
(Plates 77–84)

THE EARLY IRON AGE REMAINS at Vronda (Thunder Hill), a low ridge (421–427 m. above sea level) above the modern village of Kavousi in East Crete, have been known since Harriet Boyd (Hawes) excavated there in 1900.¹ Led to the site by walls on the surface of the hill, Boyd uncovered a house and walls on the summit and a cemetery of eight small tholos tombs. Although the tombs and their contents were given preliminary publication by Boyd,² the house and walls received only a brief description. Boyd excavated a space of 20 × 15 m. on the summit of the hill, uncovering a large house with a forecourt, the plan of which was too poorly preserved to be drawn. One room contained a hoard of iron tools, including a pick, an ax head, a complete sword in seven pieces, and numerous fragments.³ Below the summit on the southeast side of the hill she excavated an “excellent stretch of

¹ H. Boyd, “Excavations at Kavousi, Crete, in 1900,” A/JA, 2nd ser., 5, 1901 (pp. 125–157), esp. pp. 131–136 (= Boyd, “Kavousi”). Other works frequently cited are abbreviated as follows:

Brock = J. K. Brock, Fortetsa, Early Greek Tombs near Knossos (BSA Supplementary Paper No. 2), Cambridge 1957

CMS II, i = N. Platon, Corpus der minoischen und mykenischen Siegel, II, Iraklion, Archäologisches Museum, i, Der Siegel der Vorpalastzeit, Berlin 1969


GGP = J. N. Coldstream, Greek Geometric Pottery, London 1968


Kanta = A. Kanta, The Late Minoan III Period in Crete (SIMA 58), Göteborg 1980


MUM = M. R. Popham et al., The Minoan Unexplored Mansion at Knossos (BSA Supplementary Volume No. 17), London 1984


Seiradaki = M. Seiradaki, “Pottery from Karphi,” BSA 55, 1960, pp. 1–37

² For the results of the authors’ work on this material, see “Kavousi 1978–81”, pp. 394–409.


Hesperia 55, 4
Fig. 1. Plan of Building B (1983)
wall,” 1.20 m. high and 13.0 m. long, and uphill from this a storeroom which contained parts of three large pithoi with molded serpentine patterns. Boyd dated these remains to a transitional period between the Bronze and Iron Ages, which she called “Submycenaean.” No other specific information about the site was published.

As part of their study of the Kavousi architecture and artifacts, the authors obtained permission to clean the settlement at Vronda. In the summers of 1983 and 1984 they were able to clean and plot a portion of the visible remains on the hill. In 1983 work concentrated on the southeast side of the hill, focusing on cleaning the storeroom identified by Boyd as lying between the House on the Summit (Building A) and the large wall on the east (Figs. 1, 3). Five rooms (Building B) were uncovered, along with a courtyard to the south of Building A. In 1984 work expanded to include a larger area of the hill where walls appeared on the surface (Fig. 2). To facilitate recording, a grid was established over the area, and cleaning was done in 4.0 × 4.0 m. squares with balks left between.

It is now clear from the remains visible on the surface that there was a sizable settlement on Vronda spreading over an area of at least 61 m. (N–S) × 40 m. (E–W), with cemeteries at its periphery (Pl. 77:a). Cleaning produced diagnostic pottery which indicates that the settlement began in Late Minoan (LM) IIIC, somewhat earlier than the Submycenaean date proposed by Boyd, and continued to be inhabited into the Protogeometric (PG) period. Later activity on the site during the Geometric period appears to have been connected with funerals.

4 Ibid., pp. 131–132.
5 Ibid., p. 136.
6 The cleaning was carried out under the auspices of the American School of Classical Studies at Athens, with the financial support of the National Geographic Society (1984), the Universities of Minnesota (1983–1984) and Tennessee (1983), the College of Wooster (1983), and Wabash and St. Catherine’s Colleges (1984). We are grateful for their assistance. Our thanks also go the Greek Archaeological Service for its cooperation and especially to the former Ephor of East Crete, Costis Davaras, and to the Epimeletria Metaxia Tsipopoulou; we are also grateful to Nikos Papadakis, the Director of the Ephoreia of East Crete, for his assistance in our study of the finds in the Siteia Museum.

Fieldwork in 1983 was carried out by the three authors, with the assistance of Gerald W. Johnson (University of Minnesota) as surveyor. In 1984 the authors as directors were ably assisted in the field by George Rochefort (St. Catherine’s College), Margaret Mook (University of Minnesota), and Joseph Day (Wabash College). James Rehard (University of Missouri) served as architect and surveyor and is responsible for the architectural drawings; Duane Bingham was photographer, and Gayle Wever served as conservator. Richard Hebda (British Columbia Provincial Museum) spent several weeks on palaeobotanical studies, and Sheilagh Wall (University of Bristol) undertook the study of the animal bones as in previous seasons. Alden and John Arndt (University of Minnesota) did much useful work in developing a program for a portable field computer. The drawings were inked by Claire Zimmerman and Elizabeth Safran. Our thanks also go to the late Marcos Peronikolis, the former guard for the Gournia/Kavousi region, and to his family for their assistance, and to George Sekadakis and Nikolis Spiliarotis for helping to organize the work at Vronda. Our gratitude to them and the other people at Kavousi who have helped us through the years is enormous. The authors presented a preliminary version of this article under the same title at the 86th General Meeting of the Archaeological Institute of America in December 1984 in Toronto (abstract, A/IA 89, 1985, p. 332).

7 It was unclear from Boyd’s published description precisely where and how much she had dug; her field notebooks for 1900 have never been found. Erosion on the top of the hill has also made it difficult to distinguish walls which had already been dug from those which had been uncovered by natural processes. Hence we inadvertently cleaned some areas which had not been completely excavated. These were recognized from the apparently undisturbed deposits of whole or nearly complete vessels which lay close to the surface.
Fig. 2. Plan of Vronda Settlement (1984)
Fig. 3. Restored plan of buildings
THE ARCHITECTURE AND ASSOCIATED POTTERY

Details of the architecture and evidence for dating are presented below for each of the following five general areas (Fig. 3): The House on the Summit (Building A) and the area immediately surrounding it, the service area (Building B) on the southeast side of the hill, the massive wall on the east, the rooms on the west (Buildings C, D), and those (Building E) on the lower terrace at the southeast.

I. Building A (Trenches 2600, 2800, 3100, 3200, 3300, 3700, 3800; Figs. 2, 3)

The major structure on the summit of the hill is the building described by Boyd as a house with a forecourt, now designated Building A. It is a large rectangle (7.20 m. E–W × 10.30 m. N–S), with a small “closet” (Room A9) in the southeast corner. Because of erosion caused by natural action and human activity, the walls, particularly along the south and west, are not well preserved, nor is there any evidence for doors. The best preserved element of the building is its long east wall, which rests partly on soil and partly on bedrock (Pl. 77:b). Indeed, there are traces of a foundation trench cut into the bedrock beneath this wall in Trench 3300. Building A was probably too large to have been roofed without internal supports, but no trace of them now remains. Most of the floor has also disappeared, but an uneven surface of hardpacked earth with projecting bedrock ridges has survived in two small areas of Trenches 3100 and 3200. In Trench 3200 there was a patch of hard, red clay where burning had occurred. Below the surface, as elsewhere on the site, red, rubbly soil filled the cracks in the bedrock.

The only artifacts Boyd recorded from this building were the iron tools from a room (p. 355 above), possibly the “closet” (Room A9). The cleaning turned up a few fragments of pottery, mostly pithos sherds left behind by Boyd, and one complete conical cup (Fig. 4:1; Pl. 81:b) from along the west wall in 3100.

To the north are two walls which run nearly parallel to the north wall of Building A. Since no trace of connecting walls was revealed in the cleaning, it is uncertain whether these walls belong with Building A or with other buildings farther north. Most of the floors in the area have been completely eroded. There are channels in the bedrock, however, that often lead into small, apparently man-made depressions or basins which antedate the use of the floors. Among the few finds from the surface were several worn fragments of Geometric pottery, decorated with compass-drawn concentric circles (Fig. 5:2a, b).

On the west side of Building A are several walls whose plans and function have yet to be determined. In the northwest corner of 2600 the authors cleaned a pit 0.60 m. deep in the bedrock. The smooth interior surface was still covered in places with patches of calcium carbonate which gave it the appearance of a small cistern. The presence in its fill of a broken

8 All room measurements, unless otherwise stated, give the interior dimensions.
9 B. J. Hayden (The Development of Cretan Architecture from the LM IIIA through the Geometric Periods, diss. University of Pennsylvania 1981, p. 84 and fig. 52) interpreted one of these walls as part of a vestibule or porch belonging to Building A.
Fig. 4. Coarse wares
Fig. 5. Fine wares
piece of tile (Pl. 80:a), resembling drain tiles found elsewhere in Crete, lends support to the idea that the pit was intended for drainage or the storage of liquid.

The soil in and above the pit contained a number of nearly complete coarse-ware vessels. Among them, two conical cups (Fig. 4:4, 5; Pl. 81:c, d), a shallow dish (Fig. 4:6; Pl. 81:f), and a tripod vessel (Fig. 4:7; Pl. 81:g) are good examples of the common types of coarse ware found on the site. Conical cups and shallow bowls were found in the settlements at Kastri and Karphi; the conical cup also appeared in a cult context in the Subminoan (SM) re-use of the Spring Chamber at Knossos. Although none of these provide exact parallels, they support an LM IIIC—SM date for the Vronda pottery. The tripod vessel, however, with its deep rounded body, slightly incurved rim, and legs which are elliptical in section, does not resemble any of the published tripod vessels from contexts of LM IIIC through Geometric on Crete. Fine pottery from the pit was scarce and fragmentary but included a kylix rim decorated with a spiral (Fig. 5:3; Pl. 81:e). The inward slant of the rim and its relatively small diameter indicate that the original shape was that of a tall kylix with conical bowl analogous to Type 3 at Karphi. The combination


11 Popham (“Palaikastro”, p. 299) suggests that these pipes might have been used in connection with the pressing of grapes and olives, and Hawes et al. (op. cit., p. 27, fig. 11) shows them in connection with oil production at Gournia. At Katsamba, however, the drain channel is found in connection with a bath and was probably used as a water conduit. Shaw (op. cit., p. 202) believes that at Zakro the terracotta drains channeled off waste water. The same form of drain channel could probably be used for more than one purpose, and so other evidence is needed to show for what sort of process the Kavousi examples were used.

12 “Palaikastro”, pp. 283, 294, figs. 14, 15, nos. P1, P4, P24a; Seiradaki, pl. 12, fig. 7: Kalathos Type 5.

13 “Palaikastro”, pp. 285, 290, fig. 11:m–o, and p. 296, fig. 16:P13; Seiradaki, p. 10, fig. 6: Type 1. Like so many of the Vronda examples, these basins are missing their large flat bases. The indentations on the rim of the Kastri example are lacking at Vronda.


15 Seiradaki, p. 26, fig. 18.3. The lip of the Karphi example is missing but has been restored to extend straight outwards without bending or curving. The already deep and narrow bowl suggests that this restoration is correct. If so, Karphi Type 3 offers a good parallel in shape for the Kavousi example.
here of spiral decoration with the shape of the bowl suggests an LM IIIC date for our example.\(^\text{16}\)

The same deposit included several rectangular blocks of hard, red clay associated with charcoal and ash. It is likely that these are mud bricks which were accidently baked in a fire. The best preserved block is ca. 0.11 m. wide, 0.066 m. thick, and at least 0.21 m. long (Pl. 80:b). These blocks suggest that part of the superstructure of the buildings at Vronda was of mud brick.

Trench 2800 on the east side of Building A contained a bench and a small, curved structure whose function is yet to be determined. The hard, red soil in this area contained sherds of mixed date, including two LM IIIC deep bowl fragments, one decorated with a spiral and the other with a lozenge (Fig. 5:8, 9).\(^\text{17}\) There were also a few fragments which resemble Middle Minoan pottery, including several with molded spiral designs (Pl. 80:c), like those of MM IIA date.\(^\text{18}\)

![Fig. 6. Seal impression from Trench 3300](image)

Another object of early date, a clay sealing with a *vierpasse* design (Fig. 6; Pl. 80:d), was discovered in Trench 3300 in the soil beneath the east wall of Building A. No exact parallels for the design of the sealing have been found, but it is close in style to several examples of EM III—MM II date.\(^\text{19}\) The sharpness of the design suggests that the original seal was

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\(^\text{16}\) See Popham, “Kylix”, pp. 303–304 and fig. 13. For good examples of LM IIIC spirals similar to that on kylix 3, see “Palaikastro”, p. 287, fig. 8:g; *MUM*, pl. 182a, top row, third from left.

\(^\text{17}\) The spiral, whether running or isolated, is paralleled by examples from Kastri (“Palaikastro”, p. 287, fig. 8:e–h) and Karphi (Seiradaki, p. 30, fig. 21:a, b). See also Popham, “LM III Pottery”, p. 326, fig. 6:32, 33, 35. The lozenge may be part of a row of linked lozenges as on Karphi 143 (Seiradaki, p. 34, fig. 24:d). Both examples from Vronoda are monochrome on the interior; deep bowl 9 has a reserved band on the inner lip, which is an LM IIIC characteristic. See Popham, “LM III Pottery”, p. 321; Kanta, p. 259.

\(^\text{18}\) See A. Evans, *The Palace of Minos at Knossos* IV, i, London 1935, p. 121, fig. 89 and a similar bowl from Keos: J. L. Caskey, “Investigations in Keos. Part II: A Conspicuous of the Pottery,” *Hesperia* 41, 1972 (pp. 357–401), pl. 83:D119. The examples from Vronoda, however, have smaller spirals, and they are applied in low relief, rather than produced in a mold.

\(^\text{19}\) See, for example, *CMS* II, i, no. 312 (Platanos, Tholos B: EM II—MM II); *CMS* II, i, no. 222b (Marathokephalo Tholos: EM II—MM IB); *CMS* II, i, no. 134 (Koumasa, Tholos B: EM II—MM II); *CMS* II, i, no. 385 (Archanes: EM III—MM IA); *CMS* II, i, no. 124 (Kalathiana Tholos: EM II—MM IB). A similar example was found in the Archivio di Cretule at Phaistos; see D. Levi, “L’archivio di cretule a Festòs,”
carved in a hard medium rather than in ivory, which was used for many seals with a similar design. The sealing shows no signs of being affixed to a string, and, in fact, the back was worked into a crude pyramidal shape, with fingerprints still visible on two of the three sides. It may have been shaped in this manner to form a stopper, or perhaps, although less likely, it may have served as a rough seal itself. The sealing and the Middle Minoan sherd, along with a Neolithic axhead found on bedrock, constitute the earliest finds from the site, and so although there are no associated architectural remains, it is evident that there was some activity at Vronda early in the second millennium B.C.

The area to the south of Building A is the highest on the site and has suffered most from erosion. The bedrock lies exposed in much of this region, but a few flat paving stones are preserved where there was soil. To the south of Room B4, where the bedrock drops down, a leveling course of small stones had been put in. The paving stones, leveling course, and absence of walls suggest that there was a paved court south of Building A (Fig. 1), probably the forecourt mentioned by Boyd. The limits of this courtyard on the south and west have not yet been defined, but it may have extended further to the west, where crevices in the bedrock in Trench 2500 and the southern part of 3000 had been filled in and evened up with small stones to create a cobbled street.

Set into the north side of the courtyard, just outside Room B6 at its southwest corner, is a flat paving stone with a ring of shallow circular depressions (Fig. 1; Pl. 77:c). The stone has 24 depressions forming a rough oval, which measures ca. 0.28–0.35 m. Such stones, called kernos or cupule stones, are common on Minoan sites from the Early Minoan period on, and they have been interpreted as either cult-related offering tables or as gaming boards. A similar kernos stone with added incised decoration, found in the settlement on


Seals of terracotta are known, particularly from East Crete, although they are generally pierced and better formed. See I. Pini, “Minoische und helladische Tonsiegel,” "Aux origines de l’hellénisme, la Crète et la Grèce: Hommage à Henri van Effenterre, Paris 1984, pp. 73–81. P. Yule (Early Cretan Seals: A Study of Chronology [Marburg Studies 1980], Mainz am Rhein 1981, p. 194 and p. 202, note 26), for example, lists seven seals in clay, of which four are from near-by sites in East Crete (Gournia and Vrokastro). To his list may be added CMS II, i, no. 419 from the Chrysolakkos cemetery at Mallia.


The identification of these objects as gaming boards has been supported by the following: Boyd, "Kavousi", pp. 141–142; A. Evans, The Palace of Minos at Knossos III, London 1930, pp. 390–396; H. van Effenterre, “Cupules et Naumachie,” BCH 79, 1955, pp. 541–548; S. Swiny, “Stone ‘Offering Tables’ from
the Kastro, shows that these objects continued to be used in the Geometric period.\textsuperscript{22}

The size and position of Building A suggest that it was of special importance; possibly it was the house of a prominent individual or served a public function. Its date is uncertain because so little material has been left in and around the building. The conical cup (1) from Trench 3100 and the pottery found to the west (3–7) and east (8, 9) are LM IIIIC in date, and so it would seem that Building A was constructed in that period. Erosion on the summit has removed possible traces of later occupation.

II. Building B (Rooms 1–4, 6, 7; Figs. 1–3)

Cleaning the area southeast of Building A, where Boyd excavated a storeroom, revealed at least five rooms, only one of which (Room B1/2) appears to have been thoroughly explored by her. This long, narrow room (1.70–1.85 m. E–W \times 5.67 m. N–S) contained little soil and only a few sherds. The bedrock slopes unevenly down from west to east, without any trace of floor above it (Fig. 1). Since there was no doorway, entrance must have been from above.

A. Room B3

Boyd apparently removed only the surface material from Room B3. Long and narrow (1.52–1.70 m. E–W \times 5.67 m. N–S) like Room B1/2, this room was built up against the massive wall on the east. The floor was paved with flagstones, well preserved on the north but which have eroded to earth and bedrock in the south (Fig. 1; Pl. 77:d). These flagstones represent the best floor so far encountered at Vronda. Since Room B3, like Room B1/2, lacked a doorway, access into the room must also have been from above. Two complete pithoi and fragments of a third, all decorated with rope patterns, were found broken on the flagged floor (Pl. 78:a).

Amid the pithos fragments in the southeast corner were two nearly complete kylxes and fragments of a third which are important for dating the deposit. The best preserved (Fig. 7:10; Pl. 81:h) has a broad, carinated bowl and a fairly short straight stem. The rim is


Although a case might be made that the Cyprus keros stones were intended for the Egyptian games of Senet and Mehen, most of the Cretan stones do not seem to have the same regularity or pattern of depressions, but rather the holes form a circle or oval. Furthermore, some of the Cretan examples are clearly from religious contexts, and others are associated with cemeteries. Although many are set in streets and courts, they may all have had religious significance. See G. Gesell, Town, Palace, and House Cult in Minoan Crete (SIMA 67), Göteborg 1985, pp. 7–8, 10, 14–15, 19, 31, 33, 59, 63, 66, 71, 105, 110–112, 130.

vertical with a rounded lip, and the foot is of the disk variety with an underside which slants inwards to a fairly deep hollow. The rim and bowl are comparable to Type 1 at Karphi.  

The decoration, not paralleled elsewhere on Crete, appears to consist of either a floral design with a fringed tricurved streamer or a debased octopus. Similar individual decorative elements can be found on two kylikes from Vrokastro, one from Kritsa, and on a pyxis from Karphi. Both shape and individual decorative motifs are well within the LM IIIC range.

The second kylix (Fig. 7:12) has an everted rim with a pointed lip. The profile just below the rim is carinated, and the bowl is quite shallow. On the underside of the preserved disk is a hollow which is similar to that of 10. The shape of the rim, bowl, and exterior of the foot appear as early as LM IIIB. The decoration consists of an upper zone of curved pendent triangles with small arcs inside and a lower zone with a curved crosshatched lozenge. Above and below the lozenge are large double arcs. The interior is monochrome except for a reserved band on the inner lip. The decoration is not paralleled exactly elsewhere on Crete, but the individual motifs appear on vessels of both LM IIIB and LM IIIC date. The total design is more elaborate than that generally found in LM IIIB but lacks the fringed elements of LM III C. Although the shape and decoration occur in both late IIIB and early IIIC, there are two features which are more characteristic of IIIC: the hollow disk of the foot and the inner reserved band on the lip. Thus, it may be that this kylix belongs to an early phase of the LM IIIC period.

The third kylix (Fig. 7:11) is tall and broad with a deep conical bowl and long stem. The everted rim has a thin lip with a slight carination below it. The stem is fairly straight; what slight swellings there are may be due to poor quality of clay rather than to design. The disk foot is not so large as those on 10 and 12, but the stem is pierced for its entire length. The shape resembles that of the two kylikes from Tomb V at Vrokastro. The decoration of

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23 Seiradaki, p. 26, fig. 18:1. The Karphi Type 1 also occurs with straight handles. A fragmentary rim from Kastri (Palaikastro) may also belong to the same shape; cf. “Palaikastro”, pp. 283 and 289, fig. 10:a. See also Popham, “Kylix”, p. 303, fig. 12.

24 Hall, Vrokastro, p. 150, fig. 89A and C. The two Vrokastro kylikes, however, have a crosshatched area between the fringed streamers. They also have swollen stems and are much smaller in size.


26 Seiradaki, p. 33, fig. 23:c. The leaf design here, however, is framed by fringed lines.

27 For rim and bowl, see Popham, “Kylix”, p. 302, figs. 9, 10; Popham, “LM III Pottery”, p. 319, fig. 1:G. For disk, see Popham, “LM III Pottery”, p. 319, fig. 1:J. LM III C kylikes with similarly shaped rims also come from Phaistos and Vrokastro; cf. L. Pernier, “Il palazzo miceneo di Phaestos,” MonAnt 12, 1902 (pp. 5–136), p. 115, fig. 45, left vase; Hall, Vrokastro, p. 92, fig. 49:i.

28 See Kanta, fig. 91:9; MUM, pls. 126:b, top row, and 179:10, 11. An LM IIIB pyxis from Tomb 19 at Armenoi (Rethymnon) has linked, crosshatched lozenges with double arcs on its shoulder; cf. I. Tzedakis, «Χρωμικά άρχαιοτήτες καί μυμεία Δυτικής Κρήτης», Δελτ 26, 1971, B’2 (1975) (pp. 508–517), pl. 526:8. See also Kanta, pp. 263–265.

29 For decoration, see Seiradaki, p. 34, fig. 24:d, e, and p. 36, fig. 26:c; Popham, “LM Pottery”, pl. 89:c.

30 Pottery of the late IIIB and early IIIC phases on Crete is, as yet, extremely difficult to distinguish; see MUM, p. 186.

31 See footnote 24 above.
Fig. 8. Open shapes from Room B4
11 is very worn but appears to consist of vertical stripes at the rim and hatched diamonds (?) below. Only the lower part is preserved, but the decoration might have been a series of hatched diamonds placed inside each other in decreasing size. The linearity and essentially geometric nature of the decoration, which has moved away from the curvilinear and floral designs of LM IIIC, suggests a Subminoan date for 11. The long, pierced stem might support such a date.

B. Room B4

Room B4 (1.28–1.52 m. E–W × 3.28 m. N–S) also had not been cleaned thoroughly by Boyd, since it contained an undisturbed deposit on bedrock. The room was filled with hard, light yellow-brown clay down to the bedrock, which here is very irregular and slopes down some 0.31 m. from west to east. No floor or surface was recognized. The clay deposit contained whole or nearly complete pots, animal bones, much carbon, and small flat stones, but no pithoi. It would appear that the material in the room had collapsed from above and that the stones, carbon, and clay had come from an upper story or roof. The pottery also had fallen from above and smashed onto the bedrock, either from an upper story or from a wooden shelf. The fine pottery was concentrated on the north side of the room (Pl. 78:b), while on the south were many fragmentary cooking pots, at least two cow skulls, two pig skulls, and the horns of cattle and sheep or goats (Pl. 78:c).

The fine vessels from Room B4 are mostly LM IIIC in date, but there are two large fragments of a Late Geometric (LG) vessel. The LM IIIC material includes a “champagne glass”, two deep bowls, a basin, and two stirrup jars. The “champagne glass” (Fig. 8:15; Pl. 82:a) is plain on its exterior with a “blob” coating on one quarter of the interior. The shape occurs in the LM IIIB period at Knossos and Olous, where the vases are plain, and in LM IIIC at Kastri, where the vessel has a “blob” decoration. Although “blob” decoration also occurs as early as LM IIIB, the closeness of the Kastri parallel in shape and decoration suggests that the Vronda example is LM IIIC.

Both deep bowls have a very shallow conical foot and are decorated on the exterior with a band at the rim and a thinly painted zigzag in the broad handle zone. One (Fig. 8:13) is deeper, with an almost straight rim, and has a reserved band on the lip of its monochrome

32 Antithetical, crossed, pendent, and accumbent crosshatched triangles form a fairly close decorative parallel. These occur, for example, on an LM IIIC pyxis from Palaimylos Zakrou; cf. C. Davaras, «Χρονικά ἀρχαιότητας καὶ μνημεία» Ανατολικῆς Κρήτης, Δελτ 28, 1973, B' 2(1977) (pp. 585–596), pl. 559:γ, δ.
33 Long, pierced stems similar to that of kylix 11 appear in the Protogeometric period on Cyprus and on the mainland; cf. V. Karageorghis, Alas, A Protogeometric Necropolis in Cyprus, Nikosia 1975, pl. 85:H1; W. D. E. Coulson, “The Dark Age Pottery of Sparta,” BSA 80, 1985 (pp. 29–84), p. 59, fig. 11:356, 357 (from Amyklai); Coulson, The Dark Age Pottery of Messenia, (SIMA), Göteborg 1986, (from Volutnos).
35 “Palaikastro”, pp. 283 and 295, fig. 15:P22.
36 Kanta, p. 265 (Kastelli, Chania).
interior. In shape and decoration it is paralleled by LM IIIC examples from Kastri.\textsuperscript{37} The deep shape with a straight rim is also comparable with Type 1 at Karphi.\textsuperscript{38} The second deep bowl (Fig. 8:14) has a much shallower shape. The rim is slightly everted, and the sides taper to the foot. Both shape and decoration are paralleled by LM IIIC examples from Kastri.\textsuperscript{39}

The complete profile of one spouted basin is preserved (Fig. 8:16; Pl. 82:b). The vessel has a slightly indented base, flaring sides, and a bulbous, offset rim; below the lip runs a rib, over which the handles are placed. The exterior is banded. The main decorative zone is worn; one vertical line is preserved, perhaps belonging to a row of stripes or a zigzag. On the interior there is a thin band along the inner rim. A parallel for shape and decoration comes from Kastri (P34),\textsuperscript{40} although the exterior decorative zone contains a wavy line and the inner rim is dotted. On balance, the similarities appear close enough for Kastri P34 to provide an LM IIIC date for this basin.

The two stirrup-jar fragments are particularly interesting. The first (Fig. 9:17) preserves an almost complete shape; the vase is missing its false spout and both handles, although the stubs remain. Part of its body has been restored. The jar has a large, globular, biconical body with a spout which inclines inwards.\textsuperscript{41} The decoration on the top and shoulder is the same on both sides; what is preserved are two spirals, one on either side of the spout. The spirals are attached to curved bands, which may represent a debased octopus. On the shoulder are fringed concentric arcs and connected concentric semicircles. At the base of the false spout are stemmed spirals. No exact parallel exists for the total design; the decoration on the top and shoulder, however, consists of good individual LM IIIC motifs.\textsuperscript{42}

The second fragment (Fig. 9:18; Pl. 82:c) may be part of the mid-belly and shoulder of another stirrup jar. The decoration consists of a large, heavy spiral with a long, curved stem, possibly part of an octopus. Below are groups of loops and arcs. The fragmentary band at the bottom probably represents the beginning of banding at mid-belly. Again, such a combination of decorative motifs is not paralleled exactly elsewhere, although heavy, connected spirals occur in LM IIIC contexts at Karphi, Kastri, and Mouliana.\textsuperscript{43}

\textsuperscript{37} “Palaikastro”, p. 287, fig. 8:b, c. Other examples of the deep shape but with a more everted rim are illustrated on p. 287, fig. 8:a and p. 288, fig. 9:a. See also Popham, “LM III Pottery”, p. 325, fig. 5:21.

\textsuperscript{38} Seiradaki, p. 21, fig. 14:1.

\textsuperscript{39} “Palaikastro”, p. 287, fig. 8:d.

\textsuperscript{40} “Palaikastro”, p. 295, fig. 15:P34. A deeper example with similarly shaped rim also comes from Kastri (P11); cf. “Palaikastro”, p. 296, fig. 16:P11. Also Seiradaki, p. 8, fig. 5:3. None of these, however, is spouted.

\textsuperscript{41} FS 177; cf. A. Furumark, \textit{The Mycenaean Pottery: Analysis and Classification}, Stockholm 1941. (FM = Furumark motif; FS = Furumark shape.)

\textsuperscript{42} For connected concentric semicircles, see FM 43:34. A stirrup-jar fragment from Kastri has connected concentric arcs on the top in a similar close-style manner but otherwise does not constitute an exact parallel; cf. “Palaikastro”, p. 295, fig. 15:P24. Fringed concentric arcs appear on stirrup jars from the Kephala Tholos Tomb and Tomb B at Mouliana; cf. G. Cadogan, “LM IIIC Pottery from the Kephala Tholos Tomb near Knossos,” \textit{BSA} 62, 1967 (pp. 257–265), p. 263, fig. 4:2; Popham, “LM Pottery”, pl. 89:d; Kanta, pl. 82:5, 6. For connected spirals, see Seiradaki, p. 32, fig. 22:i.

\textsuperscript{43} Seiradaki, p. 35, fig. 25:f; “Palaikastro”, p. 292, fig. 13:KP31; Popham, “LM Pottery”, pl. 89:d (Tomb B, Mouliana) and pl. 89:c. See also Erganos: L. Mariani, “The Vases of Erganos and Courtes,” \textit{A/Â}, 2nd ser., 5, 1901 (pp. 302–314), pl. 6:1, 2.
The Geometric fragments, which belong to the wall of a large krater, may represent a later intrusion, because they were found above the stones toward the top of the fill, not smashed on the bedrock with the earlier pottery. The predominant decorative scheme of the first (Fig. 9:19; Pl. 82:d) is one of circles, semicircles, and crosshatching. On the shoulder are remains of arcs of what was once probably a set of hand-drawn concentric semicircles with a fringe on the interior; below, on the upper belly, are two rows of opposing concentric semicircles, one pendent and the other accumbent, with crosshatching in between. Similar semicircles and hatching or crosshatching can be seen on Geometric vessels from Crete.\textsuperscript{44} The second fragment (Fig. 9:20, Pl. 82:e) has a metopal panel with a leaf pattern, which is an LG feature on Crete and occurs on vessels from Skouriasmenos, Vrokastro, and Fortetsa.\textsuperscript{45}

C. Room B6
To the west of Room B4 is Room B6, a small room (1.20 m. E–W × 2.60 m. N–S) entered from the courtyard through a doorway, the only door so far recognized in the settlement. This door is ca. 1.0 m. wide and used bedrock as its threshold. Boyd had not thoroughly excavated the room, since three potstands, one of which still contained the base of a coarse vessel (Fig. 1; Pl. 78:d), were found along the eastern wall. Other fragmentary pottery from Room B6 includes coarse cooking pots, kalathoi, and a number of conical cups, of which the best preserved is illustrated here (Fig. 4:21; Pl. 82:f).

D. Room B7
Room B7, another storeroom, south of Rooms B1/2 and B3 was partially cleaned by the authors. Like the others, it seems to have been a basement room. It was built on the edge of the natural hill, where the bedrock drops abruptly more than a meter from west to northeast. Some attempt had been made to level the bedrock on the west with a few flat stones, but there is no indication of a flat surface elsewhere in the room. Fragments of a large pithos (22a, b; Pl. 82:g, h) were found smashed on the bedrock (Pl. 78:e) where the vessel apparently fell from above. Fragment 22a has a wavy line carved with slashes in imitation of rope decoration and bands of incised chevrons above and below. This decorative motif is paralleled at both Karphi and Kastri.\textsuperscript{46} Fragment 22b has part of a similar wavy line with a chevron band below, but between the loops of the wavy line are vertical columnar ridges.

E. Function and Date of Building B
Some evidence exists for the function and date of Building B. Three of the rooms (B1/2, B3, B7) served as storerooms while another (B4) may have been used for the preparation of

\textsuperscript{44} D. Levi, “Arkades—lo stile geometrico cretese,” ASAtene 10–12, 1927–1929 (pp. 15–710), p. 584, fig. 629 (from Prairos); p. 587, fig. 633 (from Kavousi, Plai tou Kastrou); p. 593, fig. 641 (from Tourtouli).

\textsuperscript{45} Amphora from the thelos at Skouriasmenos: Levi, op. cit., p. 563, fig. 620. Sherds from Vrokastro: ibid., p. 555, fig. 615, second row, left; Hall, Vrokastro, p. 98, fig. 53:E1, and pl. 26. Pithos from Tomb F at Fortetsa: Brock, p. 69, no. 758, pl. 47 and p. 181, motif 12t. Also GGP, pl. 54:a, b.

\textsuperscript{46} Karphi: Seiradaki, pp. 3–4, pls. 1:a, 12:a, top row, third from left; Kastri: “Palaikastro”, p. 286, pl. 78:c, top right.
Fig. 10. Plan and section of Trench 3900: terrace wall on the east
meals. The position of B6 just off the courtyard is significant, for it may have served a public function. All the rooms seem to belong to the same period, since the pottery found smashed on the floors or bedrock is of LM IIIC date, with the exception of kylix 11 from B3 which may be Subminoan; nothing later was found.

III. Massive Wall on the East (Trenches 2900, 3900; Figs. 2, 3, 10)

One of the most conspicuous features on the site is the long stretch of wall on the east mentioned by Boyd. It was constructed of large stones, ranging in maximum dimension from 0.60 to 1.30 m. (Fig. 10; Pl. 78:f). The 1983 cleaning showed that Room B3 was built against this wall, but two 1984 trenches (2900, 3900) further to the north revealed no other rooms built against it nor any inner face. In Trench 2900, a second wall with a well-preserved east face was found 3.0 m. west of the first. The space between the two walls was filled with a rubble packing, about 0.87 m. deep (Pl. 79:a). In Trench 3900, however, no clear second wall was found on the west, although a few massive stones lying at odd angles could have slipped out of a western wall (Fig. 10). It is more likely that the bedrock, which rises steeply here, served as a western boundary for the rubble fill (Fig. 10). Although the evidence is not easy to interpret, it would appear that the wall on the east is a massive terrace wall, 3.0 m. wide and at least 1.90 m. high, with a good east face and rubble packing behind (Fig. 10). So far, the wall has been traced for about 28 meters along the east side of the hill, but its total length still has to be determined. The massiveness of the wall might suggest a defensive function, but since it does not seem to continue around the settlement, it is more likely to have served as a retaining wall, possibly constructed to increase the available area on the summit. The date of the wall is not secure because the associated pottery is mostly non-diagnostic. One LM IIIC krater rim, however, decorated with horns of consecration (Fig. 5:23; Pl. 83:a), was found within the wall in Trench 3900. An

47 Hayden (op. cit. [footnote 9 above], p. 78) suggests that such single-roomed structures located off courts or streets could have served public functions. One such, Room 58 at Karphi, which contained two snake tubes, has been identified as a shrine (Karphi, pp. 84–85).

The combination of service rooms next to or associated with a large structure is interesting. Coulson has recently suggested that the large, apsidal Unit 1V-1 at Nichoria served both domestic and religious functions and that, with its combination of exterior and interior supports and interior altar, it served as a link in form and function between the Mycenaean palace and the Archaic temple; cf. W. A. McDonald, W. D. E. Coulson, and J. Rosser, Excavations at Nichoria in Southwest Greece, III, Dark Age and Byzantine Occupation, Minneapolis 1983, pp. 30, 39–42, 57–58. Mazarakis-Ainian has further suggested that generally in Dark Age Greece the chieftain’s house, usually the largest and most important house on a site, was the center for cult activities which involved ritual meals; cf. A. Mazarakis-Ainian, “L’architecture religieuse grecque des âges obscurs,” AntCl 54, 1985 (pp. 5–48), pp. 46–47. Such ritual meals could certainly have occurred in Building A at Vronda, while the preparations for them could have been made in Rooms B4 and B6; this theory would explain the presence of so many drinking vessels and whole animal heads in these rooms. While such an idea is very attractive, it is difficult to prove archaeologically, since it is so far impossible at Vronda to distinguish ritual dining from ordinary meals. Rooms B4 and B6 could simply have been part of the kitchen for a house. The presence of a number of conical cups, however, and the layout of Room B6, which opens onto the courtyard with the kernos stone, along with the extraordinary number of animal heads in B4, do lend some support to the idea of preparation for ritual dining.

48 For a list of possible Early Iron Age fortifications, see Hayden, “Vrokastro”, p. 383, note 28.

49 Compare the decoration on a pyxis from Karphi: Seiradaki, p. 33, fig. 23:b.
LM IIIC date for the construction of the wall is also suggested by the fact that Room B3, which is built against it, contained pottery of that date.

IV. Buildings C and D and the Rooms on the West (Trenches 2500, 3000, 3500, 4600, 5000, 5100, 11900, 12400; Trench 9800; Figs. 2, 3)

To the west and northwest of Building A several rooms were cleared on lower terraces (Figs. 2, 3). The relationship of these buildings is not clear, since there are no streets separating them nor any connecting doors. Three rooms in Trenches 3500, 11900, and 12400 appear to belong to the same structure, called Building C. Rooms C1 and C2 are on the same level, have the same orientation, and share a common wall, while Room C3, although at a higher level, shares a common wall with Room C1. To the north in Trenches 4600, 5000, and 5100 are sections of walls forming parts of at least three rooms of a second structure, called Building D. Room D1 is particularly large and regular with interior dimensions of 5.10 m. E–W × 7.40 m. N–S.

The rooms of these buildings present some interesting architectural features. A stone bench extends along one of the walls in Trench 3500. Along the west wall of Room D1 is a stone-built bin (Pl. 79:b) with the base of a pot still in situ; this bin is not set into the floor, but rather its base is well above the level of the surface found in the room. Although none of the rooms in this part of the site has obvious floors, surfaces could be distinguished by the deposits of pottery, mostly pithos fragments, lying on them. These surfaces were sloping rather than level and were composed of a thin layer of clay over stony soil, with projecting ridges of bedrock. In Rooms C2 and D1 the surfaces contained irregular patches of hard, red earth where burning had occurred. These patches may represent hearths, although they could also have resulted from burning in a secondary context.

Rooms C2 and D2 contained deposits of gray claylike soil which may represent collapsed material from a second story or roof; the same type of clay was used to roof houses in the area until recently. The finds from the west area are chiefly fragments of pithoi, coarse tripod cooking pots, and crude stone pounders and polishers. Among the few pieces of fine ware are a handleless shallow bowl from Trench 3000 (Fig. 5:24; Pl. 83:c) and an LM IIIC krater rim from Trench 3500 (Fig. 5:25; Pl. 83:b).50 In Building C, in the southwest corner of Trench 12400, we uncovered a pile of stones which contained ashy soil, burned human bones, and a few burned fragments of pots. This probably represents a secondary use of the building for a cremation similar to that found in Room E3 (see p. 382 below). To the south in Trench 2500 a scatter of stones may represent a street. Fragments of two Late Geometric vessels, one with compass-drawn concentric circles (Fig. 5:26a–c; Pl. 83:d)51 and the other with a hatched maeander (Fig. 5:27; Pl. 83:e), were found mixed within this scatter.

50 The decoration consists of a disintegrated quirk above and curved transverse bars below, possibly part of a bird design similar to examples from Karphi (Seiradaki, p. 35, fig. 25:a, b) and Kastri ("Palaikastro", p. 292, fig. 12).

Fig. 11. Plan and section of Trenches 800, 900, 1300: Building E
One test was made farther down the slope to the southwest (Trench 9800), where a well-preserved wall with a bench running alongside it showed on the surface. The leveling course of small stones found beside this wall is similar to that under the courtyard on the summit and may have been put in for a street or court. From this area came two perforated sherds (Pl. 83:f), too fragmentary to identify precisely but probably belonging to a firebox, incense burner, or strainer.\(^{52}\)

The function and date of these buildings are uncertain because little undisturbed material was found in them. The pottery is not inconsistent with an LM IIIC occupation date.

V. Building E (Trenches 800, 900, 1300; Figs. 2, 3, 11)

Many walls lie exposed on the surface of a lower terrace to the southeast of the summit. Although they appeared to have been completely excavated by Boyd, the large deposits of pottery found just below the modern surface would indicate that she did not dig deeply. Building E (Fig. 11), comprising at least three rooms, stands directly on a fill of leveling stones which extends throughout the excavated area. These stones are similar to those found on the summit and in Trench 9800. A sounding made in this leveling fill to the east of Building E in Trench 900 revealed that it extended to bedrock at a depth of nearly 1.30 m. Although it is evident that the fill served as the foundation for Building E, its function to the east of Room E2 is less clear. In this area it may have supported a street or court. The sounding yielded much pottery which should provide a *terminus post quem* for the construction of Building E. Unfortunately, nearly all of the pottery is coarse, with the exception of a cup decorated with impressed holes (Fig. 5:29; Pl. 83:g), for which no parallels have been found.

A. Room E1

Room E1 (3.50 m. N–S × 4.80 m. E–W) was built against the southeast side of a wall which may be the continuation of the massive wall to the northeast (p. 375 above). This room (Fig. 11) showed three distinct building phases; in the first phase, the northwest wall was constructed and the leveling fill covered by a hard-packed earth floor. On this was found a large irregular burned patch near the center of the room. In the second phase, a bench (0.90–1.10 m. wide) was built along the northwest wall and a flagstone floor laid in the northeast part of the room. In the third phase, a small "closet" was constructed in the northern corner (Pl. 79:c). The final use of the room can be dated from the pottery found smashed on the floor of the room and "closet" (Pl. 79:d). The following shapes are represented: skyphos, cup, jug, amphora, and feeding bottle.

The monochrome skyphos (Fig. 12:30) is a good EPG shape with an everted rim and upswung handles placed close to the rim.\(^{53}\) Two cups were found in the deposit. The first

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\(^{52}\) For fireboxes, see H. Georgiou, "Minoan Fireboxes: A Study of Form and Function," *SMEA* 21, 1980, pp. 123–192. These artifacts, sometimes identified as incense burners, are not common in LM IIIC. Two perforated artifacts of unidentified use were found at Karphi; see Seiradaki, pl. 12:a, third row, third and fourth from left.

\(^{53}\) Brock, pp. 24–25, pl. 17:208 (skyphoi from Tomb IV); also Hall, *Vrokastro*, p. 131, fig. 79. The handles on these examples, however, are set lower down on the body and swing more sharply upwards.
(Fig. 12:31), covered with a red monochrome coating inside and out, has the flaring bell-shaped profile, slightly everted rim, and shallow conical foot of Karphi cup Type 1,54 which dates it to LM IIIC. The second example (Fig. 12:32; Pl. 83:h) is coarse. Plain and shallow with an S-shaped profile, it can be dated EPG in comparison with S-shaped cups from 10th-century B.C. contexts on the mainland and in the Cyclades.55

54 Seiradaki, pp. 20–21, fig. 14: Cup 1.
55 For example, S-shaped cups with low handles are grouped under Shape 1 of the Dark Age (DA) II period at Nichoria; for bibliography and parallels, see Coulson, in McDonald, Coulson, and Rosser, op. cit. (footnote 47 above), pp. 80 and 150, fig. 3-34; also V. R. d’A. Desborough, *Protogeometric Pottery*, Oxford 1952, pl. 19:A 1471 (from Rhencia). Cup Type 2 at Karphi has a similar body profile, but the handle is higher, and the base concave underneath; Seiradaki, p. 21, fig. 14: Cup 2.
Fig. 13. Vases from Trenches 800 and 1300.
A large jug or oinochoe (Fig. 13:33) was found in such poorly preserved condition that it is difficult to determine its complete decoration. Bands are preserved on its upper and lower belly, however, and a single broad spiral can be seen on the neck. This may have been part of a double-spiral motif, but the second spiral cannot be discerned with any certainty. The lower neck is covered with black, and so it is possible that the entire neck was monochrome. The globular shape with flat base occurs in PG contexts at Fortetsa and Phaistos.\textsuperscript{56} The double spiral is found on an EPG amphora from Fortetsa,\textsuperscript{57} and a less spiraliform but broader horizontal-S pattern occurs on amphorae from the Knossos North Cemetery (SM) and Ayios Ioannis (EPG).\textsuperscript{58} The combination of the shape and decoration suggests a date in EPG for the Vronda jug.

In the same deposit were found the two rope handles from a neck-handed amphora (34; Pl. 84:a). Such handles do occur in LM IIIC contexts, as at Karphi,\textsuperscript{59} but there the handles join the neck at a point below the rim. In contrast, the handles of 34 join the body right at the rim. In this they are similar to EPG–MPG examples from Ayios Ioannis\textsuperscript{60} and may be dated accordingly.

Also of interesting shape is a feeding bottle (Fig. 12:35; Pl. 84:b). Its globular shape is analogous to that of Type 2 at Karphi\textsuperscript{61} which provides an LM IIIC date.

B. Room E2

Room E2 (Fig. 11) is rectangular in shape (3.20 m. E–W × at least 4.80 m. N–S). A thick layer of calcareous material, perhaps the remains of floor or wall plaster, was found in the room and still adhered to many of the sherds. There was no hard-packed floor as in Room E1 but just a thin layer of clay over the leveling course, similar to the clay surfaces on the bedrock in Buildings C and D. Rooms E1 and E2 provide evidence which suggests the possibility of a second story. The fact that several sherds from Room E1 joined with those from Room E2 indicates that the pottery fell from above, probably from a single room or the roof. The kalathos with knoblike projections on the rim (Fig. 13:37; Pl. 84:c), for example, was made up of pieces found in both rooms.\textsuperscript{62} In the fill above the floors of those rooms was


\textsuperscript{57} Brock, p. 14, no. 84, pl. 7 (from Tomb VI), and p. 179, motif 11f.


\textsuperscript{59} Seiradaki, p. 13, fig. 8:4 and pl. 5:c, top.

\textsuperscript{60} Boardman, op. cit. (footnote 58 above), p. 132, no. 1, pl. 32 (from Tomb IV) and p. 140, no. 2, pl. 32 (from Tomb VIII).

\textsuperscript{61} Seiradaki, p. 16, fig. 10: Type 2. Seiradaki, however, calls these vases “side-spouted jugs”.

\textsuperscript{62} The flaring shape of kalathos 37 is paralleled at Karphi: Seiradaki, p. 12, fig. 7: Type 1. The kalathos from Kastri is much broader in shape; cf. “Palaikastro”, p. 296, fig. 16:18. The horned projections do not occur elsewhere, but the device of placing objects on the rim is a survival at least from IIIIB. A small cup is placed on the rim of a kalathos from a tomb at Episkopi; cf. S. Xanthoudides, «Λαζευτος μυκηναικός τάφος Ἐρυκόπης Ἰεραπέτρου», ΔΕΛΤ 6, 1920–1921 (1923), Παράρτημα, p. 161, fig. 12, left; there is also a cup on the rim of a kalathos from Palaikastro; cf. R. C. Bosanquet and R. M. Dawkins, The Unpublished
much charcoal, possibly the remains of wooden beams supporting the second story or roof.

The pottery from Room E2 included a kylix and pithoi. The kylix (Fig. 13:36) has a shallow conical bowl and a straight rim with rounded lip. The rim is defined by vertical stripes between bands; below is a pendent crosshatched triangle framed by horizontal and oblique lines. Its shape and decoration are not paralleled exactly elsewhere on Crete, but the linear decoration, like that of kylix 11 from Room B3, suggests that it, too, dates to Subminoan. The pithos fragments (38a, b, c; Pl. 84:d–f) are decorated with bands, some of which are incised with chevrons or vertical lines.\(^63\) Along with these storage jars are fragments of cooking pots and coarse domestic vessels, a fragment of a stone saddle quern, and a square loomweight, of a type generally found in the Middle Minoan (MM) period (Pl. 80:e, f).\(^64\)

C. Room E3

Only one corner of Room E3 was cleaned in Trench 800. It showed clear indications of a secondary use of the room for a cremation. The upper soil in the northern corner was black and ashy and contained burned human bones, fine pottery, jewelry, and weapons. Since the earth below the ash layer was hard and red and much of the associated pottery was burned, it is evident that the cremation actually took place in this corner. It is not clear, however, whether some bones and artifacts had been collected and buried elsewhere. The finds included a large, bronze, bow fibula (Pl. 80:g),\(^65\) similar to those from other tombs at Kavousi, a hoard of over 18 iron arrowheads (Pl. 80:h, i), a stone bead (Pl. 80:j), and much pottery, including a skyphos, a pedestal skyphos, cups, and a jug.

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\(^{63}\) Similar chevrons and incised bands of Geometric date appear on pithos fragments from the Kastro at Kavousi; cf. Gesell, Day, and Coulson, op. cit. (footnote 22 above), pp. 344–351, pls. 95–97.

\(^{64}\) This loomweight has been identified by Jill Carrington-Smith as probably belonging to the Middle Minoan period. She reports that this type of cuboid, four-hole weight seems to have been confined to East Crete and has up to now been found only as far west as Mallia (F. Chapouthier and R. Joly, *Fouilles exécutées à Mallia. Deuxième rapport: Exploration du Palais, 1925–26 [Études crétoises IV]*, Paris 1936, pp. 9, 37, pl. XVIII:k). The type was prevalent at Palaikastro from MM IA to LM IB (R. C. Bosanquet, “Excavations at Palaikastro. II,” *BSA* 9, 1902/1903 [pp. 274–387], p. 283, note 1; R. M. Dawkins, “Excavations at Palaikastro. III,” *BSA* 10, 1903/1904 [pp. 192–231], p. 207; R. W. Hutchinson, “Unpublished Objects from Palaikastro and Praisos. II,” *BSA* 40, 1939/1940 [pp. 38–59], pp. 47–49), although in recent excavations such weights have been found either in MM contexts or in mixed contexts which included MM material (“Palaikastro”, p. 305). Many of these loomweights have also been found at Zakro in both MM and LM contexts (D. G. Hogarth, “Excavations at Zakro, Crete,” *BSA* 7, 1900/1901 [pp. 121–149], p. 127, fig. 38:6 and p. 128; N. Platon, “Zákros”, *Eph'ov*, 1968 [pp. 118–140], pp. 124, 128–129, 131–132, 139), and the type is also used in the MM I Oval House at Chamaizi (S. Xanthoudides, *Eκ Κρήτης*, *EΦ'ΑΡΧ*, 1906 [pp. 117–156], p. 148) and at Petras (Siteia), where they were found on a rubbish heap which included Kamares sherds (R. C. Bosanquet, “Excavations at Petras,” *BSA* 8, 1901/1902 [pp. 282–285], p. 285).

\(^{65}\) The fibula is 0.088 m. long and is flat in section. Its closest parallels are from Protogeometric and Geometric contexts. See E. Sapouna-Sakellarakis, *Die Fibeln der griechischen Inseln* (Prähistorische Bronzefunde XIV, iv), Munich 1978, pp. 48–49 and pl. 6 (Type IIa: Blinkenberg, Type II, 4).
The skyphos (Fig. 14:40) is large, with straight sides and flat base. The shape is related to the Late Geometric kotyle. Of great interest is a pedestaled skyphos with straight rim,

U-shaped bowl, and high conical foot (Fig. 14:39; Pl. 84:g). On the exterior in the handle zone is a running spiral, or "running dog";\(^67\) framed above and below by black bands; the rest of the vase is monochrome. Pedestaled skyphoi of similar shape from Adromyloi and Piskokephalo\(^68\) are classified as Eteocretan. The Adromyloi skyphos is decorated with a rough, almost curvilinear maenae which seems to have developed from the "running dog". Although the "running dog" occurs in Protogeometric B,\(^69\) the high-footed shape of this pedestaled skyphos belongs to Eteocretan Geometric.

Two cups were found in association with the cremation. The small shallow cup with the everted rim and high handle (Fig. 14:42; Pl. 84:h) is a Geometric shape which occurs at Fortetsa.\(^70\) The chevron decoration provides a Late Geometric date for the cup.\(^71\) The shape of the deep, monochrome cup (Fig. 14:43) has good parallels in LG contexts in the town at Knossos and at Fortetsa.\(^72\)

The shape and decoration of the small jug (Fig. 14:41) are somewhat unusual. A so-called jug from Kastri (P14) has the same wide mouth and globular shape but is decorated with a "leaf-and-stalk" motif around the shoulder,\(^73\) rather than a foliate band. As a motif, the foliate band is found as early as LM,\(^74\) but the leaves are set opposite each other in the style of chevrons. The leaves on 41, however, run in opposite directions, and its decoration thus appears to be a degenerate form of the foliate-band motif.

D. Function and Date of Building E

The material found in Building E gives little indication of its original function, but what there is suggests ordinary domestic use. The pottery from Rooms E1 and E2 spans LM IIIC—MPG. Three vessels (31, 35, 37) are LM IIIC, 36 is Subminoan, while the others (30, 32, 34) are EPG or MPG. The building thus seems to have been built sometime

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\(^67\) Alexiou calls this design a running spiral or "laufender Hund"; cf. S. Alexiou, «Πρωτογεωμετρικός ναύσκος τῆς Συλλογῆς Γιαμαλάκη», Κρήτη 4, 1950 (pp. 441–462), p. 446.


\(^70\) For example, Brock, p. 50, no. 491, pl. 35, and p. 99, no. 1127, pl. 76.

\(^71\) See, for instance, L. V. Watrous, "J. D. S. Pendlebury's Excavations in the Plain of Lasithi. The Iron Age Sites," BSA 75, 1980 (pp. 269–283), p. 271, no. 10 and p. 272, fig. 3:10. Also Brock, p. 40, no. 396, pl. 27 (Late Geometric—Orientalizing).

\(^72\) Coldstream, "Knossos", pp. 83 and 87, fig. 8:F 19; Brock, p. 94, no. 1023, pl. 73 (Tomb II). These examples, however, are decorated in added white paint.

\(^73\) "Palaikastro", p. 294, fig. 14:P14. The shape of 41 really represents a cross between a deep cup and small jug. An example from Fortetsa has a taller neck but otherwise keeps the same globular body; cf. Brock, p. 47, no. 449, pl. 34 (Tomb X).

in or after LM IIIC, and its final occupation can be dated early in MPG by means of the pottery found on the floor and in the "closet" in Room E1. After the abandonment of the building, the corner of Room E3 was used for a cremation in the LG period.

**The Settlement: Summary**

The summit of the ridge appears to have been occupied by two buildings (A and B) on two sides of a courtyard. A cobbled street ran from this courtyard down to the west, and there is evidence for streets east of Building E and in the southwest; it is likely that there were other streets as well. Further work is needed to clarify the plans of individual houses and their relationship to one another. The buildings vary in size and arrangement, and there is no standard plan; Buildings C, D, and E, however, have at least three rooms in an agglutinative arrangement like the houses at Karphi. Building A consists of a large, rectangular room with undefined structures to the east, north, and west; Building B, which shares part of a wall with Building A, may be part of the same complex. The lack of doorways makes it impossible to know how entrances to the buildings were oriented and what factors may have influenced their placement. The plan of the Vronda settlement is thus different from the plan of the near-by settlement on the Kastro where the buildings are more regular and better built.75

The construction techniques used at Vronda are simple. The walls were built of local breccia and mud mortar, often incorporating bedrock in the lower courses. A few cut limestone blocks were used in the walls, but no other refinements in wall construction have been found at Vronda.76 The superstructure may have been of mud brick, a technique rarely found in Early Iron Age Crete but common in Late Bronze Age construction.77 The lack of doorways suggests that only the basements are preserved and that most activities took place on the floor above; Building E provides some additional evidence for an upper story.

The buildings contained a few noteworthy features. Stone benches were built along the walls, either within the rooms (E1) or outside (Trench 2800 and possibly 9800). Such benches are common in Cretan houses, but at the Kastro they are regularly placed outside

75 The differences in the two settlements may be due to topography. There was little space on the Kastro, and so the houses had to be built on carefully constructed terraces, one or two buildings to a terrace. Vronda has much more space and is less steep, and so it did not require extensive terracing. There was also a difference in building techniques on the Kastro, where the walls make more use of bedrock, are built of more regular stones, and do not employ mud brick. The tidier construction may be due to the nature of the local schist on the Kastro, which splits into more regular blocks; it also may represent a later technique.

76 Although such refinements are rare in the Early Iron Age architecture of Crete, dressed blocks were used at Phaistos (H. Drerup, *Griechische Baukunst in geometrischen Zeit* [ArchHom II, O], Göttingen 1969, p. 107), at Vrokastro in the building associated with the Bone Enclosures on Karakovilia, which is Geometric (Hall, *Vrokastro*, pp. 86–87), and at Karphi, where there are well-shaped door jambs and raised thresholds (Karphi, p. 67).

77 Hayden ("Vrokastro", p. 375, note 17) suggests that most of the elevated sites of the Early Iron Age had buildings constructed of stone, because of its easy availability. The walls on the Kastro at Kavousi, later than those at Vronda, were probably built entirely of stone. No mud brick was found at Karphi (Karphi, p. 67) or Vrokastro. At the LM IIIC site at Kastri, Palaikastro, however, the excavators found stone socles for mud-brick superstructures ("Palaikastro", p. 272).
the houses in streets or small private courts. Potstands also are numerous at Vronda, either set in the floor (Room B6 and courtyard) or built against walls (Room D1). The small closets found in the settlement (Rooms A9, E1) are also a common feature in the architecture of the period.

While the plan and technique of the buildings of the Vronda settlement offer few surprises, the use of the rooms of Building B, and possibly A, for specialized functions is unusual in the Early Iron Age, when houses were smaller and rooms had to serve a variety of domestic uses. This situation may indicate continuity with the Minoan architecture of the palatial era. No cult rooms of the sort which appear at Karphi have yet been found at Vronda. The presence of Minoan cult symbols on the pottery (horns of consecration, Pl. 83:a; double ax, Pl. 81:a), the appearance of conical cups, and the kernos stone in the courtyard, however, suggest some continuity of cult.

**Chronology and Conclusions**

To date, the Vronda settlement is one of the few in Crete that appears to be inhabited from LM IIIC to the early MPG time. The settlement at Kastri ends in LM IIIC and that at Karphi perhaps lasted into SM. Other evidence for settlement dates comes from tombs where the material is usually mixed. Therefore until stratigraphic excavation can be carried out at the sites in the Kavousi area and until more Subminoan and Protogeometric comparative material from Crete is published, the conclusions reached here must necessarily be of a tentative nature.

The MM sherds, sealing, and loomweight indicate Middle Minoan activity on the site. The nature of this activity is unclear, but no traces of a settlement have yet been found. The ceramic material, however, indicates that three main periods are represented:

- **LM IIIC—SM**
  - 12th–11th centuries B.C.
- **EPG—MPG**
  - 10th to end of first quarter of 9th century B.C.
- **LG**
  - last half of 8th century B.C.

Although it is not yet possible to separate its LM IIIC and SM periods, it appears that the settlement began early in LM IIIC on the top of the ridge and continued into Subminoan. The material from Building E suggests that at least this area of the settlement was inhabited into early Middle Protogeometric. LG sherds and the remains of the cremations suggest that the site had ceased to be used for inhabitation and functioned solely as a cemetery. Possibly the population had moved up to the Kastro.

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78 For benches in general, see Hayden, *op. cit.* (footnote 9 above), pp. 140–141, 148. For the Kastro, see Gesell, Day, and Coulson, *op. cit.* (footnote 22 above), p. 353.

79 These occur also at Vrokastro and Praisos; see Hayden, *op. cit.* (footnote 9 above), pp. 79, 141.

80 Provisional until a more refined chronology is established for the Early Iron Age in East Crete in general and at Kavousi in particular, the dates cited are those first proposed by Brock, p. 214, and accepted by Boardman, *op. cit.* (footnote 58 above), p. 129, note 5.

81 It is interesting to see that the tomb material does not always accurately reflect the date of near-by settlements. The fact that the tholos tombs at Vronda continued in use in the Geometric period shows that different types of burials were practised at Vronda simultaneously: cremation in abandoned buildings and interment or cremation in previously built tombs. Such a mixture of burial customs can also be seen at Vrokastro (Hall, *Vrokastro*, p. 176), Mouliana (V. R. d’A. Desborough, *The Last Mycenaeans and Their Successors*, Oxford 1964, p. 188), and Knossos (*idem., The Greek Dark Ages*, London 1972, pp. 226–227).
It remains to clarify the relationship between the settlement and tombs at Vronda and the settlement on the Kastro, with its cemeteries at Plaï tou Kastrou, Aloni, and Skouriasmenos. The following presents a tentative summary of the sequence of events at the two sites:

a. Late Minoan IIIC—Subminoan: settlement and cemetery at Vronda begin; as yet, the date of foundation of the settlement on the Kastro is unclear, but the near-by tomb at Plaï tou Kastrou is in use at least as early as SM.

b. Early Protogeometric—Middle Protogeometric: settlement and cemetery at Vronda continue; Plaï tou Kastrou tomb in use. The Vronda settlement apparently goes out of use early in MPG.

c. Late Protogeometric: a gap in the use of the cemetery at Vronda. This seems to be a low period in general for the Kavousi area.

d. Protogeometric B: a thriving phase on the Kastro; the Vronda cemetery continues to be used, as does the tomb at Plaï tou Kastrou.

e. Early Geometric—Middle Geometric: continuation of the Kastro settlement and the use of the Vronda cemetery. The latter goes out of use, however, at the end of MG.

f. Late Geometric—Early Orientalizing: continuation of the settlement on the Kastro; burials in the tombs at Plaï tou Kastrou, Aloni, and Skouriasmenos; cremations in the Vronda settlement. In EO, the settlement on the Kastro and its cemeteries end. There is no more known activity in the Kavousi area, except perhaps in a shrine at Pachletzani Agriada.82

The interesting point concerning the relation of the Vronda and the Kastro settlements is that after the lower settlement ended, people seem to have moved up to the Kastro. At the present stage of our investigations, the reason for such a move is impossible to determine.

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82 S. Alexiou, « Ἱερὸν παρὰ τὸ Καβοῦσι Ἱεραπέτρας », Κρητ.Χρον 10, 1956 (pp. 7–19), pp. 7–9.
83 All the authors have contributed equally to this article. The order of their names is on a strictly rotating basis.
a. Vronda settlement, from the east

b. Aerial view of east wall of Building A

c. Room B3: paved floor and pithos in southeast corner, from the north

d. Kernos stone in courtyard, from the west

a. Room B3: pithos smashed on floor at north end, from the north

b. Room B4: pottery at north end, from the south

c. Room B4: animal skulls at south end, from the north

d. Room B6: potstands, from the west

e. Terrace wall, from the east

f. Room B7: smashed pithos fragments, from the east

a. Trench 2900: rubble packing behind terrace wall, from the south

b. Trench 5000: potstand, from the southeast

c. Room E1: closet, from the northeast

d. Room E1: pottery smashed on floor of closet, from the northwest
a. Trench 2600: drain tile

b. Trench 2600: mud brick

c. Trench 3300: MM sherds with molded spirals
d. e. Room E2: loomweight, sides A and B

f. Trench 3300: seal impression
g. h. Room E3, burial in Trench 800: bronze fibula and bead

i. Room E3, burial in Trench 800: iron arrowhead

j. Room E3, burial in Trench 800: iron arrowheads

a. Room B6: sherd with double axe

b. Trench 3100: conical cup 1 (LM IIIC)

c. Trench 2600: conical cup 4 (LM IIIC)

d. Trench 2600: conical cup 5 (LM IIIC)

e. Trench 2600: kylix rim fragments 3 (LM IIIC)

f. Trench 2600: coarse shallow dish 6 (LM IIIC)

g. Trench 2600: tripod vase 7 (LM IIIC?)

h. Room B3: kylix 10 (LM IIIC)

a. Trench 3900: krater rim 23 (LM IIIC)
b. Trench 3500: krater rim 25 (LM IIIC)
c. Trench 2500: painted pithos fragment 27 (LG)
d. Trench 3000: bowl 24

e. Trench 2500: body fragments 26a, b, c (LG)
f. Trench 900: cup 29
g. Trench 9800: firebox, incense burner, or strainer 28
h. Trench 1300: cup 32 (EPG)

Plate 84

a: Trench 1300: amphora rim and handles 34 (EPG-MPG)

b: Trench 1300: feeding bottle 35 (LM IIIC)

c: Trench 800: kalathos 37 (LM IIIC)

d: Trench 800: cup 42 (LG)

e: Trench 800: pithos rim 38a

f: Trench 800, burial: pedestalled skyphos 39 (Eteocretan Geometric)

g: Trench 800: pithos fragment 38b

h: Trench 800: pithos fragment 38c