a doorway gave access from this to the interior of the tower: the stone impost for the western jamb of its wooden door-frame was found in position, but here again not enough of the stonework survived for the plan to be worked out in detail. The best-preserved feature of the gateway was the paved threshold between the outer piers. This was of large but irregular slabs, some of them clearly taken from older buildings; gaps between them were packed with small stones. The threshold sloped up steeply to the line of the door and down again to the level of the entry: the basalt door-stop, with its bolt-hole going right through the stone, was found *in situ*, as also was the bowl-shaped hinge-stone against the inside corner of the southern pier-head: the other hinge-stone had disappeared. There was no paving between the inner piers.

§ 3. The Outer Wall, South Section.

South of the gate the wall ran in a virtually straight line for some 510·00 m. In the north part of this stretch we could trace the remains of three salients, each having a frontage of roughly 20·00 m. with a projection of 4·30 m. in one case and 8·00 m. in the two others: it is very probable that such salients existed along the whole circumference of the wall, but we have

hesitated to restore them on the plan and have preferred to show there only what was actually found with so much of restoration as is required to make the scanty and scattered remains intelligible. Here, as north of the gate, the foundations of the wall seem never to have been other than flimsy and shallow, a single course of small stones; the brick had entirely disappeared and the foundations survived only in patches; sometimes a face could be distinguished, but seldom with certainty. A modern road ran along and over the whole of this wall stretch, and traffic had destroyed much which mere agriculture and denudation might have spared, and the wall remains were often hard to distinguish from the road metal.

The inner wall was more irregular than the outer; its junction with the West Gate was broken away and a fragment of wall followed by a patch of what was either paving or wall foundation (it was rather out of the line) led on to a comparatively well-preserved stretch of wall proper, 26·00 m. long, running not quite parallel to the outer wall. Then there was a gap, and when ruins of walling again occurred, behind the first salient of the outer wall, they were so confused as to assist but little the reconstruction of the original plan: there seems to have been here either a house on the wall line or else a salient of the inner wall corresponding to that outside; the main feature, a long but rather thin wall running east by west, had no connexion with the other fragmentary remains. The inner wall was well preserved between this and the next salient on the outer wall, where it returned east and gave out: beyond this point all traces of it failed.

In the north angle of the second outer salient there was a complex of wall fragments with apparent faces at right angles to each other; possibly these are due to drains in the thickness of the wall.

Very scanty traces of wall followed along what the contours showed to be inevitably the line of the defences to opposite House B, where remains were more abundant but so confused as to be of small value: we found in fact little more than patches of cobbles which may or may not have been foundations. The only considerable stretch of actual construction appeared to belong to a house built on the inner wall line.

A row of half a dozen fair-sized blocks gave the direction of the next stretch, which ran under the modern hospital; the evidence of the stones was indeed scarcely necessary, for the line was fixed with certainty by the nature of the ground. A narrow ravine with low but precipitous rock sides runs along beneath the south wall of the hospital and beyond it (making a slight turn) to where the pudding-stone breaks down in a little cliff above the modern road to the village. On the surface of the rock beyond the hospital traces of the wall were recovered; a small double re-entrant built of finely dressed basalt slabs either marked a recess in the wall line (as shown) or was part of the inside of a building whose outer (S.) face has fallen away: beyond this a solid buttress-salient occupied a slight projection of the rock bank. The ground from this point sloped rapidly downhill, there was but shallow soil above the rock, and remains were therefore scanty; 42·00 m. from the buttress the wall face seems to have been set back some 14·00 m.; we found here parts of the face of a wall which at its east end developed into a compartment wall like that which flanks the Water-Gate of the Inner Town. Here the rock finally breaks down to the road, on the other side of which stands a modern house; here therefore excavations could not be carried out, but there is every reason to suppose that here was the South Gate of the Outer Town

East of the modern building, in the low-lying agricultural soil, our work produced better results. A slight depression in the ground level, running in a straight line for about 180·00 m., represented the town ditch: this may have been originally no more than the borrow-pit of the wall-builders, who required much earth for their mud brick and would obviously have taken it from the nearest spot and from outside the line of their work; a ditch here, even a shallow one, would have protected the wall footings from the occasional waters coming down the hospital ravine and also would have been of military service. Along this ditch then ran the town-wall. Its outer face had everywhere perished, but considerable stretches of its inner face were preserved; it was noticeable that even here, on soft soil, the foundations were of a very shallow and feeble type. No salients could be traced. The evidence for the inner wall was less satisfactory. Just beyond the modern building were found the remains of House C, built upon the wall line itself and perhaps antedating the wall; to the east of this were eight hammer-dressed blocks of hard limestone (giving a length of 5·90 m.) which certainly were part of the wall face, and two good blocks behind them which gave the thickness of the wall as 5·00 m. This seems to have been a recessed part lying 4·00 m. behind the front wall of House C and some 8·00 m. behind the next stretch for which evidence was forthcoming: where this next stretch came to an end there were behind its line walls clearly belonging to another house and not to the town's defences.

East of this point the inner wall failed altogether and the outer wall became irregular, and its remains were too scanty to afford material for any certain reconstruction. It seems to have been recessed for the length of 16·00 m. and then to have been carried forward again so as to enclose a small pudding-stone knoll on the line of the second scarp which drops to the lower river beach. The rock bank is here breached by the mouth of a wady, a continuation of that which skirts the hospital, and the edge of the miniature ravine has been cut artificially to an almost vertical face above which rose the town wall. At the end of the ravine the wall seems to have returned north following the natural rock face and crossing a smaller and shallower wady,—a mere dip in the rock's level,—the farther bank of which again was artificially scarped. On the top of the rock foundations could be traced for about 3·00 m., but thereafter they failed: neither along the bank by the second wady nor on the flat ground immediately below could any signs of construction be discovered. It is possible that a wall did run all along the rock edge to a point a little east of the South Gate of the Inner Town, but for this there is little or no evidence; even if it did so, it is not to be regarded as the outer wall of the late town (inasmuch as buildings lay to the east of it), but as a cross wall dividing the late town in two and affording a subsidiary line of defence: no reconstruction is admissible which would leave the long river wall outside the scheme of the fortifications. The scarped edge of the second little wady gives a line which if produced hits the south end of the great embankment wall. Half-way down this line was found a tumbled group of large blocks which though not *in situ* are not likely to have been removed far from their original position: in default of better evidence we have suggested a straight wall in the direction thus indicated, linking up with the embankment wall on the Euphrates and completing the circuit of the Outer Town on the land side.

The extreme end of the river wall was destroyed by the Germans during the war, and for some 10·00 m. there were only a few traces of filling left. Beyond this the first stretch runs on in a straight line for 14·00 m., having at the start three courses of stones which rose to six at the far

end of the stretch; the courses are irregular, from 0·30 to 0·50 m. high, and the stones are mostly rather small, their length being anything from 0·40 to 1·20 m.; the construction is of poorer quality than in the following stretch, and the presence in it of blocks taken from other buildings and worked into the wall anyhow, e.g. with the dressed face downwards, shows that it is of late date.

The wall now makes a turn of fifteen degrees and runs in a straight line for 253·00 m. It is of more careful and more solid construction than before, the blocks are on an average much larger, and where the top course is preserved are well-dressed orthostats like those of the river wall of the Inner Town. The height of the courses averages 0·70 to 0·95 m. and blocks vary in length from 0·90 to 1·40 m.

There is a higher earth talus along the wall's base, and of the four courses visible at the start the lowest corresponds to the fourth from the bottom in the previous stretch, i.e. seven courses would show if the wall face were cleared. The top course is lost at 12·00 m., the second at 18·50 m., exposing a back (filling) course of similar big stones with a packing of small rubble and mud. After a partial recovery where two blocks of the top course remain (22·70 to 23·40 m.), a wide gap up to 30·40 m. lays bare a third row of big filling stones behind that already seen. Then the face reappears with four and later with five courses visible, the bottom course being the same as that in the first part of the reach; at 47·00 m. three stones of a still higher course appear, but the talus covers the course which had been the lowest visible just before, so that only five courses show out of a probable nine. (See Pl. 5 *a*.)

At 48·50 m. the wall breaks down to two and at 50·00 m. to a single course and that partly buried; at 52·50 m. it has two showing, is badly smashed up to 60·50 m., then becomes clear of earth accumulations at its feet and rises (at 67·00 m.) to a total height of six courses, the sixth represented by one stone only. At 74·50 m. all the face is broken away or buried, and only the upper filling of the back part shows. At 84·00 m. it recovers with two, three, four, and, at 92·50 m., five courses, but at 96·50 m. breaks down again to two courses and to one, retaining only the back filling. One to three courses remain as far as 106·50 m.; the filling here is of small unshaped stones so rough and so roughly tumbled in that they can hardly be said to be in courses at all. From 116·00 m. onwards all facing stones have been removed by the Germans and only a little of the rubble backing is left; previous to this destruction the wall face was stepped, each course being set back one stone's width from the front line of the course below, as in the embankment wall in front of the fort at the south-east corner of the Inner Town: so at least we were informed by the natives. At 253·00 m. the wall disappears under the railway embankment, but its line is continued by the stepped embankment wall already mentioned.

CHAPTER V

THE INNER TOWN

§ 1. The North Wall (Pls. 3, 5 *b*, 6, 7, 8, and 9).

Section A. Pl. 6. From the north corner of the Citadel a tower was built stretching half-way down the slope of the mound towards the river. The main element of this was a bastion of solid masonry forming the tower's western half. There would seem to have been at least twelve courses of rubble, which varies a good deal in size, the larger stones measuring about 0·80 × 0·60 m.; the foundations are stepped down the slope, but the stone courses are horizontal and continuous: if the highest course now remaining at the inland end of the tower was originally carried through to the water-front (where now only five courses of rather small rubble survive) the total height of the masonry was some 4·50 m. with brickwork above.

To the east, the superficial foundations of a broad wall, probably built of brick from the ground upward, can be traced running down the slope of the mound to a point almost on the line of the front of the bastion; here they break away and afford no definite proof of connexion with the latter, but it is fairly safe to assume that this wall is either part of the tower itself or a flanking wall to shield its eastern face. It may be the Early Hittite wall enclosing the north end of the Kala'at slope between ring wall and river. On the plan, the two sides are conjecturally joined up by a continuation eastwards of the front line of the bastion; the absence of a true corner at either end of this makes it probable that though the bastion was built separately, and is structurally independent, it lined up with the main wall and in appearance was distinguished from it only by its greater height.

To the west, the line of the tower front was prolonged by a wall of brick over stone. For the space of 80·00 m. this has almost entirely vanished and a few patches of the rubble filling alone testify to its previous existence. The violent slope of the ground on which it rested fully accounts for its disappearance. The tower runs back for 18·00 m., and then its masonry abuts on the end of the inner (brick) wall of the town.

The defences along the north of the town consisted in fact of two walls, generally almost parallel and about 22·00 m. apart: the outer wall was the stronger, with a greater proportion of stonework; the space between the two was sometimes more or less open, sometimes occupied by a mass of cross-walls which enclosed chambers or passages. These may be the basements of forts; but more probably they were carried up to no great height and their flat roofs formed behind the outer wall a terrace apt for the evolutions of the defence. The two ends of this wall line, its junction with the citadel wall on the east and with the earth ramparts on the west, were respectively strengthened by the bastion-tower already described and by a very large and complex fort.

Section B. Where the inner wall joins the bastion, it is of brick throughout. 8·00 m. to the west the brickwork as such disappears and is replaced by foundations of small rubble which run

on for 6·50 m. and then fall back some 1·50 m. to continue at a different angle for 5·50 m. and to peter out. These rubble foundations, however, though in part at least they follow the original wall line, are no part of the original wall: they are very superficial, and the remains of pottery built into their mud mortar show them to be of late classical date: they only concern us in so far as they have destroyed the older work. The original brickwork does not appear again until the bottom of the (present) slope of the Citadel is reached, at a point 36·00 m. from the bastion. Between this point and the late wall mentioned above there is a good stretch of heavy rubble foundations (one of the blocks measures 0·90 × 0·65 m.), in front of which lie one or two fallen orthostats (one 1·55 m. long by 1·00 high), while a cut made behind shows the existence of other walls to the rear. For some time I regarded this as part of the original wall; but I have no doubt whatsoever that I was wrong in so doing. The foundations are of a very flimsy description, with no depth (one or two courses only), badly set in loose soil which contains Hittite potsherds of fairly late date: they give a wrong alignment (this is an *a priori* argument, but the evidence given by the brick wall, where it is found, is very strong), and they lie too high to agree with the brick wall just to the west. Underlying the back of these foundations was found a row of stones more deeply set and in a different alignment, which may be the foundations of the brick wall: in that case the later stonework (doubtless itself Hittite) was plastered against the face of the older brick wall, which, as is shown by a deep bed of water-borne shingle and refuse lying right across the wall line, had been breached and needed repair. In this section, as the plan shows, very little was found of the two main walls, and no sign whatever of any cross-walls. The evidence was not conclusive, but it seems safer to regard this section as one in which the intramural area was open.

Section C. Once on level ground, the ruins present more abundant data. The inner wall, 3·50 m. thick, runs straight and easy to follow for 44·00 m. The outer wall rises directly from the edge of the pudding-stone cliff, which here had been trimmed into a straight line: the blocks, ranging up to 1 m. high and anything up to 2 m. long, rest on the natural rock: where they have fallen down, or the edge of the rock itself has broken away, the line can be restored with absolute certainty. The intramural space is divided up by cross-walls. At the eastern end of the section the cross-walls are so massive and so closely set that they must be regarded as the substructures of a very lofty terrace or of a tower. Most of the cross-walls are or seem to be interrupted near the south end by doorways forming a passage parallel with the main wall line. The second cross-wall discovered is the best preserved. From the face of the inner wall there runs out a wall of heavy rubble, two courses high, ending in a solid stone doorway. The reveals, 2·00 m. out from the main wall face, are made of good hammer-dressed limestone orthostats; the actual jambs are similarly dressed white limestone slabs, 2·40 m. long by 0·95 m. high, which (like the reveal blocks) have round dowel-holes at the outer corners of their top surface; these slabs rest on a good stretcher-course, 0·25 m. high (with a set-back of 0·05 to 0·12 m.), under which are undressed rubble foundations. Beyond the doorway the cross-wall continues north, with two courses and then one course of very heavy rubble (stones up to 1·00 m. × 0·60 m.) showing traces of brickwork above. It breaks off before reaching the line of the outer wall, which itself is destroyed, and there is no means of determining the latter's width.

The pudding-stone forms here a cliff, mostly natural but straightened out by art, some 3·50 m. high. Immediately below the cross-wall just described an opening in the cliff-face gives access to a large cave. The destruction of the outer wall is due to the collapse of the cave roof

near the mouth, and this collapse has destroyed almost all evidence as to the character of that mouth. It would appear, however, that at one time it was blocked, wholly or in part, by a masonry wall; at present it is fully exposed and is 13·50 metres wide. The cave is some 2·80 m. high. The roof is of pudding-stone, the walls and floor of the underlying limestone. The roof is quite flat; the walls, which are artificially cut, run in straight lines drawing together somewhat towards the back of the cave. The floor is flat in the centre with a very slight upward gradient inland, and at the sides is stepped up and from the steps carried in a sharp slope to about half-way up the height of the walls. The cave was open and in use till late Roman times, so contained no Hittite remains of interest. Behind the inner town wall three vertical shafts cut in the rock give access to the cave. The outermost of these measures 2·00 m. × 1·50 m. across, and was found to be stopped by two large and well-cut blocks of limestone 2·35 m. × 1·00 m. × 0·40 m. and 2·30 m. × 0·75 m. × 0·70 m. respectively which were laid flat and bedded in masonry over the entrance: fragmentary but massive wall-foundations showed that the shaft had once been enclosed in a building probably connected with the inner wall. Behind this were the two other shafts: one was square, measuring 2·00 m. × 1·50 m., with a wider cutting above to take the (missing) cover-stones; the other was broken up and rendered shapeless by the collapse of the roof—it may have been itself purely accidental. The dangerous condition of the roof here, and the impossibility of any important remains surviving, decided me to discontinue the excavation of the cave after the first shaft had been reached and opened up. That the cave had some intrinsic connexion with the wall there can be no doubt: what the connexion was is conjectural, but it may well have served the purpose of a water sally-port, corresponding to that at the south end of the river face of the Citadel, an emergency exit only to be used in time of war, and in peace time kept blocked by the heavy stones found by us *in situ*.

In the cave, but high up in the filling, *c.* 1·00 m. above floor level, and therefore of no dating value, was found the cylinder shown in Pl. 25, fig. *b*. 3. Close to the shafts, and cut in the same pudding-stone rock, was found a small chamber-tomb (N. W. 1) which afforded corroborative evidence for the Middle Hittite dating of the inner town defences. It is fully described on p. 133.

Just west of the cave mouth a few facing-blocks of the outer wall remain in position: beyond these only some of the rubble wall-filling survives. The inner wall is well preserved, with cross-walls at intervals, or at any rate with buttresses which correspond with the inner door-jamb of the first cross-wall and probably extended like it across the intramural area, though little trace of their continuation was found: the earth here was very shallow and our cross-cuts produced only rubble and cobble-stones which were probably wall-foundations but may conceivably have been bedding for a floor.

Section D. Then comes a change. The western face of the last buttress is carried back through the thickness of the wall, giving it a clean end, and beyond this end there is a gap of 7·00 metres before a new stretch of walling begins: the new stretch, which is set back 4·50 metres behind the line of the last section, also ends cleanly and abruptly to the east. Between the sections there is therefore a break as well in alignment as in continuity. The only thing which occupies this gap is a patch of low-lying but poor foundations (small rough stones and pebbles) of a wall (?) running north and south with a clean south end in line with the inner face of the wall of section C: between it and the section-ends on either side is a wholly unfilled interval of

3·00 and 1·30 m. respectively. This arrangement, which is paralleled more than once on the river wall, is hard to explain. Either the low-lying patch of cobbles is only a pavement bedding, in which case the whole gap must be conceived as a wide doorway through the inner wall; and the fact of the wall-ends not being in one line is against this; or the foundation is that of a wall which did not itself fill the gap but had a narrower entry on each side of it. The latter seems the more probable supposition; but it does not explain the abrupt change in the wall line.

The inner wall runs on, from this point, at the same angle as before, though set back from the old line: it is of mud brick on three or four courses of small rubble and cobbles, only the corner being strengthened by two heavier blocks. The rubble of the wall is still further recessed by 0·60 m. with a correspondingly shallow buttress at each end; the wall ends with the second buttress, when it is joined by the south wall of the mill tower (E).

Section E. The junction of the tower is confused by the existence of two walls of different dates which, while partly coinciding, run at different angles: both are Hittite and both are ruined down to foundation level.

Properly speaking the tower is a projection from the inner town-wall to the face of the outer: it is therefore an intramural, not an extramural, structure. Its outer face (Pl. 5 *b*), coming where the angle of the wall line changes, is particularly massive: its side walls, not being normally required for purposes of defence, were not so thick, and have been modified to suit some later plan. Most of the walls found are shown by their bonding to be contemporary: only that at the east side of the tower which runs askew above the straighter foundations of the original wall must unquestionably be put down as late. At the south-west corner, the brickwork remained standing about 1 metre high. Over the brickwork ran the stone foundations of a fairly heavy skew wall which though of early material is probably a Roman structure, linking up the Roman town wall with the Hittite tower, still exposed and in use: it is not shown on the plan.

Behind the tower stretches a level strip of heavy but unshaped stones whose worn surface points to their having been a pavement in front of the tower door: they are separated from the foundations of the tower wall proper by a narrow surface drain.

Of the doorway, part of the threshold stone and the foundations of the jambs remain: a second pair of piers form an inner doorway: beyond this the whole ground floor area of the tower was taken up by a single room of the shape apparently of an inverted T: a narrow recess on either side accounted for all that remained of the intramural space proper, while the leg of the T was in the thickness of the outer wall.

Owing to the presence of recent Mohammedan graves the room was not cleared beyond the point shown on the plan, and its shape is therefore partly conjectural. At its north-west corner the tower has a proper return wall south, which starts with blocks of reputable size and tails off with small rubble. A few stones continue the line of the towers outer face westwards, and beyond them are traces of brickwork and poor cobble foundations. This is in striking contrast to the solidity of the tower's stonework, but there is yet enough to show that we have here one of the curious transitions, normal in Hittite work, from stone to brick: the tower ends, but the wall continues, in brick, along the same line.

Section F. This section was one which obviously would not repay excavation. West of the mill tower the low but flat-topped pudding-stone cliff gave place to a fairly steep gravel slope running down from the inner wall line to the mill-stream, and on this slope there was no

accumulation of soil to protect the originally flimsy foundations of the outer wall. These were followed up from the north-west corner of the tower until they gave out altogether, but that was for no great distance ; it merely sufficed to show that from the tower or thereabouts there was a slight change of direction which brought the outer wall gradually closer to the inner wall.

The inner wall was in better state: its mud-brick ruins had formed a low but fairly steep-faced mound of which the Romans had taken advantage: they had built their town-wall along it, and in most places had done almost as much thereby to conserve as to destroy the Hittite work.

Along the whole of this section we contented ourselves with making cross-cuts to show the nature and direction of the wall. Even this was not quite easy. Though the core of the wall might be standing two metres high, the mud-brick face had been so hacked about and so weathered that it could be only approximately traced: one could draw an imaginary line and certify that there was solid walling half a metre to the south of it and nothing but fallen brick rubbish half a metre to the north; but a clearly defined face was not to be found. The inner wall ran on virtually on the line of the previous sections (it seemed to change by about one degree), and just west of the tower the intramural space would seem still to have been divided up by compartments such as those in section D ; one cross-cut showed party-walls of mud brick, but these party-walls also seemed to have been razed at an early date. It was clear that rebuilding and alteration had confused the issues before the Romans came and made a clean sweep of everything outside their new rampart: even in the case of the inner wall itself, the foundations would change so much in level and in character that only the consistency of direction showed them to be parts of the same system though not necessarily of the same date.

The white steatite bulla-seal, Pl. 25, fig. *b*. 9, was found against the inner wall in this section.

In the middle of section F the low mound of the inner wall gave place to a hollow: there we suspected a gateway, the more so as several large Hittite blocks were visible on the surface ; and this point was therefore dug more thoroughly than the preceding stretch. Digging, however, produced only the ruins of a Roman building (perhaps the proscenium of a small theatre lying against the wall) whose foundations projecting north to the line of the outer wall went down below the Hittite level ; enough mud brick remained to show that the original wall had run on uninterruptedly and that there had not been here any gateway.

West of the Roman ruins both the inner and the outer walls could again be followed. The slight change of angle already noted had now brought the two close together, reducing the intramural space to less than ten metres. The outer wall was four metres thick: its foundations, of rubble masonry, were well preserved on the inner face, standing four and five courses high ; they thinned off, owing to the slope of the modern ground level, and their outer face had been ruined right away and could only be approximately fixed. The core of the inner wall stood two metres high, its face had disappeared. Between the two there ran a skew wall, of brick on rather flimsy stone foundations laid less deeply than those of the outer wall ; it was six metres wide. From the inner face of the outer wall it ran sharply across the intramural space and ended in a doorway with stone jambs which seemed to be right against the face of the inner wall and to be blocked by it, though there may have been in the latter an opening corresponding to the door. The skew wall was certainly of later date than the two main walls, but there was no means of dating it more definitely. By it was found a clay flask.

To the west of it, the outer wall ran on for 12·50 metres and then broke away; there were still foundations carrying on its line, but these were of a very different character and the pottery embedded in them (including stamped tiles) showed them to be of Roman date.

The following section (G, the North-West fort) shows how very far-reaching had been the changes in the north wall prior to the classical period; in section F the destruction of the older work due to classical reconstruction and to the ground levels had been far more wholesale, and this fact, which rendered complete excavation unprofitable, also rendered less valuable the results of the partial system of trenching which it imposed. It is safe to say that originally between the mill tower and the North-West fort the inner and the outer walls continued, virtually along their old line, that at one time there were compartments over part of the intramural area, that during the long period of the Hittite town's existence the defences here were several times modified or completely remodelled; it would be more than rash to assign to any one date or system the broken and scattered elements of walling which time and man have spared and our trenches brought to light.

Section G. The North-West Fort. Pls. 7, 8, and 9. The double wall of the last section led to a rectangular complex of buildings, mostly well preserved, which represent the basement of a large fort forming the junction of the builded wall and the earth mound. The walls were of mud brick on heavy stone foundations; the ground-plan was simple, parallel rows of small chambers (mostly opening out of one another), fronted by a large rectangle of solid brickwork projecting beyond the wall line on the north and probably representing a raised terrace or platform on which the defending forces could be massed. The fort had been radically remodelled more than once. The ground-plan of the later buildings could not be recovered in its entirety, partly because of their complexity, much of the earlier work having been incorporated in them, partly because of their ruined state; the earliest buildings were much better preserved. The plan, Pl. 7, shows how much of this middle Hittite fort was actually cleared—it was enough to give a very good idea of the whole.

The fort consisted of two parts, constructionally independent though similar in character: their foundations are at different levels—those of the eastern part being *c.* 0·50 m. below those of the western—and the two walls which divide them are not bonded together, but simply built touching each other. These foundations are well built of moderate-sized stones: the walls above, averaging 1·80 m. in thickness, are of mud brick plastered and whitewashed, both the plaster and the whitewash being remarkably well preserved (v. Pl. 9 *b*). The bricks are made of mixed soil including many fragments of M. H. pottery, and are of very poor quality; the mud mortar is of precisely the same character as the bricks and forms with them a mass so uniform that the individual bricks could not be distinguished from each other and their dimensions could not be determined; it was only the presence of the whitewash which enabled us to follow the walls and to distinguish the standing brickwork from the absolutely homogeneous débris.

The rooms of the eastern part communicated with each other by means of doorways; these had raised stone thresholds, but no jambs, and were simply apertures in the brickwork, their sides plastered and whitewashed; they had never been furnished with wooden doors. Three of these chambers were completely cleared (see plan, Pl. 7, and photographs, Pl. 9): their walls were standing, in some places, 2·00 m. high (in places they had been destroyed by our work), but they contained nothing of interest. In the northernmost, indeed, were found some human bones and

some scattered beads, small nasturtium-seed beads of dark brown paste, and a scaraboid seal (Pl. 25, fig. *b*, 12), but otherwise the rooms were filled with remarkably clean brick rubbish. Work was carried far enough east to show the existence of a second range of chambers, less well preserved than those already dug out, but as the work was extremely heavy (floor level was

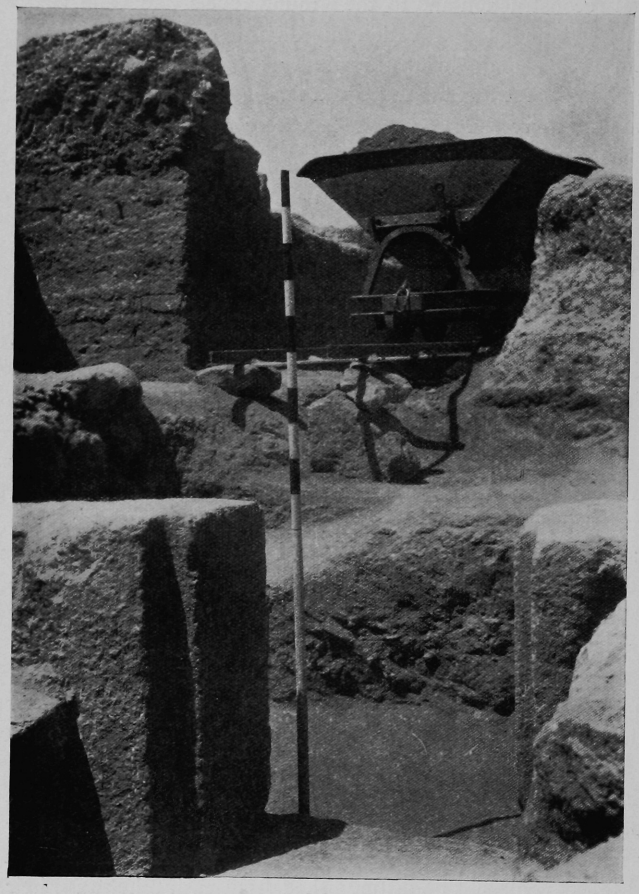


Fig. 10. Ashlar doorway in south-east room of fort.

three and four metres below ground surface) the eastern confines of the building were left to be conjectured.

Of the western half of the fort four chambers were laid more or less bare; west and south-east of these the walls of the early period had been razed during the Hittite occupation, and even their foundations could hardly be distinguished, and so were not followed up; the less so as to have followed them up thoroughly meant the destruction of all the later Hittite buildings.

At the same time there can be very little doubt that the restoration (Pl. 7) is correct in its main lines.

The chambers in this part of the fort had no communicating doors except in the case of the south-east room (see plan and fig. 10), where there was a doorway with solid ashlar stone reveals: the rest must have been merely cellars reached by openings through the floors of the upper rooms. No objects were found in connexion with them. Along the whole of the north front of the fort, attached to it but not constructionally one with it, was a solid mass of brickwork which, starting with the same height as the walls against which it abutted, gradually thinned off with the slope of the modern ground surface and at 17·50 m. gave out altogether; its northern face therefore could not be exactly fixed, but was assumed to be where the last traces of brickwork occurred. The inner western corner of this salient was discovered in the slope of the mound corresponding to the western limits of the fort. Here were three large and well-worked limestone orthostats, fronting north, their line prolonged westwards by rougher masonry which probably had been hidden by the slope of the glacis whose core the wall retained. East of the orthostats projected the brickwork, the western face of the platform which stretched before the fort; the east face of this platform was presumably the continuation of the outer North Wall. The fort lines up not with the North Wall but with the eastern section of the earth rampart on which it abuts; its west wall was the retaining wall of the end of the mound, and the short stretch of stone orthostats already mentioned lined up with the mound's face and filled the angle between its slope and the brick platform—virtually they are the end of the retaining-wall which was the west wall of the fort. At a later period this retaining-wall fell into disuse and the orthostats also may have been buried beneath the new glacis slope; but they would seem to have formed part, if not of the earliest plan, at any rate of the earliest fort before it had been very seriously remodelled; it may well be that the whole of the brick platform was an addition to the main building, later in conception, if not in actual date. Whether it was solid all the way up, as it was at foundation level, cannot be known; it certainly betrays now no sign of internal construction, and it is safest to assume that it was simply a platform.

The fort, like the rest of the North Wall and like the earth mound, belongs to the Middle Hittite period. During the city's life it was modified and recast beyond all recognition. In the later work which covered the site it was easy to distinguish three main periods of Hittite construction: it was not so easy to work out a consistent scheme of the form assumed by the buildings of any one of those periods, and the plan (Pl. 8) shows but a fragmentary and confused complex of rather meaningless walls.

In the second period, the whole of the eastern part of the old fort had been ruined and its chambers filled with débris to a depth of 1·50 m. to 2·00 m. above their floor level; some of the old walls stood yet above that level and may have been incorporated in the later building, but as no floors could be detected here it was impossible to say when this was the case and when not. In the western sector the brickwork of the old walls had been wholly and deliberately destroyed: that this was the result of deliberate destruction and not of gradual decay was shown by the fact that large masses of mud-brick walling lay fallen, but intact, with their whitewashed faces resting on the floor surface. Where the stone foundations were left, the chambers were filled up with débris to the level of the top of the stonework, or else the foundations too were pulled up so as not to incommode the new plan. Essentially, the second period building, and

the third, seem to have consisted of rooms, or recesses, flanking a long and narrow corridor which may have had a door at its northern end giving an outlet clear of the fortifications. The old brick platform seems to have been retained in part, but curtailed: at least if we are right in supposing that heavy masonry foundations which run across the old brickwork belong to the second period and represent the front of the platform at that date.

Immediately behind the platform, overlying four of the earlier chambers, was a big room or court A, whose east wall rested upon but did not align with the stone foundations of the older work (Pl. 9 *a*). This court belongs to two dates. Above the stonework were four courses of bricks, reddish in colour and measuring *c.* 0·40 × *c.* 0·22 × *c.* 0·11 m.; above these, resting upon them but not quite in line (and on the south wall, where the same construction showed, not at all in the same line), was walling of a very different sort: here the bricks were yellowish-grey in colour and measured *c.* 0·35 × *c.* 0·26 × *c.* 0·11 m. Clearly here there were two periods, both later than and independent of the original fort, of which the later was, perhaps, no more than a patching up of the first. The chamber was cobble-paved, and its walls, standing in places 2·00 m. high, were plastered and whitewashed. Facing this chamber, at the other side of the corridor or passage, was a series of recesses or open chambers with other chambers behind them. The brickwork of their walls resembled in quality that of the early buildings beneath them, and in part incorporated remains of those early buildings: the bricks were of so mixed material, so homogeneous with the mud mortar, that generally speaking their form and dimensions could not be ascertained. The one or two individual bricks which could be traced measured 0·40 m. long and should therefore connect with the earlier of the two periods represented in the wall opposite; but they had every appearance of having been re-used. In not a few instances the wall was cut into or cut away by our workmen before any one had recognized that it was a wall.

The floor of the passage east of chamber A was level with the top of the stone wall-foundations of the earliest period, and these served as part of its pavement: the rubbish-filled area between the walls was paved with small cobbles. Of such cobble paving there were two layers, corresponding to the two building periods represented in the east and south walls of chamber A: the lower was flush with the old stone foundations, the upper was some thirty centimetres higher, and was better preserved. South of chamber A the two cobble pavements were indistinguishable and the floor level seems not to have been raised when the reconstruction took place.

Chamber B could be approximately mapped from its pavement, which stopped where the walls had been (the actual wall-face had mostly disappeared). In the second recess (C) the lower cobble stratum ran under the walls, the upper ended against them; this part of the wall therefore must belong to the later (third) building period. It is built without stone foundations, resting on the hard brick-earth rubbish of the old destruction level, and contains re-used material taken from the earlier buildings. Its bottom course is level with the line of junction of the two styles of building in the east wall of chamber A, i.e. nearly 0·40 m. above the earliest cobble pavement and level with the third period cobble pavement farther north. Chamber D was better preserved: its walls and also its floor were mud plastered and whitewashed, and thanks to this fact could be followed up: the brickwork was of the bad quality characteristic of this period and the measurement of the individual bricks could not be ascertained.

The west wall of chamber A formed a retaining-wall to the end of the earth mound, and

behind it, some 2·50 m. above the cobbled floor within the chamber, were rough but heavy stone foundations with traces of brickwork above which ran obliquely up the higher slope of the mound, almost bisecting the angle between the west wall of the chamber and the short stretch of front wall with stone orthostats which, belonging to the earliest period, may have been still in use in the second and third. This oblique wall, 5·00 m. thick, is apparently the end of the actual town wall which ran along the top of the earth mound.

These buildings of the second and third periods were in time destroyed as thoroughly as had been their forerunners. The whole site was buried under 1·50 to 2·00 m. of débris, and the new buildings which late in the Late Hittite period were erected on the site had nothing whatever to do with the earlier work. These latest constructions, lying close under the modern surface and still closer under the Roman bath establishment which covers much of the site, have been so ruined that no plan of them as a whole can be made: the existing remains consist only of three rooms or courtyards between which no structural connexion can be traced.

In the north-west, 1·10 m. over chamber A of the older building, lies a chamber G. The floor is of cobbles overlaid with beaten mud; the walls are of brickwork over stone foundations. The stonework shows alternate courses of fair-sized rubble and small flat splinters of stone which form the level bedding of the next rubble course: the main courses are 0·35 to 0·40 m. deep: at the south-west corner the stonework dwindled to a single course externally. The stone was carried up higher on the inner face of the wall than on the outer, so as to stand nearly 0·70 m. above the floor level of the interior. The foundations contained a large proportion of soft white chalky limestone. The bricks measure 0·41 × 0·11 m., stretchers only being employed with, at the corners, half-bricks 0·16 m. long to give a good bond: the bonding was excellent throughout. The north wall shows an inner face only: behind this is the solid brickwork of the (old) platform, which, as the town-wall, seems still to have survived to a thickness of 9·00 m. Outside the west wall the space between it and the west wall of the old room A was filled up with rubbish containing a great quantity of Late Hittite pottery; as much of this was of forms found in the latest buildings of the Outer Town and rare or wholly unknown in the Yunus cemetery, it can safely be said (as is in any case probable) that the building to which room G belongs dates from the very end of the Late Hittite period.

Connected with chamber G only by general similarity of type and by level of construction were two rooms at the south end of the site, E and F. When these were built the cobble paving of periods II and III had already been buried under fallen débris to a depth of nearly a metre, so that the stone foundations of chamber E, though sunk below what was then surface level, are 0·80 m. above the cobble-stones. Chamber F is very different in level. The surface may have been uniform, but the whole of the chamber was sunk below the surface: a rectangular pit was cut down in the solid mass of brick rubbish which covered the site, as low as the floor level of the third period; this pit was then lined with brickwork (which was presumably carried up also above ground level) so as to make a sunken chamber, a chamber, that is, which lay at least half below the floor level of the contemporary rooms adjoining it. As the lining of the original pit was put in from the inside, the bricks being laid against the none too cleanly hewn earthen sides, the outer face of the brickwork, when the earth was cleared away from it by us, was most irregular and for some time we were completely at a loss as regards the character of the building. Inside the walls were true and well built, plaster-faced, with a whitewashed mud floor, through which

could be distinguished some stones of the wall-foundations of the earliest (M. H.) period of the fort; outside, the bricks were stepped outwards from the bottom up, and having no mud pointing detached themselves markedly from the whole mass (v. Pl. 9 *a*). These bricks were of a peculiar yellow colour, were roughly square, and measured 0·25 × 0·28 × 0·10–0·12 m.; in one corner occurred one of the 0·40 m. bricks, taken over from the second period walls and re-used here. Abutting on this sunken room, but on the normal floor level, was a second chamber, E, of which only three walls could be traced. The foundations on the north side were of rubble, on the east and south of a single course of river pebbles; the floor was of beaten earth on a pebble bedding which extended to beyond the south wall of the chamber, probably to form the floor of another room whose walls had wholly disappeared. Virtually none of the brickwork remained, since the ruins lay very near the surface and the foundations of the Roman bath building rested actually on the floor of the Hittite rooms, and almost everything above floor level had been destroyed by the classical builders.

Just north of the outer wall of chamber E, in the brickwork of the earlier buildings, there was sunk a circular well or shaft, 8·00 m. deep, which dated from this fourth (L. H.) period. It contained numerous L. H. pottery fragments, including the vases in Pl. 20, figs. *c*. 2, *d*. 1, and three gaming-boards roughly engraved on slabs of soft limestone.

On the floor level, close to this shaft, was found a fragment of a late Cypriote ampulla, with black bands and concentric circles on a bright red ground.

In the south-east corner of room E, in a circular pit cut in the floor, immediately below a Roman wall, was found a pot-burial containing cremated remains and a quantity of objects in gold, semi-precious stones, and ivory; the tomb must date from the very close of the Hittite period; the jewellery in it would seem to be considerably older. The Roman bath buildings which overlay the south part of the site will be described in a subsequent volume.

Summarizing what has been said above, the different buildings which occupy the site may be described thus.

The earliest (M. H.) fort, of which alone the plan can be restored with tolerable accuracy, took the form of a rectangular tower built up below in small chambers, some of which at least were mere cellar-rooms, while its upper floors were presumably barracks. In front of this, completing the angle between the two adjacent wall-sections, was an irregular quadrilateral of solid brickwork, an advanced manœuvring-platform for the defenders. This fort was absolutely destroyed, perhaps at the close of the Middle Hittite period, and in the Late Hittite period there was built in its place a fort of another type, slightly different in orientation, but preserving as one of its features, though in a modified form, the front platform of the original plan. This new building may have contained a sally-port: certainly its main feature was a central passage between chambers or recesses which may very well have had an outlet at the north either on to the platform or alongside of it to the valley of the mill-stream. At some period or other the fort was largely rebuilt without, so far as can be seen, the ground's plan being seriously modified.

Towards the end of the Late Hittite period this fort was destroyed, and over its ruins rose a new structure of which only some incoherent elements remain. The oblique (town) wall to the east of the fort, assigned above (section F) to period three, continued in use in the fourth period, for it underwent certain repairs at this late time; the brick platform, in a reduced form,

was incorporated in the town-wall, and the other buildings found (rooms E, F, and G) may well have been behind the defences rather than structurally part of them; certainly they are so flimsy in character that they cannot have belonged to a fort rising, as the earlier forts had done, to any considerable height; they are rather the poor one-story buildings of the city's decadence which both in plan and execution compare ill with the solid structures of an earlier time.

§ 2. The Earth Mounds.

From this point, to the south-east corner by the river, the elaborately built wall is replaced by an earth mound. In view of the fact that the mound stands as much as 20 m. high at the

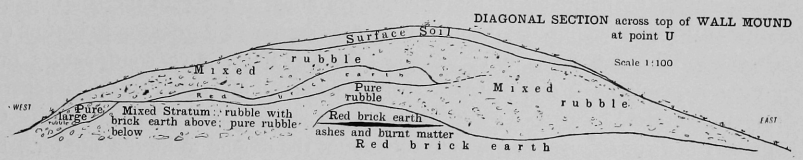


Fig. 11.

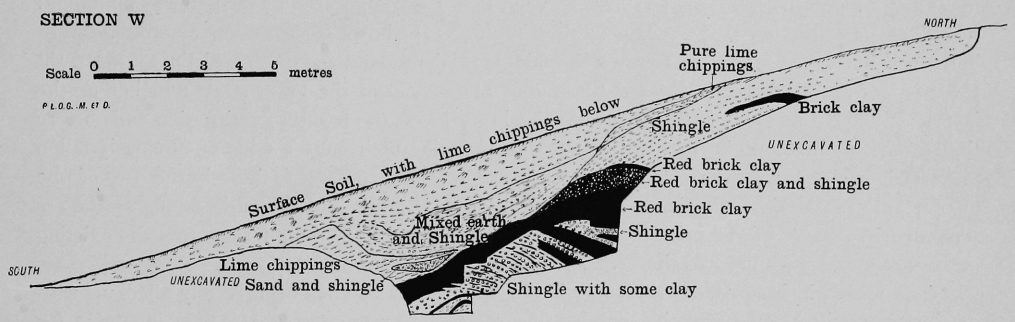


Fig. 12.

present time, it may seem strange that there should have been any doubt as to its original character; but for a long time such doubt did exist. The outer face of the mound is in most places very steep, running at the natural angle of the fall of earth; the top is narrow; the inner face slopes as a rule more gently than the outer, but none the less, except where the ruin of buildings inside the town have piled up their débris against it, is steep enough to afford but slippery foothold. The first idea of the excavators was that the rampart had always been much what it is to-day, a mound piled up as steeply as earth would stand, save that a wall, necessarily of no great height or thickness, had run along its top. But wherever stone wall-footings could be traced upon the summit—and that was seldom—they proved to be almost certainly of Roman and not of Hittite date. An alternative view was that the existing mound was itself but the ruins of a very thick wall built with an inner and an outer face of stone or brick and filled with earth or rubble: the collapse of the upper part of the retaining walls and the action of weather on the exposed core would have produced a mound triangular in section such as we have here. But

trenches driven into the earthwork both high up and low down not only failed to find a retaining-wall, but conclusively showed that such had never existed.

Naturally there was never any question of excavating the whole of the earthworks: that would have been destruction on too expensive a scale to have been warranted by any possible results: we have done no more than was necessary to establish the nature of the fortification. At the west gate we have (see Pl. 10 *b*) a virtually complete section of the mound at a point where the retaining-wall of the gateway abuts on it. Farther to the south, at the point marked U on the general plan, Pl. 3, the French troops, during the hostilities of our 1920 season, dug a machine-gun emplacement which, though of no great depth, gave a useful section of the upper strata (fig. 11); these upper strata were tapped again at the point V, where a cutting was made to get brick-earth for the building of the expedition's house. Close to the south gate, at W, a long trench was driven deep into the mound, and gave a section of it from top to bottom (fig. 12): on the east side of the gateway another cutting (X), less deep, gave confirmatory evidence. At Y, where the mound takes a different form, being composed of two steep slopes separated by a gently shelving terrace, a cut was made in the upper slope; farther east, at Z, the German railway engineers in 1913 scooped deeply into the foot of the mound to level a site for a hut.

Of these sections, complete or partial, those at the west gate and at point W are the most important, though the former is less instructive in that it is complicated by the gateway buildings: it will be described on p. 73. The section W (fig. 12) shows a succession of strata, almost horizontal but with a slight dip towards the middle of the mound and often a distinct upward tilt towards its outside: but this upward tilt is only observable in the lower strata: higher up the layers run flat to the face of the slope. At the lower levels the regular stratification ends before the surface of the slope is reached, and there is overlying their ends a talus of obviously fallen matter whose lines, running sharply downwards, are in strong contrast to those in the core of the mound: the two sections, the inner horizontal or uptilted strata and the outer falling strata, are separated by a layer of red brick-clay which, running up far more steeply than does the existing mound-contour, comes towards the surface and disappears about half-way up it.

The moat which surrounds the Inner Town on the land side has been largely filled up with detritus from the mound, and this implies that the mound was once steeper than it now is, for otherwise there would have been no cause for the earth of it to slip any more than it slips nowadays. As has been said, the present gradient of the mound is that at which earth will hold up, and if it was originally sharper there must have been some kind of retaining-wall to hold up the earth. That there was some kind of retaining-wall is also implied by the horizontal stratification of the filling; this must have been thrown in by basket-work, and in that method if you have no retaining-wall you almost inevitably get a curved stratification as in fig. 13, the basket-carrier walking up over the pile he has already made to chuck down the farther side from its crest, which grows forward and upward; on the other hand, if a wall is built *pari passu* with the deposit of the filling you throw first just inside the near wall and then forward, levelling up as you go to the farther wall, and your rubbish is coursed horizontally or slopes downward from the wall.

Fig. 13.

A wall therefore seems to be necessary, and the evidence all points to it, but the section W shows that there was no wall. But there was something which served the purpose of a wall, and

that is shown by the section. The mound was much steeper than it is to-day, its outer face sloped at an angle of degrees from the horizontal, and it was revetted with brick-clay. Put on as the mound grew in height, and dried by the sun, such a revetment, if kept in good repair (an easy matter), would amply suffice to retain the filling in position. The mixture of broken chalk, lime dust, and brick earth of which the mound is built becomes under pressure a very solid mass. In the excavation of the West Gate in 1914, above the south retaining-wall we exposed a vertical face of rubble filling 5·50 m. high, and though it is vertical and unsupported, by 1920 hardly a stone had fallen from it. By the South Gate, where the filling consists largely of shingle (for naturally the material used was that most ready to hand, and so there is plenty of variety at different points of the line) this is carefully alternated with brick-clay, and bands of brick-clay and, near the edge, of bricks run also parallel with the mound's face, making compartments which counteract the more fluid nature of the ballast. A revetment of mud may sound a feeble and therefore an improbable thing; but it was used, and there is really no reason why it should not

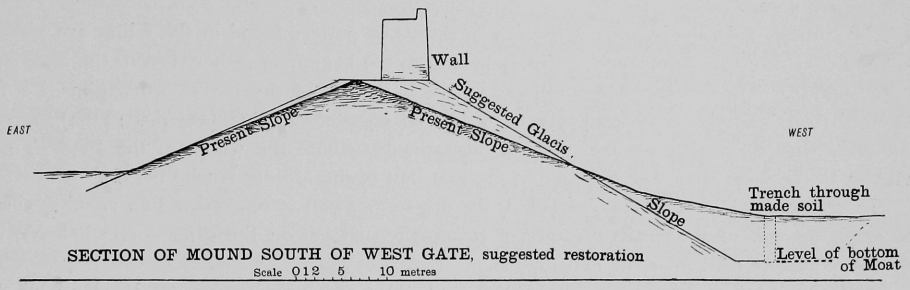


FIG. 14.

render as good service as a revetment of mud brick. In the West Gate section the revetment has disappeared: in section W it is preserved sufficiently to show that, with the sharper gradient of its outer face, the mound had a width at its summit (assuming this to have been no higher than it is now) of 10.00 metres. Along this broad top ran a wall which, judging from the remains at the West Gate, was 5·00 m. thick. The wall would have followed the front edge of the mound's platform, and this front edge has slipped down into the moat: the wall was of mud brick, and very likely had no stone foundations at all, for such would have been superfluous when the mound itself was a foundation; no trace of it therefore remains, except at the West Gate and at the south-east corner of the town, where, owing to the different character of the soil, stone foundations were necessarily employed. At this south-east corner, the line of the town wall ran across a sand-bank, and sand was therefore used for the filling of the mound. Obviously a mud revetment, which would suffice for a solid packing of lime and clay, would never stand against the thrust of so fluid a stuff as sand; here therefore retaining-walls were essential. As has been already mentioned, the mound here shows a pronounced step or terrace half-way up. The cutting at Y, in the upper slope, showed that this was composed of pure sand. The cutting Z, at the foot of the lower slope, laid bare heavy brick walling which (though its face had been wholly destroyed) clearly ran parallel to the axis of the mound and was the lower retaining-wall. It may be remarked that in this part of the

site the bricks were made of very loose and sandy mud, and were unusually difficult to distinguish from the soil surrounding them; it was, indeed, seldom that a wall here could be satisfactorily followed. In trying to trace out the connexion between the mound and the built wall of the river front we found brickwork, also heavy and shapeless, on the inner face of the former, and, again, stone foundations stepped up the end of the mound to its summit from the fort building below (see plan, Pl. 14). Here then the mound really was a wall, a double wall with sand packing between the two skins of brick, built in two sections, a lower and broader wall supporting a narrower one above, and this in turn surmounted by the rampart proper which ran along the top of the whole earthwork. It is, however, quite possible that even here the walling was internal. We have seen that where shingle entered largely into the filling, the brick-clay was so arranged as to form compartments dividing up the shingle both horizontally and vertically; where shingle is replaced by sand, regular walling is substituted for the lines and layers of piled clay, but this does not exclude the possibility that outside the walling there was a clay-revetted slope of sand, and that the mound presented a uniform appearance from the north-west corner of the town to its junction with the river wall.

All cuttings are alike in one respect. The sherds of pottery found in the filling are always of Middle Hittite type, and some definitely belong to the beginning rather than to the later part of that period. The evidence for the dating of the built part of the inner fortifications, i. e. for the north wall and the river wall, given by burials on the wall line (see pp. 133–4), agrees absolutely with this; and we can, without hesitation, attribute the whole of the Inner Town defences to the same date, and that one in the first half of the Middle Hittite period.

In the general plan of the site (Pl. 3) the inner town-wall is represented as running along the earth mound. As virtually no trace of it actually survives on the ground, so wholesale an attempt to restore calls for some explanation.

A fresh survey of the mound, made by P. L. O. Guy, following accurately along all the curves or angles of its present crest, showed that the whole line consists of twenty-one straight stretches of varying lengths. The difference of angle between two, or three, consecutive stretches was in some cases very small indeed. To have made the original town-wall follow absolutely the lines of the present crest would have been misleading. *Ex hypothesi*, the top of the mound was originally at least 10 m. broad (in some places it is now only one), the wall ran along the front of this platform, and it is the front of the platform which, owing to the greater steepness of the outer face, has disappeared. The wall therefore should be restored, for the most part, *outside* the present crest-line (see the restored section, fig. 14).

Again, on any given straight stretch of mound, the accidents of destruction may lead to deceptive appearances. At the two ends of the stretch the front face may slip down, and the crest of the mound will be the back of the old platform, or even the upper part of the back slope, whereas in the middle it may be the back face which falls and the crest-line will here be thrown forward to the platform's front: the new top of the mound will show a convex curve very different from the straight line of the old wall. This process may vary indefinitely and all sorts of minor angles and turns occur, which ought not to appear on a plan of the walls. I have worked on the theory that the wall was built in straight stretches, as few in number as the present conditions allow me to assume. All the survey points, i. e. all the present crest, have been taken as lying at some point or other on the original platform, generally nearer to the back of it than

to the front; the wall therefore tends to be in front of the survey line rather than behind it, but never by more than three metres. Where three consecutive survey points are so nearly in line that an imaginary wall five metres in width running straight between the two outer points passed over the intermediate point, the wall has been drawn straight for that whole length, and the (necessarily slight) angle of the present crest has been disregarded. In this way the twenty-one stretches of the crest survey have been reduced to the fourteen stretches of the restored wall.

§ 3. The West Gate. (Pls. 10, 11 *a*.)

The plan of the west gateway was peculiarly difficult to recover. The original structure had been radically altered at least once and had undergone various minor modifications; it had been destroyed altogether, and to complete that destruction the south retaining-wall which backed on the mound had been breached low down, and the earth and rubble filling of the rampart had poured through the breach, spreading fanwise and burying deeply the central part of the buildings: then, despairing, as it would seem, of repairing so hopeless a ruin, the men of Carchemish had decided to do without a western gate and had blocked up the entry with a mass of brickwork as high as the mound on either side, at the same time laying down a stone water-conduit along and above the abandoned roadway. To complicate matters further, the Romans had made here a fresh water-conduit, this time a concrete tube which ploughed its way through what was left of the old masonry and tunnelled under the brick blocking-wall; and builders of a yet later date had cut into the inner slope of the mound to lay their foundations and to cut their drains in the mass of brick which represented the earliest gateway and its successive botchings. The outer part of the gateway, once ruined, has suffered least thereafter; farther in, the water filtering from the conduit had turned the mixed mass of brick-clay and limestone chippings into something almost as hard as concrete, which sorely tried the picks and the patience of the excavators; but the ruins could at least be laid bare. Beyond this the original building, if it survived at all, could only be reached by cutting away solid brickwork fifteen metres wide and three or four metres high, resting upon courses of massive rubble foundations. Not only were the results likely to repay ill the cost and labour of such digging, but this blocking of the gate was of hardly less interest than the gate itself, and its destruction was not justified by the chance of completing a ground-plan whose general lines could not be surmised with a very fair degree of certainty. Therefore excavation stopped short of the blocking-wall.

The plan on Plate 10 *a* shows the ruins as found. Ashlar or other facing-stones standing to the height of the orthostats are represented in solid black, those less high in cross-hatching; rubble without brickwork above it is roughly hatched. Brickwork is shown in black and in hatching, the former where the walls stand above the level of the orthostats, or well above their contemporary floor levels, the latter where the walls have been so destroyed that so far as existing evidence went they might never have been more than substructural. The drawing of the bricks is purely conventional and does not aim at producing faithfully either their size or their order of laying.

The plan on Pl. 10 *c* is an attempt at a reconstruction of the gateway in its second and main period: work for which there is evidence *in situ* is represented in solid black, conjectural restorations are hatched.

Before excavation began, the site of the gateway was clearly shown by a deep hollow in the line of the earth ramparts. When digging started it was found that this hollow did not correspond with the axis of the gateway, but lay over the ruins of its northern tower, which was the more thoroughly destroyed of the two. So shallow was the soil here that of the retaining-wall of the mound, only two or three courses of brickwork, at one place only, remained above the heavy rubble foundations, and of the cross-walls the barest traces alone survived. On the south side we had to dig deep into the mound itself before even arriving at the face of the retaining-wall, and then had above us a sheer face of rubble filling 5·50 m. high. This deep cutting gave us a cross-section of the mound which was very valuable for the evidence afforded by it both as to the mound's construction and as to the destruction of the gateway. The core of the mass shows the horizontal strata, distinguished by the varying sizes of the rubble or by the greater or less admixture of earth with the limestone chippings, which resulted from the pouring of basketful after basketful of material on to the gradually rising mound; these strata came, of course, right up to the inner face of the brick retaining-wall which is the limit of the gate site. Towards the centre there is a marked dip in the lines, a sinkage which goes right up to the top of the mound; this results from the breaching of the retaining-wall low down. Through the breach there poured a mass of débris which, driven out by the great weight of the upper filling, lies in almost horizontal strata over the ruins of the side chambers and across the entry. On ground level is a thin layer of brick rubbish representing the ruins of the retaining-wall: above it is the mass of lime chippings and brick earth, ending in a slope, as the pressure from behind ceased to operate: above, the limestone rubbish lies loosely packed. All this, or most of it, comes from the core of the mound itself; very distinct from this are the sloped covering strata which represent the débris of buildings, or at least stuff fallen from above, not pushed out laterally, and this is almost entirely brick rubbish, with but a slight admixture of lime from the mound's upper levels.

Reverting to Pl. 10 *b*, the east to west section, we have the horizontal stratification of the lower limestone filling, and the central dip of the same, fully accounted for. Above this the brick earth, the débris of the fallen gate-tower and of the town-wall itself, shows naturally the same sinking: behind the second pier the rubble has been held up by the inner wall which ran back somewhat into the mound, and west of this the mixture of brick earth and lime probably represents the solid filling of the lower chamber of the gate-tower.

The centre of the section is obscured by the solid brickwork of the blocking-wall. East of this, the strata in the mound correspond sufficiently with those to the west. We have the same horizontal layers of limestone lumps and chippings once kept in place by the brick retaining-wall: above these is a mass of brick rubbish representing the gate-tower and wall. Then comes a stratum which, close to the blocking-wall, contains fair-sized blocks of soft limestone and bricks, sometimes complete, often but slightly broken, and, as it thins off farther from the wall, is almost entirely composed of ashes and burnt stuff; in this talus occur numerous potsherds and tiles of Roman date. Above this again is a stratum of brick earth and lumps of limestone, mixed together, and a second of almost pure limestone, which are due to the collapse of the last wall-fragments left standing, in classical times, on the mound.

Turning now from the mound to the ruins (plan, Pl. 10 *a*), we see that the earliest gateway pierced the mound at an angle. Two retaining-walls lined the cutting and supported the ends of

the earthwork: from these, cross-walls ran out at frequent intervals to parallel internal walls, forming small chambers which, in their lower stages at least, were filled up solid so as to strengthen the footings of the retaining-walls; indeed, the cross-walls themselves did not go down to ground level but rested on a platform of rough stones, earth and chippings, which extended from the retaining to the parallel inner walls. What the original entry was like we have no means of knowing: probably a narrow passage passing between two towers and roofed by the continuous line of the town-wall.

Fig. 15. The staircase in the south recess of the West Gate.

At some time, perhaps quite soon after its original construction, perhaps early in the Late Hittite period, the axis of the gateway was changed so as to run at right angles through the earthwork, and this re-orientation meant a virtual rebuilding of the gate.

Pl. 10 *c* shows an attempt to reconstruct this second gateway. The old retaining-walls were not tampered with, but the centre of the building was gutted and new features introduced whose divergent lines at once distinguish them from the old. The new outer tower was a rectangle [illegible] of piers, joined by back walls, on either side of the roadway: in front of this [illegible] uttress-towers by which the actual gate was recessed and its near approach [illegible] uble flanking fire. The recesses between the piers were raised nearly a metre,

the pier-heads projecting only 0·90 m. in front of the line of the platform: this feature recalls the Outer West Gate of the town rather than the Inner South Gate.

The gate-tower also resembled the Outer West Gate in that it was built not of ashlar work but of heavy rubble: only the pier-heads (Pl. 11 *a*) boasted good facing-slabs (2·20 × 1·60 m. high); there were two, or three, stone courses above ground level, then mud brick. There was no stone threshold, and no hinge-stone or doorstep was found; the road surface was apparently of very hard beaten gravel only: but in the Late Hittite conduit (v. seq.) were re-used a few old paving-stones which may have been taken from the threshold of the then disused gateway.

Beyond the second doorway the road passed between long shallow recesses occupied by low platforms. From the southern of these a narrow flight of very rough stone steps (v. fig. 15) led up obviously to the upper tower-chambers: a few otherwise unexplained stones *in situ* in the much more ruinous corresponding recess on the north side were taken as evidence for a similar flight of steps there also. In the rough cobbled floor of either platform was a more or less circular hollow filled with ashes—the fireplace of the guard which once sprawled away here its hours of duty.

On the south side of the entry the platform-recess was bounded by a wall parallel to the entry itself and masking the incongruous angle of the old retaining-wall: the space between the two was filled up solid with rubble. On the north side no trace of such wall could be found, and the cobbled flooring ran back to the inner wall of the old gateway. This is the rather lop-sided arrangement shown on the plan; but it is possible, considering the ruined state of the building and the probability that such a wall would have at best but shallow foundations, or might even rest directly on the platform (which may itself belong to the gate's earlier period), that here too there was a masking-wall which would give a more balanced uniformity to the general plan. East of the long recess material evidence for reconstruction was very scanty: everything was buried or confused by the great mass of the later blocking-wall. Only on the south side there could be distinguished in the brickwork cases of faulty bonding where it looked as if new work had been built up against the face of walls already in existence: this was not by any means conclusive proof, for in what was beyond doubt the homogeneous structure of the blocking-wall the through bonding was often very bad, so bad that a whole outer skin of brick would fall away and leave exposed a fresh vertical surface as good and clean as the last; but the lines shown on the plan running through the brick mass seemed to be more genuinely distinctive and coincided with differences of bricklaying and of direction which supported the view that the elements so distinguished were of different origin and date. In the central section of the blocking-wall's west face, above the conduit, the bricks measure 0·40 by 0·20 by 0·14 m.; the south section is of bricks measuring 0·37 by 0·35 by 0·11 or 0·12 m., which is also the size of the bricks in the north and south retaining-walls. Indeed, there can be no doubt that a second door or set of doors existed, for the line of the town-wall running along the mound must have been carried across the gateway gap, and must have had, for its support, the projecting piers, brought close enough together for the narrow passage between them to be easily and strongly roofed, which characterize the Hittite gate. An inner gate-tower of the same type and the same width as the outer gate-tower is *a priori* not improbable; as such agrees exactly with the over-all measurements of the brickwork mass and with its internal divisions as indicated by the absence of bonding, I have felt fairly safe in reconstructing the gateway on those lines. The skew angle of the retaining-walls resulted in

a far greater depth on the north side of the entry than on the south: either then the northern recess was actually deeper, or if it was of the same size as its fellow, there lay behind it a wider space to be occupied by chambers or to be filled in solid.

On the assumed line of the east face of the north inner tower, though rather far back from the roadway, there was in the brick mass a row of heavy foundation-stones, at a high level, certainly, but resting on débris which may be the levelled walls and filling of the side-chambers of the earliest structure; it is true that they are aligned rather with the old skew retaining-wall than with the later entry, but that is an argument of little weight, for as a wall-end (which they certainly are) abutting on an older building they would almost necessarily conform to that. In default of better evidence, this foundation has been assumed to be that of the north-east corner of the rectangle of the inner gate, and the north element of this rectangle has accordingly been represented as rather disproportionately deep. Corresponding to this, stone foundations were found underlying the central section of the brick mass at its south end; they rested on brickwork, which was apparently a low platform carried out to the east; these stones may well give the south-east corner of the rectangle.

Behind (i.e. east of) the blocking-wall, on the north side of the entry, was a mass of brickwork which continued the line of the north retaining-wall but extended well in front of it. No definite edge to it could be found; it had been built over and cut into in classical times and reduced to a shapeless mass for which it was hard to find an explanation. In the South Gate of the Inner Town there projects from the back wall on either side of the entry a wall which was certainly the retaining-wall of the corner of the earth mound. Inside the West Gate the ground level was low, and the simple retaining-wall of the South Gate may have been elaborated here into a massive brick buttress masking the transition from building to earthwork; owing to the angle at which the original road ran through the mound, such a buttress would be more necessary at the north corner, where the angle was sharper, than at the south. Of a corresponding mass of brickwork on the south side there was no trace; but there must have been a retaining-wall, and in the restored plan it is suggested that the two angles were externally symmetrical.

There is a striking difference between the West and the South Gates. In the latter case, the gateway is virtually on the line of the front of the mound, and the wall which ran along the mound's top passed in a straight line over the road-bridge; the gate-towers may have risen well above, but they projected very little in front of, the town-wall. In the West Gate the depth of the cutting through the earth mound is very much greater: instead of three piers on either side, set closely together, we have two sets each of two piers aside, separated by a considerable gap; the town-wall, crowning the mound, passed over the back set of piers, i.e. over the inner gate, and the outer gateway, though not projecting much from the mound, was well in front of and quite independent of the wall. The rectangle of the outer gateway proper is so small (it measures but 16·00 × 9·30 m.) that its superstructure can hardly have been other than a single block: there is not room for the two towers and the connecting bridge which, as we shall see, was the form probably assumed by the South Gate, nor was there any need for that form as this outer gate is not in any sense a link between two otherwise disconnected stretches of the town-wall, but altogether an excrescence from the wall. Moreover the gate-tower is not likely to have been of any great height. Had it been higher than the town-wall it would have masked the defensive fire of the latter and have been a tactical weakness; had it been lower than the town-wall it

would have invited attack. Probably its top was flush, or nearly flush with the top of the town-wall, making a deep platform or terrace very valuable at a point whose essential weakness would demand a corresponding strength in the number of its defenders.

The entry itself must certainly have been open to the light, for to have roofed it in throughout would have made of it but a long tunnel perpetually dark; the terrace would have run over the side chambers and the gate-tower, leaving a light-well down the centre. This would have possessed the added advantage, that in case of the outer gate having been captured the enemy would have advanced only to find himself at the bottom of a narrow shaft exposed to a direct plunging fire from all four sides.

Fig. 16. The blocking-wall in the West Gate. A. The Late Hittite conduit. B. The Roman water-pipe. The wall face was mud-plastered: higher up, the outer skin of bricks has fallen away and actual bricks are exposed.

Whatever were the precise arrangements for the gate's defence, and the above seem the most likely, they proved inadequate. At some time or another the outer tower was seized, the entry was carried by assault, and the town presumably fell with it. Either in the attack, or when the town was in the hands of an enemy who was anxious to make its defence impossible for the future, the outer tower was razed, and a breach was made in the south retaining-wall between the first and second gateways, through which a mass of rubble and earth poured out and buried the ruins. No attempt was ever made to repair the damage. Instead, the gate itself was abandoned, and across the entry was thrown a huge barrier of solid brickwork filling up the gap in the mound

where the road had been, and forming a new basis for the town-wall which, now repaired, ran in an unbroken line from the South Gate to the Citadel. There are certain features which seemed to indicate that this barrier was built hurriedly and in time of stress. The bricklaying, as has been already mentioned, is very careless, lacking a thorough bond, and it incorporates in itself whatever was left standing of the old inner gate; on the outer side the bricks rest directly on the mixed rubble and débris which blocked the roadway, whereas on the inside there were proper foundations of heavy rubble, five or six courses giving a height of 2·80 m.: moreover, on the outside where the stone conduit ran, the space between the stones and the trench sides, and over the conduit, had been levelled up with fragments of burnt brick, slag, and lime, and anything that came to hand—all the materials showing signs of a big conflagration which had not reached the brickwork proper resting on them. It looked as if the builders had started at the outside, building as best they could on whatever foundation offered, and only when sheltered by their own half-completed work had given themselves time to lay regular foundations of stone. These apparent signs of haste, and the fact that arrow-heads and the bones of horses and men (one wearing armour) were found in the ruins outside the blocking-wall, tempted one to look upon the latter as the last desperate shift of the Hittites when, hard pressed by the besieging forces of Nebuchadnezzar, they lost their outer gate-tower and despaired of holding the inner.

But this dramatic interpretation of some of the facts failed to agree with others. When the blocking-wall was built, the inner gateway, as well as the outer, was already in ruins; in that case the defenders could hardly have held out at all, and certainly would not have been allowed by the enemy to build not only a barrier across the roadway but the town-wall across the barrier. The signs of hurry were rather outbalanced by the fact that a stone water-conduit ran through the blocking-wall; outside, it lay over débris, high above road level, and therefore it was later than the destruction of the gate: the brickwork of the blocking-wall rested on the cover-stones, and wall and conduit were certainly contemporary; a besieged garrison could not have been free to instal a new water-supply from outside the town. The finding in the ruins of the outer gate-tower of a burial accompanied by typical Late Hittite seals showed that the ruin was complete before the close of the Late Hittite period, which ended abruptly with Nebuchadnezzar's victory; and, lastly, the arrow-heads found in the gateway, while they undoubtedly belong to the actual date of its destruction, are not of the types employed by either side (and our evidence for this is very strong) in the fatal days of 604 B.C. The ruin of the West Gate, its abandonment, and the building up in its place of the blocking-wall, must be assigned to an earlier siege in the troubled history of Carchemish. When that was, one cannot say. Had the gateway fallen in Sargon's time, and its closing been part of his work of reorganizing his new dependency, one would have expected to find bricks stamped with his name, but such bricks, which occur on the Citadel, are not found at the West Gate. One hesitates to put it earlier than this, for it seems unlikely that a great and an expanding city would have been long content with a single gate on the land side: it is more probable that the change dates from the decadent and troubled period between 700 and 604 B.C., when circumstances may often enough have warranted so despairing an expedient. The evidence afforded by the pottery agrees with this. In the mass of filling which had poured out from the mound's core over the ruined gate, all the sherds found were either possibly or indubitably of Middle Hittite date; they included some of the best-known Amarna types and some fragments (e.g. of the types shown in Plate 27, fig. *b*) which probably come earlier in the

Middle Hittite period than does the bulk of the Amarna pottery. In the trench dug through the ruins for the construction of the stone conduit were found fragments of the most typical Late Hittite wares, e. g. of kraters with geometrical decoration in black on a white or buff ground, open rather flat saucers with very angular grooves and minor curves on the outside, figurines, &c., and two fragments of wares not known to us from the Yunus (Late Hittite) graves, and closely resembling some examples from the Deve Huyuk (post-Hittite) cemetery. These potsherds are evidence not conclusive but corroborative for putting the building of the conduit, and therefore of the blocking-wall, very late in the town's history. Virtually the blocking-wall is the continuation in brick across the gateway gap of the original earth rampart; the town-wall ran straight along both. Behind the town-wall the breadth of the block made a wide terrace, wider, perhaps, than that along the top of the mound; and whereas the inner face of the earth mound sloped down to the town, the wall face was sheer.

In the classical period the blocking-wall still stood, and its flat top seems, judging from the mass of pottery and ashes which is heaped above it, to have been used by the Romans for a strong point. They found no gateway, and the few Roman stones lying on the surface do not, in the absence of any considerable foundations, warrant us in supposing that they built one; but the almost complete disappearance of the Hittite structures, including the massive blocking-wall along the north side of the entry, make it probable that they effected here a partial breach for the convenience of the traffic between the town and the scattered suburb which in classical times stretched out to the west. This breach has remained in use until to-day. They also laid down a cement water-pipe which cuts through the outer northern pier and tunnels under the blocking-wall.

The following objects were found during the digging of the gate:

A. Just inside the outer pier on the south side of the outer gate tower, in a hole scooped out but shallowly in the mound's slope was found the grave of a small child. It was clear that the burial took place when the whole of the brickwork of the gate-tower had disappeared and only the stonework remained.

The bones, not cremated, were lying in disorder, and the body seemed to have been simply shoved into the hole. With it were

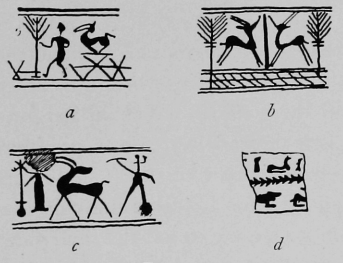


Fig. 17.

1, 2, 3. Three engraved cylinder-seals of pale green glazed white frit and part of a fourth (fig. 17, Nos. *a–d*).

4. A number of small beads strung apparently as follows: Two white shell disks, one white paste 'nasturtium-seed' bead, one red paste spheroid, one white 'nasturtium-seed', two white shell disks, &c. (repeating).

5. A cowry shell.

6. A bone needle, broken.

7. A bronze ear-ring.

8. A spiral ring of bronze wire.

9. A small bronze disk, chipped and much corroded.

B. In the entrance of the outer gate-tower was found a small limestone stela 0·095 m. high, very crudely engraved with a representation of a seated human figure (fig. 18).

C. Above the stone conduit and just in front of the blocking-wall were the skull and some other bones of a horse or horses, part of a human skull, and

1. An iron dagger; blade flat and single-edged, 0·18 m. long, tang 0·12 m. long with three rivets; the handle had been of wood, probably tipped with a plain white stone pommel found just beside it (v. fig. 19).

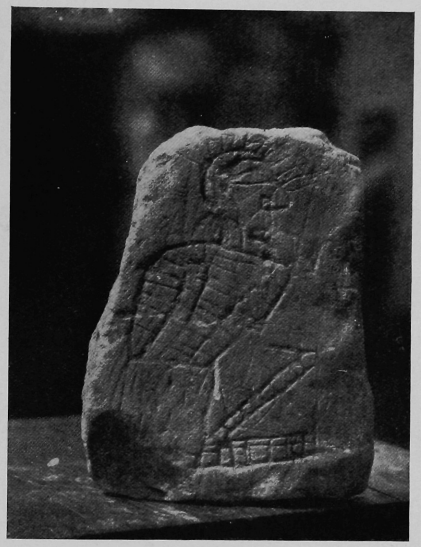


FIG. 18. Limestone stela.

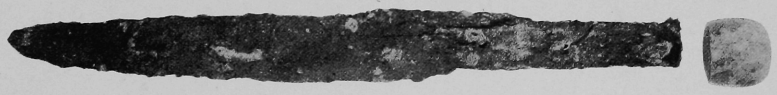


FIG. 19. Iron dagger and pommel.

2. A greave of thin bronze plate. It is 0·39 m. long and 0·13 c. across at the calf; the muscles are rendered in relief: there is a swelling for the knee; the line down the front of the shin is sharp and clean. Some small holes at the edge seem to show that it had been lined (they are too small for straps or laces). It was probably springy enough to be opened and clipped on to the leg and to retain its position without fastenings. See Pl. 25 *a*.

D. Six arrow-heads, two of bronze, four of iron: see types in fig. 20.

E. A bronze object, use doubtful.

F. A gold finger-ring (found by the stones of the conduit, so presumably Late Hittite), plain bezel, hoop a line of beading between plain rim-bands.

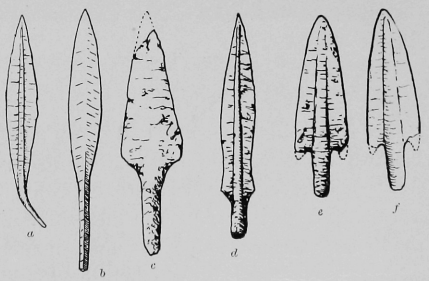


FIG. 20. Arrow-heads; *a–b*, bronze; *c–f*, iron.

§ 4. The South Gate.

Plan, Pl. 12; suggested elevation, fig. 22; photographs, Pls. 11 *b*, 13 *a*.

The ground-plan of the gate is essentially simple: it consists of two towers supported each on three long piers and backed against the earth mound on which the enceinte wall was built, joined by a bridge; under the bridge the roadway runs between the towers, and the ends of the piers form three doorways across it.

Of the superstructure proper little, of course, remains. We see that the building was of mud

Fig. 21. The Gate of Carchemish: from the bronze doors of Balawat.

brick over stone, and we can tell, at every point, the exact height at which the stonework ended and brickwork began. It is clear that the roadway was bridged, for the line of the fortifications as a whole would never have been broken by a gap between the gate-towers; there is nothing in the ruins themselves to tell what form the bridge took. From the ruins we cannot be certain whether the top of the gate as a whole was uniform and level with the top of the enceinte wall, or whether it stood up above that, or whether the tower projected above wall and bridge alike; but the solidity of the base afforded by the supporting piers and the projection of the towers outside the line of the wall face denote a building of considerable height, whereas the roofing of the roadway,

whatever its nature, would hardly carry too heavy a superstructure, so that it is intrinsically probable that the towers stood up above both wall and bridge.

From the ruins we may turn to the picture of Carchemish on the bronze door-reliefs of Shalmanezer (fig. 21). The buildings there shown are certainly the gates of the city, for from them the emissaries come forth to the fortified camp of the Assyrian king, which presumably was pitched in the river valley below the town. There are two versions of the picture, one showing a single entry, one a main entry with a postern in the flanking tower: perhaps two different gates are intended (i. e. the South and West Gates of the town), or the two may be the same and the side entry in the one case due to Assyrian perspective, a sort of shorthand view of the whole defences, or again, the two representations may both be conventionalized regardless of accuracy in detail. In the ruins neither of the West nor of the South Gate is there any indication of a postern or apparently any possibility of one, so that I incline to disregard this detail as conventional, just as the position of the river flowing in front of the gate is due to a convention. But the reliefs are sufficiently in agreement with the actual ground-plan to enable us to rely upon them with confidence for certain main features of our restoration. We have the towers projecting from the wall face and standing up above the line of the wall top, with a lower bridge connecting them over the roadway, as the ruins indicate. The reliefs show towers and walls crowned with triangular battlements like those on an Assyrian relief at Tell Ahmar representing probably a Hittite town (fig. 57), and this is what we should expect for Carchemish (v. p. 152). On the other hand, the reliefs represent the gate in the form of a stilted arch, such as was that of Boghazkeui, and this is a surprising feature, not confirmed by anything on the site. The false arch of the Boghazkeui gateway starts from ground level, the great stone jambs inclining inwards from their base and the upper stones being cut to continue the curve; at Carchemish the jambs are strictly vertical, at least up to the height of the top of the stonework, and it was but natural to assume that the upper brickwork likewise was vertical with flat lintel beams above. But the evidence of the reliefs cannot lightly be rejected. We know that false arches in brick were used at Carchemish, and the span of the gateway is not too wide for such (experience in Nubia, where this construction is common, has shown that 4·40 m. is about the limit for uncentred vaulting in mud brick), so that conceivably gate-passage and recesses alike may have been vaulted, or, as is more probable, while the inner passage and the recesses were flat-roofed the outer doorway alone was arched over. In the ruins there were found a few flat tile-like burnt bricks; such are unusual, and it might be argued that they were used in rough arching; but this would virtually imply that the arch was a true one, whereas our sole analogy is for a false arch in crude brick: it is more likely therefore that the burnt bricks in question come from the floors of upper chambers in the gatehouse, especially as burnt bricks have been found used in flooring elsewhere on the site.

Though the gateway is a triple one in plan, only by the outermost pier-jambs were the hinge-stones found in position, with the stone door-stop and bolt-hole in the road-paving between them; this was not the chance result of destruction, because though the former might have been taken away and no trace left,[1] the original paving is intact where door-stops and bolt-holes should have been. Probably in peace-time a single barrier was deemed enough, and when need was to make the gate more sure against attack the two inner portals would be provided with doors, not hinged,

[1] The hinge-stone of the eastern jamb was removed during the war, doubtless by some Turkish soldier or Armenian refugee who saw in it a useful porridge-mortar.

but made fast with slotted cross-beams; or possibly the inner doors were of the portcullis type. The hinge-sockets were of the usual bowl form; they stood not in the roadway but in the recesses against the inner corners of the piers, so that the doors folded back into the recesses; the top end of the hinge-posts turned in sockets either in joists laid across the recess openings or in short (perhaps metal) brackets projecting from the brickwork of the piers.

The recesses probably served as guard-chambers. I was long inclined to imagine a guard-room in the thickness of the outer angle of the east tower, but there is no real evidence for this, and the walls which bound this area on the north and east are best explained as purely constructional, being retaining-walls for the mound beyond; moreover, a chamber here would mean a dangerous thinning of the outer wall, whereas the addition of the later masking-buttress would imply that this angle was a vulnerable point requiring special solidity. It is probable that this angle-space was solid up to a considerable height at least, and that the gateway proper had no communication with the upper floors of the gate-towers or with the walls. In view of the rough character of its stonework, it is probable that nearly the whole of the outer recess was occupied by a raised platform leaving in front of it only the space required for the door to fold back flush with the pier-ends: this is the case in the West Gate. From the platform there may have been a stairway to the gate-tower. The inner recesses (where there was no platform) certainly did not contain staircases, for the back walls are preserved to a height which makes that theory impossible.

The gate was set at an angle of the ramparts: its façade is in line with the stretch of wall to the east, while on the other side the wall runs west by north; this caused a certain lack of balance in the appearance and in the plan of the gate.

Roughly speaking, the two towers which flank the gateway serve as retaining-walls for the mass of earth and rubble which formed the mound whereon the wall proper was built; necessarily therefore they had to be very solid in their construction, virtually reinforced buttresses calculated to resist a strong lateral pressure. The back wall of the recesses is of brick, 2·0 m. thick; but behind this is a second wall of which only the heavy rubble foundations remain; the upper part was originally in brick. These inner foundations lie at a higher level than the roadway, higher in fact than the top level of the ashlar blocks which supported the orthostats of the piers: they were laid when the brick wall was already building and the lower part of the mound had already been heaped along the rampart line: at this stage the builders decided to strengthen their retaining-wall, so they tumbled rough stones into the angle between the rising wall and the rising level of the mound and carried up their mud-brick construction with a double thickness. On this massive substructure rose the outer walls of the gate-towers.

In the case of the eastern tower this retaining-wall takes a double return, first eastwards and then outwards. From the second angle southwards it served a double purpose; at the start it rose clear of the mound to form the east wall of the (solid) angle of the flanking tower; beyond the tower's face it ran on only as a low footing to hold back the talus of the mound from the brick-paved platform which stretched in front of the tower's foot. The steep slope of the mound, which ran in a diagonal line across the abutting wall of the tower, cut its south-east corner at a point well above ground level and continued beyond and below its base to the ditch; in front of the tower itself was a level brick platform from whose edge a short slope carried on the lower part of the talus to the side of the road. The eastern tower therefore had the appearance of being

recessed back into the mound. The western tower, on the contrary, owing to the fact that from it the ramparts ran back in a north-west direction, stood out from the mound; the slope of the latter, instead of coming outside the line of the tower's base and so to speak overlapping it, lay well behind it. The peculiar character of the stones in the west face of the tower wall has already been remarked; the greater part of the wall was evidently hidden, but at least half of the corner orthostat and the first ashlar block below it were exposed. On the opposite side of the trench driven into the hillside to follow this wall face the section of the soil showed the line of the original surface of the mound coinciding with what the appearance of the stonework would lead one to expect; the tower projected from the earthwork instead of being recessed into it. This explains the slight difference in the ground-plan of the two sides; on the one extra retaining-walls were required, on the other there was nothing to retain. The restored elevation (fig. 22) shows this feature of the gateway.

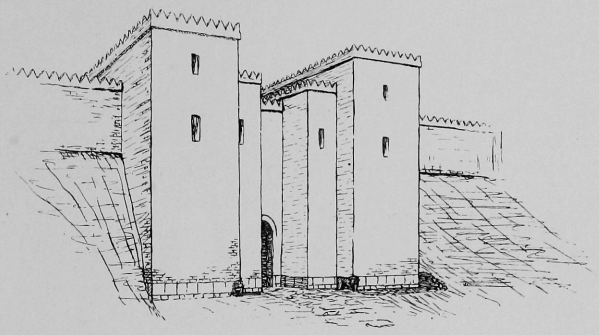


FIG. 22. Restored elevation of the South Gate.

It should be remarked that the front wall of the eastern tower (which has three courses of rubble foundation below its ashlar course) was built when the mound had already reached a fair height. The ground to the south is lower to-day and was originally much lower than these foundations, and in the section there can clearly be seen the trench cut in the soil to take the stone courses; this is, in front of the wall, filled up with lime chippings which brim over it and form a horizontal stratum on which the brick pavement rested (fig. 23). Notes made at the time of excavation duly record that the wall was therefore later in date than the mound; but, on the other hand, the priority need only have been a matter of days, and the foundations of the retaining-wall, which is beyond question contemporary with the mound's building, lie at a considerably higher level than those of the tower front and actually cross them.

The road itself passes through the gate over the nucleus of the mound; it approaches the entry up a steep gradient, and runs downhill again into the town. The question might be raised whether the gate was built over a pre-existing lower earthwork or whether for strategic reasons the laying of its foundations was deferred until the new mound had attained a height sufficient to give the gate and its towers adequate command of the approaches: but there is no evidence whatsoever to support the former theory, and it is safest to assume that the whole scheme of the inner defences was an innovation and a unity.

Detailed Description.

The whole of the masonry is in white limestone, with no intermixture of basalt. Generally speaking, the foundations are of coursed rubble, limestone or pudding-stone, not visible above the surface of the ground; directly on these or on an intervening course of quarry-dressed limestone stretchers came a course of carefully-worked and more or less polished blocks averaging 0·55 to 0·57 m. high; on these again rested the orthostats proper, big slabs 1·10 to 1·65 m. high, or, where there were no orthostats, the brickwork.

On the east side, the south face of the outer flanking tower has a solid foundation of three courses of quarry-dressed rubble; the blocks are very rough but fairly of a height, giving even courses of about 0·45 m. each; the interstices are packed with flints, broken rubble, and brick-earth not at all worked up. The face is battered, the two lower courses being flush but the third set back 0·05 to 0·10 m., and the faced blocks 0·10 to 0·17 m. The top surface of the foundation course is well levelled and smoothed over its whole depth to give a good bedding to the ashlar; behind it is a packing of big stones and earth which has been destroyed towards the south (partly in the process of excavation, its nature not having been immediately apparent), so that now it only stands flush with the top of the rubble foundations. Originally a mud-brick pavement ran level with and up to the bottom of the faced limestone blocks, concealing the rubble below, and filled up the angle between the south wall of the gate-tower and the return wall of the buttress-tower which here projects from the line of the rampart (v. fig. 23); presumably it was only a narrow strip (no edging to it was found) between the wall's foot and the glacis slope which must have run down to the low ground immediately to the south.

From the buttress of the rampart to the first re-entrant angle of the gate-tower all the ashlar blocks have been removed, though several of them, and a few of the orthostats which had stood over them, were found tumbled down just in front of the foundations; they first appear *in situ* at the point of junction between the older wall face and that of the later encasing wall. Leaving the latter to be dealt with afterwards, and following the original ground-plan, we find the facing blocks running continuously round the double re-entrant angle of the approach, along the front of the first gateway pier, and round the corner into the gate recess. In the recess, however, only the corner-stone and that next to it are of ashlar; the second stone in the row has a chisel-dressed edging with a rough hammer-dressed centre as if it had been intended for a polished convex-faced block but had never been finished; the third is of good hard limestone only roughly squared, then come two quarry-dressed blocks of poor quality stone and then one ashlar block; beyond this is a broken gap; the stones at the back of the recess and along the side of the second pier as far as the third from the end are rough quarry-dressed lumps with a packing of chips and pebbles like the foundations: where the course is of rough stones there were no orthostats and the brickwork rested directly on them. It should be noted that the stone bonding is good throughout; vertical bonds of foundation and ashlar blocks seldom coincide, corner-stones are exceptionally large, and the south-east angle of the first recess shows a good alternating bond in the rubble courses, while in the north-east corner the long stone of the back wall has been cut into a reveal so as to join on in line with the first stone of the return wall.

The 0.55 m. ashlars are always cut back smoothly on the top surface to stela at a depth of 0·40 m., if not over their whole area, so as to take the orthostats; in a few cases the surface has

been shaped with a view to fitting a particular stone: but there are no dowel-holes or mortices of any shape or kind in any of them: the orthostats were kept in position on their bases simply by their own weight.

Fine ashlar begins again with the third stone from the south-west angle of the second pier. This block is so cut on its upper surface as to show that it was the point at which the brickwork lining of the recess gave place to the orthostats of the entrance proper: the western half of the stone has been dressed flat back for its whole depth, while on the eastern half the smooth dressing is only about 0.15 m. deep, the usual thing where foundations for brickwork are concerned.

FIG. 23. The south-east corner of the Gate-tower. A. Foundations of the flanking tower. B. Stratum of limestone chips made by dressing the stones at the time of building. C. Pavement of mud brick resting on the builders' rubbish. D. Retaining-wall for the talus of the mound.

The great front orthostat of the pier's end was found lying on the ruins of the pier here, fallen backwards with its base still almost in the original line, and that which belonged next to it, facing on to the outer recess, was found at the wall's foot. The 0.55 m. high facing blocks continue along the front of the pier, all round the second recess, and along the north face of the third pier to the angle of the returning wall. In the recess the stones, beyond the outer two on each side, are of a somewhat inferior quality of limestone, and their surface has suffered a good deal from fire and from damp, being now flaked and rather uneven; but the original dressing seems to have been quite good, and is even now in striking contrast to that of the inner wall of the first recess.

Here, too, there were no orthostats, but brickwork resting on the ashlar course. On the west side of the gateway the second recess is also built of similarly well-dressed stones, mostly of a rather inferior quality; along the north face of the third pier, looking towards the town, the 0·55 m. ashlar blocks are all of good quality stone and carefully worked: this is the case on both sides of the gate. A trench cut in classical times (for a drain) ran through all three western piers, removing a few stones from each, as shown in the plan.

The back wall, facing as it did on to the town, had a second stone course: at its east end five orthostats were found standing together *in situ*; they are 1·10 m. high and of varying widths, and give the construction and original appearance of the wall as a whole. They present one unusual feature. As against their height of 1·10 m., they have a thickness of only 0·30 to 0·50 m. at the most, with a bearing surface considerably narrower: consequently they would have of themselves but little power of resistance against the outward thrust of the superimposed brickwork and of the filling behind them. It was, therefore, necessary that they should be in some way tied into the wall. Accordingly there is at the back of the top surface of each a dove-tailed mortice-hole measuring 00·9 m. across its widest and 0·06 m. across its narrowest width, by about 9·22 m. long and 0·05 m. deep. These were, no doubt, intended to take the shaped ends of long tie-beams embedded in the brick filling of the wall, and probably connected together in that filling by cross-timbers; there were no stone blocks immediately behind to which they could have been made fast by short metal clamps, and the wooden tie-beams were therefore the only practical method, and are the only reasonable solution of the mortice-holes.

Besides the mortice-holes the same orthostats had in their upper surface a rectangular hole 0·035 × 0·03 × 0·04 m. deep set back on an average 0·10 m. from the front edge; some of the wider orthostats from the gateway have two or more similar square or round holes in their upper surface, and in the great slabs from the pier-ends such holes are numerous and run round the corners of the stone. The purpose of these holes is discussed in Ch. VII.

A somewhat different style of masonry is seen in the later addition which masks the double re-entrant angle of the gateway tower on the south side. The ashlar course resting on the rubble foundations is composed of blocks, some of them older blocks re-used, much larger than the corresponding stones of the old wall; they measure from 0·66 to 0·75m. in height by as much as 0·90 m. in length, and the corner-stone is exceptionally big (1·14 by 1·12 by 0·75 m.). They rest, not upon stretchers, but upon small rubble and pebbles, the smaller blocks being stepped up on such so as to bring their top surfaces level with the rest; this pebble-bedding seems to be characteristic of late work (cf. the Water-Gate). The top of the course is 0·06 m. lower than that of the ashlars in the older wall on which the new abuts, and as the blocks are of larger size they correspond in the wall face to the old ashlars plus part of the stretcher course below them. The lower part of these blocks must accordingly have been below ground, and actually their outer face is not always properly dressed over the whole surface, but at 0·45 or 0·50 m. (measured from the top, i. e. at the original ground level) is left sticking out in an irregular bulge. The front edge of the top surface is rounded off and polished smooth (in contrast to the sharp edges of the ashlar stones in the older part of the gateway), making it probable that here the orthostats were set considerably back from the lower course instead of being flush with it, or nearly so, as is the case elsewhere.

The filling of the piers is rather more solid and much more careful than that of the interior

of the tower. In the outer pier there is a regular course of roughly-shaped limestone blocks laid flush with the top of the ashlar masonry (except that one has a boss projecting above the surface), and in the broader part of the same pier the filling (limestone and pudding-stone) is so regular as virtually to continue the wall line of the outer tower face. The stones, some of which are old building-stones re-used, are well bedded in with mud and small rubble. The filling of the flanking tower is mostly of pudding-stone and river boulders, just tumbled into place and levelled up with small stuff and mud.

The west side of the gate was much less well preserved than the east. The Roman gate-tower and the actual roadway of the Roman period rest on a solid platform of masonry consisting in part of the foundations of the earlier (Hellenistic) gate, in part of the ruins of the same laid or tumbled in as extra foundations. Large blocks of soft white chalk and old Hittite orthostats were set side by side and tier above tier, the whole mass going down some 60 cm. below the road level of the Hittite entry, and, in front of the western Hittite gate-tower, below the lowest level of the old foundations. To make this platform first the Hellenistic and later the Roman second-century builders had pulled up virtually all the Hittite work that came in their path: of the double re-entrant angle of the original structure only one stone remained in place. The three piers were well preserved except in so far as a drain, made of rough stones and cement, had ploughed right across them at foundation level near their outer ends: the south-west outer corner of the gate-tower retained, besides its foundations, one orthostat and three blocks of its lower ashlar course and the rubble masonry beyond, but the front face of the tower could only show half a dozen stones of the foundation course, and thereafter was destroyed by or disappeared beneath the chalk blocks of the Greek gate. The brickwork stood to a fair height on the back wall of the inner recess, where it served as support to a wall of Roman concrete, but in the outer recess it had been wholly demolished, and its place below the Roman wall was taken by a tumbled medley of Greek column-drums and building blocks (fig. 24). Of the south (outer) pier the south face beyond the first two stones has been destroyed together with the salient angles of the tower; most of its filling remains; in the area once occupied by the inner (older Hittite) buttress-tower there are three channelled blocks of hard limestone which at first sight look like water channels, but they are not in line, and appear to be only old wheel-rutted paving-slabs re-used either by the Late Hittite remodellers of the gateway (if this packing is of that date), or, more probably, by the classical builders.

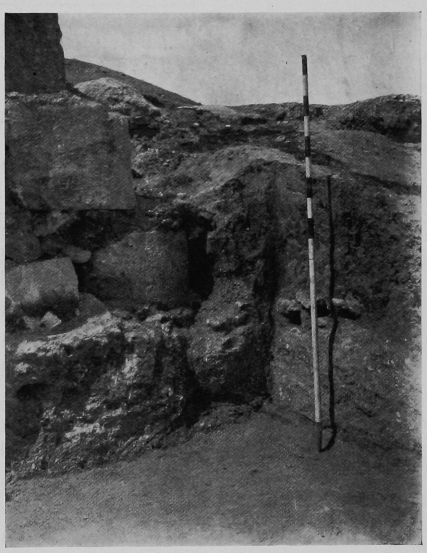


FIG. 24. Recess-wall showing plastered face of Hittite work, and late wall-support of column-drums.

Taking the remains in detail, we find on the north face of the inner buttress one orthostat

in situ at the extreme west end; next to this is an orthostat (probably re-used) built into the wall edgeways so as to form the return angle of the gate-tower; against this comes a large rubble block serving as retaining-stone to the mass of brickwork which runs out here at right angles to the tower wall and corresponds to the mud-plastered rubble wall of the east tower. In the inner recess, here as on the east side, only the two outer stones of each pier face are good limestone ashlar, the remainder of the course consisting of blocks well squared but poor in quality. At the back of the recess the brickwork is particularly well preserved; fig. 25 shows the brick bonding at this

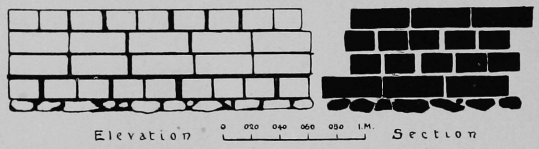


Fig. 25. Brick bonding.

point. In the outer recess also the first stones on each side are ashlar, after which come roughly-squared rubble blocks; at the north-west corner a little of the wall-plaster remains; it is a moderately thick mud plaster apparently mixed with some lime and lime-washed; it was smoothly rounded off in the wall angle, and was carried down over the lower courses of rubble, which therefore were not visible. This plaster can be distinguished in fig. 24. It should be remarked that the holes in the brickwork just above the stone course, shown in the photograph, are not due to the presence of timber in the wall; they are irregular in shape, they contained no ashes, and the bricks round them bore no traces of burning; they are apparently the work of small animals.

The extreme SW. corner of the gate-tower is the only other part of the structure at all preserved, but its preservation is most valuable. Of the front of the tower, as has been said, only some of the foundation course remained, and one stone (the corner-stone) of the ashlar masonry: the ashlar block which had been next to the latter was still resting on the foundation course but was twisted slightly out of position. Immediately in front, against the foundations, lay an orthostat which had unquestionably slipped off these stones; the only orthostat actually in place was the corner one facing on the west wall of the tower. It was noticeable that the dressing of this stone was not carried uniformly over the whole surface, but while the upper and outer part was well finished, the lower and back part was left very rough; similarly with the blocks of the course below; the corner-stone was of well-worked white ashlar, the next two stones deteriorated in quality, and thereafter the whole character of the wall changed, and instead of orthostats on ashlar blocks there were four courses of rough rubble masonry running back to a mud-brick wall which makes a right-angled return west and goes into the rampart mound. On the brickwork, which stands as high as the top of the rubble wall, rest heavy foundations of rough rubble, presumably those of the back of the gate-tower.

Paving. The roadway between the pier-ends was paved throughout its whole length, but between the actual pier-heads the paving was noticeably more carefully done, and with better stones: these were mostly squared blocks, sometimes old orthostats, laid in regular rows against the ashlar bases of the piers, while in the centre of the roadway rougher stones were used; the

interstices were filled with small chips and pebbles. The parts of the roadway between the recesses were paved wholly with roughly-shaped stones or mere boulders. The pavement is deeply grooved by the wheels of passing vehicles, showing a rather broad axle-base of about 1·10 m. The entrance into the city was up an incline, so that the top of the ashlar course of the third or inmost pier is higher than that of the first; but this slope has been accentuated in the laying of the pavement, so that whereas against the outer pier this is flush with the bottom of the ashlar course, against the north corner of the inner pier it comes 0·27 m. up the face of the stone.

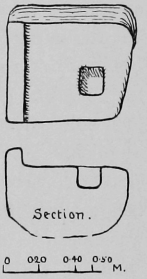


FIG. 26.

Of the outer door, the hinge-stone, of the usual bowl type, was found in position inside the recess against the corner of the pier, and the door-stop with bolt-hole (fig. 26) in the centre of the roadway; the other hinge-stones and the bolt-stones had disappeared, if they had ever existed: v. p. 83.

The recesses were not paved, but had plain floors of beaten earth.

Brickwork. The majority of the bricks measure 0·42 by 0·21 by about 0·13 m. A larger brick measuring 0·36 m. wide was occasionally used to break bond.

The building in the interior of the walls, where alone it was preserved sufficiently to admit of record, was not very good. No particular care was taken to secure a regular bond, and the alternation of headers and stretchers was only occasional. In one instance, reckoning from the stone foundations upwards, the first and fifth courses were of headers, the second, third, fourth, sixth, and seventh of stretchers; in another, the first, third, fourth, and sixth were stretchers, the second and fifth headers, but the stretchers of the fourth course were of the large type, measuring 0·42 by 0·35 m. The vertical joins at the short ends of the bricks often coincide, thus weakening the cohesion of the fabric, but the (stretcher) courses have a tendency to overlap, at any rate by a few centimetres, longitudinally. This is probably less the result of foresight than of the habit observable in the modern builder in North Syria, to put very little, if any, mud mortar at the ends of his bricks, while between the long faces of two adjoining bricks he puts little or much quite at random; thus two layers of the same number of bricks laid lengthways may be of equal length, and yet the vertical joins between the bricks may seldom come quite together. The Hittite builder generally trusted to the varying thickness of his mortar to make a slight bond; occasionally he was more conscientious, and employed the larger-sized brick, or half-bricks, to get a really good bond.

The brickwork always rests directly on the stone foundations without any timber between, and there is no timber strengthening in the core of the brick wall.

Such are the ruins as found. Towards the end of the process of excavation a limited amount of restoration was attempted on the eastern gate-tower in so far as some of the many facing-stones and orthostats found lying about were set up on the walls. This was only done when measurements from assured data settled the position of the stone beyond reasonable doubt. Pl. 12 shows that orthostats were discovered *in situ* on the north face of the east tower, and on the south-west corner of the west tower; on the middle buttress of the east side was found the huge slab which had formed the pier-end, only fallen back a little from its original position; the corresponding pier-end slab was lying exposed on the surface outside the gateway. These stones give the height of the orthostats of the front and back walls and for the pier-ends; a pair of large blocks, the dressing back of whose side faces showed that they were corner-stones, must have

stood either on the outer piers (against which one of them was found) or on the outer re-entrant angle of the masking buttresses. Only a few stones (orthostats measuring 1·25 m. high, and three long narrow stones measuring on the average 0·47 m. high, probably used as an upper masonry course to level up the shorter orthostats with the big slabs of the inner jambs) could not be attributed with certainty to any particular position and were therefore left on one side. Pls. 11 *b*, 13 *a* show photographs of the east tower after this partial restoration.

Sculpture. In the second or northern recess on the east side there were found fragments of a colossal statue in white limestone, a hard shelly stone like marble and taking almost as fine a polish. The figure represented a bearded man wearing a tight-fitting head-cloth and turban, clothed in a short-sleeved under-garment over which was worn a heavy mantle having a broad fringe along its edge. The figure appears to have been seated, but the greater part of the body was missing; only the back of the head (the front had been deliberately smashed), parts of the shoulder and arm, and fragments of the drapery and the feet with the base were found (v. Pl. B. 27, fig. *a*).

A large block of the same limestone as the statue, measuring 1·00 by 1·25 m., stood against the north wall of the recess and had served as pedestal; a second base was cut out of the block from which the figure itself was made; it stood 0·25 m. high and bore on three of its faces an inscription of an unusual type, the Hittite characters being in *relief en creux* (Pl. A. 13 *a*, *b*, *c*). Part of the skirt of the drapery came down over this base, and itself bore a continuation of the text. From an artistic point of view the statue is undoubtedly amongst the finest yet found at Carchemish; the combination of refined detail with broad effect and the monumental and yet naturalistic treatment of the drapery put it really in a class by itself.

The sculpture had been intentionally broken up. While the body, which must have been a colossal block, had been removed, the smaller fragments had remained where they had fallen, but for the most part they were found under the floor of beaten earth; some which lay just on the surface had clearly formed part of the floor, for they were worn right down on the exposed face. It follows that the destruction took place some considerable time before the recess, i.e. the gate, fell into disuse, and as it is quite certain that after the sack of Carchemish in 605 B.C. the floors and roadway of the Hittite gate were buried beneath heaps of débris, and were not again laid bare until A.D. 1912, it also follows that the statue was smashed up on some occasion well before the time of Nebuchadnezzar's victory. Now it is noteworthy that our colossus occupies virtually the same position in the gateway of Carchemish as does the triumphal stela of Asarhaddon in that of Sinjerli; it may be not unfairly argued therefore that the one, like the other, represents not a god (whose image might possibly have commanded respect), but a victorious king. If this be so, the king whose inscription is in Hittite characters is presumably himself a Hittite, and King of Carchemish; as such his statue would be peculiarly objectionable to the enemies of Carchemish, particularly if they happened to be those over whom the king had gained his victories. As Sargon's conquest came at the end of a long series of wars between Carchemish and the Assyrians, in some of which the former could undoubtedly claim their successes, and as after its capture then the city remained in occupation with, as far as we can see, very little material alteration, it is hardly rash to assume that the destruction of the great gate statue took place in Sargon's time; the obnoxious record having been removed the gate could be used by an Assyrian without damage to his susceptibilities. This date for the statue would agree very well

with that which may on more material grounds be assigned to the lion of the outer tower; that they are contemporary is extremely probable on grounds of style, but as that criterion is with our present knowledge to be used only with the greatest reserve, it would be of interest to find independent reasons for placing the lion also in the pre-Sargon period.

Outside the gate-tower, just south of the (late) masking buttress in the re-entrant angle, was found a large limestone orthostat bearing the figure of a lion carved in relief, the head and shoulders projecting beyond the end of the stone (Pl. B. 27 *b*). The analogy of the southern town gate of Sinjirli would be in favour of restoring the lion at the inner corner of the gateway approach, i.e. at the corner of the masking buttress. But the analogy is not a strong argument; the Sinjirli relief was not found in position, and was placed at the tower conjecturally, though probably correctly; moreover, here we have two corners as against the single one at Sinjirli. The dressing of the stone on the left side (that built into the wall) gives the projection of the lion's head beyond the wall face; the feet also project well beyond it; in the Sinjirli restoration a set-back or re-entrant angle in the wall face is suggested so as to leave free the carved shoulder of the lion; at Carchemish the upper surface of the ashlar course at the corner of the masking tower shows no sign of such a re-entrant, and the forepart and paws of the beast must have stood clear from the wall line. This cannot have been the case at the corner of the masking tower. There is in front of it no projection which could have supported the beast's feet, which would in consequence have rested on nothing at all,—an artistic impossibility, and the lion would in any case have been standing with his feet half a metre or more up above ground level, which is almost equally absurd. The lion did not stand originally on the inner corner of the (older) tower, that masked by the later buttress, for its length is greater than that of the wall. It seems safest to restore it at the corner of the outer or flanking tower. Here there are no ashlar stones, only the rubble foundations, and the lion probably stood directly on these. There is no doubt that the south wall of the tower had its row of 0·55 m. ashlar blocks, like the rest of the contemporary building, and if these be restored from the many lying about and the normal orthostats be set above them, we shall have a continuous line of masonry level with the top of the lion slab. In this position the lion fits exactly, the back of the block coming at the back angle of the return while the feet project beyond the wall face, and the working of the other side allows of a set-back of 0·10 m. for the ashlar work behind the front of the rubble foundations, which is correct. It is true that there is not here, any more than at the other corner, a masonry projection to support the lion's feet, but such is only required artistically, not structurally, and actually is not required here at all, as the beast would appear to stand on the ground with his feet resting on the brick pavement which ran along the front of the tower.

In the outer recess of the west tower was found a white limestone altar of the usual type (cf. Pl. A. 4 *c*), 1·05 m. high by 0·47 m. square; the front face had been inscribed with $2\frac{1}{2}$ lines of linear text, but owing to the flaking away of the stone's surface virtually the whole of this had disappeared, and only a few fragmentary characters could be traced. The altar was not in place, but lying tilted at an angle against the edge of the masonry of the central buttress; it has been set up close to where it was found.

In front of the foundations of the east tower, close to where the corner lion stood, there was found a square limestone slab; a shallow rectangular depression occupies the greater part of its upper surface, and in the broader space at one end there are three cup-like hollows. A number

of such stones occur in the ruins of the town and, more plentifully, in the Late Hittite cemetery of Yunus outside the town walls. The South Gate stone (which has disappeared during the war) was of the simplest type; more elaborate examples have the three small holes enclosed by a rim in relief (three is the normal but not the invariable number), and the main depression is provided with a spout at one corner. These stones cannot have served any constructional purpose—both their form and the fact that they are commonly found in graveyards are against that; they may

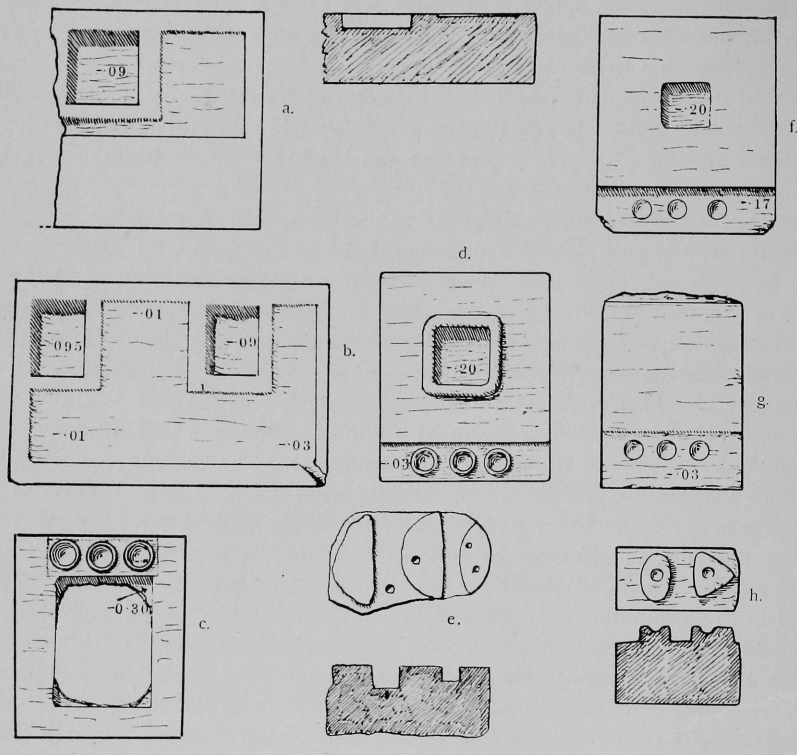


Fig. 27. Scale 1:30.

sometimes have been statue-bases, the larger hole being the socket for the figure and the smaller cups for offerings thereto; more often the character of the larger hole, which itself would seem to be a basin or receptacle, makes the statue theory improbable. I believe that all these stones are essentially 'tables of offering'; some may, perhaps, have had statues standing on them, but most, though they may well have stood in front of a statue or shrine, are complete in themselves. A series of these offering-tables is shown on fig. 27. A variant from the normal type, No. 27, has bosses in relief in which the cup-like hollows are cut; these may be bases on which were placed round-bottomed pots holding the actual offerings.

The original position of the South Gate stone is quite uncertain. The fact of its being found

in front of the tower face would rather suggest a connexion with the lion at the tower corner. But I cannot agree with the excavators of Sinjirli in their theory that these gateway lions were to the Hittites objects of idolatrous worship (R. Koldewey, *Sendschirli*, p. 130); they very probably were in their origin symbolic of the more than human might which kept the enemy from the gate, but with time even that symbolic value was likely to be forgotten and the lions, outliving awe, to survive in their traditional corners as mere decoration.

Small Objects. These, as was to be expected in a public gateway, were few in number and of no great interest in themselves; their importance lies in the fact that they were found below the mass of mud brick fallen from the gate-towers, which, except where it had been cut through by Roman drains or bodily removed by the classical builders in laying their foundations, had remained undisturbed since the towers fell. On the roadway lay a good many fragments of pottery, all, in so far as they could be dated, of the Late Hittite period; with them a fragment of a Cypriote aryballos and two sherds of Anatolian (?) pottery with a decoration of black and purple guilloches on a buff ground.

All these objects can be assigned to one period, that of the fall of Carchemish in 604 B.C. Their presence, and the absence of any later pottery or other finds under the débris of the gate-towers, show that after this time the gate was a ruin and its paved entry buried, not to be trodden again until twenty-six centuries had passed. It is proof additional to what the rest of the site yields in abundance, that from the day when Nebuchadnezzar destroyed the rebellious city, Carchemish was left virtually uninhabited until its resettlement in the Hellenistic age.

§ 5. The River Wall.

Plan, Pl. 14; photographs, Pls. 13 *b*, 15.

The transition from earth rampart to builded wall was effected, and the angle between them strengthened, by a large and solidly constructed square tower which projected beyond the line of each and rose almost directly from the river embankment.

Section A. The tower itself was admirably built. On the north side were dressed stone stretchers 0·70 m. high laid over a rubble foundation three courses deep, and above them orthostats 1·05 m. high: these show combined hammer and chisel dressing over the greater part of the face, with slightly drafted chisel-worked edges: most of them were hidden by a later buttress; their jointing was extremely precise. On the south face the orthostats that remain are much weathered: they stood 1·30 m. high over 0·80 m. high dressed stretchers (fig. 29): but towards the river end dressed masonry stops and is replaced by three courses of rubble, the top of this rising rather higher than the top of the ashlar stretchers: it may have had brick resting directly on it.

The river end of the tower has altogether disappeared. The tower contained two rooms, a comparatively narrow chamber along the south side and another, occupying the greater part of the area, which was filled up with stone packing and brickwork to a height well above the floor level of the first. The smaller room was peculiar in that the stonework differed greatly in quality in its three remaining walls: in the north wall were well-worked blocks with hammer-dressed centres and pronounced drafted edges, one course only, with brick resting on it (and no trace of woodwork); the west wall had a course of squared but poorly-finished stonework;

the south wall was of quite rough stones. The floor was of compressed limestone chippings level with the bottom of the good masonry. The whole of the back wall of the tower was stepped up, and its stones were masked by brickwork which extended over the whole of the main chamber. Bricks measured 0·40 × 0·38 × 0·13 m.: the jointing was poor, as much as five centimetres sometimes intervening between vertical faces, with but little mud mortar to fill the gap. (See fig. 28.)

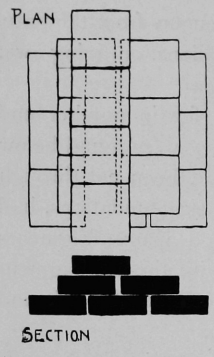


Fig. 28. Bricklaying.

The junction between the two lines, the earthwork and the wall, presented considerable difficulty; the ground-plan, owing probably to patchings at various dates, was much confused, and the bricks employed here were of so poor a quality, made of light and sandy clay homogeneous with the packing behind the walls, that it was hard to find or to follow a wall face.

South of the tower, and behind it, a 3·70 m. wall of brick resting on three courses of heavy rubble carried on (at a slight angle) the line of the main river wall for a distance of 14·50 m. At its north end it abutted on a wall which ran inland from the middle of the tower and contained a solid packing of sand and boulders; but the awkward angle between it and the south-west corner of the tower was afterwards blocked by a cross-wall, which masked the original bond between town-wall and tower. Against the south wall of the tower itself there was a block of heavy rubble building, not bonded into the tower but abutting on it, and in part masking the ashlar masonry: its foundations were rather shallower than those of the tower wall itself and its construction was notably coarser and more careless (fig. 29). This came to a broken end 3·40 m. from the tower face. It may have been merely a strengthening buttress added at a later date, but such would hardly seem to have been required in view of the tower's massive construction; otherwise it may have been the wall of a corner buttress, with a return west to the southern continuation of the river wall, supplementing the cross-work and blocking more effectually the still awkward re-entrant angle left by the latter.

At its southern end the prolongation of the river wall returned north-west and ran up against a now shapeless mass of mud brick which represents what was the retaining-wall of the sand-built mound. On the inner slope of the mound, a little to the north of the line of the north side of the tower produced, a similar shapeless mass of mud brick was found. Between these brick masses the mound slopes down towards the back of the tower, or rather, towards its north-west corner. Tracing back from the tower, we dug through a solid filling of clean river-sand and pebbles, then hit on mud brick, and then, resting on the mud brick aforesaid, which ran right round to the inner face of the mound and apparently to the outer face also, rough stone foundations stepped up the face of the talus.

We have here then the two containing-walls and between them a brick cross-wall which rests upon a solid platform stretching eastwards up to the back of the angle tower. The containing-walls themselves form a platform at a higher level, over and along which ran the town-wall; this is now represented only by the rough rubble foundations on which it was carried up the mound talus over the unstable sand of the filling. One would surmise that the mound, though necessarily terraced in construction, was, at least between the outer containing-walls and the rampart proper, sloped off and clay-revetted to agree with the main earthwork farther west.

At the point marked Z on the general plan a cutting showed the upper part of the mound to be but light sand, which would certainly have required a revetment to keep it in place. The inner retaining-wall probably supported the flat causeway which must have run round the whole line of defence.

Turning from the junction with the earthworks to the river wall proper, we come at once on signs of reconstruction and alteration. The north wall of the tower formed with the river wall an acute angle: at a later period this was filled in with a solid mass of heavy rubble whose front formed an obtuse angle with the river wall. The foundations of this lay almost as deep as those of the tower itself, implying that it was relatively early in date; the construction was massive but rough, the four layers of quarry-dressed blocks (average size 1·25 × 0·70 m.) being scarcely even

Fig. 29. Ashlar masonry of the south wall of the south-east tower, and the rubble building abutting on it.

coursed (fig. 30). The wall of its obtuse face is continued east at a low level, that of its east face runs north for one block beyond the corner, probably merely to strengthen the latter as the soil here is light. In the angle between this obtuse buttress and the river wall proper, but high up, level with the top of the second course of rubble in the late buttress wall, there lies a single layer of rough boulders, closely set together, which by itself might seem accidental, but taken in relation to similar phenomena occurring at regular intervals along the south of the river wall calls for an explanation. It would seem that these are the (very poor) foundations of square brick towers plastered against the face of the river wall at a late but still Hittite period.

Section B. The original point of junction between the north wall of the tower and the river wall seems to have been in brick, but from the angle there run north two orthostats, one 4·40 m. long and one 5·85 m. and 1·45 m. high, resting on well-dressed stretchers over two courses of heavy rubble. It is noticeable that the top surfaces of these enormous (but quite thin) slabs

are provided with round holes near the front edge, but do not form a level surface, and that therefore there can hardly have been a horizontal beam resting on them, however much the presence of the holes might lead us to expect such. If, as seems probable, another large orthostat, or two smaller ones, carried on the line, they have disappeared and left no trace. Over the stretcher course lies a deep bed of water-borne shingle and potsherds, showing where a torrent has breached the wall or profited by a breach already made. Among the sherds was one Cypriote fragment of the seventh or sixth century B.C., and a piece of decorated *terra sigillata* Lezoux type 37.

Beyond this breach is another high-lying patch of big boulders (1·25 m. above the stretchers) which we assume to be the base of a second late-added buttress. It masked a slight angle

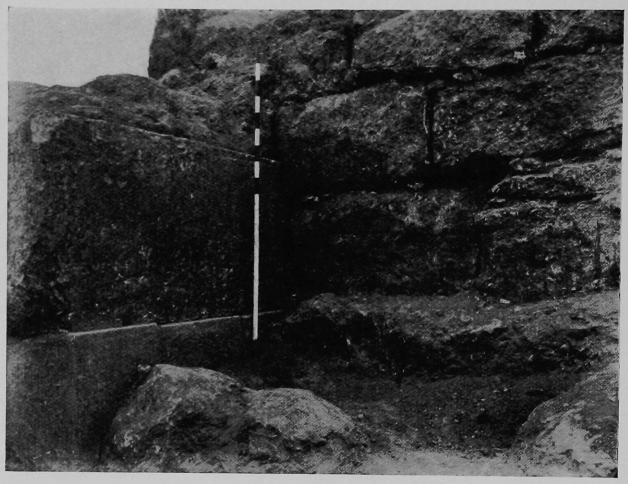


FIG. 30. Ashlar masonry of the north wall of the south-east tower and the rubble masonry masking the angle with the river wall.

of the wall. The hammer-dressed stretchers continue as before, but now they support not massive stone orthostats but mud brick, which farther on gives place as unexpectedly to stone, the best-preserved section of the whole wall (see Pl. 13 *b*). The orthostats here are very large, ranging up to 2·05 m. in height by 2·30 m. in length: they are not all of the same size and not all cut square: but where the side of one stone is out of the vertical, the next is carefully cut to fit, and where a stone fails of the right height it is made up with smaller blocks above. The foundations are of heavy rubble blocks, but there is only a single course of these below the stretchers, which have an average height of about a metre (see Pl. 15 *b*).

Behind the stonework there is a packing of large rubble and sand which continues for a metre or so behind the brickwork to the south, and thereafter gives place to a pure sand filling. Here the ground level inside the walls was high (the defence really cut across a large sand-bank) and the ruins of a Late Hittite house were found well above the level of the highest masonry, while just behind the junction of brick and ashlar walling the back foundations of the wall itself,

and of a wall which abuts on it, are higher than the ashlar of the front face. Virtually therefore the wall here is a retaining-wall, and that fact would account for the manner in which it has been breached by torrents cutting through the slope of light sand behind and thrusting against the masonry. It would also account for the preservation of the rest of the stretch here; the river which had thrown up the original sand-bank before long deposited a fresh bank against the wall's face. Clean sand with remarkably little admixture of rubbish, and slight pebbly strata, came within some seventy centimetres of the tops of the orthostats; the absence of any rubbish stratum low down seems to show that the process of sanding up took place not very long after the wall was built.

The line of the first stretch of section B prolonged would necessitate a short set-back about where the late tower comes; and here, at a low level, a few stones do occur just in front of the last visible stretcher, the northernmost of them forming a right angle (nearly) with the following wall face: their tops are just level with those of the stretchers. Here the brickwork, which to the north is, as one would expect, flush with the face of the stone course below, projects beyond it, showing only a broken outer face but that well outside of the stretchers; it follows almost inevitably that it rested on the low-lying stones already mentioned. The brickwork was breached before the late buttress was added, for the stone foundations of the latter come within the wall line, and there is rubbish behind them, and also between them and the top of the broken brickwork below. The brickwork therefore does not belong to the latest wall period. The fact that the fine stretchers here run under and behind the brick might incline one to think that the brickwork as a whole, and the salient which it forms, were not part of the original wall, which would have been in masonry throughout. But the salient is proved by the direction of southern stone stretchers as well as by the projection of the brickwork, and it is quite possible that the stretchers from the north run behind the brickwork as they do simply through an error in laying out the wall line, and that the builders of the northern section did but overshoot their mark. Incongruous as this patch of mud brick between two sections of massive stonework may appear, it is demonstrably original. Under the orthostats, the tops of the hammer-dressed stretchers are carefully brought to a level, as was necessary for stone buildings. Southwards, under the brick, the stretchers have the same character and are manifestly of the same date and scheme of things—but they are no longer all of a height, e.g. the third stone south of the last orthostat projects 0·20 m. above the line hitherto observed, the fourth is like it, the fifth is stepped down by seven centimetres, and the sixth is again lower. This irregularity is wholly incongruous with any such construction as that of the ashlar stretch to the north, but is quite unobjectionable when mud brick is to be used. It follows that such sudden changes in material were a feature of the original wall and cannot always be attributed to botchers of the city's decadence.

The short return at the north end of the fine masonry stretch (B—C) presents certain difficulties. There is no facing-stone, and apparently never was such. The return is of very heavy quarry-dressed rubble, with solid filling behind, whose top is 0·70 m. below that of the wall proper. A double row of rough rubble, parallel with the outer wall, runs across the platform, leaving a broad channel between it and the back of the first big orthostat. On the inner or western side the filling may have been carried on to the line of the next wall stretch produced. The whole angle of the main wall is filled up with a mass of heavy shapeless stones, lying at a higher level (1·25 m. below the top of the masonry) and supposed by us to be the foundation

of a late tower; but (at about the same level) a line of similar rough stones runs from the short face of the re-entrant parallel with the next stretch, for a distance of three metres, and between it and that wall face was nothing but earth filling. These two features in the angle would seem to be related. One's first idea was that of a narrow postern-gate with steps leading on to the river bank; and this is, perhaps, the most probable. Another view would connect it with the drainage system, but for this the level would seem unduly high.

The next stretch (C) was of masonry but of a quality much inferior to that of the last; there was no course of ashlar stretchers: the wall blocks, of very varying sizes and shapes, rested upon rough quarry-dressed blocks, or even boulders, which formed the top line of a three-course foundation. Properly speaking there are no orthostats, but it is a building with fitted stone blocks, generally in two and sometimes in three courses. The stones were originally well dressed (they have suffered a good deal from exposure), and the fitting was good but not nearly so exact as in stretch B.

The next stretch (D) was of the same character, the stones being if anything more carefully levelled, but it soon broke away into complete ruin, and even its foundations could not be traced with any certainty. The wall was here 5·80 metres broad, and in places at any rate (e.g. just north of the internal abutting-wall shown on the plan) it was faced on the inside with orthostats as massive as those of the outer face. So showy a construction would hardly have been thrown away on a wall which was not meant to be seen; excavation (though not pushed very far here) produced no evidence in favour of there being a second wall, or of this ashlar face having had any building west of it. It would appear that at this point the town defences were limited to a single wall 5·80 metres wide.

This stretch of the wall ended in absolute ruin; for a little distance it could be traced by the rough stones of its filling which had been left when, apparently, the cut blocks of the back and front faces had been despoiled for buildings elsewhere: then even these gave out. Scattered stones in the line of the irrigation ditch implied that the wall had lain not far away, but its exact course could only be conjectural. How complete was the work of destruction, begun probably by stone-seekers and continued by nature—for here the torrents had cut their courses most deeply amongst the débris of the town—can be judged from the photograph reproduced in fig. 8.

When the wall face was picked up again (D—E) a few stones of a right-angled return justified us in prolonging the last stretch to an imaginary point on a continuation of the line so given, but excavation at that point produced nothing but clean river sand.

Section E. From this return, two courses of heavy foundation blocks (averaging from 0·60 to 0·80 m. in length by 0·45 to 0·60 m. high) and some of the wall core lead on to a long wall running from east to west back into the town. The south face of this was of large coursed rubble giving about 0·50 m. to a course. The north side (its true face could not be found) was of brick with stone foundations three courses (1·30 m.) deep at its east end and cobble foundations farther back; at its west end (beyond the masonry shown on the plan) the wall was carried on in mud brick throughout. This should mark another and an unusually deep recessing of the defences: but nowhere along the north side of the wall could any trace be found of one running north from it: for a space of four metres there was nothing whatsoever to guide us. Then came the scanty ruins of a wall apparently resembling in character the east to west wall with which it must have connected—at the back its foundations consisted simply of two or three layers of large

river cobbles, while what little remained of its front face showed two and probably three courses of fairly heavy rubble. The line of this fragmentary wall produced southwards would hit the east to west wall just about at its inner end; and this, though it gives an awkward angle, has been adopted in the reconstruction as the only line for which there was the least material evidence.

After 22·00 m. even this fragment failed us, for the builders of a large Roman structure had gone down below Hittite level to lay their foundations. The Roman work was as hopelessly ruined as its predecessor; it had, perhaps, been a gate, as voussoirs occurred among its scattered stones. North of it a broken line of smallish rubble, itself of uncertain date, gave a not improbable line, bringing the wall to the south end of the next (well-preserved) stretch and allowing here for the small salient (1·50 m.) which is the most common on the river wall. But it must be confessed that no actual trace of its junction could be discovered in the ground.

Section G. The next stretch (G) is, by contrast, well built and very well preserved. Over the heavy rubble foundations (two courses, about a metre high) runs a course of hammer-dressed blocks 0·65 m. high, above which, with a set-back of ten centimetres, the orthostats, 1·10 m. high and as much as 2·05 m. long: five of the latter are preserved and the lower course, though some stones are broken, is virtually complete. The wall is only 2·70 m. thick, with an inner facing of poor rubble: brick walls at right angles abut on this western face; and it is probable that here there was a double wall with intramural compartments such as we find near the Water-Gate.

Section H. The next stretch is completely ruined, and what elements of building do survive are confused and hard to reconcile with any coherent plan. Section G had finished abruptly, with a large orthostat in position as its northern end, and one would therefore expect to find the next stretch recessed like the preceding one. Instead, heavy foundations lie at right angles in front of the short north face of stretch G, running forward *c.* 1·50 m. and back 2·00 m. behind its back face, and then return north in the form of poor foundations, one course deep. Eleven metres to the north of the short east-by-west wall, and separated from it by a line of Greek foundations, heavy rubble foundations of unquestionably Hittite and river-wall character line up with its east end, run north for 10·50 m., and then return westwards. They fail at the south, immediately in front of a Hittite wall running east and west which, though it does not in fact come nearer than 7·50 m. to this line, can, when all evidence is so confused, hardly be dissociated from it.

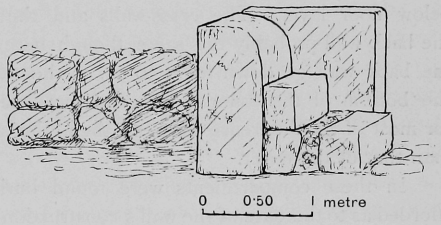


FIG. 31.

This last-mentioned wall is really a double one: the two wall faces, 1·50 m. apart, form a kind of narrow corridor which half-way along is blocked by a set of steps (fig. 31): a stone 1·30 m. high set between two orthostats, re-used here to line the passage (one is fallen but lies almost *in situ*), has against its eastern face two steps roughly formed each of a single block: in front of these the side walls give out and there are only, to the south, the shoddy foundations already mentioned as connected with the short east-by-west cross-wall. At its western end the double wall finishes irregularly: the southern side tails off into a tumbled mass of rubble core which extends inland

for 3·00 m. beyond where the real face disappears; the northern side ends in a clean right angle, but traces of mud brick beyond it and to the north suggest that it was continued, or that there was a return wall here, in brick. Some 4·00 m. to the north-west brickwork was found which could possibly connect with this, and is on the line of the inner wall discovered intact farther north.

The best explanation would seem to be that we have here the remains of a stretch of a double enceinte wall, the two connected by cross-walls which in one case form a narrow passage. The upward slope of the terrain westwards would account for the steps in the passage, and for the very different levels of the inland (brick) wall and of the stone foundations along the river front. As a number of cross-cuts failed to trace these latter beyond the point where they break off in line with the very fragmentary, but heavy, foundations running west, we have been constrained to see in the latter the northern limit of the double-walled stretch, though the blocks lie at so much higher a level that their connexion with the deep foundations of the east face must be considered problematical.

Certainly there was hereabouts a return recessing fairly deeply the line of defence, for 13·00 m. to the north we have the wall of brick on rubble foundations which runs straight on to the Water-Gate and forms the outer face of a compartment-built wall still standing in a good state of preservation.

Section J. The intramural space is divided up by cross-walls at irregular intervals into narrow chambers or passages which, since they have no means of entrance, were presumably all below floor level. The cross-walls and the front wall were of brick on stone foundations, the back wall probably the same, though here no brickwork survives: the rubble foundations of the back wall go down for 2·50 m., of the cross-walls 1·60 m., and of the front wall *c.* 1·10 m.; the bottom of the foundations are approximately on a level, the slope of the ground accounting for most of the difference between them, the stonework of the inner wall being carried up higher than that of the outer.

In these compartments were found burials which were invaluable for the evidence they afforded as to the date of the wall's construction (see Ch. VI, R. W. 1, 2, 3). The inner side of this compartment-wall was broken off at the south, the break, which went below foundation level, being filled with pebbles and débris brought down by flood-water. It appeared to have ended against an east-by-west wall of stone, 2·00 m. thick, to the south of which was a mass of solid brickwork whose shape could not be determined, but which may indicate that the defences were carried south from here, not in compartments, but as a solid and substantial single wall. In this brickwork was a stone-lined well or store-pit, 2·50 m. deep, probably of Roman date.

Section K. The north-east corner of the compartment-wall was broken away; its inner line was continued north and met the corner of the Water-Gate; this was recessed by the width of the compartment-wall, which therefore had the appearance and the effect of a flanking tower. Between the corner of the salient and the gate, the existing wall face was set back one course: but the stones found in position were really but filling-blocks and the wall had almost certainly been faced with good orthostats which have long since disappeared. Behind this wall stood the south tower of the Water-Gate.

In front of the gate, and to the north of it, there was complete ruin. Here the pudding-stone rock of the Kala'at's original structure extends south in a bank shelving steeply to the river,

and thanks largely to this slope nearly every trace of building has vanished: we cleared down to the rock face and found little but tumbled Hittite stones, or late Roman walls resting on the rock. The only piece of construction which could with any probability be assigned to Hittite times was a single course of rough boulders running east and west 14·00 m. north of the Water-Gate: it rested on the natural rock and the pottery found in connexion with it was apparently all Hittite. This would give the return wall of a salient connecting up by a short eastward-facing front (of which we have now no trace) with the broken end of heavy foundations visible in the soil at the foot of the citadel mound: these are the foundations of the stepped wall which, running up the slope, connected the river wall with the ring wall of the Citadel and completed the fortifications of the Inner Town. It is probable that between the fortress on the hill and the Water-Gate there was a fairly elaborate work, embracing the north gate-tower and corresponding to the compartment-wall south of the gate: a prominent salient might therefore be expected, and the projection here of a rock platform which, if not occupied, added danger to what was in any case a weak point, inclines us to restore a prominent tower on the slender foundations of a single and disconnected rubble course. 6·00 m. south of this doubtful wall the rock shelves down and a steep sand-bank lay below the Water-Gate; the heavy stratum of decayed vegetable matter resting on it shows that it was for a long period the exposed surface.

It is obvious that the river wall, whose foundations are often none too deep and rest often on most unstable material, was in need of protection against river floods. At the south-east corner of the town, in front of the angle tower, there was found a stepped embankment-wall of heavy coursed blocks which carried on the line of the quay wall of the Outer Town. There can be no doubt that it was continued along the whole river front. We did not follow it up far because trenching to the requisite depth meant long and costly labour which would hardly have been repaid by results: not only is the soil deep, but the construction by the Baghdad railway engineers of two successive stone embankments has made the site difficult to dig; we have therefore contented ourselves with the tangible proof that a river wall did exist. Chermside in 1879 (v. p. 10) recorded a wall then standing above the surface and skirting the river bank; this was not visible in 1912, and as it follows virtually the line of the inner German embankment it is not likely to come again to light. In our general plan of the fortifications Chermside's river wall is inserted, not as seen by us, but as being most probably Hittite and the continuation of the embankment which we did find.

§ 6. The Water-Gate.

Plan, Pl. 16; photographs, Pls. 17 *a* and B. 28–31.

The Water-Gate stood just where the lowest shelf of the Acropolis rock gave place to the gravel of the river bank: the north tower was based upon the rock itself, the foundations of the south side were laid more deeply in the gravel; in front of the entry the ground ran down steeply to the river bed.

It would seem that the wreckage of the Hittite gate had been buried beneath an accumulation of débris from the Citadel, that Roman buildings covering the same site had destroyed much of the underlying remains, and that after the decay of the classical town storm torrents, sweeping down from the higher areas inland along the foot of the great mound to the river, had carried

away the Roman walls and exposed once more so much of the Hittite structure as the later builders had spared. When our expedition started work, only a few centimetres of soil overlay the Hittite pavement and virtually the whole of the south side of the gateway was standing above ground, though so lichen-grown were the stones that almost it required an act of faith to recognize the reliefs which adorned the broken orthostats. But with the north side the case was very different. Here there were no surface signs, and when the whole area had been cleared down to the rock only a rough mass of rubble core, without a single facing-stone, testified to the east end of the gateway, while farther inland heavy Roman foundations set below the Hittite ground level had destroyed the last vestige of the older work. The rubble mass gives us, at least approximately, the width of the entry, but apart from that most valuable hint our reconstruction has to depend upon one side only; and even there the evidence is confused.

The general scheme of the building is simple enough. The entrance was flush with the adjoining sections of the town-wall: from the river's edge a flight of shallow stone steps passed between the outer buttresses and at the second buttress gave place to a paved road sloping more gently upwards; the paving stopped on the inner line of the third buttresses, but the road ran on to the foot of the Great Staircase. The gateway was thus provided with three doorways opening between the ends of three pairs of rather shallow buttresses which projected from the inner walls of the towers flanking the entry. Owing to the slope of the ground the outer buttress was much lower than the rest, the top of its orthostats being almost level with the pavement before the central buttress, and for the same reason there could be no actual door folding back into the recess; the steps did not widen out, but the recesses were filled with a solid platform of faced rubble whose top ran level from the base of the central buttresses to the top of the outer: the back walls of the recesses were decorated with reliefs which thus carried on the line of the carved faces of the central buttresses. The outer buttresses were also decorated with reliefs. The inner recesses, between the central pair of buttresses and the third, were faced with plain orthostats and their (unpaved) ground level was that of the paved roadway between them; this is only natural, because into these recesses the big wooden doors folded back concealing the back walls. Beyond the third buttresses were other recesses to take the second pair of doors, and these were likewise plain.

The north gate-tower (apart from the rubble core already mentioned) had wholly disappeared. The south tower was better preserved; its walls could be clearly traced by their heavy rubble cores, though no facing-stones remain and measurements are therefore approximate, and show a rectangular tower of massive masonry divided into four chambers by cross-walls, the north-by-south walls corresponding to the buttresses of the entry.

Our plan of the gateway given on Pl. 16 is that of the building whose ruins were most in evidence; but this was itself a late and botched reconstruction of an earlier. The original Water-Gate was, of course, contemporary with the river wall of which it forms an intrinsic part, and with the whole line of the Inner Town's defences, i.e. it was of Middle Hittite construction. At a considerably later date the gateway underwent radical alterations; the builders, while adhering to the main lines of the old ground-plan, modified its details, and re-used many of the old sculptured stones, but not in their original positions. This reconstruction probably took place after 1200 B.C. The following description deals primarily with the existing ruins of the later gate; the evidence for the earlier building will be given as it occurs.

The steep slope in front of the gate was in Hittite times the river bank, and over the sand and gravel to the south a heavy stratum of black mud containing many Middle Hittite potsherds preserved the original contour; though later the river changed its course, and withdrawing eastward left a fairly wide stretch of flat ground between wall and water, there were on this few signs of subsequent building. But in front of the north tower of the gateway, where the shelving rock gave firmer foundations, late classical buildings had extended on to the lower levels outside the wall line: one short stretch of heavy rubble masonry running east by west may possibly have belonged to the last salient of the Hittite river wall, but even it had been incorporated in a Roman house and its date is doubtful at best.

The modern irrigation trench which follows the entire line of the river wall ran just outside the Water-Gate entry and had further confused the stratification of the area; in the ditch and buried in the level ground to the east of it were numerous building-stones, fragments of sculpture, &c., which so far as the evidence of depth and condition went might have been tumbled in here at any time within the last 2,500 years. The principal sculptures found here were a limestone orthostat with reliefs carved on one side and one end, which unquestionably came from the outer corner of the south gate-tower immediately below which it lay, and many fragments, large and small, of two (or three) colossal basalt lions. Whether these belonged to the Water-Gate is very doubtful, and the point is of such importance for the reconstruction of the latter that it is best to deal with it at once.

The fact of the sculptures being found in front of the gate has little value as evidence, for they were only brought here forty years ago. In the very scanty records of the 1878 excavations it is stated that when digging a long trench from the Great Staircase to the Water-Gate, with a view to the removal of the Son- and Moon-god slab, the workmen discovered two headless lions which were dragged down to the river-side for dispatch to England, but were abandoned there; subsequently they were broken up by the local miller to make millstones. These are our lions. Unfortunately nothing is said as to whereabouts in the trench they were discovered, and we have no reason to suppose that it was in the Water-Gate section rather than inland near the Great Staircase.

The two beasts to which the bulk of the fragments belong are corner-stones of walls, the lion's body being carved in relief on one side of the block while the head and front legs carved in the round project at the end; they form a pair in that of the one the right flank is represented, and of the other the left, and that each bears on the side of the body an inscription in hieroglyphic characters (Pls. 31 and A. 14); but they are not the same in size or style (nor, if style is a criterion, in date), so that there are difficulties in assuming that they balanced each other on opposite sides of the same building. It is still more difficult to see where in the Water-Gate they could have stood; their style is quite inconsistent with the date of the older building and in the later there is no room for them; the central buttress is the only available corner, and if placed against it they would narrow the entry to a degree wholly disproportionate to the rest of the plan. I was originally inclined to restore them here, but on revising the evidence decided that it was impossible. Rather do I feel disposed to associate them with another fragment of basalt sculpture representing the fore-part of a lion (fig. 32) found a few metres west of the inner buttress, and to suppose that they all three came from a building whose entrance was guarded by the two corner-stone lions, while others, their fore-parts only represented, projected at intervals along its façade.

A building that might answer to this description lies on the north side of the road within the Water-Gate, on the line of the trench dug in 1878.

As a doubt exists, the lions are figured in this volume and are described under the heading of 'Sculptures of the Water-Gate'; but they are not taken into account in our attempts at a reconstruction of the original building.

About the limestone corner-block (Pl. B. 28 *a*, *b*) there can be no doubt at all. Its style is that of the other reliefs and it fits into place on the foundations from which the corner orthostat is missing, the end of the block projecting by just the thickness of an orthostat beyond the line of

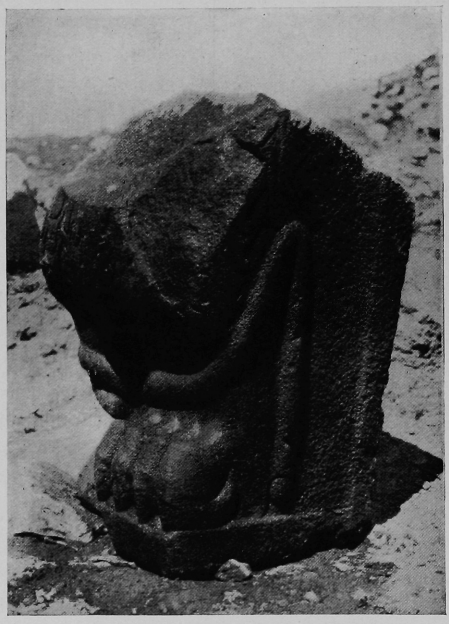


Fig. 32. Basalt lion from near Water-Gate.

rubble core which is all that here remains of the river wall. The other facing-slab (Pl. B. 29 *a*) of the outer buttress (south side) also bears reliefs; it was found *in situ*; the upper part is broken away, but what remains affords valuable evidence for the restoration of the gate. On the left (east) side of the field the base-line below the figures is horizontal and on a level with the base-line of the (displaced) corner block; on the right (west) it runs up at an angle and if produced would hit the pavement level in front of the central buttress: it gives therefore the gradient of the stepped (?) slope which led from the lower platform on the river bank to the roadway proper.

The back wall of the outer (south) recess was not parallel with the buttress fronts, and the depth of the recess varied accordingly from 1·00 to 1·50 m.; the wall, 2·75 m. thick, was solidly built with outer foundations of quarry-dressed blocks on which rested carved orthostats

1·40 m. high; two of these were found *in situ* (Nos. 3 and 4), and fragments of a slab (No. 7) which may have belonged to the row were found some 3·50 m. north on the line of the other side of the gateway. In the south-west angle there was a narrow gap between the last relief of the back wall and the return side of the buttress where there may have been a narrow slab (perhaps sculptured with a pendant to the demon of the next stone) or a stopping of plastered rubble. The platform which filled the recess was of small stones and earth with a front wall of rough rubble probably once plaster faced.

Of the north gate tower all that remained was a stretch of rubble wall-core corresponding to the back wall of the first recess on the south side. Its heavy outer blocks, one course high (the smaller rubble behind rose to two courses), formed a straight face parallel to the axis of the gateway, to which therefore it should be assigned, and presumably it is the back wall of the outer north recess. Between this and the south tower is a double line of stones (see plan). The straightness of the edge along either side makes it look like a fragment of a wall built as usual with larger facing stones and a filling of small rubble, but the polish on the upper surface of the slabs proves that they are part of a pavement. They give a line for the front of the buttress on the north side which agrees well with that of the paving against the inner (west) buttress; this makes the outer recess on the north side much deeper than the corresponding recess on the south, but as the line receives further support from the finding-spot of the 'banqueting' slab (v. *infra*) the objection of asymmetry carries little weight. The pavement slopes upward inland, but not at so steep an angle as that given both by the base-line of the outer buttress reliefs and by the actual ground levels in front of the outer and central buttresses respectively, and it is therefore difficult to reconcile with the plan of the gate; the gradient of the entry was probably changed at the time of reconstruction and may never have been very regular; it is even possible that this is part of an old wall incorporated in the later pavement.

The second (central) buttress on the south tower bears no sculptures but is very roughly built of large limestone blocks. The corner orthostat from the north-east angle is missing. At first we supposed this to be intentional, and that one of the basalt lions stood against the face of the buttress, its right shoulder and the right side of its head (carved in the round) exposed by the reveal in the corner of the buttress, as in the suggested restoration of the Sinjirli gateway. But, as has been said above, the lion will not suit this position, and the 'reveal' is in fact only accidental, for a large stretcher or foundation block occupies the corner, and its upper surface is carefully cut to take an orthostat; originally then the face of the buttress was uniform for its whole width. The buttress is peculiarly badly built (v. Pl. 17 *a*). The main facing block is a re-used orthostat laid face upwards so that the present front is really the side of the stone; the remaining corner-stone is not a real corner-stone at all, but an ordinary orthostat, not even re-trimmed to suit its present position, and the gaps left by the rounding off of the angles of the blocks are roughly packed with small haphazard lumps. Obviously this is reconstruction. Again, the orthostats rest on a well-laid stretcher-course whose top is 0·30 m. higher than the pavement; but instead of forming a straight edge along the front the stones project jaggedly as much as 0·40 m. beyond the orthostats, or do not project at all. Had they formed a regular footing one might have assumed that such was contemporary and intended to support a facing of thin slabs which would have given a workmanlike finish to the buttress; but as it is, one can only see here further evidence of rebuilding. In the original gateway the projection of the buttress was

greater than at present; in the reconstruction the old foundations were re-used, but as the buttress was shortened the front of these foundations was hacked away to make room for a level pavement; the rough end of the upper stonework must have been either plastered all over or masked with wooden panelling.

Nearly all the paving-stones have disappeared, but on the north side of the entry, 3·90 m. from the face of the south buttress and in line with it, there was found embedded at pavement level a limestone block 2·30 by 1·35 by *c.* 1·00 m. set right way up with on its north face a relief of a banqueting scene (Pl. B. 29 *b*). Its position shows that this piece of sculpture, undoubtedly a feature of the original Water-Gate, had at the time of the gate's rebuilding been discarded and used as the foundation of the new central north buttress. Thanks to its bulk and to the depth at which it lay, the block had not been disturbed when the later gateway was destroyed; it stands alone, but even so it enables us to restore with practical certainty the whole of the north side of the gate.

The recess between the central and the western buttresses on the south side was plain, the wall being faced with limestone orthostats 0·90 m. high resting on rough stones, not on properly dressed stretchers. There was no paving in it.

The west buttress had a projection of 1·40 m. Its front is formed by a single limestone block 2·30 by 1·35 m. on which is a relief representing animals being led to sacrifice (Pl. B. 29, fig. *a*). The block is bedded on small cobble-stones and chippings.

The wall beyond the buttress was recessed, but as the orthostats are missing and only the rough core remains the depth of the recess can only be conjectured. The west face of the buttress itself does not help us: the end of the 'sacrifice' slab, which is not dressed as a corner-stone should be, goes back for 0·80 m. and then the angle between the buttress and the core of the main wall is filled by projecting rubble certainly never meant to be seen: either the recess was extremely shallow, some 0·30 m., enough to let the doors fold back flush with the wall, and this is made more probable by the fact that 2·00 m. farther inland the core of the main wall comes forward again virtually to the line of the buttress face; or else the buttress had a wider front than that given by the 'sacrifice' slab alone and the filling in the corner belonged to the buttress and not to the wall proper. Beyond the 'sacrifice' slab there exists no hinge-stone to support the former theory nor any foundation for a corner orthostat to confirm the latter, but the foundations below the 'sacrifice' slab itself are so shoddy that were the slab removed it would be difficult to prove that it had ever occupied its present position; the actual working of the slab (v. *infra*) suggests that it had another stone next to it; and on the whole I incline to compromise by restoring the (later) gateway with an inner buttress wider than that now existing and with a rather shallow recess beyond it.

In front of the buttress the pavement is fairly well preserved, consisting of large more or less square slabs well polished by use, the spaces between them filled with smaller stones and pebbles; five slabs set in a straight line show the frontage of the north buttress (which has been entirely removed to make way for a Roman foundation of heavy hawâra blocks), and give us the width of the entry. West of the Roman foundation there are the remains of a Hittite wall set well back behind any possible buttress face, and exactly upon the line of the rubble mass representing the back wall of the outer recess on this side. The wall runs inland to a doorway with projecting masonry jambs giving on to the slope of the Citadel. It is probable that here,

inland of the Water-Gate proper, the two sides of the road were not symmetrical, and the remains on the north side do not greatly assist us to estimate the depth of the recess on the south.

A closer examination of the paving supports the view already expressed as to the reconstruction of the gateway. The pebble foundations below the 'sacrifice' slab rest on the ends of four heavy blocks which project in front of the buttress and, with four more blocks in front of them, make a flat square platform 0·20 m. higher than the paving in the middle of the entry; beyond the straight edge of this platform runs a long line of paving-slabs like that on the north side of the entry, whose well-worn surfaces contrast with the rather rough tops of the platform stones. There can be no doubt that this platform is the foundation of an earlier buttress which had a greater projection than that represented by the 'sacrifice' slab. The plan shows that the 'sacrifice' slab lies well behind the frontage line of the central buttress, and it has already been remarked that that buttress seems to have been originally deeper than it is now. If the frontage line of the original inner (west) buttress as given by the foundation platform be produced it will accord well with the broken ends of foundations projecting below the central buttress: we have only to suppose that as in the inner doorway the paving was but slightly below the level of the old buttress foundations, whereas in the central doorway it had sloped down and was some 0·30 m. below them (in spite of the foundations themselves being graded down), the builders of the reconstruction period were content to leave the foundations of the old west (inner) buttress in place as paving, while perforce they cut away those of the central buttress and put down in their room new paving at road level.

The original gateway therefore had a uniform width of 3·50 m. between buttresses; the later gateway had a width of 4·25 m. between the inner buttresses, decreasing to the original 3·50 m. on the river front. Most of the paving now *in situ* belongs to the earlier period.

The question then arises, Are the sculptures of the gateway to be assigned to the earlier or to the later building? and if to the former, is their present position also their original position in the old gateway (in which case we have good evidence for the reconstruction of the old gate), or were they removed by the later builders and re-used regardless of their proper purpose? The point is involved with arguments of artistic style which are reserved for treatment elsewhere, but the purely archaeological data go far towards supplying an answer.

It is obvious that the 'banqueting' slab, used in the foundations of the later buttress, belongs to the first period of the Water-Gate; as it forms in all respects a pair with the 'sacrifice' slab, the latter must also be assigned to the first period.

Did then the two stones, being a pair, face each other from the two ends of the inner buttresses? i.e. while one has been discarded altogether, has the other been re-used in, or approximately in, its former position?

That the 'sacrifice' slab is not in its original place is proved by the fact of its buttress having been shortened; but it might merely have been moved back and so occupy the same position relatively. Now the (spectator's) left-hand end of the stone is dressed to a true face, but the right end is trimmed to fit on to another block; along the edge it is smoothed down at right angles to the carved face, and farther back it bulges out, so that the stone next to it must have been wedge-shaped in section—the most common thing with Hittite orthostats. The foundations show that the original buttress was no wider than the 'sacrifice' slab; if therefore this was meant to have another stone continuing its line it cannot have stood at the end of the buttress as

it does now. Similarly with the 'banqueting' slab; the right-hand end is dressed with the convex bulge which is typical of Hittite, and, as seems probable, essentially typical of Middle Hittite orthostats, while the left end is not so dressed, but is cut at a sharp angle to the vertical, so that it could not have formed the corner of a building but would give a characteristic example of the Hittite fashion of non-rectangular jointing of masonry. That it was not an end stone is further shown by the cutting of the front face. Along the top of the stone runs a margin in relief; the right edge is plain, but down the left-hand edge, behind the figure holding a fly-whisk, the ground-plane of the relief is cut farther back in a vertical line making a sunken border which narrows as the stone edge slants inwards and then runs off it altogether, to be continued, presumably, on the neighbouring block. Exactly the same feature appears on the left-hand end of the 'sacrifice' slab, but here, as the slant of the stone is outwards, the sunken border only appears on its lower part. It is practically certain that the two slabs had originally nothing to do with the buttresses, but were parts of a continuous dado or dadoes along a main wall: the later builders paid not the least regard to the artistic value or to the original purpose of the old sculptures.

This conclusion is important because it brings the reconstruction of the Water-Gate into line with the wholesale reconstruction of other buildings in the Inner Town; it goes to show that there was a general rebuilding following on a general destruction, and that the two events were separated by a sufficient interval of time or of sentiment, or of both, for the new builders to hold their predecessors' work in light esteem. In the present state of our knowledge the sacking of Carchemish about 1200 B.C. and its resettlement by the Mushki (?) branch of the Hittites seems to be the only historical event which would suit the circumstances, and we are thereby entitled to regard the older sculptures of the Water-Gate as being of Middle Hittite workmanship, not later in date than the thirteenth century B.C., and, perhaps, considerably earlier than that.

On stylistic grounds (v. *infra a*) the other reliefs of the Water-Gate should all, with the exception of the basalt lions, belong to the Middle Hittite period; the archaeological evidence is slight, signs of rebuilding involving any change of ground-plan are less obvious in the outer part of the gateway, and it is possible that the reliefs were found *in situ* by the later builders and not disturbed by them.

§ 7. The Sculptures of the Water-Gate.

1. Pl. B. 28, figs. *a* and *b*.

Limestone corner-block. End face, 0·80 × 1·10 m.; side face, 1·50 × 1·10 m.

Found at the edge of the old river-bed below the Water-Gate.

End Face. Upper part of stone broken off and much of face flaked away.

In a recessed panel, leaving a broad base margin and narrow margin on rt. side at the original plane, remains of two figures advancing l.

Of the front figure, there are left only the feet, wearing turned-up shoes, the border of the skirt, and the long staff: all the rest of the body is flaked away.

The rear figure is preserved to the waist. The figure wears turned-up shoes, and a long-skirted garment reaching half-way down the calf with plain lower border and a slightly

curved seam or edge running vertically down the middle of the body. The rt. arm was advanced, sharply flexed at the elbow, the hand holding upright a long staff of which only the lower part remains. The treatment is very flat, the whole relief being virtually on two parallel planes.

Side Face. Sphinx (?) advancing l.; the head, upper part of wing, and end of tail broken away.

The beast is almost certainly a human-headed Sphinx, not a winged lion.

The treatment of the relief is flat; the outline of the figure and its internal detail hard and angular, e. g. the back of the l. shoulder is a straight vertical line: the muscles of the l. haunch are represented by a curious fan-shaped trefoil, like conventionalized drapery. The breast and shoulders are covered with small round-tipped scale-like feathers, the wings consist of narrow straight quills, the hair of the animal's body is not represented. The feet are of typically early type, highly stylized, the near claw forming a regular spiral round an embossed circle; the hind legs and feet are noticeably more realistic than the fore-limbs, which are disproportionately thin and almost geometrical in outline: the sculptor, having represented the l. foreleg as advanced, has attempted to show the lower part of the chest, with a very grotesque result.

2. Pl. B. 29, fig. *a*.

Limestone slab. 2·15 m. long by (originally) 1·10 m. high.

Found *in situ*.

The stone is broken across diagonally from the rt.-hand top corner of the stone to the bottom l.-hand corner of the relief, all above this being missing, and the rt.-hand top corner has also been broken away.

Two animals confronted.

On the l. side, the feet and legs of a bull (?): none of the body remaining except the lower line of the chest. The legs are set forward as if the body was drawn back in an attitude of defence. On the rt., a lion advancing as if to attack. The body of the lion is peculiarly long and thin; the front legs show no detail, the hind legs have two cord-like lines edging the limbs; these are perhaps meant for muscles, perhaps are the groundwork on which a fringe of curled hair was represented in paint. The claws observe the same convention as in the previous slab, but in a more exaggerated form; the pad of the foot is rounded down so as to rest upon the ground, and the toe and claw, undifferentiated by any bone joint, form $1\frac{1}{3}$ whorls of a spiral. The relief may well be an early (Middle Hittite) version of Pl. B. 13 *a*.

3. Pl. B. 29, fig. *b*.

Limestone slab. 1·67 m. × 1·36 m.

Found *in situ*.

Stone broken vertically across the middle: part of upper field broken away.

Winged lion advancing l.

(N.B. The stone, which has long been exposed, is so discoloured by lichenous growth that a direct photograph is almost meaningless; to obtain the photograph here reproduced, the face of the stone was treated with a colour-wash of mud and water.)

The head, body, and forelegs of the animal are those of a lion; the hind legs are eagle-footed; he has eagle's wings and a short tail with long square-ended brush.

The relief is flat, with comparatively little detail.

The lion is maneless; the muzzle is rendered by heavy horizontal folds (an early convention): the open jaws show the teeth, and the tongue protrudes; the lower jaw ends with an exaggerated curl for the chin. The ear is pricked forward, a single cord-like muscle marks off the head from the heavy neck: there is no hair on the body. The fore-feet are treated with the exaggerated convention observed in No. 2; the l. leg has along its back the relief edging of muscle (or hair, v. *supra*, No. 2) which ends in a ring with central boss against the body. The front line of the shoulder merges into that of the wing, the feathers of which, starting just above the belly line, cover the whole shoulder. The l. hind leg shows the same back edging of muscle; the eagle's claws are highly conventionalized.

4. Pl. B. 31, fig. *a*.

Limestone slab. 0·90 m. × 1·36 m. (?) top broken away. Whole surface much weathered and scaled.

Found *in situ*.

(N.B. The surface has been treated with a mud wash, like No. 3, for the same reason.)

Demon facing rt. holding staff. Cf. Pl. B. 14 b.

The lower limbs of the demon are those of a bull, the long tufted tail falling between the hooves: the upper body was human, but is so defaced that only part of its outline remains. He holds vertically in front of him a spear (or, possibly, a staff with palmette top, as in some examples of this common motive), and the head, which has disappeared altogether, must have been represented full face.

5. Pl. B. 30, fig. *a*.

Limestone block. 2·30 m. × 1·35 m. Intact.

Found *in situ*.

(N.B. The upper part of the surface of the stone has been treated with a mud wash, like Nos. 3 and 4, for the same reason.)

Scene, a sacrifice to a god of the type generally called Teshub (Sandan).

On the l., a youth advancing rt. leads up a goat. The youth, who is partly concealed behind the goat, has his hair cut to a straight fringe in front, and hanging behind in a heavy mass curled up and out from the neck; the surface is left smooth. The features of the face are much obliterated, but the heavy line of the lower jaw is very marked. The chest and shoulders are in profile. He grasps the goat's horns with both hands. His dress seems to consist of a short chiton girdled at the waist, with short sleeves: the legs are bare, on the feet are upturned shoes. The goat is now no more than a silhouette, but the rendering of this is fairly faithful, and the proportions justly observed.

In front of this is an adult figure rt. The hair, cut square over the forehead, falls in straight heavy tresses to the nape of the neck: the features of the face are obliterated, leaving only the lobe of the ear and the strongly marked line below the jaw, but the depth of the latter suggests a closely-trimmed whisker and beard such as that worn by the seated figure in No. 6. The dress consists of a long chiton reaching to the ankles: it has short sleeves, is girdled round the waist, and from the girdle a long transverse seam or fold runs down to above the rt. foot; along the

bottom of the skirt is a broad band or fringe. The l. hand is raised in front of the face and grasps by the feet a bird, apparently a dove; the rt. arm projects downward in front of the hip, and the hand holds an object which seems to be a basket suspended by cords, the ends of which are looped up from the fingers. The chest and shoulders are in profile and show a very fair mastery of the perspective of the human figure, contrasting strongly with the conventions of contemporary Egyptian art. The l. foot is advanced. Both feet rest flat upon the ground and are shod with upturned shoes.

The feet of the three figures already described rest upon a raised platform about 0·18 m. high; the feet of the remaining figures come down to the bottom of the stone.

Facing the third figure are two bulls. The body and head of only one are represented, but four forelegs are visible (the hind quarters are so flaked away that it is difficult to make out whether here, too, the limbs are duplicated), and this would seem to be a somewhat crude attempt to represent two animals one immediately behind the other. The horns of the front animal curve forwards over the forehead, one appearing just below the other: the ear is short and rounded, the eye full and round, its pupil marked by a hole. No other internal details are portrayed; the tail, of which only the tip remains, came down between the hind legs to the ground. Above the bulls' backs is the large winged disk generally associated with royal names. Behind the bulls stands the figure of the god facing l. He wears the pointed head-dress across which run two bands supporting crescent horns (this is probably a pointed cap with a thin turban wrapped round the lower half of it; the horns thin plates of bronze sewn on to the turban). The rt. arm is raised behind the head, the hand brandishing what must be the double axe (cf. Pl. B. 11 *a*), though the head of it is broken off. The whole of the god's body, upper legs, and left lower leg have scaled away: it would appear that the l. arm was extended over the bulls' hind quarters and the left leg advanced: the calf of the rt. leg remains and, being bare, shows that the dress was the short chiton in which Teshub is usually represented.

The flatness of the relief, and still more the absence of detail from all the figures, makes it tolerably certain that the sculpture as we have it is only the stone basis of a work originally completed with plaster and paint.

6. Pl. B. 30, fig. *b*.

Limestone slab. 2·30 × 1·35 m. Intact.

Found embedded in foundations of central buttress on north side of entry.

Scene, a royal or divine personage at banquet, with attendants.

On the l. of the field, a standing figure rt. The hair is cut square over the forehead and falls behind in a heavy mass curled up over the shoulders: there is no attempt at internal detail. The eye, seen in profile, is full and flat, the ear prominent, nose straight and fleshy; the jaw is heavy and prominent; the surface of the stone is bad, but there are signs of his having worn whiskers and chin-beard. The perspective of the shoulders is clumsy, the upper part of the body being represented virtually full face as in Egyptian art; the rt. arm is bent at the elbow with the hand in front of the waist, the l. advanced and the raised hand holds a long fly whisk. The dress is a short-sleeved chiton reaching half-way down the lower leg, plain above, with a fold or seam (?) running from the girdle transversely to the skirt; the feet are badly scaled, but seem to have worn turned-up shoes.

The principal character is seated rt. on an X chair with a cushioned seat from which a heavy tassel depends behind. The hair is treated as a smooth mass, as in the other figures, and is similarly arranged except that the curl behind is less pronounced. The ear is set high, the jaw is covered with a close-cut whisker and chin-beard. The shoulders are shown in perspective, with very fair success: the rt. hand with open fingers rests on the knee, the l. hand is raised and holds a small cup. The dress is a short-sleeved chiton reaching almost to the ankles, with a fringe along the bottom of the skirt. The feet have perished.

In front of the seated figure, on a raised base, is an X table laden with viands. On the table itself are set four long objects, with pointed ends slightly upturned, fastened together round the middle: on these rests a large goblet with base-ring and two vertical handles, and on either side of it are three small cones—one suspects wine in the καλὸν δέπας ἀμφικύπελλον—six little loaves, and ribs of beef.

On the rt. side of the table an attendant facing l. stands on the edge of the raised base. His hair falls in a heavy curl over his shoulders, his eye is full and rather slant, his ear set high, he probably has the same closely-trimmed whiskers and chin-beard as the rest. The shoulders are in clumsy perspective, the rt. hand is extended over the table, the l. hand also extended holds what seems to be a spouted bottle; his short-sleeved chiton shows a seam round the neck, a broad double-edged belt from which a seam or fold[1] runs down the skirt, and a broad fringe along the lower hem. The feet are in turned-up shoes.

The last figure, on the rt. of the slab, represents a Court musician. He is dressed in all respects like the last and wears the closely-trimmed whiskers and beard. It is noticeable that whereas in sculpture of the earlier period human beings are usually bearded, in later sculpture this is by no means invariable: e.g. in Pls. B. 2 and 3 the common soldiers are bearded, but the officers and members of the Royal House (Pls. B. 4–7) are clean-shaven, and so are the temple servants in Pls. B. 22, 23, and 24; gods maintain to the end their tradition of curled beards and shaven upper lips. The musician plays on a kind of mandolin with small oval sounding-box and very long finger-board beribboned and tasselled; the number of strings cannot be seen. The same instrument is seen on Pl. B. 17 *b*, and is in use among the Kurds at the present day.

The sacrificial feast is a common subject for Hittite reliefs; the Carchemish example is the most elaborate on record, but some of its details are paralleled elsewhere—the X furniture (e.g. Malatia), the cup (e.g. Marash), the curved rib-like objects (e.g. Marash, &c.), and the small cone-shaped loaves (e.g. Sinjirli). In the absence of any symbolical attributes it is impossible to say whether the seated figure represents a human being or a god; if the latter, we have in this and the companion slab an interesting record of two forms of sacrifice, or, perhaps, of two stages in the same rite.

7. Pl. B. 31, fig. *b*. Basalt.
Length 1·6 m., original height uncertain.
Found on the line of the outer buttress on the north side of the entry.
Two fragments only, giving lower part of stone.

[1] So this feature, common in Hittite sculpture, has usually been interpreted. But I prefer to see in it the long tasselled cord of the belt itself, which is tucked through the belt and allowed to hang free: cf. Pls. B. 5 and 7. Such belts with long tasselled cords are still worn.

Subject: a bull advancing l.

Only the lower part of the forelegs and the hind legs and tail preserved. The relief is flat and the outlines stiff and lifeless. Of internal detail, the fetlocks are marked by two parallel grooves, the l. hind leg has a groove running parallel to the back edge to denote a muscle, and the tuft of the tail is treated with incised parallel lines.

The relief is of the early style and might well belong to the Water-Gate, in the ruins of which it was found. The destruction of the north side was so complete that it is not very likely that any one of its sculptures should have remained even near its original position, though, of course, the stone might have long kept its place on the better-preserved south side and only been thrown down and broken in comparatively recent times. It might have stood in the back wall

FIG. 33.

of the outer recess, in front of the winged lion (No. 3): the size is suitable and so is the subject, which might well continue the line of beasts found *in situ*; on the other hand, the fact of the sculpture being in basalt is against such an attribution, as all those known to belong to the Water-Gate were in limestone, and the alternation of limestone and basalt reliefs has hitherto occurred only in Late Hittite buildings.

8. Fig. 33. Basalt: fragment only. *c.* 1·15 × 1·60 m. high.

Found in ruins of the entry of the Water-Gate.

Two fragments fit together, showing the end of the wing feathers, the tail, and the upper part of the l. leg of a winged lion.

The relief is flat, the design extraordinarily conventionalized, more so than in any other example yet found on the site; even the characteristic lion's tail has been transformed into

a purely decorative scheme of parallel curves and straight lines and the upper part of the hind leg is similarly treated with meaningless curved grooves.

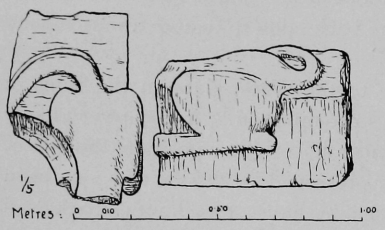


Fig. 34.

The arguments for or against assigning this fragment to the Water-Gate series are the same as those for No. 7.

9. Fig. 34. Limestone.

Greatest length 0·63 m.: height 0·36 m.: greatest width 0·45 m.

Found at the bottom of the slope below the Water-Gate.

A much-battered and weathered fragment of a double lion base. The workmanship was originally poor, and now almost all detail has been lost through the destruction of the stone's surface; but the piece is of interest not only as being early but as giving an early stage in the evolution of what became a favourite motive of Hittite sculpture. The base retains the form of a square block, the body of the lion showing on the side and top of it as if embedded in the stone. The beast is couched, not standing as in later examples, its tail lies flat on the stone's upper surface, the limbs protrude little from the block. It seems to be coiled round the column instead of supporting it. The whole effect from the side is that of a relief in the flat style characteristic of the early period; the effect seen from above is childishly inept; it is clearly the effort of a man accustomed to work in two dimensions, and here trying his prentice hand at three. Instead of resting on the flat top of the base the shaft of the column was let into a funnel-shaped hole pierced right through the stone; constructionally therefore as well as artistically this fragment differs from the more developed double lion base, of which a fine example is figured in Pl. B. 32. This sculpture, found in the ruins of Sargon's fort, will be described in the volume dealing with the Citadel mound; it is published here for the sake of a comparison with our early fragment. In his monumental treatment of the animals and in the consciousness of the limitations imposed by their architectural function the later artist has advanced far beyond the crude and weak attempt of his predecessor.

10. Pl. B. 31, fig. *c*; Pl. A. 14 *r*, and fig. 35. Basalt; fragments only.

Found in the irrigation channel in front of the Water-Gate.

Fragments of two, if not of three, basalt lion sculptures were found here (v. p. 105); Pl. B. 31, fig. *c* shows a rather rough attempt to reconstruct that to which the largest number of fragments belonged; in the drawing the missing parts are filled in in a lighter tint. The lion is a corner orthostat, the body carved in relief on the side of the block, the head, shoulders, and forelegs sculptured in the round projecting beyond the end of it.

Along the base runs a guilloche pattern with rope border above. On the side of the orthostat proper, above the lion's back, were large 'marguerite' rosettes between double fleurs-de-lis; on the flank was the hieroglyphic inscription published in Pl. A. 14 *a*.

The lion's forefeet are set together, planted firmly on the ground; the right hind leg is

advanced with the pad well down, the left hind foot is well behind but rests more lightly, as if the animal, stationary for the moment, were on the point of advancing. The tail ends between the hind legs with the tip upturned to the rear (fig. 35).

The hair on the breast is rendered by parallel rows of S-shaped curls, each composed of 4 strands; similar curls fringe the back of the legs. The muscles are represented by cord-like bands, highly stylized on the Assyrian model. The treatment of the feet is characteristic of the late period: while retaining much of the artificial convention of the older style they give an appearance of greater force, if not of realism. Of the head only a small fragment from the corner of the jaw is preserved; it is enough to show that the beast's mouth was widely open, that the jaw muscles were treated in the same cord-like manner as those of the body, and that the hair fringing the cheek was rather more naturalistic than that of the mane as a whole.

The sculpture is of late date, but probably not of the latest; it should be compared with the (later) lions from the Sinjirli gate, and with the Carchemish lion bases on Pls. B. 25, 26*a*, and 32. The only considerable remains of the second lion found with this below the Water-Gate (v. Pl. A. 14*b*) are distinctly earlier in style; the outlines are harsher and more angular, the details of the convention more rigid. It is possible that this second lion was never quite finished: certainly the carving of the hieroglyphs is rough to a degree surprising in a monument of such importance.

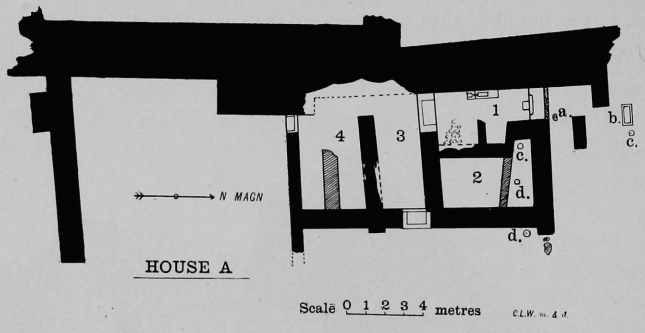
Fig. 35.

CHAPTER VI

§ 1. The House Sites of the Outer Town

House A. Plan, fig. 36.

The walls were in a most ruinous condition and their foundations failed altogether at the limits shown on the plan; what remains is clearly only part of a once considerable building. Not all the walls belong to the same period, but all are extremely badly built, contrasting strongly with the massive door-thresholds whose discovery led to the excavation of the site; they are all



a. Column base. *b*. Trough. *c*. Store-jar. *d. d*. Pot-burials.
Walls represented by hatching are of later date.

Fig. 36.

of small rubble and most irregular in line. Of course they are only sub-surface foundations, and the walls built on them were of brick, now wholly disappeared (the ground level has been much denuded), but even so they are remarkably poor in quality. Room 1 was entered over a very solid threshold stone with raised door-stop; by this was found part of a basalt column-base socketed as if re-used for a door-hinge. Against the west wall was one stone, and part of another, cut into troughs connected by a small channel. Room 2 had no special features: it was divided up by a late wall largely consisting of a very large threshold stone with raised door-stop, set up on edge. In the north-west corner was a deep ash-pit containing a good deal of Late Hittite pottery (broken) and a large store-jar in position. Room 3 was entered from room 1 by a door with heavy threshold stone; it was apparently but a passage leading down through the east door to a room (or courtyard) now wholly ruined, and on to room 4, which had also a door with large threshold stone in its south wall: the dividing wall was late. The number of entrances made it look as if rooms 3 and 4 had contained a staircase leading to the upper

floor. Outside the house, to the north, was an isolated fragment of wall, and a stone trough backed against a shapeless pile of rubble. By this was a large store-jar.

Two pot-burials were found, one in room 2, one outside its north-east corner. In the former case the burial was that of an adult, not cremated, in a large hand-made urn. In the latter the bones were those of a child, also not cremated, in a typically late type of long urn; the top and base of this had been broken away before the pot was used for the burial, and were patched with large sherds of similar urns. With the bones were two plain iron armlets, two simple bronze ear-rings, some small paste beads, and an eye amulet in blue-glazed frit. The pot lay in loose soil mixed with ashes and sherds against, and partly below, the level of the wall-foundations, 0·75 m. beneath the modern surface (which is about the same as the Late Hittite); there was no sign of any floor level. The pot was very possibly put here when the building was already out of use. The other pot-burial was much more clearly to be dated after the destruction of the house.

Some 15 metres east-north-east of the building was found another grave: two large funerary 'baths' of the type normal in the Yunus cemetery were set on their sides mouth to mouth (a quite abnormal arrangement), giving an over-all measurement of 1·95 m.; they contained fragments of a large pot or urn, a lightly baked brick, a single glass bead, and at the east end an unburnt skull: the other bones had perished. By the baths was set a clay jug covered with a (broken) bowl (Pl. 20, figs. *c.* 1 and *c.* 3). The grave had no connexion with any building. It is surprising to find urn-burials which while necessarily late and representing certain features of the normal Late Hittite graves contain uncremated remains. The post-Hittite cemetery of Deve Huyuk II [1] shows that cremation was out of fashion in the sixth century B.C., when the bodies were laid out in cist graves. These few Carchemish examples of a mixed type should point to a transition period soon after the fall of the city, when a few survivors squatted in the ruins and reverted in some degree to the manners of their remote ancestors who, before the Hittites came, had buried instead of burning their dead.

House B. Plan, fig. 37.

This site, lying in the south-west corner of the Outer Town, had been occupied by buildings once important but now so ruined as to present few features of interest; the poverty of the remains was complicated by the fact that such walls as were found belonged to different dates, though lying at not very different levels. Attention was drawn to it by a large column-base and two slabs of polished basalt visible above the surface, but digging proved that there was little more below ground than showed above it. The column-base was on the line of a fairly long stretch of wall with solid rubble foundations, which seems to have been the eastern boundary of a rectangular building most of which had disappeared. Little of the interior of the house was dug; a small chamber with rubble wall-foundations in a very ruinous state was found in the north-east corner, but it contained nothing of interest and its walls soon petered out.

Under the east wall were traces of an earlier wall of mud brick which itself seemed to belong to two periods; its four upper courses ran at a slightly different angle from those below, but the difference was so small that it might quite possibly have been due to faulty bricklaying; all the

[1] v. Hittite Burial Customs, *Liverpool Annals of Archaeology*, VI, No. 3.

bricks were of the same rather gravelly earth and averaged 0·38 × 0·38 × 0·11 m. What was probably a return of this wall could be traced along the north side of the later building, and a stretch of walling which ran at right angles to the south wall of the same, but 0·60 m. below the top of its rubble foundations, probably belonged too to the early period.

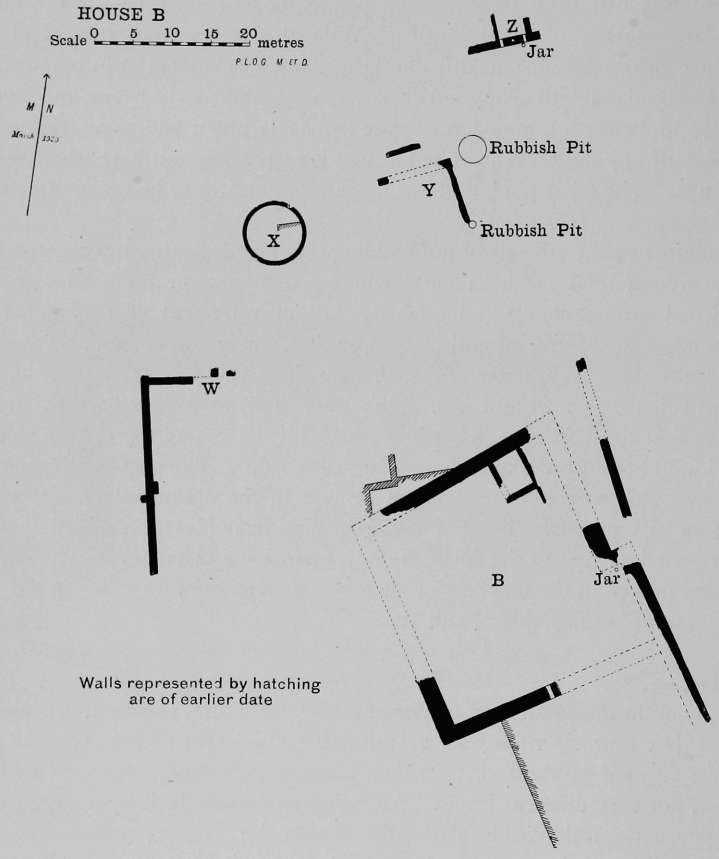


Fig. 37.

A considerable quantity of (broken) pottery was found in connexion with the building; all was of the Late Hittite type. Two complete pots occurred, one in red clay, plain (Pl. 20, fig. *d*. 3), one (Pl. 20, fig. *d*. 5) with bands of sepia paint on a yellowish buff surface: also the terra-cotta doll on Pl. 20, fig. *b*. 1.

North-west of this house was a single wall (west), solidly built, of a house perhaps connected with the inner town wall: at its north end there was a return westwards containing a doorway with dressed jambs of soft limestone (hawâra); here were found two bronze situlae (Pl. 21 *a*. 1, 1*, 2, 2*) of Egyptian type but of Phoenician rather than Egyptian manufacture, cast with

ornament in relief showing figures of Anubis, &c., conventionalized almost beyond recognition; a scaraboid seal in lapis blue paste, and a well-made basalt trough; this last was rectangular, standing on four feet, and had had two bulls' heads projecting at one end, but these were broken off; it measured 0·57 × 0·40 × 0·25 m. high, with an inside depth of 0·08 m.

North of this lay a circular building (X); its outer wall was flimsy and its foundations shallow; in the centre, at a lower level, were remains of brick walling, and a stone pierced with a vertical hole as if to take an upright post. No objects were found here and no explanation was forthcoming of so unusual a structure.

North-east of this there were two other fragmentary and disconnected groups of walling (Y and Z); the latter comprised a doorway with central column-base of basalt resting *in situ* on the stone threshold.

House C. Plan, Pl. 18 *a*; photograph, Pl. 18 *b*.

The house lay against the inner wall of the town's outer line of defence, which served as the south wall of the house itself; it is natural therefore to regard the building as having an essential relation to the defences.

As it stands, the building is not all of one date: apart from several slight and obviously very late party-walls (not all of which are shown on the plan), the walls show great differences in depth of foundation and in manner of construction; at the same time, they are consistent with a single ground-plan, and though some may well be additions to the original building most of them probably are contemporary in use if not in construction. In one or two cases later and higher floor levels had concealed older walls, but as a rule the latter were re-used in spite of patching at various periods. It is difficult to say whether the house is earlier or later than the town-wall; that it is of the same date is made improbable by the angle of its walls; they are askew to the wall of the town, and line up with that lying a little to the north, which must be taken as the bounding-wall of the house though no direct connexion with it can now be traced. Depth of foundation is hardly an argument here, for though the house-foundations are much nearer the surface than are those of the city wall, that is only to be expected in view of their different purposes; and, on the other hand, the north wall to which the house must be related has foundations of four or five courses of rubble with a depth of 1·30 m. (see fig. 54); in the house itself three or four courses of rubble are not unusual. The house cannot have been built after the wall was in ruins, for the wall must have stood till the close of the Hittite period, and as no objects found in the house are later than that period, wall and house must have been standing together. The party-walls of the house abut on without being bonded into the town-wall. Had the latter been built first, it would presumably have had a face which the house-builder would have respected: actually the town-wall shows no internal facing within the house-limits, whereas just beyond, to the east, two blocks remain to prove that the internal facing of the wall hereabouts was of excellent masonry. It would rather appear that the house antedated the wall, and that, as it stood awry and protruded beyond the city's bounds, the south front was cut away and the town-wall was built across the jagged ends of the cross-walls. This would account for the very rough joining up of the two, for the absence of an inner face to the town-wall, and for its varying thickness, since some of the rooms, having been reduced to a size too small for further use, were filled in solid. Whichever was built first—and the evidence either way

could not be called conclusive—it would seem likely that a building so closely connected with the wall and standing on it so close to where the south gate must have been, had a more or less military character.

Unfortunately the building itself was so ruined as to preserve but few signs of its original nature. The 'rooms' marked on the plan were all really underground; either they were cellars, without doors, reached by trap-doors or by steps through the floors of the rooms proper, or else they were filled in solid up to a floor level which has disappeared. The brickwork of which the walls were built above ground level has almost invariably vanished. From mere foundations it is hard to judge the character of the building itself; but the rubble walling is generally poor and rough; much soft chalk is used, sometimes in big blocks as much as 1·60 m. long, more often in small unworked lumps, and the coursing is very irregular, large stones running up into the course above and being followed by two or even three layers of slight stuff; the south, i.e. the town, wall was of hard limestone, but poorly built, the blocks rather small and merely quarry-squared. Some of the thinner walls were certainly no more than sleeper-walls, supporting but not rising above the floors.

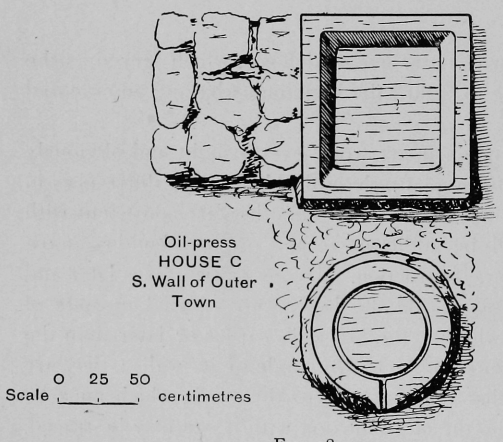


Fig. 38.

The outstanding feature of the house was the olive-press which had stood in the middle of it. The limestone base for the press and the basalt trough or basin, their tops just level with the floor, were found *in situ* (Pl. 18 *b*, and fig. 38); against the basin was a rough platform, solidly constructed in stone, a foundation for some part of the press. North of this runs what on the plan is a narrow passage, but the wall on the west was undoubtedly but a sleeper-wall; had it been otherwise the press could hardly have been worked.

The objects found were not numerous, as was natural when nearly all floor levels had been destroyed, nor did the rooms contain many features of interest.

Room A. Against the south wall a low bench or divan of rubble: in the south-west corner a small store-pot of typical Late Hittite type, tall, straight-sided, and with angular shoulder (Pl. 20, fig. *c*. 6). In the room, a fragment of basalt bowl with regular Late Hittite angular section, height 0·04 m., diameter 0·13 m.

Room B. In the south-east corner, a circular mud stand *c*. 0·75 m. in diameter. The walls of this room were of unusually large (chalk) rubble.

Room D. Against the west wall, clay base for hearth; in centre, two mud pedestals or supports for objects on floor level. Three pillar-bases were found *in situ* here, of basalt, resting on rough stones; they were probably flush with the floor of the room proper, as was the case with the column-base in room F, where the (late) floor of stone slabs was partly preserved. In the room were found many rubbers of both the dumb-bell and the sugar-loaf type, and a small vase of greenish glaze on a frit body (Pl. 20, fig. *d*. 7).

Room E. In front of the oil-press, many fragments of basalt rubbing-stones and rough shallow bowls for bruising grain.

In the surface soil were found the figurines, Pl. 20 *a*. 2 and 5, *b*. 6.

In the small walled spaces to the north were several store-jars and very many pottery fragments, including examples of the most characteristic Late Hittite types, bowls, craters and amphorae, and one unusual specimen, a ring-stand 0·10 m. high by 0·20 m. (larger diameter), and the vase Pl. 20, fig. *d*. 8.

House D. Plan, Pl. 19 *a*; photograph, pl. 19 *b*.

This house was unusually well built, well preserved, and rich in small objects. It lay on high ground, facing west. Its front wall and the north wall were built of brick resting on a single course of excellent hammer-dressed blocks of hard limestone 0·55 m. high and of varying lengths: the south wall had no dressed stones, since it was not exposed to view but hidden behind the out-buildings attached to the house, but it was solid and well built. Indeed the construction of the house was throughout remarkably good. The average width of walls was 1·70 m.; the stone foundations stood half a metre above ground and were most deeply laid, even in the case of internal walls; thus in the small compartment under the stairs in the south-west corner (No. 2) all the foundations went down 2.30 m.; the west wall of room No. 7 showed sixteen courses of rubble, the stones of very different sizes and irregularly coursed but truly built, giving a depth below the brickwork of 3·75 m.

The soil here is deep and light, and for a building of any height good foundations were necessary, but even so we have not yet found upon the site any other private house at all so solidly constructed. The house had been burnt and all the brickwork was reddened by fire; the bricks were made of poor sandy clay which under the influence of heat became not firmer but more crumbly; it was impossible even to get their measurements, all being reduced to a uniform and incoherent mass absolutely homogeneous with the fallen débris which covered the floors. Fortunately the wall faces had in nearly every instance been covered with a yellowish-white plaster, a centimetre or two thick, made apparently of a mixture of powdered lime and clay; where this still adhered to a wall, it could be followed with comparative ease, though a touch would dislodge it; where the plaster had fallen, or had never existed, the only criterion for differentiating between standing wall and fallen rubbish was the smoke-blackening of the wall face, and to pursue this tenuous shadow taxed all the skill and patience of the workmen.

The eastern part of the building had been destroyed by the Baghdad Railway, which here runs through a deep cutting diagonally across the site; but what remains is enough to give a good idea of the residence of a well-to-do gentleman of Carchemish at the close of the Late Hittite period.

The ground-plan is well laid out, most of the angles being true right angles. Before the front door is a porch with three shallow steps to the north and a dwarf wall along the other two sides. The front door gives on a large entrance-hall, on the left of which a door leads into the main saloon, while on the right three doors open respectively on the staircase, on a narrow passage lying under the return of the stairs (it might be the cloak-room of a modern suburban villa), and on another large room from which other doors lead off the central chamber and to smaller rooms at the back.

The staircase shows that the house was of two if not of three stories. Room 5 looks as if it may have been a light-well, but the objects found in it are rather against such an attribution. If room 8 was a light-well it would not have served for rooms 4 and 6, and these then must have been lighted by windows in the outer walls. All doorways were provided with stone thresholds and raised door-sills (fig. 39). In the main saloon (room No. 6) there were found in six places heaps of ashes quite different from the ordinary burnt stuff which covered all the floors impartially: these were solid deposits of calcined wood in some of which the forms of heavy timber could be distinguished. These probably represent the wooden columns which supported the roof. It is true that no column-bases were found in this or in any of the rooms; but the room is too wide for a single-span roof to be very probable, and, as is shown in the plan, the position of

Fig. 39. Doorway of room 5, House D. On the stone threshold lie the cuneiform tablet (T) and a number of arrow-heads.

the ash-piles seemed too symmetrical to be the result of accident. I have suggested therefore nine columns in two groups of four each with one in the centre. In all the rooms the floors were of beaten clay, laid over a stone bedding. In room No. 7 the floor had had a coat of whitewash, and this may have been the case elsewhere also, but no signs of it survived.

Against the south wall of room No. 6, at the east end, in room No. 8, and in room No. 7 against the north wall were found a number of stone slabs with a raised border (v. fig. 40): most lay on or just above floor level, one or two were sunk in the floor; they seem to have fallen from some height. The stone is soft limestone and shows no signs of having been worn by treading, so it may be that these are not door-sills but window-sills. If that be so, the position of the stones would imply windows on the inside instead of on the outside of the rooms, and one of the central chambers, No. 5 or No. 8, may have been an open court, or only one story high with a light-well above, on to which looked the windows of the upper floors. This is possible, but the evidence for it is wholly insufficient, as the stones need not be window-sills, and, if they are, they may have fallen from so high up that the position in which they were found is of no importance.

Unlike all the other sites of the outer town which we have excavated, that of House D shows only one building period: there are here no walls at different levels and at different angles extraneous to the simple and consistent ground-plan of the existing house. This immunity from change is explained by the very solid character of the building: on such foundations a house was likely to stand for long, nor, if it was destroyed, would a later builder fail to avail himself of so excellent a substructure. Though therefore the house stood as late as 604 B.C., it need not in its origin date from very far on in the Late Hittite period. This point is of some interest, for the facing-blocks of the north and west walls correspond exactly in height and closely in dressing with the facing-course below the orthostats of the Inner South Gate, so that one is tempted to see between the two buildings a connexion in date which would be disturbing to one's ideas if House D were necessarily very late. There is no need to suppose them contemporary, indeed the evidence is against this; but one does feel inclined to put back the foundation of the house to a time when the traditions of the gate-builders had not been wholly forgotten.

It has been mentioned that the house was destroyed by fire. This, and the fact that it had remained undisturbed ever since, made it an ideal site for excavation, for whatever was in it at

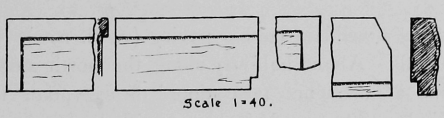


FIG. 40.

the time of its destruction, and did not perish in the fire, was waiting to be brought to light. Moreover the fire, and through it the contents of the house, could be accurately dated, and this gave to it and them a dramatic interest second only to their historical importance.

The house had been destroyed by an enemy, and the burnt ruins were littered with evidence of a desperate struggle. Everywhere, and especially in the doorways, were arrow-heads (Pl. 22 *b*) literally in hundreds, arrow-heads in bronze and in iron and of many types, some of them Hittite,[1] some clearly not. Occasionally a mass would be found all fused or rusted together, the contents of a quiver; sometimes the single points would be bent or broken as if by striking on the stones or metal-work of the doors. Javelin heads were fairly numerous (Pl. 23 *a*. 7, 8, 13), a sword was found (Pl. 23 *a*. 14), and a remarkable bronze shield (see p. ~~130~~ 128); and in rooms 3 and 4 there were human bones on the floor.

Even without other evidence than this, it would have been safe to argue that the fight, and the destruction of the house, took place in 604 B.C., when Nebuchadnezzar (may the King burn for ever!) captured and destroyed Carchemish. It would be difficult to suggest any other occasion (except that of Sargon's conquest in 718 B.C.) when a building inside the town could have been assaulted and burnt by an enemy force, and it is more than improbable that at any time so prominent a house should have been so destroyed and its ruins left undisturbed while the life of the city went on all around. But the argument is rendered unnecessary by other material evidence. A large number of the objects found in the house were of Egyptian origin or showed

[1] Some of the arrows were actually made on the spot, a mould for such being found in the outbuildings: see p. 130. This might point to a prolonged siege of the town.

Egyptian influence, and it is precisely towards the close of the seventh century B. C. that we should expect such to be in fashion. In room No. 5 were found clay seal-impressions bearing the cartouche of Necho, and a bronze ring with its bezel in the form of a cartouche of Psamtik I was found in room No. 4, close to the human bones. Here then we have definite proof that the house was destroyed by Nebuchadnezzar's troops, that everything in the house is to be dated to 604 B.C. or to the years immediately preceding it, and incidentally that the house belonged to a wealthy Hittite sufficiently important to be in communication with the Court of Egypt. It also shows that the revolt of Carchemish and Necho's march north did not stand alone. Egyptian intrigues had for years been busy in North Syria, and when Nebuchadnezzar totally laid waste the Hittite capital he was punishing not a single act of rebellion but a long-continued policy which, ever since Egypt had regained her independence in 651 B.C., had looked to the Nile for deliverance from the Mesopotamian yoke. House B is then of peculiar interest for the light which it throws on the conditions of life in the city during its last years, and the numerous objects recovered from its ruins possess in an unusual degree an historical as well as an intrinsic importance.

In front of the house is a well-laid cobble paving (v. Pl. 19 *b*). This ran also against the whole length of the north wall. About half-way along the north side of the house, against the outer wall face, was found a limestone 'false door' of Egyptian type (see fig. 59). Near this was found a bronze fibula. The porch is paved with limestone slabs, but the steps are of basalt. The two lower steps are cut out of a single block, the upper is separate: the height of the steps is respectively 0·05, 0·14, and 0·15 m., and the treads are 0·37 m deep. Round the other two sides of the porch runs a stone foundation 0·46 m. wide, clearly intended for a dwarf parapet wall of mud brick. There was no evidence to show whether or not the porch was roofed, except that from the end of the dwarf wall there ran across the middle step a deep and narrow line of wood-ash which may represent a column-shaft.

The front door had a raised sill and an inner threshold of two limestone slabs: the hinge-stone was behind the southern jamb, and in its hollow were the remains of the iron shoe of the hinge-pole, with fragments of the burnt pole.

Room 1. The front hall. The walls were whitewashed.

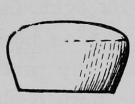


Fig. 41.

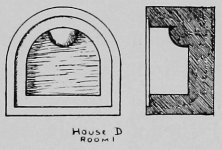


Fig. 42.

Objects found, besides arrow-heads, were:

1. Two large basalt weights, both broken (fig. 41).

2. Near the last, two troughs in soft limestone (fig. 42). Both were broken. I cannot explain their use.

3. Fragments of a straight-sided bronze tumbler; in it an iron object like a stirrer (rusted away) and burnt grains of wheat or barley.

4. An Egyptian clay seal-impression (Pl. 26, fig. *c*. 5).

Room 2. There was no wall-plaster beyond the door-jambs.

Beyond the threshold was a solid mass of clay rising by two steps edged with small rough stones to a level platform *c*. 0·40 m. high: towards the back of this, near the west wall, was

a shallow circular hollow 1·00 m. in diameter with at its bottom large stones embedded in the clay. This room is obviously a staircase. The stairs were presumably of wood, the two lowest steps resting upon the clay and stones: the circular hole might be the socket for a timber support of the higher steps. Separated from the clay bedding by a sleeper wall there was, in the angle of the house walls, a small pit 2·30 m. deep lined with rubble masonry (nine courses): the bottom was of hard rammed earth. There was nothing found in it.

Room 3. No wall-plaster. The return of the stairs must have run over this narrow chamber.

Room 4. No wall-plaster. Against the east wall of the room lay a mass of rough stones which might have been merely fallen or might have been the rough packing for a dais. A door gives on room No. 5. In the east wall a gap at the south end may have been a doorway, but there are no jambs left and there is no stone threshold: if the rough stones in front are really a dais the door-sill would have been at a higher level, and its disappearance would therefore be explained. In the room were found, besides many arrow-heads, &c.:

1. A two-thirds life-size human mask in white steatite, burnt and reduced to the character of plaster of Paris. The head (Pl. 22, fig. *a*) is strongly Egyptian in type: the eyes were of inlay and the eyebrows were represented by a band of inlay which ran right across the forehead: the surface was originally painted.

2. Bronze statuette of Osiris; height, 0·07 m. (Pl. 21, fig. *c*. 2).

3. Ditto; height, 0·077 m. (Pl. 21, fig. *c*. 1). There is a curious difference of style between the two figures; the first is purely Egyptian, the second has the large ears, large outstanding eyes, protruding lips, and fleshy nose characteristic of Hittite bronzes. It must be a local work, imitating an Egyptian model but in detail keeping to a more familiar tradition.

4. A miniature head of a demon, very delicately carved in lapis lazuli. Height, 0·013 m. (fig. 43).

Fig. 43.

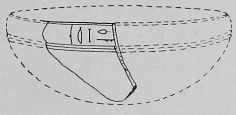


Fig. 44.

Fig. 46.

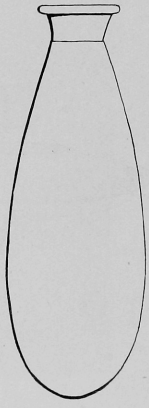


Fig. 45.

5. Bronze thumb-ring with bezel in shape of cartouche inscribed with name of Psamtik I (Pl. 26, fig. *c*. 8, 8*).

6. Fragment of alabaster bowl inscribed (fig. 44).

7. Fragments of a number of alabaster vessels: only of one could the whole shape be made out (fig. 45).

8. Fragments of glazed Egyptian 'New Year' flask (fig. 46), inscribed .

9. Small fragment of a clay tablet inscribed in cuneiform (Pl. 25, fig. *b* 5).

10. A set of stone weights.

11. Parts of a bronze hinge.

Room 5. White plaster on walls. Objects found, besides arrow- and lance-heads:

1. On the door-sill an unbaked clay tablet 0·157 × 0·075 m. inscribed in cuneiform (Pl. 26 *a*). See Appendix to Ch. VI, p. 135.

2. Four clay seal-impressions of Necho (Pl. 26, fig. *c*. 1–4.)

3. Clay impression from an oval convex seal inscribed in Assyrian style with a figure of Gilgamesh and the lion; guilloche pattern round edge. Very delicate work, but the impression has virtually perished.

Room 6. White plaster on walls. The evidence of wooden columns supporting the roof has been given previously. Against the east end of the south wall was a pile of rough stones, apparently fallen from the floor above.

Objects found, besides arrow- and lance-heads:

1. In the north-west corner, an embossed circular bronze shield, diameter 0·70 m. (Pl. 24). The metal is extremely thin and was backed with leather: the design is in repoussé work. The shield was very badly broken, and parts were missing: when found the metal was so rotten that a piece even three or four centimetres square could not be lifted without its breaking by reason of its own weight. The object could only be moved by gumming surgical bandages over its exposed face and letting it and them dry before a board was slipped beneath.

In the centre of the shield is a Gorgon's head, the features and hair conventionally rendered in archaic style but with a certain freedom in the treatment of the snakes: round this in narrow concentric zones are rows of running animals, dogs, hares, gazelles, and horses: these are somewhat superficially drawn, but retain a certain liveliness, and the horses in particular show plenty of spirit.

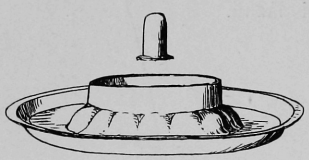


Fig. 47.

Scale 1/20

Fig. 48.

The shield is certainly not Hittite: it is a product of that orientalizing school of Greek art which in Greece itself is best represented by Proto-Corinthian pottery, but whose real home was in Ionia and its origin much farther east. It may have come to Carchemish by way of trade, or it may have been carried by one of the Greek mercenaries in Necho's heterogeneous army—one of those Ionians perhaps who prompted the offering of spoil from Gaza in Apollo's temple at Branchidae.

2. Bronze statuette, of Egyptian fabric, of Isis and the infant Horus; height 0·17 m. The metal suffers from warty patina and the figure has lost most of its detail (Pl. 21, fig. *b*. 2).

3. Bronze statuette, of Egyptian fabric, of Harpokrates; height 0·115 m. (Pl. 21, fig. *b*. 1.)

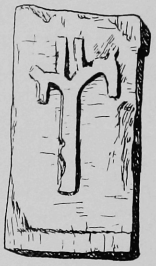
4. Bronze dish (?): fragments only, the metal in very bad condition (*v*. restored drawing, fig. 47); height 0·10 m., diameter 0·25 m. The handle (which apparently belongs) is solid: it may have been attached below instead of above the umbilical cup.

5. Bronze ladle with duck's-head handle (fig. 48); the bowl detached and broken. Length 0·30 m.

6. Fragments of a blue-glazed 'albarello' jar of white frit.

7. Fragments of a small alabastron.
8. A pair of iron tongs (Pl. 23 *a*. 9).

Rooms 7 and 8 contained no objects of interest. The wall between them was broken away at the east end, below floor level, and there may have been a door here, but there was no door-sill found: the floor of room 7 was much destroyed and the disappearance of the door-sill is therefore easily explained. The cut stones found in this room have already been described.



Ht. 0·17 m.

Fig. 49.

House E. Plan, Pl. 19 *a*.

This was really an annexe of House D: it lay against the south wall and front court of that house, but was slightly differently orientated. The walls had fairly heavy rubble foundations, the stonework of which rose some 0·40 m. above ground level with traces of brick on top.

Room 1 had a doorway on the north opening on to a small courtyard or unroofed passage, the east end of which, together with the east end of the

Fig. 50.

building itself, had been destroyed by the railway cutting. West of this lay a long narrow court-yard (2), across the centre of which ran a curved drain with stone sides and cover-slabs, the exit of which passed under the foundations of the south wall. By the drain was found a 'false door' in hawâra stone (fig. 59), and the roughly carved hawâra stone, fig. 49. In the south-east corner of the yard was a small chamber (3) with no visible means of approach; at its west end a room (4) with a doorway in its east wall: the door-jambs were of roughly squared limestone, the floor was

cobbled. Against the east end of the south wall the cobbled floor ceased, leaving between it and the wall face a narrow trough simply cut in the soil; west of this the wall was thickened by a facing of brickwork of the same width as the trough, backed on to the rubble wall, and in front of this brickwork was again a rough trough separating it from the paving. The room might well have been a stable.

Another small building, of which only the eastern part remained, lay beyond this, its front wall running at a different angle. The space between it and room 4 formed an irregular little yard with a doorway at either end, that on the north giving by a single step on to the cobbled

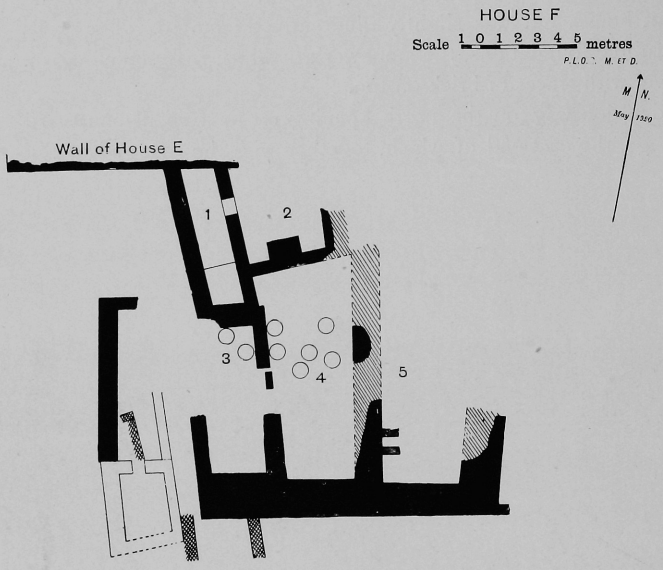


Fig. 51.

paving in front of House D, that at the south end leading out to the (destroyed) area beyond the houses. The door-jambs were of hawâra. The chamber itself had a well-built door-frame of squared hawâra blocks (fig. 50) and a floor of beaten mud: the front wall was of rubble to a height of about 0·60 m. with brick above; the side walls were of brick only and could not be traced for more than two or three metres. Just inside the door, in the north-east corner of the room, were four large store-jars: on the other side of the doorway were found fragments of pottery, several lumps of fused bronze, a small bronze situla (Pl. 21, fig. *a*. 3, 3*), and one part of a bronze mould for making arrow-heads, of which a second part was found in the courtyard between this chamber and the front door of House D. The mould (Pl. 23 *b*) was in three segments, each with a long handle behind; the segments were fitted together and fixed by being inserted in a round hole, probably in a bronze form, the molten metal

being poured in through a hole at the top. Arrows of the type turned out by the mould were common (cf. Pl. 22, fig. *b*).

House F. Fig. 51.

This lay to the south of House E, and abutted on it. It was very badly ruined, and as there were here remains of three different building periods the ground-plan was difficult to establish; in any case it is no more than the fragment of a house.

Room 1 was a long narrow chamber with a door in its east wall and a raised mud platform at its south end; the walls were of small rubble, very poorly built. By the door was found a limestone statuette representing a bearded male figure seated in a chair, height 0·12 m. (v. Pl. 20, fig. *b*. 7). In room 3 were two store-jars, and in room 4 six more, all empty and broken; in room 5 against the west wall were two thin slabs of limestone set on edge, 0·70 m. apart, which as they showed no trace of burning may have formed a bin or supports for a bench.

In the ruins were found a broken terra-cotta of a horse's head, with traces of paint, modelled on the style which reoccurs in the sixth-century cemetery of Deve Huyuk (Pl. 20, fig. *a*. 11); a small plain vase of buff clay (Pl. 20, fig. *d*. 4), and a pair of bronze scale-pans (Pl. 23 *a*. 2, 2*).

House G. Fig. 52.

Close to the north-east corner of House D were the remains of a once important but now almost completely ruined building. Of its south part four chambers were preserved, of mud

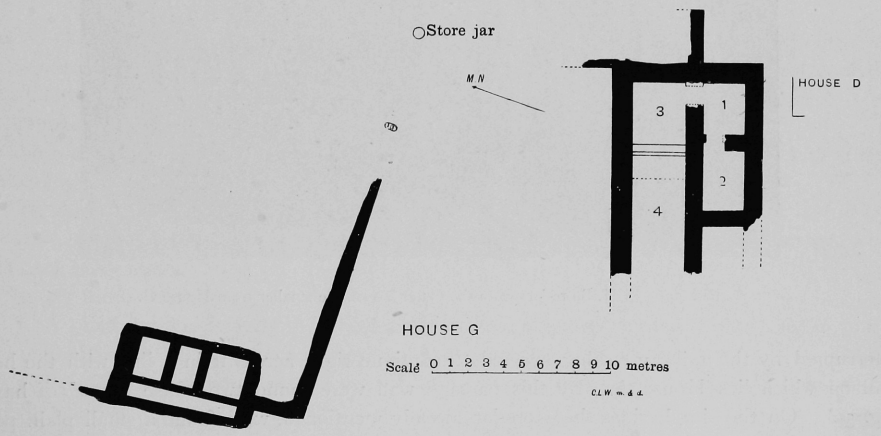


FIG. 52.

brick (accidentally burnt, like the mud brick of House D) on stone foundations, the walls retaining some of their plaster facing and coat of whitewash. The doorway between rooms 1 and 2 had had well-cut jambs of soft hawâra stone (one was missing), while that between 1 and 3 was only a gap in the wall. Between rooms 3 and 4 was a broad stone threshold formed

of fair-sized slabs carefully fitted together with a raised sill across its entire length, as if for a door-step; there were, however, no door-jambs against the wall nor any sign of a wooden door-frame, though the latter may have existed originally.

North of this the building was absolutely destroyed, though in one place (see plan) a store-jar (fig. 53) was found intact against a fragment of wall which seems to have bounded a large, roughly cobbled area. Beyond this, at a different angle, was a long wall and a row of three small chambers without doors fronting on a narrow passage; the west wall of the passage,

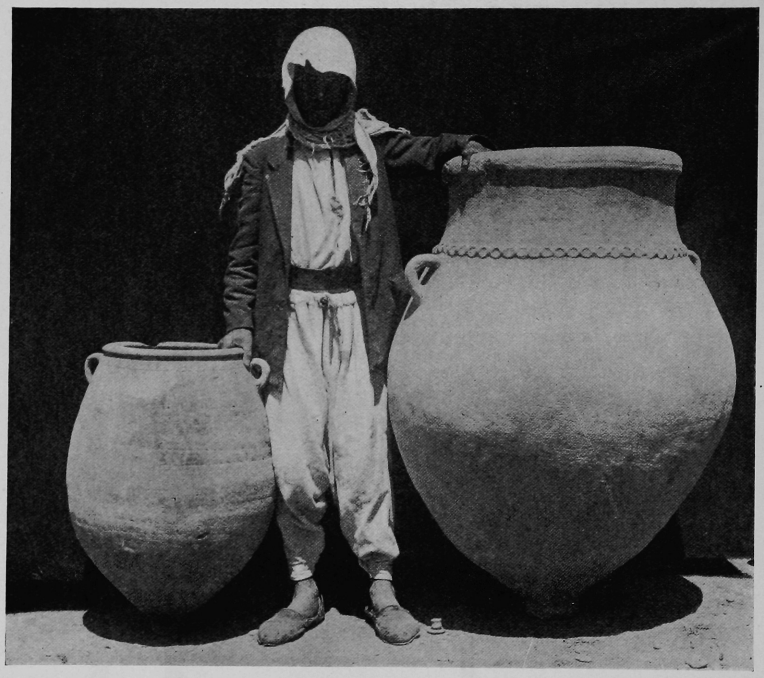


Fig. 53. L. H. Store-jars from the Outer Town, the smaller from House G.

interrupted by the railway cutting, seemed to continue right across it in a line with the heavy wall on which lies House A. By this passage wall were found two 'false doors' of hawâra (fig. 59). On the site, besides the store-jar already mentioned, were found a small plain pot of red clay (Pl. 20, fig. *d*. 9), a plain bowl of reddish clay (Pl. 20, fig. *d*. 2), a curved iron knife-blade (Pl. 23 *a*. 10), a few arrow-heads, and a black pebble scaraboid seal engraved with the figure of a winged sphinx (Pl. 26, fig. *b*. 11, 11*).

House H.

South of House F ran a single straight wall against whose face were found a 'false door' in hawâra (fig. 59) and a red stone scaraboid seal (Pl. 26, fig. *b*. 9, 9*).

§ 2. The Wall Graves.

Tomb N. W. 1.

Behind the inner town wall, north face, at the foot of the Citadel, near the shafts leading to the cave.

See plan, Pl. 6.

A rock-cut approach, sloped and stepped, gave access to a rock-cut chamber, roughly squared, *c.* 1·80 m. across by 1·00 m. high: the doorway was closed by a slab of limestone pierced for the hoisting-rope: it was found disturbed.

The tomb was filled up with infiltered earth: near the doorway were a few late sherds and a fragment of a miniature classical column-shaft.

In the south-east corner lay the bones of at least seven bodies; all were in confusion, heaped together anyhow, and broken; some apparently doubled up but so obviously disturbed since interment that position was unimportant; all the skulls except one were smashed and in a very bad state.

Over the bones lay three vases:

1. Pl. 27, fig. *b.* 1. Height 0·09 m. Reddish clay, wheel-made.
2. Pl. 27, fig. *b.* 3. Same size and type, creamy-drab clay.
3. Fragments of vase similar to No. 2, but 0·13 m. high. Pl. 27, fig. *b.* 2.

In the earth filling were fragments of several jars with rims characteristic of Middle Hittite wares, of a large store-jar with incised combed ornament, and of several plain, flat saucers.

Tomb R. W. 1.

In one of the narrow intramural spaces of the compartment-wall (River Wall), south of the Water-Gate.

See plan, Pl. 14.

The foundations of the wall were deeply laid, the whole compartment filled up with (fairly clean) earth, and the burial lay at a depth of 2·30 m.

The skulls and bones of eight bodies were found: all were simply thrown in, not laid in any particular position; most of the bones were in bad condition and the skulls crushed, but two were got out tolerably intact.

Among the bones were:

1. A small pot, height 0·95 m., wheel-made, of drab clay, well turned. Pl. 27, fig. *d.* 2.
2. Similar pot, height 0·11 m., wheel-made, of drab clay. Pl. 27, fig. *d.* 1.
3. Fragments of a large pot or urn of drab clay, ring-burnished: in this the bones of an infant (not burnt), also vases 4 and 5.
4. Small pot similar to No. 2, height 0·10 m. Pl. 27, fig. *d.* 5.
5. Ditto, height 0·08 m. Pl. 27, fig. *d.* 6.
6. Vase, height 0·105 m., wheel-made, of drab clay. Pl. 27, fig. *d.* 4.
7. Fragments of vase of similar form, wheel-made, of flaky black clay, ring-burnished.
8. Broken vase, height 0·32 m., flask-shaped with loop handle from flattened side to neck: surface covered with wash of haematite paint. Pl. 27, fig. *d.* 3.
9. Silver pin, square shank, flattened curled head. Pl. 27, fig. *a.* 7.

10–15. Bronze pins. Pl. 27, figs. *a*. 1, 2, 6, 8, 9, 11.

16. Silver wire ring with twisted ends. Pl. 27, fig. *a*. 5.

17. Bronze ear-ring, fragment of. Pl. 27, fig. *a*. 3.

18. Bronze bracelet, plain. Pl. 27, fig. *a*. 10.

19. A number of beads, mostly in carnelian, agate, and shell; spheroids and lentoids; also a blue paste nasturtium-seed bead and bronze spheroids. Pl. 27, fig. *a*. 13.

20. A rectangular limestone plaque, pierced. Pl. 27, fig. *a*. 4.

21. A limestone toggle. Pl. 27, fig. *a*. 12.

Tomb R. W. 2.

In the intramural space of the compartment-wall (River Wall), next to R. W. 1. See Plan, Pl. 14.

Remains of four or five bodies: the bones were in disorder and the bodies had evidently been thrown in anyhow.

With these, scattered in the soil, were found:

1. Jar, height 0·16 m., wheel-made, creamy-drab clay, flaring to pink; finely levigated. Decorated with one broad and four narrow bands of red paint round neck and shoulder. Pl. 27, fig. *c*. 4.

2. Jar, height 0·11 m., wheel-made, fine creamy-buff surface; broad and narrow sepia bands round rim, neck, and shoulder, and concentric rings of same on interior of base. Pl. 27, fig. *c*. 5.

3. Jar, height 0·10 m., wheel-made, pinkish-drab clay. Pl. 27, fig. *c*. 2.

4. Jar, height 0·12 m., wheel-made, creamy-buff surface; badly turned, bottom pierced. Pl. 27, fig. *c*. 3.

5. Jar, height 0·07 m., reddish-drab clay. Pl. 27, fig. *c*. 7.

6. Fragments of jar resembling No. 5; red clay.

7. Fragments of vase, height 0·12 m., grey-drab clay. Pl. 27, fig. *c*. 1.

8. Bronze pin with ribbed nasturtium-seed head, length 0·082 m. (shaft broken).

9. Head and part of shaft of similar pin.

10. Bronze pin with head like a button-mushroom; length 0·09 m. (shaft broken).

11. Bronze pin with plain thickened head; length 0·095 m.

12. Two carnelian beads (one spheroid, one lentoid), and one amethyst spheroid.

Tomb R. W. 3.

In the intramural space of the compartment-wall (River Wall), next to R. W. 2. See plan, Pl. 14.

A few bones were found loose in the soil; near these:

1. Pot, height 0·05 m., wheel-made, pinkish-drab clay. Pl. 27, fig. *c*. 6.

2. Pot, height 0·12 m., wheel-made, pinkish-drab clay, resembling last.

3. Part of a bronze pin.

4. Half a dozen stone beads, carnelian and pebble; spheroids and tubular.

APPENDIX TO CHAPTER VI

THE CUNEIFORM TABLET FROM HOUSE D

Contributed by R. Campbell Thompson, M.A., F.S.A.

1. General Description.

The tablet found by Mr. Woolley in the excavations at Jerabis measures $2\frac{3}{4} \times 5\frac{5}{8}$ inches, and is inscribed in Assyrian cuneiform of a type rather earlier than is found on Assurbanipal's library-tablets. It appears to contain a concession of some kind in which are concerned about sixteen Syrians, who, from their names, are natives of the Harran district, and one native Assyrian, Šarri-itakkil, who may be the 'chief of the levy' of l. 2. The matter appears to concern rights over the oaks, and perhaps sumachs, with all their tannin-producing properties, as well as perhaps the manna-bearing shrubs in the district. The witnesses are also North Syrians, and the tablet is dated in the eponymy of Pa-da . . . perhaps to be read Nabû-li', and, if so, to be referred to 702 B.C., the early part of Sennacherib's reign. This, however, is doubtful.

The peculiar phraseology of the tablet, its new words and its lack of copulas, make anything more than a tentative translation at present impossible.

2. The Proper Names.

The first most noticeable point is the definitely Syrian character of the personal names, except in that of Šarri-itakkil and the eponym, and, as Mr. Sidney Smith of the British Museum pointed out to me, when he kindly sent me his copy (which I have used to the full in making my own), these bear remarkable similarities to the names in Johns' *Liber Censualis*. This latter presents the cuneiform tablets, of about the same date as this Carchemish text, which record the families living on estates round about Harran, and the names there are similarly compounded with the god-names Nasuḫ (Našḫu) and Sî. At least eight of our [thirty-eight or forty] names include Nasuḫ, and three Sî. Dr. Johns thought that Nasuḫ was Nusku, and Sî, Sin, and considering the popularity of N S K and S H R on the Aramaic monuments of N. Syria, he was probably right. A comparison of the other components of the names on the Carchemish tablet shows other similarities:

Carchemish Tablet.	Johns, *Liber Censualis.*
[Na]suḫ-yatê (cf. אֶלְיָדָע, אֶלִיאָתָה)	Mannu-yādi' (2, III, 15).
Su(?)-kit-mâdi	Sî'-maḫ(?)-di (6, I, 7).
Itni-ili (cf. יִתְנִיאֵל)	Itnâ (7, I, 9).
Sî-sagab	Našḫu-sagab (12, II, 11).
Abdâ	Abdâ (3, IV, 15).
Nasuḫ-samê	Našḫu-sama'ani (1, II, 28).

[*Na*]*suḫ-yatê*, when compared with the . . —*yadini* in *l.* 5, appears to be nearer to the form אֶלִיאָתָה than אֶלְיָדָע. The [*Na*]*suḫ-yali* of *l.* 8 looks as if it should be read [*Na*]*suḫ-yagub*, parallel to the Palmyrene בלעקב. *Su(?)-kit-ba(?)-na-me(we)* (*or na(?)-na-me*) and *Su(?)-kit-ma-a-di* offer

OBVERSE

REVERSE

Fig. 54.

perhaps a solution for סְפוּת (Amos v. 26) or סְכוּת בְּנוֹת (2 Kings xvii. 30) (the *su* is almost certain); the *ma-a-di* is perhaps to be referred to the מְאֹדֶךָ of Deut. vi. 5, 'thy force', and if *banawe* is the reading it will mean 'my begetter'. *Riḫimaniš*, if right (or *Riḫima-šarri*, improbable), approaches the Hebrew form רחם and the Arabic epithet رحمان, rather than the Assyrian form of the root *rîmu*. *Sagab* in *Sî-sagab* occurs simply in the well-known name of an Assyrian eponym *Sagabbu*, from the Aramaic שְׂגֵב pael, 'strengthen'; *Nasuḫ-ili* (?) ('Nusku is my god') and *Nasuḫ-urri* ('Nusku is my light') are comparable to Nusku-ilai (Bezold, *Catalogue*, p. 1715), Nergal-ilai, &c., and אוּרִיָּה, *Šamaš nûri* respectively. *Abdâ*, 'my servant', is the western Semitic form of *Ardiya*, occurring as עַבְדָּא in O. T., עבדו (old Aramaic), עבדי (Nabatean and Palmyrene). *Nasuḫ-samê* (in conjunction with *Našḫu-sama'ani*) must be the equivalent of יְשִׁמְאֵל, 1 Chron. iv. 36; *Si'-parasi* must mean 'The moon is my protector' (فرس 'covering'). *Atar-ur(?)-ri*, 'Atar is my light (?)', finds a counterpart in the well-known name of the eponym Atar-ili, 'Atar is my god,' prefect of the city of Laḫiri (Bezold, *Cat.*, p. 1982). Atar, probably a form of the Arabian god Athtar and the Phoenician goddess Astarte, and the Assyrian Ištar, occurs (like עשתר כמש Aštar-kemosh, Moabite Stone, 17) as a compound deity at Hierapolis (a day's journey from Carchemish) as Atargatis, and at Ascalon as Derketo, which is a compound of Atar and the Cilician Ate, actually found on coins as עתרעתה (cf. Garstang, *The Syrian Goddess*, pp. 1 ff., 21: Dussaud, *Les Monuments Palestiniens*, p. 69: G. F. Hill, *Some Palestinian Cults*, *Proc. Brit. Acad.*, 1911–12, p. 419). With *Sî-nûri* . . ., 'The Moon (is my) light', compare Si'-nuri, W.A. I. iii. 50, No. 2, 14.

3. The Translation of the Tablet.

A. The text contains many difficult words, which renders any translation provisional at present. In the nineteen lines of text which are practically complete, other than the names which we have already discussed, we find the following new words or place-names: the village Elumu (ll. 19, 40), *Bît-AN-BAR-GIŠGAL* (ll. 19, 28), *salamuḫu* (l. 21), *iššaḫapu* (l. 23), *mirti* (l. 24), *agi* (ll. 29, 33), *eti* (or *etimali*, l. 29), ^{iṣu}*a-pi-sa-na* (?) (l. 33), ^{iṣu}*amikû* (l. 34), which is a very large proportion of unknown to known.

B. The clue to the whole lies in the two last words. ^{iṣu}*A-pi-sa-na* (?) is a tree, doubtless the Arabic عفص, the oak producing the gall-nut, or the gall-nut itself used in tanning; ^{iṣu}*a-mi-ku-u* (= ^{iṣu}*a-wi-ku-u*) is another tree, to which it is tempting, for want of a better word, to compare the Syriac ܐܘܓܐ (*awgâ*) *Rhus Coriaria*, or sumach, the Talm. אוג, of which the red berry was used in dyeing Cordova leather.

The former, at all events, seems reasonably probable. It is true that the last character *na* (?) is uncertain (it might be *si* (?), *zu* (?), *ti* (?), or *âlu* (?)); also, عفص is represented by the Aram. חפצא, עפצא, and we should thus have expected *ṣ* and not *s* in the Assyrian form, but it must be remembered that it is a local word probably borrowed at this late time, as it has not yet been found in Assyrian. For confirmation of the great value of the dwarf oak in this district we can again turn to Dr. Johns' *Liber Censualis*, which contains the census records of the district near the city of Harran. One of the most salient points of these cuneiform documents is the careful record kept of the groves of ^{iṣu}*beliṭ* or ^{iṣu}*beluṭ* trees, as many as 10,000 being frequently mentioned, and in one district the total is given as 49,300. His suggestion that the word means 'vines' is not satisfactory: it is so obviously the Arabic word بلوط, the modern dwarf oak, of which the habitat is the lower and middle to sub-alpine regions (G. E. Post, *Flora of Syria*, p. 739, where

he speaks of it as *Quercus Cerris*). I have myself seen it growing plentifully in the hills of Eastern Anatolia and in the Kurdish mountains east of Jazirah, but it does not grow, as far as I know, in the flatter districts south of the line Carchemish-Mosul. It may be added that the later Assyrians themselves represented it admirably in their sculptures of hilly country.

C. It will be well therefore, before trying to identify the other unknown words in the tablet, briefly to discuss the question of tanning and dyeing in the Birejik-Harran-Diarbekr district, limiting ourselves to the two substances taken from the dwarf oak and the sumach.

Oak bark (in general), according to the *Encycl. Britann.*, 11th ed., vol. xvi, pp. 332–3, produces the best leather known. *Galls*, on the other hand, which are abnormal growths upon oaks, contain from 50% to 60% of tannin, and are generally used for tannic acid and not for tannin. Chesney (*Exped.*, i. 107) says that Jazirah produces gall-nuts and yellow berries (query, those of the sumach?) from the mountains to northwards. Mosul, as Olivier mentions (*Voyage*, vol. iv, p. 273), was an *entrepôt* for gall-nuts in his time. According to Löw (*Ar. Pflanz.*, p. 427) gall-nuts in the Lebanon come from the *afs-oak*, our ^{iṣu}*a-pi-sa-na* (?). A great export trade is carried on in gall-nuts, Basrah sending more than £150,000 worth to the United Kingdom in 1912 (*Consular Report* for Basra, 1914. p. 16).

Sumach (in general) (again I quote from the *Encycl. Brit.*) is perhaps the best and most useful material known for tanning. אוּס, which I have compared to ^{iṣu}*a-mi-ku-u*, means, according to Levy (*Neuhebr. u. Ch. Wörterb.*, p. 17), the red berries of the dyeing-tree. It is the sumach of commerce, thus described by Dioscorides (i. 138) as '*rhus*, quae opsoniis aspergitur, quamque nonnulli *rubram* vocant, fructus est rhois coriariae, sic vocatae quod coriarii ea utuntur ad coria densanda'. Ainsworth (*Assyria*, p. 34) says that the *Rhus Coriaria* grows on the banks of the Euphrates; Post (*Flora of Syria*, p. 206) says that the fruit, bark, and young leaves are used in tanning and dyeing. It is hardly necessary to say that our word 'sumach' comes from the Arabic سماق.

From this discussion of the two chief trees used in tanning, the oak and the sumach, we can proceed to the local *tanning industry* of our district. The Arabs, especially those of Barbary, have long been unrivalled in their preparation of coloured leather. Olivier speaks of the natives of Urfah as making '*très beaux marroquins*' (*Voyage*, vol. iv, p. 221). At Diarbekr, says Buckingham (*Travels*, vol. i, p. 380), were three hundred manufacturers of leather besides those who worked it up into shoes, saddlery, &c., and Pococke (*Travels in the East*, 1745, in *Pinkerton's Voyages*, vol. x, p. 535) also says that from Diarbekr came 'Turkey leather, especially the yellow sort, which they make in great perfection'.

There is no need to enlarge on the subject here: it is clear that our district is the centre of a busy trade in tanning leather and making shoes, in which oaks and sumachs are used. But to clinch the matter that our Carchemish tablet relates to this industry, it mentions a shoemaker by his trade on rev. 3. The sign is the same as that given by Thureau-Dangin (*ZA.* xx, p. 400, *n.*[4]) from an early contract from Ur which mentions a sale of skins; and by De Genouillac (*Or. Literaturzeitung*, 1908, 381), who explains it in another text as meaning 'currier', 'because he takes the skins of sheep which have been killed by the butcher'. The Assyrian equivalent is *aškapu*, (معصفا) 'shoemaker' (Meissner, *ibid.*, 1911, 385). The local tanning industry, with its red morocco leather-working, must have been uppermost in Sargon's mind when he flayed Ilubidi, king of Hamath (which is at no great distance), and 'dyed his skin like red wool'; it

should be remembered also that one Agabtaḫa, who fled from Ḫaligalbat (in this neighbourhood of the upper Euphrates) to Elam in the Kassite period, was a leather-worker (Scheil, *Textes Élam.-Sém.*, vol. ii, p. 95.)

Finally, if our tablet really be a 'concession' document, it is interesting to quote the 'List of Exactions and Monopolies, farmed out by the Pasha of Mosul, 1841' (Chesney, *Exp.*, vol. ii, p. 673), in which is included 'dyeing blue with indigo'.

D. In this light we can discuss the remaining words. *Satamuḫu*, not a correct I, 2 form, which should be *sutamuḫu*, is probably a local word; the verb which governs it is the IV, 1 *iššaḫapu* (somewhat mutilated, but the *ša* is probably badly written). This last must surely be the equivalent of سحف 'to peel off', Ar. שחף 'rub, scrape, peel,' and שְׁחָפָא 'rubbish' (Jastrow, *Dict. of Targ.*, p. 1549), and we may thus translate ll. 21–23 *ultu satamuḫu ina eli iškari ša šarri ina eli eḳli bîti kîri iššaḫapu* 'after the *satamuḫu* on the domain of the king, on field, house (and) garden [the regular legal phrase] has been peeled off'. In spite, therefore, of a change of *ḫ* to *ḳ* (which I should not venture to suggest except in a provincial or foreign case like this) it is conceivable that we have the root of سماق, هٰكُحُفا 'sumach', the latter being used in the plural for 'tanning-bark'. There is a curious modern local habit quoted by Sachau (*Reise*, p. 446) of changing *ḳ* to *ḫ* between the Karaja Dagh and the Euphrates; indeed, Nusku and Našḫu offer an ancient example. But it must be admitted that the infixed *t* is difficult to explain satisfactorily: Assyrian does, it is true, show forms with infixed *t*, but not sufficiently similar to warrant comparison. Provisionally, however, I would suggest 'sumach bark' or 'tanning-bark' until something better is found.

E. Following up this clue, we can make a suggestion for *agi*, which occurs twice (ll. 29, 33). It is described as 'in the midst of the oaks, in the midst of the sumachs (?)', and it would appear to be a plant of commercial value. The word itself is at once suggestive of حَاج, חָגְוָא, حاج, the *Alhagi Maurorum* (*Alhagi Manniferum*) of the botanists, which produces manna. It is a small spiny leguminous plant growing in Arabia, Asia Minor, and Persia, common throughout Syria in the waste places. It yields a manna in the form of small, roundish, hard, dry tears varying from the size of a mustard seed to that of a coriander (*Encycl. Brit.*, 11th ed., vol. xvii, p. 588; G. E. Post, *Flora*, p. 284). Olivier (*Voyage*, vol. v, p. 336) says that the manna from the *alhagi* is to be found at all druggists' in Persia, and that the harvest is made towards the end of the summer, but that it is only in the warmest provinces of Persia and Arabia that this plant produces it. It must, however, also be remembered that manna is found on the leaves of the dwarf oak and the tamarisk (Chesney, vol. i, p. 123), and Olivier found this manna in Mosul, but was unable to trace the exact tree from which it came, but many told him it came from a large shrub like an oak (*Voyage*, vol. iv, p. 273). Both authorities say that it was made up into a paste.

Pliny (*NH.* xii. 40) speaks of the odoriferous gum from the strobus or storbus at Harran, in the centre of our district, which must surely be the same word as the Assyrian *iṣu ṣarbutu*, a tree or shrub mentioned in the Harran census-texts (Johns, *Liber Censualis*, p. 43) as growing near Harran, as many as 150 being mentioned on one estate.

With these identifications I put forward a tentative translation of the tablet. I am by no means convinced of all the identifications or the method I have followed in dividing up the paragraphs.

4. Transliteration and Translation.

Transliteration.

Obverse.

1. . . . . rid (?) ṣabî (?)
2. . . . . amelu rab (?)-ki-ṣir
3. [m] . . . . apil m . . . . . -e-ir
4. [m] . . . -i apil m . . . . . -di-Na-suḫ
5. [m] . . -u(?) . . [apil m] . . . -ia-di-ni
6. [m] . . -ilu [apil m] . . . ḫu-u(?)-ra(?)
7. [m] . . -bi-i apil m [Na]-suḫ-ia-te-e
8. [m Na]-suḫ-ia-li apil m Su(?)-kit-na(?)-na-šip(me)
9. [m] . . -ra(?)-ia apil m Su(?)-kit-ma-a-di
10. [m] . . -e(?)-ni apil m . . . -me-Na-suḫ
11. [m] . . . . . apil m Ri-ḫi-ma-niš
12. m . . . -[Na]-suḫ apil m It-ni-ili
13. m . . . . . apil m Si-e-sa-gab
14. m . . . . . apil m Na-suḫ-ili(?)
15. m . . . . . -a(?) apil m Na-suḫ-ur(?)-ri
16. m . . . . . apil m Ab-da-a
17. m . . . . . apil m Na-suḫ-sa-me-e
18. m Ki(?)- . . . . . apil m Si-e-pa-ra(?)-si
19. ina aluE-lu-mu gab-bi-šu bît an-bar GISGAL
20. ḳa-li-šu-nu a-di dannûti-šu-nu
21. ultu sa-ta-mu-ḫu ina eli
22. iš-ka-ri ša šarri ina eli
23. eḳli bîti iṣukîri iš-ša-ḫa-pu
24. KU alânipl ina mir-ti
25. šum-ma ši-pir-ta ma-aš-ka
26. ina eli alânipl gab-bi amelu ap-ḳi(??)
27. a-di amelu ṣi-ḫi-ru-te
28. KU ša bît an-bar GIŠGAL gab-bi(?)-šu(?)
29. a-gi ša e-ti ma-li
30. e ša šu u me(?) ina lib-bi ša(?)
31. abîpl -šu-nu abî-abî-šu-nu
32. ina pân m Šar-ri -i-tak-kil
33. a-gi ina lib-bi iṣu a-pi-sa-na(?)

Reverse.

34. ina lib-bi iṣu a-mi-ku-u
35. m Šar-ri -i-tak-kil KU
36. amelu aškapu amelu mu- . . . amelu ṣab šar kiššati
37. gab-bi-šu-nu . . . . . li(?)-i

38. man-nu ša ina [ar-kiš ina ma]-te-e-ma
39. ultu . . . . . ri . . . . . .
40. ṣi . . . . . ša ^{alu} E-[lu]-mu gab-bi-šu
41. ta- . . . . . -tak-kiš
42. ša ina šu(?)-pu . . . . . .
43. ša . . di-ni . . . pa-ma . . . -te(?)-u-ni
44. ^{ilu} Sin . . . [^{ilu}]Ša-maš . . . . . .
45. di . . . . . bilat kaspi
46. V bilti ša [ḫur]aṣi ša(?) ina(?)$^{alu(?)}$ . . . u(?)-mi-in
47. ša i(?)-ḳa(?)-la . . ina . . . . . .
48. ina kar- . . . . . rab-bi(?)-ni
49. man-nu ša [ina a]r-kiš ša ina [ma]-te-e-ma
50. igirri . . . . . ḳi(?)-u
51. ina ḳatâ^{II} . . . ^{pl} . . . na(?) u
52. ^{ilu} Šamaš(?) . . . . . šarri
53. pân [^{m} . . .]-kur apil . . . . .
54. pân $^{m\ ilu}$ Nusku(?)-aḫ(?)-iddin(?) apil [^{m}] A-tar-ur(?)-ri
55. pân ^{m} Bar-ru . . [apil ^{m}] . . . -li-i
56. pân ^{m} Si-e-nûri [apil ^{m}] . . . -li-i
57. lim-mu ^{m} PA-da ḳa(?) . . . . i-kul(?)-lu

Translation.

(1) . . . . . ; (2) [N.] the chief of the levy; (3) [N.], the son of . . . . êr; (4) [. . .]i the son of . . . di-Nasuḫ; (5) [. . .]u(?) . . [the son of] . . . Yadini; (6) [. . .]-ili, the s[on of] . . . ḫûra(?); (7) [. . .]bî, the son of [Na]suḫ-yatê; (8) [Na]suḫ-yali (*or* yagub), the son of Sukit-naname(?); (9) [. . .]ra(? si)-ia, the son of Sukit-mâdi; (10) [. . .]e(?)-ni, the son of [. . .]me (*or* lal) -Nasuḫ; (11) [N.], the son of Riḫimaniš; (12) [. . . Na]suḫ, the son of Itni-ili; (13) [N.] the son of Sî-sagab; (14) [N.], the son of Nasuḫ-ili(?); (15) [. . .]a, the son of Nasuḫ-urri; (16) [N.], the son of Abdâ; (17) [N.], the son of Nasuḫ-samê; (18) Ḳi(?)[. . .], the son of Sî-parasi(?).

In the village (or, district) of Elumu all of it, the depôt (?), their underlings as well as their overseer(s) (:), after the tanning-bark (?) on the royal estate, on field, house, and park has been stripped, [he] will provide (:) the villages with tannin(?) (:) if there is leather-working (*or* if it is good [the villages] are to draw (?) [on the tannin(?) :]) throughout the villages all the *ap-ḳi*(? ?)-men, as well as their children, [he] will provide from (?) all the depôts (?).

The *alhagi* which is full of juice (?) (*or*, which aforetime ?) . . . . therein their fathers, their grandfathers in the presence of Šarri-itakkil (:) the *alhagi* in the midst of their oak-trees, in the midst of the sumachs (?) Šarri-itakkil will provide (deliver). Shoemaker, ... -man, ... , escort from the king of multitudes (*or*, escort of his king), all of their . . . .

Whoever shall in future . . . .

The text, now mutilated, continues with another mention of 'all the village of Elumu'; the mention of so many talents of silver and five of gold: and then the usual contract phrase, 'Whoever in future shall go to law'. Four witnesses attest the contract, which is dated in the eponymy of Pa (or Nabû) -da (or li). The impressions of two seals at the end indicate the local worship of the moon-god.

A few notes must be added to those already given to justify the suggested translations. *Bîtan-bar* GISGAL is unknown to me: AN.BAR may mean 'iron' or 'the god Ninurta', neither of which is probable. I have taken the Syro-Persian group اصطبل as its equivalent: *ambar* 'a shed' is still in use at Carchemish as elsewhere, where Arabic has borrowed from Persian. *Ḳali-šunu*, opposed to *DAN-šunu*, I take to be *ḳallu*. For KU in this sense of 'deliver', see Allotte de la Fuye, *Rev. d'Assyr.*, vol. ix, p. 145, and Förtsch, *Or. Literaturzeitung*, 1915, 39. *Mirtu* is very doubtful: I suggest that it is a parallel to *martu* 'bitterness', but borrowed actually from the Syr. ܡܪܝܪܬܐ, and here representing 'tannin'. Comparable is عقص which is the root for both 'gall-nut' and 'bitter'. In l. 25 the characters *ši-pir* might be read *damḳu*: *šipirtu* is the word for craftsmanship: *ma-aš-ka* is most probably the ordinary Assyrian word 'skin', much less probably the verb מָשַׁךְ 'to draw'. ^{amelu}*Ap-ḳi*(*??*) is doubtful: there are probably two characters after *ap*; there is a root افق 'to tan'. *E-ti*(-)*ma-li*, either 'full of *eti*', or a dialectical equivalent for *itiṁali* 'yesterday', אֶתְמוֹל. *Eti* might be the Heb. אֵת, the equivalent in Syriac being ܐܝܬ 'substance'. For *e ša šu u me*(*?*) (or *lal*) I can suggest nothing: there should be a verb here, and it can hardly be *e-ḳar šu-u-me* 'garlic-roots' ܫܘܡܐ and ثوم. The mention of fathers and grandfathers looks as if there were some reference to precedent.

CHAPTER VII

BUILDING METHODS AT CARCHEMISH

It may seem premature to discuss generally Hittite building methods in a volume which deals with little but the outer fortifications of the city: it is advisable to do so because thereby a good deal of repetition can be avoided when separate sites are described, and because certain general questions which must necessarily arise can better be treated in a technical chapter than parenthetically to the account of any particular building. It must be remembered that a far wider area of the ruins has been excavated than we have yet been able to publish; we can therefore draw upon evidence more varied and extensive than our work on the town's defences has supplied: and though so far as is possible the statements made hereafter will be illustrated by buildings herein described, this cannot always be the case, and reference will needs be made to parts of the site whose publication is reserved for a future volume.

Materials. The materials used by the Hittite builders were naturally those which the neighbourhood afforded (v. p. 33).

All buildings were constructed principally of mud brick. The mud-brick walls rested on a stone foundation which might be no more than a single course of pebbles, or might be elaborated into a sort of podium; this stone masonry, whether rubble work or ashlar, seldom rose more than a metre and a half above ground, and was never more than a base for brickwork; we have found no case of a wall built of stone throughout.

The mud was, of course, taken from the nearest available piece of ground, and the bricks were moulded on the spot; consequently there is a great variety in their composition in different parts of the site: in one place the bricks are of a light friable sandy soil, in another of clean firm clay, while elsewhere, when an old site has been rebuilt upon, they may contain a large proportion of ashes, potsherds, and rubbish, as do most of the bricks used to-day in long-settled villages where the raw material is dug up on the outskirts of the houses, from the rubbish-heaps, or from the débris of other ruins. The mud mortar is generally of the same character as the bricks; naturally, too, for it was dug out from the same spot. On the top of the great mound this is not so; bricks required for buildings here were probably made down below where the water was ready to hand, and where the ground surface was less valuable than on the crowded Citadel platform; on the other hand, the mud mortar was necessarily taken from close by; consequently we find in buildings of the Early Hittite period on the top of the mound bricks of clear red clayey earth set in mud mortar of a blackish grey, the two forming a most striking contrast.

In most bricks there is no admixture of chopped straw or other binding material; when such is used, it is in a proportion far smaller than is the rule to-day. The size of mud bricks varies considerably at different periods, or even in different buildings of the same period. Considering how these bricks are made, with the simplest of wooden moulds, it is hardly to be expected that

a definite canon should hold uniformly good at any one time, especially as the size of the brick, within certain limits, affects its constructional value but little. It would be rash to try to date buildings by the measurements of their bricks: at the same time a difference of measurement is good corroborative evidence for a difference of date arguable on other grounds.

It should be remarked that the (vertical) thickness of the brick is the measurement which is most liable to minor variation, owing to the method of manufacture, and is, within the same limits, most constant owing to the convenience of handling. Certain recorded measurements are as follows:

E. H. period.

Prior to the building of the citadel wall, in house-sites on the mound 0·50–0·48 × 0·21–0·19 × 0·095 m. The vertical joints are very wide, brick-ends being as much as 0·11 m. apart: bonding good. Slightly later in date, bricks 0·40–0·41 × 0·32–0·25 × 0·09 m. with quarter-bricks 0·10 m. long to break bond. Walls do not always have stone foundations, and the courses tend to 'wave' a good deal owing to the sinking of the subsoil.

M. H. period.

South-east fort on River Wall, 0·40 × 0·38 × 0·13 m.

South Gate, Inner Town, 0·42 × 0·21 × 0·13 m.: bricks 0·36 m. long occasionally used to break bond.

West Gate, Inner Town, original building, 0·37 × 0·35 × 0·12–0·11 m.

L. H. period, early.

In north-west fort, second construction, 0·41–0·40 × 0·22–0·21 × 0·11–0·10 m.

In north-west fort, third construction, 0·36–0·34 × 0·27–0·26 × 0·10 m.

In West Gate of Inner Town, back wall, 0·37–0·36 × 0·35 × 0·12–0·10 m.

L. H. period, late.

In north-west fort, Inner Town-wall, fourth building period, 0·40 × 0·11 m. with half-bricks 0·16 m. long and 0·25 × 0·28 × 0·12–0·10 m.

In blocking-wall of West Gate, Inner Town, 0·40–0·36 × 0·20–0·18 × 0·14 × 0·10 m.

In the land wall of the Citadel at its south-east end the terraced wall was built of a kind of *terre pisée*; the soil, mixed stuff quite unprepared, was laid in horizontal layers about 35 centimetres thick and apparently the full width of the terrace (certain vertical cracks seem to be only accidental): the system, which resembles that still employed at Hama, Damascus, &c., has not been remarked elsewhere on our site and I have not observed it in modern buildings of the neighbourhood.

The stones used are of four sorts. River ballast, from small pebbles to water-worn boulders, is used in underground foundations and in the filling of heavy walls. The pudding-stone rock, which forms the nucleus of the Tell and crops out at intervals along the river bank, was also used as a wall-filling: it is common in the M. H. period, notably (and naturally) along the river wall of the inner town, but also in L. H. buildings, e.g. in the filling of the solid corner-towers of Hilani I; it was not used as facing-stones, perhaps the only exception to this being a slab carved with a relief of a couchant lion in the second palace, beyond the processional entry. The two

stones most generally employed were basalt and limestone, and all ashlar and all sculpture is in one or the other of these. The basalt most probably came from the east side of the Euphrates and at some distance from the river. The stones found at Carchemish were certainly quarried; slabs over a metre square, and big lintels, could not have been cut from the scattered boulders of the hill-sides. The nearest point (I think) at which basalt could be quarried in bulk is a long low hill just south of Arab Punar station, 35 kilometres from Jerablus; but neither here nor elsewhere in the neighbourhood have ancient basalt quarries been reported.

The limestone presents less difficulty. On the hills south-west of Jerablus are extensive quarries which have been used at many later dates but must have originated with the Hittites. Here the upper strata are of soft chalky stone, very easy to cut but of little value as a building material. The E. H. and M. H. builders would have nothing to do with this poor-quality stuff; they never introduced it into a wall face, shaped it into blocks, or worked it in any way, and if occasionally a few chips of it are found in the foundations of a wall (for which, had they only known it, it is rather good) that is so rare an exception as to raise doubts about the wall's date. In the Late Hittite period, on the other hand, the use of this soft stone (hawâra) is not uncommon: it is used for door-jambs, for false doors, and for window-sills (?); large blocks of it, sometimes roughly quarry-dressed, sometimes more carefully worked up, occur in the lower masonry of poor-quality walls, and in underground foundations it is not uncommon; it is even used, at times, for sculpture on a small scale. Obviously we have here signs of degeneration in building; the stone which, lying next to the surface, is cheapest to obtain, and being soft, is easiest to work, comes into vogue in spite of its poor quality. Its use is general in the early classical and in the Byzantine periods.

The lower beds in the quarries give stone of varying degrees of hardness and of varying grain, ranging from highly fossiliferous lime conglomerate to what is almost marble. These are the stones used for all good masonry by the earlier builders and nearly always by the builders of the L. H. period.

Stone-dressing varies a good deal. Blocks used in foundations, where they were not seen, are but roughly quarry-dressed at most. Smaller squared blocks and stretchers which show in the wall face are most often hammer-dressed; sometimes the whole surface is uniform, sometimes the edges are drafted either by finer hammer-work or with a chiselled dressing, and occasionally the contrast is so far marked as to give the stone a rusticated appearance. The large facing-stones or orthostats are very often polished, the face being ground down so as to show no trace of tool-marks: in this case the surface is generally convex with a more marked projection in the lower half, which gives a 'pillow' effect to the stone, a sag such as that of a not too well filled sack: this style of dressing seems to be particularly characteristic of M. H. work, whereas in the L. H. period stones with drafted edges and hammer-dressed centres are more usual. The care expended on these polished blocks is shown by one of the South Gate orthostats, wherein a natural fault in the stone was filled up by a river pebble fitted closely into the hole and ground down flush with the stone's face. Stones would seem to have been roughly dressed in the quarry but re-dressed on the site, and polished after they had been built into place; where the stones were sculptured, the reliefs were roughed out in the workshops and finished when the stone was in position: this accounts for the layer of stone chippings often found against the wall footing, cf. fig. 23. Building-blocks were often not truly squared, the sides especially being out

of the vertical, and the fitting of these must have been done on the spot when the first stone was already in its place in the wall. The face of the wall is always dry-stone built, and no mud mortar is used between the blocks, nor are these in any way tied to each other; in the foundations and in the cores of walls mud is freely employed.

Floors and pavements were of beaten earth or of stone. In gateways, where traffic would be heavy, regular pavements of large slabs were used, the stones sometimes slightly grooved to prevent slipping (e.g. in the outer doorway of the Processional Entry); outer courtyards were paved with large cobbles, the floors of inner courtyards and of rooms with small pebbles, sometimes mud-covered and whitewashed. Foundations vary greatly according to the nature of the soil on which the building stands: thus, sections of the outer West Wall, where the subsoil is of hard gravel, can show only a single course of cobble-stones and chippings below the brickwork, though this is a military work of defence over five metres thick; on the other hand the walls of House D, built on a knoll of light soil, have stone foundations nearly four metres deep (with a width of only 1·80 m.), and the foundations of the wall behind House C have a depth of 1·30 m. The stones used in these basement structures are seldom very large, nor is the coursing very regular, large stones alternating with smaller ones, of which two layers or more are required to make up their height, and small chips and pebbles are used with a good deal of mud to give a flat bedding for the next course (fig. 55); but the work is good and solid, so that no extra thickness is required, and foundations are very seldom splayed or stepped out to a width greater than that of their superstructures.

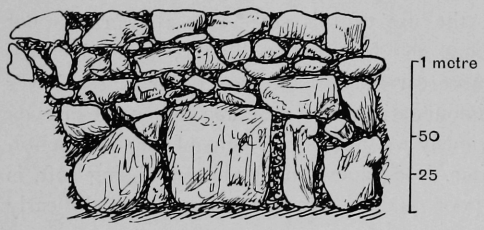


Fig. 55. Rubble masonry, north wall of House C.

In the case of interior walls, and of most brick walls resting on rubble foundations such as those described above, the stonework seldom rises more than a few centimetres (one course at most) above ground level; it is only when properly worked stones were used that they were allowed to show.

The visible stone substructures range from the single course of hammer-dressed limestone blocks, 0·55 m. high, which gave an air of importance to the north and west walls of House D, through the plain bellied and polished orthostats of the Lower Palace Shrine and of Hilani 1, to the massive masonry of the South Gate of the Inner Town and of stretches of the River Wall.

The style of building most typical of the Hittites is that in which the mud brickwork of the wall proper rests upon a more or less decorative base (almost a podium) of stonework faced with well-dressed or sculptured slabs. Generally speaking the walls are of considerable thickness, from two to five metres. Over a rubble foundation whose depth varies according to local conditions runs a course of carefully worked hammer-dressed blocks, as a rule a good deal longer than their height, and therefore to be termed stretchers, whose level tops support the orthostats, large slabs of stone, generally from 1·05 m. to 1·30 m. high by about as much in width (the great stones of the River Wall, measuring up to 4·40 m. long, are an exception, as are the pier-head slabs of the inner South Gate, 2·80 × 1·60 m.), but of no great thickness, which are either polished or adorned with figured reliefs and inscriptions. These facing-slabs form but the skin of the

wall; the space between them is filled up with rough stones, not indeed piled in anyhow but laid in place with a certain system and order, the interstices between them filled with pebbles, chippings, and mud mortar, and the whole smoothly levelled off flush with the top line of the orthostats so as to make a platform-bedding for the brickwork above. Occasionally the wall is faced with orthostats on one side only, its inner face being of brickwork: sometimes the orthostats rest directly on the rough rubble foundations and the stretcher-course is lacking; occasionally, but rarely, more than two courses of stone were visible, e.g. on stretches of the River Wall where for a space two courses of smaller blocks took the place of larger orthostats, or these latter themselves stood not high enough and had to be eked out by an upper course of smaller stones. But the general rule holds good, that not more than two courses of stonework were visible, that the facing-stones are but a skin, not bonded into the core of the wall, and that the wall proper was of mud brick which rested directly upon this stone base.

In view of the discoveries made and the generalizations deduced therefrom by the German excavators of Sinjirli, the above statment cannot be other than controversial. Dr. Koldewey and his companions found on their site that a timber-course is interpolated between the rubble foundations and the stretcher-course, a feature which has never yet appeared at Carchemish; and between the top of the stone base and the brickwork they find again a timber-course whose longitudinal baulks rest on and are made fast to the orthostats while transverse ties joining them run through the thickness of the wall, the interstices between these being filled with stones and mud mortar to form the level bedding of the brickwork; and they shrewdly suspect that such timber-courses were not uncommonly repeated at vertical intervals in the brick construction also. In many cases at Sinjirli the former existence of this woodwork seems to have been abundantly clear: wood-ashes were found in the long grooves of the masonry where the beams had lain, and the mud mortar about them was reddened by their burning;[1] in other cases the excavators had only analogy to rely upon and supported their argument by the presence of small round holes along the front edge of the top surface of the orthostats which they assume to have held the bolts which tied the timbers to the stone. So convinced was Dr. Koldewey that the timber-course was in general use at Sinjirli that he regards it as characteristic of Hittite building as a whole and would make it a criterion for Hittite walls everywhere.

Now at Carchemish such a timber-course has never yet been found, in town-wall or temple, palace or private house. The brick always rests directly upon the stone base. The evidence for this is positive. In many buildings the brickwork is preserved and could not have failed to retain signs of the woodwork running through it, had such ever existed; but the uniformity of the bricklaying, the absence of any holes where wood could have been, the lack of any ashes or any signs of special burning of the bricks, are absolutely conclusive.

The Sinjirli excavators found, in many walls, tangible evidence for the timber-course: where this was lacking they argued its former existence from the presence of the small holes, round or rectangular, in the top surface of the stone orthostats. These holes are almost invariable, alike at Sinjirli and at Carchemish, and in stray orthostats on other Hittite sites: they are quite small (if rectangular, they average 0·03–0·04 m. across by 0·04 m. deep; if round, about 0·025 m. in diameter and 0·04 m. deep) and are set back 0·10–0·18 m. from the front edge of the stone:

[1] The theory is disputed by Th. Friedrich in *Beiträge zur Assyriologie*, iv, p. 227. He suggests that the holes were for drying the brickwork, and that straw, &c., was burnt in them to hasten the process.

if the orthostat is narrow, there may be only one central hole; more often there are two, about 0·10–0·16 m. from either end, and in the case of very large blocks (e.g. the pier-end slabs of the South Gate) there may be a whole row of them, continued round the side of the stone if that side is also a face. Dr. Koldewey believed that these holes were dowel-holes, by which the beams lying along the top of the orthostats were tied to these by metal or by wooden belts: from them he argues to a wooden beam and from the beam to a whole timber-course in the thickness of the wall.

Now these 'dowel-holes' are found as regularly at Carchemish as at Sinjirli: but they do not, on the former site at least, support Dr. Koldewey's theory. It is noticeable that they only occur in large orthostats (with the exception given below), and that where, as in the recesses of the South Gate or in House D, the brickwork rests on smaller worked blocks 0·55 m. high, it rests directly on these and there are no holes in the surface of the stones; nor are there such holes in the stretchers whereon the orthostats stand, and so far as their base is concerned these large and often thin slabs were kept in position only by their own weight. It might have been supposed that the orthostats required ties as much below as above, but there certainly were none below.

If the holes were dowel-holes, the bolts for the timber must almost certainly have been of metal, for the holes are too small for wooden pegs to have served the alleged purpose; and some trace of this metal, were it only a discoloration of the stone, ought to have survived. Actually not a single hole has betrayed any such trace. But we need not rely on negative evidence. In the Processional Entry the carved orthostats are directly surmounted by brickwork, still standing five or six courses high, which originally was masked by a panelling of cedar-wood. The lowest course of bricks is set back behind the rest, backing a beam which lay along the top of the orthostats; the next course of bricks projects and partly covered the beam, and at intervals in the brickwork are the holes due to the burning out of short ties (little more than pegs) which made the panelling fast to the wall (v. Pl. B. 17 *a*). When found, the ashes of the lowest beam (the whole had been burnt) lay undisturbed upon the stonework, a solid mass of charcoal still preserving the form of the old wood. On removing this we found that the 'dowel-holes' which occurred at each front corner of the carved orthostats were filled with perfectly clean sand or lime dust, and a film of mud which had served as the bedding of the beam passed unbroken over the holes. Here, where there was woodwork, it was ornamental, not constructional; it was not tied to the stonework nor acted as a tie for the stones, and the 'dowel-holes' served no constructional end. An equally striking proof was afforded by the River Wall. In section B of the wall the orthostats are of unequal heights and the shorter ones are levelled up by means of an upper course of thin and often shallow blocks (see Pl. 15 *a*). Where the orthostats reach to the full height of the stonework, they are provided, as usual, with a (round) hole near either front corner: where the small levelling-stones occur, they too have one or two round holes in their top surface. Of these we can only say that they showed no signs of metal insertions; but the overlying brickwork had long since vanished and the negative argument is therefore not conclusive. On the other hand, the tall, thin slabs (2·05 m. high) might well seem to require some kind of tie to resist the outward thrust of the rubble core under the enormous weight of the brickwork above.

Now the small levelling-stones were original to the wall and had never been disturbed.

We lifted three of these (Pl. 15 *a*, the stones marked with crosses) and found that the main orthostats on which they rested were duly provided with 'dowel-holes': *these holes were blocked with small pebbles, lime dust, and mud.* These orthostats were not made fast to each other, to the levelling-up stones above, or to the wall behind them. A timber-system which tied up the small levelling-stones and left the great slabs below unconnected to take the whole outward thrust of the wall would have been constructionally useless, and one can hardly imagine the Hittite builder undertaking labour so otiose. We are driven to the conclusion that these holes in the orthostats are no argument for a timber-course; they were not necessarily used even when there was woodwork; they were made without reference to any structural function, and when once the stone was in place they were disregarded by the builders. Of course they had an object, but what that was cannot be definitely proved. The explanation we would suggest is that they were lewis holes for the manœuvring of the blocks, not in the quarry but during the building of the wall. As they occur only on one side of the block, they were not meant to help the lifting of the stone off the ground by nippers: as they are always in the top surface, they must have been for use when that surface was at the top, i.e. when the stone was more or less in place. Now the jointing of these blocks is particularly good, varying from 0 to 0·00385 m., and the bedding afforded by the lower course is often none too true, and the base of the block itself is often cut not flat but at a slight angle, so that the back part of the stone has to be wedged up with small stuff in order to bring the face to the perpendicular. Experience has shown us abundantly that this is a difficult task: the stone has to be levered sideways, or backwards, or forwards, and this when it is not steady on its base but balanced on a narrow edge. I fancy that the holes at the top of the stone were to take the grip of stays (mere poles with a projecting metal tongue), by which the block was held in balance, or manœuvred slightly, while levers brought it into its exact position, and wedges were driven in behind to keep it true. Certainly they would be most useful if so employed, and how else they can have been employed I cannot guess.

The theory that a timber-course was general, or even usual, in Hittite buildings apart from Sinjirli, must be ruled out. If such a course was employed at Carchemish it was an exception and not the rule. In one case only have we evidence for anything of the sort, and that is in the case of the tall and slender orthostats (1·10 m. high and *c.* 0·30 m. thick) on the north (inner) face of the South Gate. These stones have a very small bearing-surface below; there are the usual two round lewis holes, but also in the top of the stone, at the back, there is a dove-tailed mortice-hole which does seem certainly to connote ties, of wood or of metal, embedded in the thickness of the wall and not improbably connected by a beam, partly structural and partly ornamental, resting along the top of the orthostats (see p. 88). This is the only instance found as yet of timber being used constructionally in the fabric of the wall, and even this is not quite certain, for the mortice-holes are small and the ties may have been of metal.

From this it follows that the theories of reconstruction elaborated by the excavators of Sinjirli do not hold good at Carchemish. On the other hand, wood was sometimes used in the form of panelling to mask the mud brickwork of the walls of important buildings: Solomon's 'Palace of the Forest of Lebanon' was not without its prototypes in the Hittite capital.

Decoration. A favourite device with the later Carchemish builders was the employment, in the stone facing of the walls, of limestone and basalt slabs alternately. This was most

commonly done when the stonework was adorned with carvings in relief, e. g. in the great series of the Processional Entry, of the Herald's Wall, and of the Long Wall of Sculpture; where the buildings are not decorated with reliefs, limestone alone is more usually employed, perhaps because the basalt was so much more costly that it was hardly worth while to use it except for carved work (and so the most elaborate parts of buildings, e. g. the staircase from the Lower Palace and the royal buttress of the Processional Entry, are all in basalt), but still plain basalt slabs occur and these in alternation with limestone. The South Gate and the River Wall (both M. H. buildings) are of limestone throughout. There is no doubt that the black-and-white effect obtained by the alternation of basalt and limestone, though striking enough of itself, was heightened by the use of colour. At Sinjirli traces of colour were found on the limestone carvings; at Carchemish none such have been remarked as yet, but the character of the carvings leaves no doubt upon the point.

In the first place, the limestone used for the reliefs was often of poor quality, full of flaws and holes, a quality noticeably inferior to that of the plain polished orthostats; this implies a thin coating of stucco to hide the blemishes of the stone, such a coating as we get on the sandstone reliefs of Southern Egypt. Traces of stucco have been found at the base of the carved slabs. Moreover the treatment of detail is so summary, especially on the limestone carvings, which contrast strongly in this respect with those in basalt, as of itself to suggest the application of colour, even if we do not suppose that a more delicate and detailed treatment of relief was reserved for a plaster facing. In judging the artistic value of the limestone sculptures we have to remember that we are only dealing with a skeleton from which the skin has disappeared; these stones give us the main lines, the composition and the proportion of the figures, but not the finished work, even from a plastic point of view, and still less the original effect of pictures probably no less brilliant than those of Egypt. The basalt reliefs are at all times more finely finished, and it would be absurd to suppose that the artists would procure and work so costly and so intractable a stone merely to disguise it: but even so the relief was probably picked out with touches of colour, as were the granite carvings of Egypt. Of this, naturally, no trace remains.

We must, then, imagine the lower part of e. g. a Hittite palace as bright in colour, reliefs painted against a white ground alternating with reliefs blue-grey, almost black, in general tone, but relieved by touches of paint accentuating their detail. Above this gay dado rose the mud-brick wall, sometimes panelled with cedar-wood (e. g. the Processional Entry), sometimes gaudy with glazed brick (Upper Palace); or the stonework may be plain white, surmounted by glazed bricks whereon white and yellow marguerites stand out against a background of pale turquoise blue (the Lower Palace Shrine); or, in a building less meant for show, the white stones may support a wall plainly whitewashed or even of mud brick unadorned (the South Gate and the River Wall).

Inside, the walls were covered with a thick plaster made of crushed soft limestone (hawâra) mixed sometimes with enough brick-clay to give it at once greater firmness and a warm creamy tint: the coating may be several centimetres thick. Or, again, the plain crushed chalk mixed only with water and a little salt may be applied with a twig brush, as is done to-day, and form but a flaky film on the mud-rendered wall. As yet no traces of wall-painting have been found.

Roofs were largely of wood and were supported by columns whose shafts were of wood, their bases cushion-drums of basalt (most commonly) or of limestone: these base-drums were

most often plain, but sometimes carved (figs. 60 and 61), and occasionally are elaborated, on the analogy of statue-bases, so that the drum stands between the animals which seem to support the shaft (v. Pl. B. 32). No actual column-capitals have been found, but reliefs and minor objects show that these sometimes took the form of a plain cushion abacus, sometimes were elaborated with foliage, with pomegranate bells, or with a type of net decoration (cf. 1 Kings vii. 15–20); the fact that no stone examples have come to light as yet, in spite of the great number of bases found, makes it probable that the missing capitals were in wood or in metal.

Buildings were often of two or more stories: this is shown both by the solidity of the walls and by the presence of staircases of stone (Inner West Gate) or of wood (House D, &c.).

The roofs, supported on wooden beams, were probably flat, as are those of modern native buildings (except the domed mud huts of the Kurds and of some Arab tribes) throughout Syria. How far the roof-line was relieved by crockets or by crenellations it is difficult to say. The

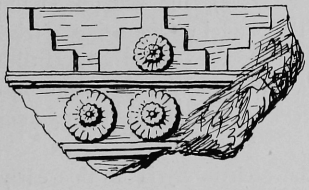


Fig. 56.

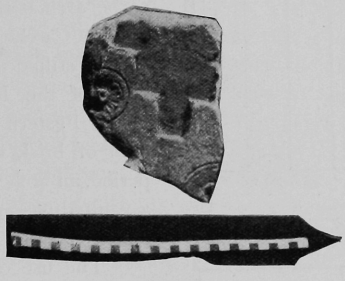


Fig. 57.

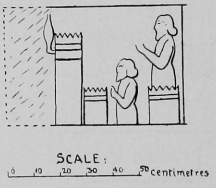


Fig. 58.

Mesopotamian analogy in favour of stepped crenellations is accepted by the excavators of Sinjirli, who restore their palaces accordingly; this analogy is supported by the decoration of a few L. H. altars which show stepped crenellations with central rosettes (e.g. fig. 56, a fragment from the foundation of an early classical building over the north-west fort, and fig. 57 from the Yunus cemetery); the motive is most likely derived from architecture, and the rosettes recall the marguerites of the glazed brickwork in the Lower Palace Shrine. Most altars, however, have plain rectangular battlements (cf. Pl. A. 5 *a*); a relief at Tell Ahmar, which presumably represents a Hittite town, shows machicolations and plain triangular battlements (fig. 58), and the same appear on the Balawat Gates which picture the buildings of Carchemish itself (fig. 21). In front of the Long Wall of Sculpture were found several stones cut in hawâra but dating well back in the Late Hittite period; some of these were oblong blocks 0·20 m. high, the tops rounded from back to front: the others were similar, but in the middle rose a tall round-topped crocket 0·25 m. in height; these would seem to have stood along the top of the wall. On house-sites D, G, and H, were found false doors cut in hawâra (see below) which, judging from the rounded slot sloping forwards and downwards at their base, masked the ends of the gutters leading rain-water off the nearly flat roofs; they had been painted in red and yellow; in modern houses gutters are generally set about two metres apart, so that on a fair-sized building there would have been enough of these gay and upstanding 'doorways' to make a striking architectural effect: they

may have stood not free but framed in a solid coping. We may, perhaps, assume that on a fortress or a wall of defence there were solid brick-built crenellations, rectangular or, in later buildings, triangular, either stepped or flat-sided, while on a palace or private house, where the object was decorative effect, not military use, these were replaced by slighter panels of stone or brick, sometimes painted, round-topped, or in the form of 'false doors' or as stepped crenellations adorned with marguerites and rope mouldings.

On the strength of this argument we assume that doorways as a rule, and windows, were flat-topped, with timber or stone lintels. On the Great Staircase of the Lower Palace was found a (broken) lintel of basalt with a winged disk carved in the centre of its face, and at least two other basalt lintels are known to us. Flat-topped doors seem to have been the invariable rule at Sinjirli. On the other hand, there is the stone corbel arch at Boghazkeui, the Shalmanezer reliefs picture Carchemish itself with gateways in the form of stilted arches (fig. 21, cf. p. 83 on the South Gate of the Inner Town), and actually in the Water Postern of the citadel wall we find a false arch of brick dating back to the Early Hittite period, an arch which apparently is prolonged into a vaulted passage (Pl. 16 *b*), like the Boghazkeui posterns.

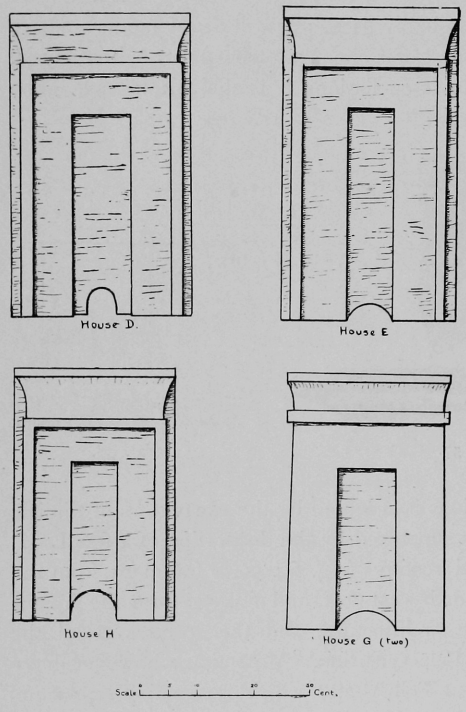


Fig. 59. 'False doors' from Late Hittite house-sites.

The use of the arch in Syria at this early period is of extreme importance for the history of architecture, but as yet we have not the material for tracing its evolution. The citadel postern as an instance of brick construction is unique so far as our excavations have gone, nor have we found anywhere any stones so cut as to suggest a corbel arch of the Boghazkeui gateway type, much less any true voussoirs; but we cannot suppose that a principle which the Early Hittite, like the Early Egyptian, understood, was not elaborated by his successors and therefore was abandoned in practice. The evidence of the Assyrian reliefs proves that the arch form was employed by the Hittites at the close of their occupation of Carchemish as at its beginning. It may well be that throughout the whole period, while the doors of the more monumental or defensive buildings such as the city gates were arched, those of private houses, interior doors, &c., were generally flat-topped.

Doorways are generally, though not always, set between stone jambs: in some cases, e. g. House D, the jambs are of brick only. In some cases there was a wooden door-framing, but this is not invariable. Thresholds were generally of stone with a raised sill or, in the case of main gateways, a raised stone door-stop (v. fig. 26). The door was hung on a solid hinge-pole

whose projecting rounded ends, shod with iron, turned below in a basalt socket, bowl-shaped and embedded firmly in the ground, above either in a socket in the cross-beam of the door or in a projecting metal bracket. The door itself was of wood, sometimes bound with strips of bronze and studded with bronze nails, and opened always inwards. The small 'false doors' from Late Hittite house-sites (v. fig. 59) show that Egyptian influence was, in the Late Hittite period, making itself felt in Hittite architecture, and it may well be that the real doors, of which we have only the lower parts surviving, should be restored in the style of these 'false doors' with reeded jambs and projecting rolled cornice.

For windows we have at present no evidence unless certain dressed hawâra slabs found in House D are rightly to be taken as window-sills. Small bronze hinges of modern type found in the same building probably belonged to wooden window-shutters or to cupboard doors.

About the ground-plans of buildings at Carchemish there is more variety than, perhaps, might have been expected. Even in such monumental works as the town gates we found differences, not of detail only but of general scheme, which contrast with the rather monotonous uniformity of the Sinjirli gateways. Certainly we found here nothing to support Dr. Koldewey's theory that the 'Hilani'—itself based on the defensive gateway—lay at the root of all Hittite architectural designs; the Hilani itself occurs in a more or less modified form, but it is not the sole model even for religious shrines, and in the ground-plan of private house or palace not even the most biased could find plausible trace of such a prototype.

Foreign Connexions. The general uniformity of constructional methods at Carchemish, Sinjirli, Sakjegeuzi, and Boghazkeui is as obvious as was to be expected. It is true that at Boghazkeui, a rocky site, stone is more freely used and that some walls are built of stone throughout, or, at least, to a considerable height, whereas at Carchemish the norm of two visible stone courses is rarely exceeded; it is true also that at Sinjirli, lying on the skirts of the great sub-Amanus forests, which until a few years ago still clothed the plain, timber seems to have been far more extensively and more essentially used than on the banks of the Euphrates; but these are differences due to local conditions; the main conditions are the same.

In these main principles we can see nothing of Egyptian origin. The 'false doors' are of very late date: the custom of painting sculpture, and in particular the use of a thin stucco coat over the carved stonework of sculptured relief, is a feature of Egyptian work which may have been borrowed from the Nile Valley but may equally well have been an independent invention; the East loves colour, and the character of the local stone demanded an applied surface. Moreover, this is a question of ornament, not of building principle, and further we cannot yet say when it was introduced. Connexion with Mesopotamia is more definite. The employment of a dado of carved stone with brickwork above recalls at once the palaces of Nineveh; but if there is borrowing here, the Assyrians were the debtors, not the Hittites. Not only are the great friezes of Ashur-bani-pal and Ashur-naṣir-pal later in date than those of Carchemish—later than the Late Hittite reliefs e.g. of the Processional Entry and *a fortiori* than those of Middle Hittite buildings similarly built and adorned, but the methods of construction and its history betray the original. The alabaster reliefs of Nimrud are on thin slabs applied to the wall as one might apply wooden panelling, or even wall-paper; there is nothing constructional about them. In the Hittite reliefs, though the orthostats may be thin in proportion to their size, and do serve as a decorative facing, they are essentially part of and indispensable to the solid stone base, which

is as thick as the wall and supports its brickwork. It is a natural development of the Hittite style of building. The facing-stones which at first were simply and solely the visible part of the wall-foundations, affording an obvious field to the artist, acquired in course of time a decorative value supplementary to their true constructional function.

The use of glazed bricks as a wall-covering recalls the great encrusted gates of Babylon. The date of the buildings so decorated found up to date at Carchemish cannot as yet be fixed with any accuracy; they belong to the Late Hittite period but probably not to its later stages; perhaps 1000 B.C. would be, in round figures, the safest date to which to assign them.

In this case they are older than the Babylonian gates, by some 400 years. The Mesopotamian work is far more advanced than the Hittite both in design and in execution, and it might be argued (though without material proof) that this superiority was due to the invention of glazed bricks being native to the country and developed there by generations of workmen skilled in its technique, whereas the Carchemish bricks, of unbaked clay with an ill-fixed film of lightly-fused vitreous glaze, are the product of inexperienced imitators. That may be true. On the other hand, there is no doubt that glaze was known in Egypt and in Syria at a very early date (the general view that it originated in Egypt is, in my opinion, not fully proven: further excavation in Syria is needed to settle the point), and spread rather slowly, not reaching Mesopotamia for some centuries. Egypt never developed glazed mud brick (the small tiles for wall-encrustation of the late XVIII and XIX dynasties come in quite a different category), and we have to judge between the two isolated examples, that of Carchemish, where the design is simple and the relief only due to the thickness of the glaze, and that of Babylon with its high moulded designs of animals, of rosettes, and of 'men pourtrayed upon the wall, the images of the Chaldeans pourtrayed with vermilion . . . exceeding in dyed attire upon their heads . . . after the manner of the Babylonians'. I cannot think that the simple is a copy of the elaborate, and it is more natural to suppose that in a land where glazing was native, or at least of far older growth, men developed it up to the point we see at Carchemish; and that the craftsmen of Babylon, taking over the art where the Hittites had left it, developed it on their own lines to a greater excellence.

A parallel which goes far more deeply to the root of things is afforded by the buildings of Minoan Crete. Here we have walls constructed on the same principle, the lower part of rubble faced with great orthostats, the upper part of brick.[1] The roof-timbers are supported on columns whose wooden shafts rest on stone cushion-bases—rest on them, not socketed at all into the stone—just as in Hittite buildings; and there is reason to believe that the shafts of Hittite columns had that same inverted form, with a greater diameter above than below, which is characteristic of Minoan architecture. The fashion of stone-dressing, with slightly convex polished surfaces, is similar in the Hittite and the Cretan buildings, as is the principle that the wall-facing is dry-stone built, whereas the core of the wall is of mixed mud and rubble: it would appear that the Cretan orthostats are provided with square 'dowel'-holes on the upper surface, just as are those of Carchemish and Boghazkeui, and these may have served the same purpose in the process of construction. And if one would compare the glazed bricks of Carchemish with those of Babylon, there is equal reason to compare them with the wall-tiles of Knossos and

[1] In Crete, a stony land where soil is scarce and precious, there is a more lavish use of stone where the Carchemish builder has naturally chosen mud brick; but, as has been remarked, at Boghazkeui too stone is more in evidence and for the same reason.

hardly less to cite in evidence the κύανος of the Homeric palace. The striking parallel between the Inner Town walls and those of Melian Phylakopi has been described on p. 46.

Evidence of connexion between Crete and the Hittite lands is not confined to architecture; but it need not be any proof of borrowing by one from the other. If these civilizations have certain fundamental points in common, it is because there was a fundamental though perhaps a very distant connexion between them. It is, I believe, a mistake to suppose that the Hittite race was originally at home only in the Halys basin and extended its power westwards only by occasional and precarious conquest. The Hatti proper were but one branch of a stock which peopled a large part of Asia Minor and North Syria; at one time they took the lead of what was

Fig. 60.

Fig. 61 (from Zamaghara).

Basalt column-bases.

perhaps a confederacy rather than an empire, but the other branches, though they might call themselves by other names and, losing touch with one another through distance, might develop along diverging lines, yet when they retained their independence had similar traditions, preserved sometimes a similar language, and in the more essential arts betrayed their common ancestry. If then the resemblance between the building methods of Carchemish and those of Knossos is no less striking than that between some of the carvings from the upper Euphrates basin and from Crete,[1] it should not strike us with surprise; we have here no chance borrowings from a wholly alien culture, but as it were the two ends of a chain whose other links are to be sought across the whole length and breadth of Asia Minor.

It is, of course, true that the Hittites owed not a little both to Egypt and to Mesopotamia, at least in the later stages of their history; but their indebtedness is rather in the field of applied art, of the minor crafts, of religion and religious symbolism, of those things and those influences which pass easily from land to land by trade exchange and by social contact. Owing to its position on the frontiers between Asia Minor and Mesopotamia, standing as a bulwark of the

[1] Cf. a marble figurine of Amorgos style from Serrin, *Liverpool Annals*, VI. 3, Pl. 24; and the L. H. steatite carvings on Pl. 28.

northern peninsula against the recurrent advances of Egypt, in touch, when and as far as circumstances allowed, with the peoples and the civilizations of the west and of the western islands, Carchemish was, indeed, peculiarly exposed to external influences and served to no small degree as both an exchange and a melting-pot for these. But the basic principles of the Hittite civilization, and not least of the architecture, which is all that here concerns us, are derived not from any foreign source but from the proper genius of the people themselves: we can already, even with our limited knowledge, trace their development back from that sophisticated stage when alien borrowings tend to confuse our judgement to the simple originals which on grounds both of date and of logic we must needs regard as native to the race.

PLATE 3.

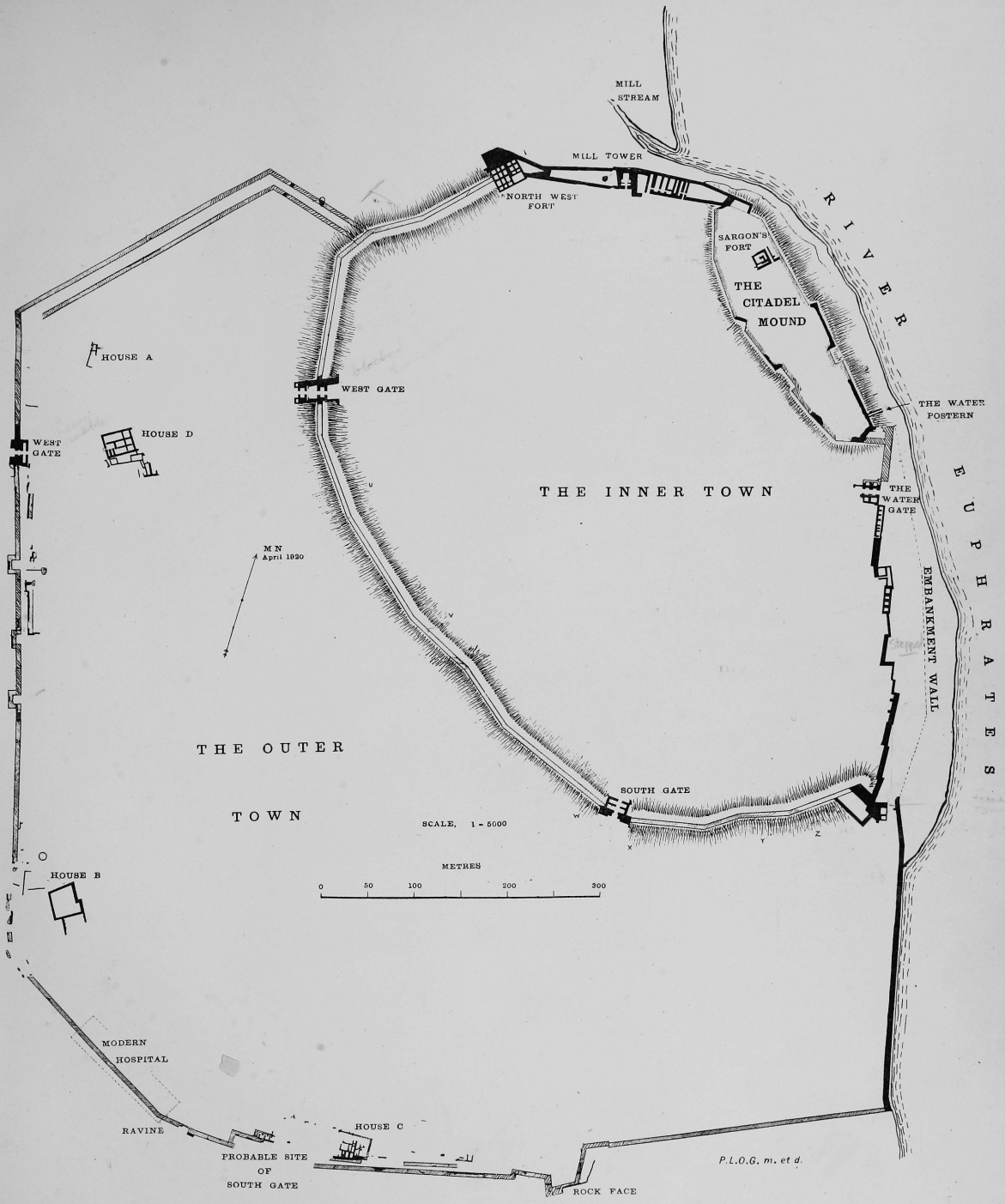
THE TOWN DEFENCES

In the fortifications of the Outer Town, actual remains are shown in solid black, all restorations in plain hatching.

In the fortifications of the Inner Town, the buildings of which detailed plans are published separately in this volume are shown as restored and in solid black ; the wall along the earth rampart is hatched.

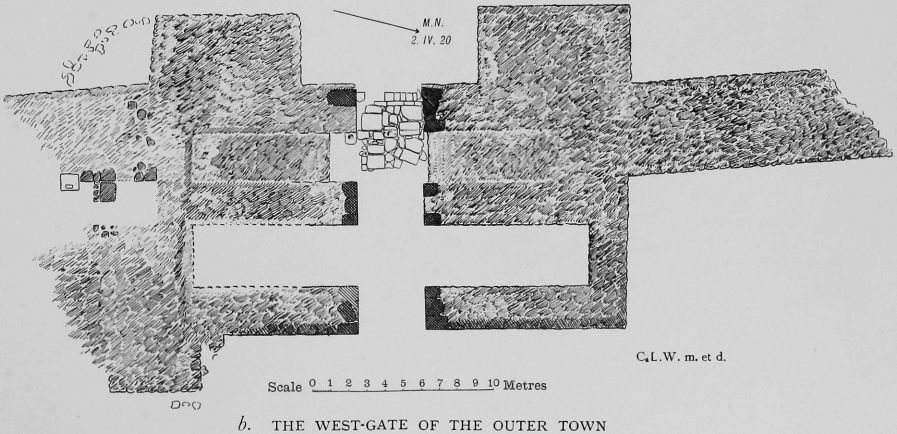
The fortifications of the citadel mound have not yet been thoroughly excavated ; the parts already cleared are shown in solid black ; a provisional restoration is given in hatching, but this is subject to correction in later volumes.

For the sake of clearness, the non-military buildings of the Inner Town are not shown on the plan ; the position of buildings in the Outer Town is indicated, since they are treated of in this volume, but for their details the separate plans of each should be consulted.



THE TOWN DEFENCES

a. THE WEST-GATE OF THE OUTER TOWN
The threshold and door-stop

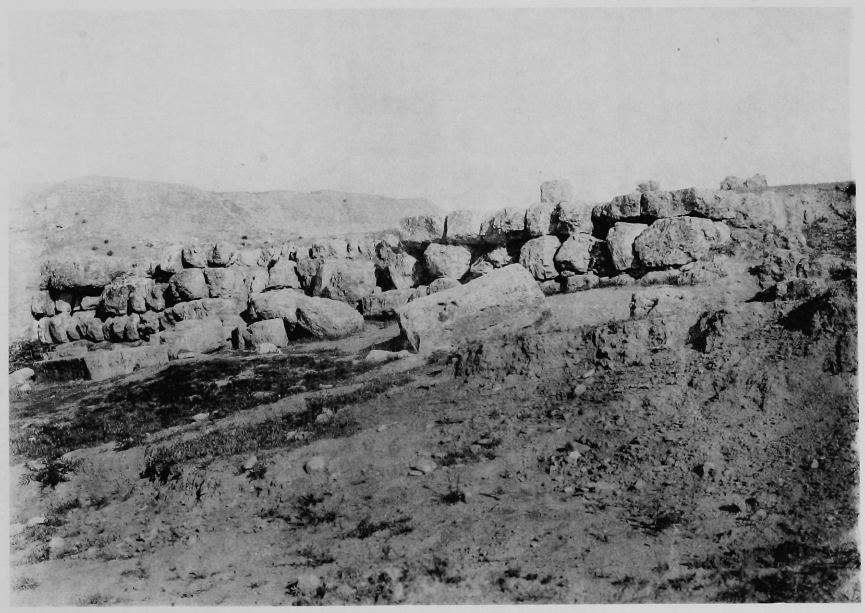


b. THE WEST-GATE OF THE OUTER TOWN

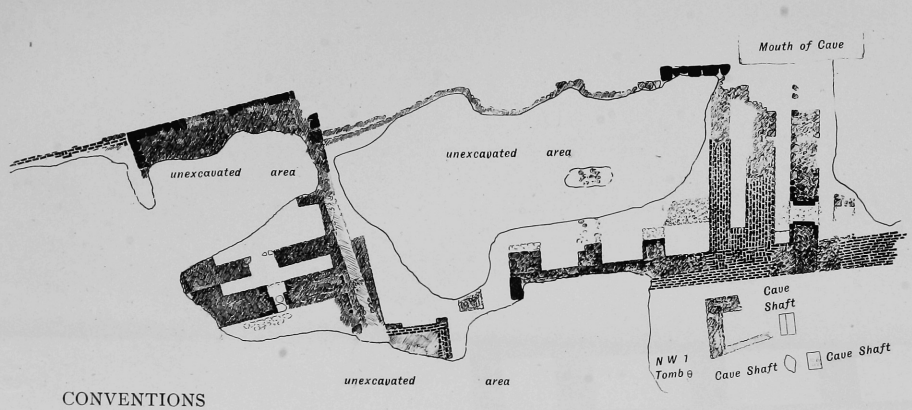
CONVENTIONS

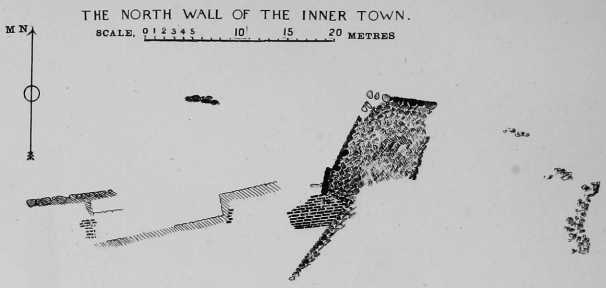
Stones drawn with completed outlines are to scale; drawn with broken outlines are sketched.
Pavement stones are in outline only.
Stones at foundation level have plain diagonal hatching. Wall-filling at foundation level, broken diagonal hatching.
Rubble masonry standing above ground level, stretcher courses, &c., have cross-hatching.
Ashlar facing-stones in position are in solid black.

a. THE QUAY WALL OF THE OUTER TOWN



b. THE NORTH WALL OF THE INNER TOWN: THE MILL TOWER





a. PLAN OF THE RUINS AS FOUND

CONVENTIONS

Stonework.

Stones drawn with completed outlines are to scale; drawn with broken outlines are sketched.

Pavement stones are in outline only.

Stones at foundation level have plain diagonal hatching; wall-filling at foundation level, broken diagonal hatching.

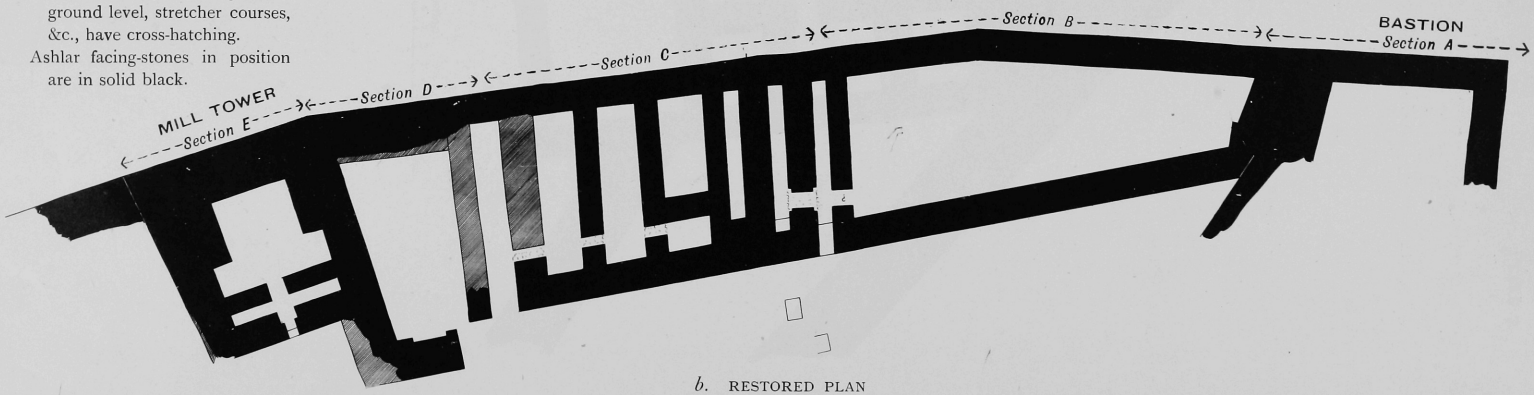
Rubble masonry standing above ground level, stretcher courses, &c., have cross-hatching.

Ashlar facing-stones in position are in solid black.

Brickwork.

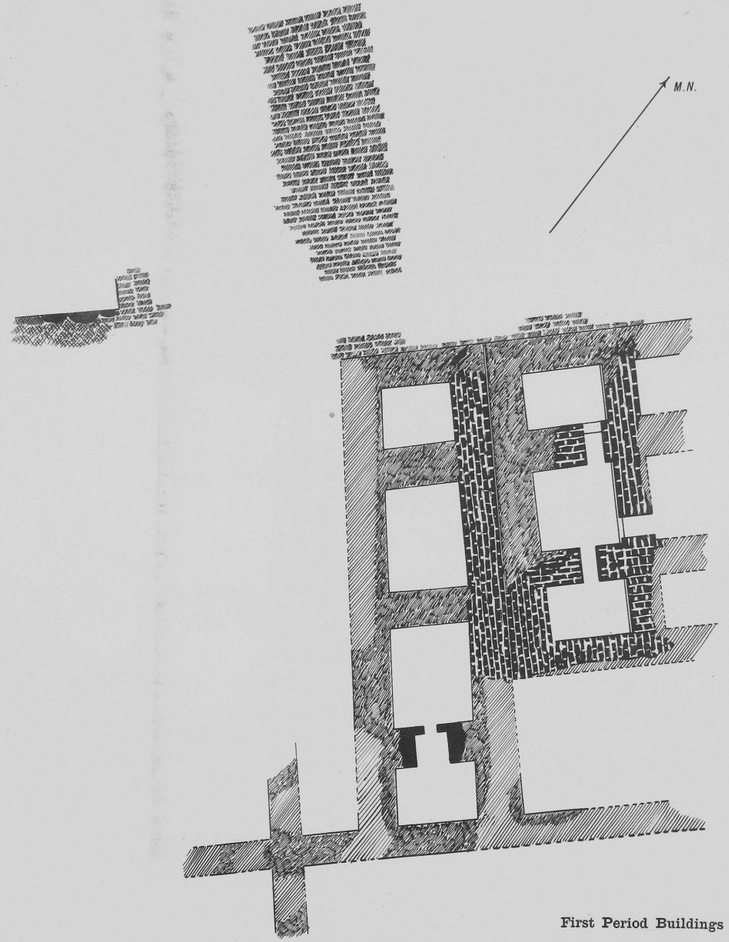
Brickwork is represented conventionally, not to scale nor in the order of laying.

Bricks standing to the height of 1·00 m. in solid black, below the height of 1·00 m. in diagonal hatching.



b. RESTORED PLAN

PLATE 6.



First Period Buildings

Scale 0 1 2 3 4 5 6 7 8 9 10 Metres

CONVENTIONS

Stonework.

Stones drawn with completed outlines are to scale; drawn with broken outlines are sketched.

Pavement stones are in outline only.

Stones at foundation level have plain diagonal hatching; wall-filling at foundation level, broken diagonal hatching.

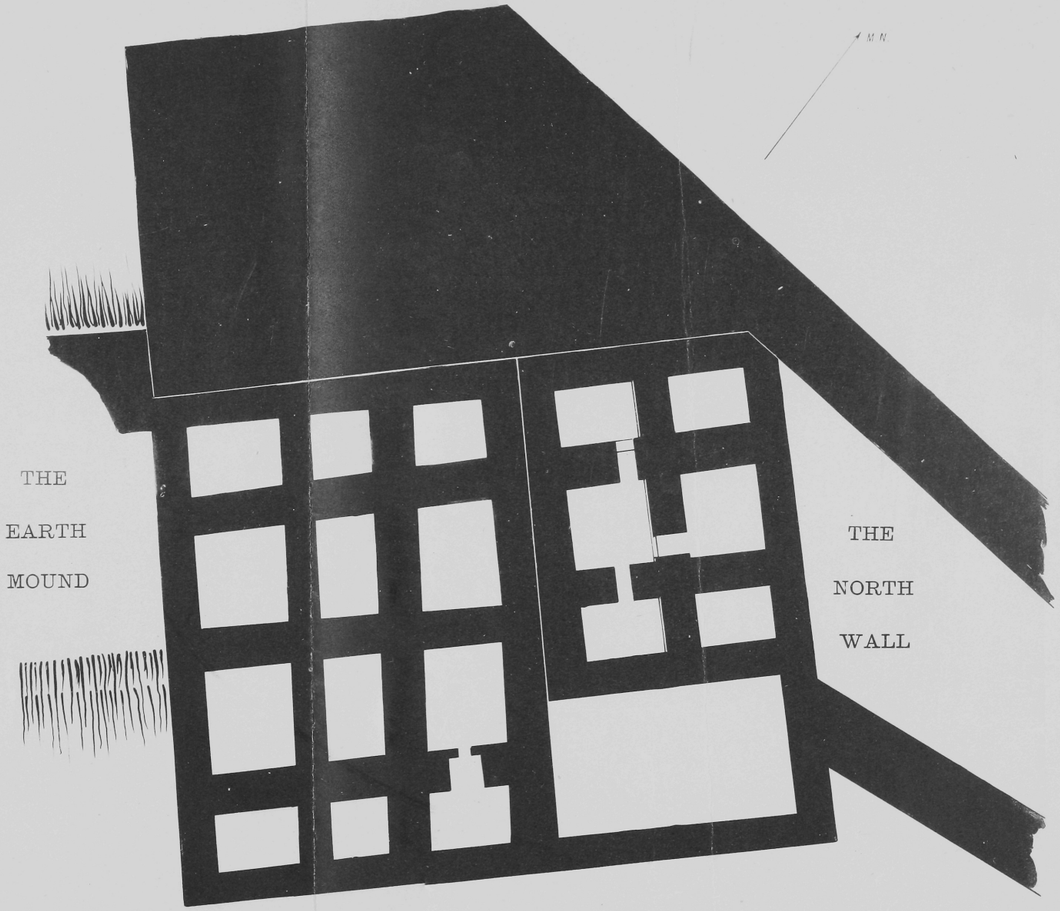
Rubble masonry standing above ground level, stretcher courses, &c., have cross-hatching.

Ashlar facing-stones in position are in solid black.

Brickwork.

Brickwork is represented conventionally, not to scale nor in the order of laying.

Bricks standing to the height of 1·00 m. in solid black, below the height of 1·00 m. in diagonal hatching.

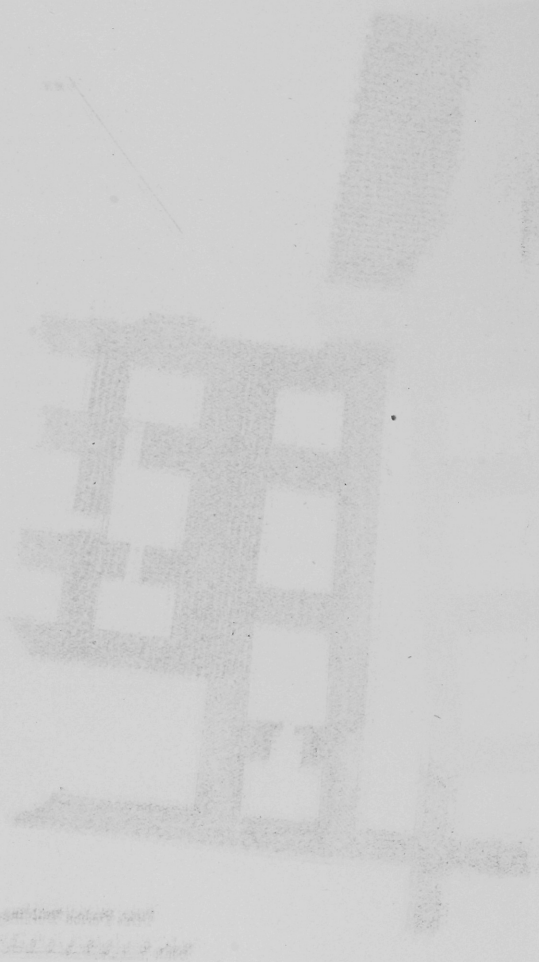


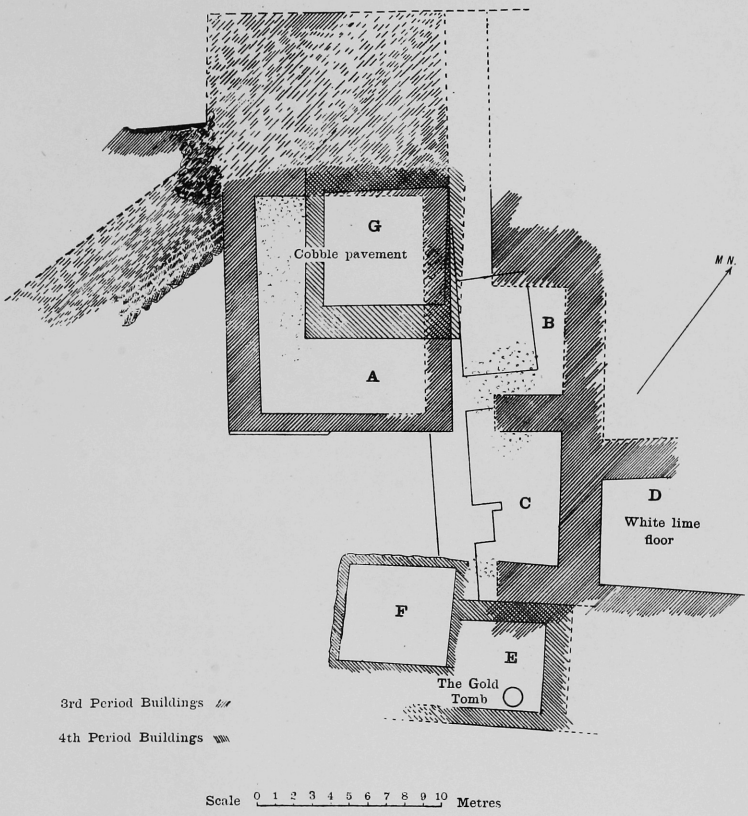
Reconstruction:

Scale 0 1 2 3 4 5 6 7 8 9 10 Metres

THE NORTH-WEST FORT

Plan and reconstruction of the earliest buildings





THE NORTH-WEST FORT

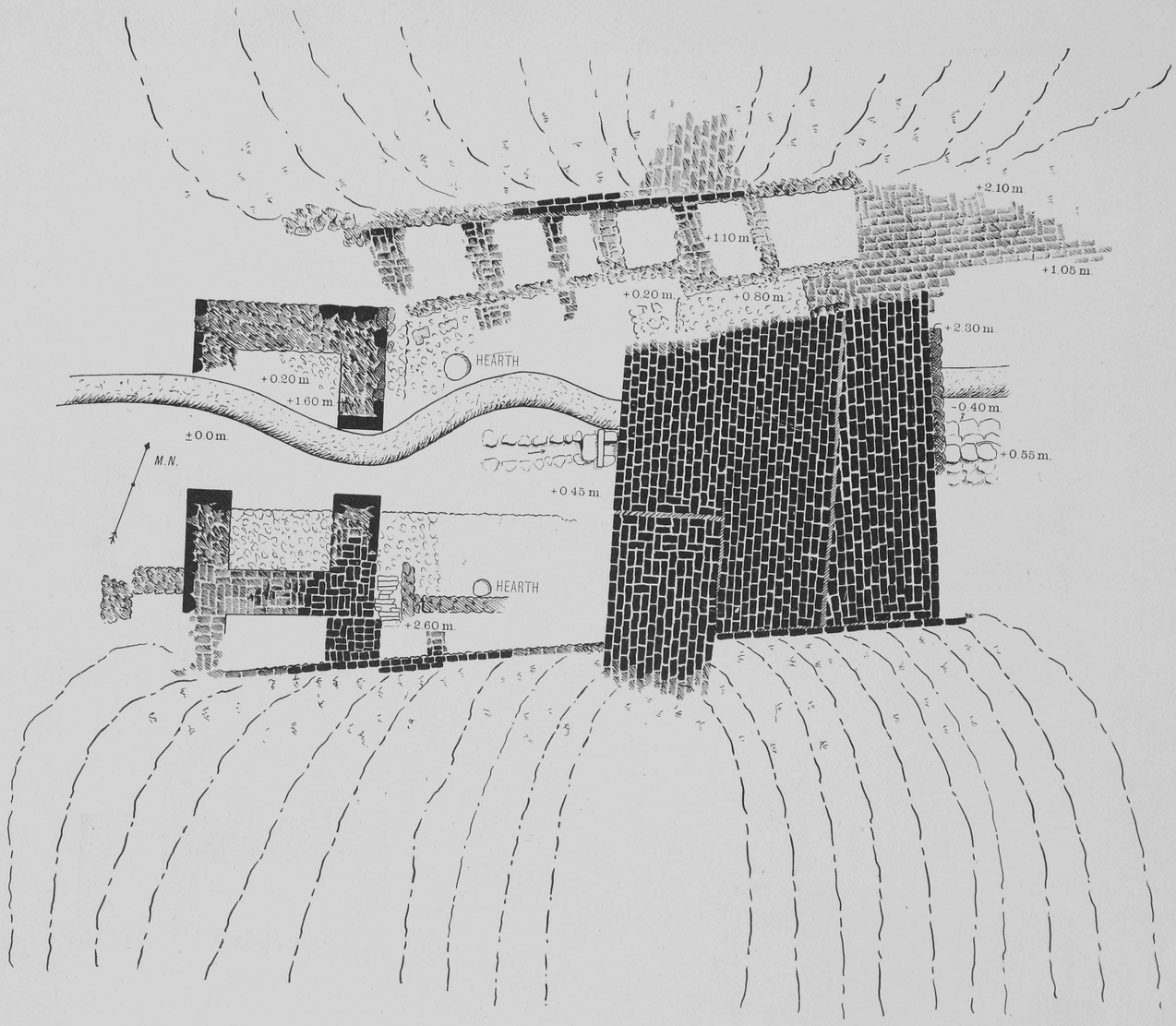
Plan of buildings of the third and fourth periods

a. THE NORTH-WEST FORT, PARTIALLY EXCAVATED

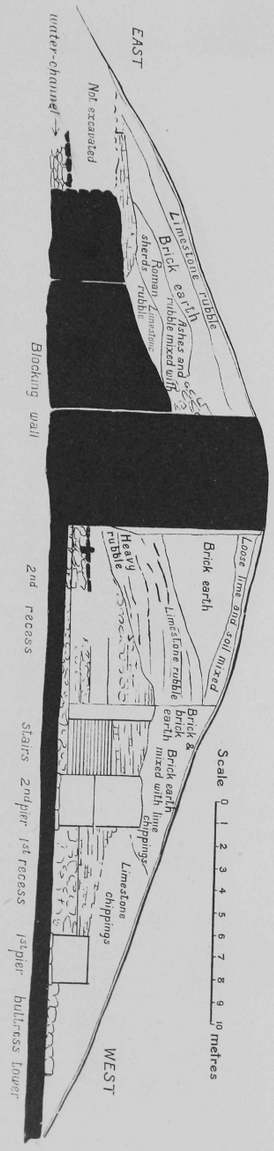
View looking south, showing (A—A) the tops of walls of Period I, the corridor wall of Periods II and III (B and C), and rooms (F and G) of Period IV; on the surface, ruins of the Roman baths

b. THE NORTH-WEST FORT

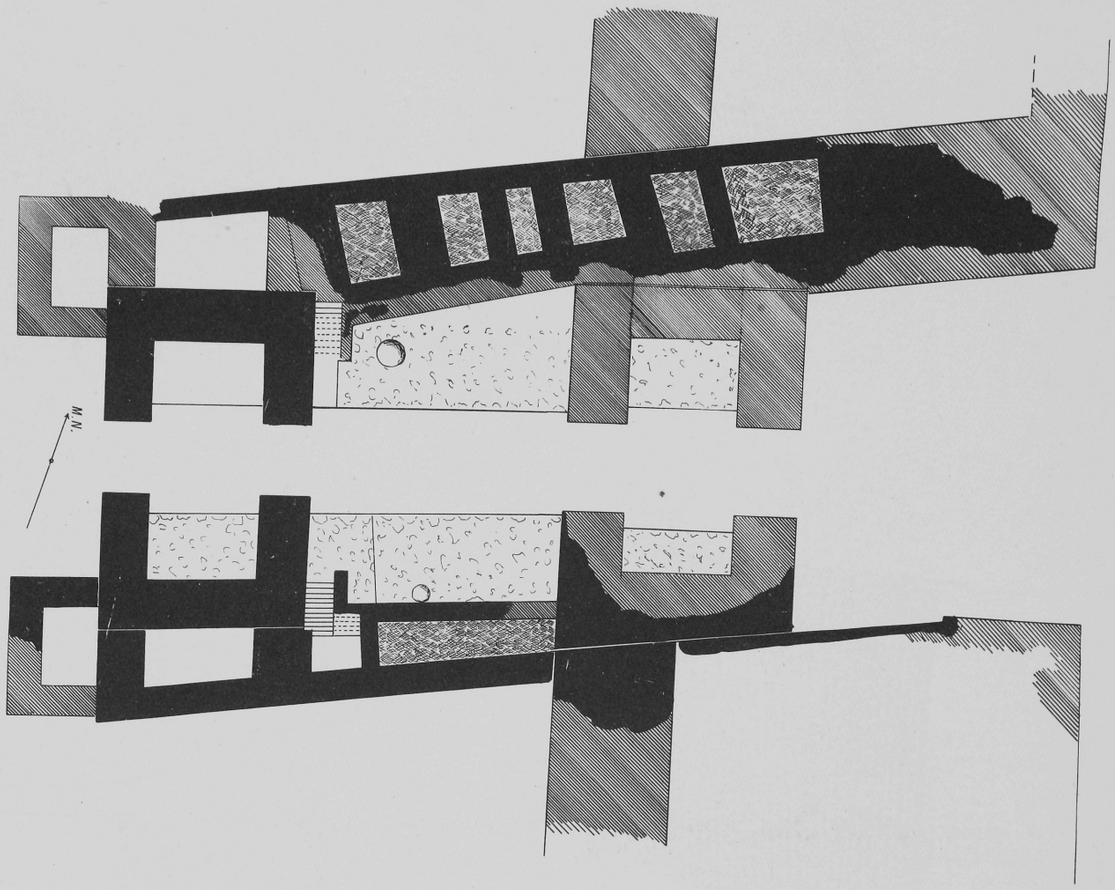
Whitewashed walls and doorways in chambers of the first period



a. PLAN OF THE RUINS AS FOUND



b. CROSS SECTION THROUGH THE GATEWAY



c. RESTORED PLAN

CONVENTIONS

Stonework.

Stones drawn with completed outlines are to scale; drawn with broken outlines are sketched.

Pavement stones are in outline only.

Stones at foundation level have plain diagonal hatching; wall-filling at foundation level, broken diagonal hatching

Rubble masonry standing above ground level, stretcher courses, &c., have cross-hatching.

Ashlar facing-stones in position are in solid black.

Brickwork

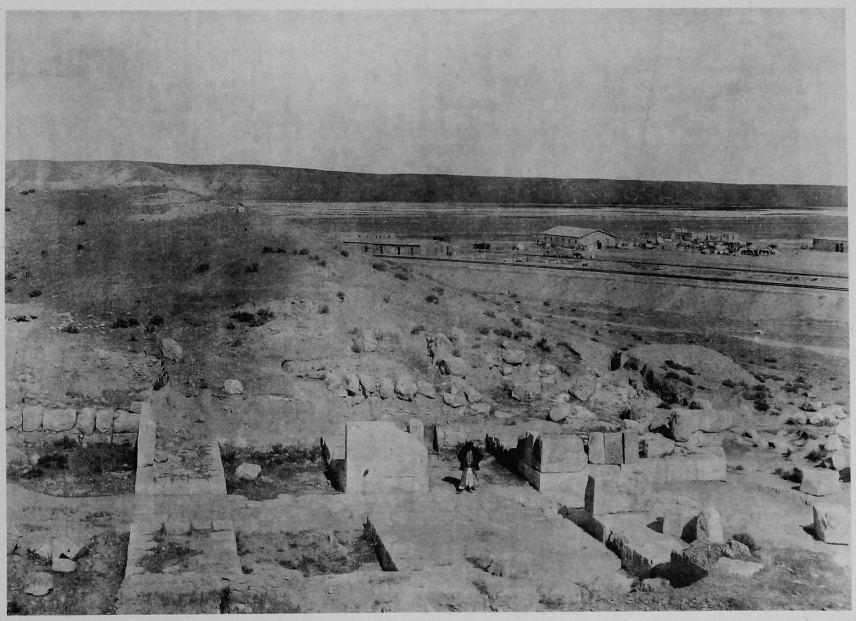
Brickwork is represented conventionally, not to scale nor in the order of laying.

Bricks standing to the height of 1·00 m. in solid black, below the height of 1·00 m. in diagonal hatching.

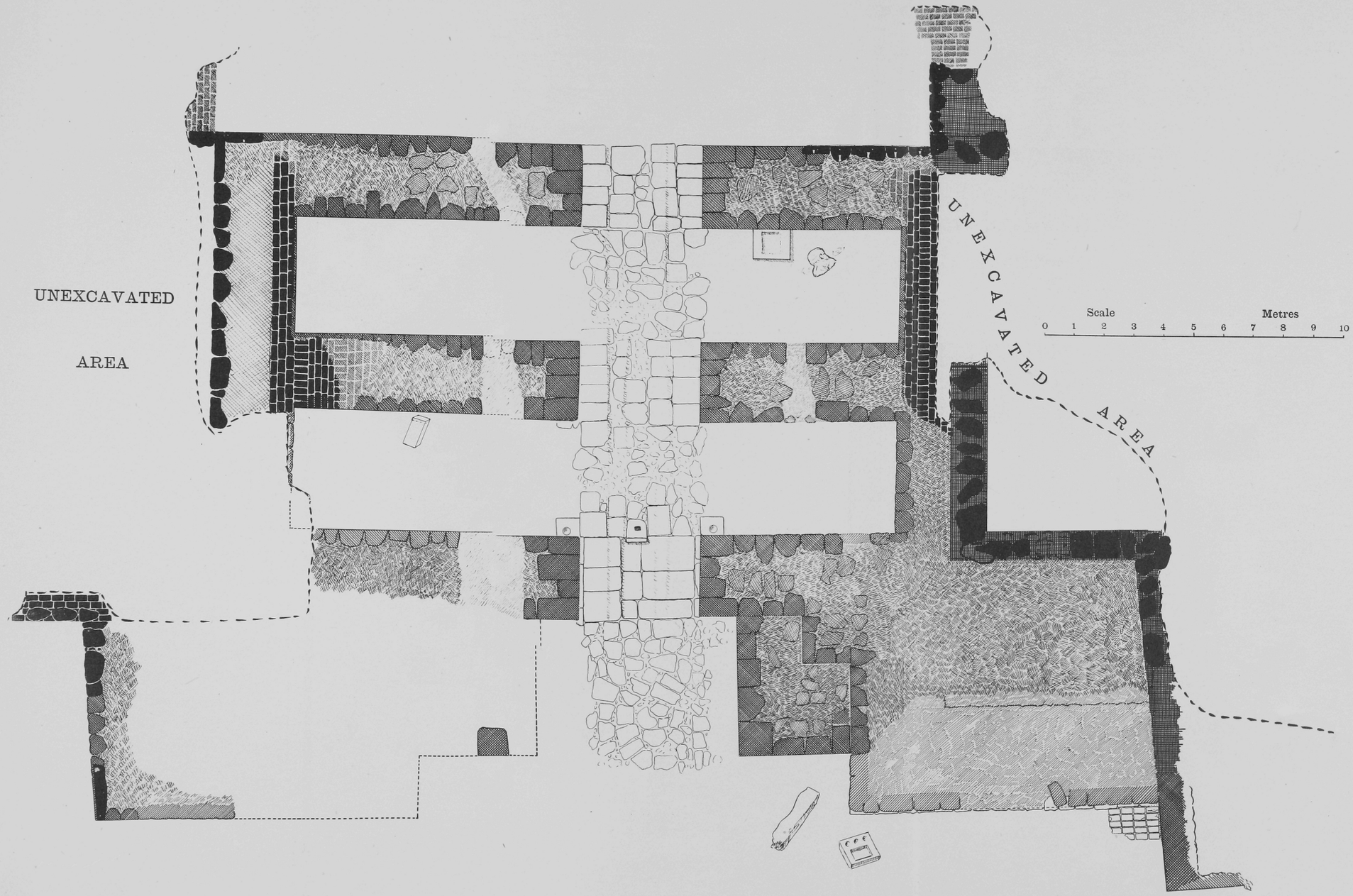
THE WEST GATE OF THE INNER TOWN

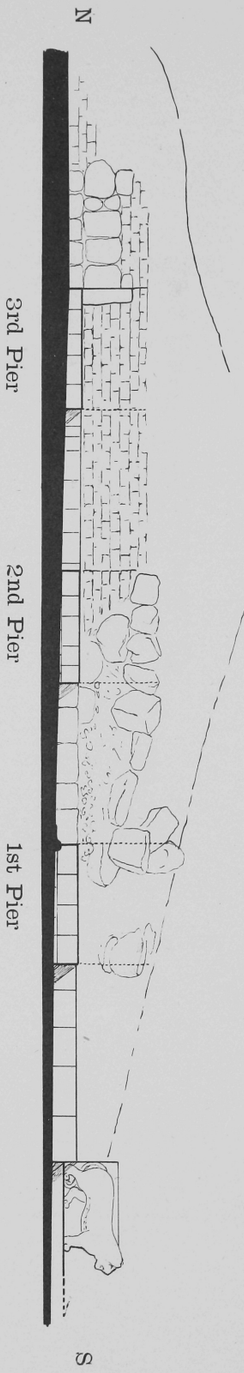
a. THE WEST GATE OF THE INNER TOWN

A—A. 1st and 2nd buttresses on S. side. B. 2nd buttress on N. side. C—C. Roman cement pipe. D. Late Hittite water-channel. F. Blocking wall. G. Hearth. H. Retaining wall of mound.



b. THE SOUTH GATE OF THE INNER TOWN





SECTION THROUGH CENTRE OF ROADWAY, SHOWING EAST GATE TOWER RUINS

THE SOUTH GATE OF THE INNER TOWN

CONVENTIONS

Stonework.

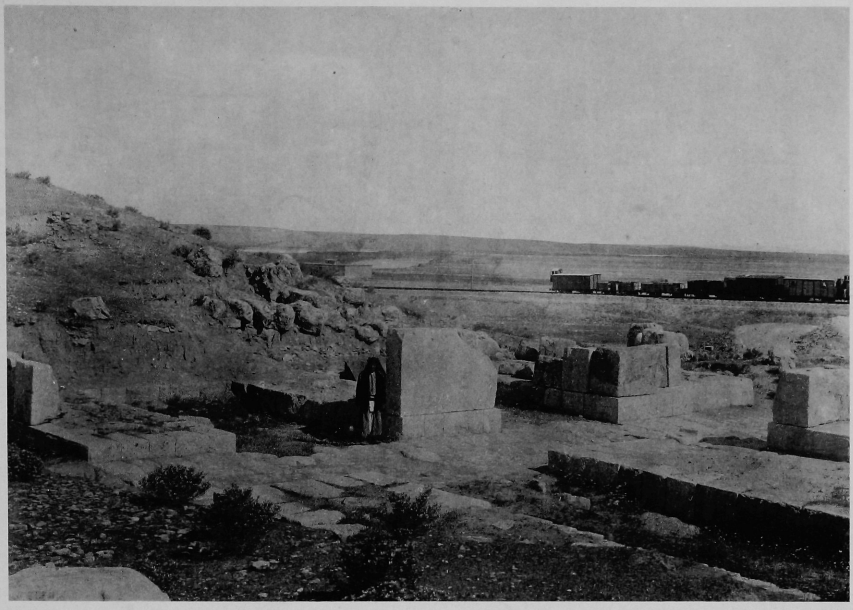
Stones drawn in completed outline are to measure; drawn in broken outline are sketched.
Stones standing or rising above the 1·50 m. level are shown in solid black.
Stones rising to or above the 0·50 m. level are diagonally cross-hatched; if ashlar facing-stones, with ruled hatching; if rubble, with hand-drawn hatching.
Foundation stones, below the 0·50 m. level, have plain diagonal hatching; if facing-stones, ruled hatching; if internal rubble, hand-drawn hatching.
Stones on or below pavement level, in outline.

Wall-filling and interior foundations.

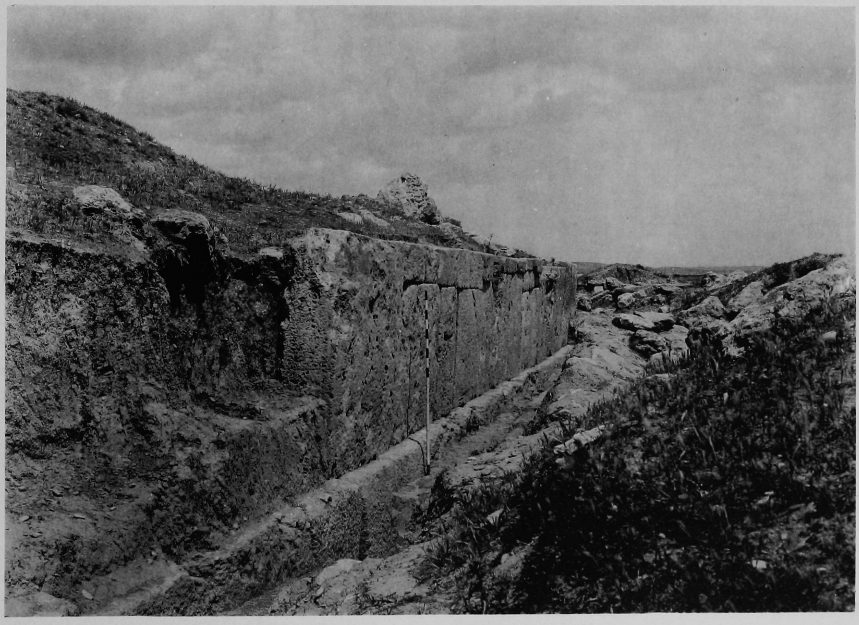
Above the 1·50 m. level, vertical and horizontal cross-hatching.
Above the 0·50 m. level, broken diagonal cross-hatching.
Below the 0·50 m. level, broken plain diagonal hatching.

Brickwork.

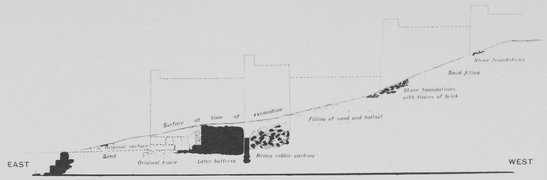
Brickwork is represented conventionally, not to scale nor in the order of laying.
Brickwork standing above the 1·50 m. level, solid black; below the 1·50 m. level, diagonal hatching.
As pavement, in outline.



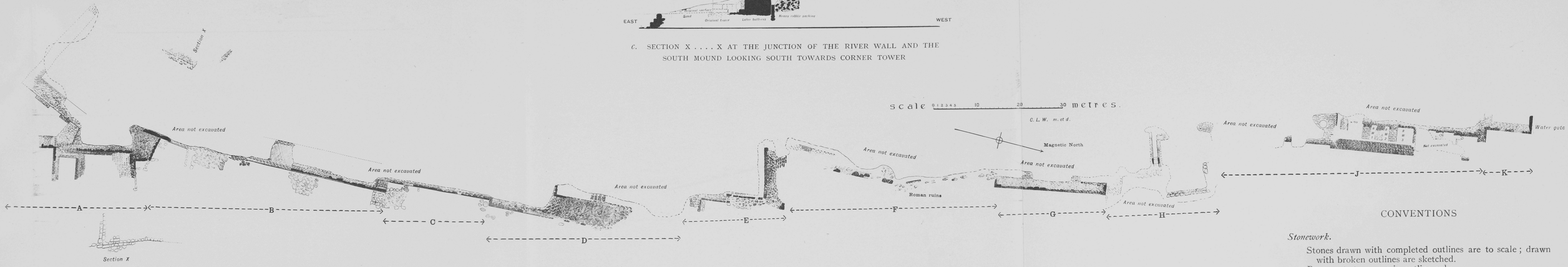
a. THE SOUTH GATE OF THE INNER TOWN
View looking south-west



b. THE RIVER WALL OF THE INNER TOWN
View looking north along section B



c. SECTION X . . . . X AT THE JUNCTION OF THE RIVER WALL AND THE SOUTH MOUND LOOKING SOUTH TOWARDS CORNER TOWER



a. PLAN OF THE REMAINS AS FOUND

b. RESTORED PLAN

CONVENTIONS

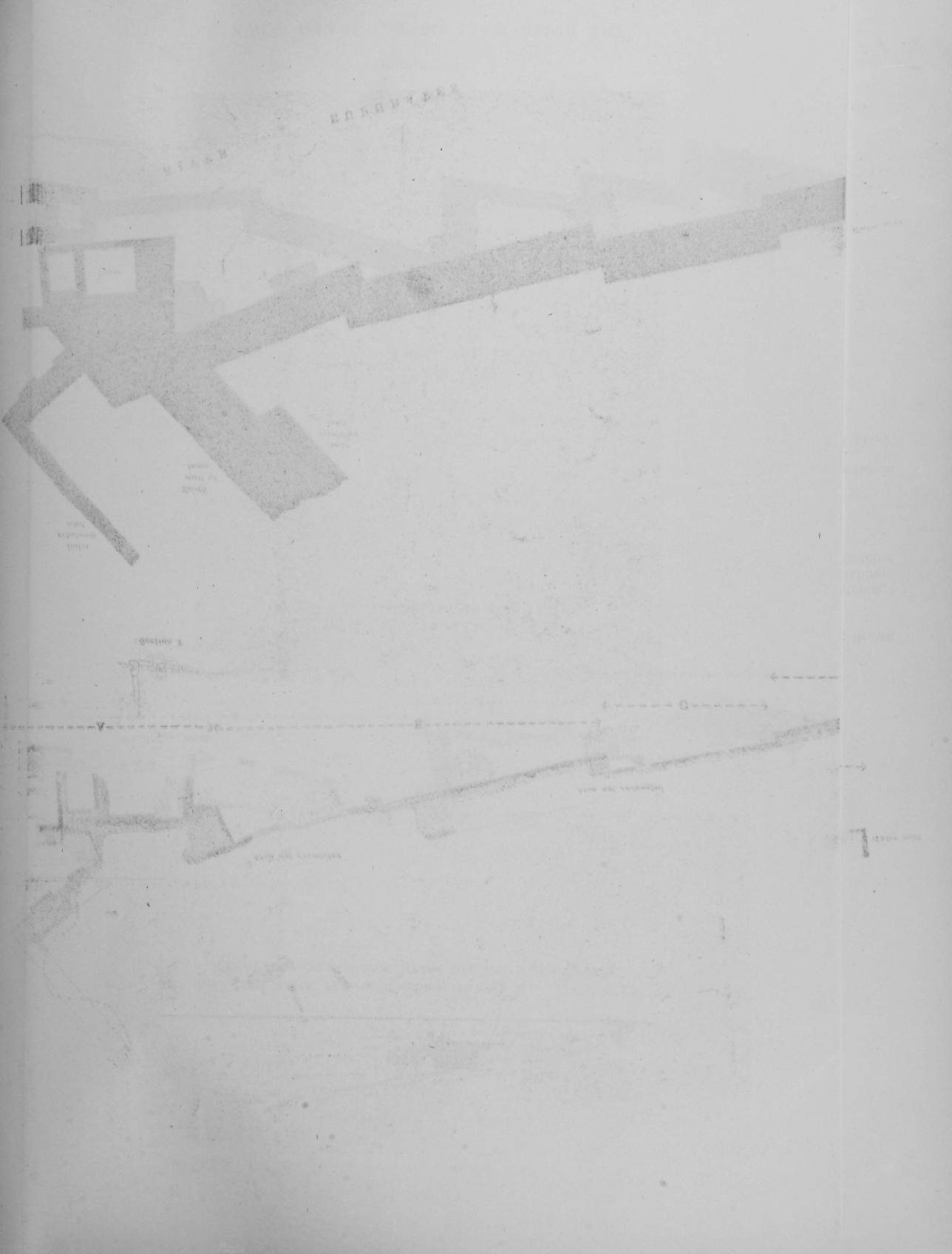
Stonework.

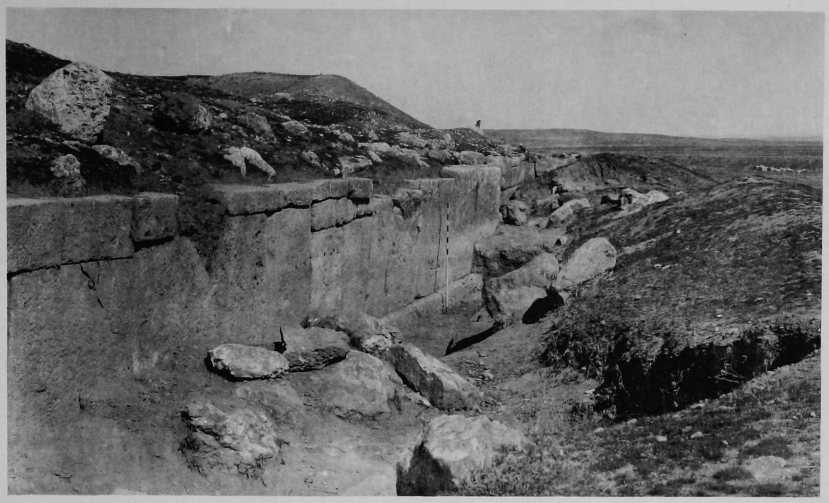
Stones drawn with completed outlines are to scale; drawn with broken outlines are sketched.
Pavement stones are in outline only.
Stones at foundation level have plain diagonal hatching; wall-filling at foundation level, broken diagonal hatching.
Rubble masonry standing above ground level, stretcher courses, &c., have cross-hatching.
Ashlar facing-stones in position are in solid black.

Brickwork.

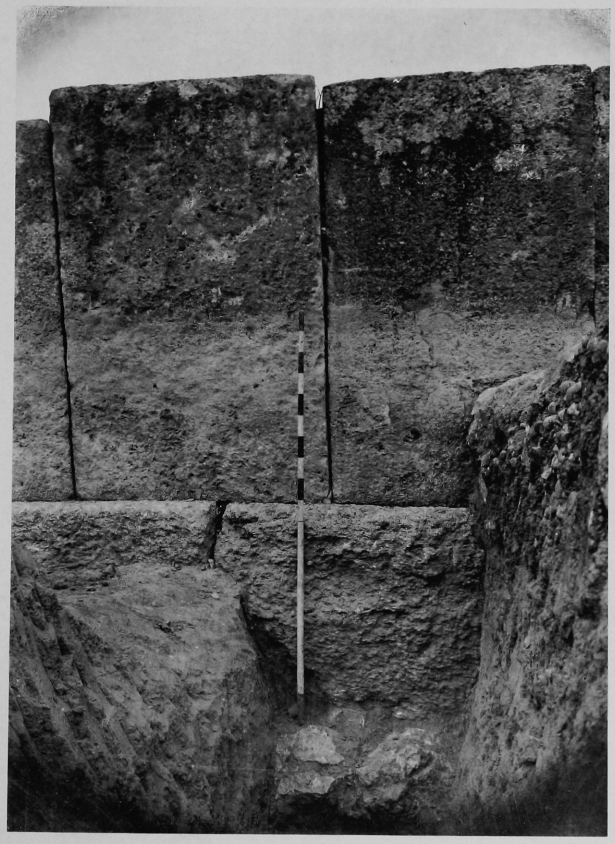
Brickwork is represented conventionally, not to scale nor in the order of laying.
Bricks standing to the height of 1·00 m. in solid black, below the height of 1·00 m. in diagonal hatching.

THE RIVER WALL OF THE INNER TOWN

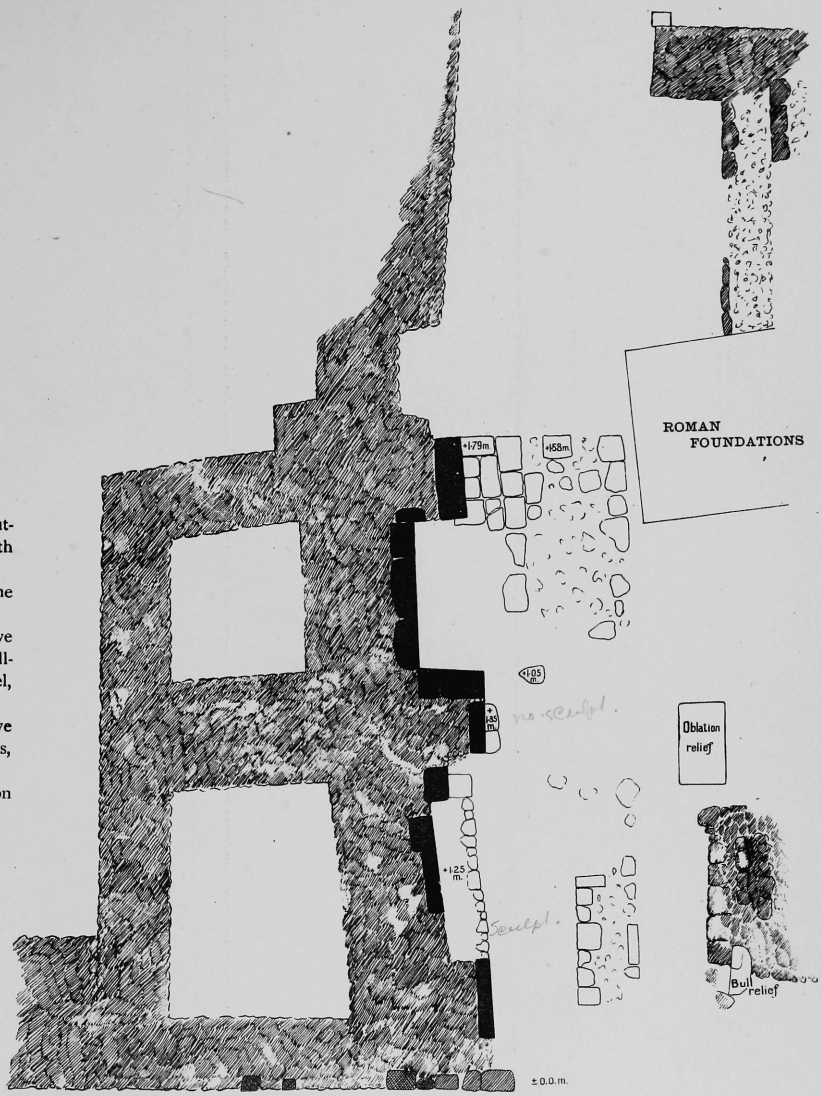




a. THE RIVER WALL OF THE INNER TOWN
View looking north along sections B and C



b. THE RIVER WALL OF THE INNER TOWN
Stretchers and orthostats in section B



CONVENTIONS

Stones drawn with completed outlines are to scale; drawn with broken outlines are sketched.

Pavement stones are in outline only

Stones at foundation level have plain diagonal hatching; wall-filling at foundation level, broken diagonal hatching

Rubble masonry standing above ground level, stretcher courses, &c, have cross hatching.

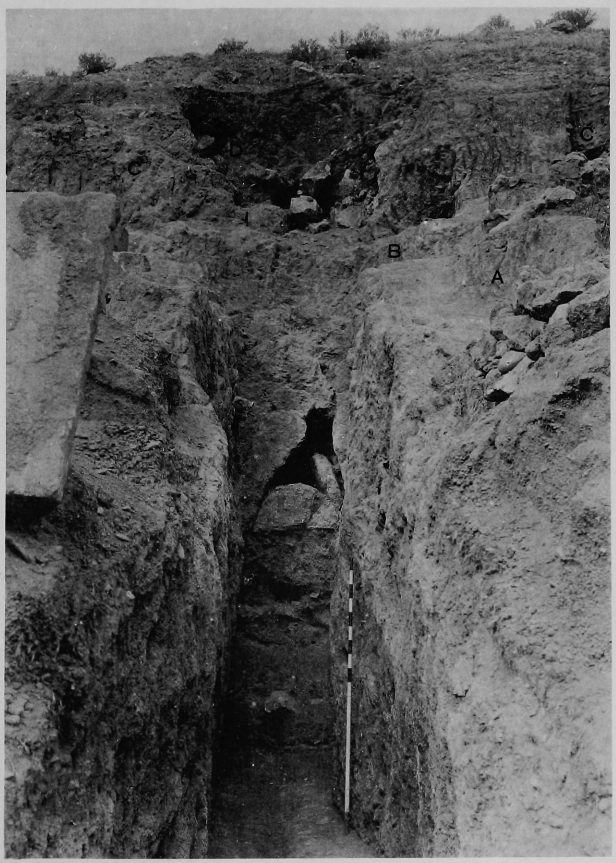
Ashlar facing-stones in position are in solid black.

Scale 0 1 2 3 4 5 6 7 8 9 10 Metres

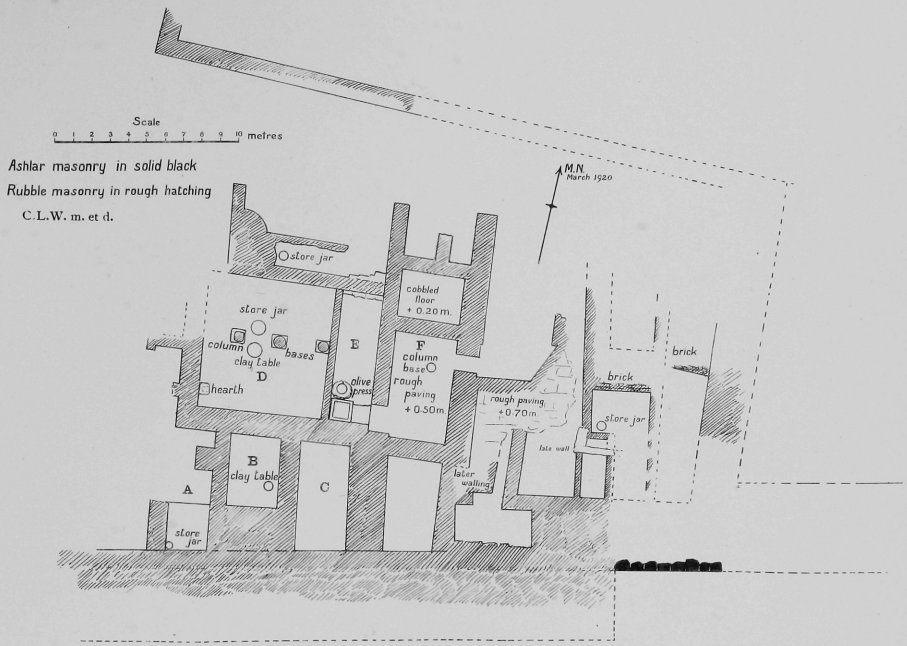
C.L.W. m. et d.

PLAN OF THE WATER-GATE

a. THE WATER-GATE, SOUTH SIDE
X. Relief No. 6 as found

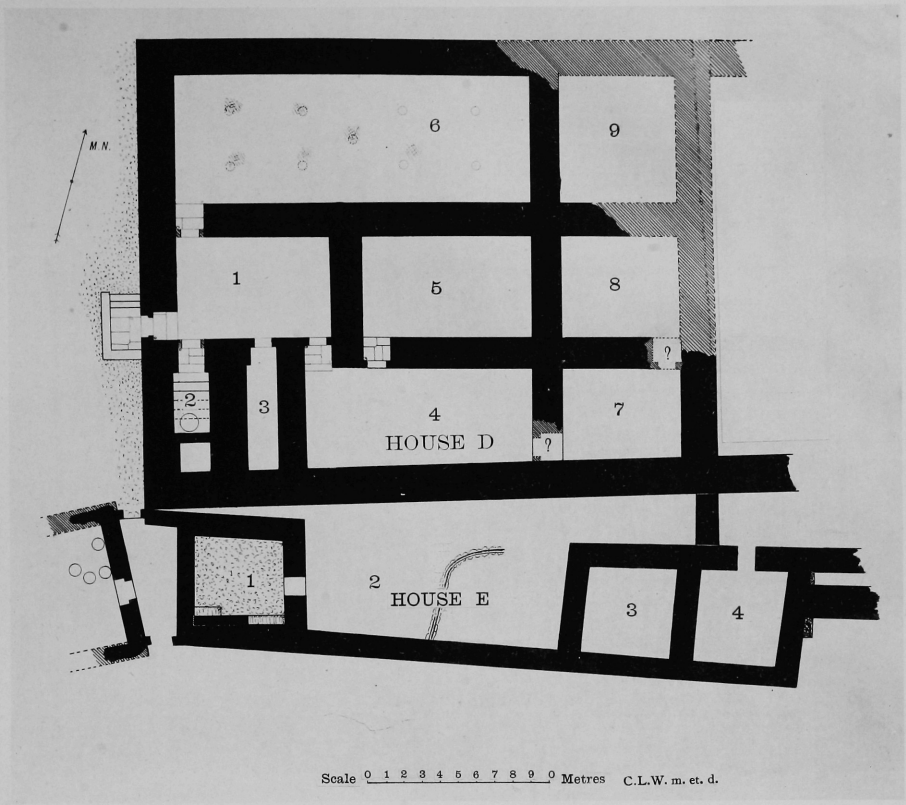


b. THE WATER POSTERN IN THE CITADEL MOUND
A, B, C—C. Successive wall levels. D. Champagne tomb.



HOUSE C: PLAN

HOUSE C: THE OLIVE PRESS



HOUSES D AND E: PLAN

HOUSE D

The front door, showing cobbled court and porch with basalt steps

PLATE 20.

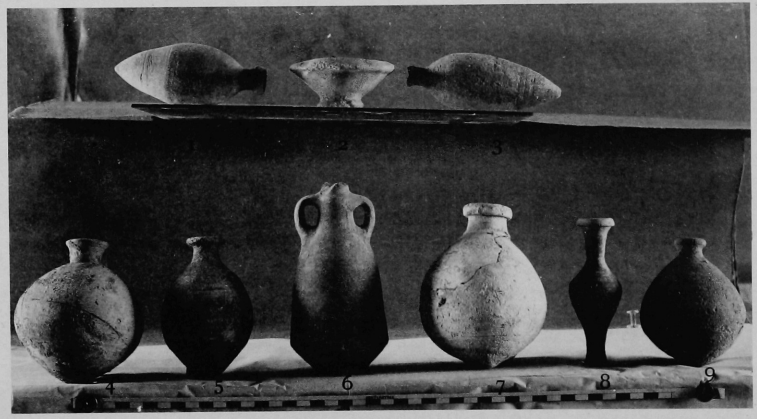
TERRA-COTTAS AND POTTERY VESSELS OF THE SEVENTH CENTURY B.C.

a. Terra-cottas.
Nos. 9 and 14. From NW. Fort.
Nos. 2 and 5. From House C.
No. 11. From House F.
No. 13. From site of Yunus cemetery: painted in black on a white slip ground.
The remainder are surface finds.

b. No. 1. From House B.
No. 6. From House C.
No. 7. From House F.
The remainder are surface finds, Nos. 2 and 3 from the Lower Palace Area. No. 3, like No. 7, is in soft limestone.

c. No. 1. Drab clay. House A.
No. 2. Pinkish clay with very fine creamy slip surface whereon bands of sepia paint; L.H. Well in NW. Fort
No. 3. Drab clay. House A.
No. 4. Drab clay. Found against the outer face of the Wall of the Outer Town, northern section.

d. No. 1. Pinkish drab clay. L.H. Well in NW. Fort.
No. 2. Buff clay: from House G.
No. 3. Red clay: from House B.
No. 4. Buff clay: from House F.
No. 5. Yellowish buff surface whereon horizontal bands of sepia paint: burnt and discoloured. From House B.
No. 6. Creamy surface whereon horizontal bands of sepia paint: burnt and discoloured. From House C.
No. 7. Red clay body, covered with a light green glaze: the glaze is much decayed. From House C.
No. 8. Fine red clay, coloured in a smother-kiln to a greyish black inside and out. From House C.
No. 9. Red clay: from House G.



TERRA-COTTAS AND POTTERY VESSELS OF THE SEVENTH CENTURY, B.C.

PLATE 21.

BRONZE SITULAE AND STATUETTES

a. 1, *a.* 1*. From House B.

a. 2, *a.* 2*. From House B.

a. 3, *a.* 3*. From House E.

b. 1. Harpokrates: from House D.

b. 2. Isis and Horus: from House D.

c. 1. Hittite imitation of an Egyptian Osiris figure: from House D.

c. 2. Egyptian Osiris figure: from House D.

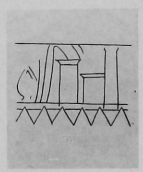
All date from the end of the seventh century B.C.

a

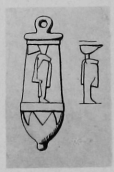
1 2 3

b

1 2



a 1*



a 2*

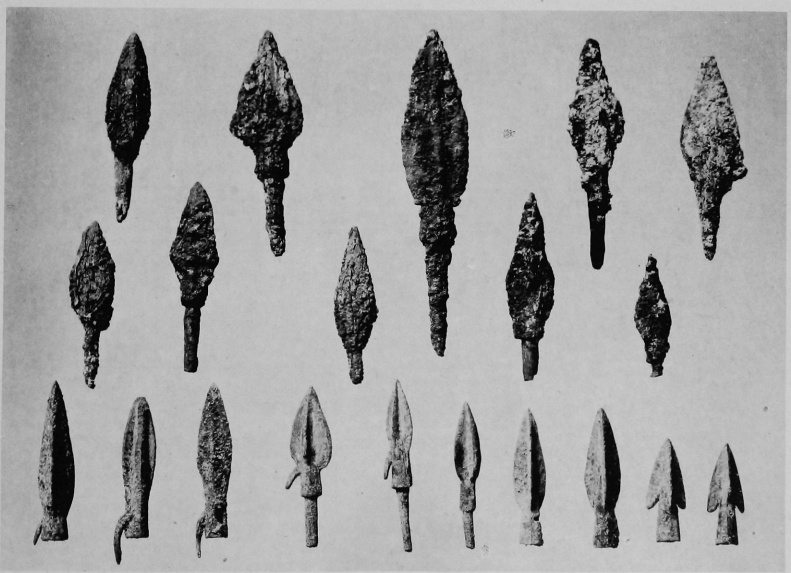
a 3*

c

1 2

BRONZE SITULAE AND STATUETTES

a. STEATITE MASK FROM HOUSE D



b. IRON AND BRONZE ARROW-HEADS FROM HOUSE D

PLATE 23.

a. 1, 1*. Iron pick-head, l. 0·175 m.; from House D.

2, 2*. Bronze scale-pans, diam. 8·08 m.; from House F.

3–6. Iron arrow-heads (scale 1 : 2); from House D.

7. Iron lance-head, l. 0·095 m.; from House D.

8. Ditto, l. 0·10 m. (?); from House D.

9. Iron tongues, l. 1·30 m.; from House D.

10. Iron knife-blade, l. 0·16 m.; from House G.

11. Ditto.

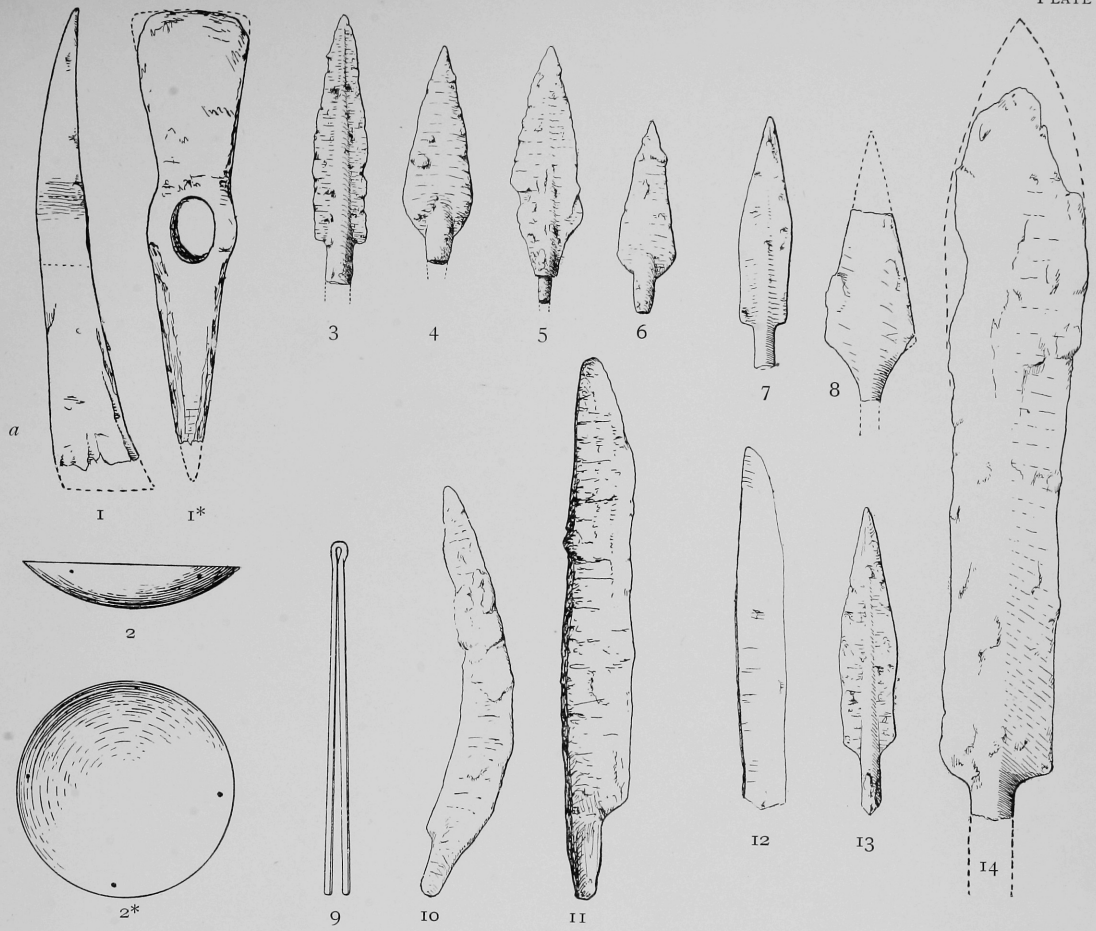
12. Ditto, l. 0·14 m.; from House D.

13. Iron lance-head, l. 0·115 m.; from House D.

14. Iron sword, l. of blade 0·28 m.; from House D.

b. Two sections of a tripartite bronze mould for casting barbed bronze arrow-heads; from House E.

a



b

METAL OBJECTS: LATE HITTITE

PLATE 24.

IONIAN SHIELD FROM HOUSE D

The design is of *repoussé* work on very thin bronze. The Gorgon's head in the centre must have been in comparatively high relief, and the whole shield was slightly convex; the flattening of the metal by the weight of the earth resting on it has therefore distorted it to such an extent that it no longer forms a true circle. In the plate, photographs of the main fragments are superimposed on a drawing restored from tracings, the two being made to register as nearly as possible.

The animals of the second and third lines (reckoning from the centre) are running into two half-hoops, seen on the left of the principal fragment, which probably represent the entrances of a hunting enclosure.

BRONZE SHIELD OF IONIAN TYPE WITH DECORATION IN RELIEF. HOUSE D

PLATE 25.

a. Bronze greave from West gate of Inner Town.

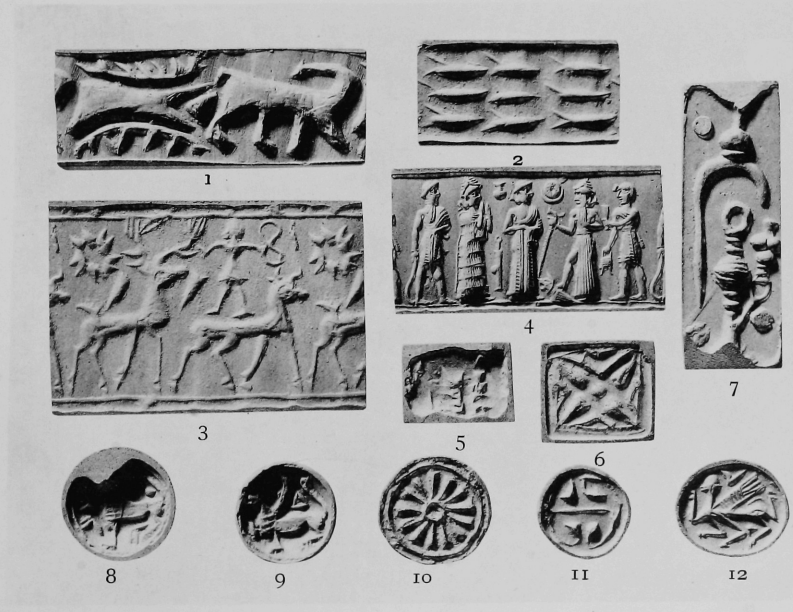
b. Seal impressions, &c.

1. Red stone cylinder with design of stags. Early Hittite Found below the Ring Wall of the Citadel Mound.
2. Yellow stone cylinder with designs of 3 rows of fish. Early Hittite. Found below the Ring Wall of the Citadel Mound, at a lower level than *b*. 1.
3. White steatite cylinder. Found high up in the filling of the cave under the N. Wall. Late Hittite.
4. Haematite cylinder. Late Hittite. Surface find.
5. Fragment of cuneiform tablet. House D.
6. Black steatite seal, pyramidal. River Wall.
7. Black steatite goldsmith's mould for ear-rings, &c. Late Hittite. Water Postern.

8, 9. White steatite bulla seal. Two faces. Late Hittite. Found high up against the brick face of the inner line of the N. Wall.

10. Black steatite button-seal. Late Hittite. River Wall.
11. Black steatite button-seal. Surface find.
12. White steatite scaraboid, found on floor level of first period chamber in NW. Fort. Middle Hittite.

a. BRONZE GREAVE, FROM WEST-GATE OF INNER TOWN



b. SEAL IMPRESSIONS AND CAST FROM JEWELLER'S MOULD

PLATE 26.

a. Cuneiform tablet from House D.

b. 1. Fragment of lapis lazuli cylinder. Late Hittite. Water Postern.

2. Head of green glaze Bes amulet. Water Postern.

3. Bow of fibula in green glaze. Water Postern.

4. Green glaze eye amulet. Water Postern.

5. Fragment of black steatite cylinder. Late Hittite. Water Postern.

6. Green glaze Bes amulet. Surface find.

7. Head of green glaze Sekhet amulet. Water Postern.

8. White steatite cylinder. Late Hittite. Water Postern.

9. Red scaraboid pebble seal. House H.

10. Fragment of ivory panel cut *au jour*. Late Hittite. Water Postern.

11. Ovoid pebble seal, winged sphinx. Late Hittite. House G.

12. Black steatite cylinder. Late Hittite. Water Postern.

c. 1–4. Clay seal impressions with cartouche of Necho. House D.

5, 6. Fragments of clay seal impressions. House D.

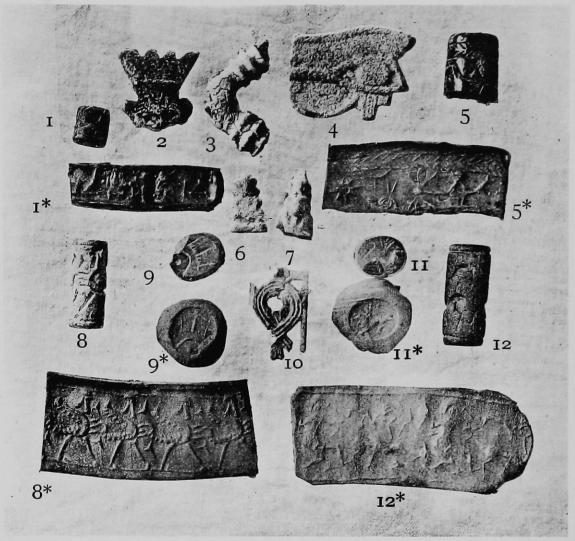
7. Fragment of glazed frit vessel in black, blue and yellow. Late Hittite. Water Postern.

8*. Bronze seal-ring with cartouche of Psamtik I. House D.

9–13. Green glaze amulets. Late Hittite. Water Postern.

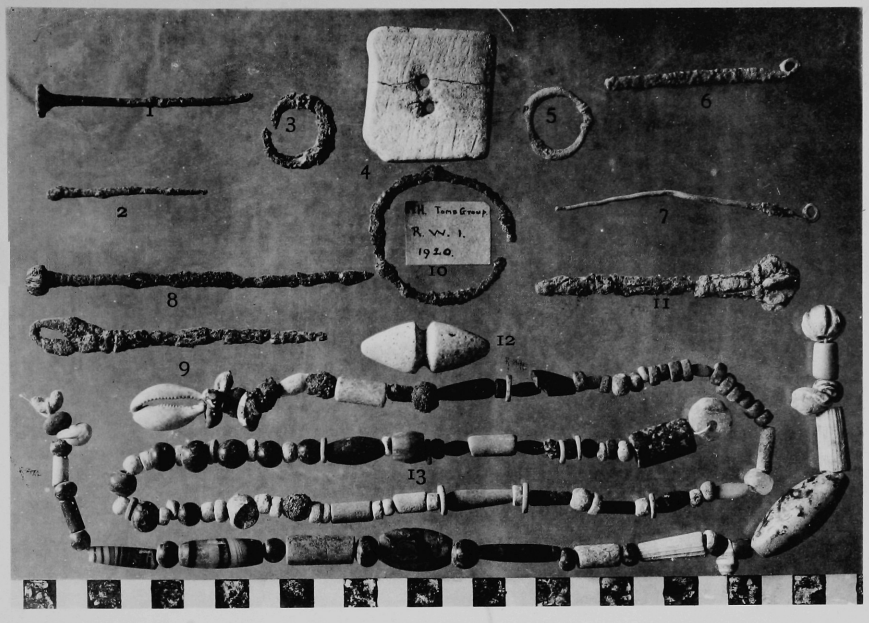
a. TABLET FROM HOUSE D

b



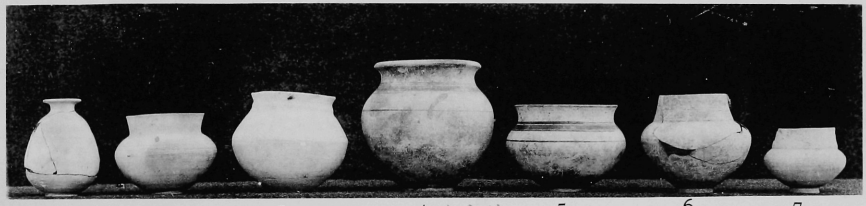
c

a



b

c



d

OBJECTS FROM MIDDLE HITTITE TOMBS

PLATE 28.

1. Fragment of grey steatite box with carvings in relief: animals and 'tree of life'. Late Hittite. Citadel Mound.

2, 2*. Fragment of steatite disk. Round rim, marguerites in panels: along edge, guilloche; in centre, a lion overmastering another animal. Late Hittite. Surface find.

3. Fragment of steatite pyxis. Late Hittite. Water Postern.

3*. Design on 3.

4. Fragment of steatite pyxis. Late Hittite. Water Postern.

4*. Design on 4.

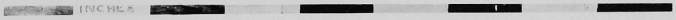
1

2

2*

3*

4*



3

4

STEATITE CARVINGS

a

*a b**

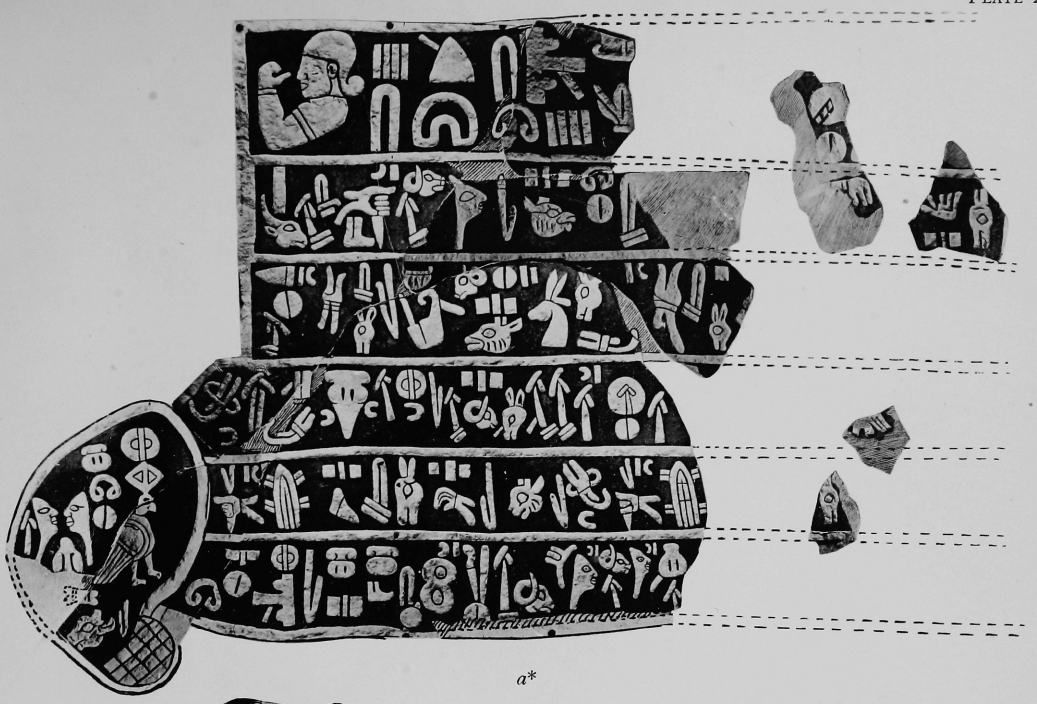
a

b

c

*d**

d

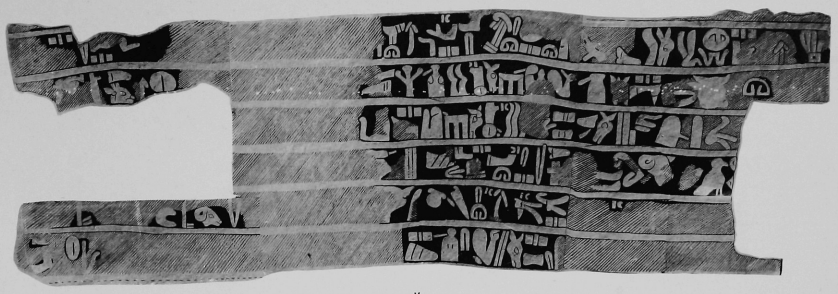


*a**

b

*b**

a



*a**

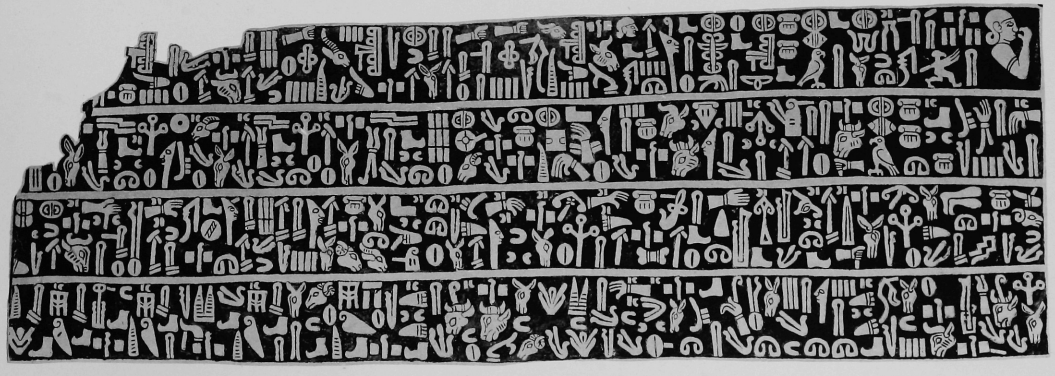
*c**

b

*e**

*b**

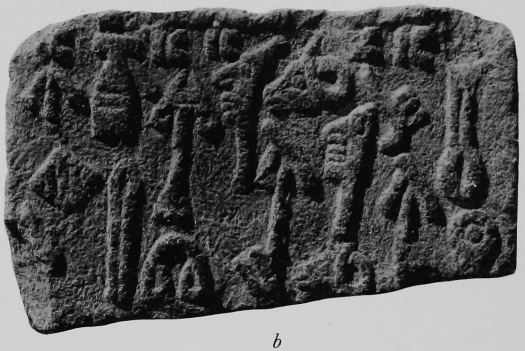
*d**



*b***

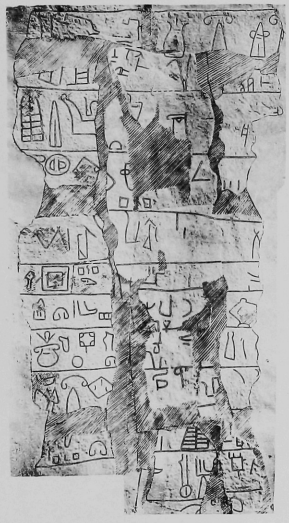
a*

b*

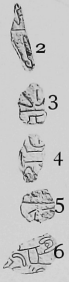


b

c



c* 1



c*

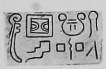
c 1

d

d*

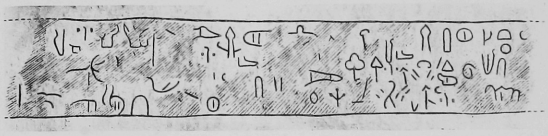
f

e



e* 1

e* 2



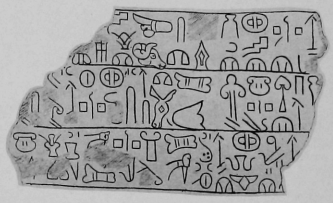
f*

a 1

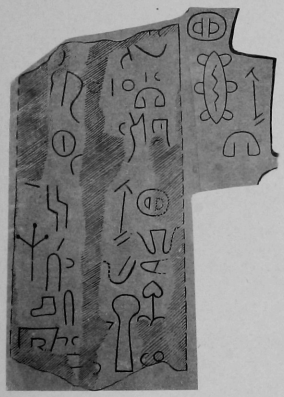
a 2

a 3

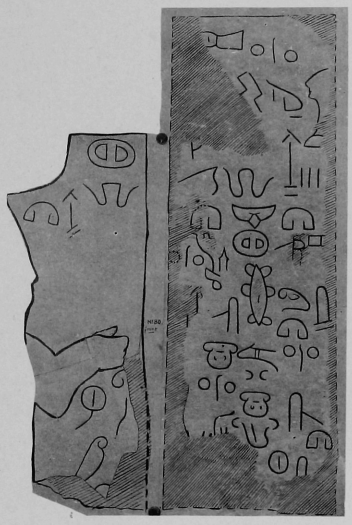
b



*b**



*a** 1



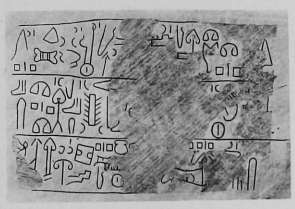
*a** 2 *a** 3

d

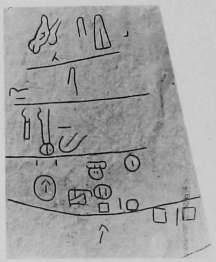
c 1

*c** 1

c 2



*c** 2



*d**

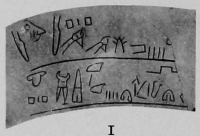
a

*a**

b

*b**

*c**

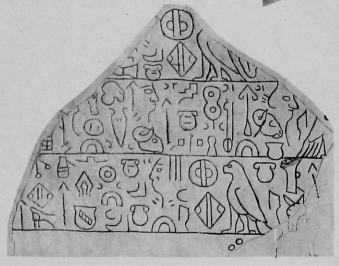


1

2

*d**

e



*e**

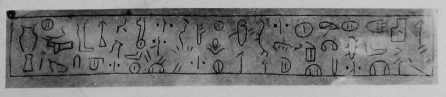
*f**

*g**

h

*i**

j



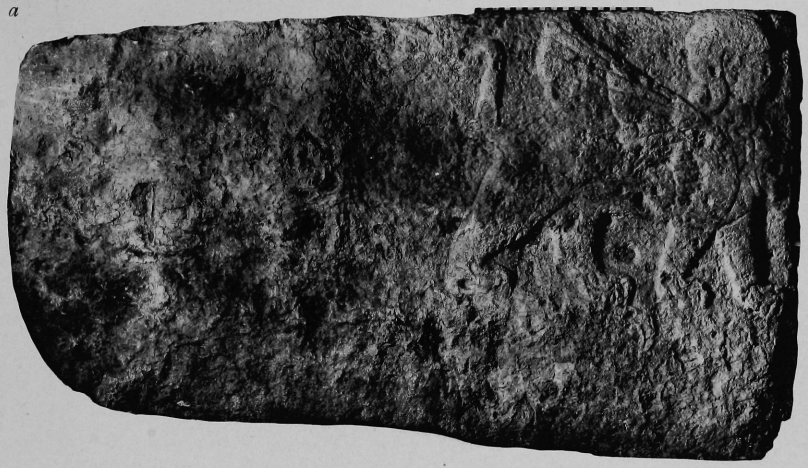
*h**

*j**

a

b

a



b

a

b

*b**

a

b

a

b

a

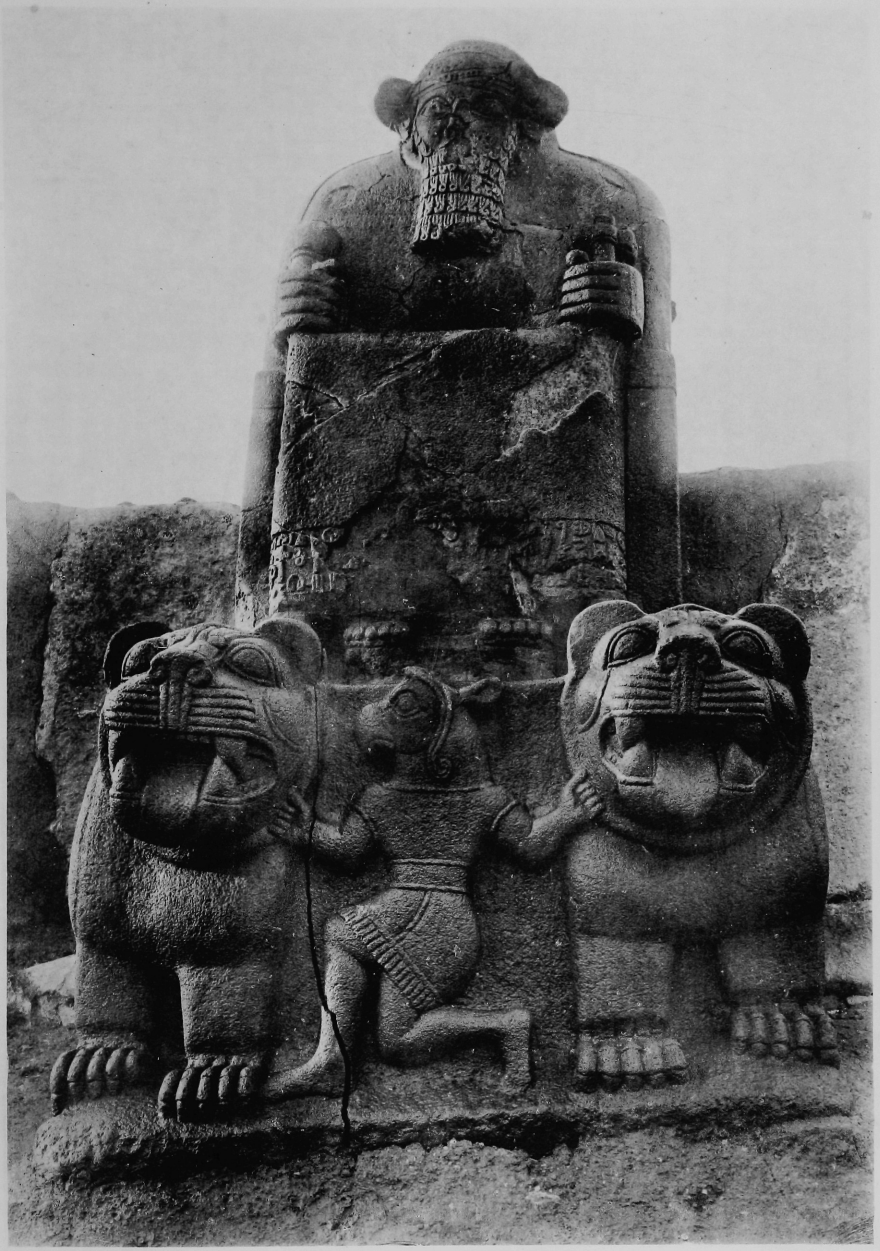
b

a

b

a

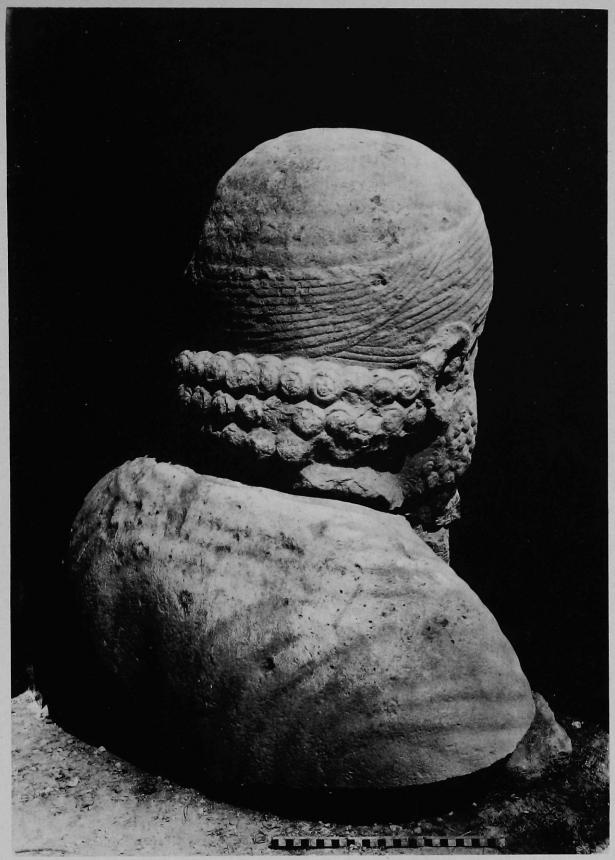
*a**



a

b

c



a. HEAD OF LIMESTONE STATUE FROM SOUTH GATE

b. LIMESTONE LION FROM SOUTH GATE

a. WATER-GATE RELIEF NO. I. END FACE

b. WATER-GATE RELIEF NO. I. SIDE FACE

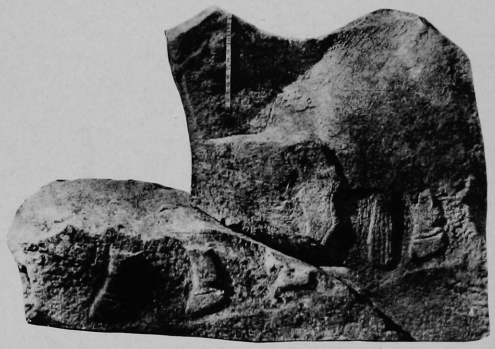
a. WATER-GATE RELIEF NO. 2

b. WATER-GATE RELIEF NO. 3

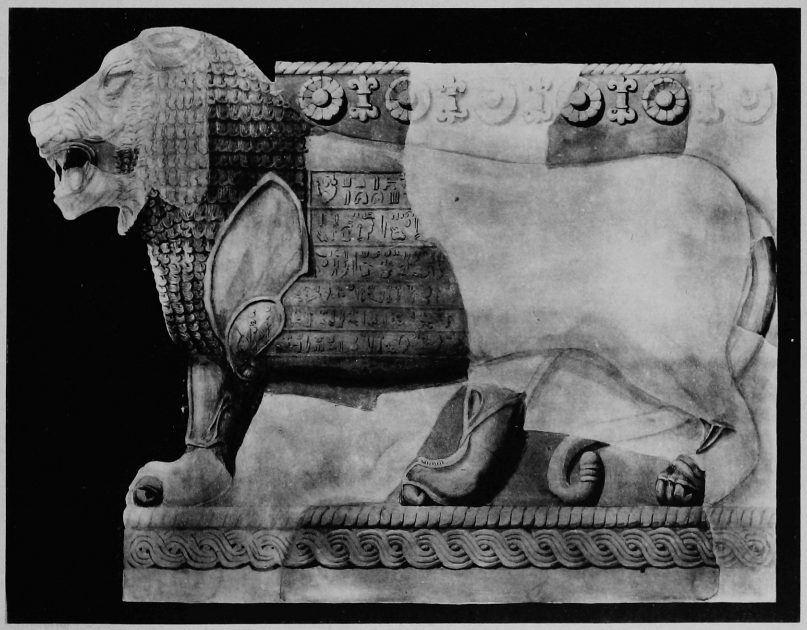
a. WATER-GATE RELIEF NO. 5

b. WATER-GATE RELIEF NO. 6

a. WATER-GATE RELIEF NO. 4



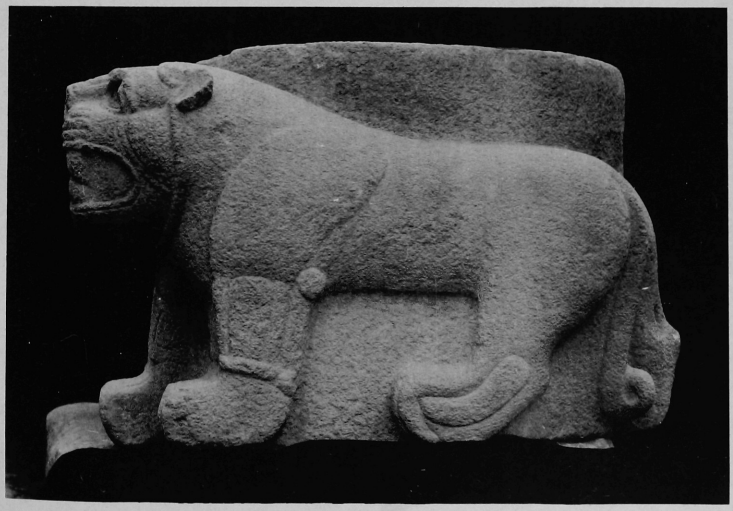
b. WATER-GATE RELIEF NO. 7



c. LION FOUND NEAR WATER-GATE

a

b



LION BASE FROM NORTH-WEST END OF CITADEL MOUND

9128-