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## The Archaeological Survey of Masada, 1955-1956

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### HISTORICAL SUMMARY

A PART from two short notices in Strabo<sup>1</sup> and Pliny,<sup>2</sup> all our information about Masada is derived from the writings of Flavius Josephus, viz. the *Antiquities* and in particular *The Jewish War*.<sup>3</sup> According to Josephus the first to erect a fortress (φρούριον) on this isolated plateau in the Judean Desert, west of the shores of the Dead Sea (Pl. 1, Fig. 1), was the high priest Jonathan, who called it Masada.<sup>4</sup>

This short notice raises several problems : (a) When did Jonathan build the fortress? At the time when he was already high priest (after 152 B. C.), as appears from the wording of Josephus, or while he was still defending himself in the Judean Desert against Bacchides and the Syrian army? As it is hard to

<sup>1</sup> Strabonis: *Geographica*, rec. A. Meinecke, III. Lipsiae, 1904, p. 1066 (XVI, 2, 44). Strabo refers to the pitch issuing from rocks in the crevasses near Μοασάδα.

<sup>2</sup> Pliny: *Natural History*, ed. H. Rackham, II. London, 1947, p. 276 (V, xvii, 73): Inde (from Engeddi) Masada castellum in rupe et ipsum haut procul Asphaltite.

<sup>3</sup> *Antiquities*, XIV, 280-303, 358, 361, 390, 396, 400, 413; XV, 184; *Jewish War*, I, 237, 265, 286, 292-294, 303; II, 408, 433, 447, 653; IV, 399, 401, 504, 506, 516, 552; VII, 252, 275, 304-406. F. M. Abel's attempt (*Géographie de la Palestine*, II. Paris, 1938, p. 380) to connect Masada with the 'strongholds at Engeddi' מצודות עין גדי of 1 Sam. xxiii, 29 (MT xxiv, 1), seemed far-fetched from the beginning; now, with the discovery of a series of Iron Age strongholds in the vicinity of Engeddi proper, it may be regarded as outdated.

<sup>4</sup> *War*, VII, 285; in another passage (*ibid.*, IV, 399) the construction of this fortress is attributed to 'ancient kings' (ὑπὸ τῶν ἀρχαίων βασιλέων) who built it for the protection of their property and their lives.

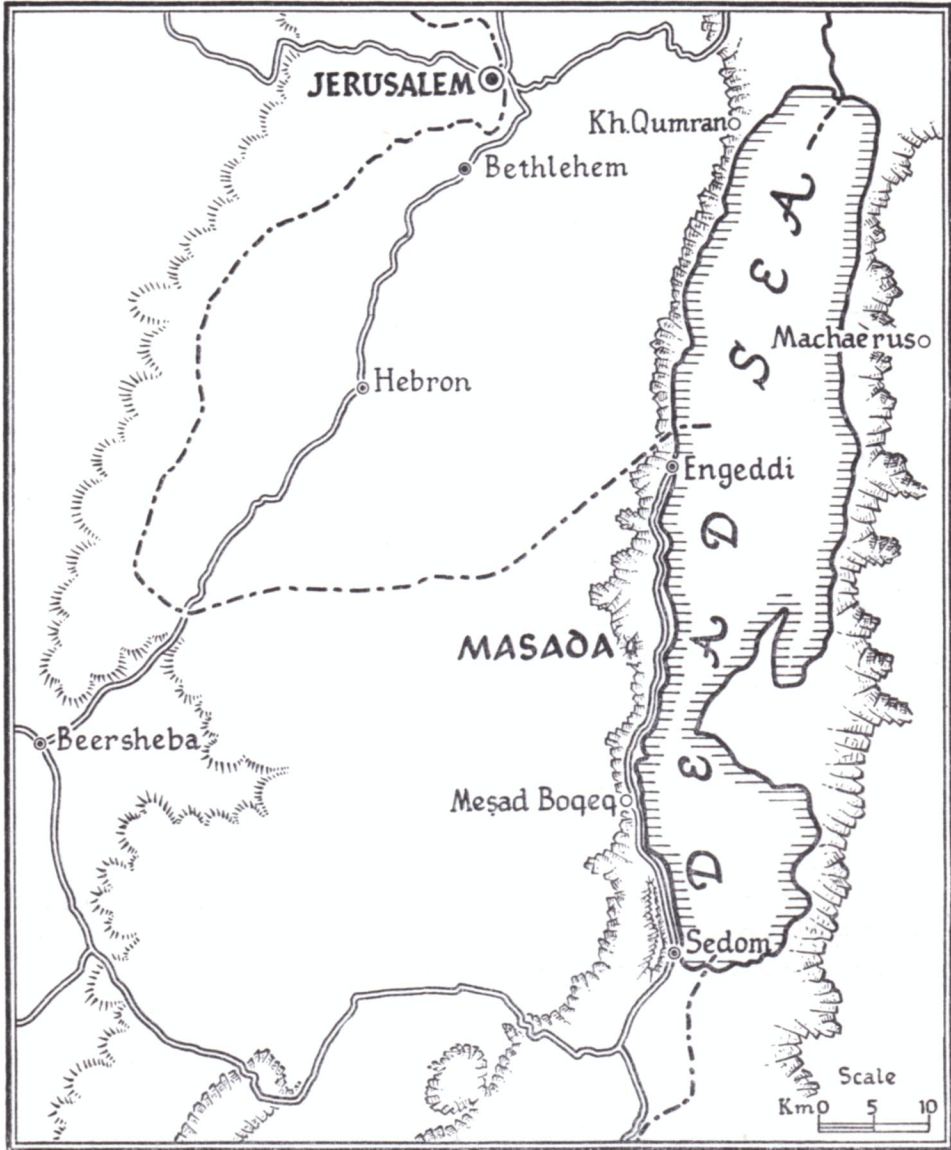


Fig. 1. Map showing situation of Masada.

assume that during his outlaw life in the desert Jonathan had the means and the leisure to build a fortress, it seems more likely that he noticed the defensive strength of the place during his wanderings in the desert, but could only profit from his knowledge when he became head of the Jewish Commonwealth. On the other hand, it would have to follow that the Hasmoneans dominated the

whole length of the eastern part of the desert even before Hyrcanus' conquest of Idumea,<sup>5</sup> possibly even at a time when this region was still formally outside their territory.

(b) The second problem is the size of the fortress. The wording of Josephus (ἐπὶ ταύτῃ) is vague, and we cannot deduce from it whether Jonathan included in his fortress the whole of the plateau of Masada or only part of it, and if so, which part. The fact that even before Herod built a wall around the whole area, his brother Joseph defended himself successfully at Masada against Mathithyah Antigonus,<sup>6</sup> leads us to assume that the fortress of Jonathan defended at least the approaches to the summit of the rock. From the same passage we also learn that even at this early date there were cisterns at Masada;<sup>7</sup> indeed, it is impossible to assume the existence of a fortress in that desert region without an assured water supply.

(c) As regards the naming of the place, Josephus' story is almost certainly fictitious. At that time fortresses were usually given the names of the rulers who built them, or of their relations; the name Masada is derived from the root *šwd* (to hunt), which occurs in the Bible in the form *mešad*, pl. *mešadoth* (hunting place, mountain fastness), i. e. it was originally a generic name.

Masada next appears in the history of Judea in 42 B. C. in connection with the struggle between the house of Antipater and its opponents. After the assassination of Antipater, father of Herod, by one Malichus and the killing of Malichus by Herod, the brother of Malichus seized 'a good many fortresses including Masada, the strongest of all'.<sup>8</sup> Herod soon took the fortresses from him and released him under a truce.<sup>9</sup>

In 40 B. C. Herod fled to Masada with his mother and sisters, his betrothed Mariamme and her mother and his younger brother Joseph, after Jerusalem had fallen into the hands of the Parthians, who had crowned Mathithyah Antigonus king. On his way to the fortress (after many skirmishes with the Jews who were pursuing him) Herod dismissed most of his followers, numbering nine thousand, as the place was too small to contain them all. According to *Antiquities* he kept those who were lightly armed; according to the *Jewish*

<sup>5</sup> In the time of Herod the toparchy of Engeddi was part of Idumea; possibly this attribution was a reward for the support Herod received on his return from the inhabitants of this district (*Ant.*, XIV, 398; *War*, I, 293). <sup>6</sup> Cf. *infra*, p. 4. <sup>7</sup> *Ant.*, XIV, 390; *War*, I, 287.

<sup>8</sup> *War*, I, 237: ὀχυρώτατον; *Ant.*, XIV, 296: ἐρμνότετατον. Quotations are from the Thackeray-Marcus translation in the Loeb edition. <sup>9</sup> *Ant.*, XIV, 296; *War*, I, 237-238.



*War*, those who were strongest. He then left at Masada a garrison of eight hundred to protect the women, and sufficient supplies (*Antiquities*: 'grain and water and other necessities'), and continued on his way to Petra.<sup>10</sup>

Antigonus and his army seem to have blockaded Joseph at Masada throughout the winter of 40/39 B. C. and well into the spring. It was more of a blockade than a siege, and the besieged do not seem to have suffered much from the assaults of the besiegers—only from the lack of water. This became so serious that Joseph in despair planned a flight with two hundred of his soldiers across the Dead Sea to the Nabateans. However, a providential rain fell during the night and filled the cisterns. (It appears from this story that the cisterns at that time were limited in size and probably restricted to the upper plateau of the fortress). This relief encouraged the besieged and they began in turn to harry the besiegers, sometimes by open attacks and sometimes by ambushes; both sides suffered casualties in these skirmishes. Meanwhile Herod had returned from Rome and landed at Ptolemais (Acre). After subduing Jaffa, which stood in his way, he came directly to the assistance of his family. Antigonus attempted in vain to stop him by laying ambushes in suitable places; Herod raised the siege and removed his family to friendly Samaria.<sup>11</sup>

We learn from this story (a) that at that time Masada was already considered one of the strongest places in the country, not by reason of its fortifications, but of its natural advantage; (b) that there existed various ways out of it (some 'open' and some 'secret', as Josephus has it); (c) that the cisterns were still small in size and did not suffice for a thousand people even for one winter; (d) that the fortress nevertheless had space for that number, but no more.

In the course of these events Herod apparently made a thorough study of the advantages of Masada and decided to exploit the place by strengthening it still more. His various constructions are described in the *Jewish War* (Book VII, 286-294). One of the subsequent paragraphs (300) seems to indicate the time during which the fortifications were erected. According to this passage 'Herod furnished this fortress as a refuge for himself, suspecting a twofold danger: peril on the one hand from the Jewish people, lest they should depose him and restore their former dynasty to power; the greater and more serious from Cleopatra, Queen of Egypt'. If so, the fortress was built in the years

<sup>10</sup> *Ant.*, XIV, 361-362; *War*, I, 264, 267.

<sup>11</sup> *Ant.*, XIV, 390-391, 396, 400; *War*, I, 286-287, 292, 294.

37-31 B.C., at a time when Herod was in danger from Cleopatra's domination of Mark Antony. It must also have been built while there were still some Hasmonaean living who could dispute his throne, i. e. before the murder of Aristobulus in 35 B. C., or the execution of Hyrcanus II in 31 B. C. The palaces were probably added later on, when Herod's rule had become fully established.

The works of Herod at Masada included the building of a casemate wall around the whole area on top of the rock, the total length of which was seven stadia (c. 1300 m.). The wall was built of white stone, was twelve cubits high (6 m.) and eight wide (4 m.), and had thirty-seven towers, each fifty cubits (25 m.) high, from which access could be had to the rooms within the thickness of the wall.<sup>12</sup> Most of the interior of the fortress was used for cultivation, which served to augment and give variety to the diet of the garrison. Herod also built himself a palace below the walls towards the northern incline of the rock.<sup>13</sup> Drawing the obvious conclusions from the lessons of the siege of 40/39 B.C., Herod took special care to assure the water supply of Masada. He ordered the cutting of cisterns in the rock 'at each spot used for habitation, both on the summit and about the palace, as also before the wall'; and cisterns have actually been found in each of these places.<sup>14</sup> In consequence he procured for Masada a supply 'as ample as where springs are available'.

Herod also built great store-houses, supplying them with quantities of wheat sufficient for years, plenty of wine and oil, all kinds of pulses and quantities of dates.<sup>15</sup> He deposited at Masada many weapons of all kinds, enough to arm ten thousand men, together with ingots of iron, brass and lead.<sup>16</sup> Finally he secured the approaches to the fortress from the west by building a big tower, one thousand cubits (c. 500 m.) from the summit of the fortress.<sup>17</sup>

It seems that these works were complete, or nearly so, in 30 B. C., when Herod, his head in danger, left to meet Caesar (Augustus) at Rhodes after the battle of Actium. In order to ensure the safety of his family as far as possible, the king ordered his mother Cyprus, his sister and the rest of his family to be taken to Masada.<sup>18</sup>

<sup>12</sup> All these details are mentioned in *War*, VII, 286-288. cf. *infra*, pp. 51-54.

<sup>13</sup> For the location of this palace,

<sup>14</sup> *War*, VII, 291; for details of these cisterns, cf. *infra*, pp. 54-59.

<sup>15</sup> *War*, VII, 296; for the finds reflecting this description, cf. *infra*, p. 24. Josephus' story that the foodstuffs kept at Masada remained fresh for over a century, and that the Romans found the fruits undecayed, cannot be true; the fact that the garrison of Masada found it necessary to raid the store-houses of the villagers of Engeddi (cf. *infra*, p. 6) suffices to prove this.

<sup>16</sup> *War*, VII, 299.

<sup>17</sup> *Ibid.*, 293.

<sup>18</sup> *Ant.*, XV, 184. Mariamme and her mother Alexandra were sent to Alexandrium.

After Herod's death Masada was held for his son Archelaus, and after the deposition of the latter it was manned by a Roman garrison, which remained in possession from A. D. 6 to 66, except for the years 41-44 when Agrippa I reigned over Judea. It was during this Roman occupation that Josephus perhaps saw Masada with his own eyes (from the outside, most likely), during his stay with the Essene sectarians near the Dead Sea.

In the very first days of the Roman War a group of zealots, banded together, attacked Masada suddenly and took it by stratagem. The Roman garrison was put to the sword and replaced by a garrison of their own.<sup>19</sup> This was their first success and it strengthened their hands in the struggle for Jerusalem. Their leader, Menahem, the son of Judah the Galilean, went to Masada with his close friends, broke open the royal store-houses and armed his fellow-townsmen and other 'brigands'; with these as his bodyguard he returned to Jerusalem 'like a veritable king'.<sup>20</sup> After his death at the hands of his Jewish rivals, some of his followers succeeded in escaping to Masada; among them was Eleazar the son of Yair the son of Judah, i. e. Menahem's nephew; he subsequently became the 'tyrant' of Masada.<sup>21</sup>

Thenceforth the zealots were in undisputed possession of Masada throughout the years of the Roman War (66-73). From time to time their garrison raided the Idumean villages nearest to them; Josephus mentions in particular the raid carried out on Passover night at Engeddi, in the course of which the property of the villagers and their entire harvest was taken; during such activities the number of zealots at Masada increased from day to day.<sup>22</sup> The fortress served apparently as a point of concentration for those of the 'sicarii' who were hard-pressed elsewhere. Thus when Simeon Gioras was attacked by the high priest Ananias in his home district of Acrabittene, he fled there. At first the garrison of Masada regarded him with some suspicion and allowed him, his followers and the women who accompanied them, to stay only in the lower part of the fortress, while they themselves held the upper. Gradually, however, Simeon won their confidence and was allowed to participate in their raids. But soon there was a rift between the two: Simeon was planning a revolution on a national scale, while the garrison of Masada had become used to staying in their safe 'lair'. Finally Simeon went up into the mountains.<sup>23</sup> From there he began to harry the Idumeans, who marched against him in force, leaving the

<sup>19</sup> *War*, II, 408.

<sup>20</sup> *Ibid.*, 433-434.

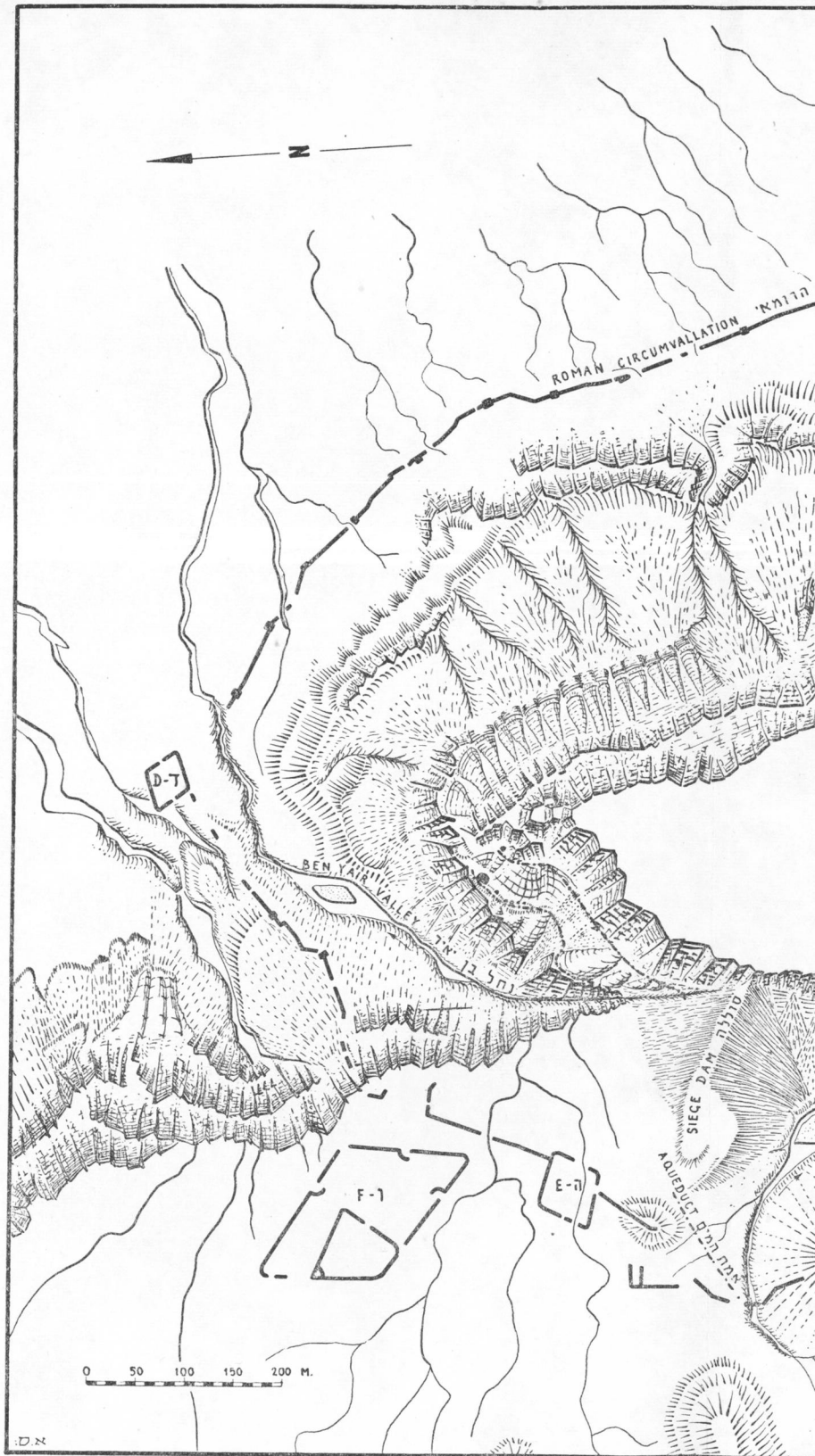
<sup>21</sup> *Ibid.*, 447.

<sup>22</sup> *Ibid.*, IV, 399-404.

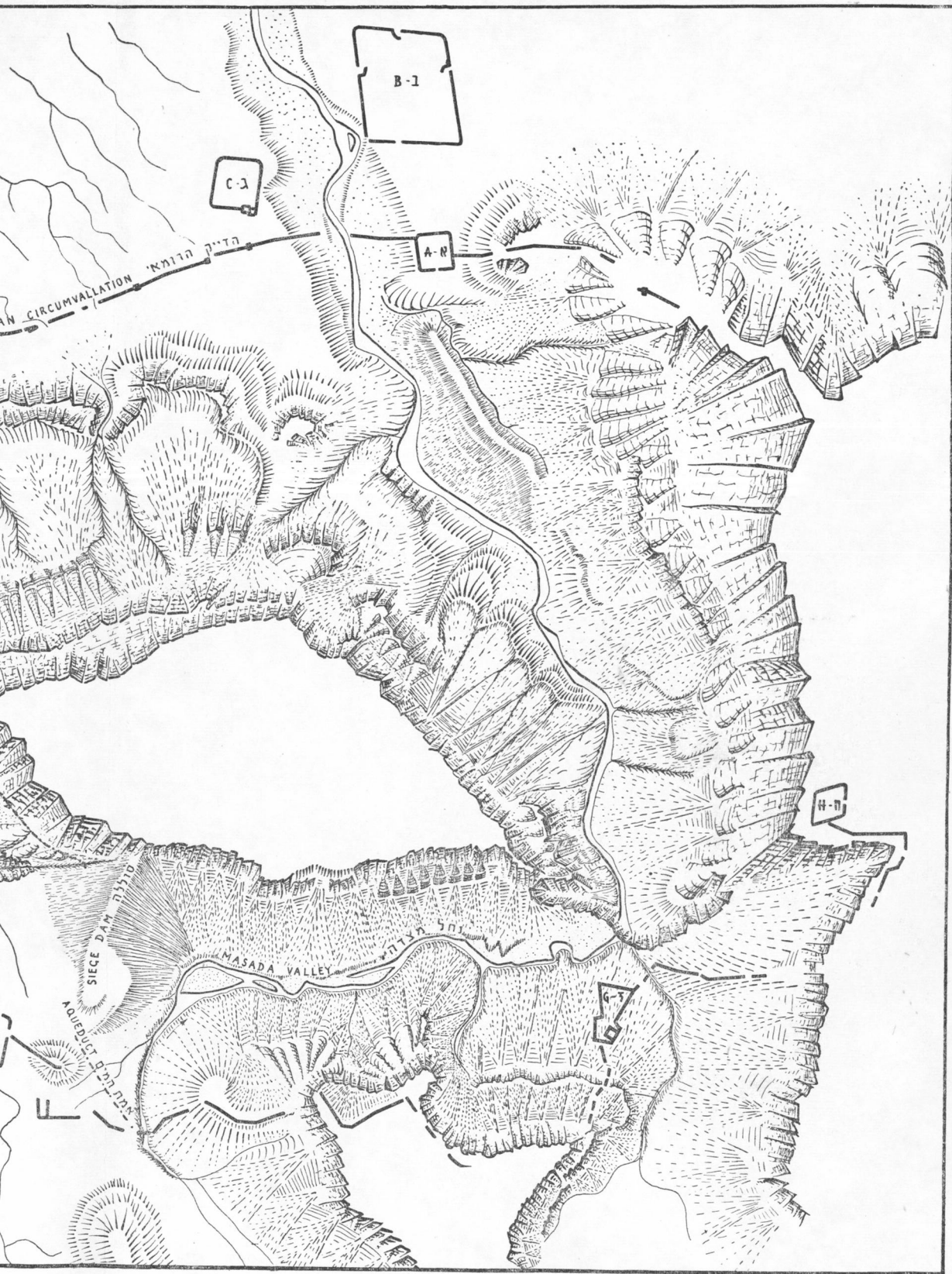
<sup>23</sup> *Ibid.*, 504.

Fig. 2.  
Masada and its vicinity.

A-H: Roman camps.

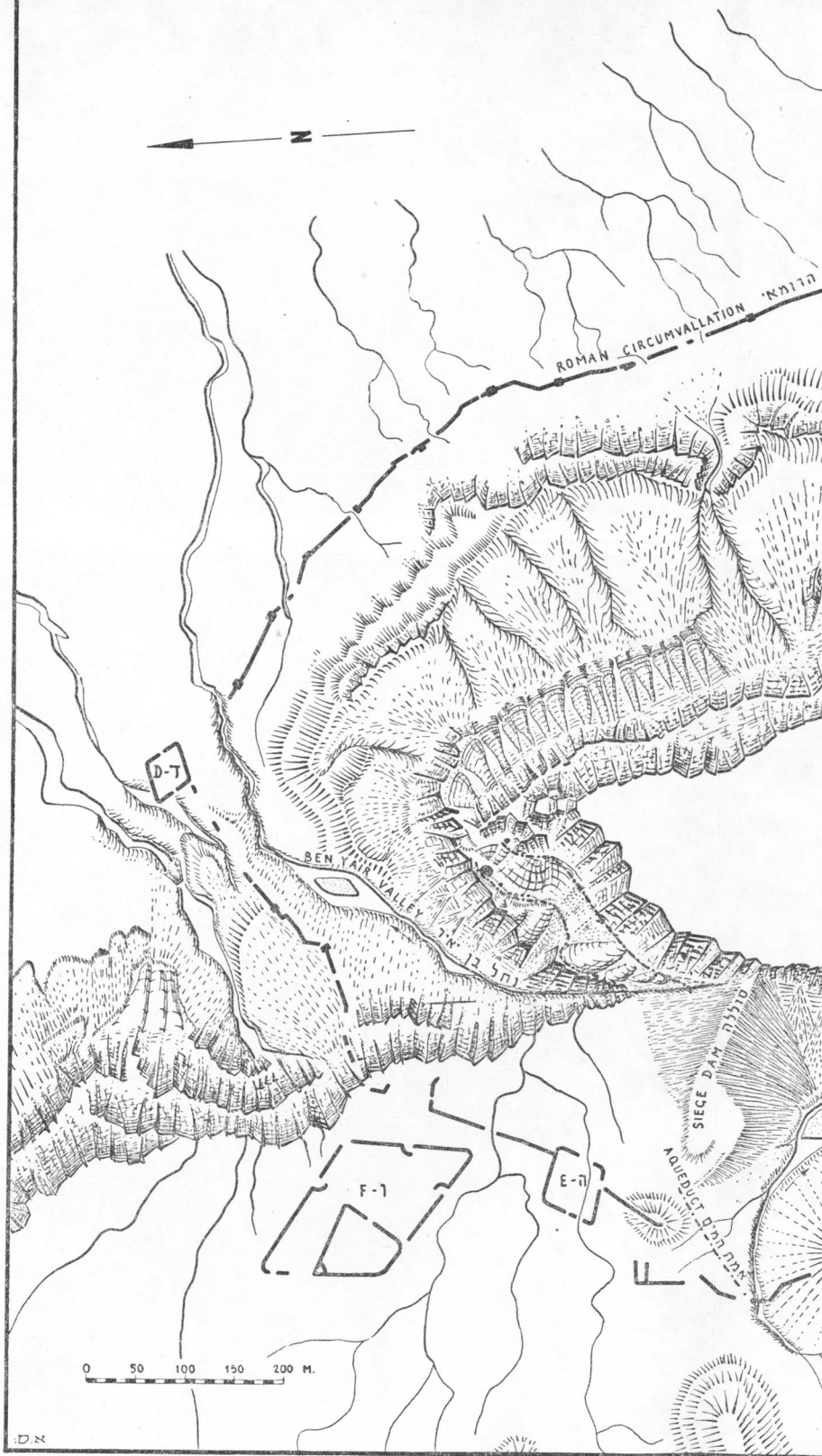






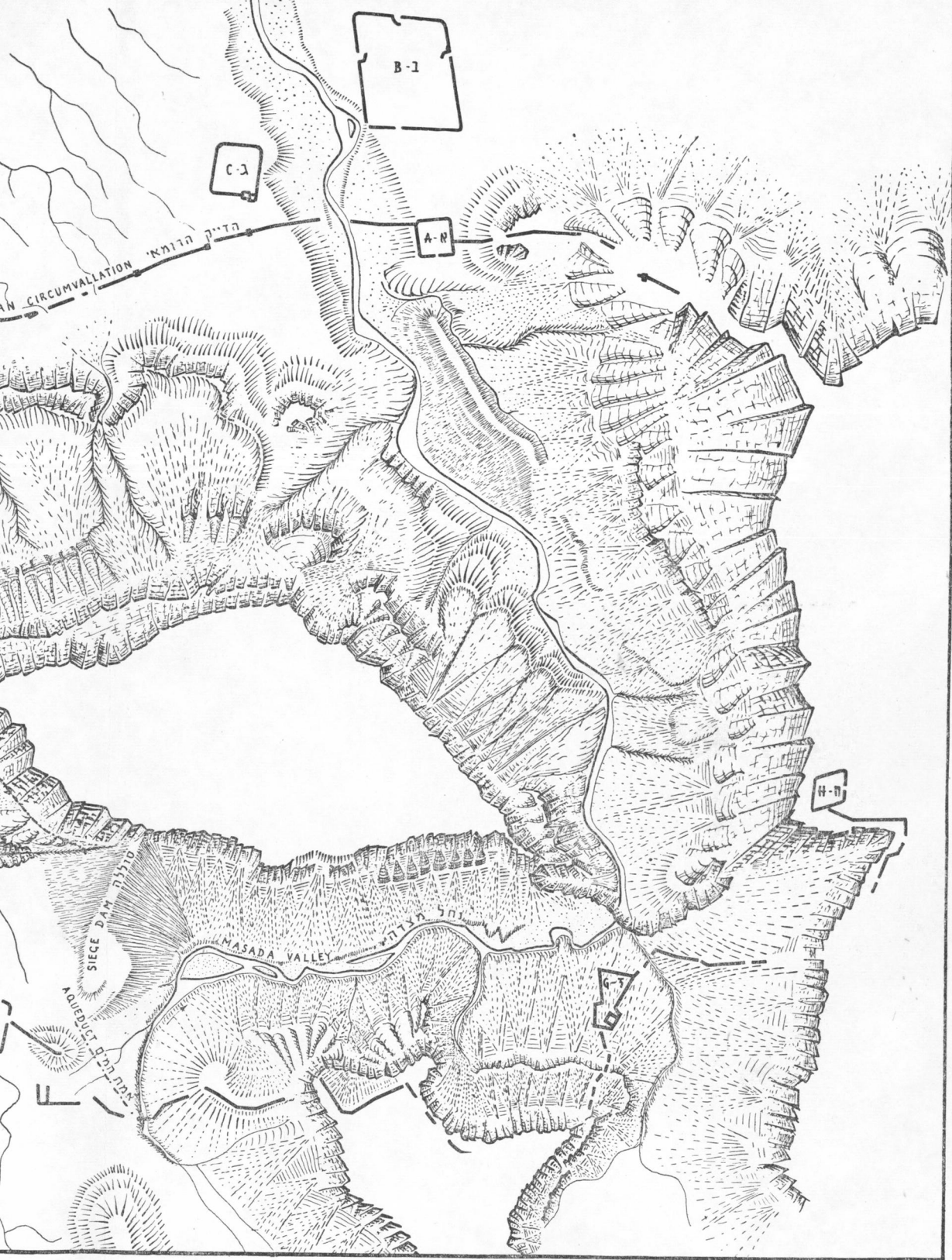


A-H: Roman camps.



(Facing page 7)







defence of their lands against the garrison of Masada to the common people.<sup>24</sup> In the last year of the war, when the area controlled by the Jews was much reduced, Masada was one of the three fortresses (the other two being Herodium and Machaerus) which were still in their hands outside Jerusalem.<sup>25</sup>

In fact, Masada was destined to be the last stronghold held against the Romans; only in 72, two years after the fall of the capital, did the Roman governor Flavius Silva march against it at the head of his Tenth Legion, its auxiliary troops, and tens of thousands of Jewish prisoners of war, who served him as hewers of wood and drawers of water (in the literal sense, for owing to the barrenness of the region all the provisions had to be brought from afar).<sup>26</sup> Once arrived at the base of the rock, Silva established his camp in a rocky place well suited for siege operations, for there the rock of Masada touched the nearest mountains (apparently the upper Roman camp, F). As this site, however, was not convenient from the point of view of supply,<sup>27</sup> we can understand why another camp (B) was established at the east foot of Masada. This second camp had no military function save that of keeping watch on the rock; it was, however, much easier of access for the supply trains from Engeddi and the other springs on the shore of the Dead Sea (Fig. 2).

Once having set up his camps, the Roman general encircled Masada with a wall and placed guards along it, in order to make it more difficult for the besieged to flee.<sup>28</sup> He also found a suitable spot for the earthworks, a rocky area called the Leuce ('White Rock') which was situated behind the tower guarding the western approach to Masada. Although this white rock rose above its surroundings, it was still three hundred cubits (150 m.) below the summit of the plateau.<sup>29</sup> It can be clearly seen to this day (Pl. 2A).

From this spot a siege-dam was thrown up, two hundred cubits high (100 m.); this dam is still visible against the west face of Masada. On top of it a platform of great stones was set up, well fitted together; it was fifty cubits wide and fifty high (25 m.). On this the Romans raised their siege tower, sixty cubits high (30 m.) clad in iron; from its top engines shot arrows and threw stones. As the top of the tower was  $100 + 25 + 30 = 155$  m. above the top of the Leuce, it dominated the fortress, and the missiles fired from its top soon cleared the wall of defenders. At the same time a battering ram was directed from the bottom of the tower against the wall, and finally breached it. The

<sup>24</sup> *Ibid.*, 516.    <sup>25</sup> *Ibid.*, 556.    <sup>26</sup> *Ibid.*, VII, 252.    <sup>27</sup> *Ibid.*, 276-278.    <sup>28</sup> *Ibid.*, 275, 304.

<sup>29</sup> *Ibid.*, 305; these measures given by Josephus here and in other passages are much exaggerated.

defenders then erected a second wall behind the breach, made from two faces of wooden beams with the intervening space filled with earth, while transverse beams gave it stability. This provisional construction was well calculated to defeat the ram, whose blows only served to make the earth filling more compact. Silva then ordered his soldiers to attack the wooden wall with flaming torches. At first a south wind defeated their efforts, but soon it turned in a northerly direction, and the wooden wall burned down. The Romans, seeing the fortress defenceless, retired for the night.<sup>30</sup> During that night Eleazar persuaded his followers to commit suicide, leaving the provisions intact to show that it was not want which drove them to suicide.<sup>31</sup> Nine hundred and sixty men, women and children perished; only two women and five children, who had been hiding in the subterranean aqueducts, survived. The last of those dying set fire to the palace. This happened on the 15th Xanthicus (c. 2 May) 73.<sup>32</sup>

On the following morning the Romans made bridges from their siege works and entered Masada; they made their way through the burning debris until they reached the palace and the corpses.<sup>33</sup> Silva left a garrison in the ruins and returned to Caesarea.<sup>34</sup>

#### THE STORY OF THE SURVEY

Ever since Wolcott's visit in March 1842<sup>35</sup> made Robinson's tentative identification of the ruins of es-Sebbe with Masada a certainty, the site has been the object of fairly constant attention.<sup>36</sup> However, the difficulty of reaching the distant spot (see Fig. 1), combined with the further rigours of a climb by way of the Roman siege-dam to the fortress plateau,<sup>37</sup> has prevented most explorers from devoting to it more than a rather hurried inspection. The one expedition which stayed for some time, Schulten and Lammerer in 1932,<sup>38</sup> happened to consist of scholars principally interested in the Roman camps and siege-walls which encircle the fortress.<sup>39</sup> Schulten, who stayed four weeks at the foot of the rock

<sup>30</sup> *Ibid.*, 306-319.    <sup>31</sup> *Ibid.*, 366.    <sup>32</sup> *Ibid.*, 397-401.    <sup>33</sup> *Ibid.*, 402-406.    <sup>34</sup> *Ibid.*, 407.

<sup>35</sup> E. Robinson, ed.: *Bibliotheca Sacra*, I, 1843, pp. 62-67, quoted by R. E. Brünnow & A. v. Domaszewski: *Die Provincia Arabia*, III. Strassburg, 1909, pp. 236-237. Wolcott was the first to notice the Roman camps and circumvallation and thereby clinched the identification, for no other site on the western shore of the Dead Sea was ever besieged by the Romans.

<sup>36</sup> The results of the research until 1932 are summed up by A. Schulten: *Masada. Die Burg des Herodes und die römischen Lager*, *ZDPV*, 56, 1933, pp. 1-185 (henceforward referred to as *Schulten*).

<sup>37</sup> Cf. the exaggerated account of de Saulcy (1851) reprinted in Brünnow & Domaszewski, *op. cit.* (supra, n. 35), pp. 237-240; and Warren's climb up the east side (*PEFQS*, 1, 1868-70, p. 146).

<sup>38</sup> Cf. *Schulten*.    <sup>39</sup> Domaszewski, too, was mainly interested in the Roman remains. Cf. *op. cit.* (supra, n. 35), pp. 216, 221-244.

of Masada, visited the plateau on its top on two mornings only<sup>40</sup> and was consequently only able to make sketch-plans of the constructions visible there. He states, quite understandably: 'One can envy the future explorer of the fortress his task, for it is varied and interesting and the magnificent view is a reward in itself'.<sup>41</sup>

Apart from the ruins plainly visible on the top of the plateau, the steep slopes of the rock contained more evidence of the work of man. The very first explorer of Masada, Wolcott,<sup>42</sup> had noted the foundations of a round tower 40-50 feet below the north summit, and windows with whitened sides cut in the rock nearby, probably belonging to some large cistern. Dale, Anderson and Bedlow, who accompanied Lynch on his exploration of the Dead Sea (1848) saw<sup>43</sup> 'at a distance of c. 100 feet below the north summit on an inaccessible precipitous ledge, the remains of a round tower; and fifty feet below that, on another ledge, the foundation walls of a square enclosure, with a triangular wall (*sic*) abutting with the angles of its base upon the walls of the circular tower and the west side of the square enclosure.' Tristram (1864), more courageous or a better mountaineer, records: 'About seventy feet below (as far as we could judge) on a slight projecting ledge, was built up a strong circular fort with double walls and a hollow space of four feet between them. These walls were perfect; but we found it impossible, without ropes, to descend to them, though we got down to within twenty feet and saw several windows in the solid rock, which we could not reach, but which told us plainly of vast subterranean vaults . . . About thirty or forty feet lower still, the rock runs out into a fine point, and on this were the ruins of another fort, quadrangular, and which had once reached up, as we could see by the fragments of masonry, to the base of the round bastion above.'<sup>44</sup>

Both Conder and Schulten were satisfied to indicate these remains in part on their plans of Masada.<sup>45</sup>

<sup>40</sup> *Schulten*, p. 64.

<sup>41</sup> *Ibid.*, p. 7.

<sup>42</sup> Quoted by Brünnow & Domaszewski, *op. cit.* (supra, n. 35), p. 236.

<sup>43</sup> Quoted *ibid.*, p. 237 from J. W. Lynch: *Narrative of the U. S. Expedition to the Jordan and the Dead Sea*. Philadelphia, 1849, pp. 330-331.

<sup>44</sup> Quoted by Brünnow & Domaszewski, *op. cit.* (supra, n. 35), p. 242, from H. B. Tristram: *The Land of Israel*. London, 1865, pp. 298-299.

<sup>45</sup> Conder notes on his plan (*Survey of Western Palestine: Memoirs*, III. London, 1883, facing p. 419) below the 'foundation of a tower which is rounded on the north side and about 80 feet square' (*ibid.*, p. 419)—actually the platform described below, p. 29—a round construction marked 330 (ft. above the Mediterranean?) and beyond that an oblong rounded on the east side. On p. 418 of his report he

The existence of columns on Masada, already reported to Seetzen in 1807<sup>46</sup> and to Robinson,<sup>47</sup> clearly refers to the finds on either the upper or the lower terrace at the north point (see *infra*, pp. 25-51), for no other colonnaded buildings have left any trace on the plateau.

This state of affairs changed when the fortress of Masada began to attract the attention of Jewish youth movements in Israel. From the forties onward it became the rule among the hardier spirits to set up a camp at Masada for a week or two and to climb the cliffs bordering the plateau. A group led by S. Gutman first reached the 'round tower' and the square building below it. A fuller exploration was undertaken by Mr. Gutman at the head of a group of members of the Kibutz Meuchad in 1953, the provisional results of which were published in the *Bulletin of the Israel Exploration Society*.<sup>48</sup>

The obvious importance of these finds, which included a peristyle building dating from the time of King Herod with some of the attached columns still standing *in situ*, and the discovery of a whole system of rock-cut cisterns, clearly required a fuller archaeological survey and exploration.

Following a decision of the Joint Committee for the Advancement of Archaeological Research in Israel under the chairmanship of Prof. B. Z. Dinur, then Minister of Education and Culture, the 1955 expedition was undertaken jointly by the Department of Antiquities, the Hebrew University, and the Israel Exploration Society. It was directed by the authors of this report, who wish to thank the Minister of Education and Culture, the President of the Hebrew University and the Director of Antiquities, for the unfailing support and assistance given to this undertaking. The organization of the expedition was entrusted to Mr. J. Aviram, Secretary of the Israel Exploration Society, who performed this task with his customary efficiency. No labourers were employed

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notes a round tower 30 feet in diameter, 70 feet below the north point, with very thick walls, and two rings of ashlar and rubble within. Below that is a square outwork on the face of the cliff. Schulten on p. 72 and Plan XIII describes the house on the upper terrace and the circular tower below as 'Türme' and refers to Conder's description; on p. 66 he mentions a round tower 15 m. in diameter and 30 m. below the north point, and 15 m. below that a square building apparently joined to the round tower; he connects the two with the 'snake path' and approves of Tuch's suggestion that the underground passage from the Palace (*War*, VII, 292) ended here.

<sup>46</sup> U. J. Seetzen: *Reisen* (ed. F. Kruse), III, Berlin, 1855, p. 23.

<sup>47</sup> E. Robinson: *Biblical Researches in Palestine*, II, London, 1841, p. 240.

<sup>48</sup> S. Gutman: Masada, *BIES*, 18, 1954, pp. 254-267 (Hebrew). For part of this article see *infra*, pp. 54-59; cf. also *id.*, *Mibifnim*, 16, 1953, pp. 468-476 (Hebrew).

on the project, all work being done by students and volunteers from various settlements.<sup>49</sup> Through the good offices of Prof. B. Mazar, President of the Hebrew University and Chairman of the Israel Exploration Society, the Chief of Staff, Maj.-Gen. M. Dayan, agreed that the Israel Defence Army should take over arrangements for the equipment, supply, security and transport of the Masada survey, and these were supervised most efficiently by Capt. S. Magen. Of the two camps established, a base camp was set up at the eastern foot of Masada rock, which was connected by a motor track with Sdom and Engeddi. From this camp mules carried equipment and supplies (including the ration of water brought daily by tanker from Engeddi) by a winding path, following in general the line of Josephus' 'snake path' which was repaired for the occasion by the Pioneer Corps of the Army, up to the foot of the cliff crowning the rock. From there supplies were lifted by a winch standing on the fortress wall. The main camp was set up on the top, on the flat space near the ruined church, and served as the expedition's headquarters.

The chief aims of the survey were:

- (a) to examine the entire surface of the rock in order to establish the character of its archaeological remains;
- (b) to plan the remains visible on the surface;
- (c) to examine in particular the recently discovered remains at the north point of the rock;
- (d) to examine the water supply system of Masada.

The work of the survey was divided as follows:

M. Avi-Yonah—the remains on the upper terrace up to its north end and the trial sounding in the centre of the 'Great Palace'.

Y. Aharoni—the round building on the middle terrace.

N. Avigad—the peristyle building on the lower terrace of the north point.

I. Dunayevsky (assisted by Mr. Elisha Gatt)—planning the remains visible on the surface and those discovered in the soundings.

S. Gutman was responsible for the safety arrangements, the preparation of the approaches to the various sites, and the exploration of the cisterns.

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<sup>49</sup> The following were the members of the first expedition: Students: Sara Barkai, A. Drucks, M. Harel, J. Levy, Yael Namir, Ora Negbi, A. Negev, Yael Shifman, Ruth Sofer, E. Stern, Yael Tversky, Tamar Yizraeli, Varda Zwilichowski; Volunteers from settlements, etc.: Miriam Avi-Yonah, M. Baram, G. Ben-Ari, Y. Friedberg, M. Hurvitz, J. Reifenberg, J. Shemesh; the expedition was accompanied by J. Aviram, M. Sofer, surveyor, and A. Volk, photographer.

The expedition arrived at Masada on 18 March 1955 and left on 29 March; its working days were therefore no more than ten, but owing to the energy and devotion of all concerned, the amount of work done exceeded all expectations.

In March 1956 the survey was continued by a group of 28 persons led by Dr. Y. Aharoni and S. Gutman.<sup>50</sup> The main purpose this time was to complete the excavation of the round tower and to clear the area between it and the rock face to the south; also to elucidate several points left doubtful in the plan and details of the peristyle building. The group stayed from 7 to 17 March; owing to the absence of a camp on top of Masada rock, members had to stay at the Lapidoth oil drilling camp near the base and to climb up to their work and down every day. Nevertheless, they not only accomplished their allotted task, but even succeeded in making the two trial soundings in the arsenals, reported below (p. 24).

#### THE SURFACE REMAINS ON THE PLATEAU

The total surface of the top of Masada is a rhomboid measuring c. 600 m. from north to south, and c. 200 m. from east to west (Fig. 3, Pl. 1). This area of about 8 hectares is encircled (except at its northern extremity, see *infra*, p. 25) by a casemate wall with towers. Most of the area within the wall is bare earth; here and there erosion has bared the rock surface. This supports Josephus' statement<sup>51</sup> that the interior of the fortress of Masada was cultivated. The work of human hands visible inside the wall consists partly of remains of buildings above the surface, and partly of cisterns and quarries cut into the rock (Fig. 3).

In the course of the survey five of the structures above ground were measured as accurately as possible, and their plans are published herewith. It should be understood that in the circumstances the survey included only the remains visible above ground (with two exceptions, see *infra*, pp. 15-18; 24). Thus in many cases, where the entrances to the various rooms could not be observed, they were not recorded. The absence of soundings also makes an exact dating of the buildings impossible, for the surface pottery of Masada ranges from the Hellenistic through the Roman and Byzantine to the Arab periods. We may, however,

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<sup>50</sup> Members of the second expedition were: Dr. Y. Aharoni; S. Gutman; Y. Kolodni, surveyor; B. Rotenberg, photographer; Tally Anteby, S. Avidan, G. Ben-Ari, A. Drucks, Y. Feigin, Y. Feldmann, Y. Friedberg, Edna Gelber, E. Hanun, Z. Harari, M. Horvitz, A. Lisovsky, M. Livneh, Y. Nir, J. Reifenberg, B. Safrai, Mira Safrai, A. Shabbatai, Z. Shapira, Y. Shemesh, Miriam Shmueli, A. Siegelmann, Yael Tversky, Z. Yeivin (Mr. Yeivin assisted in the preparation of the plans of this season).

<sup>51</sup> *War*, VII, 288.



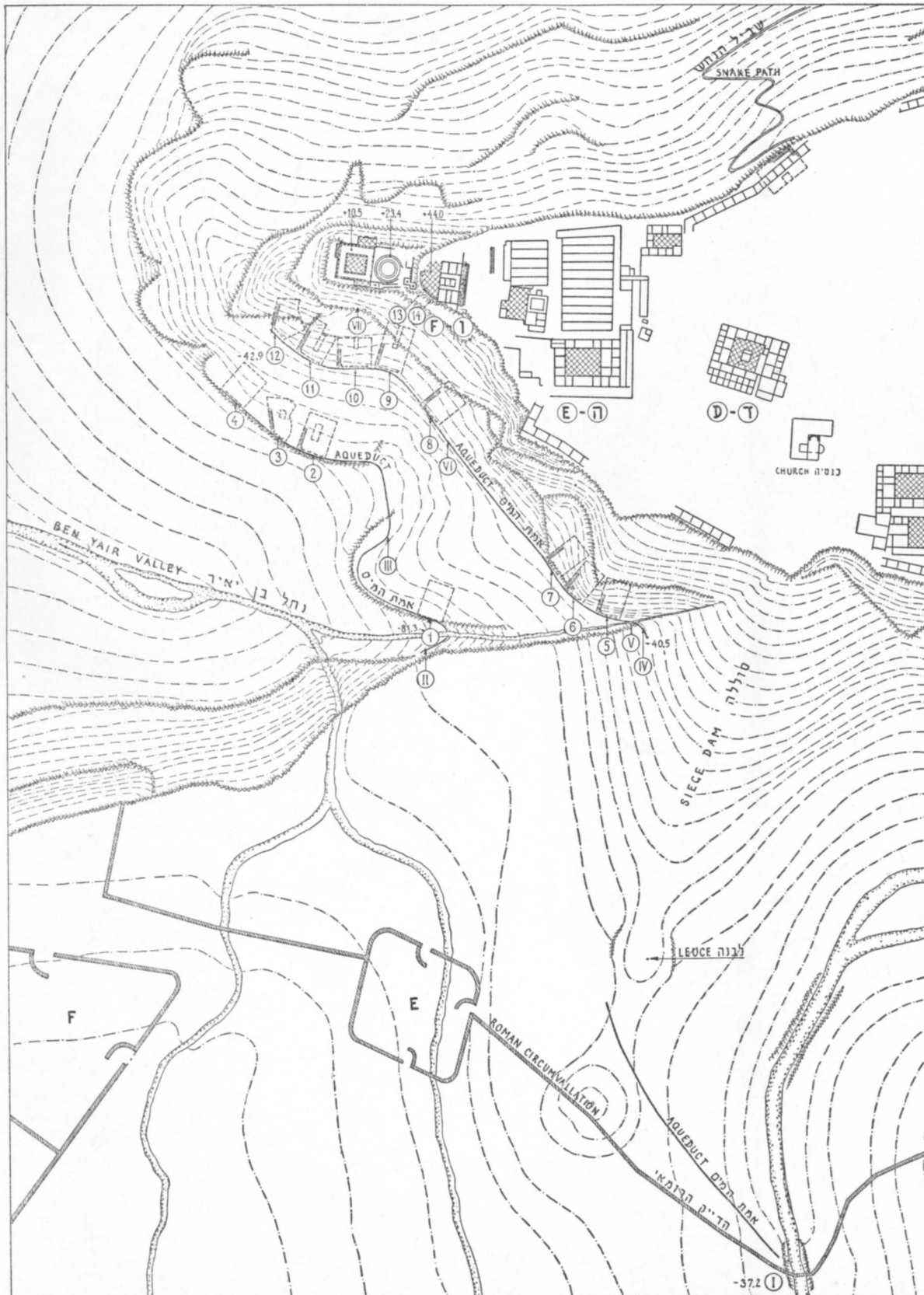








Fig. 3. Plan of the fortress and its water installations.

- 1-4: Cisterns in the lower row.
- 5-12: Cisterns in the upper row.
- 13: Bathing pool of the palace.
- 14: Water-reservoir of the palace.

- I: Site of the dam in the Masada Valley.
- II: Rock-cut channel leading to lower row of cisterns.
- III: Wall built to protect aqueduct.
- IV: Traces of aqueduct.
- V: Vault.
- VI: Dwelling-cave.
- VII: Remains of tower protecting the area.



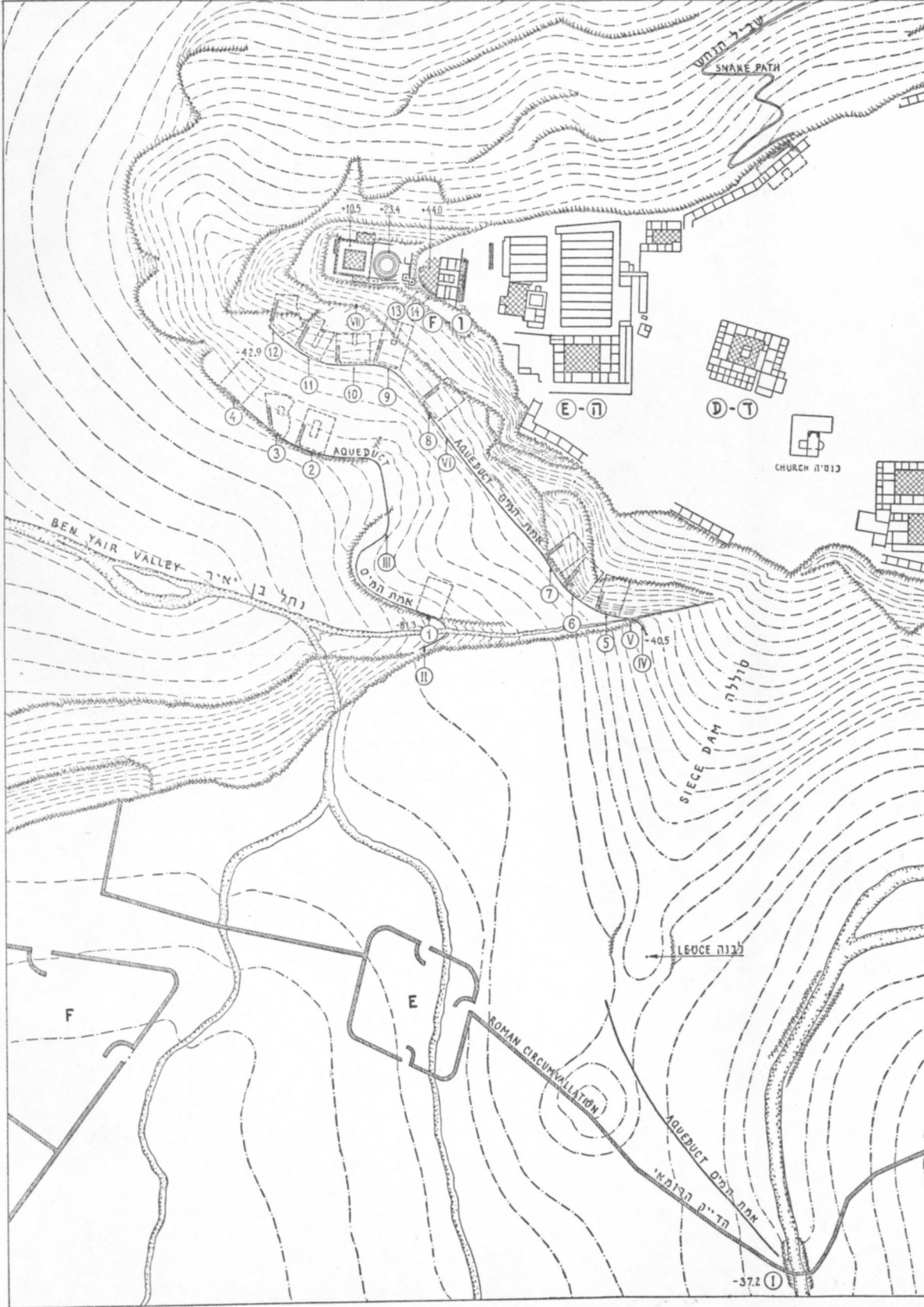






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assume with a fair degree of certainty that of the structures listed below, (D) and (E)—the 'barracks' and the 'arsenals'—are Herodian; as regards (C), the 'Great Palace', we know this positively as a result of the sounding in one of its courts described below (pp. 15-19). We can suggest only a vague date for the two houses (A) and (B).

All these constructions are uniformly built of fairly large blocks of local stone, roughly cut square and laid in level courses which were straightened by the addition of small stones between them. The walls are all plastered inside and outside, as are the walls of the fortress and the supporting walls of the

north palace, and sometimes even the rock face. This plastering occasionally makes it difficult to distinguish between the outer and inner walls of a building.

(A) The south-easternmost building (Fig. 4),<sup>52</sup> c. 20 m. square, is a typical oriental dwelling-house consisting of a series of rooms grouped round a courtyard. As far as could be seen, the entrance was constructed in such a way that the courtyard could not be seen into from the outside. The rooms included at least one big hall  $9.5 \times 4.4$  m., and two large rooms, one of which, measuring  $5.2 \times 4.4$  m., was in the north-eastern corner; the other ( $6.4 \times 4.7$  m.) served as gate-room in the south-east.

At a short distance south-east of this house stand two small isolated buildings ( $A_1, A_2$ ), one consisting of a single room, the other of two rooms and a terrace north of them.

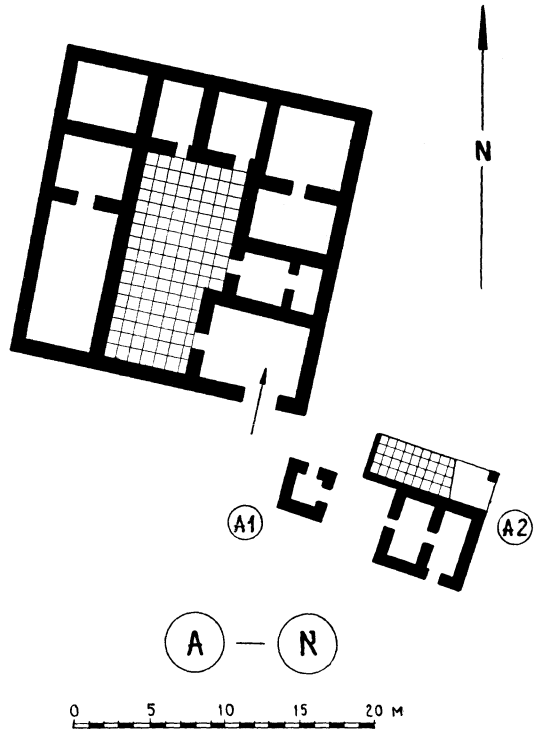


Fig. 4. Buildings A,  $A_1$  and  $A_2$ .

<sup>52</sup> Schulten's 'Bau mit zwei Türmen', *Schulten*, p. 72, Plan XVIII B.

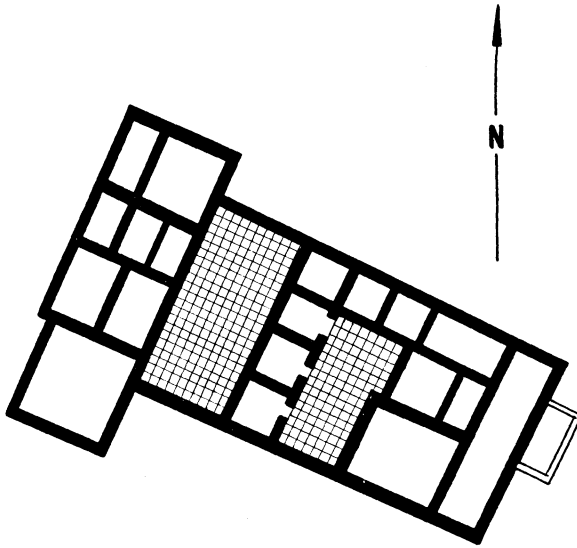
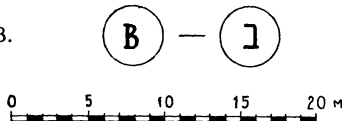


Fig. 5. Building B.



Of special interest were the traces of a mosaicist's workshop south-west of the two-roomed house. An area several metres square was strewn with parallelepiped oblongs of white stone (Pl. 3 B), each sufficient to make three cubes of the size used in the mosaics discovered on the upper terrace of the north palace (see *infra*, pp. 26-27). A few black cubes were also found, made of soft bituminous material and less liable to keep, but none of any other colour. This seems to show that the place was a workshop where mosaic cubes were prepared for

the Herodian floors. Hence, the two small constructions ( $A_1$ ,  $A_2$ ) may well belong to that period; the large house (A) may perhaps be assigned to the same time, but this must be left to further research.

(B) The second house (Fig. 5), called by Schulten 'das Gebäude mit zwei Höfen',<sup>53</sup> has been found to differ considerably from his sketch-plan. It seems to consist of (1) a series of rooms of roughly equal size grouped around a courtyard ( $9.2 \times 4.8$  m.) with a large room ( $5.7 \times 4$  m.) in one corner; (2) a long and narrow hall ( $12.6 \times 2.9$  m.) at the east end with a smaller room attached to it; the long hall runs the whole width of the complex; (3) another large courtyard ( $14 \times 5.8$  m.) on the west with a cistern in its north-eastern corner; this court connects the complex to (4), another group of eight rooms at a slightly lower level. Whereas in all other buildings at least the outline of the whole plan was clearly discernible, the plan in this complex seems haphazard. One may assume, therefore, pending further investigation by sounding, that build-

<sup>53</sup> *Schulten*, p. 72, Plan XVIII A.



ing B belongs to a later period; possibly it was a Byzantine monastery connected with the apsidal church in the centre of the plateau.

(C) The second largest construction on the plateau (after the arsenal) is the building identified by Schulten (erroneously, we believe) with Herod's Palace as described by Josephus.<sup>54</sup> The plan made by Schulten (Fig. 6) is more accurate than those he made of the other buildings, as may be seen from the accompanying plan (Fig. 7). The whole complex, which measures about 67 by 48 m., consists of three parts, each planned on different lines: in the west the whole length is taken up by a series of narrow halls of various lengths, with a few smaller rooms, a central court and a very long corridor (55 m.) running parallel to the fortress walls. This part of the complex (I) bears a marked resemblance to the large arsenal at the north end of Masada; we undoubtedly have here the store-houses serving this whole complex. In the north this group ends in a differently oriented construction (17.5 × 12 m.) joined to the fortress wall. East of this a series of entrances leads to a comparatively broad hall (26 × 6 m.), connected presumably with the corner-room of the southernmost of the other two groups of rooms (group III).

Another house (35 × 22 m., II on plan) fills out the north-eastern part of the complex. It is formed by a series of rooms, more or less equal in size, surrounding a central courtyard. A comparison with building D (pp. 19-21 below) suggests that this part was used as barracks.<sup>55</sup>

The most interesting of the three parts of building C was group III. It consists of a series of rooms of different sizes, more or less irregularly placed around a central courtyard. It was here that Schulten discovered traces of a *liwan* (i.e. a raised bench running inside a room opening into the court) in the southern half of the court (the *oecus* according to his theory). We therefore decided to test this view and to try and trace this structure by a trial sounding. It was very soon found that no such *liwan* existed; its shape was suggested by a purely accidental higher accumulation of debris along the wall and in the centre of the court.

Three soundings were made, one along the west wall at X, one in the centre of the court at Y, and one in the south-east at Z. Soundings X and Y reached

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<sup>54</sup> *War*, VII, 289-292. *Schulten*, pp. 68-72, Plan XVI. The first to make this suggestion was Conder in 1875 (see *op. cit.*, supra, n. 45).

<sup>55</sup> Schulten (p. 71) suggests its use as a harem. It is doubtful, however, if Herod was accompanied on his probably rather rare visits to Masada by a female entourage requiring so many rooms.

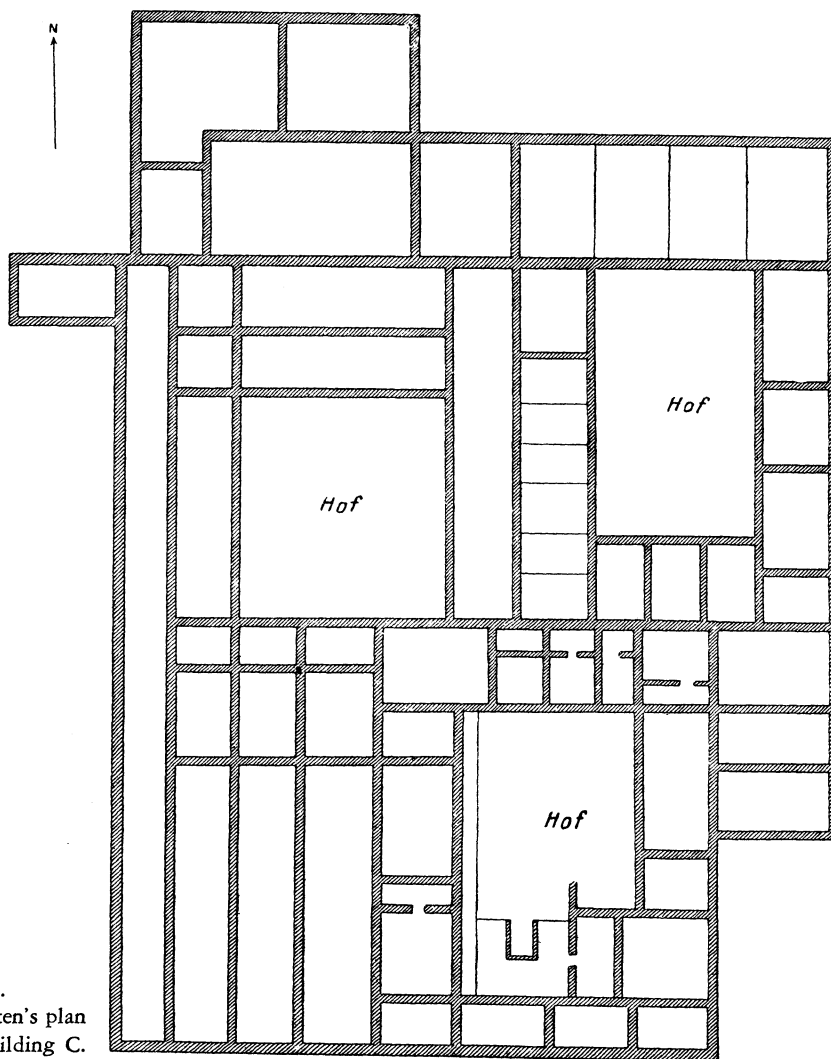


Fig. 6.  
Schulzen's plan  
of building C.

a pavement of hard plaster at a depth of 0.8 and 1 m. respectively. The larger sounding Z laid bare the west face and the corner of a wall projecting into the court<sup>56</sup> (Fig. 8, Pl. 3 C). The wall was found to have two openings (with a presumed third door further south). It still stands c. 1.5 m. high, built of rough stone masonry covered with thick stucco in several layers. The flat faces of the stucco are moulded into an imitation of bossed stones with margins, a practice typical

<sup>56</sup> This wall is noted on Schulzen's plan, Pl. XVI (Fig. 6, above).

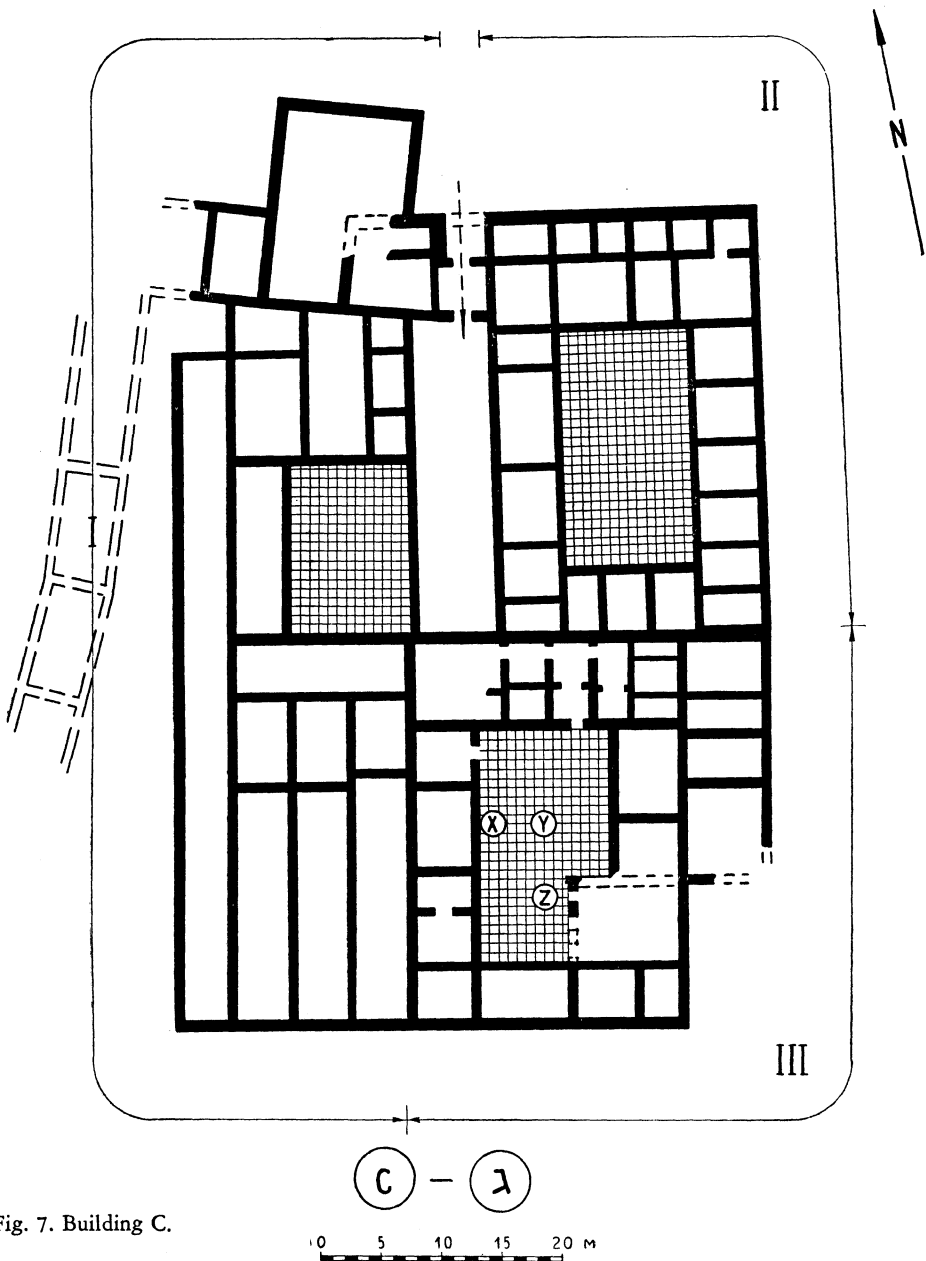


Fig. 7. Building C.

of the Herodian period.<sup>57</sup> A pillar with a moulded Attic base (Pl. 3 C) stood in the corner of the wall; the moulding and pillar face show traces of broad painted

<sup>57</sup> For similar imitations in stone, see *infra*, p. 45; cf. also the Umm el-'Amed tomb (N. Avigad: The

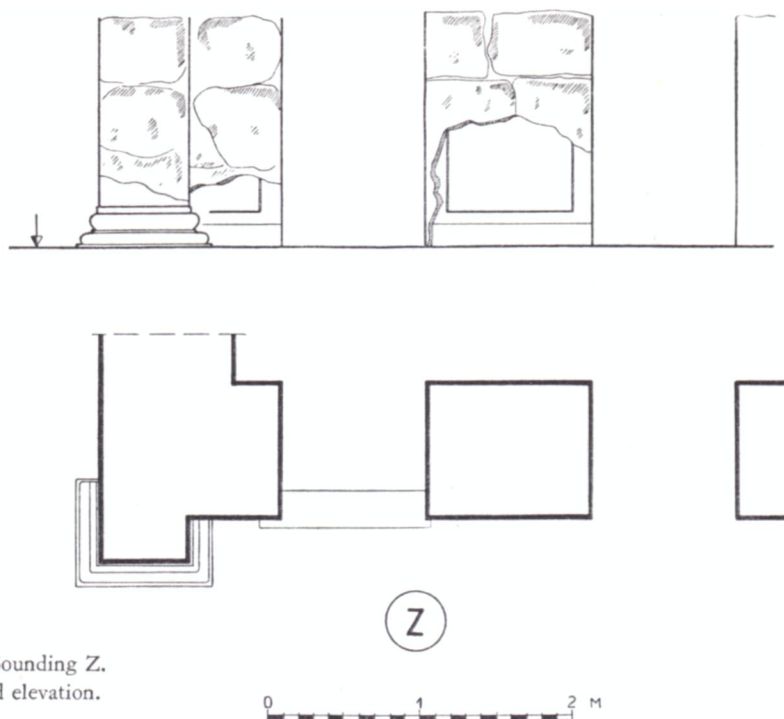


Fig. 8. Sounding Z.  
Plan and elevation.

bands in black. The debris in front of this wall and inside the door (which had a sill with wooden door-fragments *in situ*) included a great quantity of charred wood. This showed clear signs of carpenter's work. Fragments of narrow bands of moulded stucco were also found, each strip either rounded or flat and set in a raised frame; the whole suggested a stucco wall-panelling of alternate flat and rounded strips. The fact that this moulded and painted stucco had been exposed to the weather in an open court is significant in connection with the problem discussed below (p. 49) of whether the peristyle building of the palace with its frescoes was open or covered. In our sounding in the court of C we found plenty of evidence of a huge conflagration which destroyed this building. This is quite in accord with Josephus' account of the destruction wrought at Masada by the Romans (see *supra*, p. 8). Small finds in this area included a Hasmonean coin, late Hellenistic pottery, a fragment of a glass vessel with inlaid white wavy lines, nails, bronze fragments and an ivory handle.

The discovery of plastered and moulded remains beneath the apparently

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Rock-carved Façades of the Jerusalem Necropolis, *IEJ*, 1, 1950-51, pp. 102-103) and other parallels (*ibid.*, p. 103, n. 12).

ruined walls of this building, and at a shallow depth, leads us to believe that a thorough excavation of this large building would be worth while.

The purpose of this complex must be understood in conjunction with our identification of the palace described by Josephus with the building at the north end of the rock (see *infra*, pp. 51-54). As will be seen, this palace had only a few dwelling-rooms. Neither the great peristyle building nor the small building above it could serve as quarters for the court, except for the king and his immediate entourage. The remainder of the courtiers, servants, guards etc. must have been lodged elsewhere, and the building under consideration is obviously the one most suited for this purpose. It had store-rooms, barracks for some of the royal guards (most of whom were probably housed in building D), and living-rooms for the court ministers and servants. There is thus nothing wrong basically with its description as a palace, although hardly *the* palace of Masada.<sup>58</sup>

(D) This building, called by Schulten the 'small palace',<sup>59</sup> measures 45 × 32.2m.; its plan is simple and regular (Fig. 9). An open courtyard (17.2 × 14 m.) is surrounded by rows of rooms (a triple row on the west, double rows on the north and south and a single row on the east). On each side, except the east, the outer rooms are of a uniformly small size, 3 m. square on the average; the same applies to the middle row on the west. The rooms surrounding the courtyard are larger, and vary from 5.5 to 7 m. in length. An exception are the three large rooms in the south-west corner of the complex, one of which (8.2 × 8 m.) might have been a courtyard. It seems that the entrance to the whole complex was through the middle room on the east, with another entrance through the narrow corridor (12 × 1.5 m.) leading into the south-west corner of the courtyard.

Of special interest are the constructions inside the courtyard: a building (7.8 × 6.3 m.) consisting of two rooms, a smaller vestibule and a larger room

<sup>58</sup> Without an excavation we cannot readily compare the plan of this 'palace' with other contemporary buildings; one can only say in general that its plan, viz. an open court surrounded by rooms, corresponds to that of the normal big Hellenistic house. For a room advancing into the court and forming a *prostas*, cf. the third to second century B.C. houses at Priene (Th. Wiegand & H. Schrader: *Priene*. Berlin, 1904, pp. 285, 287, 297, Figs. 298, 301, 316, Pls. XXIV, XXXIII). The addition of court to court and house to house occurs *ibid.*, Pl. XXXIII. Cf. also the Middle Hellenistic Unit (late third to early second century B.C.) at Tarsus (Hetty Goldman: *Excavations at Gözlü Kule, Tarsus*, I. Princeton, 1950, Plan 3). The peristyle type of house already occurs at Pergamon in the third century B.C. and becomes the predominant type at Priene, Delos and Pompei in the second (Wiegand & Schrader, *op. cit.*, p. 299). A combination of dwelling palace, store-rooms and barracks also occurs at Pergamon in Palace III, cf. G. Kawerau & Th. Wiegand: *Die Paläste der Hochburg* (Altertümer von Pergamon, V, 1). Berlin, 1930, p. 19.

<sup>59</sup> Schulten, pp. 69-70.

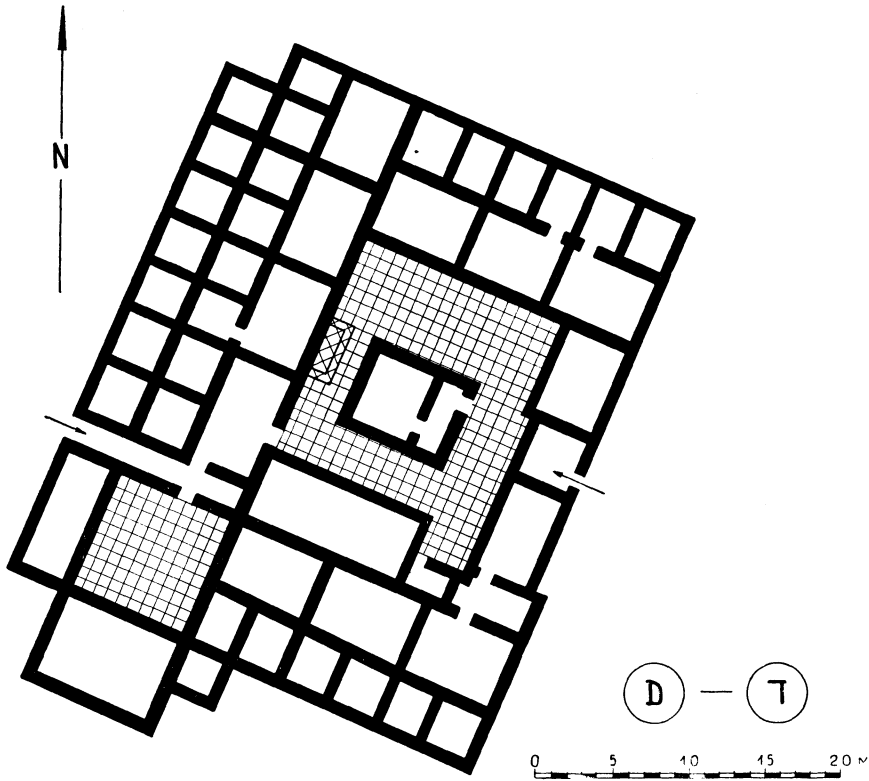


Fig. 9. Building D.

4 m. square. Behind this, on the west side, was a low elevation  $4 \times 1.5$  m.; a ruined enclosure ( $11.5 \times 5$  m.) filled the south-western corner of the court. Near it was a very small room ( $3 \times 1.5$  m.), perhaps a latrine.

Although without excavation we cannot be certain on this point, the regular rows of small rooms outside and large rooms inside suggest a military establishment, with quarters of different sizes for officers and men. The whole of D seems, therefore, to have served as quarters for the royal guard and the Roman garrison which succeeded it. If we accept this hypothesis, the group of rooms in the SW corner might have served as the guard-room facing the entrance of the fortress. The constructions within the courtyard pose a peculiar problem. The elevated platform and the central building of two rooms can hardly be contemporary. Obviously, the platform preceded the building, for when the latter was erected it rendered the former useless. One might hazard the suggestion that the platform served as an imitation of the tribunal from which the Roman commander used to address his soldiers; it is well known that Herod's troops

were commanded and drilled by Roman N.C.O.s into an imitation of the Imperial Army.<sup>60</sup> The central structure suggests a shrine; its later erection might be due to the Roman garrison which remained at Masada after Herod's death until the outbreak of the Jewish war (see *supra*, p. 6). The presence of the king would necessitate ample accommodation for his guards; in his absence, however, the barracks D might suffice; accommodation for additional troops could be found in group II of palace C (*supra*, p. 15) and at the arsenal (cf. *infra*, p. 23).<sup>61</sup>

(E) The store-houses and arsenal were from the very beginning identified as such<sup>62</sup> and are almost unmistakable, even if some later observers did mistake them for Herod's palace or even for Jonathan's.<sup>63</sup> The maximum extent of the whole complex, which fills the northern part of the plateau from wall to wall, is 106.5 m. from north to south, and 91 m. from east to west. It consists of one big group of buildings within a wall (Fig. 10, Pl. 4A). This group may be subdivided into (I) the central tower and attached buildings; (II) the northern store-rooms; (III) the southern store-rooms; (IV) the western barracks; and in the south another house (V) with various connecting structures.

(I) The first group consists of an almost square complex of buildings: a courtyard 18.8 × 8.8 m. with a room in its north-west corner and four rooms (including a bath with steps) at the south-western end. The principal feature of this complex is a tower with very thick walls (2.2-2.8 m.) and vaulted passages.<sup>64</sup> The tower, the courtyard and the rooms connected with it are placed at an angle to the store-houses, which suggests that they are either of earlier or of later construction. As the whole of group I fits into a corner of the group of store-houses (II-III), and as a watch-tower from which one could survey the whole area of the magazines at one glance would presumably be a first necessity, we may conclude that it was an earlier construction.<sup>65</sup>

<sup>60</sup> Cf. Josephus' description of the parade of the Herodian army at the king's funeral, *War*, I, 672.

<sup>61</sup> For the general lay-out, cf. the barracks at Pergamon, which also consist of rows of rooms encircling a courtyard and are dated to the time of Attalus I (241-197 B.C.); they have later additions (cf. the 'sanctuary' inside the courtyard), built under Eumenes II (197-159 B.C.); cf. A. v. Szalay & E. Boehringer: *Die Hellenistischen Arsenalen* (Altertümer von Pergamon, X). Berlin, 1937, Pl. 35.

<sup>62</sup> Wolcott, as quoted by Brünnow & Domaszewski, *op. cit.* (*supra*, n. 35), p. 236.

<sup>63</sup> Rey (quoted *ibid.*, p. 240); de Saulcy (quoted *ibid.*, p. 239).

<sup>64</sup> A similar 'Befehlsturm' is attached to the Pergamene arsenal complex, Szalay & Boehringer, *op. cit.* (*supra*, n. 61), Pl. 35.

<sup>65</sup> The possibility should also be considered that this tower might be part of Jonathan's fort, perhaps



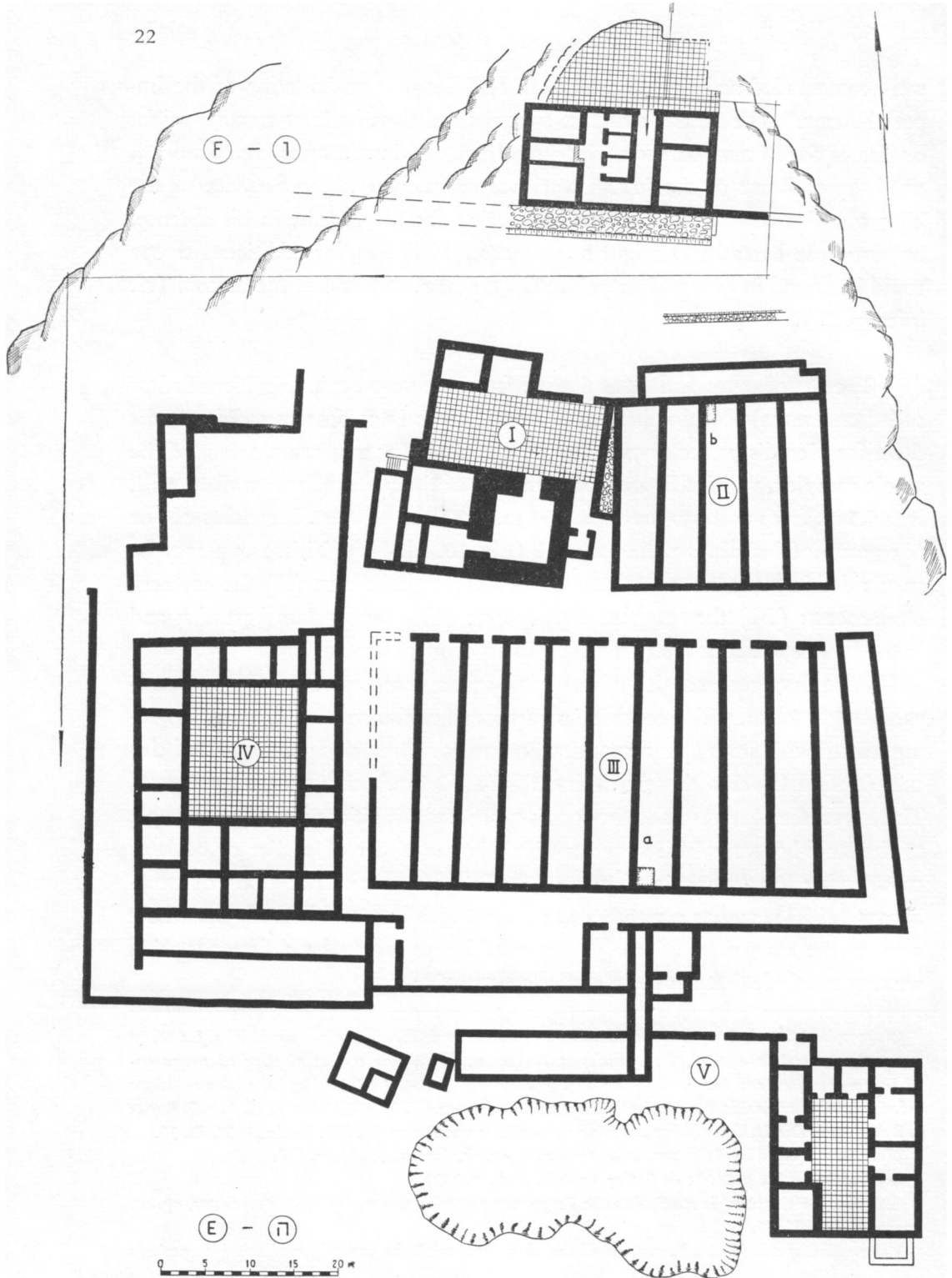


Fig. 10. The store-houses and arsenal (for F above, cf. Fig. 11).

Groups II and III are identical in plan but differ in size. Group II to the north consists of five rooms (20-21 m.  $\times$  3.5-4 m.). A traverse corridor 19.7 m. long and 2.8 m. wide limits them on the north. A passage 6.5 m. wide separates them from group III. The latter has eleven rooms 28.8 m. long and 4-4.5 m. wide. All the rooms have entrances on the north. The whole group is surrounded on three sides by a passage about 3 m. wide.

The store-houses are built of stone plastered over. At one point a whole wall collapsed owing to an earthquake and the layers of stones composing it are laid out on the ground at regular intervals.<sup>66</sup>

Group IV consists of another house with rows of rooms of nearly equal size, grouped round a central courtyard. It is bordered on the south by a long corridor (25  $\times$  3.7 m.). Another outer passage, 4.7 m. wide, runs round the south and west sides of this house. This type of dwelling with its regular rooms seems to have been the barracks of the arsenal guards, or possibly the store-house for material of special importance; the former supposition seems the more likely one.

The southernmost group V consists of a series of long passages running from east to west, and three rooms flanking a very narrow corridor (1.1 m. wide, 16 m. long) running from north to south. At the western extremity, on the border of a large open quarry, are two separate constructions (one of which has two rooms, the other only one). These stand at an angle to the main group, which recalls both the inclination of the thick tower in group I and the isolated buildings in the vicinity of house (A) (cf. *supra*, p. 13).

a watch-tower guarding his palace (see *infra*, p. 28). As a comparison we could quote the square construction which was the earliest building at Pergamon, viz. the *γασφυλάκιον* (treasury-keep) of Philetærus (286-263 B.C.) which was superseded by the later palaces. Kawerau & Wiegand, *op. cit.* (*supra*, n. 58), p. 11, Pl. II.

<sup>66</sup> A comparison naturally suggests itself between these remains and the arsenals and store-houses at Pergamon, dating variously from the first half of the third century to about 160 B.C. As regards the plan, one should note that the Pergamene store-rooms are much narrower and shorter, with thicker walls. Both have in common the uniformity of plan; the narrow passages between the groups of buildings, the equal floor-space provided in each room. Planning obviously started from the store-rooms, the outer wall and passages being added for convenience. The leaving of openings on the north side is recommended by Vitruvius (VI, 6, 4), Varro (*Rer. rust.*, I, 57), Palladius (I, 19, 1). Their advice to place the store-houses in a high position is automatically observed in Masada. In the absence of full-scale excavations we cannot determine which rooms served as arsenals and which as store-houses; see, however, *infra*, p. 24. In Pergamon, too, one thousand soldiers could be supplied from the magazines for a year; this seems to have been the standard Hellenistic quota; cf. Szalay and Boehringer, *op. cit.* (*supra*, n. 61), pp. 23, 25, 27, 55; Pls. 37, 39. The total area of the Masada arsenals (2416 sq. m.) compares very favourably with that at Pergamon (1756 sq. m.).

Finally, at the south-eastern extremity of this group stands another house,  $18.5 \times 17.2$  m., with eleven rooms grouped round a central courtyard ( $14.6 \times 6.5$  m.). This house is connected by a wall with the store-house group and has an issue into the space facing it. The most probable suggestion seems to be that this house served as residence of the officials and servants employed at the arsenals.

In 1956 a trial sounding was made in two of the store-rooms, one in the southern and one in the northern wing (Fig. 10, at a, b).

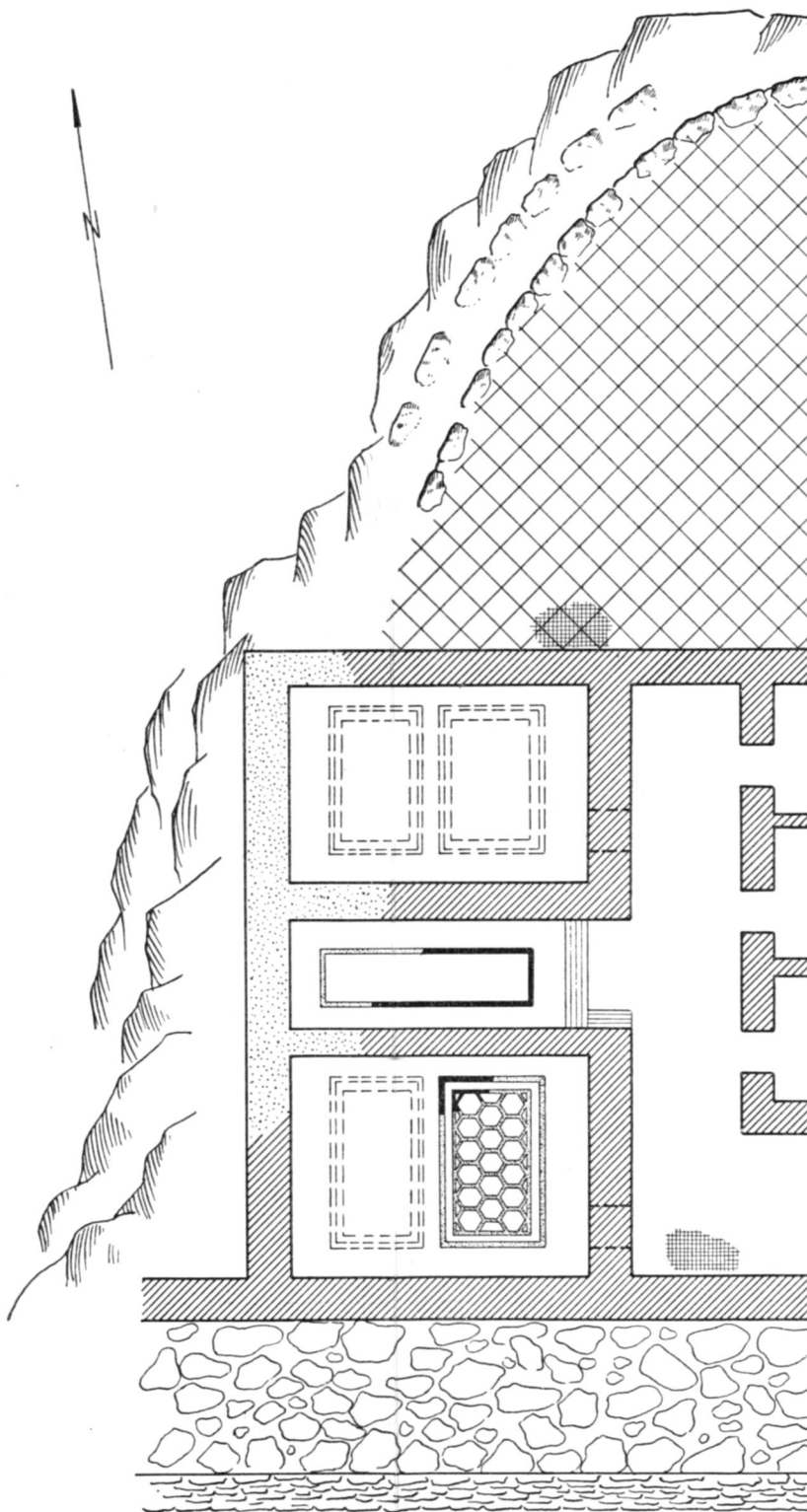
(a) In the southern wing (III) the sounding was made in the south-western corner of the fifth room from the east end (a). An area of 2 sq. m. was cleared down to the floor; the debris was found to be 0.75 m. high. The walls and the floor were plastered with strong white plaster. On the floor was an accumulation of reddish sandy soil 5-10 cm. thick. Over it was a burnt layer of 5-15 cm. (Pl. 3D) with remains of wooden beams, reeds, ropes and lumps of calcined plaster. There can be no doubt that these remains represent a burnt roof composed of beams, reeds and plaster, for which there is evidence also in other parts of the site. Over this level was a stratum of fallen stones and earth. The only object found in this sounding was an iron point found on the floor, perhaps the remains of a knife or a weapon. The absence of potsherds and other objects was very noticeable.

(b) In the north wing (II) the sounding was made near the north-western corner of the third room from the east (b); its area was  $1 \times 2$  m. The debris and accumulations were about 1 m. deep. The wall here was not plastered, but was smoothed with mud placed between the stones. The floor too is not plastered, as in the southern store-room, but is composed of small stones and mud. On the floor were found fragments of big store-jars and among them a small glass bottle, intact (Pl. 3E). No signs of burning were found there nor any indications as to the nature of the roof.

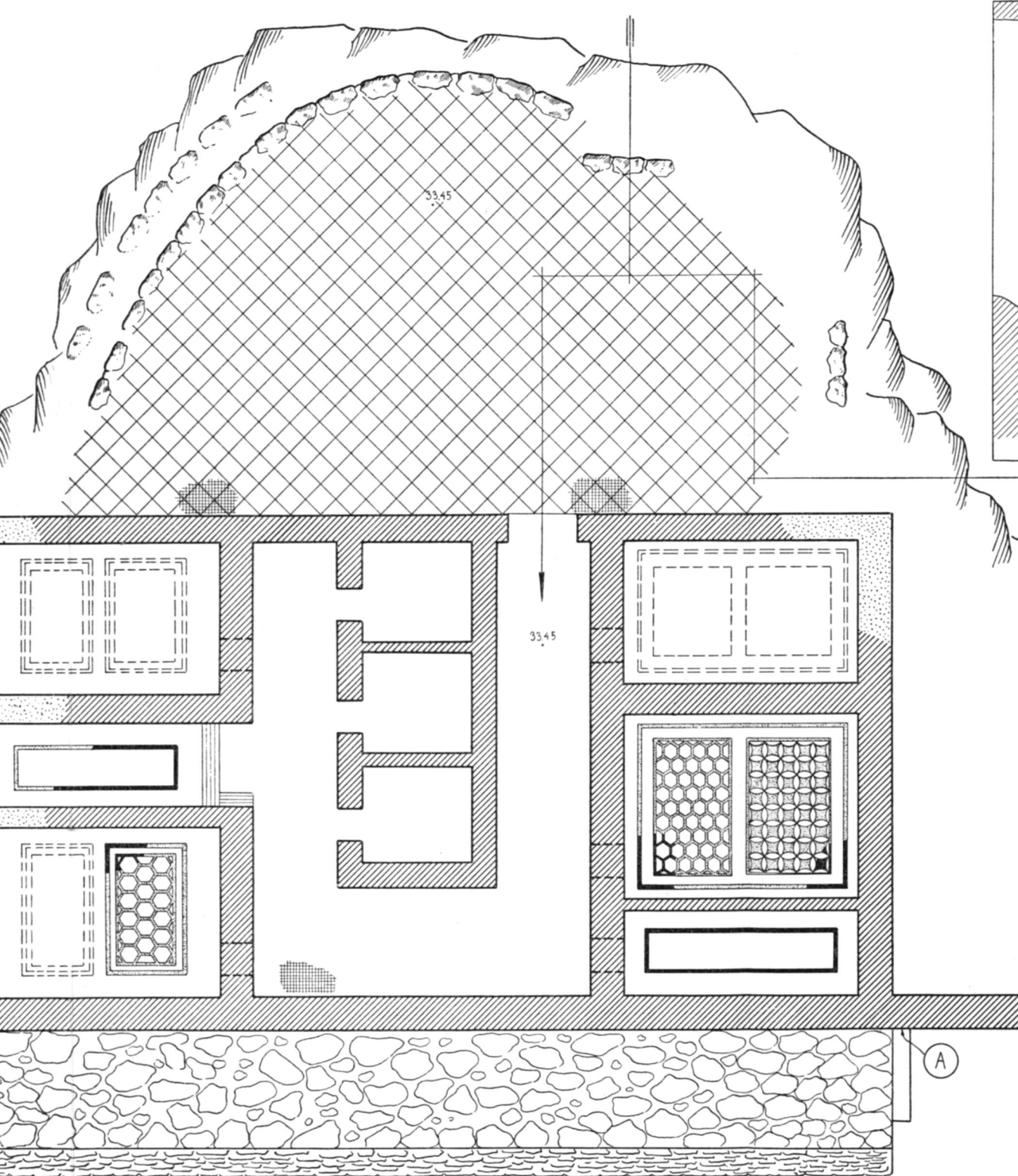
From these finds we may conclude that room (a) was part of a magazine of arms, and room (b) of a food-store. It is therefore possible that the south wing of the stores was the arsenal and the north wing a store of supplies. The conspicuous traces of burning in (a) and their absence in (b) seem to correspond to the statement of Josephus that the garrison burnt their chattels and the fortress, but left their provisions intact to show that they were not subdued by want (*War*, VII, 335-336). But one cannot, of course, arrive at any certain conclusions from the small areas excavated.

Fig. 11. The building on the upper terrace. Inset (on right): Graffito scratched on wall at A.

*Note:* In Figs. 11, 12, 13 hatched areas indicate remains as observed; dotted areas indicate restorations on plan.







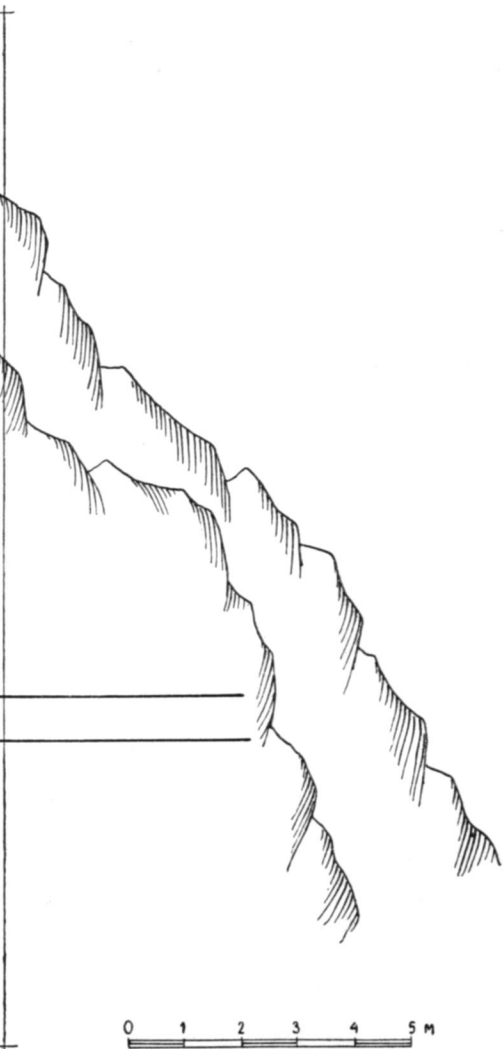
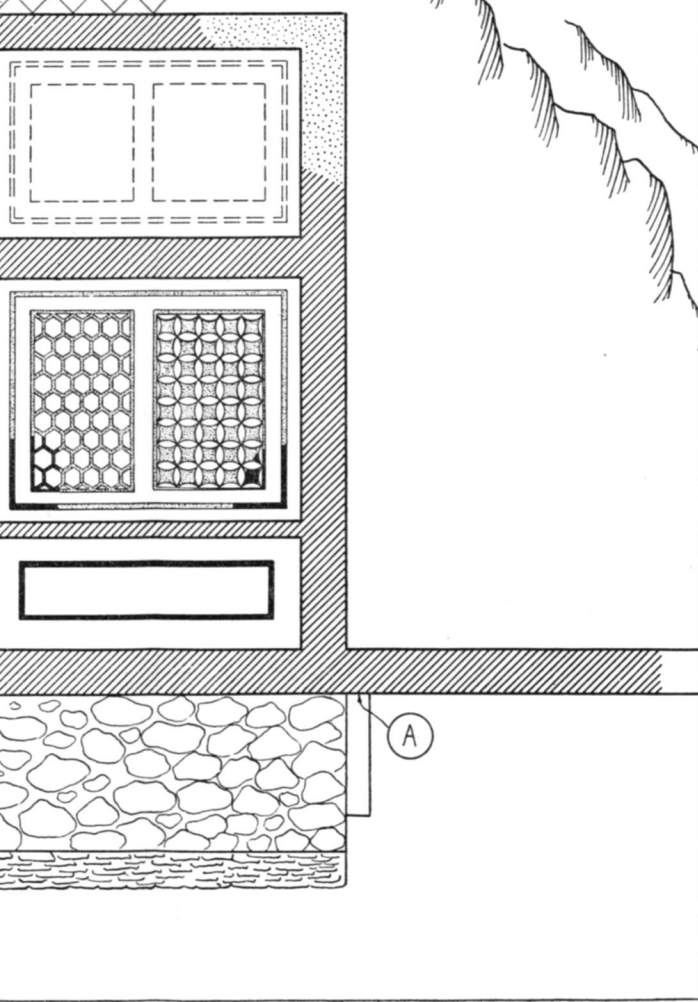
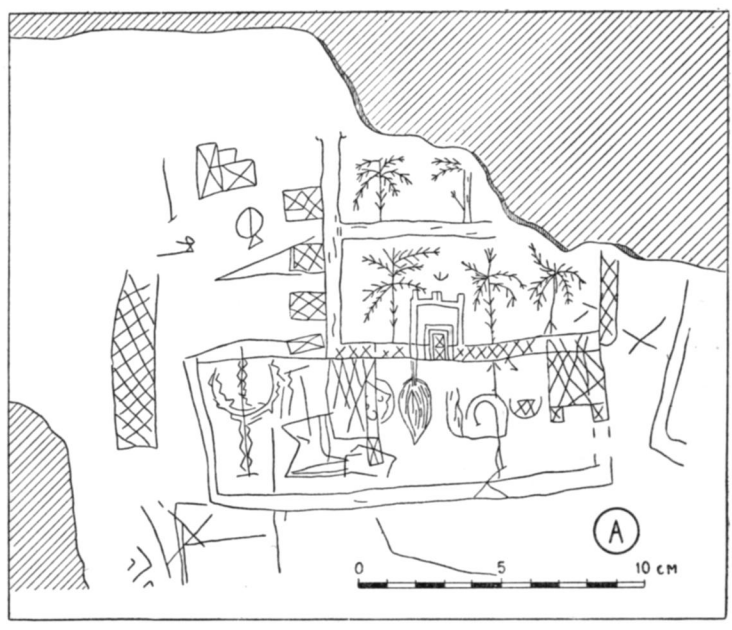
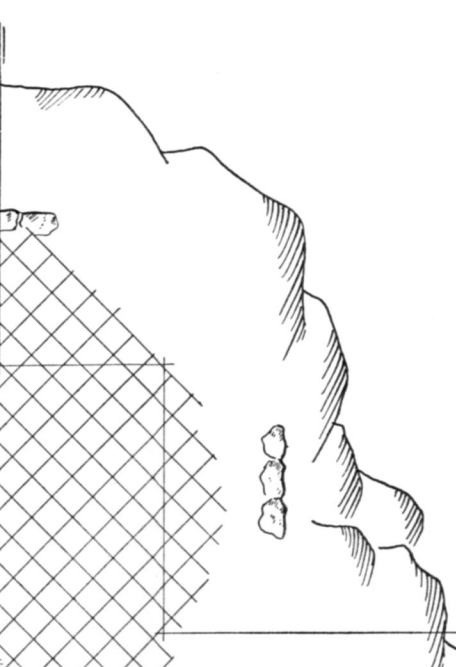
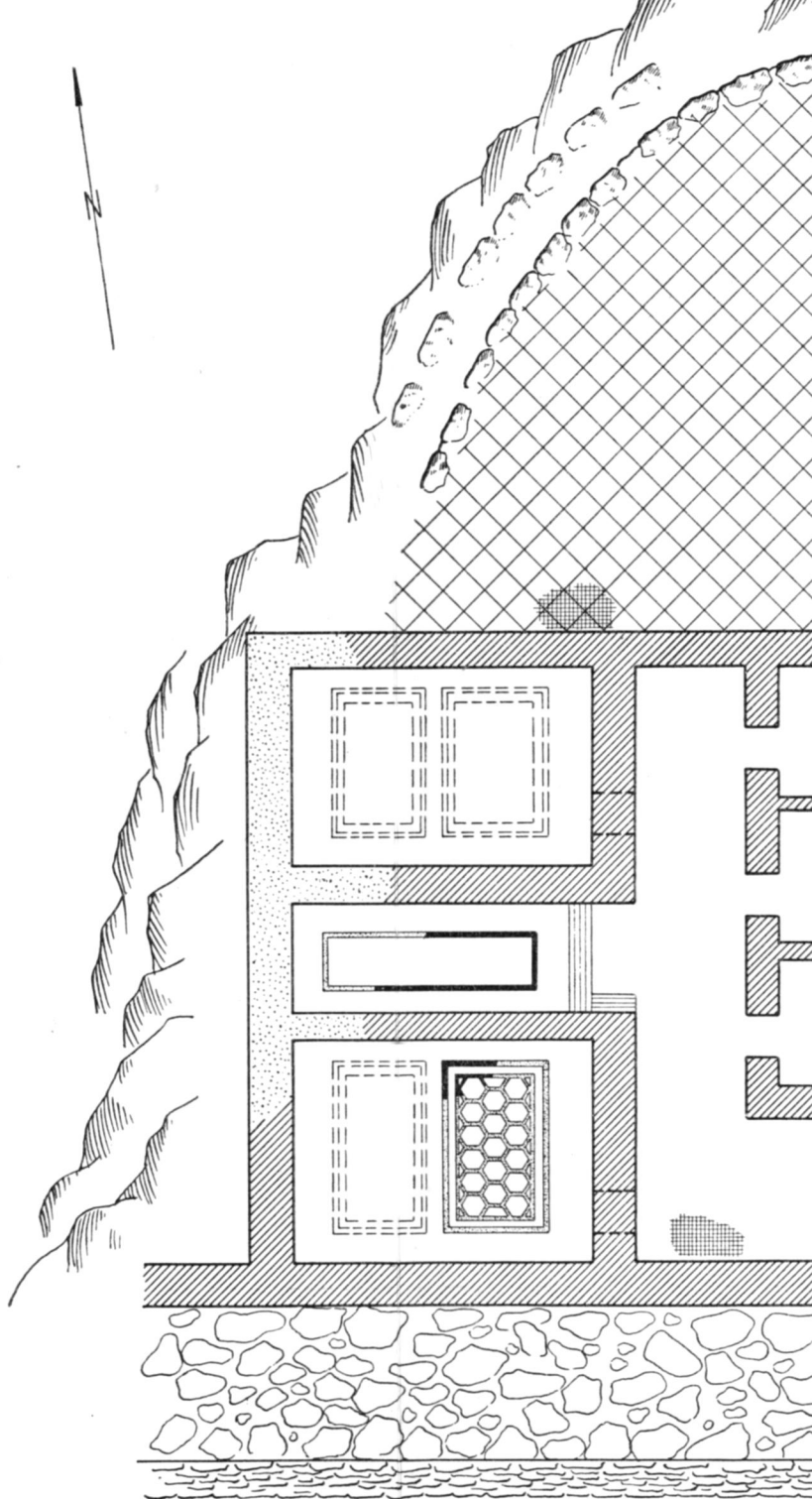


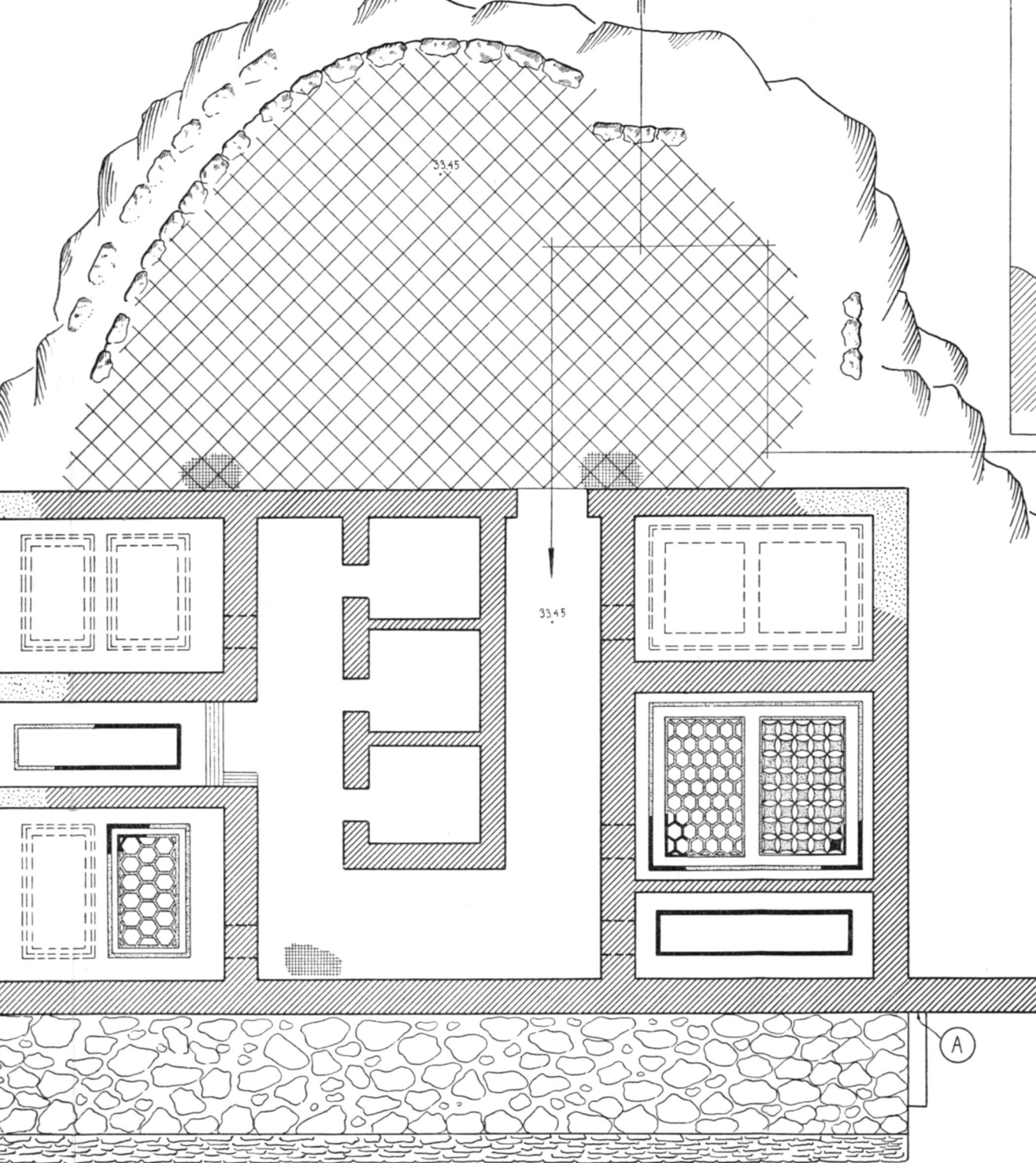
Fig. 11. The building on the upper terrace. Inset (on right): Graffito scratched on wall at A.

*Note:* In Figs. 11, 12, 13 hatched areas indicate remains as observed; dotted areas indicate restorations on plan.

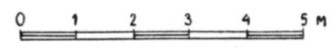
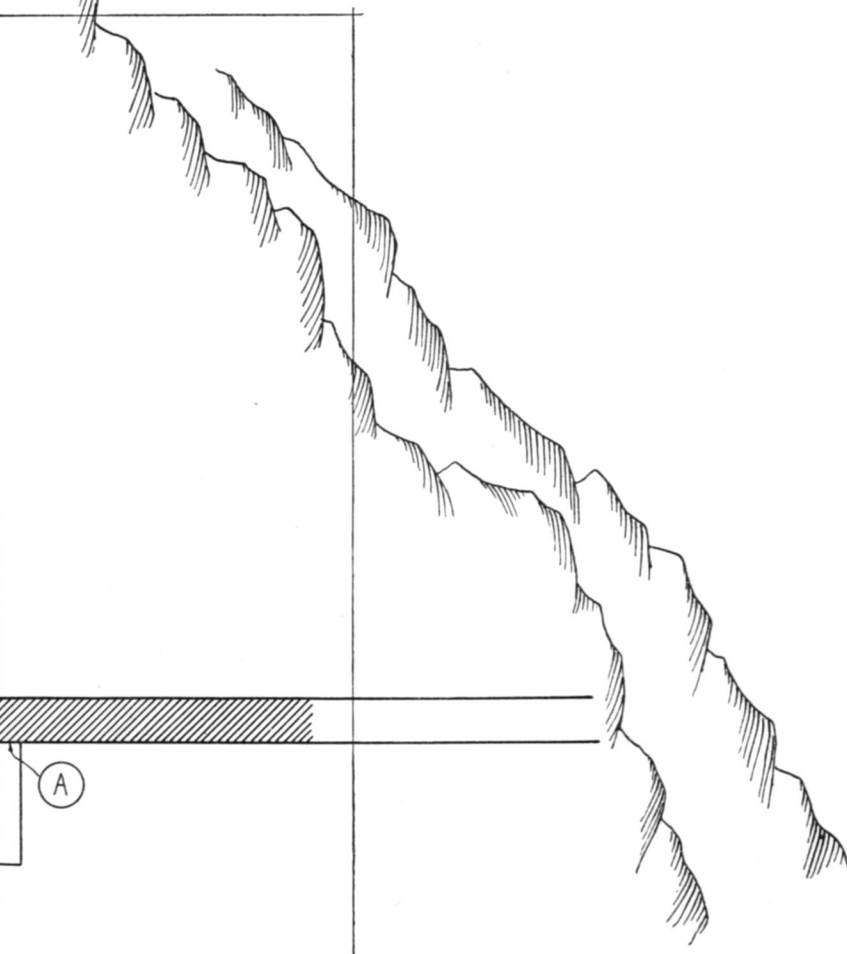
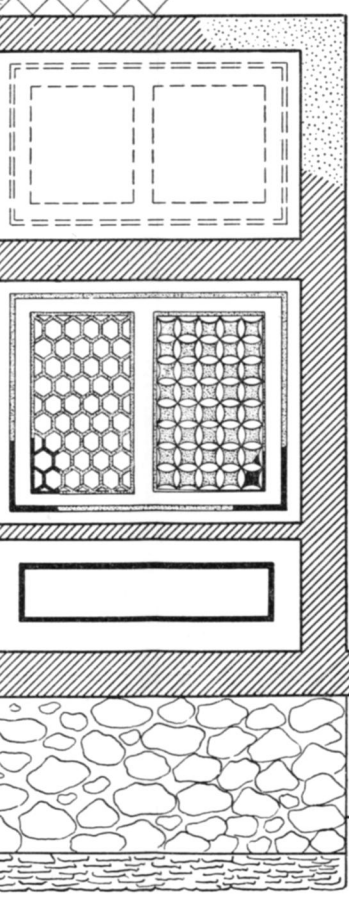
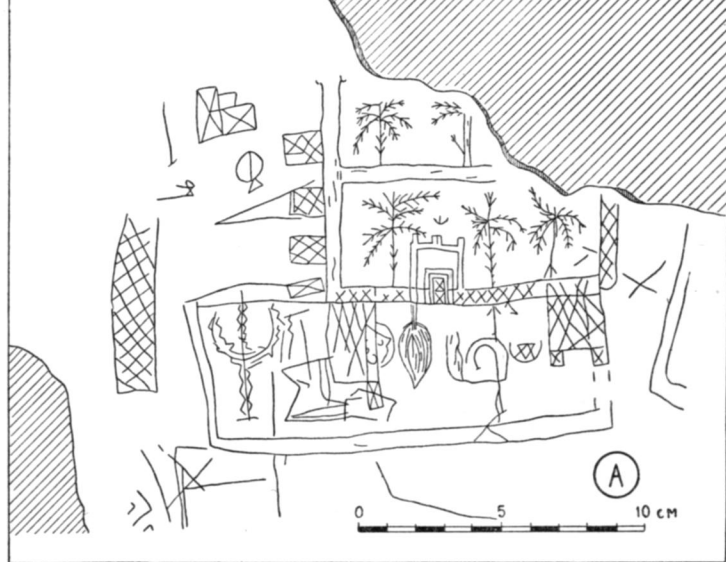
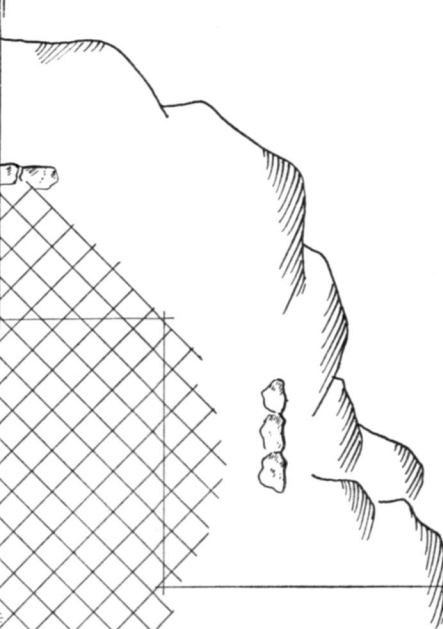


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## THE BUILDINGS ON THE NORTHERN CLIFFS

*The Upper Terrace*

A wide oblong space, most probably a road, separates the store-houses from a sloping wall (still standing 4 m. high) which cuts off the north end of Masada from the rest of the plateau; the fortress walls do not stretch beyond this point (Fig. 3). Foundations of rooms, some of them paved with mosaics, were observed as far back as 1857 and planned by E. G. Rey.<sup>67</sup> From its position at the northernmost tip of the plateau, its magnificent and unimpeded view to the north (one sees as far as Engeddi and beyond) and the important remains visible on the terraces below it (Pls. 3 A, 4 B), this seems naturally to have been a building of major importance. Owing to the configuration of the site, the remains were covered unequally. Those on the west lay beneath a stratum of debris up to 2 m. thick, while those on the east were just below the surface or even exposed to view.<sup>68</sup> The extremities on both sides were eroded away; those on the west had suffered more. Owing to the short time at our disposal and the small size of our working party, we contented ourselves with tracing the walls superficially, i.e. just enough to establish the plan of the building. Only in a few places did we excavate down to the floor, mainly in order to ascertain the mosaic patterns decorating the floors.

The whole area at the northernmost end of the plateau was found to be occupied by a rectangular house of nine rooms, facing a semicircular terrace whose boundary wall skirted the cliff edge.<sup>69</sup> A trench dug across this terrace showed a uniform filling of small stones. The house measured 21.5 × 12 m.; the terrace had a radius of c. 9.5 m. The only visible sign of an entrance door was a door-sill found in the northern façade slightly off the centre. The plan of the building (Fig. 11) was peculiar. In its centre were three small rooms (2.5 × 2.25 m.) in a row running from north to south, with their entrances to west. Around them on three sides ran a  $\square$  shaped corridor, 2 m. wide. This corridor was flanked on the east and west by three rooms on each side; two larger rectangular ones (c. 5.5 × 3.5-4.25 m.) and an oblong passage (5.4 × 2 m.), which

<sup>67</sup> Brünnow & Domaszewski, *op. cit.* (supra, n. 35), p. 220, following E. G. Rey: *Voyage dans le Haouran et aux bords de la Mer Morte*. Paris, n.d., Pl. XXVI.

<sup>68</sup> The drawing by Rey quoted in the preceding note shows, on the contrary, that at that time the western part of the building was visible, but not the eastern.

<sup>69</sup> This terrace was already noted by Conder, cf. his plan, *op. cit.* (supra, n. 45).

on the west passed between the two square rooms and on the east side bordered them on the south.<sup>70</sup>

The walls of this house were made of blocks of the sandstone used on the site, measuring on the average  $70 \times 30 \times 30$  cm.; others noted were  $56 \times 30 \times 20$  or  $30 \times 30 \times 20$  cm. The walls rested on the usual foundation layer of rough stones. The stone-blocks were well dressed and squared, but owing to their fragility it was often difficult to trace them. The outer walls were 0.7-0.8 m. thick, the partition walls c. 0.4 m., i.e. they were only one stone thick. All the masonry visible consisted of stretchers, with a filling of plaster and small stones. The walls were plastered both inside and outside. Small fragments of coloured plaster were found in the debris, showing a design of stripes (8 cm. wide), red, yellow and white, or yellow, black and red.

The most interesting feature of this building (apart from its general lay-out) was the remains of mosaic pavements found in the outer rooms on the east and west. Remains of mosaics were noticed in the corridor surrounding the three central rooms, as well as on the semi-circular terrace near the outer wall of the house. The patterns in the main rooms could be reconstructed exactly by Mr. Dunayevsky from the remains visible. Each of the larger rooms was subdivided into two areas of patterning: in the east a pattern of black stars set in a white background with a narrow border, 5 cm. wide (Pl. 5 C); the second pattern in this room, also set within a narrow border, represents black contiguous hexagons set in a bee-cell pattern, again with a white background (Pl. 5 D). A wider border (10 cm.) surrounded both patterns.

The hexagonal (bee-cell) pattern, with larger hexagons, is repeated in the larger room in the west (Pl. 5 E). The two oblong narrow rooms have both a white pavement with a black rectangle set in it (Fig. 11). While the white mosaic is made of limestone identical with that used for the half-finished cubes in the 'workshop' area (see supra, p. 4), the black ones are made from a soft bituminous stone found near the Dead Sea (e.g. at Meşad Boqeq, see Fig. 1) which disintegrates easily. These mosaics, which are undoubtedly the earliest so far found in Israel, conform in pattern to the transition period (100 B.C.-

<sup>70</sup> The only similar plans which we could discover were: (a) Palace IV at Pergamon (263-197 B.C.), where in the original plan a corridor enclosed part of the rooms grouped round a court, a plan abandoned in the later Palace V; cf. Kawerau & Wiegand, *op. cit.* (supra, n. 58), pp. 25-26, Pl. IV; (b) The Casa dei Cervi at Herculaneum (Th. Fyfe: *Hellenistic Architecture*. Cambridge, 1936, p. 143), where the rooms are surrounded by a complete corridor paved with mosaic, a feature described as unique. In Pergamon the earliest palaces are not of the peristyle type.

100 A.D.) in Italy,<sup>71</sup> and are therefore certainly Herodian. The implications of this dating will be discussed below (see p. 28).

There is evidence that the building and its surroundings underwent important changes at some period subsequent to its original erection.<sup>72</sup> Thus, the oblong room in the centre of the western section was blocked off at some later period (Fig. 11). This second builder used blocks of a different size ( $66 \times 16 \times 33$  cm.) and material (limestone, not sandstone). A supporting wall of rough stones, 2.6 m. thick, was added in the south at some later date, as it hides the outer face of the original wall. This wall tapers off on its east end into a sloping pointed edge, which has still preserved its original plaster cover. In the corner formed by the edge of this wall and the continuation eastwards of the original house-wall was set a plastered bench (Pl. 5 A). Graffiti of indefinite character were found scratched on the wall behind the bench and especially on the wall beside it. Among these was a fairly clear design (Fig. 11 A, Pl. 5 B) of a group of palm-trees enclosed within a wall with battlements. Towers stand in the corners of this wall and a gate is placed in the centre of the curtain-wall. An enclosed space in front of this walled garden has various marks and symbols, amongst which one may recognize a seven-branched candlestick on the left and a cypress-tree in front of the gate to the right. A palm-tree trunk appears left of the enclosure. It would be idle to speculate on the significance of these crude drawings (which are nevertheless executed with a certain skill). They may represent anything from the date gardens of Engeddi to paradise. This drawing and other graffiti nearby were obviously executed by soldiers on guard before the palace, who thus whiled away the tedious hours of duty.

The finds in front of the bench throw more light on the guards and their doings: they include remains of food (date-kernels, nut-shells, salt, some kind of organic substance as yet unidentified), leather, soles, a shoe-latchet, etc. Other

<sup>71</sup> For the star pattern, cf. M. E. Blake: *The Pavements of the Roman Buildings of the Republic and Early Empire* (Memoirs of the American Academy in Rome, VIII). Rome, 1930, p. 103, Pl. 1:4 (Pompeii VI, xv, 5—first half of the first century of our era); *ibid.*, pp. 97-109, Pl. 24:4 (Pompeii VIII, ii, 1); *ibid.*, p. 103 and n. 5, Pl. 31:4 (Pompeii VI, i, 8); for the hexagonal pattern *ibid.*, pp. 98, 109, Pl. 26:4 (Pompeii IX, vii, 6—transition period, first centuries B.C.-A.D.); p. 109, Pl. 29:4 (Pompeii IX, iii, 5—middle of first century A.D.).

<sup>72</sup> For evidence of similar changes at Pergamon, cf. Kawerau & Wiegand, *op. cit.* (supra, n. 58), pp. 11-13, 65, with evidence of a treasury-keep of Philetærus (283-263 B.C.) followed by later buildings by Eumenes II (197-159 B.C.). The lack of space produced similar problems at Pergamon and Masada, see especially *ibid.*, p. 65, where the development from a mountain  $\phi\rho\omicron\upsilon\rho\iota\omicron\nu$  to a splendid set of palaces is described.



finds in this area were pieces of moulded stucco<sup>73</sup> (some still adhering to pieces of cane, i.e. parts of a roof), fragments of plaster painted in red, yellow and green; also the whitewashed corner of a Corinthian capital. This find is the more remarkable as on the terrace two capitals of the Ionic order had previously been found.

Thus the house on the upper terrace is, together with the arsenal, the only construction in this area to bear signs of two periods of construction. In trying to differentiate the later elements from the earlier, we should list among the former:

(a) The high supporting wall which was obviously erected to buttress the south wall of the original house. Possibly this was done after an earthquake, or on the addition of an upper storey.

(b) Consequently, the guard bench, which was built into the corner between the supporting wall and the continuation of the original wall, must belong to the second period of building. Obviously, the only time during which a guard would be posted outside the house would be a time when it was a royal residence, i.e. the time of Herod.

(c) The mosaic pavements are clearly Herodian (cf. *supra*, p. 27).

(d) The debris found near the bench is evidence of an upper storey with Corinthian columns, whereas the columns used (in front?) of the original house were of a simplified Ionic order.

(e) The changes in the original plan of the house, especially the cross-wall blocking the west corridor passage, are certainly later.

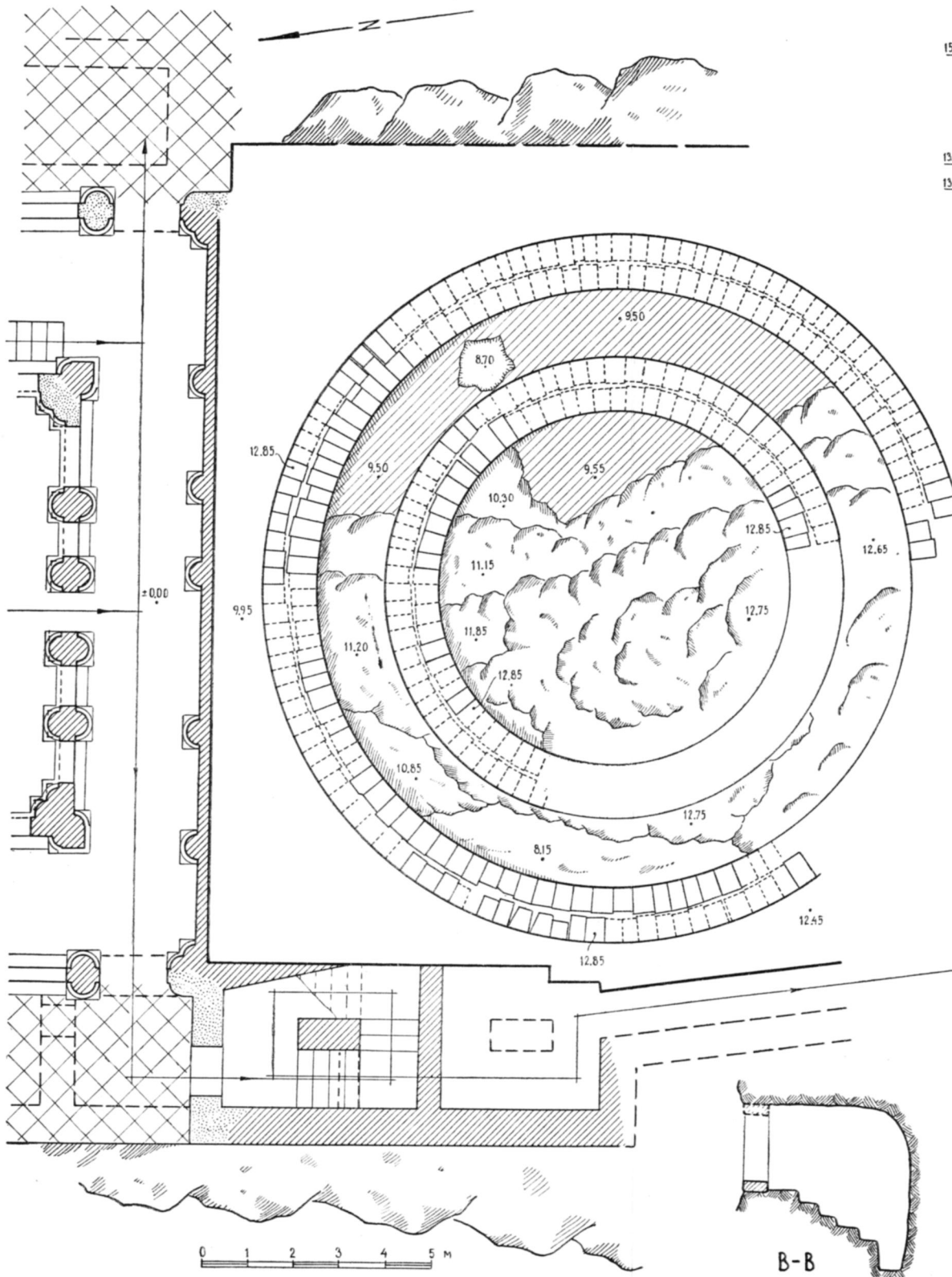
If the additions are Herodian, the original erection of the house must be referred back to the only other building period at Masada known to history, i.e. the Hasmonean.<sup>74</sup> Other considerations would also support this view, necessarily tentative before a complete clearance of the site. These are the smallness and modesty of the whole construction, compared with the magnificence of the (certainly Herodian) peristyle building on the lower terrace. The plan of the house certainly suggests a residence, with the small inner rooms possibly serving as sleeping quarters for the prince. The corridor which runs round these rooms on three sides seems destined for the guard protecting the inner rooms. The

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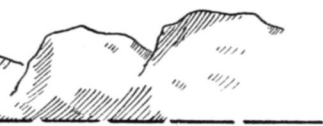
<sup>73</sup> Rey collected there a piece of stucco moulding which he presented to the Musée de Terre Sainte de M. l'abbé Michon (Brünnow & Domaszewski, *op. cit.* [supra, n. 35], p. 240). Other pieces were presented to the Louvre by F. de Saulcy (R. Dussaud: *Les monuments palestiniens et judaïques*. Paris, 1912, p. 61, No. 63); cf. also Pl. 14 A.

<sup>74</sup> See *supra*, pp. 1-3.

Fig. 12. The middle terrace.



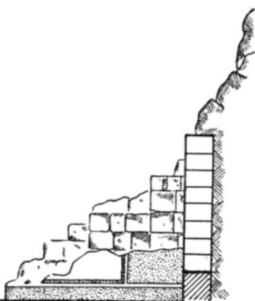
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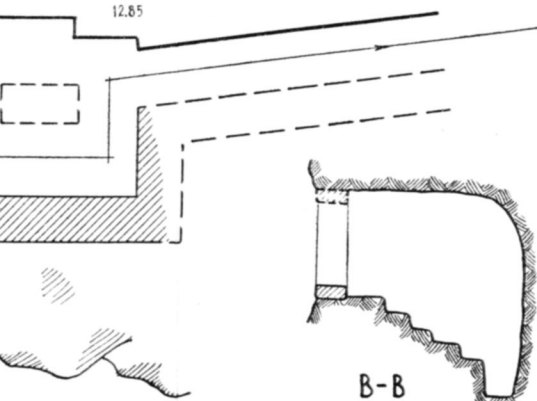
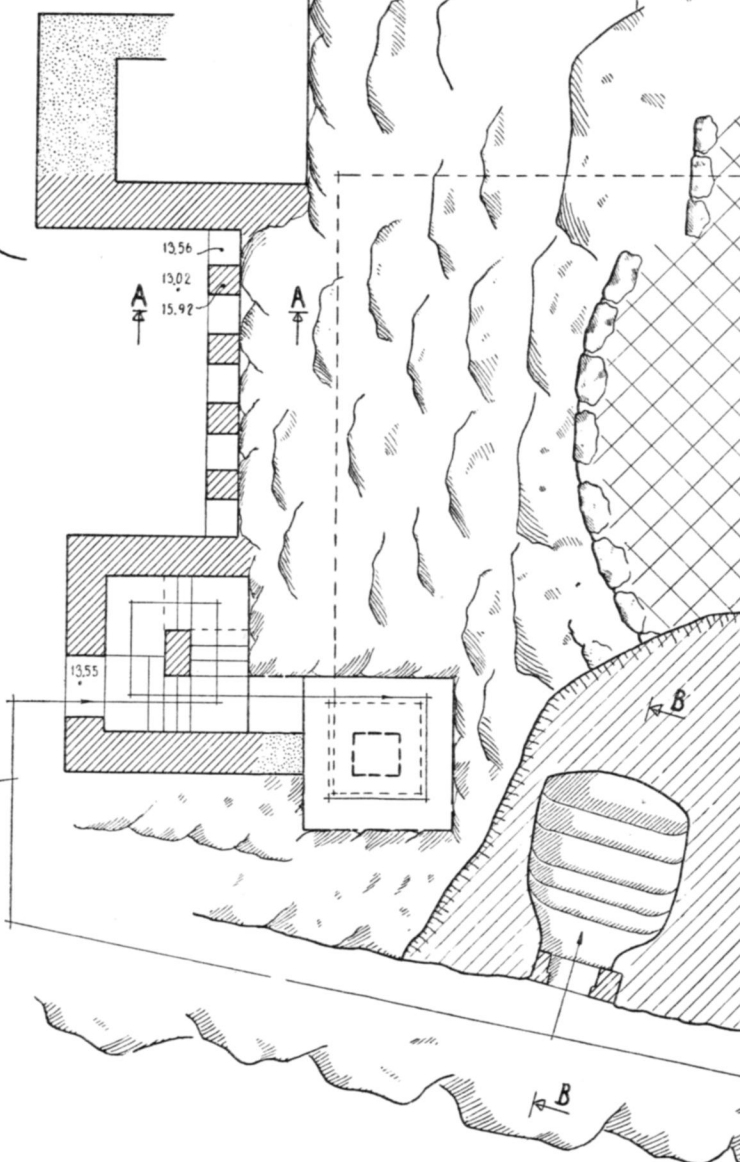
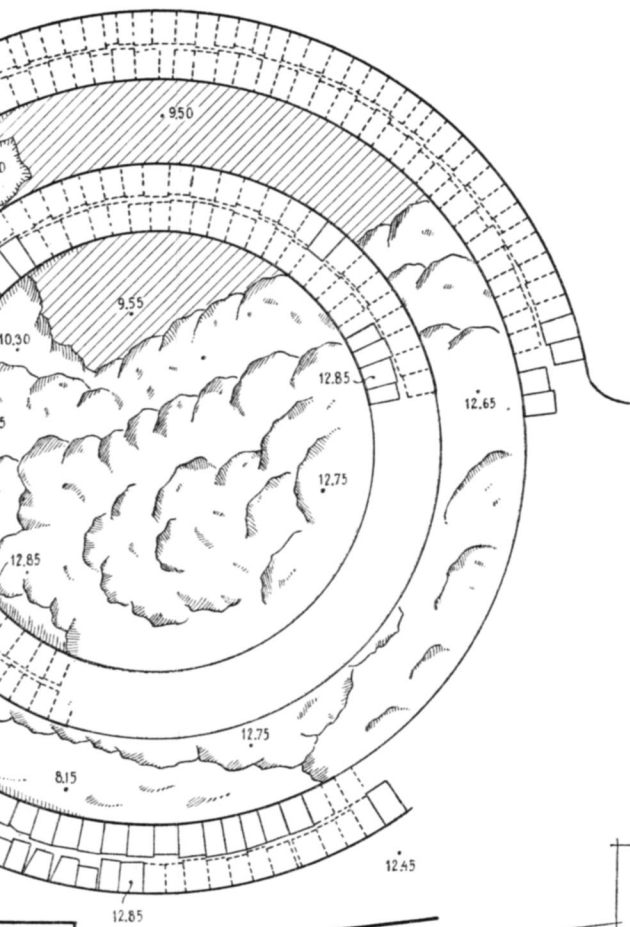
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A-A





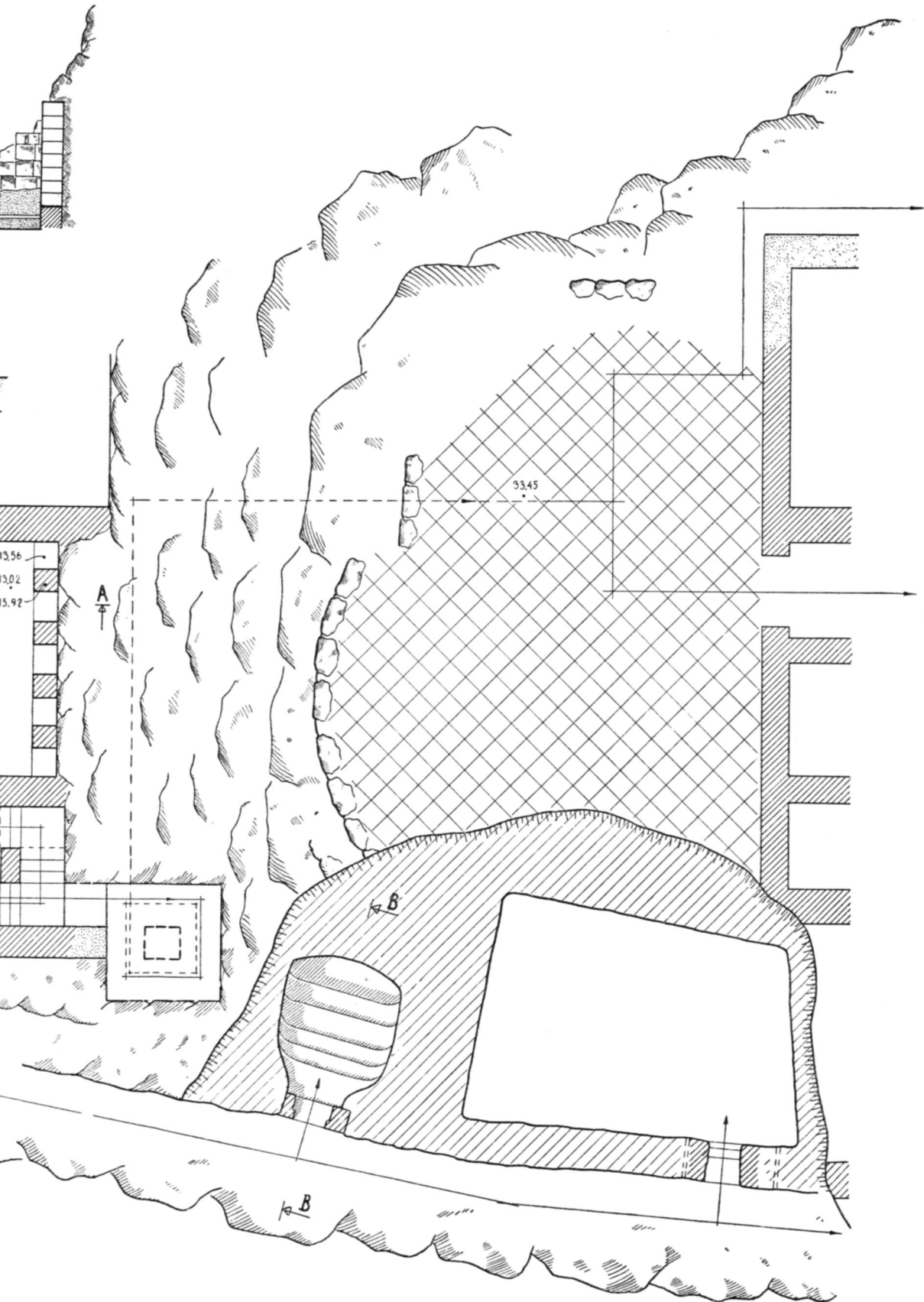
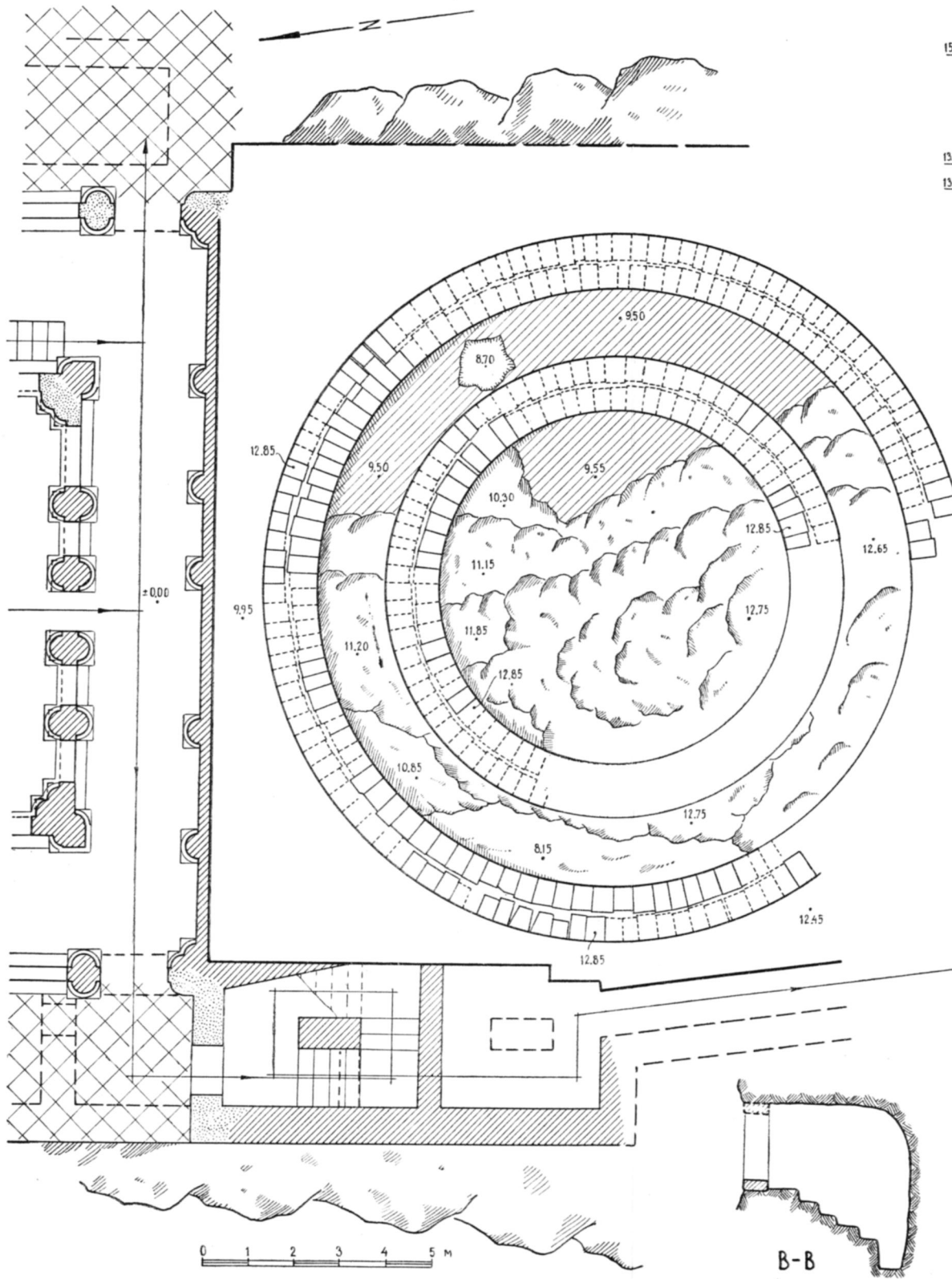
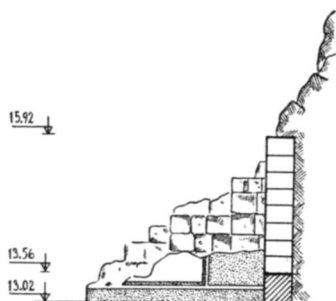
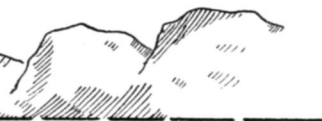




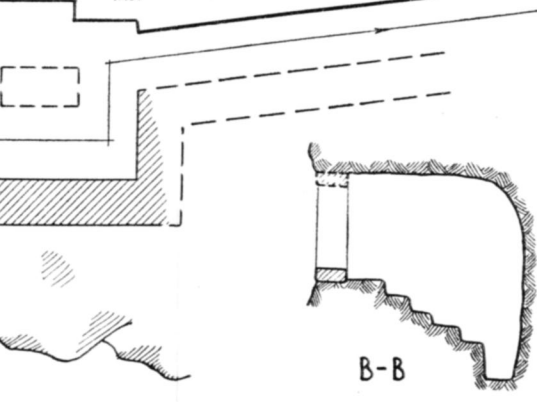
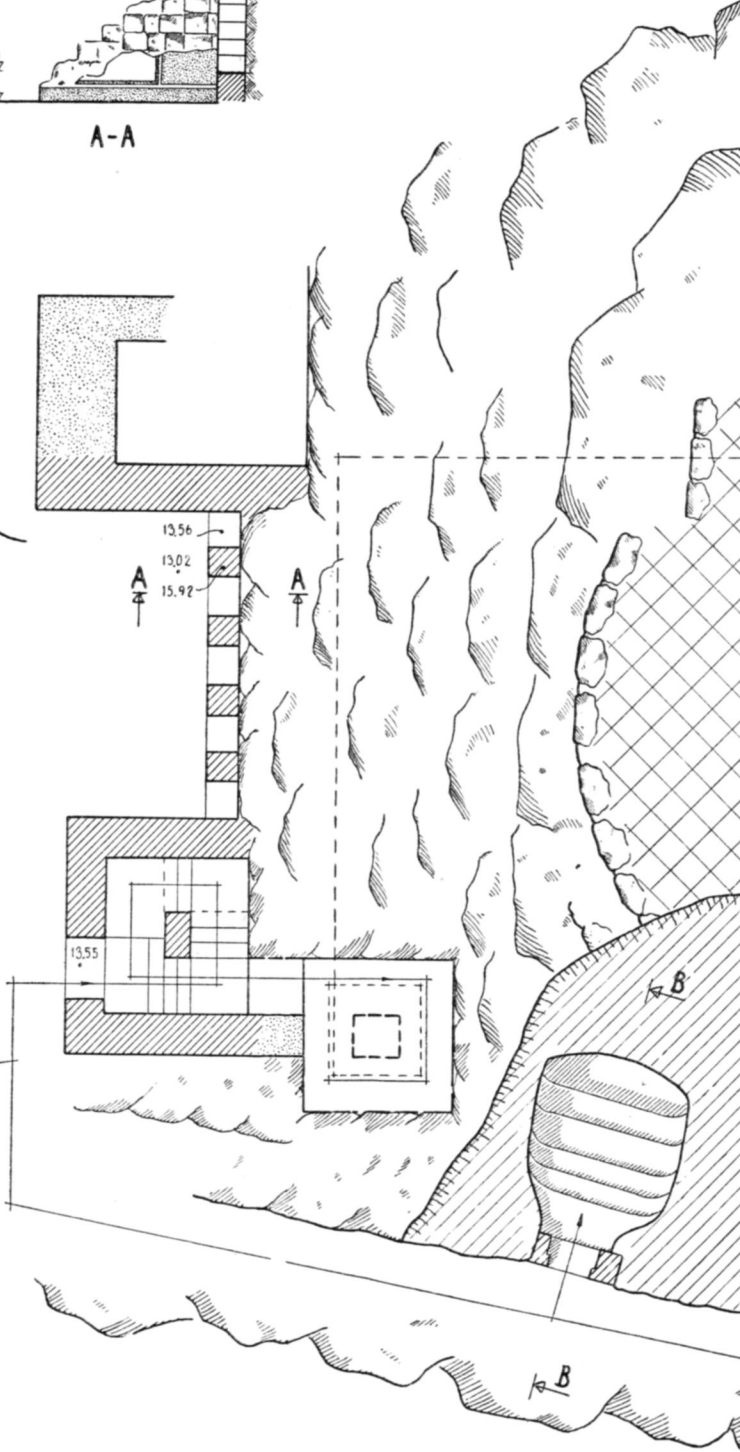
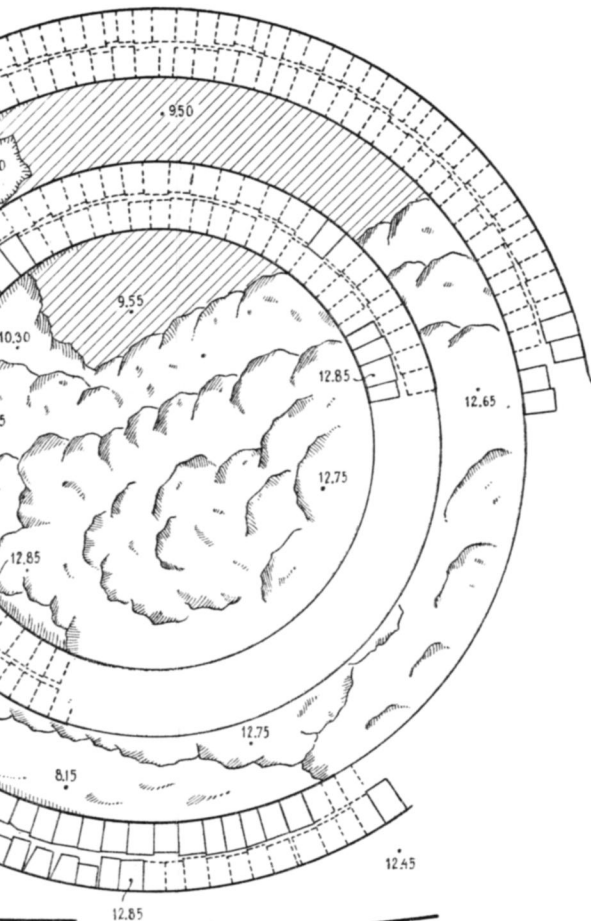
Fig. 12. The middle terrace.



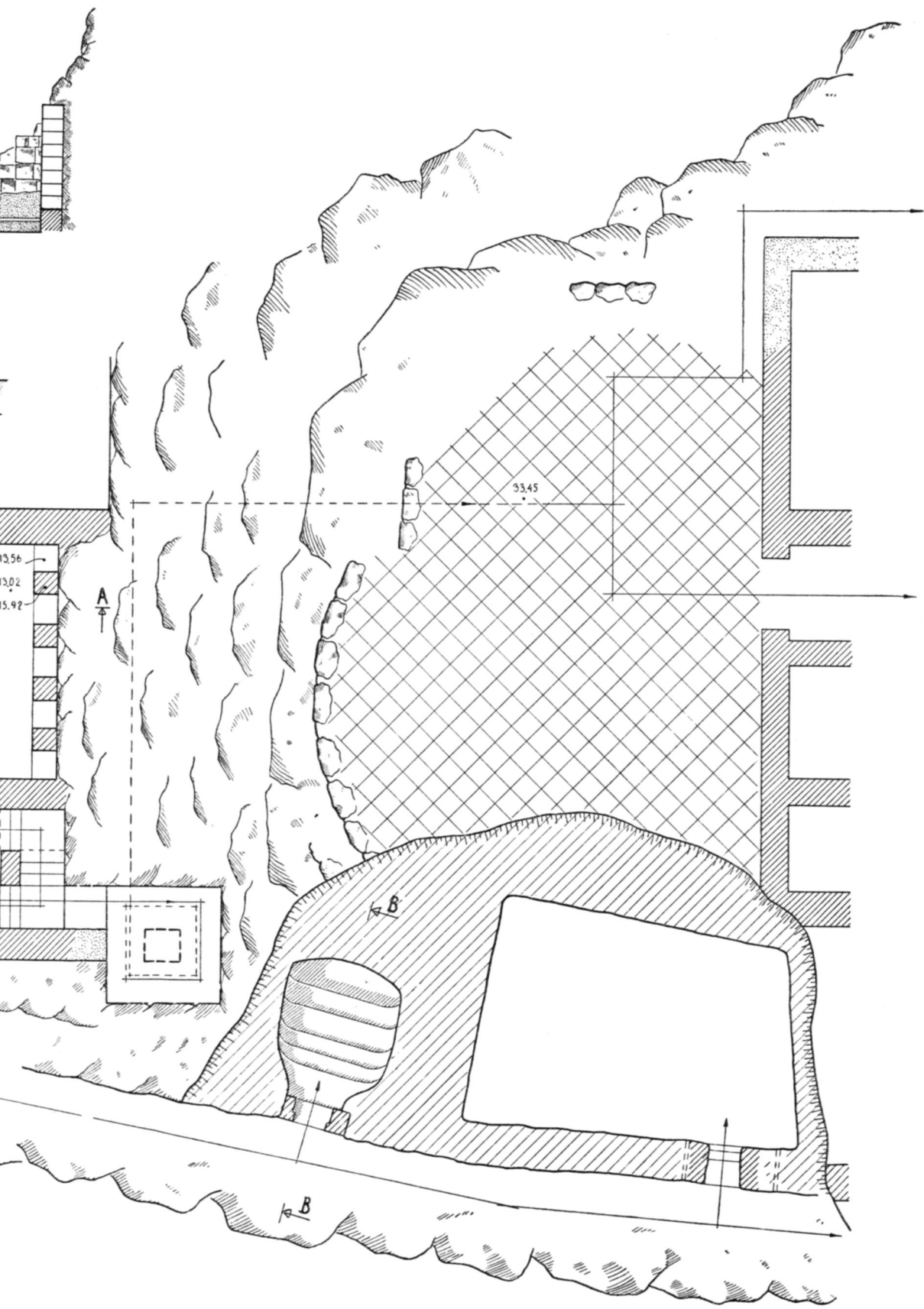
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A-A



B-B





smallness of the Hasmonean residence found at Masada must have been one of Herod's main motives for enlarging it by the addition of the peristyle building at a lower level. The erection of the arsenals and store-houses south of this house precluded an enlargement of the palace on this side. Herod seems therefore to have decided to erect the buildings near the west gate for the court and guards, and to extend his own palace into the terraces below.

### *The Middle Terrace*

The middle terrace is 20 m. below the top of the mountain and 13 m. above the lower terrace. Most of its area is occupied by two concentric masonry circles, behind which is a terrace about 6 m. wide (Figs. 12, 18).

In 1955 we excavated several places between the circles and in their centre; we also discovered the staircase at the western end of the terrace. In 1956 we completed the excavation of the area of the circles and made an additional sounding near the rock face to the south.

The natural rock terrace chosen by the builders for their field of operations was narrower than at present, and ran out on the north to a sharp point. The rock was therefore straight-cut on the western, northern and eastern sides as far as the level of the lower terrace, and walls were built along the stone face to a point slightly below the rock surface in the centre of the terrace. The result of these operations was a square and level terrace, 10 m. above the level of the lower one. Even today one can see immediately that it is partly built and partly composed of rock faces cut straight. In some places plaster has been preserved, both on the built walls and on the rock face, and it is clear that the whole terrace was once plastered to look built, for no one could distinguish from the outside between the built and the rock-cut walls.

On this level surface the two circles were built, with a diameter of 15.3 m. (Pl. 6). Earlier scholars who studied the site from above (see p. 9), thought that they were the foundations of a round tower protecting the northern end of the fortress. But on closer inspection it was seen at once that the upper rims of the two circles are built of straight, smoothed sandstone slabs (Pl. 6B). The rims are therefore partly *in situ*, and it follows that the circles were only built up to their present height. The lower courses of the circles are composed of sandstone and limestone blocks, cut more roughly.

Each of the circular walls is 1.2 m. thick, with an intervening space of 1.4 m. The walls do not form complete circles, for their circumferences rest on the



rock on the southern side. The construction of the circles starts at the point where the rock begins to slope towards the north-west and north. The walls go deeper and deeper as we move northward, while their upper edges remain at the same level. The top of the circular walls is on a level with the surface of the terrace behind them. Inside the circles the natural rock surface on the south and south-west is but a few centimetres lower. As the sides of the original rock surface of the terrace are lower than its centre, the built section of the outer circle is larger than the built section of the inner. In the outer circle it amounts to about 310 degrees, as against an approximate 250 degrees in the inner. On the west especially, the construction of the inner circle starts only in the south-western corner of the terrace.

At the time of building, care was taken to make the circles appear whole to the eye of the spectator from above. This was done by completing the line of the built circle by a ledge, partly rock-cut and partly built, to a height of only 10 cm. In this manner the line of the inner circle and the gap between the two circles was continued and completed. Only the outer circle was joined to the terrace behind it in one flat level.

We excavated the whole mass of debris between the circles and in their centre. On the east side we reached a plastered level at a depth of 3.4 m. below the rim of the walls, which at first we believed to be a plastered floor. The plaster continued at the same level as far as the north side of the circle. It was interrupted twice only: (a) by a section 0.5 m. wide, within which were three 'channels' which continued below the circles and contained fragments of charred wood; as we learned from other places at Masada, these represent beams which were set into the walls to strengthen and join various parts of the masonry; (b) by an asymmetrical depression about 1 m. in diameter and 0.8 m. deep. This depression was not straightened out; fragments of plaster and of wood which remained at certain points show, however, that it was at least partly covered. We could not ascertain its purpose.

The straight, plastered level between the two circles is placed between two natural rocky ledges, which descend to it from the south and south-west. Although these ledges form natural steps, no attempt was made to cut more convenient steps in the rock, nor did we find any traces of wooden steps.

We found architectural fragments, fragments of plaster and various objects as low as the plastered level; apparently these had fallen on it from above. We also found several column drums on the plaster (Pl. 7 B). It seems clear,

therefore, that the space between the two circles was not filled-in in ancient times, and we found no marks to indicate that it was roofed over.

A similar state of affairs prevailed in the centre of the circle. The rock descends there towards the east and the north. We descended with the natural rock steps until here, too, at the eastern end we arrived at a plastered level at a depth identical with that of the corresponding level in the space between the circles. Here too we found architectural fragments, charred wood and miscellaneous fallen debris down to the surface of the plaster; this area was therefore also open in antiquity.

In the north-western section we arrived at a ledge in the natural surface of the rock between the two circles at a depth of 1.65 m. below the rim of the walls. On the other hand in the western section, at a place where only the outer circle continued, we dug deep between the circles and found rock at a depth of 4.7 m. (Pl. 7 A). Here too were the remains of several beams which passed below the built wall.

In view of these facts it is obvious that the plastered level in the eastern part of the circles is not a floor. It seems to represent the top of a square built platform, which was straightened here by a layer of plaster; above it the two circles were built. The circles descend here 0.5 m. below the top of the platform, the edges of which were apparently slightly heightened after the construction of the circles.

The excavation of the circles did not, therefore, produce an answer to the problem of their purpose and use, but it may be worth while to sum up the points which emerged: (a) the two circular walls were built practically at the level of the rock terrace; they were not built as whole circles, but their shape was completed by rock-cuttings; (b) the top of the outer circle joins with the terrace behind it; (c) the spaces down to a depth of 3.4 m., which were created by the construction of the two circles, remained open, both between the circles and between the circles and the rock; (d) although the whole surface of the terrace was straight-cut, levelled and plastered on the outside, the rock inside the circles was left untouched and remained in its natural state; (e) a spectator looking from the outside saw a square building 10 m. high and on top of it a round construction, 3 m. high (Figs. 19, 20).

Besides the clearance of the upper staircase (see *infra*, p. 34), we made a trial sounding in part of the terrace behind the circles, in the hope of obtaining some clarification of the purpose of these buildings. On the eastern side we

found the remains of an additional room symmetrical to the staircase. Its walls were plastered and on the plaster were traces of panels painted in various colours. The whole of the area between this room and the staircase was covered with high-piled debris. When we tried to excavate this accumulation near the rock wall we found the tops of four square pillars, built of stone, 0.7 m. apart. The rock face was here cut straight, with the pillars attached to it; above their tops remained projections of rock. Both the pillars and the rock were plastered over with a smooth white plaster (Pl. 7C).

In order to ascertain the purpose of these pillars we dug an additional trench 1.2 m. wide near the easternmost pillar and near the wall of the eastern room, from the rock face to the edge of the circle. It appeared that the wall of the room was plastered and decorated in colours on its western side as well. Between the pillar and this wall was a niche, 0.7 m. wide and 0.55 m. deep. The height of this niche from its bottom to the top of the pillar is 2.35 m., and it is entirely coated with white plaster (Pl. 7D). The floor of the terrace in front of it is 0.55 m. below the floor of the niche. This terrace floor descends with a slight slope to the circles; in the section excavated we found nothing but fragments of plaster, wood and the usual potsherds.

The whole has thus the aspect of two rooms, between which are four pillars jutting out from the rock, and five niches. A terrace runs in front of them, 5 m. long, to join the outer circle (Fig. 12, section A-A).

It is difficult to believe that all these constructions had no practical purpose, and were built exclusively as architectural ornaments. The niches may indicate perhaps some ritual purpose to which the middle terrace was dedicated, but this is pure hypothesis. We can only hope that a complete clearance of the terrace will produce further evidence towards a solution of the problem.

In addition to the other buildings on the middle terrace there are two pools, cut in the rock to the south-west, several metres apart. These pools are certainly connected with the other constructions on the terrace. Both pools are well plastered, but they differ in form and purpose. The first is a wide, semi-circular bathing pool, whose floor consists of four wide steps running the full width of the pool; the lowest of these forms a kind of bathtub. The second pool is an ordinary water-reservoir, 5 m. deep and square in shape. Its plastered opening is narrow, with no steps leading inward. There are no traces of an aqueduct leading to this pool, and we must therefore assume that it was filled by pouring water either through the opening or through

the holes in the side. It is clear that this pool was intended to serve as a convenient source of water for the inhabitants of the palace, and the first pool as their bath (Fig. 12, section B-B).

### *The Staircases*

The problem of the connection between the three terraces naturally puzzled the members of the expedition. That such a connection must have existed was evident; there must have been a safe and convenient way of passing from terrace to terrace. At the end of the 1955 survey we discovered two staircases which had clearly been designed to provide such communication.

*The lower staircase* (Fig. 12, Pl. 8 B) leads from the lower terrace to the middle one. It is fairly well preserved, and the remains which have been excavated or which are still visible enable us to recognize, more or less, its original shape. This staircase was attached to the west face of the rock and was closed on the outside by a stone-wall 0.8-0.9 m. wide, which for most of its length has collapsed into the abyss below. This wall continued for 8.3 m. along the lower terrace, and the space thus formed was used for two cellar rooms, over whose roofs passed the way from the peristyle building to the lower staircase (see *infra*, p. 36 and Pl. 6 A).

The staircase itself is divided into three parts: two rooms on the north, 3 m. wide, and to the south a corridor 1 m. wide. We excavated the northernmost room only. In its centre was found a square pillar 0.8 m. wide and 1.4 m. long, built of stone and plastered over. The steps turned round this pillar; between it and the western wall were five steps, followed by three steps between it and the south wall. The steps are built of stone and plastered; their width is 1.2 m. but their rise is not uniform, varying from 0.15 to 0.3 m. South of the pillar was a small store-room under the ascending stairs. In the debris covering the stairs were found pieces of charred wood and fragments of plaster, apparently the remains of a second stair which went higher up from the stone steps. It was made of wooden planks resting on beams and fixed with plaster to the walls. Similar finds were also made in the upper staircase, and we found many fragments of plaster still bearing the imprint of the wooden parts of the stairs.

The principle on which these stairs were constructed is thus fairly clear. The length of 15 m.—which was all the builders had at their disposal—did not suffice for a straight and convenient ascent to a height of 13 m. Wooden stairs were therefore made, turning round the central pillar of the staircase (Fig. 12). In



the first room of the staircase there was space for one such turn; from there one went south to the second room. This room was not excavated and we cannot say, therefore, whether here too the stairs made a whole turn or whether a stair built along the length and width of the room was sufficient. The 8 m. long corridor which served as the southern link in the lower staircase remained unexcavated; it is clear, however, that this contained only one row of steps, approximately 1 m. wide. The length of the corridor was quite enough to enable the upper level to be reached by one straight row of steps.

*The upper staircase*, which leads from the middle terrace to the top of the rock, resembles the lower one in general outline, but only its lower part, up to a height of about 6 m., has been preserved (Fig. 12, Pl. 8A). Here too one first enters a square room 2.8 × 2.5 m. in size, with a stair rising round a square pillar. Here we found the steps around three sides of the pillar and on the north the beginnings of a wooden stair. The stairs in this room rise to a height of 3.3 m. and the height of the pillar is 2.45 m. From there one reaches a corridor, with a stair 1 m. wide, which has on its left a plastered rock face and on its right a built wall 0.7 m. wide. This corridor now leads to a straight-cut, plastered rock face. It seems, therefore, that the stairs here turned to the right and continued west of the built wall, in a north-south direction.

The remains of the stairs are destroyed, and the rock face too has fallen away at this point, so that we cannot tell with certainty whether the staircase continued in a straight line and in the same way to the top of the upper terrace at a height of 22 m., or whether it continued eastwards following the contour of the terrace. The topography and the shape of the round upper terrace lend some support to the supposition that the stairs reached the upper terrace in the north-east corner of the rock (Fig. 20). Remains of plaster with impressions of wood, typical of the staircases, were found near the pillars east of the staircase.

In their manner of construction there was therefore no difference in principle between the two staircases, but their external aspects were markedly different. The lower staircase was closed, as has been stated above, by a built wall resting on rock. As all the rock faces and the whole middle terrace were plastered and smoothed, the outside spectator received the impression that a building over 13 m. high rose from the lower terrace to the circular building and that the lower staircase was an integral part of this building. On the other hand, the upper staircase was not attached to the rock on the outside, but was cut into the rock. Even now a wall of natural rock about 1 m. wide remains to the east of

the wall closing the staircase. As against the effort to give the middle terrace the aspect of a building, everything possible was done to guard the natural rock appearance of the upper terrace. The staircase was cut and built inside the rock and was hidden from those beholding Masada from the outside on the west, and perhaps also from those on the north, by a face of natural rock.

There can be no doubt that when Josephus refers to 'a sunk road leading up from the palace to the summit of the hill, imperceptible from without',<sup>75</sup> he is describing the upper staircase.

#### *The Lower Terrace*

By descending the stairs which lead down from the circular building on the middle terrace one arrives at the side of the lower terrace in the rock, which lies 33 m. below the top of the mountain. This terrace projects only 18 m. from the straight rock face of the terrace above it; it drops steeply, almost vertically, and the surface of the rock is left unlevelled. This natural cliff was too small and too irregular in shape to serve as the foundation of the planned edifice, and it was only by building high walls at the edges of the cliff and buttress-walls on the east and north that a platform for a building could be obtained. These walls, which stand over the abyss, and the cliff to which they are attached formed a strong and compact mass; from below it would seem an impressive fortress. Pl. 9A, B shows the buttressing wall about 15 m. high which is attached to the north face of the terrace. The four horizontal slits in this wall are worth mentioning: they were made by leaving gaps 15-20 cm. wide between the groups of stone courses. Similar gaps are also visible in other walls at Masada which are built in steep places. In many of these gaps remains of wooden beams (thick branches of wood) were found fixed at right angles to the wall and set into plaster. In other places the holes are visible in the plaster, but the wood is missing. It should be noted that three out of the four slits in the wall shown on Pl. 9A are adjusted in one line with natural cracks in the rock to the right, which continue behind the buttress wall. It follows that the gaps in the wall correspond to the cracks in the rock behind the wall. This made it possible to fix the beams in such a way that part of each beam was placed inside the rock and part was between the stones of the wall. It seems that we have here a well-known method of bonding walls by courses of wooden beams, such as was common in ancient building. Bonding of this kind was especially necessary in the

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<sup>75</sup> *War*, VII, 292.

high walls at Masada, for these lacked sufficient hold on the cliff to which they were attached. The use of natural cracks in the cliff-face for this purpose is another example of the technical skill and ability of the daring builders of Masada.

The remains left on the lower terrace show that a square building, 17.6 × 17.6 m., once stood upon it. It had four portico-like cloisters surrounding a central open court measuring 10.3 × 9.2 m. (Pl. 8 C, Fig. 13). Three of the outer walls of this building face east, north, and west, whereas in the south it is formed by the cliff face of the middle terrace on which stands the circular construction described above (pp. 29-33). All the walls, whether outer or inner, had half-columns attached on both sides. These columns<sup>76</sup> were placed at irregular intervals, and in the areas between them were window-like openings. The building had cellars extending under two of the cloisters, those on the east and west.

Two small constructions are attached to the cellars. The one on the west (8 × 3.2 m.) is merely a continuation of the staircase descending from above. It consists of two rooms connected by a door; they were apparently covered by a flat roof, forming a kind of veranda through which people passed into the main building. On the east stands a wing measuring 19 × 6 m. and containing four small rooms.

When this building was ruined, its walls and columns collapsed into the deep abyss which surrounds it on three sides. In consequence there was no considerable accumulation of debris in the area of the building, except near the southern cliff face and along the west wall of the court, the remains of which prevented the debris from falling into the valley. It was in such places of accumulation of debris that most of the architectural remains were preserved. In the short time at our disposal we were, however, unable to clear all these remains.

As far as could be ascertained from the exposed remains of the building and those excavated during the survey, all the upper parts of the building—walls and columns—were made of sandstone brought from the surrounding district, which is easier to work than the stone of Masada itself. On the other hand, the walls of the cellar were built of local stone, which was dressed with the hammer only. All parts of the building were plastered inside and out. In most of the exposed parts the plaster had fallen off, and many of the stones had lost their shape as a result of the erosive activity of winds and rain; some were quite eaten

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<sup>76</sup> Wherever in this building we speak of a 'column' we always mean half a column attached to a wall. The terms 'column' and 'half-column' are here used interchangeably for convenience of expression only.

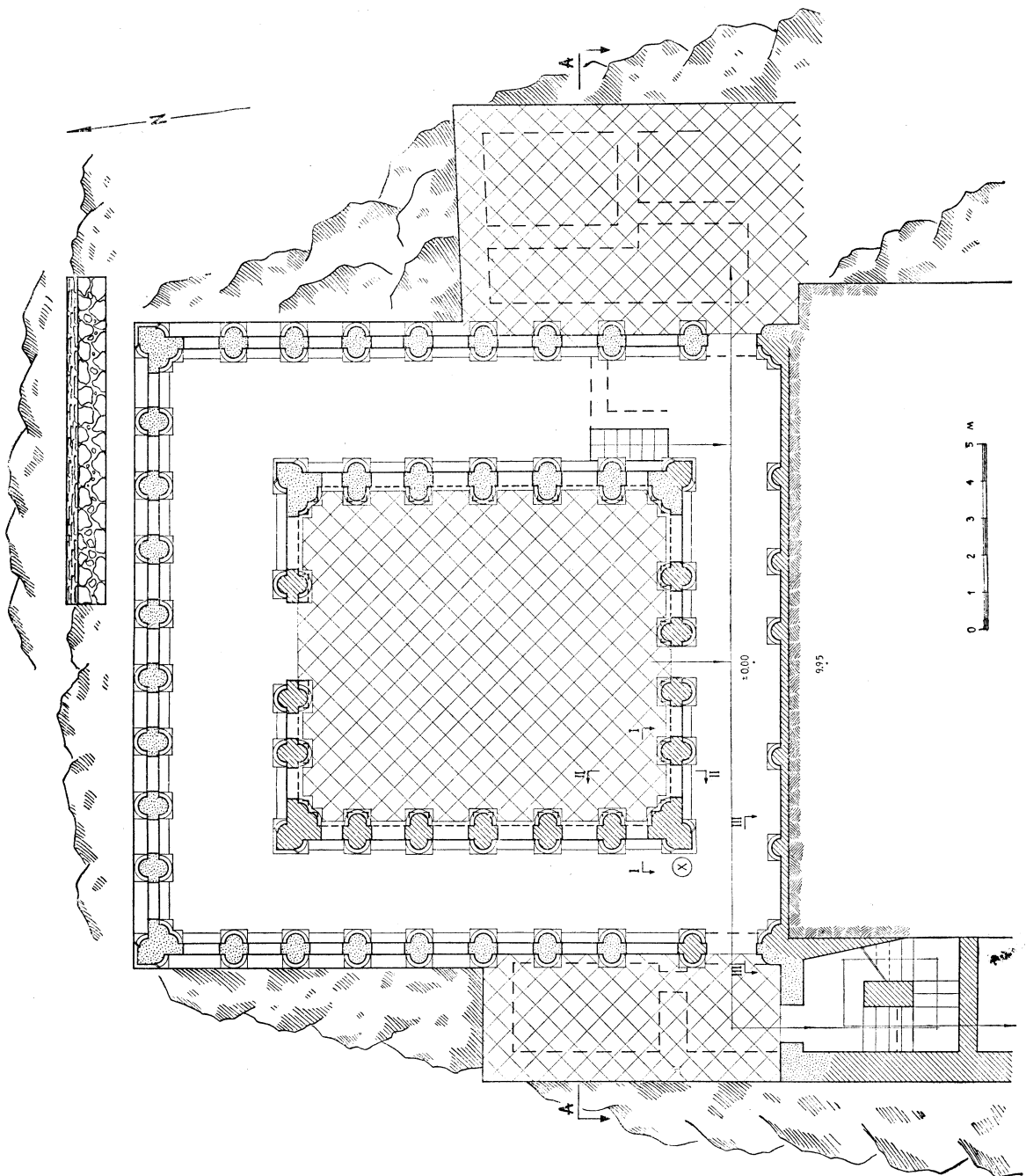


Fig. 13. The lower terrace. Plan of the peristyle building.



away and hollowed out. In the parts of the building which were covered by debris, the plaster was much better preserved.

The plaster is usually made of three layers, sometimes only of two. The first coat is two to three cm. thick, in some instances even more. It was applied directly on the stone and consists of a coarse aggregate mixed with lime and occasionally strengthened with reeds or strings. The second coat is of a finer texture, one to two cm. thick. The last layer, 0.3 cm. thick, is a very fine coat which carries the moulded patterns and the painted designs. The painting is done in tempera of various shades. On smooth and even ground only the two last coats were applied.

Of *the outer walls* of the building (on the east, north, and west) only those of the cellar built at the very edge of the rock terrace have been preserved. They are 0.85 m. wide, and have remained standing on the north and west almost to the floor-level of the building. Of the upper walls only the lower part of one engaged column has been preserved *in situ*, on the inside of the western wall; it is the first column in front of the southern rock face. At the same spot were found some drums and the capital of an exterior engaged column (Pl. 10D), lying diagonally in the debris, one on top of the other, just as they fell. These remains, however, are not the only evidence that engaged columns were inserted in the exterior walls all around. There is proof to the same effect in the row of engaged columns attached to the southern rock face. In this face, the length of which is 16.3 m., half-columns are set out at six unequal intercolumniations measuring 1.88-3.42 m. At both ends of the wall were pairs of quarter-columns which formed the inner corners of the building on the south side. In each of the corners one quarter-column corresponds to the half-columns in the rock face, while the second turns towards the row of interior columns which were engaged in the walls running at right angles to the rock face.

The rock wall between the columns was levelled off by a rubble stone facing (about 20 cm. thick) set in mortar and plastered over. This plaster has remained in several places up to the full height of the columns (Pls. 4 B, 13 A). Thus the upper limit of the portico wall can be traced for almost its whole length. The columns attached to this wall have been preserved better than those in other parts of the building, because they are close to the rock face and were for the most part covered by the debris. Of the quarter-columns on the east end the fluted shaft of one has been preserved for its full length; the capital is, however, missing. The next two columns, counting from east to west,

have disappeared, but their places on the wall can be discerned, and one may assume that their lower parts covered by debris are still *in situ*. Of the other three columns only the tops including the capitals were visible above the debris. The upper sandstone drums, which had lost their plaster covering, were much damaged; the capitals themselves, however, had suffered very little from winds and rain.

In the trial sounding near the wall in the first intercolumnar space from the west the floor of the building was reached. The bases and the lower drums of two quarter-columns in the western corner were cleared. These were partly ruined, the plaster covering them being badly preserved. The second column from the west is standing to its full height and is very well preserved. The wall between the columns is plastered and decorated in colours. It seems probable that the other two columns on the east, which are mostly covered by debris, have also been preserved in their entirety.

In the following we describe in detail the second column from the west, which is preserved in its entirety. We can deduce from it the details of the other columns, as regards the style of the capitals, the shape of the shafts and bases, methods of construction and detailed measurements, except however for the height, which differs in the columns of the court (Pl. 10 A, Fig. 14).

The height of the entire column is 4.15 m.; it includes a base 21 cm. high, a shaft of 3.34 m. and a capital of 60 cm. The column is engaged in the rubble facing which was attached to the rock. It projects for half its diameter, i.e. 26 cm. on the average, including the plaster layer. This gives the columns the strength and stability which they would have lacked had they been leaning on the rock face only. The Attic base (Pl. 10 C) has a fine profile and the carving of the stucco covering it is exemplary. The square plinth is partly sunk in the plaster floor. The shaft is 53 cm. in diameter near the base. It tapers but very slightly towards the top and has no entasis. The shaft is built of smooth stone drums, covered with a remarkably thick layer of plaster (4 cm.). In this stucco cover are incised ten rounded flutings which take up half the circuit. The flutings run for the whole length of the shaft and terminate on both ends in an approximately semi-circular shape. The width of the flutings is 7-8 cm., their depth is 20 mm.; the ridges between them are flat and measure 6-7 mm. in width.

The capitals (Pl. 10 B) consist of two stones and are carved in the Corinthian style, showing all the characteristic features of this type. The execution is satisfactory. In spite of the sandy and pitted stone, the workers succeeded in carving

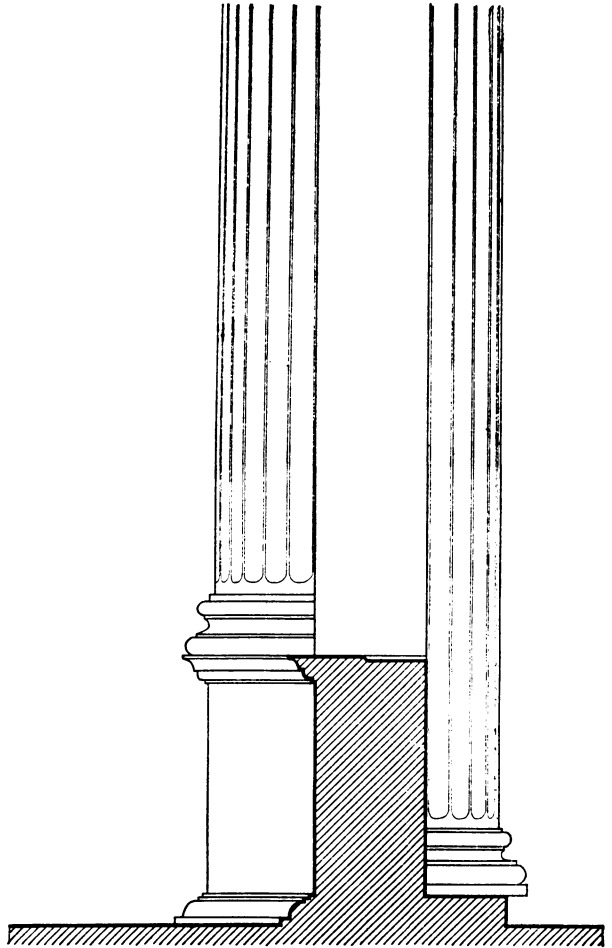
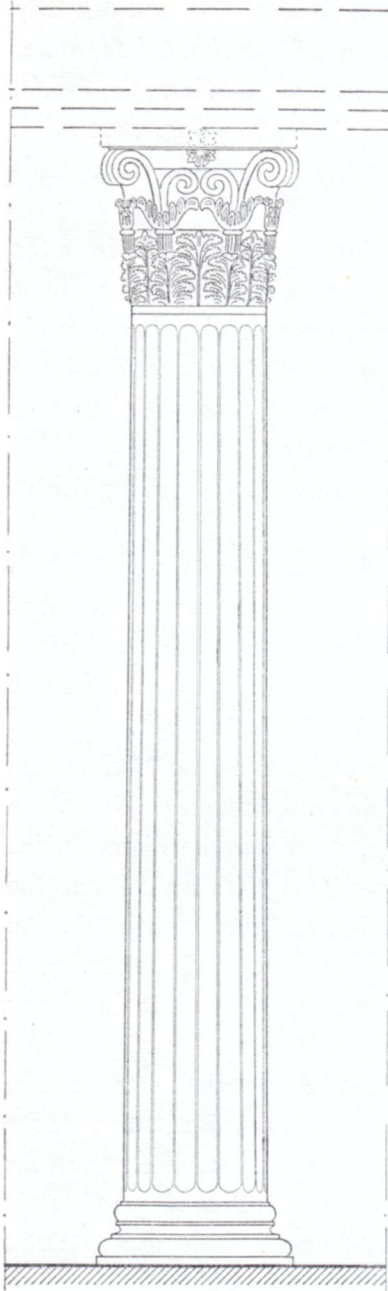


Fig. 15a. Section through inner wall surrounding the court.

0 50 100 C.M.

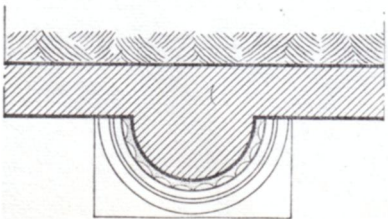


Fig. 14. Elevation and plan of engaged column.

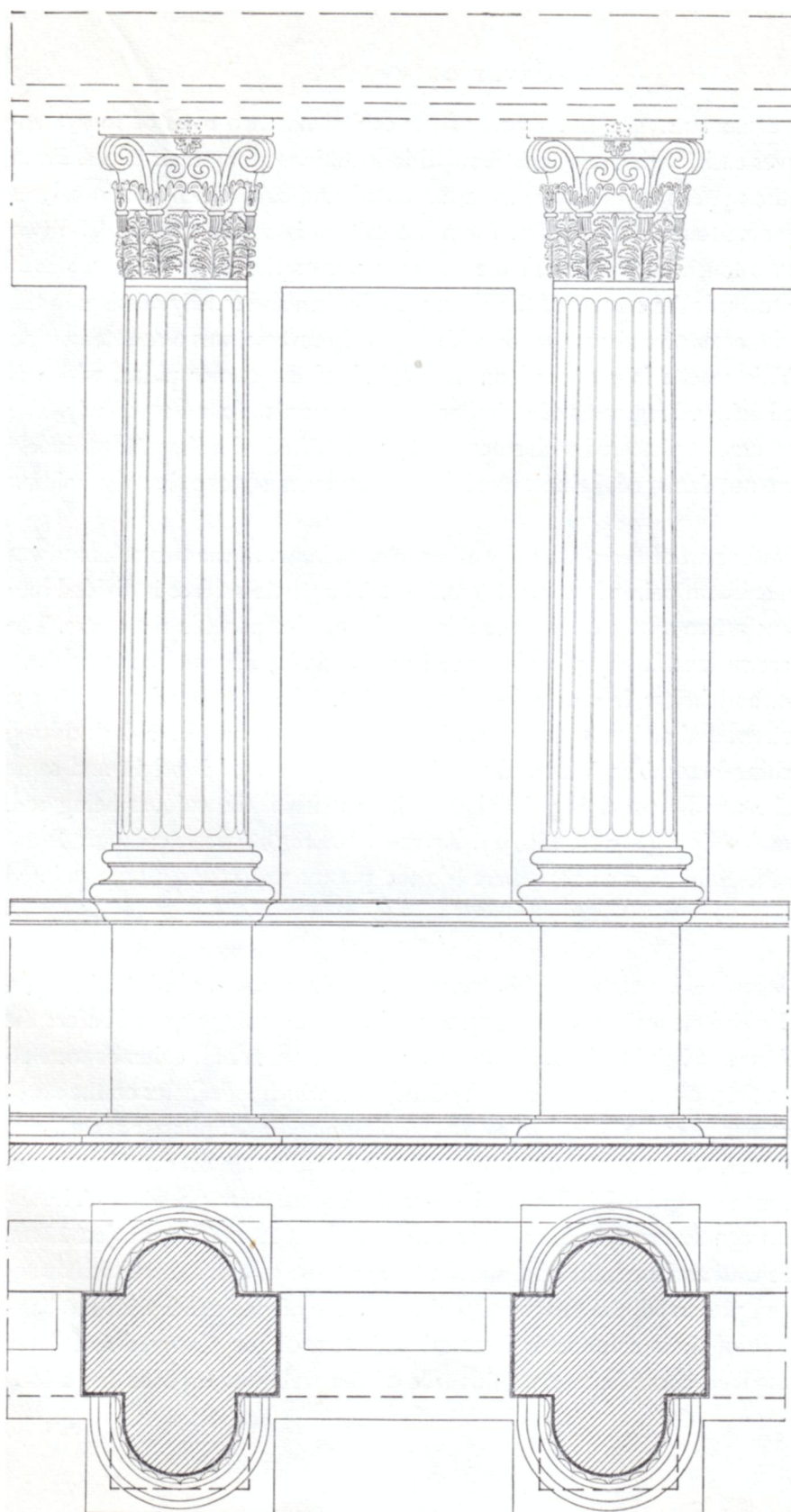


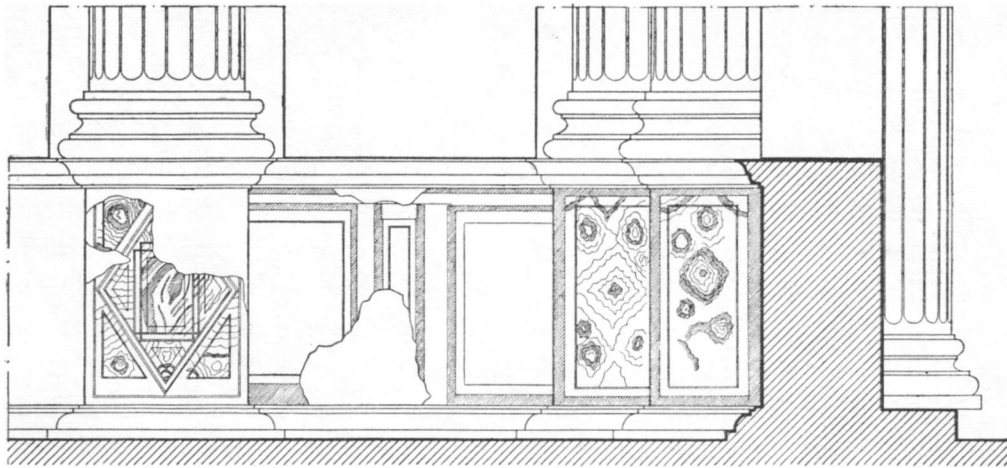
Fig. 15b.  
Elevation and plan  
of the inner wall  
surrounding the court.



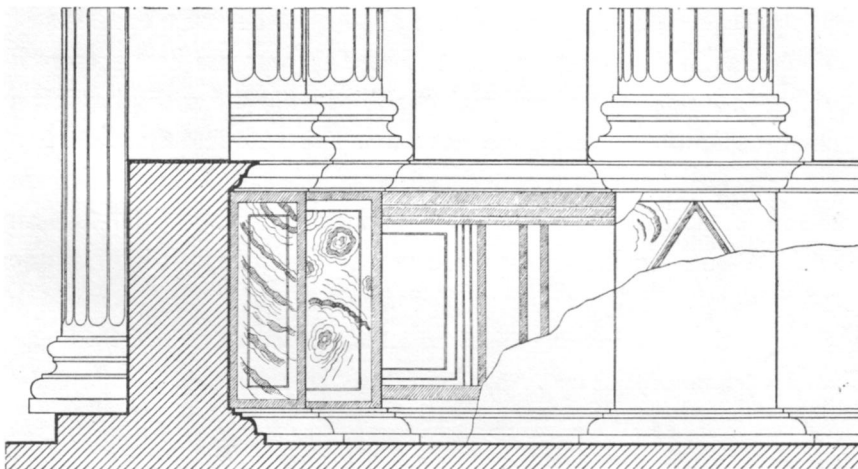
delicate ornaments. The lower part of the capital has two rows of four acanthus leaves each, with characteristic small indentations along their edges. From among the upper row of leaves issue the fluted cauliculi, which end in calyces whose leaves touch one another. From the calyces issue the volutes. The two small ones touch each other in the centre, whereas the large volutes, which develop towards the corners of the abacus, are broken and mostly missing. In the centre of the concave abacus, made with a cyma in reverse, was a rosette in high relief. This rosette is preserved on the capital of the corner pillar, which is described below. Fragments of a similar rosette were also found separately. The capitals were not plastered with stucco, but whitewashed with lime. Nevertheless they were not damaged, being carved from a harder sandstone than the column drums.

The lower part of the plastered wall uncovered between the two columns was ornamented with painted panels, 1.3 m. high. The whole surface is divided into three panels, two square ones at the sides, and a narrow panel in the centre. The panels are surrounded by a border in red and black. The ground between them is green, and below it runs a broad red stripe. The right-hand panel has a yellowish ground and most of its area is painted irregularly with a dark colour, approaching black. The left-hand panel is all red, some of it bright and some dark. The middle panel is painted to imitate marble, the colours being red, green, and yellow (Fig.16, III-III). A trial sounding between columns 5 and 6 from the right showed that there too the plaster was covered with painted panels.

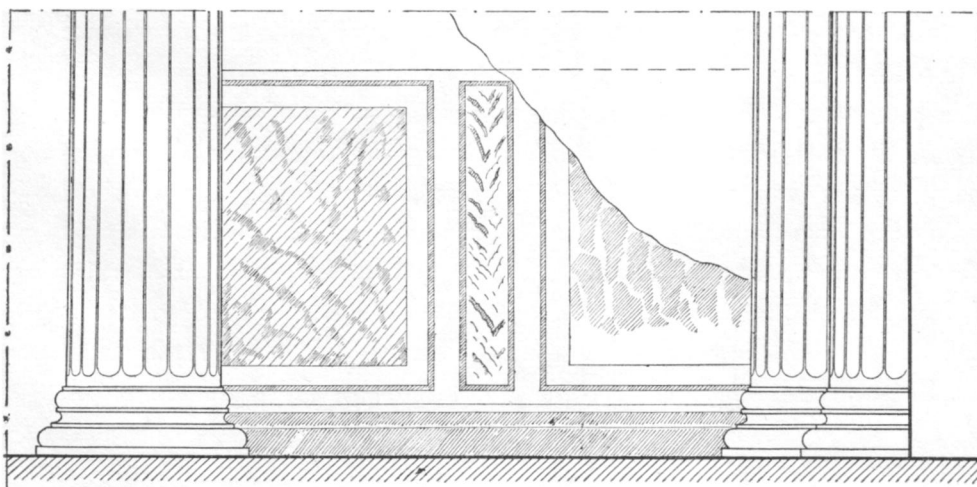
Of *the inner walls* surrounding the court those on the west and south are best preserved. Part of the wall face on the western side was standing exposed before the excavations to a height of 4 to 6 courses (Pl. 12 A). Three half-columns were attached to the west face of this section of the wall, which terminates on the north with a corner pier; the latter had a quarter-column and a flat pilaster at each side of the corner. At the south end of the wall was found an almost complete corner pier fallen to the ground (for a detailed description, see *infra*, pp. 44-46). The distance between the centres of the half-columns is about 1.7 m. They project 28 cm. from the wall and are built of drums. In two of these columns three such drums have been preserved, the lowest of which is made of one stone with the base. The shape of these columns is identical with that of the plastered and fluted ones described above. However, this side of the wall was exposed for a long



I - I



II - II



III-III

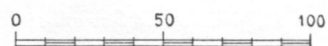


Fig. 16.  
The painted panels  
in the south-  
western corner  
of the  
inner wall (I, II)  
and on the  
southern rock  
face (III)  
(see plan,  
Fig. 13, p. 37 and  
Pls. 10A, 13B-D).

time, and all the stucco has fallen off. The Attic bases stand on a stone course, a kind of stylobate, which is narrower than the base itself, and project only very little above the floor of the cloister. This floor, which was level with the floor of the court, is here missing. The area between the wall of the court and the outer wall in the west corresponds to the western cellar (its width is 2.6 m.). It is covered with fallen building stones and drums of half-columns. We were unable to examine this area or to study the nature of the cellar. An excavation along the east side of the wall with the attached columns showed that corresponding to every column in the cloister there was a square pedestal projecting from the wall on the court side. Four such pedestals were cleared, upon three of which were standing bases of half-columns (Pl. 12 C Fig. 15 b). A partly ruined corner pedestal was found in the north-west of the court, while a complete one filled its south-western corner. On the pedestals in this corner were the bases of two quarter-columns joined together (Pl. 12 B). This was the best preserved corner of the court. An additional pedestal, the third from the north, has left a distinct trace in the debris; it was left unexcavated. This wall had therefore two corner piers, each with flat pilasters and quarter-columns, and between them five half-columns attached to both sides of the wall at intervals of 1.7-1.83 m. These half-columns rest on the floor on the inner side of the porticoes, while in the court they stand on pedestals (Fig. 15 a).

The south wall, the remains of which were entirely covered by debris, was preserved for its whole length up to the height of the pedestals. On the court side four pedestals were attached to it between the two corner piers (Pl. 13 A, B). The entrance is situated between the two middle pedestals. The south face of this wall was not examined, but we may assume with certainty that it too had columns attached to it. Incidentally, the pedestal and the columns by no means correspond in position to the engaged columns attached to the rock face on the south.

The *corner pier* (Pl. 11 A-C) at the south-west junction of the walls of the courtyard is most interesting in itself, and very important for the understanding of the details of this building. It seems that this pillar remained standing for some time after the destruction of the building. In its final fall it did not come to rest on the floor, but on a thick accumulation of ruins and debris. After that it was covered only with a thin layer of dust. It was found lying, broken into its many stone courses, with its head resting near the south rock face. The point at which the pillar broke is above the section

of the base standing on the pedestal. The lower part of this mass, which is *in situ*, was only partly excavated. The pillar itself is composed of the various architectural elements at the junction of the two walls, viz. the parts of the walls which serve also as window-posts, flat corner pilasters on the interior of the building, and attached to them two quarter-columns, one on each side, and a pair of quarter-columns attached to the inner corner of the court. Its total length is 1.5 m., its total width 1.1 m., and its height about 4.1 m., which is the height of the columns near the rock face. The two flat pilasters which are engaged in the corner are decorated with 'drafted ashlar' imitated in stucco. These simulated stones are arranged alternately in one stretcher in one course and two headers in another. The length of a whole 'stone' is 0.48 m., its height 0.32 m., the width of the margin 2 cm., and the boss projects 0.3 cm. The 'dressing' of these 'stones' is that typical in Herodian building, i.e. marginal drafting with a flat boss. On the penultimate 'layer' is engraved (at X, Fig. 13) the Greek inscription ΓΑΙΟC ΑCΚΛΑC (Fig. 22, *infra*, p. 60).<sup>77</sup> The position of the inscription raises the problem of who could have written it, and when. The direction of the writing shows that it was written while the pillar was still standing upright. If we do not wish to assume that the master-craftsman in stucco scratched his name in this high place (3.1 m. above the floor) in the course of his work, we can only surmise that it was done by a Roman soldier standing on the ruins of the building which had accumulated around the pillar.

The capital of the corner pier (Pl. 11 B) is lying in two parts, both of which had slightly moved from their proper places. The details of the capitals resemble those of the column capital described above (pp. 39-40). Here too the corners of the abacus and the big volutes have been broken. On the concave front of the abacus was a carved rosette, one half of which has been preserved; its leaves are sculptured almost in the round. The rosette is slightly off centre to the right. In the next quarter-column on the west (the south side was not examined because it touches the accumulated debris), the upper part of the capital is missing. The capital of the pair of inner quarter-columns is also missing. Of the quarter-columns themselves the lower drums have been preserved, with their fluted stucco. The plastered bases are well moulded and stand *in situ* on the corner pedestal, as did all the other columns inside the court. The Attic

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<sup>77</sup> A Roman soldier called Gaius Iulius Asclas who served in Egypt is mentioned by S. W. Baron: *A Social and Religious History of the Jews*, I, 2nd ed. New York, 1952, p. 404, n. 41.



base stands with its lower torus directly on the pedestal without the usual plinth. The bases of the quarter-columns touching the flat pilasters on the corner of the portico are apparently resting on the floor, similar to the other columns in the porticoes.

Only a few remains have been preserved in the north wall of the court. Near the western corner there stand *in situ* two parts of plastered bases of engaged half-columns attached on the portico side. Here the plaster of the stylobate is preserved which passes below the bases to the corner pier. Opposite each base are, on the court side of the wall, the lower parts of pedestals with a moulded base strip. The wall between the corner pedestal and the next one is extant; that between the second and the third is missing. The fourth pedestal to the east, of which only the foundation stones and the moulded base strip have been preserved, begins at a distance of 2.1 m. from the base strip of the third pedestal. This unusual distance shows that there was here a wide opening off centre. The moulded base strips of the pedestals on both sides of the opening are longer than usual and end in an unbroken straight line; this too proves the existence of an entrance. Moreover, the plastered floor of the court continues at this point and is connected with the floor of the north portico. In the continuation of the wall to the east only a few foundation stones have been preserved.

In the east wall of the court the base part of the south-eastern corner pier has been preserved as well as the lower moulding of the next pedestal to the north. All the other parts of this wall, not covered by debris, have disappeared entirely.

In the accumulated debris were found four lower parts of capitals and a number of drums of half-columns, as well as four upper parts belonging to capitals of quarter-columns.

The *pedestals* in the court have a height of 0.96.; their width is 0.57 m.; they project 0.4 m. from the wall face (Fig. 15 a, b). At the foot of the pedestals and the walls continues a moulded base strip, projecting for 12 cm. It is composed of an ovolo between two fillets above, and one below. The pedestals are crowned at the top with a cornice, which is preserved in its entirety only in a few isolated places. It projects 10 cm. from the body of the pedestal and consists of an ovolo and a cyma between fillets. This cornice also passes over the walls at the height of the window-sills. This sill has been preserved in the second window on the north side; it has a slightly sunk rectangle on the cover stones. In the north wall, however, was found a window-sill which was smooth and plastered. In the pillars between the windows the stone filling between the

engaged columns on both sides of the wall has not been preserved. Single column drums have been found made of one stone with the window-jambs, and from these one can calculate the width of the pillars as 0.8 m., in comparison with a window width of approximately 0.9 m.

Considerable areas of stucco, painted in various colours, are preserved on the pedestals and the parapets (Pl. 13 C, D; Fig. 16, I-I, II-II). There are two types of pattern. One consists of panels on the parapets, the other of rhombi and imitations of marble on the pedestals. The best preserved examples of the panelled pattern were found near the south-western corner of the court. On the south wall the area between the two pedestals is divided into two panels. Stripes of black, green, and red paint surround them on three sides; a broad black band separates the panels. The right panel is painted in dark red and the left one in white. A similar division was found on the west wall near the corner, except that both panels are painted dark red. In the other parts of the wall on the west the panels are mostly destroyed.

The principal ornament on the pedestals in the west wall is the rhombus. It occupies the centre of the area on each of the pedestal sides, painted in a yellowish or dark violet colour. The triangles bordering the rhombi on the outside are painted green or black. A red border encloses the rectangular area of the pedestal face. Sometimes the sides of the pedestal have an arched pattern, resembling imitations of marble. Other examples of marble imitation are found on the pedestals in the south-west corner, where the stucco has been much better preserved. The faces of the pair of pedestals facing north were painted in a yellowish colour and were bordered in red. In the centre of each of the two rectangles was a rhombus made of wavy lines of reddish brown. The rest of the area was filled with half-rhombi, irregular wavy circles and round blobs, all in the same colour. All these ornaments are encircled by thin lines. The right-hand rhombus has been almost entirely blackened by the conflagration. Of the faces of these two pedestals facing east, one is decorated with wavy stripes and lines placed diagonally, and the second with a wavy circle having a point in its centre and resembling a floral pattern. In addition there are other bands and lines of a wavy type. On the whole, these wavy patterns seem to imitate marble veining.

A kind of fusion of all these ornaments can be found in the first pedestal east of the corner. The area is divided into geometrical figures: a big rhombus within a rectangle, a rectangle within the rhombus, and triangles in the whole area between these forms. In the four triangles in the corners are drawn irregular

wavy circles in red, filled with green paint. Wavy bands and lines in reddish brown are painted over the whole area. In the inner rectangle the black bands are especially prominent (Fig. 16, I-I).

The painted stucco described above is peeling, and falls apart at a touch, owing, apparently, to the great heat of the conflagration which destroyed the building. Signs of this conflagration are clearly visible in the black spots on the painted stucco, in the plastered floor, in the fine ashes mixed with the dust, and in the fragments of calcined wood found in the debris.

*The cellars.* In the eastern cloister were found the stairs leading to the cellar (Pl. 14C); their width is 0.8 m.; they begin near the pier in the south-eastern corner. The staircase has ten plastered steps. The two lowest steps, which are the nearest to the floor of the cellar, have a width of 1.6 m. The cellar itself is ruined. Parts of the walls have fallen into the abyss, and only the west wall is still standing. Accumulations of debris were found only near the stairs, but even there we could not, for lack of time, establish the shape of the cellar.

It is possible that these stairs are connected with the entrance to the small wing of the building which rests against the cellar on the east. This construction, which was apparently no higher than the cellar, contained four small rooms. The two rooms on the east side are entirely ruined, but considerable remains have been preserved of the two western chambers. The southern one (3×2.4 m.) is partly vaulted over by a low barrel vault (Pl. 14D). In the narrow north room (3.5×1.5 m.) are the remains of a higher vaulting. There was an opening between the two rooms and both were well plastered. The plaster fragments found here included one which was painted with lines and triangles in brown arranged in a pattern, which is quite different and much more delicate than the other designs found in this building. The rooms just described were found full of loose earth mixed with ashes. The debris included pieces of blackened wood, linen and rope fragments, and remains of mats. Unfortunately, we were unable to clear the whole accumulation and to reach the floor of the rooms. This might have helped to understand the purpose of these chambers. It is obvious that these were not ordinary cellar rooms designed for storage. Their importance becomes evident if one considers the amount of labour invested in the construction of this wing of the building, which contained only a few rooms. The shape of the rock here obliged the architect to construct very high walls over the cliffs in the rock. This problem is connected with the question

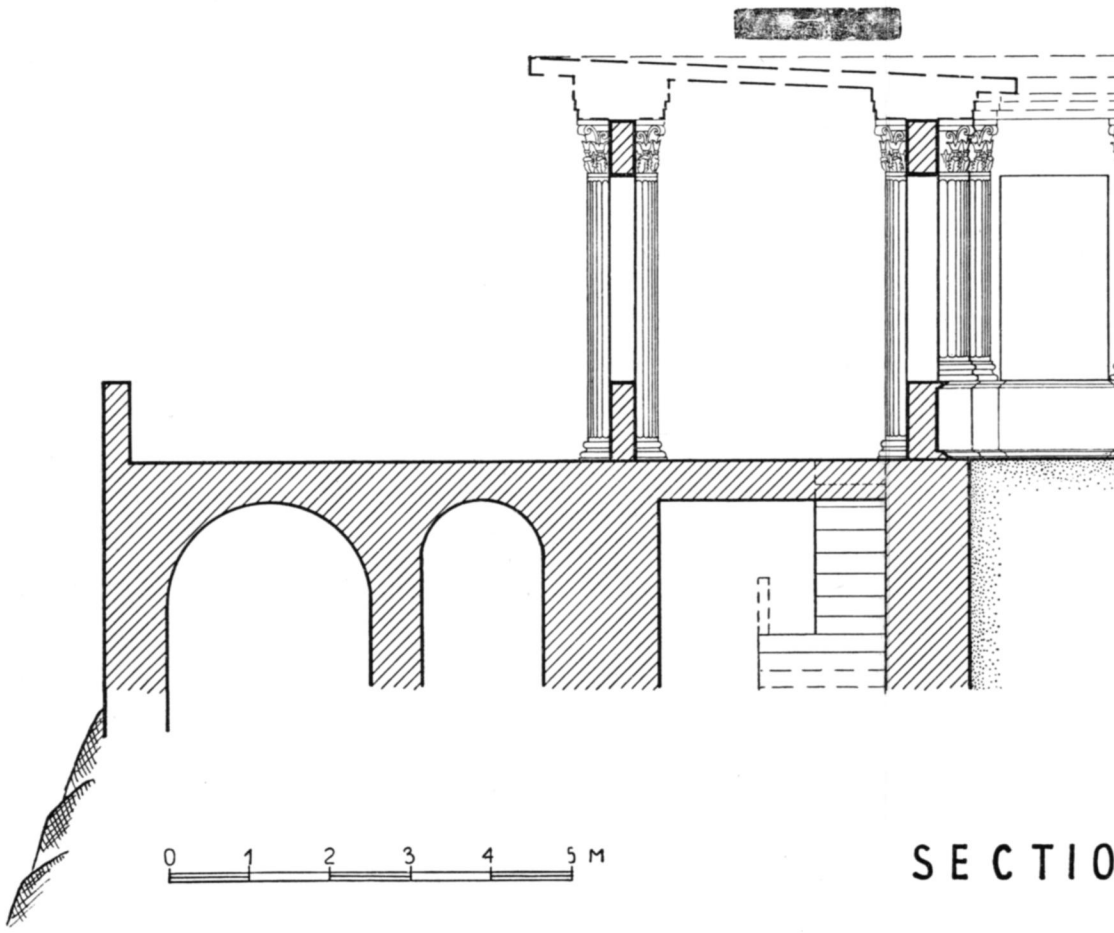
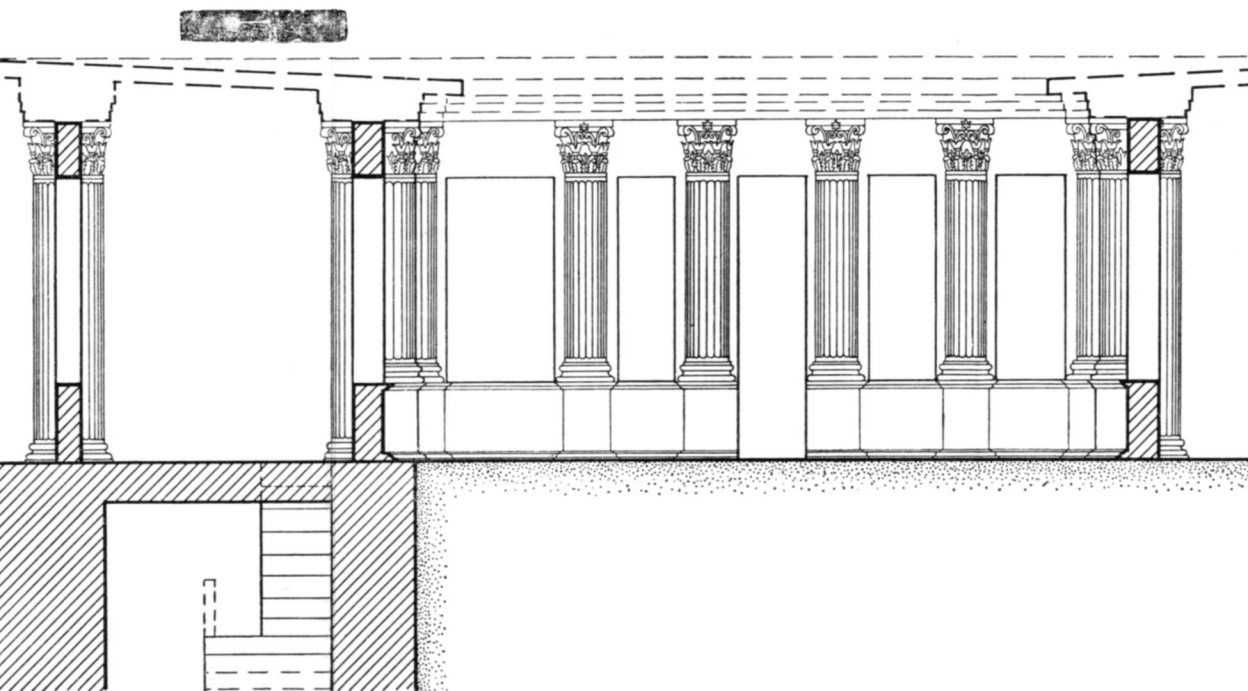


Fig. 17. Lower terrace, section

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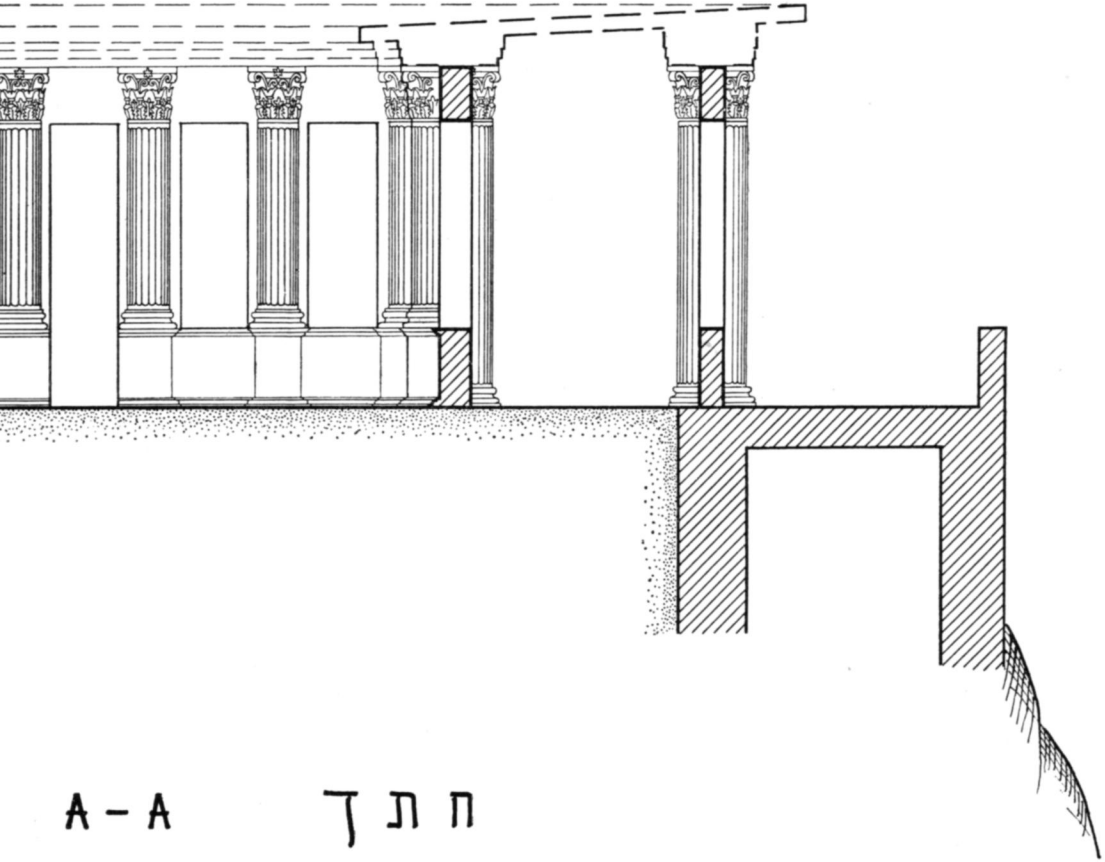




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SECTION A - A      Τ Π Π

Fig. 17. Lower terrace, section A-A, restored (see Fig. 13, p. 37).



...tored (see Fig. 13, p. 37).

regarding the purpose of the whole building, which will be discussed below.

Two other problems connected with the reconstruction of the building require elucidation: the problems of its height and of its roofing. The walls, which were much strengthened by the columns attached to them on both sides, could have easily supported a second storey. Yet the finds on the site do not justify a conclusion that this storey existed in reality. No building parts attributable to such a structure—not even plain building stones—were found. In the upper part of the rock face on the south there are no marks of any walls having been attached to it. Even the plastered area which covers the upper part of the rock does not prove that this wall constituted the inner face of a room, for the rock face has not been smoothed by a layer of small stones, as was done on the wall of the portico below. Moreover, it seems that there is no space for a staircase leading to an upper storey.

*General conclusions.* There is some connection between this and the second problem we have mentioned. Was the central area of the building a roofed-over hall, or was it an open court? Here too the proofs are mainly in the negative. We must assume that if there had been a roof or a ceiling over an area of nearly 90 sq. m., some remains of it would have been found among the debris. In fact, however, nothing was found in the centre of the court which could be attributed with any certainty to a ceiling or a roof. On the other hand one may point out that along the pedestals in the court on the western and southern sides, there were found on the floor many traces of conflagration and even fragments of calcined wood. These were nowhere at a greater distance from the walls than 1-1.3 m.; further than that no traces of burning were noticed in the court. From this we may perhaps conclude that the rafters of the roof projected into the court for this distance, so as to make a shaded area within the open court. The most acceptable solution seems to be that we have here an open court surrounded by four roofed-over portico-like cloisters (Fig. 17). We may assume that wooden architraves passed over the columns and the windows, which were covered with thick moulded stucco. Many stucco fragments of this kind were found among the debris (Pl. 14 A, B). The roof itself was most likely also made of wood, covered with plaster.

The peristyle-like building, as we may call it from its plan, was not a utilitarian construction. It had no habitable rooms save the cellars and the

chambers in the east wing (which seem therefore to be of special importance). This was a building made for enjoyment, an elaborate pavilion decorated with rich architectural ornament, shining with the whiteness of its stucco and glimmering with its many-coloured walls. Isolated from its surroundings and stuck to the face of the high rock like a bird's nest, the building was dedicated to the pursuit of solitude or entertainment, to walks in the shady porticoes and hours of pleasant enjoyment in the finely decorated court, which commanded a magnificent view over the savage landscape.

This building, as well as the other buildings at Masada, must be attributed to Herod on the basis of the historical evidence in our possession. All other considerations, moreover, combine to support this presumption. Herod is known to have been a daring and active builder. The construction of a pleasure dome in such an extraordinary place is a good example of his architectural boldness and is perhaps to be explained by the psychology of the king. The plan, the architectural details, the stucco work and the painted ornaments follow the traditions of Hellenistic building. The covering of the walls and columns with stucco, the moulding of the architectural adornments, the imitation of ashlar in plastic form, the painting of panels, and the various forms of imitation of marble in polychrome are typical of the ornamentation at Pompeii and Delos, which date from the end of the Hellenistic period. We may assume that in Herod's time and before it there were many buildings in Judea decorated in this manner, but the plaster has fallen from them and has left no traces, save in isolated spots. Nowhere in this country have plastered and fluted columns been found in such good condition, relatively speaking, as at Masada. The two excavation reports from Samaria<sup>78</sup> give, however, some information on columns which were once plastered and fluted, and also on walls inside houses covered with stucco and painted with coloured panels. At Samaria were found the upper parts of Corinthian capitals dating from the time of Herod, which are very similar to those found at Masada.<sup>79</sup> The nearest parallel to the stucco at Masada is to be found in the stucco of the Herodian buildings which were found some time ago at Jericho.<sup>80</sup> There one may likewise note the use of a course of wooden

<sup>78</sup> G. A. Reisner, C. S. Fisher, D. G. Lyon: *Harvard Excavations at Samaria*, I. Cambridge, Mass., 1924, pp. 145, 184-185, Fig. 101; J. W. Crowfoot, K. M. Kenyon, E. L. Sukenik: *The Buildings at Samaria*. London, 1942, pp. 32, 42, Pl. XLIX, 1.

<sup>79</sup> *Ibid.*, Pl. LXXXIV, 1-3, as pointed out in a letter by J. W. Crowfoot.

<sup>80</sup> J. L. Kelso & D. C. Baramki: Excavations at New Testament Jericho and Khirbet en-Nitla, *AASOR*, 29/30, 1955, pp. 42-49, Pls. 19-20 A.



beams for the strengthening of the walls; there too beams were set into the wall at right angles to its direction.<sup>81</sup>

The small finds in the area of this building were very few. It is especially remarkable that the potsherds found were not numerous and consisted only of some fragments of Roman pottery. Pieces of linen of two kinds, thick and thin, were found in various places. We must also record an important epigraphic discovery made upon re-examination of the palace: the ostrakon found during the clearance of the south-western corner of the court (cf. pp. 59-60).

#### THE IDENTIFICATION OF THE PALACE (FIGS. 18-20)

Josephus describes the palace of Herod on Masada as follows:<sup>82</sup> 'There, too, he built a palace on the western slope, beneath the ramparts on the crest and inclining towards the north. The palace wall was strong and of great height, and had four towers, sixty cubits high, at the corners. The fittings of the interior—apartments, colonnades, and baths—were of manifold variety and sumptuous; columns, each formed of a single block, supporting the building throughout, and the walls and floors of the apartments being laid with variegated stones. Moreover, at each spot used for habitation, both on the summit and about the palace, as also before the wall, he had cut out in the rock numerous large tanks, as reservoirs for water, thus procuring a supply as ample as where springs are available. A sunk road led up from the palace to the summit of the hill, imperceptible from without.'

A number of scholars have attempted to identify the sumptuous palace described by Josephus with various constructions on the top of the rock. Since the survey of Schulten the accepted identification has been with the big building C, containing three courts, near the western approach (cf. supra, pp. 15-19). The situation and the finds in these constructions did not conform to the description given by Josephus, and the scholars who supported this identification had to employ some dubious interpretations, assuming that Josephus was either inexact or ill-informed. The strongest argument in their favour was the lack of any other suitable building on Masada.

With the discovery of the magnificent building which occupied the three terraces at the northern end of the rock (cf. supra, pp. 25-51) it was at once sug-

<sup>81</sup> Cf. especially the floral ornament in the painted plaster, *ibid.*, Pl. 9, top centre, and *ibid.*, Pls. 4, No. 1; 34, No. 2; 36, No. 2.

<sup>82</sup> *War*, VII, 289-292.

gested that this must have been the palace described by Josephus,<sup>83</sup> a view which trial excavations have confirmed. The conformity between the archaeological finds and the description leaves no room for doubt that the proposed identification is correct.

In his description Josephus distinguishes between the upper town—i.e. the top plateau of the rock with its various constructions—and the royal palace, which was built below the wall enclosing the top of the mountain. He states expressly that this palace faced the north, and the building we found conforms to this description. At the same time he states that the palace was built 'on the western slope', a statement which has confused scholars and given rise to various interpretations.

The reason for this confusing and contradictory statement is probably that Josephus himself never entered the fortress. His account of the siege—unlike his account of the siege of Jerusalem—is not that of an eye-witness, for at that time he was already living in Rome. At the most Josephus saw the fortress from the outside. He tells us in his autobiography that as a youth he spent three years in the Judean Desert.<sup>84</sup> At that time, and until the outbreak of war, Masada was occupied by a Roman garrison. It is quite impossible that an Essene hermit should have been allowed to visit the fortress and the palace. This impression is confirmed by all of Josephus' descriptions of Masada. On the one hand he displays a good deal of knowledge, either his own or derived from authoritative eyewitnesses, and on the other he makes mistakes which show that he had not visited the site himself. This is particularly obvious in his description of the 'snake path'. After a factual description of the eastern path, he writes: 'One traversing this route must firmly plant each foot alternately. Destruction faces him, for on either side a chasm yawns, a chasm so terrific as to daunt the hardiest'.<sup>85</sup> This description led scholars astray, for it caused them to look for the path on the northern side, whereas it ascends on the eastern slope of Masada. In fact, no section of this path passes between chasms open on either side. Each member of the survey party underwent the experience described by Josephus. When we stood below and looked up at the path winding upwards we had the same feelings as he did; it was only on actually ascending that we noticed the exaggeration in his description. The other mistakes in his description of the palace can be explained in the same way: lack of first-hand knowledge.

<sup>83</sup> Gutman, *op. cit.* (supra, n. 48), pp. 263-264.

<sup>84</sup> *Life*, 12.

<sup>85</sup> *War*, VII, 283.

The best view of the palace is obtained from the mountain west of Masada. There the spectator stands level with the building at no great distance from it. Actually Masada has no north side, because the rock runs out on that side to a sharp point. The spectator from the west sees the palace (Pl. 2 B) 'on the western slope . . . inclining towards the north'—exactly as described by Josephus.

Josephus' description of the interior of the palace also corresponds to the archaeological finds: there are plenty of mouldings, ornaments and coloured mosaics (actually, black and white). The four-metre high columns in the porticoes on the lower terrace seemed to the distant spectator to be monolithic, because of their stucco surface. The bathing pool on the middle terrace was pure luxury in a place like Masada in the desert; Josephus did not forget to mention it. Above all, the rock-cut passage, invisible from the outside, seems to have left the greatest impression on contemporaries. The spectator from the west saw a building 13 m. high and more, crowned by a circular construction. Between the top of this building and the house on the upper terrace was straight rock face 20 m. high. The staircase between the two was cut in this rock and was hidden from the eye of the beholder. We may imagine the effects this 'sunk road' made on those standing outside when they saw a man disappear within the rock face and appear after some time on top of the rock.

According to his description, Josephus made a distinction between the 'palace', i.e. the peristyle building and the circular construction, which took up the two lower terraces, and the house on top of the mountain, to which the sunk road led. On the other hand, the mosaic pavements mentioned by Josephus have been found only on the topmost level. In fact, this building was 'beneath the ramparts on the crest', i.e. the big sloping wall which closed the fortress south of the house on the upper terrace (cf. *supra*, p. 27). There can be no doubt that from the point of view of the user the three buildings formed an integrated whole. Josephus' description again reflects the double origin of his information. On the one hand he describes from memory the two buildings separated by the high rock step, and on the other he gives details of all three parts of the building from information obtained from persons who had visited them.

The only two parts of Josephus' description which seem quite fictitious are those of the wall of the palace and the towers at its corners. However, the other buildings on the top of Masada, including Schulten's 'big palace', also lack these features. Josephus apparently misunderstood the nature of the high buttressing walls which supported the lower and middle terraces, with all their projections;

these could be mistaken from a distance for walls and towers. At all events, this additional inexactitude of Josephus' confirms our belief that he never visited the palace in person.

Finally, there is one more problem. In the account of the tragic last stand of those besieged at Masada, the royal palace is stated to be the place where they committed mass suicide: the last of them set the palace on fire. In clearing the palace we did indeed find traces of a violent conflagration, but it is difficult to imagine that nearly a thousand persons could have entered so small an area.

There is no clear answer to this question. On the one hand we notice that the building on the upper terrace apparently had two storeys, and that the capacity of the lower building was increased by its cellars. On the other hand, a conflagration level was found during the trial sounding in the 'big palace', which was also undoubtedly a public building, with the dimensions of a palace (cf. *supra*, p. 18). The palace at the north end could serve only the needs of the king and his closest attendants; it was equipped with the greatest luxury. It is, however, quite possible that the second big building was destined for the courtiers and the guards, and that it too was built like a palace, as is evident from the small part excavated (cf. *supra*, pp. 15-19). Josephus describes the palace at the north end, because it was a unique construction. It left the strongest impression on the spectator who saw it then, and the impression is still strong in our own days. It is a monument of architectural and engineering, daring, and of sumptuousness in building. Josephus may not have been very exact in describing the end of Masada, or he may have been ill-informed about the details of events. Thus he did not draw a distinction between the royal palace and the other palatial building which stood on the top of the rock.

Only a continuation of the excavations can bring us nearer the solution of this and the other problems of Masada.

#### THE CISTERNS (FIG. 3, PL. 15)

The number of cisterns cut in the rock of Masada and the plentiful supply of water thus assured are stressed by Josephus.<sup>86</sup> Until the recent survey only the cisterns on top of the rock had been explored, and even there many problems had been left unsolved.

Even from a distance one can discern in the north-western side of the rock two parallel rows of openings, one above the other; these are the mouths of the

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<sup>86</sup> *War*, VII, 291.



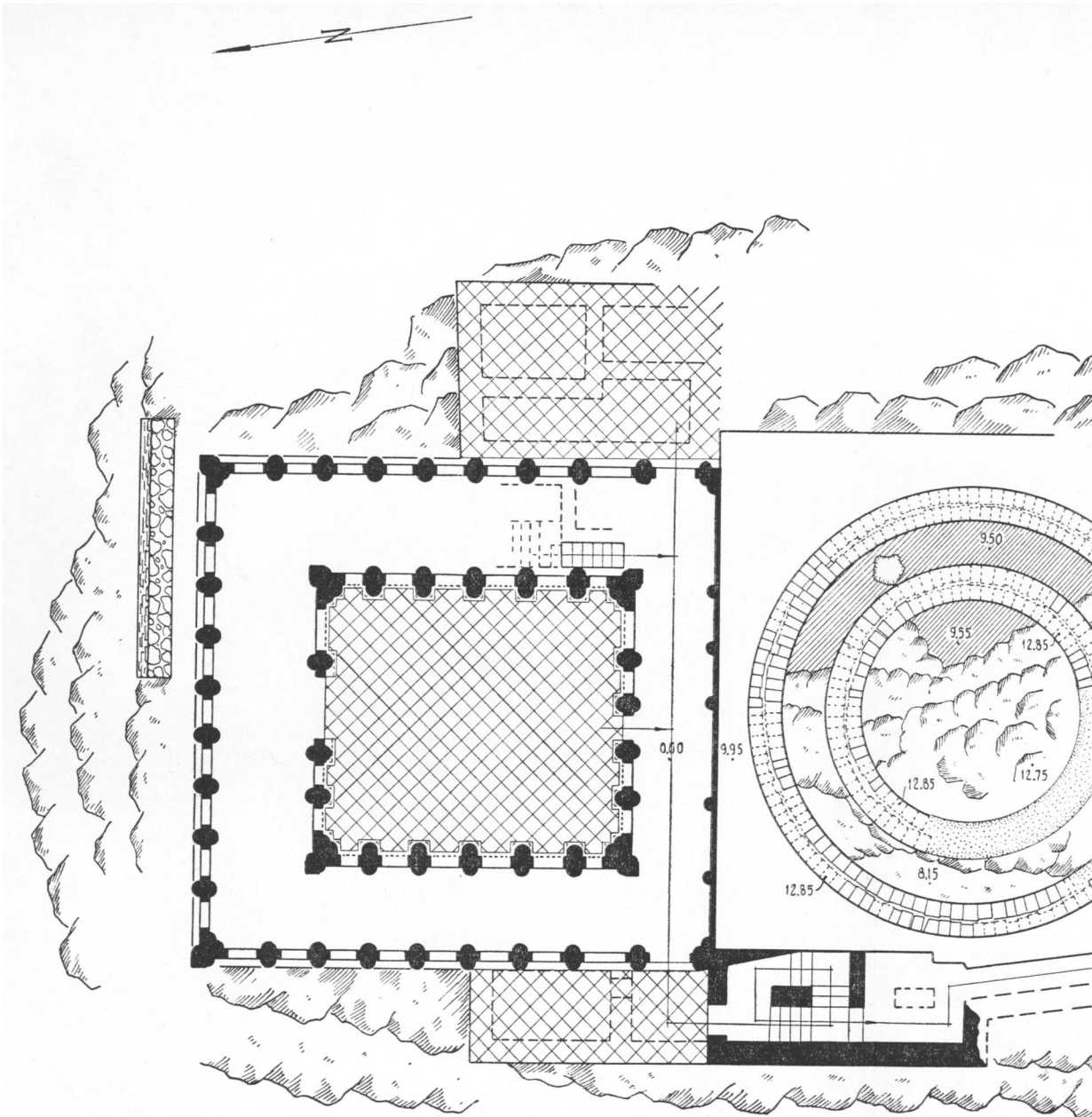
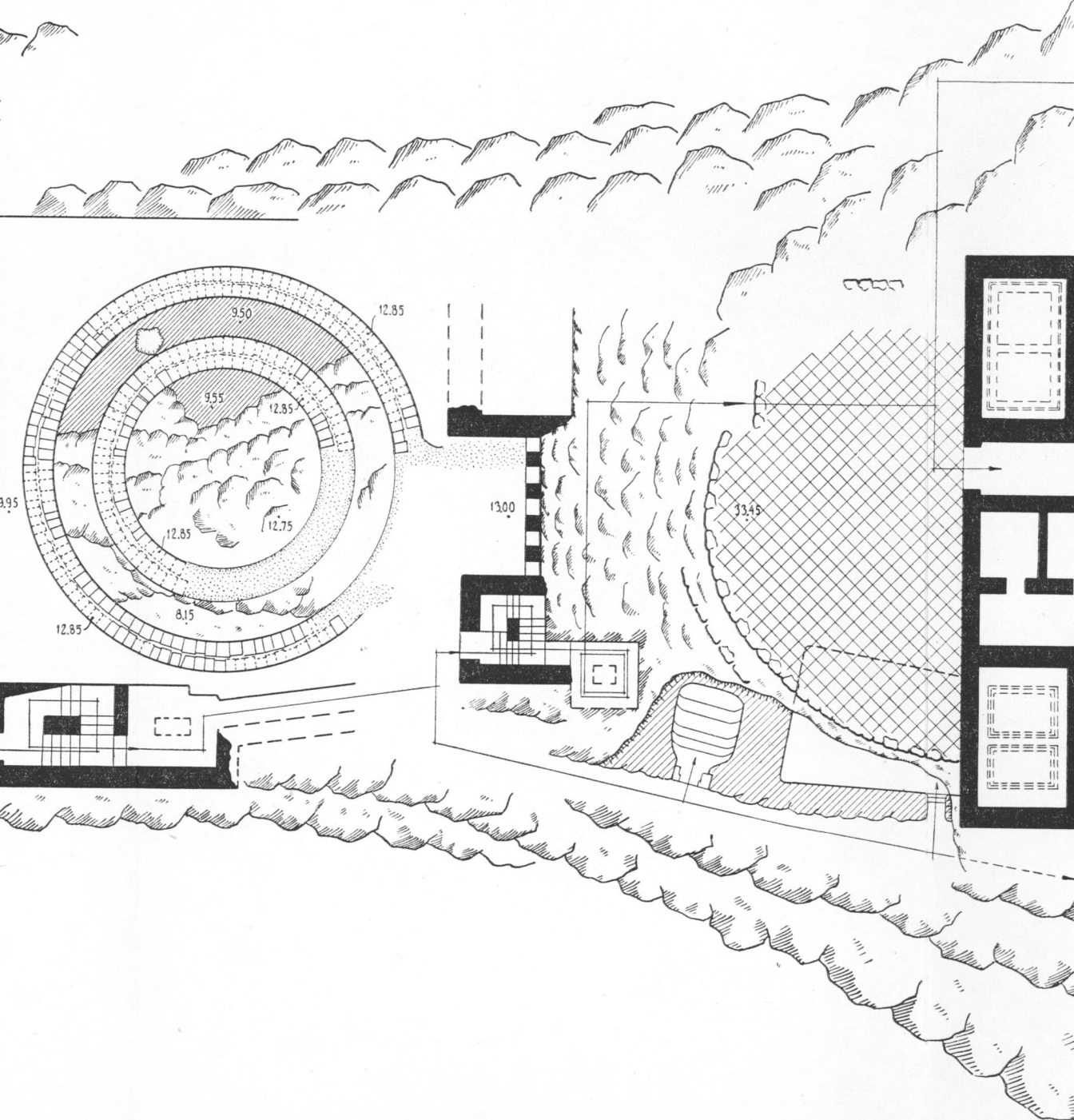
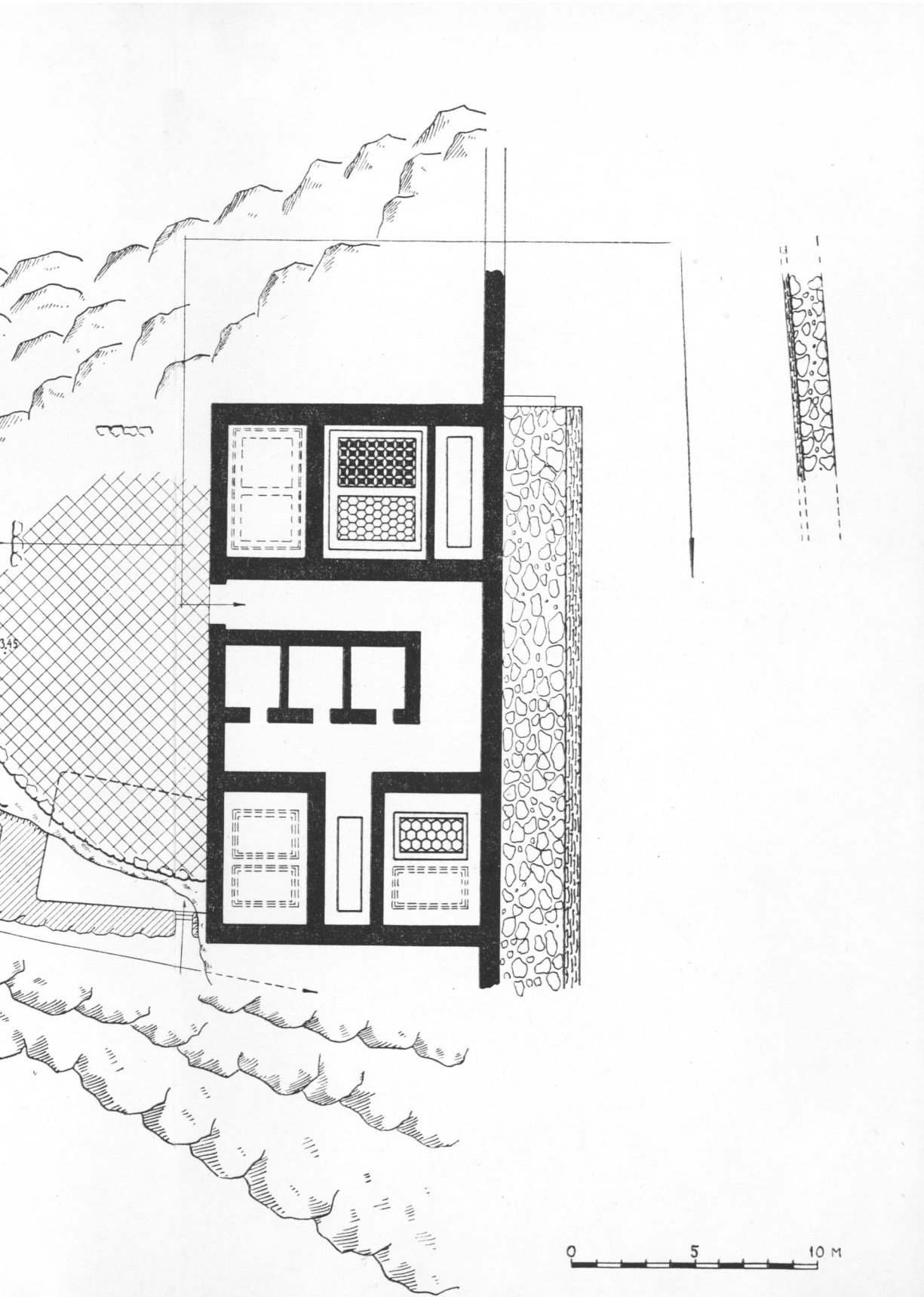


Fig. 18. General plan of palace.







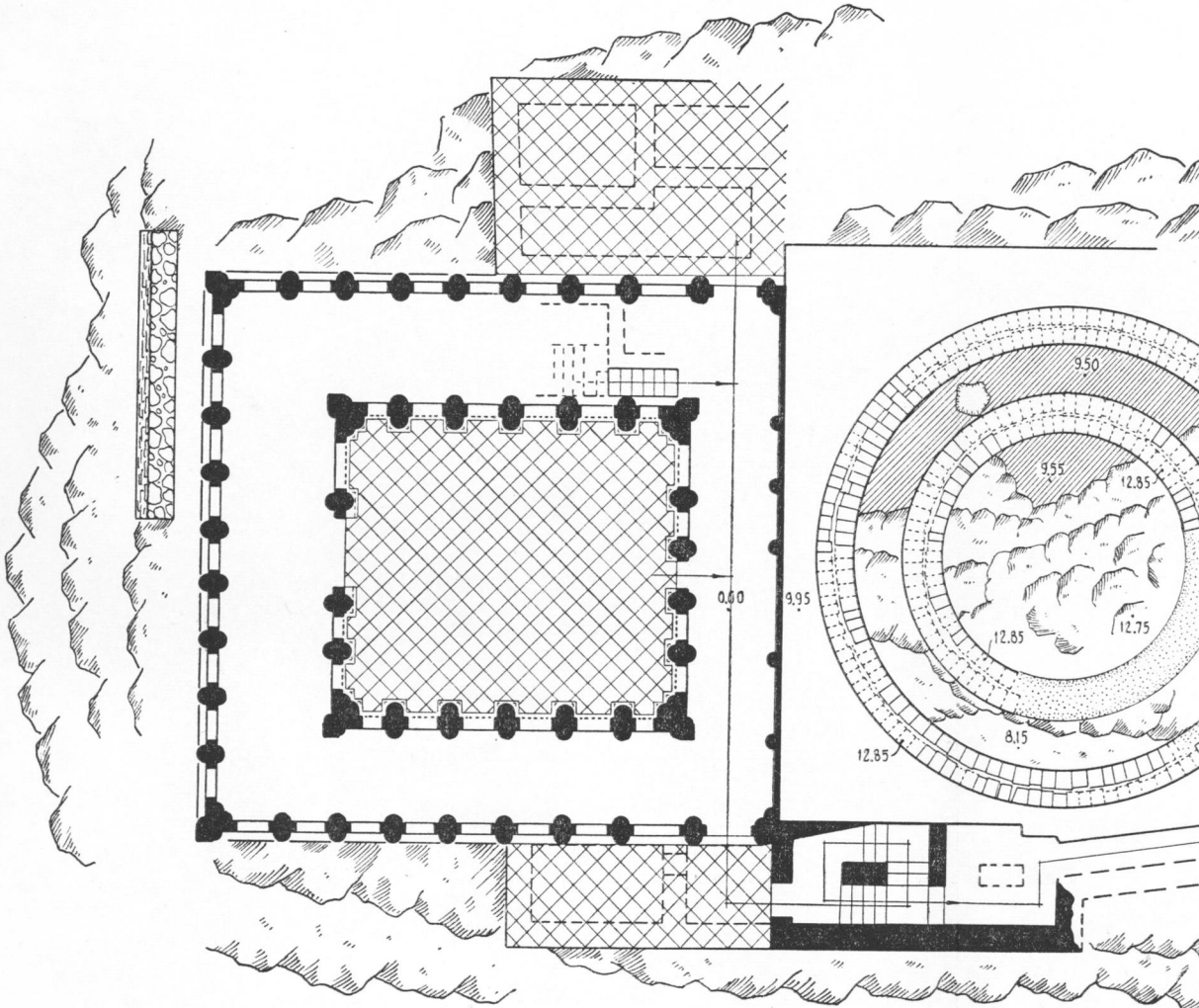
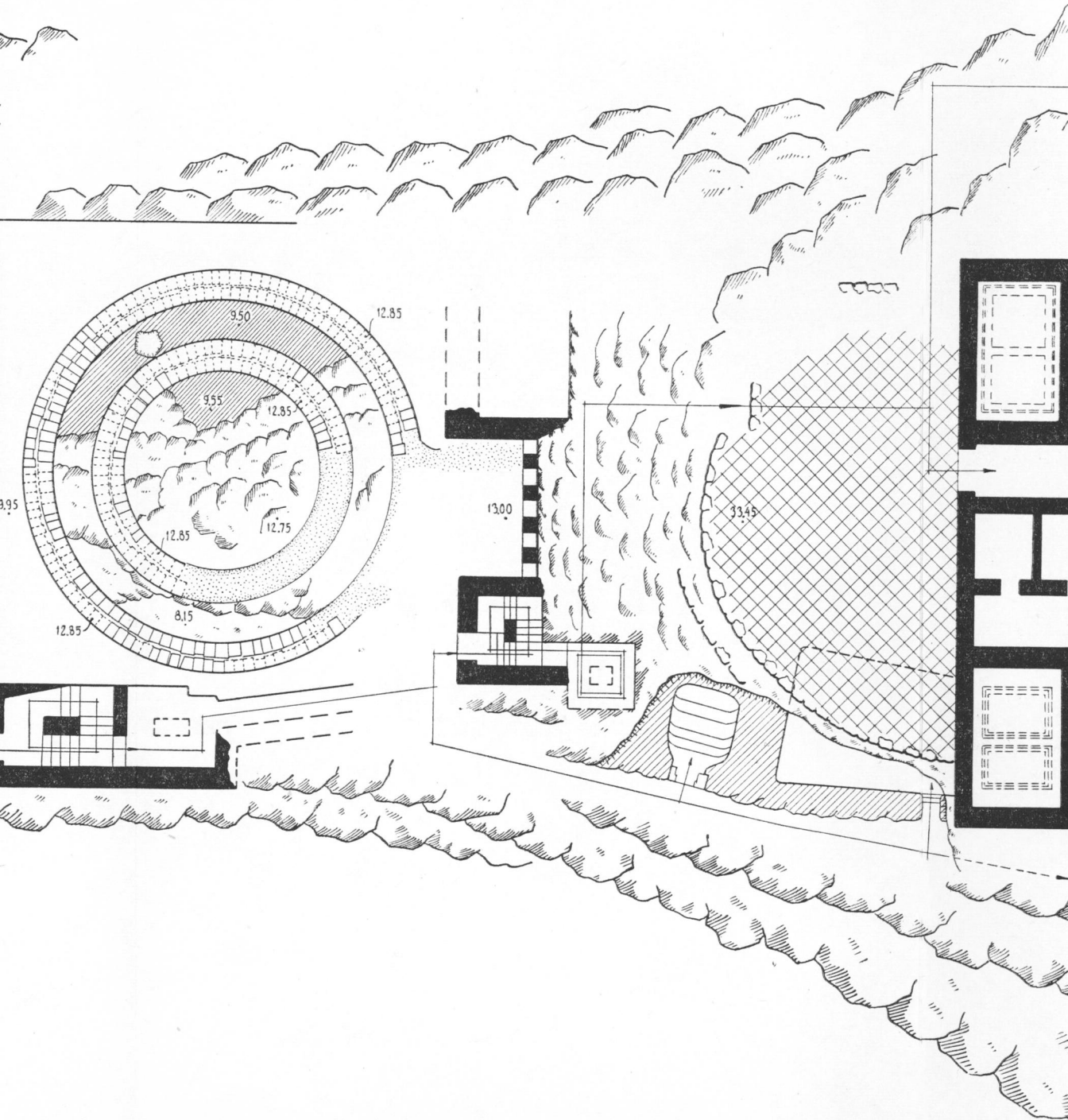
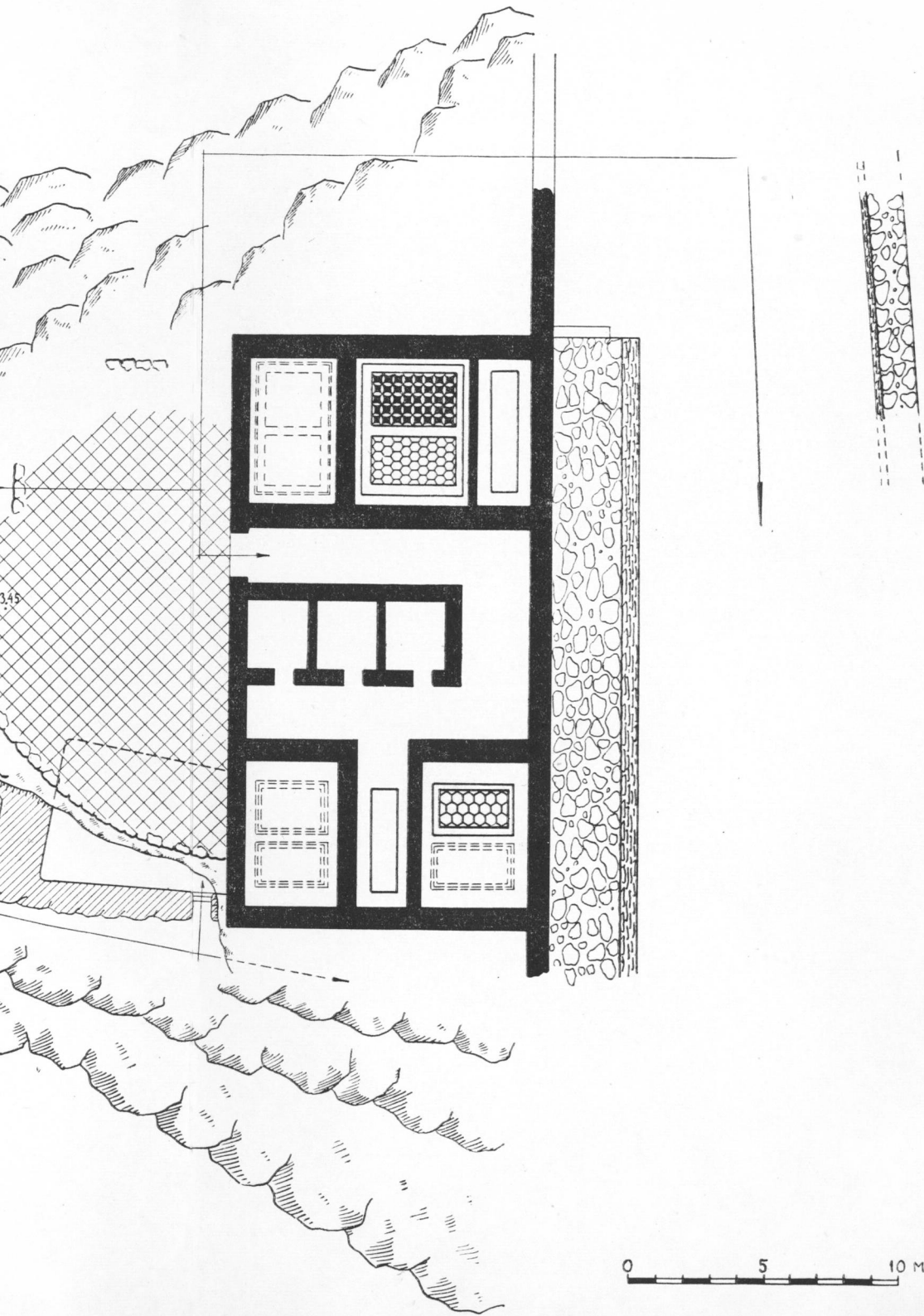


Fig. 18. General plan of palace.







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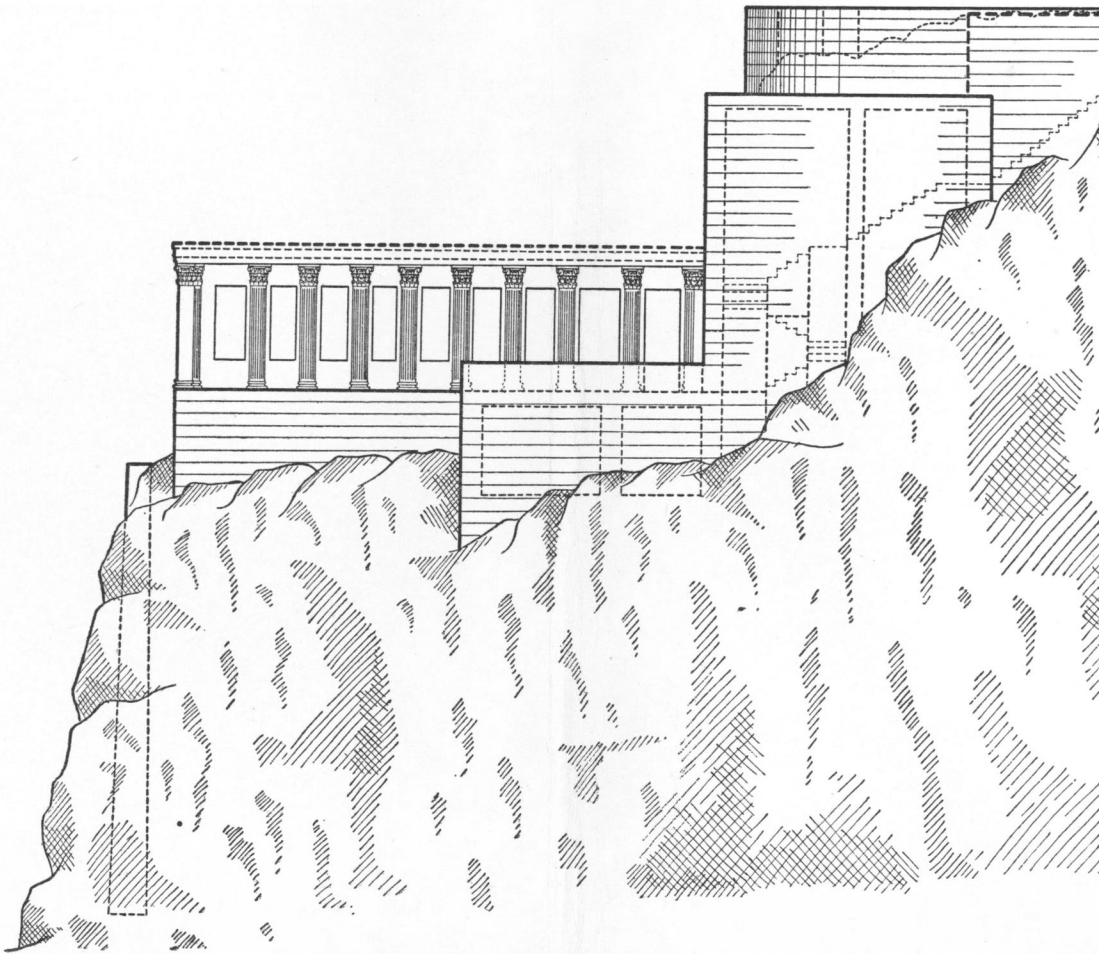
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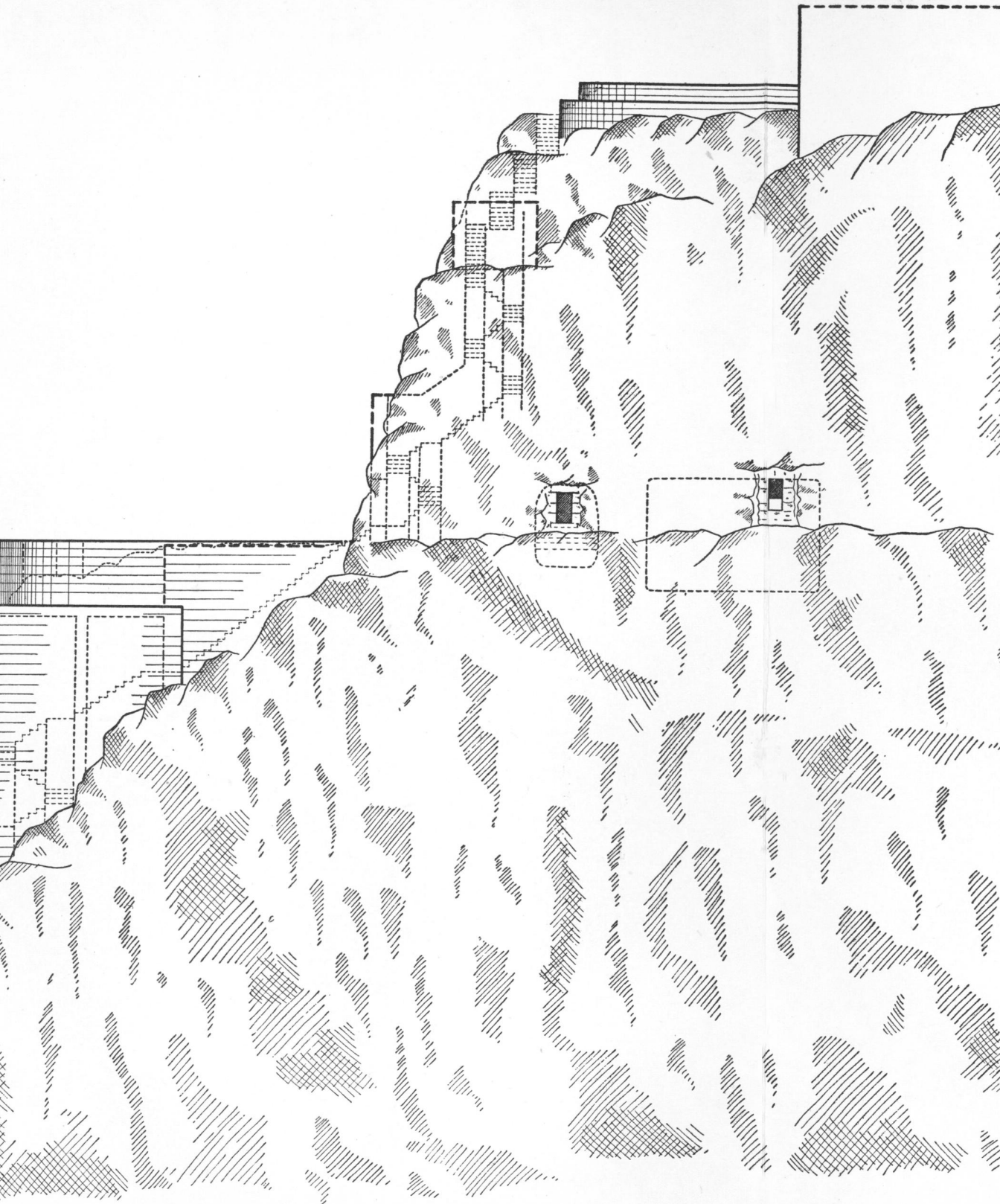
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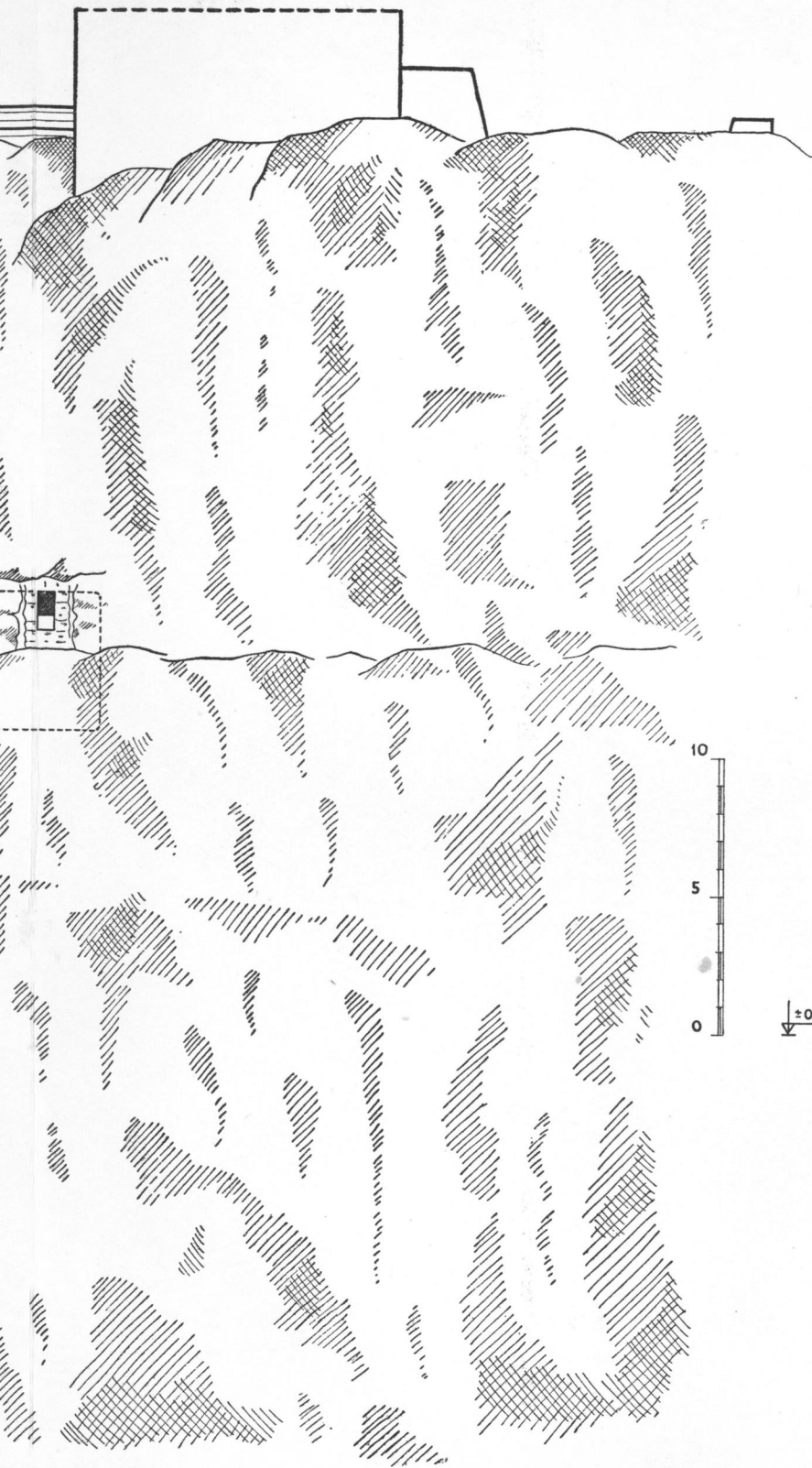
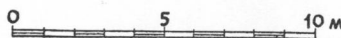
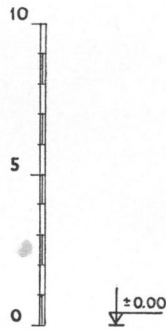


Fig. 19.  
Reconstruction of the palace,  
seen from the west.



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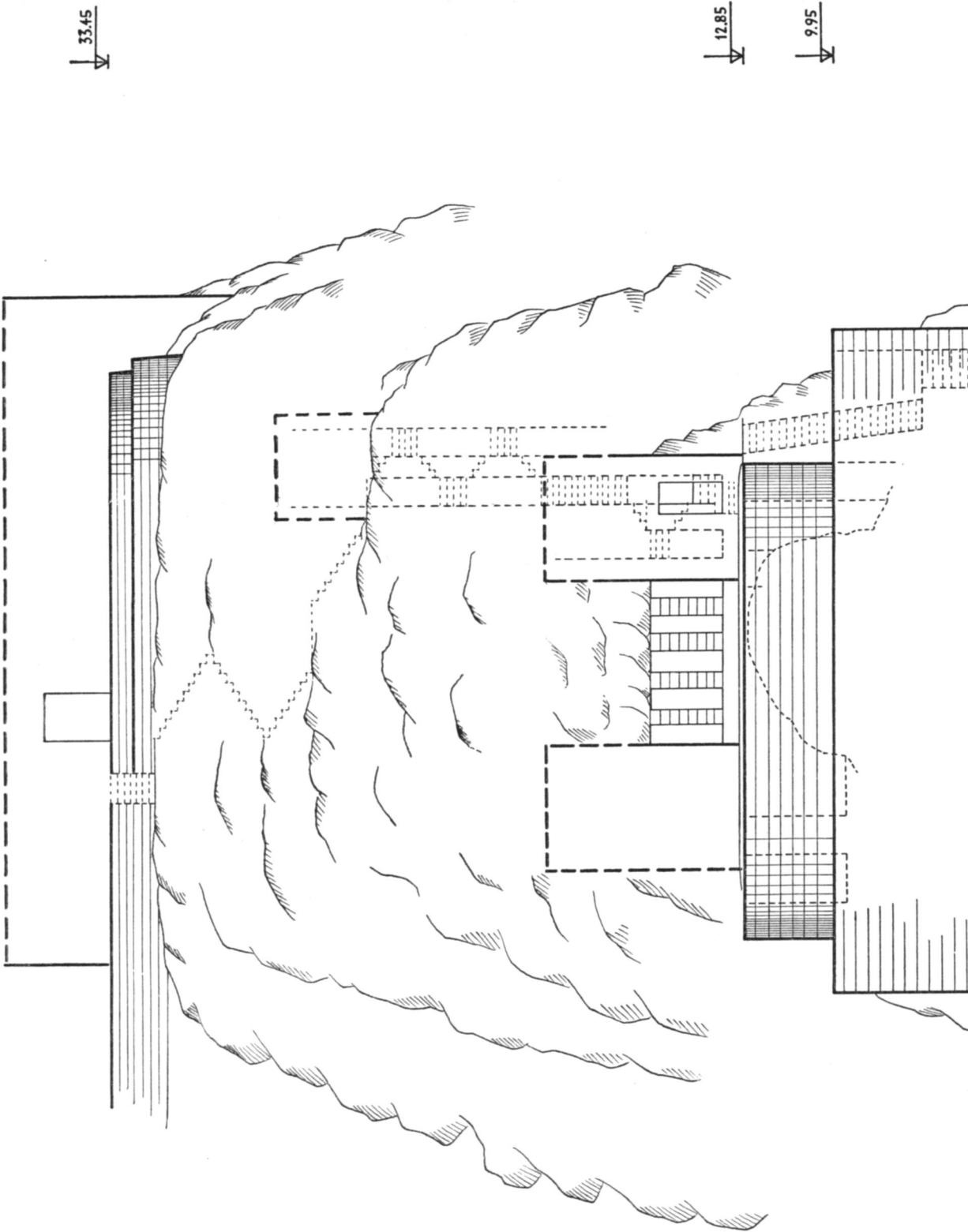
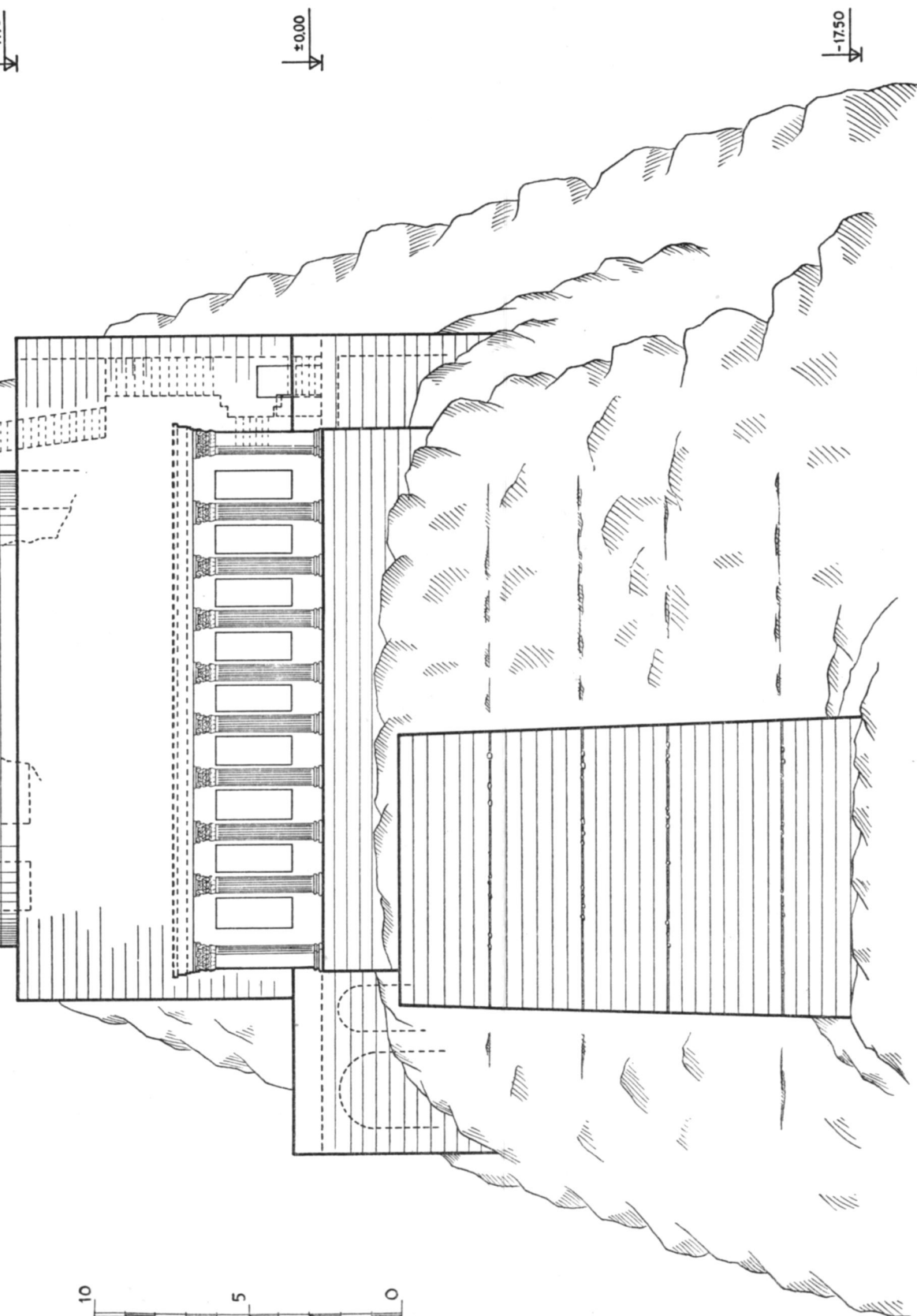


Fig. 20. Reconstruction of the palace (seen from the north).



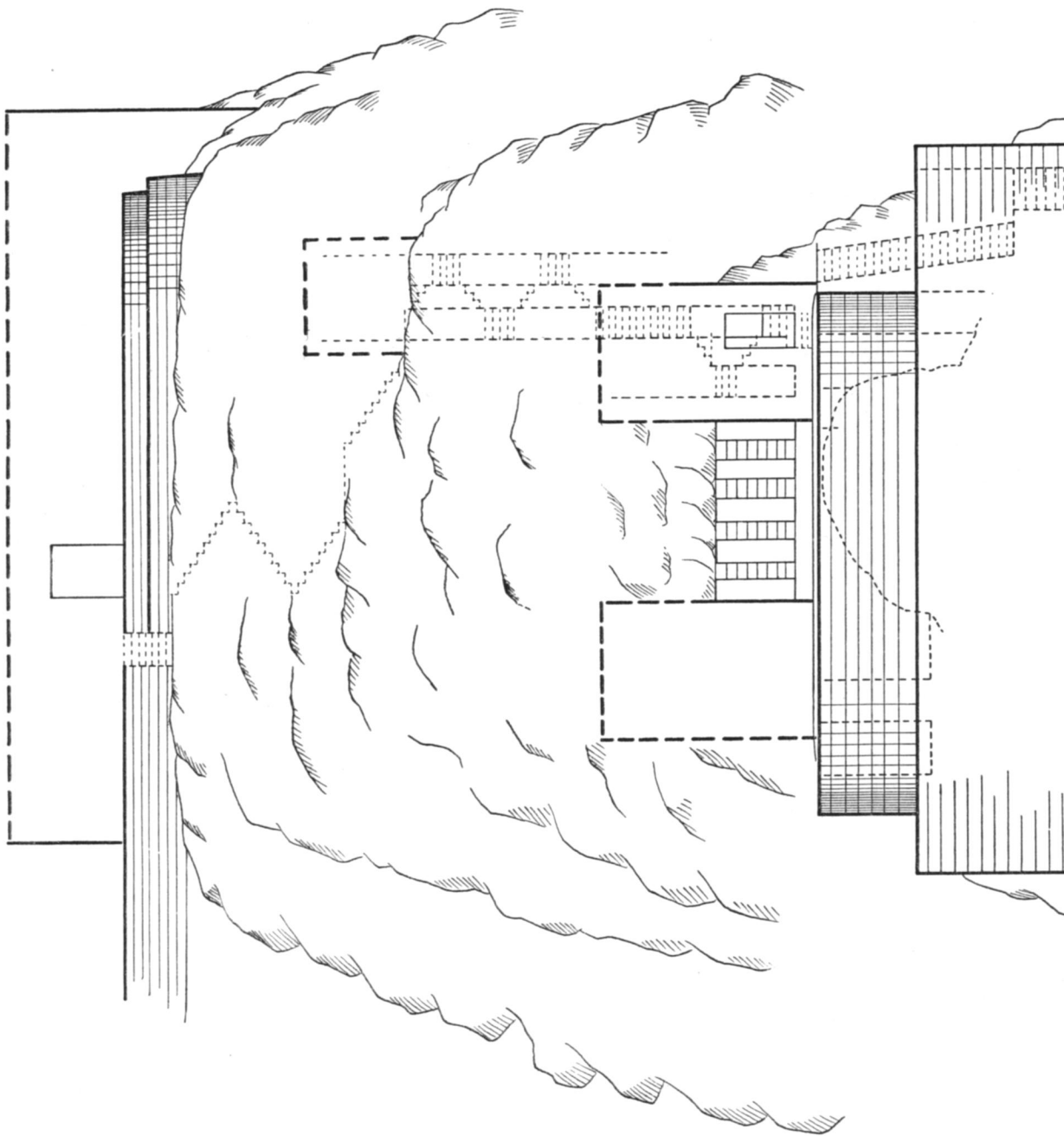
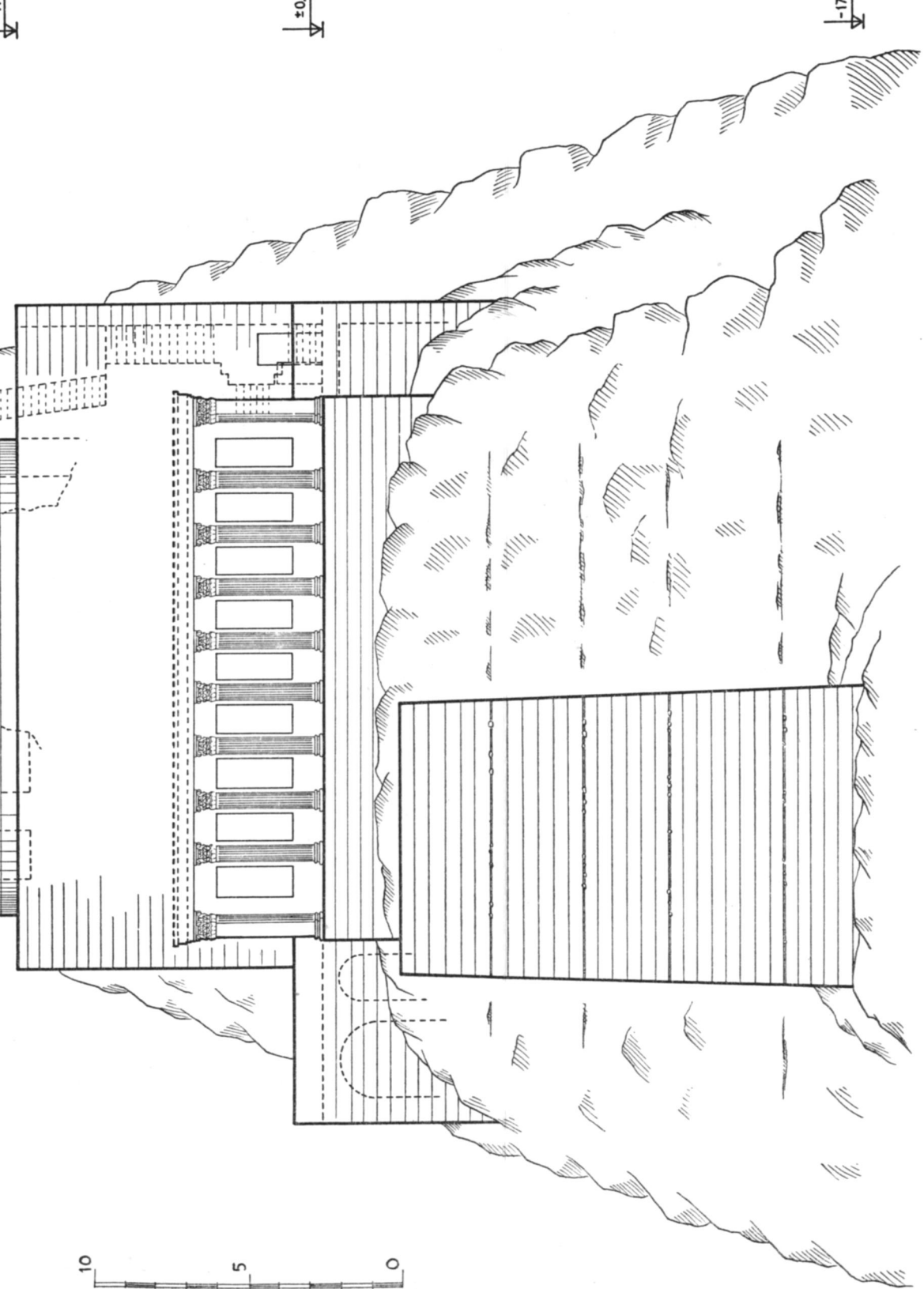


Fig. 20. Reconstruction of the palace (seen from the north).





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cisterns (Pl. 2 B, Fig. 3). The opening of the first of them in the lower row was reached at a height of 81.3 m. below sea-level; it proved to belong to a huge cistern, full of debris.<sup>87</sup> Its walls were plastered, and traces of an aqueduct leading into it were found near the mouth. The ruined state of this cistern made an estimate of its capacity particularly difficult: on advancing eastwards from its mouth many fissures and passages in the rock were noticed, which lead inwards and form parts of the same cistern. This reservoir is very near the valley which separates Masada from the mountain opposite it. Remains of a ruined channel were observed going up the valley.

The path from this cistern No. 1 to the cisterns visible further north was mostly destroyed. Re-cutting a narrow track into the rock, we observed traces of stone constructions at the level of the cistern mouths, i. e. evidence of an aqueduct. Higher up a tower was noted (Fig. 3, VII), apparently intended to protect this area.

Continuing along this row we reached three more cisterns (Nos. 2-4 in the lower row), all of them bigger than the largest cistern on top of the rock which has a capacity of about 3000 cu.m. These three cisterns are also rock-cut and plastered, and the descent into them is by many steps. Marks left by the water on the plaster and still visible today prove that once these reservoirs were filled to capacity. From the last cistern in this row a built path can be reached which, turning towards the east side of the rock and crossing it from north to south, was connected with the 'snake path' which runs up the east side of Masada.

Continuing northwards along the row of cisterns, we reached other cisterns, came first to the group of cisterns facing west, near a vault which is situated close to the upper section of the siege-dam. Here we found three cisterns (Nos. 5, 6, 7), all very large, all plastered up to the ceiling, and all with stairs cut inside them. Each had a special opening for the inflow of water and another connected with the descending stairs. Near them were the remains of a channel whose plaster can still be seen.

Continuing northwards along the row of cisterns, we reached other cisterns—the first of them No. 8. This is a big cistern, entirely plastered over. It has an inside staircase of 33 steps, at the bottom of which were potsherds, mostly of the Roman period. North of it is a similar cistern, No. 9, which is still larger in size, with a capacity of over 4000 cu.m. Beyond it were cisterns Nos. 10, 11, 12, all of

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<sup>87</sup> For details see Table of Dimensions, *infra*, p. 59.

which were plastered to the roof. Two of them have pillars supporting the ceiling, and have steps descending into the interior.

All the cisterns were cut by hand in the mountain side and are not natural caves plastered over. The marks of the stone cutters' chisels are still visible on the inside in places where the plaster has fallen off. The regular form of the cisterns also proves that they were made by man, as do the rock pillars left standing inside to serve as supports for the roofs. The openings through which the water entered the cisterns were originally made wide, in order that the workers might throw out the stones cut from the rock and for general convenience in working; later on the openings were narrowed by courses of stones, the aperture left serving solely to receive the waters brought by the channel.

The floors of the cisterns were covered with accumulated dry clayey earth, fissured today with the drying out of the water. Near the foot of the stairs and in the accumulation on the floor potsherds could be observed.

A stone vault (Pl. 16 A; Fig. 3, V), mostly preserved, served as a bridge for an aqueduct which came from the west and reached the cistern mouths in the upper row.<sup>88</sup> The height of this vault is 40.5 m. below sea-level. Near the vault a steep, smooth rock face juts forward; in order to make the aqueduct across this face a daring feat of engineering had to be performed. Part of the platform was enlarged to form a built channel, which is still passable on foot for men and beasts of burden (Pl. 16 B).

Fragments of the aqueduct were also observed in the continuation of the upper row of cisterns to the north. Here and there the plaster still adhered to the rock face, and some parts of the channel bottom had also been preserved. The aqueduct crossed very difficult terrain with steep rock faces; hence buttress walls were built, to enlarge the area available. Now the walls have mostly fallen down and adhere to the rock only in a few places. Continuing the line of the channel a small, high cave (VI) was found in the rock side slightly above the cistern row; it was not plastered and its walls still bore chisel marks made during its enlargement. It measures 10 × 3 m., and is 4 m. high. Inside was found an accumulation of earth and traces of fire. We made a small sounding in the accumulation to a depth of 20 cm., and found potsherds and bones. At the bottom was a plastered floor. It seems clear that this was a dwelling-cave in the vicinity of the cisterns. In one of the corners we found a trough plastered

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<sup>88</sup> Already observed by G. D. Sandel: *Am Toten Meere, ZDPV*, 30, 1907, p. 98 and Pl. II.

with the same plaster as the cisterns, and attached to the rock face as a kind of small water reservoir, measuring  $0.7 \times 0.4$  m. This cave seems to have served the guards of the cisterns, and possibly the workers as well. At all events, it did not serve for the collection of water.

To sum up, we have here a system of large-scale cisterns, cut in the rock for the express purpose to collect water. Obviously water in such quantities could only be supplied by the winter floods in the Judean Desert—certainly not by the relatively small quantity of rain falling on the surface of Masada itself.

On the basis of this conclusion, it became necessary to trace the constructions which connected the cisterns with the desert valleys. The only valley which could supply flood waters from the desert in the direction of Masada was Masada Valley (Wadi Sabba). We therefore examined the possibilities of a connection between this valley and the isolated rock of Masada. South of the projecting cone west of Masada, the Leuce, near the Masada Valley, we found the remains of a ruined aqueduct, i.e. a plastered strip about 40 m. long and 1.4 m. wide. It was covered by a stratum of earth and stone rubble. The plaster is strong and rests upon a stone foundation; the built sides which were constructed to keep the waters from descending the slope of the valley are visible here and there. They were presumably deflected by a dam towards the channel built in order to carry them towards the cisterns in the north-western slope. No traces of this dam were found—apparently it has been swept away. But in the slopes of the valley are visible signs of a platform cut in the rock to provide a place for the dam. No big dam was needed, as the valley at this point is rocky and narrow. The Roman circumvallation passes at the same spot (I), descending southwards inside the valley.

It appeared also that the vault mentioned above (V), which was deliberately built on the site of a geological fault, served as a bridge carrying the aqueduct from behind the western mountain to the slope of Masada. Above the vault stone-constructions are visible on the valley slope, designed to protect it and the aqueduct from washed-down stones and earth. At the sharp bend leading to the siege dam and at its base are visible traces of a row of stones, on which—we must assume—the aqueduct passed (IV). These remains were cut by the siege-dam; quite possibly the Romans used this area of soft rock as a quarry to fill up their siege-dam, and thus wiped out all traces of the aqueduct.

From the topographical point of view this is the only area that could serve for the passage of a channel which in its continuation would have to pass between



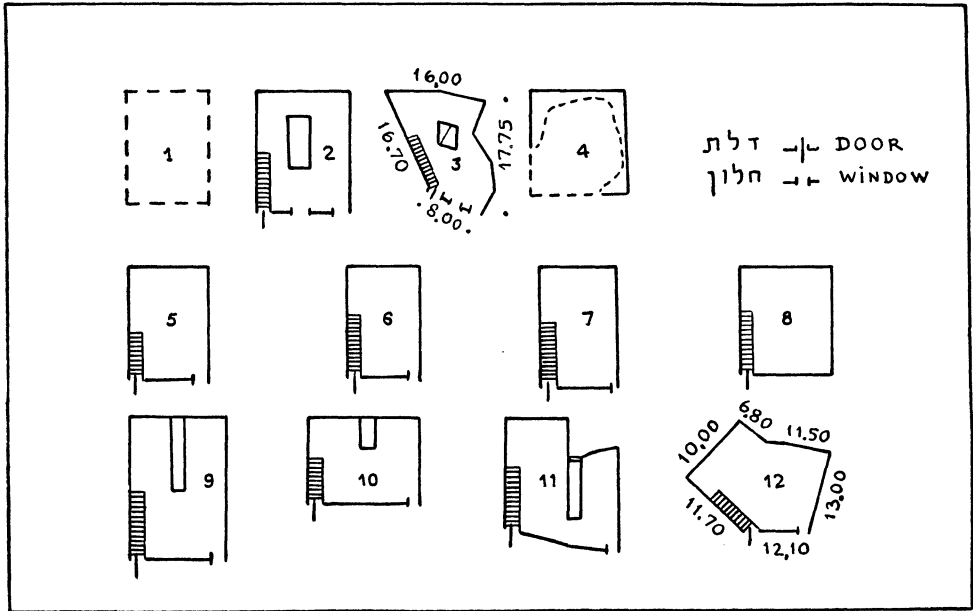


Fig. 21. Outline plans of cisterns.

the Leuce and the steep cone to the west. In this narrow area the aqueduct turned towards the Masada Valley. Near this point there are signs of the cutting away of the rock which could have formed an obstacle to the line of the aqueduct.

Levels taken in the Masada Valley near the dam show that the aqueduct was here (I) at a height of 37.2 m. below sea-level; the top of the vault was 40.5 m. below sea-level. Hence the channel was built at a slope suitable for the flow of water in this direction, and the aqueduct then carried the water to the upper row of cisterns.

West of the first cistern in the lower row there stood stone-walls on a platform (II). These served to stop the water in fissures from flowing downwards. Here were also traces of a north-westerly rock-cutting, 60-70 m. long, whose continuation was a row of stones destined to arrest fissures in the same area. The object of these constructions was to prevent the flood waters collecting in the area west and north of Camp F from flowing into Ben Yair Valley (Wadi Nimrah or Kabritha) and to turn them into the lower aqueduct. In short, this row was fed by waters from an area extending west and north of Camps G and F. In case of need, the waters of the upper aqueduct could be directed into the rock-cut channel which led into the lower row of cisterns.

In conclusion, all the cisterns in both rows were at some time filled to the top with water; the evidence of the deposits is clear. As, however, the cisterns were not always filled to capacity, each successive water level has left its mark upon the walls.

TABLE OF DIMENSIONS (CF. FIG. 21)

Cistern No.	Length m.	Width m.	Height m.	Approx. capacity cu.m.	No. of steps	Remarks
<i>Cisterns in the lower row</i>						
1	Filled with debris, could not be measured			3000 (estimated)		
2	19.5	15	14.5	3784	26	Pillars: 8.3 × 3.8 m.*
3	See Fig. 21		14	4032	26	Irregular shape; Pillars: 4 × 3 m.
4	17.1	15.8	14	3794		Floor covered with debris
<i>Cisterns in the upper row</i>						
5	18	12.8	11	2544	27	
6	18	12.3	12	2657	30	
7	19.5	12.2	12	2843	31	
8	17.6	15	14.5	3828	33	
9	23.3	15.3	13	4229	30	Pillar: 12 × 2.5 m.
10	14.1	17.8	15	3603	29	Pillar: 5 × 2.2 m.
11	18.2	15	11.5	2887	31	Pillar: 10 × 2.2 m.
12	See Fig. 21		14	4200	26	Irregular hexagonal shape

\* The height of each pillar equals that of the respective cistern.

## INSCRIBED MATERIAL

The following inscriptions were found during the survey of Masada:

1. *Ostrakon*, found in the debris near the south wall of the peristyle building (see *supra*, p. 51). The ostrakon (Pl. 16C) is a fragment of a jar, decorated with a wavy line in red paint. The writing corresponds to the shape of the sherd, whereas the painted line follows the form of the jar; this shows that we have here an ostrakon, and not an inscription on a vessel. The writing is in two lines of black ink and it resembles the script of the ossuaries:

חנני בר שמעון  
מן שמ(ע)ה

*Hnny br Šm'wn*  
*mn Šm(')h*

Hannani son of Simeon  
from Shim'ah

The first line contains the name of a person and that of his father—names which were common at that time. The second line apparently states the name of the place of origin, i.e.: from a place called Shim'ah. The reading of the third letter in the place-name is not certain, but the visible traces seems to suggest as most likely the reading 'ayin (א), as first proposed by B. Mazar. The place called Shim'ah does not occur in any known source; however, in 1 Chron. ii, 55 we find the name of a family called 'Shimeathites' among the southern families connected with the Kenites. As there are many place-names among these family appellations we may assume that this family was from a place Shim'ah in southern Judah, and that it was this locality which is mentioned in the ostracon.

2. *Papyrus fragment.* A small piece of papyrus (Pl. 16D) was found during the cleaning of the north-western cellar. It contains traces of two lines of Hebrew writing in clear black ink. The script is that of a trained scribe and the letters are joined together; the letters extant do not, however, suffice to propose a reading.

3. *Graffito.* The words ΓΑΙΟC ΑΚΛΑC were found written on the plaster of the fallen corner pillar in the peristyle building (see supra, p. 45, and Fig. 22)..

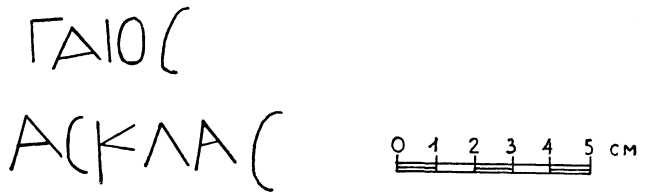


Fig. 22. Graffito.

*Acknowledgement.* — The photographs and drawings in this article were made by the following:

*Photographs:* Mrs. H. Bieberkraut Plates 14 A-B, 16 C-D.

Z. Kluger . . . Plate 1.

B. Rothenberg . . . Plates 3 A, D-E, 6, 7, 8 A, 12 A, 13.

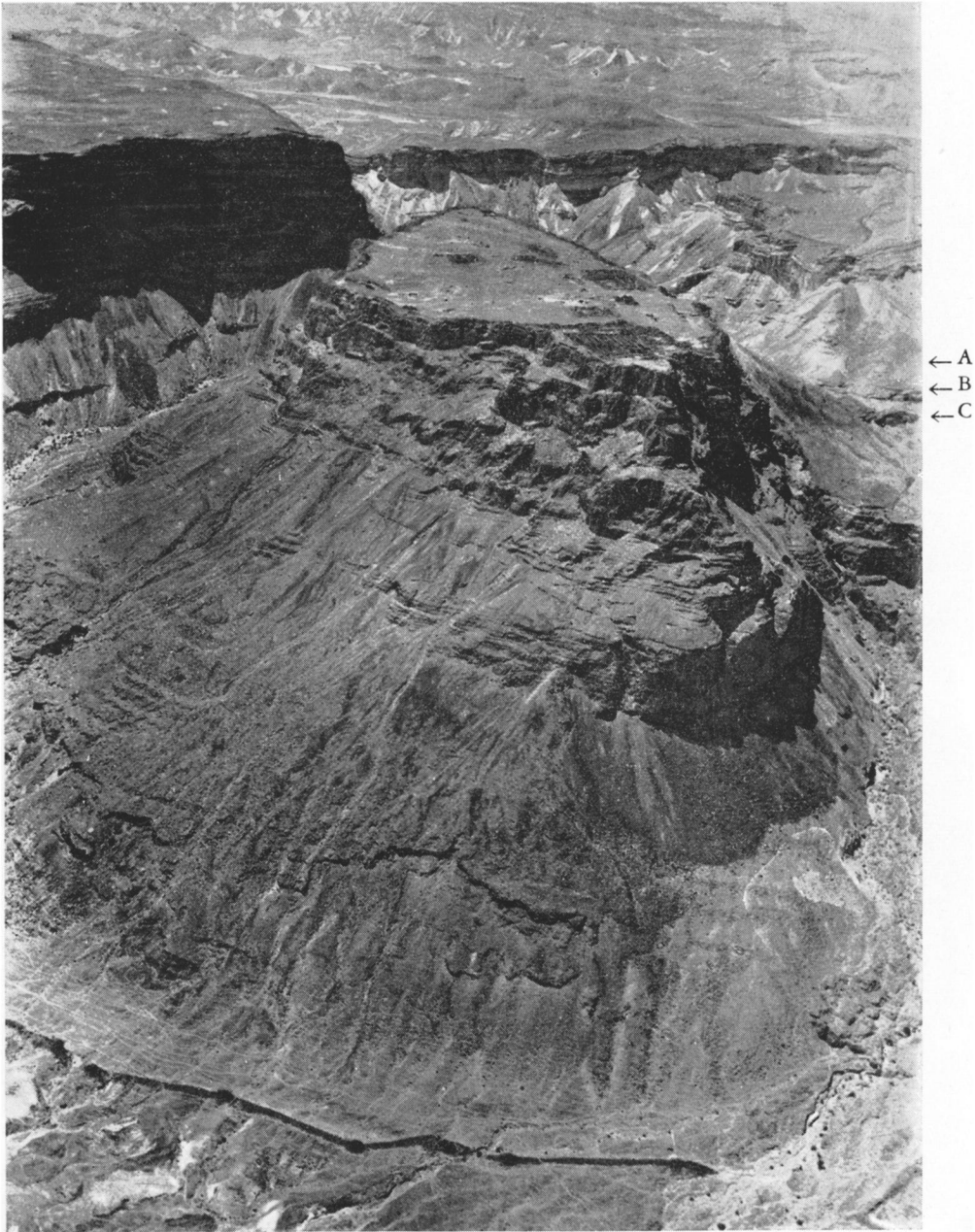
A. Volk . . . Plates 2, 3 B-C, 4, 5, 8 B-C, 9-11, 12 B-C, 14 C-D, 15, 16 A-B.

*Drawings:* I. Dunayevsky, assisted by A. Engel, Esther Kauffmann, and Y. Kolodny: Figs. 3-22.

The form lines on Fig. 3 were drawn by Z. Ron.

A. Soferman . . . Figs. 1-2.

Fig. 2 is based on an aerial photograph supplied by the Photogrammetric Institute, Jerusalem.

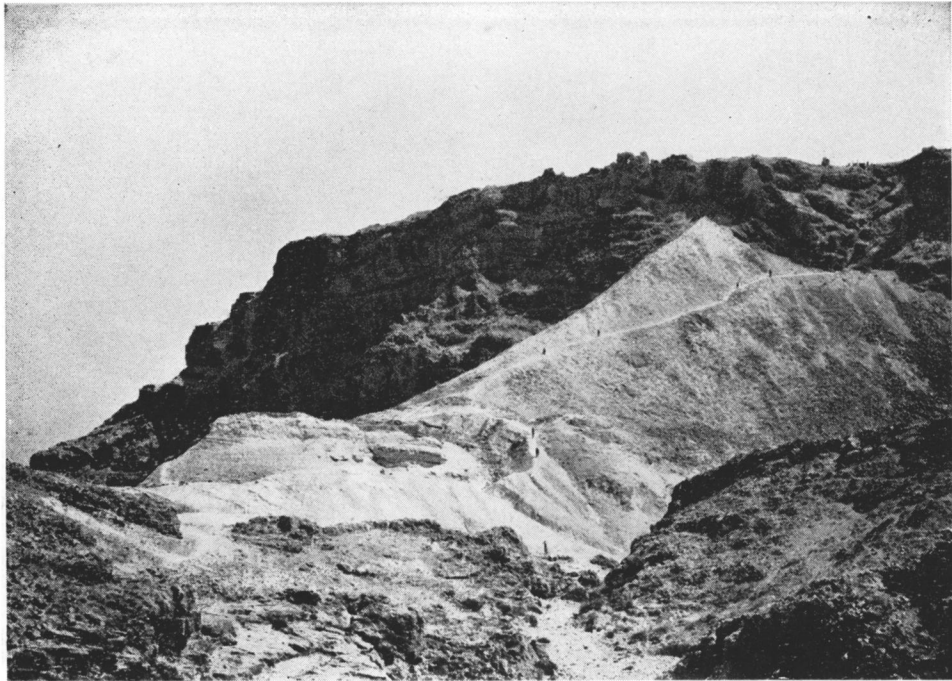


The rock of Masada, from the north-east. A—upper, B—middle, C—lower terrace of the northern cliffs. Note the Roman siege-wall at bottom of picture.

MASADA SURVEY 1955-1956



PLATE 2



A: View from the west, with Leuce and siege-dam in the foreground.



B: The northern cliffs with the three terraces. Note the mouths of the cisterns in the slope below.

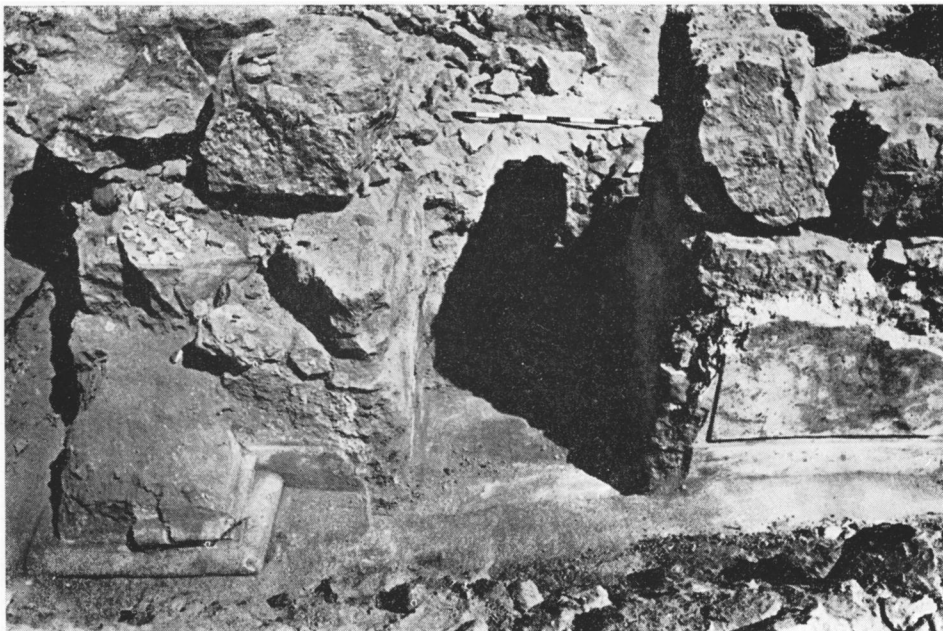
MASADA SURVEY 1955-1956



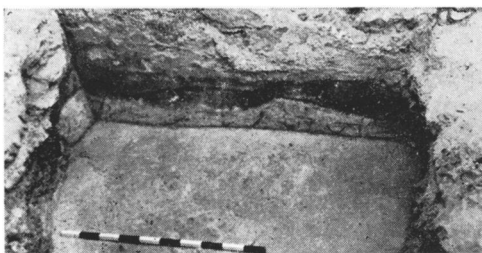
A: The three terraces, looking north-east.



B: The mosaic workshop found near building A.



C: Sounding Z in building C.



D: Sounding (a) in the arsenal.



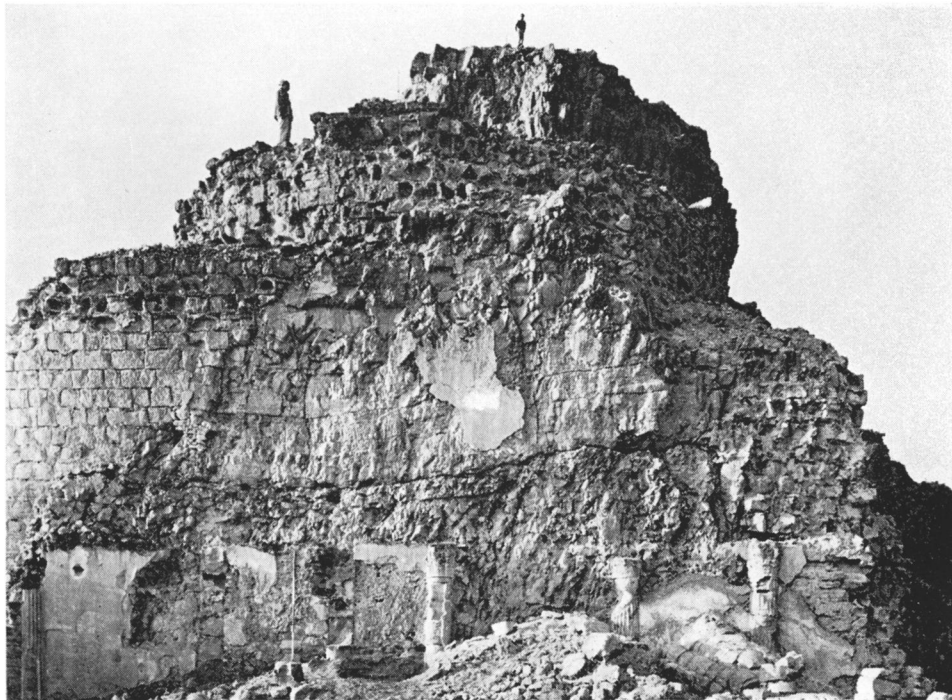
E: Sounding (b) in the store-houses.



PLATE 4



A: General view of the store-houses, looking south.

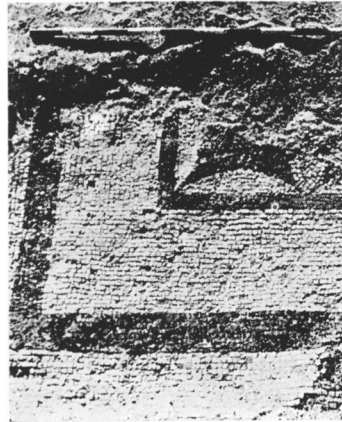


B: The three terraces of the palace.

MASADA SURVEY 1955-1956



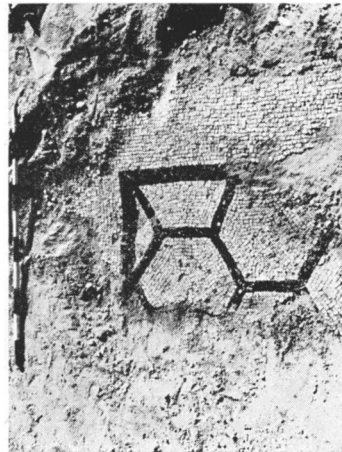
A: The bench at the gate on the upper terrace.



C

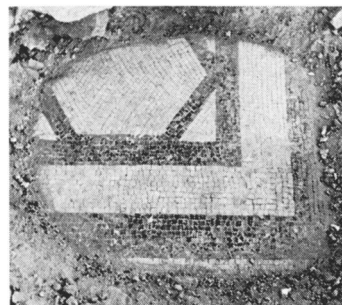


B: Graffiti on the wall beside the bench.



D

C-E: Mosaic patterns in the pavement of the house on the upper terrace.



E



PLATE 6



**A-B:**  
The circular  
constructions  
on the middle  
terrace. (In A,  
note  
western cellars  
of lower  
terrace on left.)

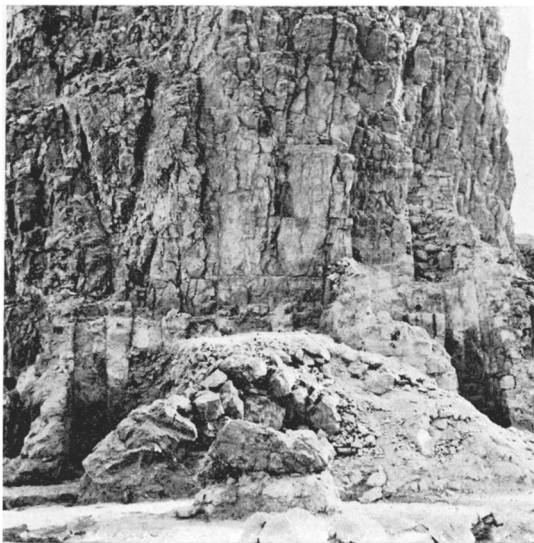
MASADA SURVEY 1955-1956



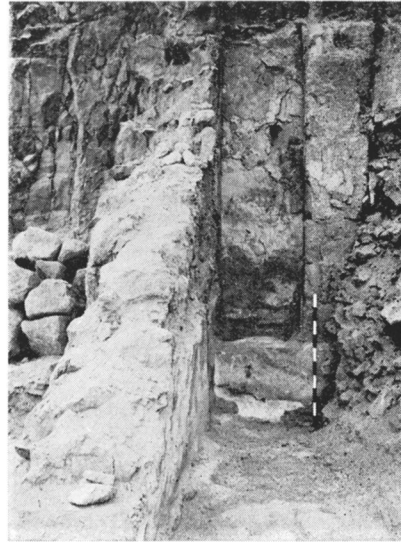
A: The space between the circular walls on the middle terrace.



B: Architectural fragments found there.



C: The pillars and niches behind the circles.



D: The easternmost niche.



PLATE 8



A: Upper staircase, looking south.



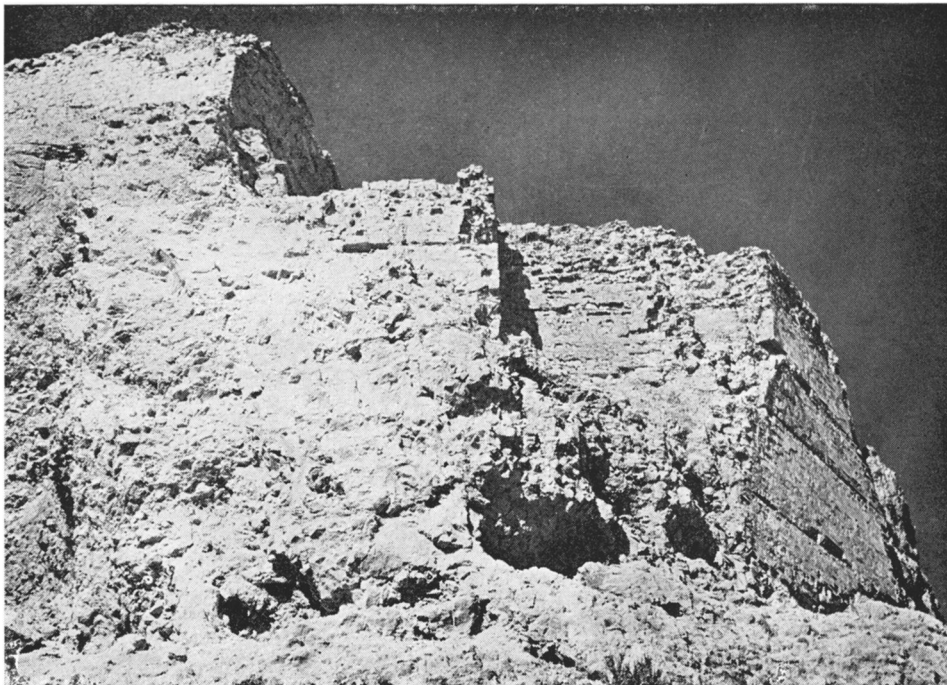
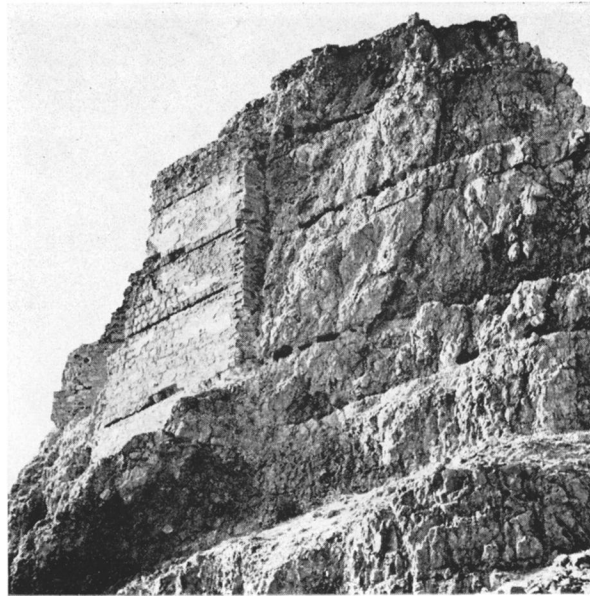
B: Lower staircase, seen from above.



C: The peristyle building on the lower terrace (general view).

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A: The buttressing wall of the palace, seen from north-west.



B: The same wall, seen from the east.



PLATE 10



A: Column attached to the southern rock face.



B: Capital of the column.



C: Base of the column.



D: Fallen column, from SW corner of outer wall.

MASADA SURVEY 1955-1956



A: Fallen pier from south-west corner of inner wall.



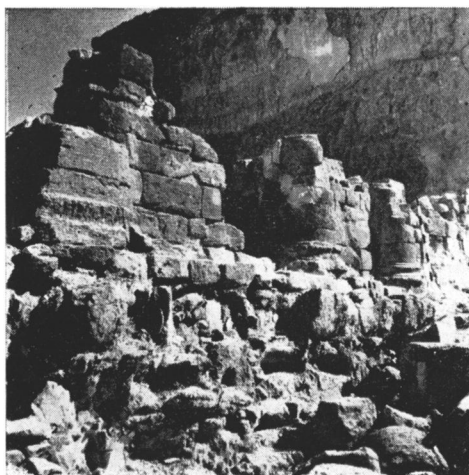
B: Capital of the pier.



C: The pier, seen from above.



PLATE 12



A: The W parapet wall, seen from the outside.



B: Twin bases in south-west corner of court.



C: The parapet wall, seen from the inside.

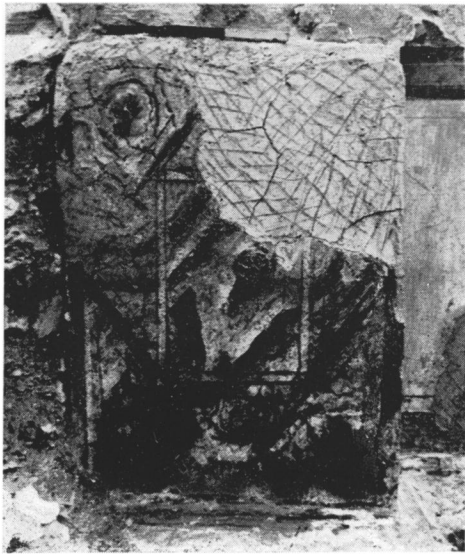
MASADA SURVEY 1955-1956



A: The south-west corner of the parapet, seen in relation to the southern rock face.



B: Inside corner of the same parapet.



C



D

C-D: Details of paintings on the parapet.

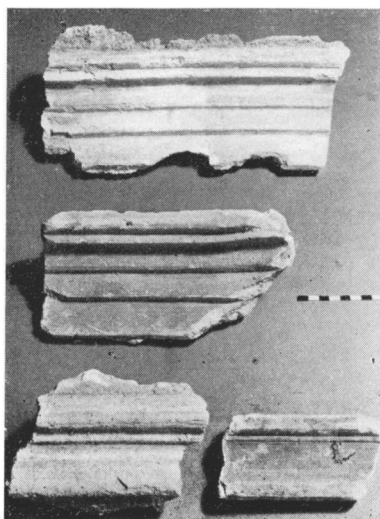


PLATE 14

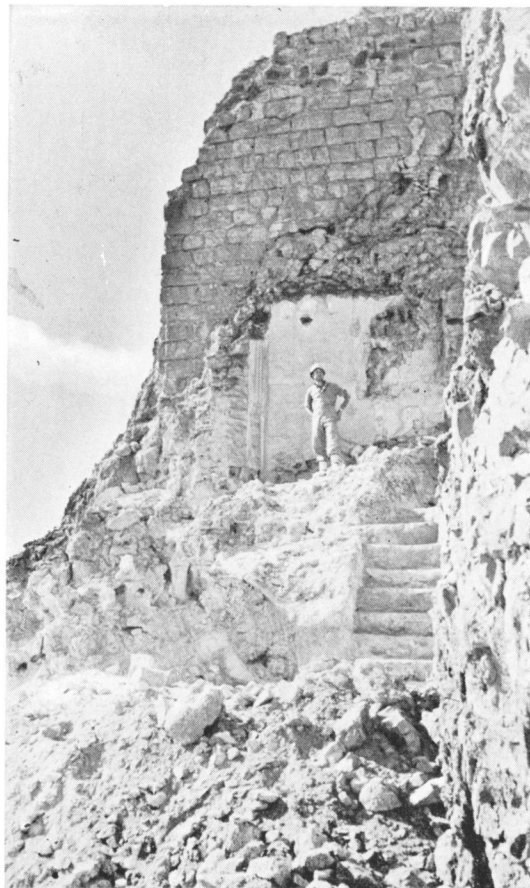


A

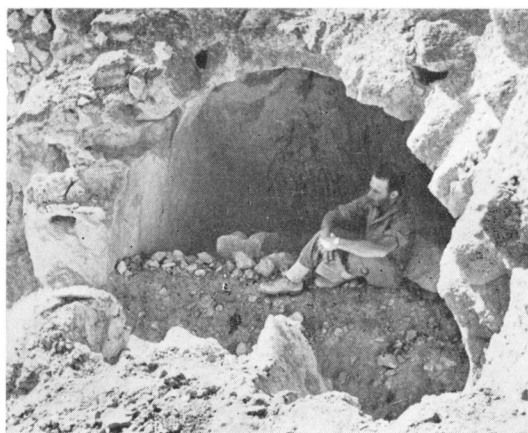
B



A-B: Moulded stucco fragments.



C: Eastern end of southern rock face and stairs to cellar.



D: Vaulted chamber south-east of cellar.

MASADA SURVEY 1955-1956



A

A-B: Cisterns.

B



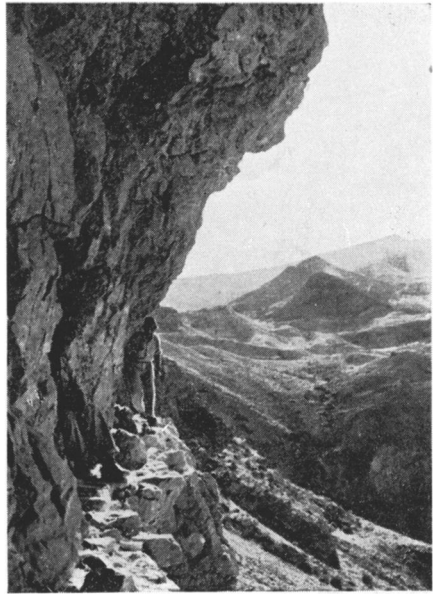
MASADA SURVEY 1955-1956



PLATE 16



A: Vaulted arch of aqueduct.

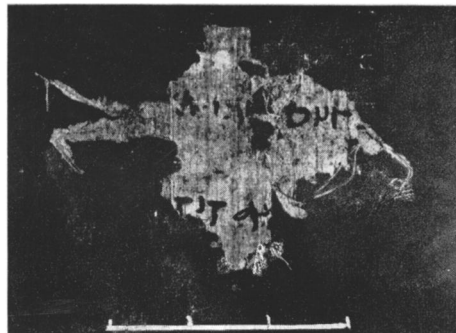


B: Aqueduct cut in the perpendicular rock cliff.



C: Ostracon.

(Scale in cm.)



D: Papyrus fragment.

MASADA SURVEY 1955-1956



E: Coins of Year Two.



F: Coin of Year Four.

A COIN FIND AT MASADA