

# PART I

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## GOURNIA.

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REPORT OF THE AMERICAN EXPLORATION SOCIETY'S EXCAVATIONS AT GOURNIA,  
CRETE, 1901-1903.

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### INTRODUCTION:

Κρήτη τις γαῖ' ἔστι, μέσῳ ἐνὶ οἴνοπι πόντῳ  
καλὴ καὶ πύρα, περίρρυτος, ἐν δ' ἄνθρωποι  
πολλοὶ, ἀπειρέσιοι, καὶ ἐννήκοντα πόλεις.

Odyssey, xix, 172.

"There is a land called Crete in the midst of the wine-dark sea, a fair  
land and a rich, begirt with water, and therein are many men innumerable,  
and ninety cities."

—Butcher and Lang's Translation.

THE high expectations which scholars held of the good that would come to  
archæology through systematic excavations in Crete have not been disap-  
pointed. It is still too early to estimate the full value of the excavations which  
have been made by the British at Knossos,<sup>1</sup> Psychro,<sup>2</sup> Praesos,<sup>3</sup> Zakro,<sup>4</sup> and  
Palaikastro;<sup>5</sup> by the Italians at Phaestos<sup>6</sup> and Aghia Triadha;<sup>6</sup> and by

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<sup>1</sup> See articles by Mr. Evans on the Palace Site in *British School Annual*, 1899-1900, 1900-01, 1901-02, 1902-03, and an article by Mr. Duncan Mackenzie on the Pottery of Knossos in *Journal of Hellenic Studies*, 1903.

<sup>2</sup> See article by Mr. Hogarth in *British School Annual*, 1899-1900.

<sup>3</sup> See article by Mr. Bosanquet in *British School Annual*, 1901-02.

<sup>4</sup> See article by Mr. Hogarth on Excavations in *British School Annual*, 1900-01, and article by Mr. Hogarth on Zakro Vases in *Journal of Hellenic Studies*, 1902.

<sup>5</sup> See article by Mr. Bosanquet in *British School Annual*, 1901-02.

<sup>6</sup> See article by M. Halbherr and Mr. Pernier in *Monumenti Antichi della Reale Accademia dei Lincei*, vols. xii, xiii, and xiv.

the American Exploration Society at Gournia. Enough has been unearthed, however, in the last four years to revolutionize our ideas of the state of culture attained by the Cretans of the "Golden Age" during the third and second millenniums B.C., and to lay surer foundations for the study of European civilization than ever before existed. Further work will, no doubt, bring many fresh surprises, and will throw new light on the origins of Mediterranean culture.

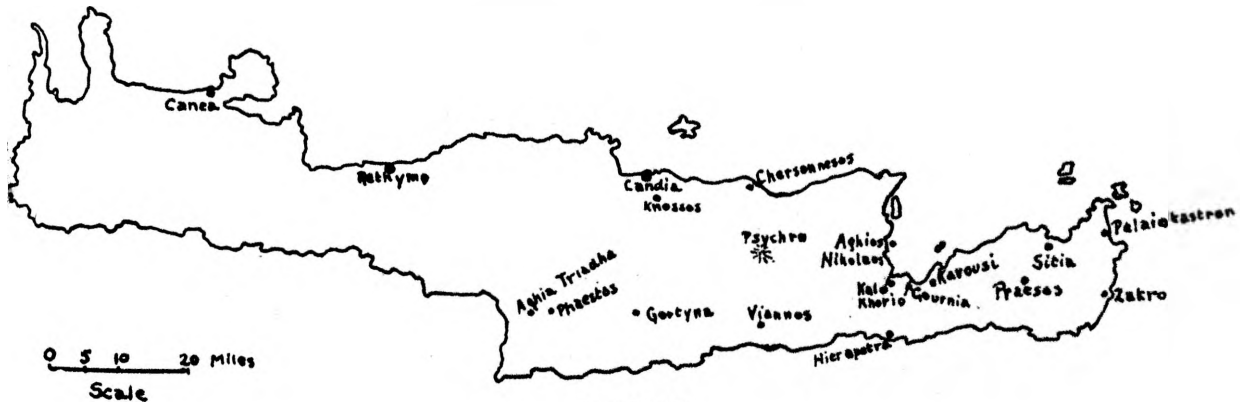
The great palaces at Knossos and Phaestos complete each other architecturally, the former giving an elevation of three or even four stories, the latter furnishing a ground plan "simple and grandiose," as it has been called by Mr. Evans. In both we see the houses of rich princes, who loved luxury, who patronized the arts of builder, sculptor and painter, and used the talents of the scribe as well. The smaller finds at Knossos and Aghia Triadha by their variety and number give us a fuller knowledge of this prehistoric civilization than we have of many a later stage of culture; but, of this as of most subjects which deserve any investigation, the more we know, the more we want to know. Palaces and tombs are not sufficient: we want also the homes of the people, for without an insight into the life of "the many," we cannot rightly judge the civilization of any period. By a singular chance, a well-preserved town, dating from the earlier period of the great palace at Knossos (about 1800-1500 B.C.) and containing a large quantity of tools, pottery and other articles of daily use, has been brought to light by the excavations of Americans ("people of the Great Democracy" as Cretans call us) at Gournia, on the north shore of the Isthmus that connects the east end of the island with the rest of Crete. It is not rash to suppose that this is one of the ninety cities mentioned by Homer in the famous passage of the *Odyssey* quoted above.

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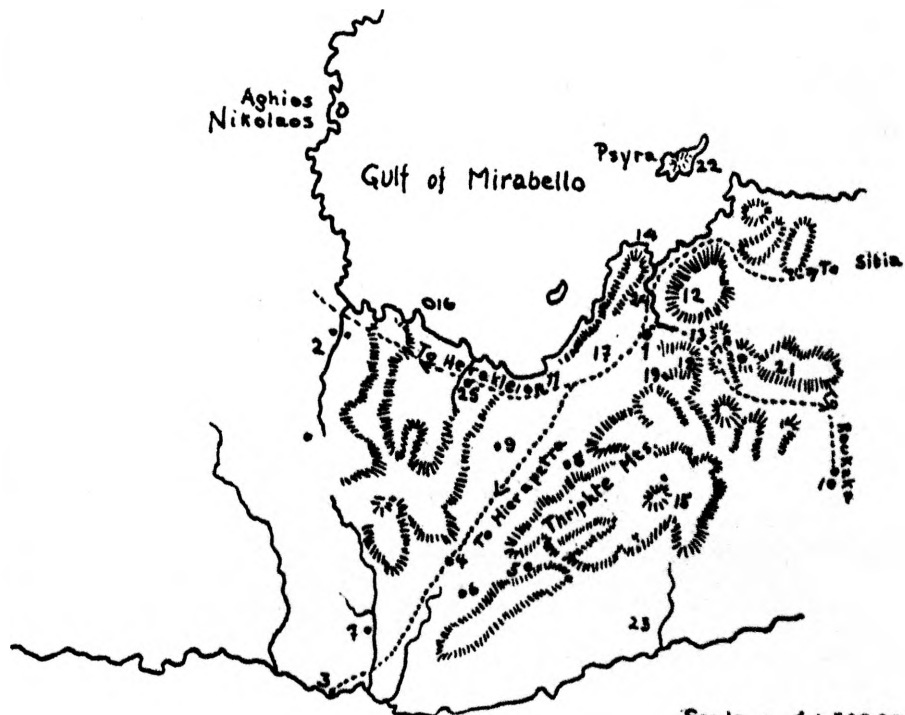
### THE ISTHMUS.

*πάλιν δὲ ἐντεῦθεν εἰς στενώτερον τοῦ προτέρου συμπίπτουσιν ἰσθμὸν αἱ ἡόνες περὶ ἑξήκοντα σταδίων, τὸν ἀπὸ Μινώας τῆς Λυττίων εἰς Ἱεράπυττων καὶ τὸ Λιβυκὸν πέλαγος.*

STRABO in Book X, Ch. IV, 3, of his "Geography" describes the long, narrow island of Crete with its northern coast-line indented by deep gulfs which at two points reduce the island to less than half its average width. At the Isthmus of Hierapetra, which is the eastern of these two points and the narrowest portion of the island, the northern and southern shores lie but 60 stadia (12 km., about 8 miles) apart. Here Nature has made the communication between sea and sea not only short but easy by leaving a narrow strip of low land between the mountain ranges of Dikte in Sitia and Dikte in Lassithi (the legendary cradle of Zeus), a break in the long chain that forms the backbone of Crete. East of the Isthmus an almost vertical rock wall of mountains hides from view the



1. CRETE.



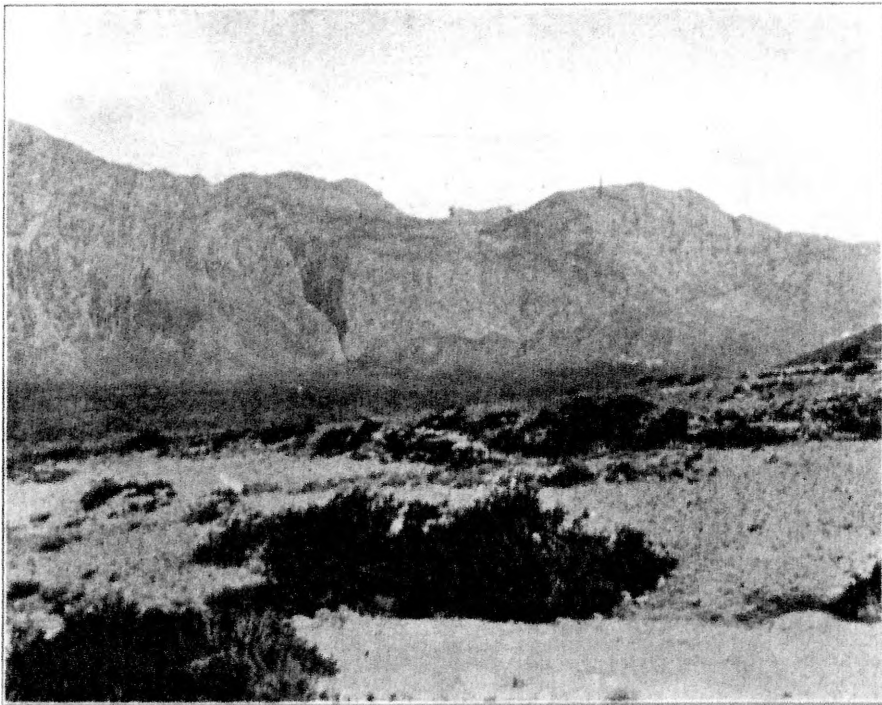
2. Isthmus of Hierapetra.

*Key to Map of Isthmus.*

- |                  |                          |                      |
|------------------|--------------------------|----------------------|
| 1. Kavousi.      | 9. Vasiliki.             | 17. Khordakia.       |
| 2. Kato Khorio.  | 10. Ronkaka.             | 18. Kastron.         |
| 3. Hierapetra.   | 11. Pachyammos.          | 19. Vronta.          |
| 4. Episkopi.     | 12. Mt. Kapsas.          | 20. Avgo.            |
| 5. Apano Khorio. | 13. Azoria Hill.         | 21. Mt. Atzelakias.  |
| 6. Kato Khorio.  | 14. Cape Tholos.         | 22. Psyra.           |
| 7. Kentri.       | 15. Mt. Aphendi Kavousi. | 23. Aghia Photia.    |
| 8. Monasteraki.  | 16. Prasonisi.           | 24. Aghios Antonios. |
|                  | 25. Gournia.             |                      |

summit of Aphendi Kavousi, which dominates Sitia (1472 m. or about 4829 ft.), while across the valley to the west, the land rises in more gradual ascent to mountain level, and from many foothills Aphendi Khristos<sup>1</sup> (2155 m. or about 7070 ft.), the loftiest peak of Lasithi, can be seen.

At the northeast corner of the Isthmus, shut in by mountains on the east and coast-hills on the west, lies the plain of Kavousi. In seasons of abundant rain like 1903 it gives good yields of olives, carobs, grapes, and grain, but in dry years like 1901 it is parched and fruitless. More fertile because better watered is the lovely valley of Kalo Khorio, which occupies the northwest



3. The Thriphte Range.

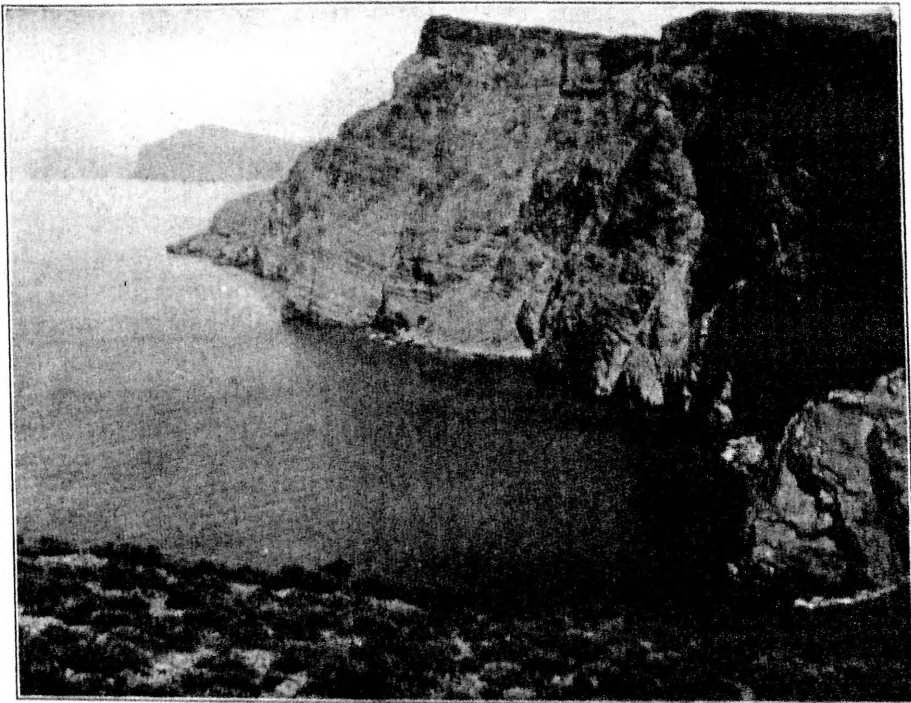
*East of the Isthmus an Almost Vertical Rock Wall of Mountains Hides from View the Summit of Aphendi Kavousi.*

corner of the Isthmus, descending to the Gulf of Mirabello. Between Kavousi and Kalo Khorio,<sup>2</sup> the coast though utterly barren is wonderfully beautiful; at Pachyammos there is a good beach; elsewhere steep cliffs alternating with coves form a coast-line as picturesque as any in southern Europe, and within these coves rest waters as clear and rich in color as those of Capri. The main highway of Crete connecting Sitia, Herakleion (Candia), Rethymno, and Canea follows this coast and near Pachyammos meets the road that crosses the Isthmus

<sup>1</sup> Aphendi Khristos is sometimes written Effendi Christos.

<sup>2</sup> Καλό(ν) Χωριό(ν), beautiful village, is aptly named.

from Hierapetra. Since the earliest times this Isthmus road must have been in constant use, for no other route across the island is so short, so level, so direct. Half way between the two seas stands Episkopi, and side roads lead east to Monasteraki, Kato Khorio, and Apano Khorio, at the foot of the Thriphte Range, and west to Vasiliki and Kentri, situated on low hills. From Episkopi south the low land widens and, being watered by mountain streams, is richly productive of lemons, oranges, figs and mulberries, as well as of the commoner fruits and grains. This cheerful fertility continues until the neighborhood of Hierapetra is reached, a region as barren as the northern shore and far less interesting.



4. Steep Cliffs Alternating with Coves Form a Coast-line as Picturesque as any in Southern Europe.

From time immemorial the Isthmus has been inhabited, and yet it is an interesting fact that with the exception of Hierapetra, where the modern city is built above ruins of Hellenic and Roman cities of the same name, the sites occupied at different periods are distinct,<sup>1</sup> one from another. Men of the Bronze Age chose low hills not far from the sea; their successors, a ruder people of the Iron Age, had strongholds on almost inaccessible mountain heights; Greeks and Romans established trading-stations on the shore; Venetians and Turks built

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<sup>1</sup> Azoria Hill may be an unimportant exception to this rule.

watch-towers and block-houses at commanding points for the purpose of holding the unfortunate Cretans in subjection; modern Cretans still prefer the security of the hills, but a seaward movement has already begun as a result of the peace and order that since the liberation of Crete in 1898 have prevailed throughout the island.

These statements are best understood by studying the map of the Isthmus (see Figure 2) with the key.

I have been too much occupied with work at Gournia to make the thorough exploration of the Isthmus which I believe its importance as a thoroughfare demands, but the following notes, results of a reconnaissance, chiefly in the northern part, may be of some use as illustrating the characteristics of settlement in different periods of Cretan history:

#### TURKISH.

1. Ruins of a Turkish block-house stand at the southeast corner of the Gulf of Mirabello, a strategic point near the meeting of the trans-Isthmian road and the main highway of the island. This block-house was destroyed in the last Revolution (1895-1898), and at the same time the Mohammedan quarters of all the villages on the Isthmus were burned. Although Mohammedans are still numerous in Hierapetra, they are rarely seen in the villages. Many of the Moslem villagers have gone to Asia Minor; some still live in a fishing community, exclusively Mohammedan, on a small island near Spina Longa on the west coast of the Gulf of Mirabello. These come over to the Isthmus to look after their lands, but do not remain long away from their island home.

#### VENETIAN.

2. Ruins which appear to have been Venetian watch-towers surmount a promontory—just north of the Turkish block-house—and a cone-shaped eminence, Mouri t'Azoria,<sup>1</sup> that guards the entrance to the northern pass leading from the Isthmus to central Sitia by way of Roukaka. Remains of a Venetian stronghold crown the cliffs of Prasonisi,<sup>2</sup> a small island northwest of Gournia.

3. Three chapels in use to-day, two in Kavousi village, dedicated to St. George and the Holy Apostles, and one in Avgo, sacred to St. Irene, were built in Venetian times and contain frescoes worth studying. St. Irene's are the best preserved. In the small dome God the Father is painted, surrounded by cherubim; at the corners the Evangelists are symbolically represented; on the south wall are rows of prophets; on the north wall marvelous scenes from the Apocalypse and on the walls at the east end pictures of Bethlehem and Jerusalem.

<sup>1</sup> Μουρί τ' Ἀζωριά, "Azoria Hill."

<sup>2</sup> Πράσινο(ν) νησί(ο)ς, "green islet."

## GRECO-ROMAN.

4. Remains that are certainly pure Greek have not yet come to my notice. At Hierapetra, close to the extensive Roman brick ruins, are vestiges of another construction, called by some archaeologists a Greek theatre, but until excavations are made it is safer to class all the Hierapetra ruins as Greco-Roman.

5. About 300 feet from the shore of Kavousi Bay stands a long building, called by peasants the "Tholos,"<sup>1</sup> because it was once vaulted—outside measurements 57.10 m. north and south, 9.45 m. east and west—on the east side are remains of five projecting walls, probably partitions between shops or store-rooms. Outer walls more than a metre thick and in some places 3.70 m. high have an outside face built of stones, which are shaped in right angles but not trimmed, laid in regular alternating courses of smaller and larger stones with some clay between and a core of small stones with much clay. Height of spring of vault is 2.50 m.; beam holes 2.35 m. above ground, average 37 cm. high by 26 cm. wide and extend 33 cm. into the wall. The floor has a pavement of small stones with cement of pebbles and pounded brick laid above. Walls and vault have a brick lining, composed of horizontal layers of brick 3 to 4 cm. thick alternating with layers of plaster 4 cm. thick, with 2 cm. of plaster between bricks in the same course. Remains of three cross walls divide the interior into four almost equal parts. "Probably the peasants are not far wrong when they call this building an ancient storehouse; it may have been one of the granaries from which Rome drew her food supply, for Roman gems have been found in the neighboring fields, and fragments of bricks and of hard brick-like pottery strew the ground in the immediate vicinity of the 'Tholos.'"

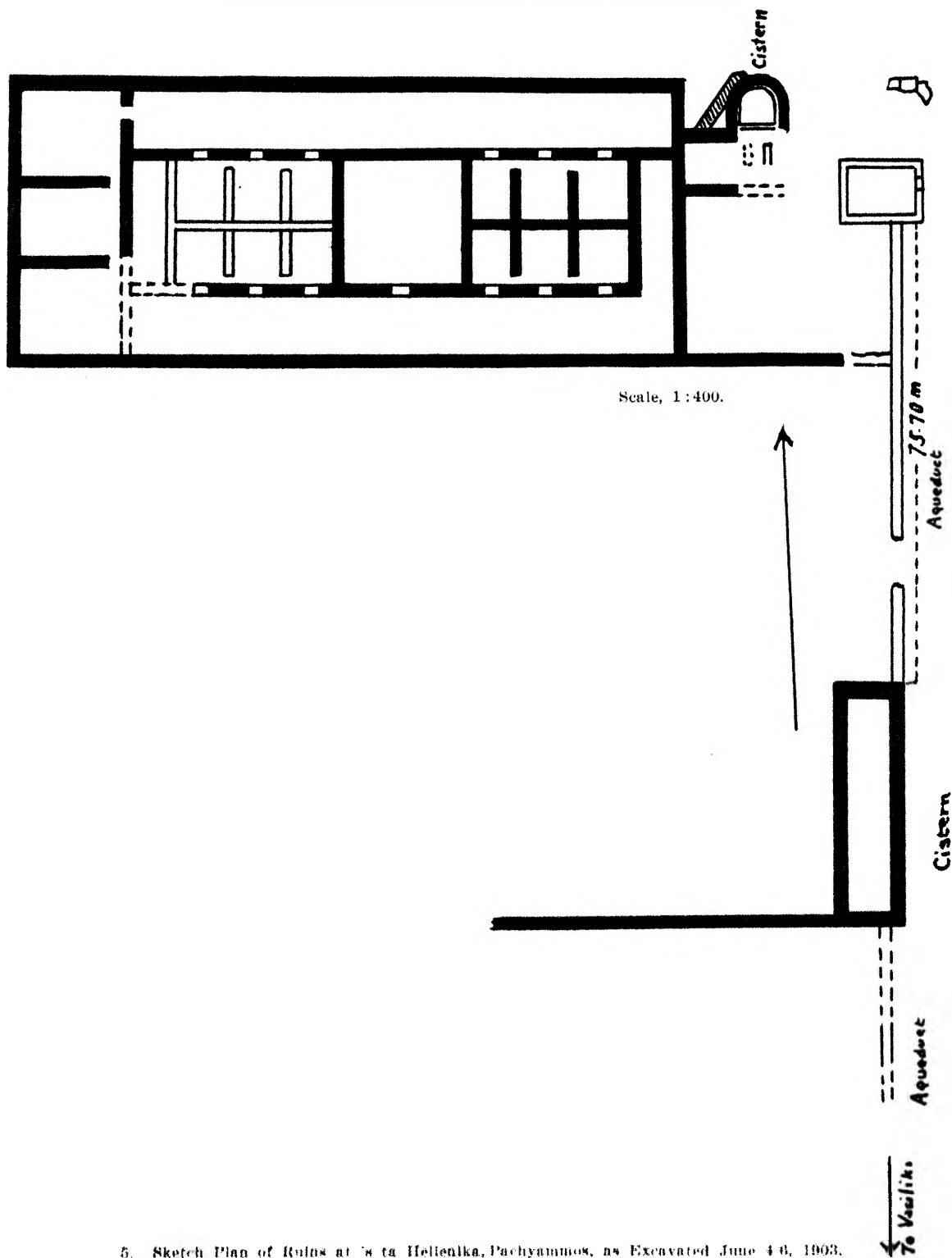
6. At Pachyammos, on a site called "s ta Hellenika,"<sup>2</sup> about one-eighth of a mile back from the sea, a trial dig of four days (April 15 and June 4-6, 1903) revealed the cellars of a large rectangular building, frontage 42.40 m. east and west, provided with two cisterns and an aqueduct, which we think was a Greco-Roman trading-station. The walls are similar to the outer walls of the "Tholos" but better built. Cellars have a fine cement lining. Only a small part of the building is yet uncovered, but the regularity of plan recalls a Roman camp. A few bits of Roman iridescent glass, some roof tiles, unstamped, and two bronze coins—one Byzantine, one of Antoninus Pius—were the only small finds. I have seen a part of a marble chair said to have been turned up by a Mohammedan while ploughing in a field close by.

7. In the midst of olive groves and fields north of Kalo Khorio, at a place called "s to Helliniko,"<sup>3</sup> is an oblong building, whose columns and coffered ceiling were of marble. The work is of Roman or very late Greek date. Frag-

<sup>1</sup> ἡ θόλος, "the vault;" cf. A. J. A., 1901, pp. 155, 156.

<sup>2</sup> s ta 'Ελληνικά, "the Hellenic ruins."

<sup>3</sup> s to 'Ελληνικό, "the Hellenic site."



5. Sketch Plan of Ruins at 's ta Hellenika, Pachyammos, as Excavated June 40, 1903.  
*Drawn by H. R. Hastings*



ments of tombstones inscribed in Roman-Greek characters are frequently unearthed in neighboring fields.

8. On a smooth face of the steep cliff that forms the south side of Prasonisi, an island west of Gournia, four names are cut just at the height which men in a boat beneath the cliff could reach. The fame of this "inscription" has spread along the coast, but probably it has no more significance than names idly carved in the bark of a tree. The characters are:

ΕΥΘΥ  
ΤΙΜΟΣ

+ΡΥCΙΠ  
ΠΟΣ

ΝΙΚΑΝ:ΡΟΣ

ΕΥΠ ΛΟΥC

9. Roman graves have been opened at "Khordakia,"<sup>1</sup> west of Kavousi, and from them two iron rings and a coin of the Emperor Gallienus were taken. On a ridge back of Gournia, near the chapel of Aghia Pelaghia, we found a grave containing a skeleton in excellent preservation, with hands crossed on breast, at the shoulder a perfect *œnochoë* of hard Roman form, and pieces of a bronze clasp and of iridescent glass. Built into the wall of Aghia Pelaghia, at the southeast corner, is a stone bearing the inscription "Klythos made (it)" ΚΛΙΘΟΣ ΕΠΟΙΗΣΕ.

#### IRON AGE (1500-1000 B.C.).

10. The Iron Age is represented by numerous sites, generally very difficult of access. On the Kastro,<sup>2</sup> a peak that rises 2000 feet above Kavousi plain, and reached only by a very steep path, ending in a hand and knee scramble, Miss Patten and I uncovered in 1900 thirteen rooms of a chieftain's house, and found the oldest circular stone game-board yet discovered in Greek lands. On a slope just below stood a small shrine, but cultivation had destroyed it, and only a miracle saved some of the offerings, strange terra-cotta figures of animals.

11. Beneath a peasant's house, on Skouriazmenos,<sup>3</sup> about one-half a mile from the Citadel,<sup>4</sup> we reopened a beehive tomb and took from it valuable specimens of geometric art—the first Cretan vase of that period, decorated with human figures and precious fragments of "finely chased bronze bearing heraldic scenes in the best orientализing archaic style."

12. Alôni is the name given to a platform of rock a few hundred feet below the Citadel.<sup>4</sup> At this place, Miss B. E. Wheeler in 1901 found four small ruined beehive tombs that furnished interesting evidence as to mode of burial; skulls placed in bronze bowls showed reburial after the bodies were reduced to skeletons. In one tomb stood a terra-cotta bath-tub coffin (1.10 m. long, 0.50 m. wide, 0.38 m. high), such as was in common ancient use for burial in Crete.

<sup>1</sup> Khordakia, χωρ(ι)δάκια, "little villages."

<sup>2</sup> τὸ κάστρο(ν), "the Citadel."

<sup>3</sup> Σκουριασμένος, "Rusty Ridge."

<sup>4</sup> Ἀλώνι(ον), "threshing floor."

## 6. IRON AGE SITES.

Skouriazmenos.

Kastron.

Vronta.

Thriphte Range.



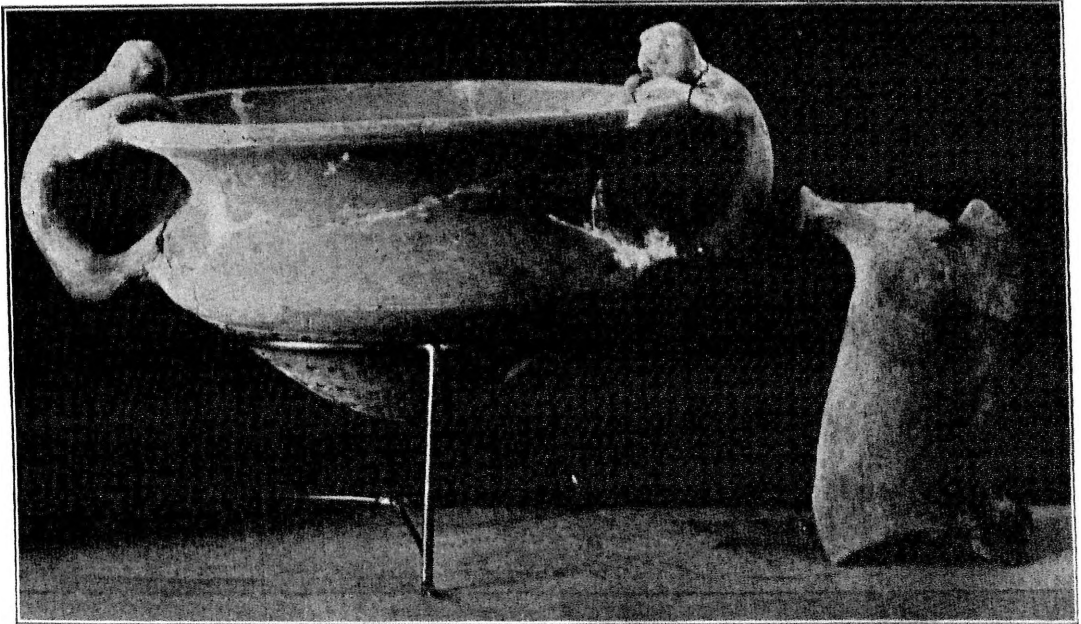
Chapel of St. Nikolas.

House of the Expedition at Pachyammos.

Kavousi Mountains from Pachyammos.

s ta Hellenika.  
Turkish Block-house.

Three of Miss Wheeler's finds, figured for the first time in Figures 7 and 8, are worthy of special mention—the neck and spout of a terra-cotta vase in form of a horse's head; a terra-cotta bowl, perforated for use as a strainer, having



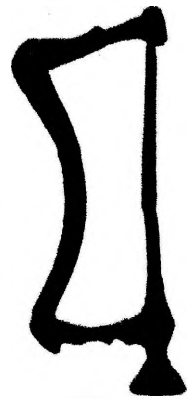
7. Vases from Aloni.

Scale, 7:20.

grotesque figures of a man and woman set on opposite sides as handles; a bronze fibula, one of a very small number from the Ægean, fashioned in the round in animal form. The two ends of this curious clasp represent the head and hind-leg of a horse, with an incurving back between; eye, mane, tail, and hoof are plainly indicated. No elasticity exists in the pin to-day, and it is hard to see how such a rigid form could ever have been practical.

13. Similar to the Citadel in character and in name is a cone-shaped peak, called Vrôkastro,<sup>1</sup> which, rising high above Kalo Khorio, is crowned with well-built walls, both circular and straight. The straight walls continue down the steep slope and are unusually good examples of construction in the Iron Age, when no cement was used and the method employed was to pile up stones and bond them with clay. The sherds from this site are excellent specimens of Cretan geometric pottery.

14. Even more inaccessible, although not of equal height, is a ledge in the Thriphte Range, just above a deep gorge, east of



8. Bronze Fibula from Aloni.

Scale, 2:5.

<sup>1</sup> Βρώκαστρο ν .

Monasteraki. With a spyglass one describes characteristic Iron Age walls, and our foreman, Aristides Pappadias, scaled the cliff and brought down fragments of geometric pottery gathered in the midst of house ruins like those on the Citadel. Perhaps one day I shall go there myself, but my eyes will have to be blindfolded.

15. Vronta,<sup>1</sup> south-southwest of Kavousi village, 330 m. above the sea, is more easily approached. Here, in 1900, Miss Patten and I excavated a house and eight small beehive tombs. That these belong to the Iron Age is proved by iron tools and an iron sword buried in the house-ruins and by the presence of fibulæ in the tombs; but the sword is of a much earlier type than one found on "Rusty Ridge,"<sup>2</sup> the fibulæ are of simple style, and many vases taken from these tombs have shapes descended from the Bronze Age. Their decoration, although Geometric, shows strong "Mycenæan" influence. Both Thunder Hill<sup>1</sup> and Avgo, which I have classed as a Bronze Age site, may be called "sub-Mycenæan."

#### BRONZE AGE (BEFORE 1100 B.C.).

16. Bronze Age sites are much pleasanter to explore than the arduous barren heights of the Iron Age. Neither words nor photograph can give an adequate idea of the wild beauty of Avgo, a mountain valley east of Kavousi, cultivated in truck gardens and vineyards, which are planted on terraces carefully tended and irrigated. Here also are olive trees and the wild olive, pomegranate, carob, cedar, and pear. Ivy covers tree and rock. This luxuriance is due to abundance of water, greatest of all blessings to Greek and Cretan. It springs from beneath huge boulders, which were flung here by the same rebel force that rent the hills and split the floor of the valley into deep caverns.

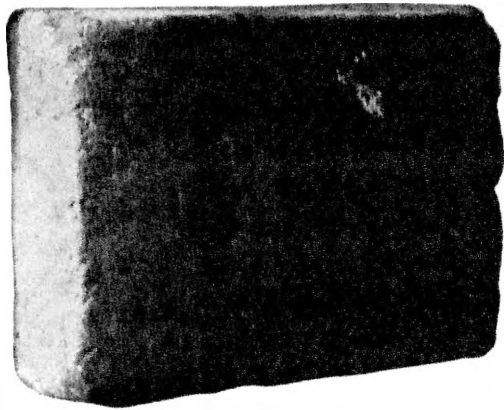
This paradise of Nature is sanctified by two Christian chapels, both resting on prehistoric foundations. St. Irene's contains the quaint mediæval frescoes mentioned above. Although the chapel of the Holy Virgin (*τῆς παναγίας*) is less interesting in itself, no wayfarer could pass it without noticing the massive "Cyclopean" walls that support the platform on which it stands. Before excavation two walls, roughly parallel to each other and 25 m. apart, were visible for a considerable distance, running northeast and southwest. Midway between these lies the church (7.50 m. long, 4.50 m. wide), oriented 23° south of east. Several olive trees have sprung up on the platform beside the church, and to the east where the ground does not fall away as on the other three sides, but slopes gently upward to join the hill, wheat had been planted, so that it was necessary to satisfy requirements, practical as well as religious, before trial excavations could be begun. The first were met by guaranteeing payment for injury to trees and crops, the second by a visit from a priest of

<sup>1</sup> Βρόντα. "Thunder Hill."

<sup>2</sup> Compare Note 3, p. 15.

Kavousi, who sanctified a small enclosure in which any Christian bones unearthed in the course of digging should be laid.

Miss Wheeler and I excavated this site May 7-19, 1901. Working with a force of twenty-seven men we soon cleared enough to learn that the chapel stands almost in the centre of a large rectangular building. The northern wall of this building extends 15.20 m. without a break in the lowest course; at the east end the height is 2.20 m., elsewhere much less is preserved. We followed the eastern and western walls in a southeasterly direction for more than 10 m., until obliged from proximity to the church to desist. Probably little more is left of them, although originally they must have been prolonged to meet the southern wall, in which case they were at least 22 m. long. The line of the southern wall is broken by a re-entrant angle that gives to the corner which here abuts on the road the appearance of a tower. This "tower" standing in the path of archaeologists who traveled from central to eastern Crete by way of Kavousi and Roukaka had not failed to attract their attention. Mr. Evans



9. Brick from Avgo.<sup>1</sup>

and others thought it formed part of a fortress guarding the pass, but I believe its existence is due simply to the contour of the underlying rock, and that the large building is not a fortress, but a "megalithic homestead," such as Mr. Hogarth has excavated in eastern Crete, with results meagre as our own at Avgo.<sup>2</sup> The walls have an average width of one metre, and are built with an outer face which is truly megalithic and an inner face composed of much smaller stones. The lower part of the walls was certainly hidden from view on the inner side, for a flooring of large slabs in the northeast corner of the building lies 1.40 m. above the base of the wall. A passageway entered from the north, separated the living apartments, which I suppose to have been included within the rectangle of walls described above, from the less important quarters to the east. Here we uncovered a series of storerooms, whose rude walls of stone and mud are laid with little regularity. Native rock cropping up within the walls greatly diminishes the floor space and indicates that they were cellars. In them were found pithoi (modern Cretan, pitharia), large jars for storing provisions of oil, wine, and corn.

<sup>1</sup> Hard, firm, even; black on parts of surface, elsewhere red; certainly fire-baked. Length, 34½ cm.; weight, 23½ cm.; thickness, 8 cm.

<sup>2</sup> The oldest walls on Azoria Hill probably belong to a building similar to that at Avgo.

As the site had suffered much from the erection of the church, the burial of Christians and cultivation, it is not surprising that the finds were few and badly broken. They include:

a. Pottery of the common household sort, almost all pieces undecorated and therefore hard to classify; small cups characteristic of "Mycenæan" sites (av. base, d. 4 cm.); parts of bowls like those from Melos; fragments of cooking-pots, usually three-legged, and of pithoi with heavy rims and the common raised rope or band decoration (bands often incised in oblique lines), which either encircle the jar or are twisted about it in snakelike curves. Sometimes the clay of the smaller vessels has received a bone-polish, sometimes it is covered with red or black slip which rubs off easily.

b. No iron. Bronze objects: a rod, two needles and a ring, fine wire twisted in spiral, and a thin, sub-triangular knife-blade.

c. A seal-stone of hematite, one side plain, the other side decorated with two water-fowls.

d. Bone bodkins, a horse-tooth polisher, several stone pounders, the upper part of small clay female figure with features "pinched."



10. Seal-Stone of Hematite.

On the steep slope of Mt. Peponas.

about 100 m. above the chapel of the

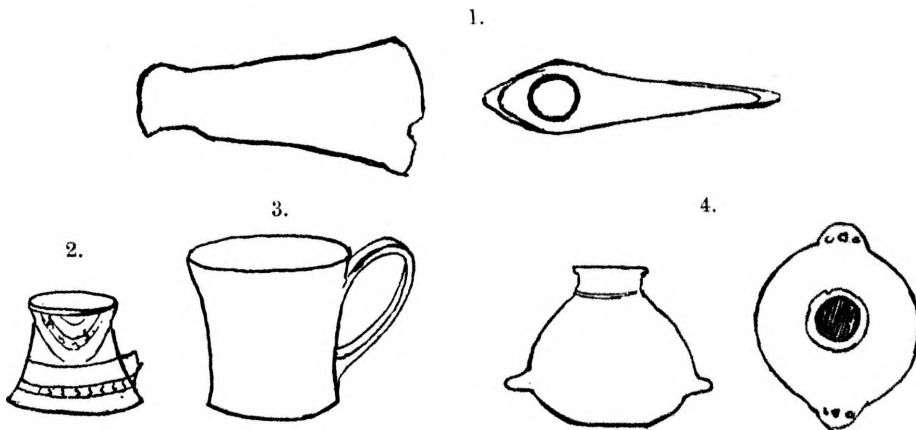
Holy Virgin to the east, one of our best workmen, Nicholas Seridakis, in digging his vineyard came upon bronze weaving-hooks, knife-blades and rings, and very interesting seal-stones and beads, scattered in the soil. These are deposited in the Museum at Candia, and will be published by Mr. Harold Hastings, who assisted me at Gournia in 1903. The house, or more probably the tomb, in which they lay has been entirely destroyed by cultivation.

Peasants report the discovery of a "casella" (ancient terra-cotta boxes and bath-tubs (coffins) both go by that name in Crete) at the base of a rocky ledge south of the Virgin's chapel, and with it ornaments and seal-stones, which were sold by the finder. A fragment said to belong to this casella, brought to me in 1900, was decorated with figures like the warriors on the famous Mycenæan vase. Unfortunately I did not obtain possession of the piece and have since lost track of it. In May, 1901, I searched all along the face of this cliff, with no reward save a few fragments of the same casella, bearing "sub-Mycenæan" patterns.

17. In the south slope of one of the hills encircling the basin, called Gournia, to the west of the acropolis of Gournia, is a cave (τὸ Τάχερ τοῦ σπηλαίου) 4.7 m. wide, about 2 m. deep, and 1.50 m. high. This had been used for a sheepfold, but still contained (April 13, 1903), under a 5-inch layer of earth, about half of a casella standing upright on the rock floor of the cave.

What remains is 0.75 m. long, 0.48 m. wide, and 0.28 m. high, and is decorated with tentacles of the octopus in debased link pattern and with a checkerboard design similar to that on the cup from the cave of Zeus at Psychro. Pieces of bone, fragments of red ware, and a tiny "stirrup-jug" were the only other finds. This casella is "*late Mycenæan*."

18. Several caves near Aghia Photia on the south coast of the Isthmus, east of Hierapetra, were visited by Mr. Richard B. Seager, May 10, 1903, who thinks that "a half-dozen might repay digging, although none are large." Samples of pottery and a copper axe-head unearthed by peasants at the opening of these caves seem to belong to the *early* Bronze Age (Figure 11).



11. Objects from Aghia Photia.<sup>1</sup>

Scale, 1:4.

19. Psyra, an island off the shore of Kavousi Bay, is covered with megalithic walls and strewn with excellent specimens of decorated ware similar to the best pottery from Gournia.

20. St. Antony's, a hillside west of Kavousi plain, south of Cape Tholos, receives its name from the Chapel of St. Anthony. This, the first site ever tried by me, was brought to my notice by Joannis Phiorakis, who while cultivating found the forepart of a small bronze lion of excellent workmanship, and the upper half of a small bronze figure, too worn to be identified, probably a female idol. Megalithic walls seemed promising; nevertheless, the trial made here (May 2, 1900) was to all appearances a complete failure. The

<sup>1</sup> 1. Copper axe, hole for handle near end. Length, 14½ cm.; breadth, blade, 6½ cm.; breadth, head, 3¼ cm.; thickness at handle, 3½ cm.

2. Small cup with flaring base, handle gone. Pink clay, fine and firm. Back slip decorated in white. Height, 4¼ cm.; weight, 7 gm.

3. Cup, bright red clay, hand-polished. Height, 6½ cm.; diameter, 7½ cm.

4. Bowl, handle polished. Three vertical holes in handle. Height, 7½ cm.; diameter, 8½ cm.

earth was shallow and yielded nothing beyond fragments of pottery "lying haphazard in the midst of rocks,—pieces of the same vase being unearthed 10 m. apart; the inference is that at a very early date this broken pottery was thrown in to help build the terrace" which was supported by the megalithic wall. To quote from my report, published in the *American Journal of Archaeology*, 2d Series, Vol. V, 1901, there were "many fragments of finer ware, which fall within the series of Island Pottery," decorated with "bands, dots and spirals, several plant designs, and a dotted fish-scale pattern. In some of the spiral designs a white line is painted on the red, following the curve. . . . Although these potsherds gave proof enough that a settlement of the Bronze Age lay somewhere in the plain, I did not feel justified in spending much of the short time at our disposal in looking for it, since the indications above ground were very slight. We therefore turned our attention to the heights above the village, where we were sure of finding remains of the geometric period."

21. At Gournia, about four miles west of Kavousi, a low hill, one-quarter of a mile back from the Gulf of Mirabello, forms the centre of a settlement of the Bronze Age, so wonderfully preserved that it has been called by visiting archaeologists a "Mycenæan Pompeii." As the bulk of this report is devoted to a description of the settlement, nothing further will be said of it here.

Thus far no sites of an age prior to the use of metal have been noticed on the Isthmus. The brief summary given above includes only such places as have been visited by me or by my colleagues.

#### LITERARY TESTIMONY ON THE ISTHMUS.

Very little literary testimony exists concerning any part of the Isthmus excepting Hierapetra, and Hierapetra lies too far outside the special field of this report for discussion here.

Strabo mentions the Isthmus in a passage from which I have already quoted. The whole reference reads as follows:

πάλιν δ' ἐντεύθεν εἰς στενωτέρον τοῦ προτέρου συμπιπτονσιν ἰσθμὸν αἱ ἥϊονες περὶ ἐξήκοντα σταδίων, τὸν ἀπὸ Μινώας τῆς Λυττίων εἰς Ἱεράπυτναν καὶ τὸ Λιβυκὸν πέλαγος. ἐν κόλπῳ δ' ἐστὶν ἡ πόλις. εἴτα πρόεισιν εἰς ὄξυ ἀκρωτήριον τὸ Σαμῶνιον ἐπὶ τὴν Αἰγυπτὸν νεῦον καὶ τὰς Ῥοδίων νήσους. — "Geographica Strabonis," ed. Kramer, Berlin, 1847, Vol. II, pp. 392-414, Book X, Ch. IV. 5.

Relying on this slender statement and the existence of some ancient ruins as yet unstudied, archaeologists have placed Minoa at Katavati (the landing-place of Kalo Khorio), in the extreme southwest corner of the Gulf of Mirabello, although there are other sites ἐν κόλπῳ to which Strabo's description would apply as well or better.

Ptolemy, Book III, ch. 15 (17), gives the Harbor of Minoa, between the Samonium Promontory and Kamara, a city on the west coast of the Gulf of Mirabello (at Aghios Nikolaos).



Stephanus Byzantius, under "Minoa," says that there is a town of that name in Crete, but we cannot tell whether he means our Minoa on the Isthmus or another Minoa near the Gulf of Almyros.

Buondelmonti, a Venetian, who visited Crete in 1415-1416, after describing Spina Longa, Istron ("Ystrinam") and remains visible near Kalo Khorio, mentions a sandy shore near which he saw standing on high crags the ruined city Panormus. A contemporary, revising his account, adds that the place anciently called Panormus went in his day by the name of Pachiamo. Probably this fact is omitted from the first version merely by accident, for the reviser seems to have had no additional first-hand information. I confess that the meaning of this passage which Mr. Bosanquet very kindly brought to my notice is not yet clear to me. Pachiamo must be Pachyammos ("Deepsand"), well named, because it is a large beach, the only beach of any size on the north shore of the Isthmus. But where are the high crags and where the ancient city? As yet the only Hellenic remains discovered near Pachyammos are at sea-level. Buondelmonti's nomenclature is wrong, based on the order of Ptolemy misunderstood, so that it is quite possible that his city was really the Minoa of Strabo, but he is too vague a geographer to be of much assistance, and the problem must be settled by the spade.

Onorio Belli, also a Venetian traveler (1596), locates Minoa and Istrôna as follows:

"MINOA. At a distance of 18 miles from Settia, toward the east, at a place called Paleocastro, are the ruins of Minoa. The situation of the city is very fine. The town was placed partly on a hill and partly in a plain; but it is now quite deserted for fear of Corsairs.

"ISTRÔNA. Six miles further to the east is the city of Istrôna, on the mouth of a river of the same name, but now called Noyaona. The city is at present entirely submerged by the sea."

This version of Onorio Belli's statements is given by E. Falkener, "On a MS. History of Candia, by Onorio Belli (1596)," as taken from an "Abstract of Honorio Belli's History of Candia," written by Apostoli Zeno (1680-1750).

Falkener comments upon the statement that Minoa lies 18 miles east of Settia (=Sitia) in these words: "'Camminado per levante.' If this be correct, the place which Belli is describing is not Minoa, but the Palaeocastron on the eastern coast near Itanus; but by his naming Minoa after Hierapytria it seems more probable that he really meant Minoa, the situation of which was fixed even in his time, and therefore that the word 'levante' should read 'ponente.' The difficulty is further increased by his describing the adjoining city Istrôna as 6 miles further to the east."

Now Istrôna is identified with Kalo Khorio by reason of Greco-Roman remains still visible there and even more by the fact that the name Nistrôna ((*ἐν τῇ*) *Νίστρονα*) continued in use until within the memory of living men it was changed to Kalo Khorio out of pride in the beauty of the place.

When Falkener calls Istrôna "the adjoining city" as relating to Minoa, he is accepting the identification of Minoa with Katavati, the landing-place (σκάλα) of Kalo Khorio, and he thereby finds himself in a second difficulty, for how can Istrôna (=Kalo Khorio) be six miles east of Minoa (=the landing-place of Kalo Khorio)? There is a third difficulty, unnoticed by him. Istrôna is described as on the mouth of a river, but Kalo Khorio lies a short distance back from the Gulf of Mirabello, and to Katavati, the site at the mouth of the river on which Kalo Khorio stands, Falkener would give the name Minoa.

I would suggest the substitution of "ponente" in both places where "levante" is used, and we would then have Minoa 18 miles west of "Settia," and Istrôna "on the mouth of a river of the same name" 6 miles west of Minoa. This would place Minoa somewhere near Pachyammos and would give to both Katavati and Kalo Khorio the name Istrôna (ancient city Istros or Istron), which seems to me more probable in view of their proximity and the fact that the name Istrôna still clings to the site Katavati even after it has been given up for Kalo Khorio.

Captain Spratt, whose "Researches and Travels in Crete" forms the vade mecum of Cretan explorers to-day, made his way from central to eastern Crete by the villages of Kalo Khorio, Mesoleri, Episkopi, and Kavousi without noting any ancient remains save "vestiges of an ancient city upon a small point of land jutting out from the centre of a sandy bay" at Katavati, north of Kalo Khorio. To those remains he gave the name "Minoa" on what appears to me very insufficient evidence. I quote his remarks in full to show the nature of his argument.

"The village of Krontsas is passed lower down to the south on the way to Hierapetra from Kritza, and another called Kato (sic) Khorio on the same route stands on the boundary between the eparchia of Mirabello and Ierapetra or Gerapetra, and, on either side, another rivulet, descending from the Lasithi Mountains—the ravine and rivulet dividing the village. Strabo tells us that the town of Minoa stood immediately opposite Hierapetra, where the island was reduced to the width of 60 stadia only.

"Thus the position of this ancient town cannot be mistaken. Ptolemy seems to be the only other author who mentions this eastern city called Minoa (for there were evidently two of this name in Crete), and he also mentions its having a port.

"In the southwest angle of the Gulf of Mirabello and exactly at the position and distance in respect to Hierapetra mentioned by Strabo we consequently find vestiges of an ancient city upon a small point of land jutting out from the centre of a sandy bay. . . .

"The modern name of the spot is Istrôna, which the natives state was also the former name of the village of Kato Khorio, but was changed some few years since. Onorio Belli, author of the Venetian MS. published by Mr. Falkener, mistook it for an ancient city of the same name, and was thus induced

to place Minoa at Palaiokastros, near Cape Salmone, at the eastern extremity of the island. But the situation of the Minoa of Strabo is too well defined to be mistaken."

When Spratt says "thus the position of this ancient town cannot be mistaken," he forgets that Strabo's description—"opposite Hierapetra, where the island was reduced to 60 stadia only"—can apply to sites further east quite as well as to Katavati. His "consequently" shows the ease with which he gave the name "Minoa" to the first ancient site he came to on the north shore of the Isthmus, while the last paragraph quoted from him gives damaging evidence against his identification of Minoa, in the survival of the name Istrôna, evidence that is not controverted by his final opinion that "the situation of the Minoa of Strabo is too well defined to be mistaken."

As a fact, Captain Spratt in his travels did not proceed east from Kalo Khorio, but went by way of Episkopi to Kavousi, following two sides of a triangle; the third side, unexplored by him, strikes both Gournia and Pachyammos. Had he gone along this northern shore, he might have seen more than did the travelers who followed him, who were perhaps led by his silence regarding this barren district to close their eyes while passing through it.

Bursian follows Spratt in identifying Minoa with Katavati, the landing-place of Kalo Khorio, as well as in his error of writing "Kato Khorio" as the name of the village, but he gives more weight to the survival among the villagers of the name "Istrônas," which clearly recalls the ancient Istron or Istros. He mentions also a probability that the cities Allaria and Eranioi, which are known only through inscriptions and coins, lay on the north coast of the Isthmus without advancing reasons for his belief.

M. Federico Halbherr, the first of modern archæologists to explore Crete, gives the name "*Ἰστρῶνα*" (Istrôna or Nistrôna) to the whole Kalo Khorio region, at the same time locating Minoa at Katavati without bringing forward any new proofs.

Lucio Mariani,<sup>1</sup> in a report made to the Italian Government on "Antichite Cretesi," in *Monumenti dei Lincei*, vi, 1895, pp. 154-347, accepts this identification as established. Quoting Bursian<sup>2</sup> to the effect that Allaria and Eranioi may be located in this part of Crete, he writes: "We have found in this region at least two ancient sites without name, and there is indeed a temptation to give them one of these names. . . . I think therefore that if the hypothesis of Bursian is correct one of the two cities mentioned may be the Greek village '*ἡ τὰ Ἑλληνικά*.'" It is impossible to tell from this brief notice which two ancient sites were found by Mariani, and I know of no Greek village called "*ἡ τὰ Ἑλληνικά*," although I am acquainted with two open places bearing that name—one of them at Pachyammos described above (p. 13), the other near Kavousi village.

<sup>1</sup> See "Antichite Cretesi," in *Monumenti dei Lincei*, vi, 1895, p. 282.

<sup>2</sup> See *Geographie von Griechenland*, ii, Crete, pp. 529-581 (Trubner, 1868-1872).

By this discussion of references I have tried to show that almost all the testimony on the Isthmus outside of Hierapetra has reference to the position of Minoa and derives from one passage in Strabo without much independent observation; that it is at least possible that Minoa lies farther east than has been commonly supposed, and that really very little knowledge of the northern shore of the Isthmus can be gained from a study of "authors."

#### FIRST YEAR'S WORK ON THE ISTHMUS—1900.

My acquaintance with the Isthmus began in April, 1900. On the tenth of that month Miss Patten, of Boston, and I, with our foreman, Aristides Pappadias, and his mother left Athens for Crete. Miss Patten's aim was to study Cretan plant-life, which is of special interest to a botanist, as both West Asiatic and Mediterranean flora are well represented in the Island, and there are other species peculiar to Crete; my aim was to put to some good use half the Agnes Hoppin Memorial Fellowship which I then held in the American School of Classical Studies at Athens. Miss Patten very kindly agreed to conduct her botanical research in whatever region seemed favorable for excavation, and I hope her thorough study of the Kavousi district may be published in connection with this report.

The serious difficulties that had been prophesied for us may be said to have ended before they began; for on landing at Hierakleion (Candia) we were met by the foreman of the British archaeologists, who placed their town house at our disposal until we should find quarters of our own, which we did within three days, and M. Joseph Hazzidakis, Ephor-General of Antiquities, immediately called upon us and offered to present our letters of introduction in Canea, Prince George's capital. It is very largely due to the kindness of three gentlemen, M. Hazzidakis, Mr. Arthur Evans, Keeper of the Ashmolean Museum, Oxford, who is excavating Knossos, and Mr. D. G. Hogarth, former Director of the British School at Athens, who has excavated Psychro and Zakro as well as sites in other lands, that American excavations in the Island of Crete have been successful. M. Halbherr of the Italian Archæological Mission, discoverer of the Gortyna Law Code and of the palace at Phaestos, and Mr. Bosanquet, present Director of the British School, have also been our friends, and so have Cretan officials of all rank from M. Stammatakis, Director-General of Customs, to the demarch and gendarmes of Kavousi, while from the Cretan people, especially our own workmen, benefits have come to us beyond our power to repay.

After studying Knossos, which we happened to visit on the lucky day when the Throne Room was discovered, Miss Patten and I started on a prospecting trip Tuesday morning, April 17th, with Aristides and a muleteer, thoroughly acquainted with the roads. We carried the simplest possible equipment consistent with keeping in condition for our work—sacks containing two

camp-beds and linen, our steamer-rugs, a hold-all, camera, maps and note-books, of course, and a small food-basket. We foraged for fresh food on the road. No pack-animal was needed for our light load and we traveled at a respectable speed on strong Cretan mules. Our first day led us south over a Veneto-Turkish highroad that serves numerous villages, many of which we found utterly ruined, the Mohammedan villages burned by Christians and the Christian villages burned by Mohammedans, in the Revolution which had ended only two years before, being about equal in number. At evening we reached Aghios Deká, the ancient Gortyna, and were entertained by M. Halbherr, who explained the site to us on the following day. He was at that time forming plans for excavating at Aghios Joannis, west of Gortyna, where he has since found the magnificent palace of Phaestos.

Thursday morning we set out on our own quest across the plain of Messara. I had visited most of the important excavations in Greece, but it is one thing to go after the deed is done, Baedeker or archæological journal in hand, studying and verifying plans and statements made by others—it is quite another thing to start out to find for oneself a place to dig. How could I be sure that “seeing I should see and hearing understand?” My advisers had told me to learn as much as possible from the peasants, but in peasants’ tales it is not easy to discriminate between worthless gossip and valuable evidence.

Our route was planned by way of Anoja Messaritica, Ligortino, Rotasi (Homeric Rhytion), Viannos, Mt. Keraton, Vasiliki, Arvi, Hierapetra, and Episkopi to Kavousi and back to Herakleion along the northern coast. Aristides soon formed a plan of action. On nearing a village, he would ride ahead, go to the inn, and order coffee for himself and any peasants who received him kindly. He would then question them about antiquities in the neighborhood. By the time we arrived, an altogether exaggerated opinion of our importance had spread throughout the village, helped largely by the national Greek costume worn by Aristides, which Cretans had seen, if at all, only in patriotic plays representing heroes of the Revolution of ’21. Ladies attended by a man in this garb must be great indeed! Soon seal-stones, fragments of pottery and of bronze would be brought to us quietly, and men would offer to show the fields where these had been unearched. Our first surprise was to find such fields, usually on hillsides, absolutely strewn with potsherd,—so many that it was hard to believe them old. Other evidence was soon forthcoming, and I might have been tempted to put in the spade at more than one site had it not been for the salutary laws which forbid unauthorized digging, and for a wish on my own part to defer judgment until we had seen Kavousi, which had been especially recommended to me by Mr. Evans.

Everywhere we met with very great hospitality and never failed to find a decent shelter for the night. At Kharakas we lodged above a grocer’s shop, where the women called upon us, entering our windows over the roofs, for in some Cretan villages the roofs connecting the houses are more used by women

for communication than are the streets; at Viannos we put up in the village court room; at Vasiliki we spent Easter (Greek calendar) in a carpenter's shop; at Hierapetra we stayed with the family of the Eparch (County Governor), a patriotic, cultured gentleman, now M. P. for Sitia. I think there were three reasons for our very cordial reception: First, the natural hospitality of Cretans; second, the rumor that if satisfied with their village we might excavate there and bring untold wealth to the community—just as attention is shown a capitalist who is looking about for a place in which to establish a factory or foundry; third, the proof which our visit gave that Crete, freed at last from Turkish misrule, was a safe, orderly land in which even ladies might travel without fear of being molested. It was this third reason that gave heartiness to the people's greetings and made our journey almost a fête.

On a blustering day (April 24th) we rode north across the Isthmus of Hierapetra to Kavousi, pursued and outstripped by the fearful African wind. After lunching at the shop of the village cobbler, we climbed to the Citadel to inspect the peak and the neighboring slope where, in 1895, an ox belonging to Theodosios Moutsakis had put his foot through the roof of a beehive tomb. Moutsakis kept his secret until Mr. Evans passed that way in 1899. He then showed the tomb to Mr. Evans, who in turn reported the discovery to the new Government, and under its supervision the contents (Iron Age pottery, etc.) were removed to the Museum at Herakleion. Mr. Evans's notes on the district, which he very kindly read to me in Herakleion, refer not only to the Citadel, but also to a "Mycenæan fortress" at Avgos, a kiln containing unfinished vases at "little villages" opposite Kavousi, and prehistoric house remains not far from Gournia. I have never found the kiln, and it happened that he did not read me his special note on Gournia until last summer, two years after our discovery of the town, but the other two clues I followed to the best of my ability.

We spent the night of April 24th at the cobbler's, and in the morning went with Joannis Phiorakis to see two hillsides, St. Antony's and Azoria Hill, where three small bronze objects—lion, stag, and idol—had been turned up in ploughing. This peasant and another in Vasiliki are born archaeologists, with a strong natural taste for antiquities and legends; to one I am indebted for the clue that led me to try St. Antony's, to the other for my first sight of Gournia. The evidence presented by the three Kavousi sites—the Citadel, St. Antony's, and Azoria Hill—"seemed to preclude possibility of failure. We hurried back to Herakleion by way of Kritsa, Neapolis, and Chersonnesos, making the journey of sixty miles in a day and a half (fast traveling for mules), and with the least possible delay sent our petition to the Minister of Education for permission to dig in the neighborhood of Kavousi. . . . On May 10th I received the official document permitting me 'as representative of the American School of Archaeology at Athens to excavate in the name of the Cretan Government,' and three days later we were established in Kavousi ready

to begin work." The results of this campaign are given briefly in the *American Journal of Archaeology*, 2d Series, Vol. V, 1901, and are referred to above under "Citadel," "Thunder Hill," "Azoria Hill," and "St. Antony's."

When the campaign was finished and Miss Patten and I rode away from Kavousi we naturally fell to discussing results, and both of us agreed that the finds which interested us most were the scraps of pottery from St. Antony's. They were in better style than anything else. Where was the Bronze Age settlement to which they belonged? We decided then and there that search ought to be made for it.

#### DISCOVERY OF GOURNIA, 1901.

Opportunity for such search was given me a year later when the American Exploration Society of Philadelphia offered to support further researches in Crete. Mrs. Cornelius Stevenson, Secretary of the Society, actively forwarded the enterprise, and Mr. Calvin Wells, of Pittsburg, and Mr. Charles H. Cramp, of Philadelphia, generously contributed the necessary funds. My colleague in 1901 was Miss B. E. Wheeler, of Concord and Providence, one of my classmates at Smith College, as Miss Patten could not leave her botanical studies in Germany. Miss Wheeler and I landed in Crete April 7th, and I again had the valuable services of Aristides Pappadias and his mother. Much progress had been made at Knossos and Phaestos, and such success in the Mycenæan and pre-Mycenæan field or, to use more up-to-date nomenclature, the "Minoan" field, increased my longing to find something belonging to this Golden Age of Cretan history. Miss Wheeler and I made a round trip through Chersonnesos, the town from which one visits Neapolis (a Greco-Roman city), (a difficult Iron Age site, at Anavlochos, and the Hellenic Dryros), Olunta (ancient city Olus, near which lie remains probably prehistoric), Goulas (site Greco-Roman city Lato—of an important prehistoric settlement), Kavousi, Episkopi, Mesoleri (ancient Oleros), Kalamavka (reserved by British as a prehistoric site), Mallais (Homeric Malla), Psychro, and back to Herakleion. On this trip I saw nothing more promising than our clue at St. Antony's and the Cyclopean wall at Avgo, and as Miss Wheeler was willing to try a second year's luck near Kavousi, we informed the Government of our wish to renew work in that dune. The St. Antony clue was too slight to be mentioned save between ourselves, and when we returned to Kavousi presumably to find Geometric or at best sub-Mycenæan things, our quest excited pity rather than envy among the archaeologists at Herakleion.

We went directly to Avgo to learn the nature of the megalithic structure near the Chapel of the Virgin. Avgo Valley is so overshadowed by the surrounding mountains that the sun does not reach it until late and the mornings and evenings are very cool. Consequently the peasants live here only in summer and content themselves with one-roomed stone huts without windows.



12. First "Find"  
at Gournia,  
May 20, 1901.  
*Bronze Spear  
Head*<sup>1</sup>

For two weeks our party living in these huts suffered some hardships, especially during thirty-six hours of incessant rain that caused serious floods in eastern Crete, wrecked a hut near us, loosened our own walls, and poured into the hut we used for a kitchen. The results of our excavations at Avgos were meagre, as has been shown above. On holidays and on days when the ground was too wet for digging we rode up and down Kavousi plain and the neighboring coast hills seeking for the Bronze Age settlement which I was convinced lay in these lowlands somewhere near the sea. It was discouraging work, for my eyes soon came to see walls and the tops of beehive tombs in every chance grouping of stones, and we went to many a "rise of ground which at a distance looked a perfect Mycenæan hill, but proved to be all rock." From an archæological as well as an agricultural point of view the curse of the Kavousi region is the shallowness of soil; even at Gournia we often have occasion to bemoan it. At last the rumor of our search reached the ear of George Perakis, peasant antiquarian of Vasiliki, a village three miles west of Kavousi, and he sent word by the schoolmaster that he could guide us to a hill three-quarters of a mile west of Pachyammos, close to the sea, where there were broken bits of pottery and old walls. Moreover he sent an excellent seal-stone picked up near the hill, and although seal-stones are not good evidence—being easily carried from place to place—his story was too interesting to pass unheeded. Accordingly, on May 19th, Miss Wheeler and I rode to the spot, found one or two sherds with curvilinear patterns like those from St. Antony's, saw stones in lines which might prove to be parts of walls (never more than one course visible), and determined to put our force of thirty men at work there the following day. (Figure 12.) Three days later we had dug nineteen trial pits and had opened houses, were following paved roads, and were in possession of enough vases and sherds with cuttle-fish, plant, and spiral designs, as well as bronze tools, seal impressions, stone vases, etc., to make it certain that we had a Bronze Age settlement of some importance. Accordingly I sent the following cablegram to the American Exploration Society, which was received in Philadelphia four days after the first visit paid by me, or, as far as I can learn, by any archæologist to the site of Gournia: "Discovered Gournia—Mycenæan site, street, houses, pottery, bronzes, stone jars." We immediately petitioned the Cretan Government for special permission to excavate this new site for the "American Exploration Society of Philadelphia," and our request was promptly granted.

<sup>1</sup> Blade has raised mid-rib and two sharp edges. Diameter of socket at end, 2½ cm. Two opposite holes 2½ cm. from open end of socket, for making fast the shaft. Length, 29½ cm.



Gournia is a name given by the peasants of the district to a basin opening north on the Gulf of Mirabello, and enclosed on the other three sides by foothills which rise west of the narrow strip of isthmus. For one-half its length from south to north, this basin is divided into two narrow valleys, of which the western forms a broad torrent-bed, dry in summer. The southern end of the ridge was used in Greco-Roman times, for here in the chapel of Aghia Pelaghia is the stone described on p. 15, and close at hand graves have been discovered containing Roman vases. This end of the ridge being for the most part an irregular mass of limestone is suitable perhaps for burial but not for habitation. Farther north the ridge becomes less rugged; platforms of earth are upheld by rock ledges, there is a slight dip, and we stand on the acropolis of the ancient city, every foot of its summit and slopes covered with roads and dwellings. But the rock reappears at the northern point of the ridge, beyond which the valleys meet and extend in one plain to the sea. The eastern valley and a small part of the plain can be cultivated, but hills and shore bear no crops except stones and low carob trees. The rugged character of the ridge and the dense growth of carobs which covered it made it possible for the acropolis to escape the notice of passing archaeologists, although many had traveled along the important highway from Herakleion to Sitia, which actually crosses the lower part of our site and lies within one-eighth of a mile of the acropolis itself. The higher hills south and southwest of Gournia are composed of pudding-stone, which easily breaks off in shallow caves, while the lower hills are of limestone like the ridge.

Our town, which until we know its ancient name must be called by the modern designation "Gournia," covered not only the middle of the ridge, where it rises two hundred feet above sea-level, one-quarter of a mile back from the Gulf, but extended across the eastern valley up the hills to the east and northeast, so that the acropolis was the centre of a settlement of considerable size. To-day the nearest harbor is at Pachyammos, a small coast guard station three-quarters of a mile east of Gournia. This place seems destined to grow to an important port. An excellent road built by French soldiers during the recent international occupation of Crete connects it with Hierapetra on the south coast only eight miles distant, and this land connection between the two seas across the narrowest portion of the island is preferred to rounding Sitia, where storms are frequent and severe. The line of the north shore has changed, and it may be that in early times the harbor lay in an arm of the sea directly north of Gournia. At all events the sea has here encroached on buildings which are proved by construction and by contents to be of the same period as those on the ridge. From this group of buildings a road probably led up to the low acropolis, and on reaching the middle eminence must have met a road which we have found continues on both the east and west sides of the hill, rising by steps where the slope is steep, and conducting the traveler at length to the small palace of the local governor.

At the beginning of excavations only a few stones showed above the surface and many houses were entirely hidden, being discovered in the course of digging by workmen who, following the roads, came upon their thresholds. The upper parts of the houses had fallen long ago, covering the hill with their ruins. On the top of the hill where denudation is constant, there was but a



13 East Road. Partially Excavated.

scant covering of earth over the native rock; here some of the best objects of bronze and terra-cotta were found within 50 cm. of the surface, and indeed at certain spots which we now know to have been within dwellings, the native rock lay bare. On the sides of the hill where earth accumulates we were often obliged to dig four or five metres before reaching virgin soil, live rock, beaten floor, or stone paving, as the case might be.

Excavations have been carried on at Gournia through two campaigns, May 20 to July 2, 1901, and March 30 to June 6, 1903, with a force of 100 to 110 workmen and about a dozen girls who wash potsherds. Unfortunately Miss Wheeler could not leave America in 1903 to give her efficient aid toward the accomplishment of the work which we had started and planned together, but I was ably assisted in the second season by Mr. Richard B. Seager, who took special charge of the pottery as well as helping in the field. Miss Moffat, of Northampton, Mass., left a Paris studio to accompany the second year's expedition, and has made for the American Exploration Society a series of excellent colored drawings of some of the better vases and scores of drawings to scale of the commoner pottery, saving thereby many shapes which through the inferiority of the common clay would have been lost. I consider these drawings and others executed for us by the Danish artist, M. Bagge, among the most important contributions which have been made to archaeology by our expedition.

The brief survey of results to be given here is strictly provisional, and will, I hope, be superseded by a more careful study of the work when the excavations at Gournia shall have been completed. In this report<sup>1</sup> and in any others that may follow I shall try to keep to the following order for the sake of easy reference:

1. The Town and its Buildings.
2. Stone Tools.
3. Bronze Tools and Weapons.
4. Stone Vases, Lamps, Basins, etc.
5. Pottery. a. Unpainted. b. Painted.
6. Modeling, Engraving, Writing, etc.

#### THE TOWN AND ITS BUILDINGS.

The sketch-plan reproduced in Figure 22, begun in 1901 by Mr. Fyfe, of Glasgow, architect for Mr. Evans at Knossos, and finished by me in 1903, with the help of Mr. Harold Hastings, gives a better idea of the town than words can. As the squares measure 20 metres on a side, the entire area cleared may be roughly computed as 2 acres, the top of the acropolis as about 1 acre, and the Palace as  $\frac{1}{4}$  of an acre. Thirty-six houses and parts of several others are uncovered.

The roads of Gournia average about 1.60 m. wide, paved with stones which seem to have been chosen from near the sea, and which, worn first by the sea

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<sup>1</sup>This article treats only of Section I: The Town and its Buildings. Other sections will appear in later numbers of the *TRANSACTIONS*. Some typical vases and bronze tools are illustrated in this article, but their discussion is reserved for the sections to which they properly belong.

and then by the passing of many feet, present a fairly smooth surface. They are laid with care, not actually fitting, but leaving no such ruts and holes as are seen in Cretan roads to-day. Where the roads ascend we find flights of steps as in modern Naples; the longest flight is in the road that climbs the east slope.

Gournia houses are superior to any homes of Bronze Age people found on the Greek mainland. Their lower courses are of rubble, but often considerable care is taken in the choice of stones, and they are roughly aligned. The size of stones varies greatly—certain walls on the east slope of the hills being sufficiently massive to have suggested on first discovery fortification walls, but as



14. East Road and Steps to House.

further digging disclosed massive and weak walls side by side, we came to the conclusion, in which all who have visited the site agree, that the heavier construction belongs simply to the better built houses and that the place is unfortified. The width of the house walls varies from 50 to 90 cm., 60 cm. being the average. That the upper walls of many of the houses are of brick is abundantly proved. These bricks average 40 x 30 x 10 cm., and seem to be fire-baked. Before May, 1901, only sun-baked bricks or those accidentally burned by conflagration had been found in Bronze Age settlements in the Ægean; but almost simultaneously at Zakro at the extreme east end of the island, where Mr. Hogarth was conducting successful excavations, at Aygo, and at Gournia fire-baked bricks came to light in May, 1901, and they have since been found at

Palaiokastro. The clay is coarse and unevenly baked, but the bricks retain their shape well. Bricks were used not only in upper walls, but also in partitions—always on a stone base. In a house on the east slope we found partition walls made of mud, which, after drying in the sun, was overlaid with plaster, a careless construction not uncommon in modern Greek villages. The marvel is that such flimsy work should have remained sufficiently intact for 3500 years to be immediately recognized and preserved by the workmen who dug it out.

Plaster is employed extensively on the door-jambs and on the walls, both outer and inner, overlaying stone and brick. It is of several varieties, a coarse white kind and a gray pebbly sort being commonest. In some instances a coarse plaster covers the wall and a second finer layer covers this, the color of the finer layer being usually a very light bluish gray, although we have a few precious bits of brighter stucco of a shade somewhat deeper than the Pompeian red. In one of the western storerooms of the Palace we found two small curiously moulded pieces of stucco, one shaped as a thunderbolt and the other as a swallow; these have one flat surface, as if they might have formed ornaments in relief on the wall.

Doorways are carefully made with stone sills and bases for the jambs which were in rare instances of stone covered with plaster, sometimes of wood, often of brick-clay plastered over. A shapeless mass of bronze evidently reduced by heat lay in a doorway of the Palace, and may have formed a part of the trimmings of the door. As a rule the house walls are not sufficiently high for windows to have been preserved, but three openings in walls on the east slope were certainly intended to admit light and air. Floors were made of beaten earth, "terrazza" (a cement of pebbles covered with a layer of plaster), stone slabs, or paving stones like those in the roads. As for roofs the evidence seems all in favor of the flat terrace forms common to-day in the East. Pieces of plaster still bearing impressions of reeds show what the ceiling must have been. In a ground floor room of the Palace a large tree trunk was found fallen and burned, completely charred through, but retaining its original shape; this supported either the flooring of the upper story or the roof. The central hall of the Palace was choked with such timbers.

In plan the houses are simple, conforming to the lay of the land rather than to a fixed form. When similarity of plan can be detected, as in certain houses on the east slope, the arrangement is modern rather than classical, and is in agreement with the mosaic picture of Minoan houses found in the palace of Knossos in 1902. As in the mosaic so at Gournia we see the houses built flush with the streets and usually provided with a good stone threshold; crossing this we enter a paved antechamber with doors leading to the ground floor rooms and steps mounting to the second story; cellar steps may descend directly from the antechamber or from an inner room. Certain cellar rooms are finished



15. Ruined Entrance of the Palace from the South.

in plaster and provided with doors; others were entered, if at all, by ladders from above, and can have served only for storerooms; still others were mere sub-structures. Several houses on the east slope have open courts which seem to have been generally omitted in the private dwellings on the top of the hill for lack of space. We know that there were second stories, because five stone staircases are well preserved and the former existence of wooden steps at many other points is clearly indicated. Moreover many objects, and these usually the best, were found in the earth at varying heights above the floor-level, and except where there was proof that these had stood on a wooden shelf, since rotted away or burned, they must have fallen from an upper story.

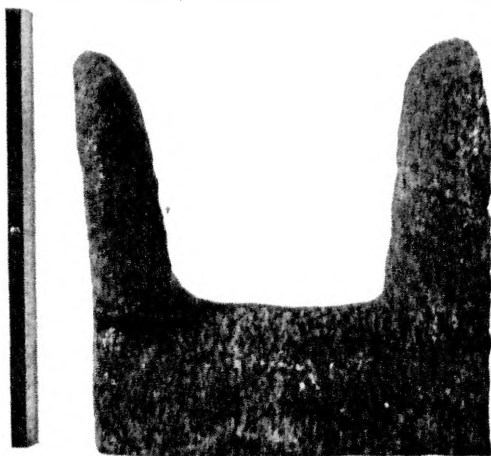
No satisfactory explanation has yet been given for a stone object which is very often found just within the street door. It looks like a large mortar, and either stands upon the paved floor or is sunk beneath it to the rim. It would make an awkward basin, for there is no way of removing water except by dipping; on the other hand, its position, invariably close to the outer door, makes us think that it must have served some other purpose than the one of pounding and grinding which its form suggests or at least that some special significance was attached to its use. No pestle has yet been found with it, although smaller pestles and mortars are among our commonest finds.

#### VIEW OF THE PALACE FROM THE SOUTH.

Special mention should be made of the Palace, of which Figure 17 gives a bird's-eye view taken from a hill to the south. On the west side are four storerooms communicating with a flight of steps, and three long, narrow magazines opening on a common corridor that correspond, though on a much smaller scale, to those at Knossos and Phaestos. The rooms south of these magazines were reached by a staircase, of which the steps are destroyed, but a transfer supporting wall still remains. West of the storerooms the road widens into a small plateia, of which we have not yet determined the western boundary. South of this is a space, having a cement pavement, which seems to be part of the Palace, possibly a loggia, in which case the west road continuing south must have formed a covered way within the Palace. From the southern end of this covered way a paved passage leads east, while the road continues southwest. The eastern passage ends in three steps ascending east and a return series of two steps which communicated with the building south of the passageway. Beyond the three steps is a large open Court, which seems to answer to the West Court of Knossos, and may have served as a market-place for the town. This Court was paved with cement; its eastern and southern limits are not yet reached. As we turn north from the steps we see on the left running north for a distance of 5.60 metres a stylobate, on which stood two square pillars, measuring 85 cm. on a side at the base, with shafts about 20 cm. less in dimensions. Of the southern pillar nothing remains, but its position can be dis-

tinctly traced on the stylobate; of the northern pillar we still have the base and lower part of the shaft. The profile of the base is carefully cut.

Beginning March 30, 1903, at this portico, from which we had removed our last loads of earth in 1901, we dug northward into the centre and, as it proved, the most interesting part of the Palace. In the northwest corner of the Court we came upon two low flights of steps at right angles to each other, which reproduce the arrangement at Knossos and Phaestos. Within their angle a pair of sacred horns, fashioned in coarse terra-cotta, measuring 0.38 cm. across and



16. Sacred Horns (Coarse Terra-cotta).

0.38 cm. in height, lay as if fallen from above. The flight of steps leading west gives access to the interior of the Palace. Without trying for the present to explain a huge single block of stone near the top of the steps that may have been the floor of a bath, we may turn northward, cross a threshold 1 metre wide and 2 metres long, and following a corridor that runs first west and then north, enter an Inner Court paved with cement ("terrazza") and open to the sky.

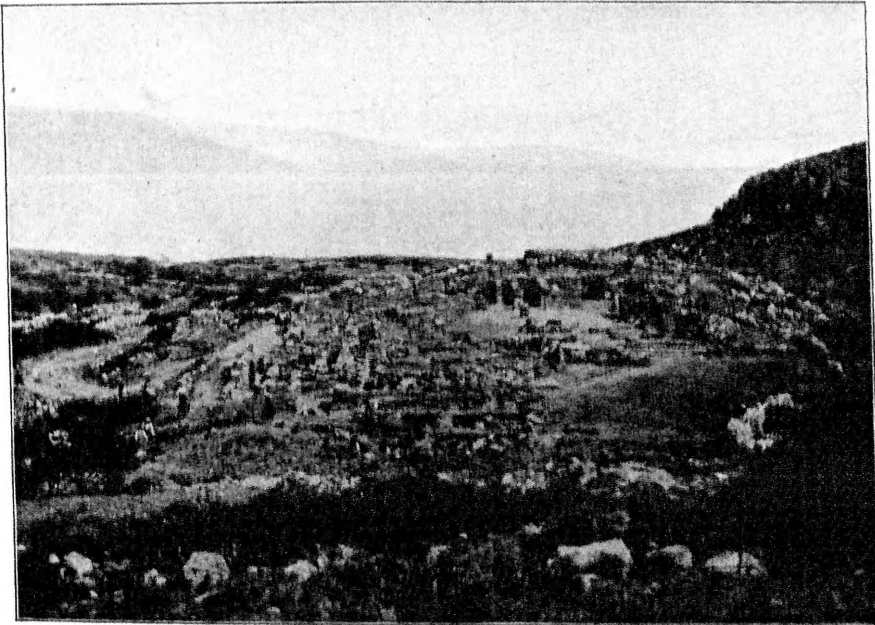
The west side of this Inner Court was formed by a line of storerooms mentioned above, which lie on a somewhat lower level; north of the Court are more storerooms, a corridor leading to the west entrance of the Palace, a well-preserved bath, and a small staircase to the second story. On a step of this staircase stood a three-legged stone basin, too heavy to be saved by the owners or easily looted by an enemy.

The east side of the Inner Court opens through a portico composed of two square pillars alternating with two round, on a square Hall, which was certainly covered, as it was choked with fallen timbers, masses of plaster, and stone slabs that in Minoan houses, as in many Italian houses to-day, made the flooring of the second story. In the southeast corner of the Hall is a rectangular recess with a stone bench around three sides and a round base for a column that must have supported an architrave across the open side. Here we may suppose the Prince sat to receive his friends and to dispense justice. It is a semipublic part of the Palace corresponding to the Throne Room at Knossos. No doubt the private rooms were on the second story; to them a narrow flight of stairs led from the northeast corner of the Hall. The walls of this Hall are carefully built of well-squared blocks of soft limestone like those used in the more important parts of the outer walls of the building. At first we were astonished to find, immediately adjoining this important Hall on the north, one square and



two oblong storerooms, the square room containing twelve huge pithoi, one of which is still perfect; but reflection shows that this arrangement is a good one, for if the Hall was semipublic and was an eating-hall for retainers it would be convenient to have "cellar" and pantry at hand.

A part of the hill was cut away to give a level floor for the Hall and the adjoining rooms, and on the west the ground lies six or eight feet higher. Here on the top of the hill no soil could accumulate to protect the ancient structure, and a careful scouring down to live rock simply proved that there had been nothing lower than the second floor level between the Hall and some narrow



17. View of the Palace from the South.

rooms of "magazine type" on the extreme eastern limit of the Palace where the land again descends,—and that of the second story not even a vestige remains. To the south of the Palace, as here described, lies a building of many rooms, which may form a southern wing (possibly the women's quarters) or may be the beginning of a block of houses. It contains a bath with cement floor and stuccoed wall, on which traces of red and yellow color are still visible, a small square court, several storerooms, and a deep cistern with water channel.

In all the more important parts of the Palace squared blocks of soft limestone take the place of rubble; usual dimensions about 1.40 m. long, 90 cm. wide, and 60 cm. high—one block attains the length of 2.10 m. These blocks



18. Shrine and Drained Roadway Leading to It.

are carefully trimmed on all sides and are laid in a thin bed of clay, each course receding about 10 cm. from the one below it. The outer face was covered with stucco, and we have some traces of its use on the inner walls also. On a block near the southwest corner the double-axe of Zeus is carved as at Knossos and Phaestos. We note also many re-entrant angles, a feature of Cretan architecture of this period.

Of the shrine which lies in the centre of the town, approached by a well-worn road of its own, I shall say very little, as it opens up too large a subject for discussion here. Not imposing as a piece of architecture, it is yet of unique importance as being the first "Mycenæan" or "Minoan" shrine discovered intact. The worshipper ascended three steps and through a doorway 1.50 m. wide entered an enclosure, about 3 m. square, surrounded by walls half a metre thick and 50 to 60 cm. high. The floor is of beaten earth. Lying near



19. Objects from Shrine.

the top of the hill, our shrine has suffered much from the forces of Nature. A wild carob tree growing within its bounds had partly destroyed and partly saved its contents, of which the more noteworthy are a low earthen table, covered with a thin coating of plaster, which stands on three legs and possibly served as an altar, four cultus<sup>1</sup> vases bearing symbols of Minoan worship, the disc, consecrated horns and double-headed axe of Zeus, a terra-cotta female idol entwined with a snake, two heads of the same type as the idol, several small clay doves and serpents' heads, all of coarse terra-cotta, and a fragment

<sup>1</sup> I have called them "cultus" vases, and such I do believe them to be in spite of Wide's article on Mykenische Götterbilder, in *Idole Athonische Mittheilungen*, xxvi, 1901, pp. 247-257, in which he calls similar objects from Prima "Idols." These resemble ring-stands found in Egypt, and with their slightly flaring rims would conveniently hold bowls. Objects with the same rings, flaring bases, and flaring rims have been found at Orchomenos and elsewhere in Greece and the islands, but none of this height.

of a pithos, on which a double-axe and disc are modeled in relief. These were huddled together in the northeast corner; the rest of the shrine was entirely empty of finds, and nothing stood in the recess at the southwest corner, although this seems to correspond to the shelf in the shrine more recently discovered at Knossos, on which were found many offerings.

Of tombs we have as yet found no trace at Gournia, although vigorous search has been made for them, but we have signs of intramural burial on the north spur of the acropolis, where within an enclosure resembling a house we



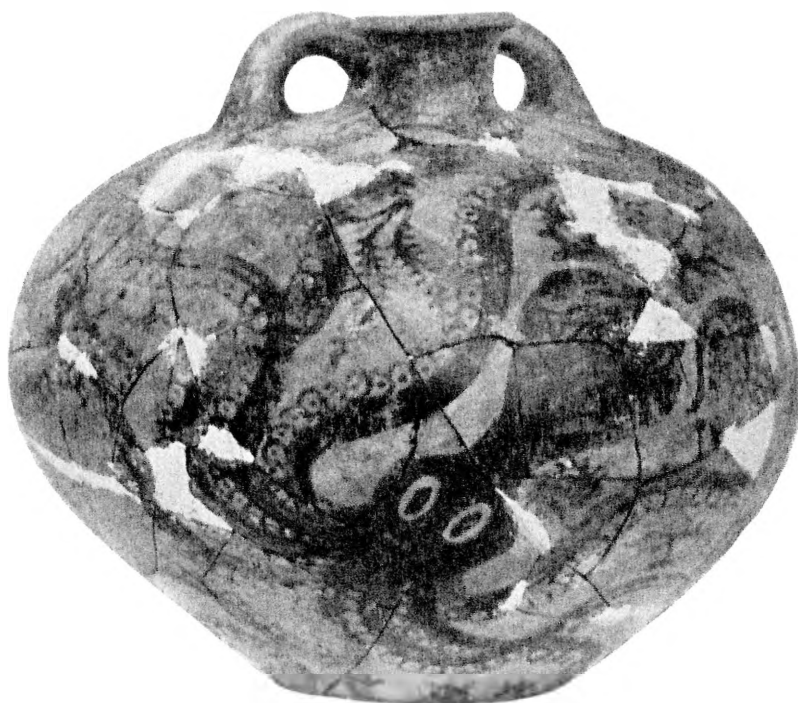
20. Pithos in Palace Storeroom.

uncovered the bottoms of three casellas (average length 1 m.) together with many human bones, three bronze knives, and a thin tip piece of beaten gold, without pattern, as large as the end of a thumb. Fragments of two other casellas were unearthed about 7 m. north of this point. But on this north spur of the acropolis the soil is never more than 30 cm. deep, and this readily explains why of the casellas only the bottoms and 5 or 6 cm. of the sides were preserved, why the bones were scattered, and why no more objects were found with them. Within the north room of House 6 on the west road, 1 metre below the surface, we came upon a better preserved casella decorated with a link pattern of debased type, and close to it a grotesque mourning female figure in



coarse terra-cotta similar to figures found in Cypriot tombs. I believe that these objects were deposited in this house at a period distinctly later than that of the settlement itself, and it may be that the casellas on the north spur are also late, although too little remains to establish a proof.

And now, in order that this brief article may contain something more than a dry introduction to the report, I add illustrations of two of our best finds in terra-cotta, giving a brief description of them, with the further observation that the Bull's Head was found in the southernmost house on the east slope at the close of last season's work, and a house whose threshold appears not six feet from the one which yielded these precious objects is as yet unexplored.



21. Octopus Vase.

1. Bull's Head. Length of head 12 cm., width across forehead about 0.07. It is hollow and has a flat back, 14 cm. long by  $9\frac{1}{2}$  wide, as if made to fit against a wall. The gray clay is medium fine, and even seems to have been covered in greater part with a shining white slip, as if to imitate silver (compare famous silver bull's head from Mycenæ), touched up with black and in certain places with a red pigment. Well modeled; witness throat, muzzle, and eye-socket. A hole, d.  $\frac{8}{10}$  of a cm., is in the end of the nose, and a second hole, d. 2 cm., in the top of the head. Horns and eyes are broken.

2. Stirrup-Jug. Height  $19\frac{1}{4}$  cm., greatest d. 24 cm., base d. 9 cm., spout d.  $4\frac{1}{2}$  cm. Clay buff, with lustrous surface. Decoration black, shading to

brown. Entire field filled with two octopuses, rocks, coral, seaweed, and small animals. This free design continues to base of spout and handle. Sides of spout and handles are solid, but the tops of the handles are painted with irregular cross-bands. The closed spout is considerably depressed. The open spout is painted with solid color without and within.

HARRIET A. BOYD.