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SOMMARIO

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PRINIAS: STUDIES AND RESEARCH. THE SIDEROSPILIA NECROPOLIS: A PRELIMINARY REPORT*

Antonella Pautasso – Salvatore Rizza – Katia Perna – Giacomo Biondi – Eleonora Pappalardo – Hartmut Matthäus – Rossella Gigli Patanè – Francesco Mallegni – Barbara Wilkens – Valeria Rita Guarnera

Riassunto. La necropoli in contrada Siderospilia, pertinente all'insediamento sulla Patela di Priniàs, da cui dista ca. m 500, è uno dei contesti funerari più rilevanti della Creta dell'Età del Ferro. Scoperta nel 1969 e scavata a partire da questo anno sino al 1978, la necropoli è rimasta sostanzialmente inedita, se si escludono alcuni articoli e due ampie relazioni generali del suo scopritore, Giovanni Rizza. Alcuni anni or sono è stato avviato un progetto di studio e pubblicazione della necropoli che coinvolge un gruppo di studiosi con diverse specializzazioni. La presente relazione intende offrire una sintesi preliminare di una parte del lavoro svolto nel corso di questi anni; essa presenta infatti un inquadramento generale delle diverse fasi e alcuni approfondimenti relativi a quei settori nei quali il lavoro di documentazione e studio è ormai a uno stadio avanzato. Tra questi, ci è sembrato opportuno dedicare uno spazio ampio a una parte dei risultati delle analisi archeozoologiche, in considerazione del fatto che la necropoli di Siderospilia è a tutt'oggi il contesto che ha restituito il numero più alto di sepolture di cavalli e cani. A chiusura della relazione, è presentato il progetto ARCHIAS relativo alla creazione e implementazione di un archivio digitale per la conservazione e la gestione di tutto il materiale documentario (cartaceo, grafico e fotografico) pertinente alla necropoli e che costituisce la base del progetto di studio e pubblicazione.

Περίληψη. Η νεκρόπολη του οικισμού της Πατέλας του Πρινιά βρίσκεται στην περιοχή Σιδεροσπηλιά, σε απόσταση περίπου 500 μ. από αυτόν και είναι ένα από τα σημαντικότερα ταφικά σύνολα της Κρήτης της Εποχής του Σιδήρου. Ανακαλύφθηκε το 1969 με τις ανασκαφές να συνεχίζονται μέχρι και το 1978, αλλά το υλικό παρέμενε αδημοσίευτο με εξαίρεση κάποια άρθρα και δύο εκτενείς γενικές εκθέσεις του ανασκαφέα Giovanni Rizza. Εδώ και κάποια χρόνια έχει δρομολογηθεί μια έρευνα μελέτης και δημοσίευσης του υλικού από ομάδα μελετητών διαφορετικών ειδικοτήτων. Η παρούσα δημοσίευση σκοπό έχει να προσφέρει μια πρώτη σύνθεση τμήματος της μελέτης που έχει πραγματοποιηθεί τα τελευταία χρόνια, παρουσιάζοντας το γενικό πλαίσιο των διαφορετικών χρονολογικών φάσεων μαζί με κάποιες ειδικότερες αναλύσεις στους τομείς εκείνους που η μελέτη έχει προχωρήσει σε ικανοποιητικό βαθμό. Μεταξύ αυτών θεωρήθηκε κατάλληλο να γίνει εκτενής αναφορά σε ένα τμήμα των αρχαιοζωολογικών αναλύσεων, μιας που η νεκρόπολη της Σιδεροσπηλιάς έχει αποδώσει τον μεγαλύτερο αριθμό ταφών αλόγων και σκύλων. Στο κλείσιμο του άρθρου παρουσιάζεται η έρευνα ARCHIAS που σχετίζεται με τη δημιουργία και εφαρμογή ενός ψηφιακού αρχείου για τη διαφύλαξη και διαχείριση του υλικού τεκμηρίωσης (έντυπο, σχεδιαστικό, φωτογραφικό) που σχετίζεται με τη νεκρόπολη και αποτελεί τη βάση για τη μελέτη και τη δημοσίευση.

Abstract. The necropolis in the Contrada Siderospilia, associated with the settlement on the Patela of Prinias, from which it is about m 500 away, is one of the most important funerary contexts in Iron Age Crete. Discovered in 1969 and excavated from that year until 1978, the necropolis has remained essentially unpublished, except for a few articles and two extensive general reports by its discoverer, Giovanni Rizza. A few years ago, a project for the study and publication of the necropolis was launched, involving a group of scholars with different specializations. The aim of this article is to give a preliminary report on the results obtained during these years of work, a general overview of the different phases, and some in-depth studies related to those areas in which the work of documentation and study is now at an advanced stage. Among these, it seemed appropriate to devote ample space to some of the results of the archaeozoological analyses, in view of the fact that the necropolis of Siderospilia is the context that has so far yielded the greatest number of horse and dog burials. Finally, the ARCHIAS project for the creation and implementation of a digital archive for the preservation and management of all the paper, drawing and photographic material relating to the necropolis, which forms the basis of the study and publication project, is presented.

* I would like to express my deep gratitude to the Director of the Italian Archaeological School at Athens, Prof. Emanuele Papi, and to all the staff of this institution, especially Angela Dibenedetto and Ioannis Bitis, for their continuous support for the work of the Archaeological Mission. I am also very grateful to the staff of the Heraklion Museum for facilitating our work in every way over the years, in particular to S. Mandalaki, Director of the Museum, and I. Galli. I would also like to thank my colleagues who participated as authors in the drafting of the report and those who provide so-called support, but actually indispensable, work: Orazio Pulvirenti for the drawings of finds, Nadia Barbi for the restoration work and Tania Marchesini for the digitization of the photographic archive. I would also like to thank Don Evely for his careful work in reviewing and improving the English. The following abbreviations are used in this article: CG = Cypriot Geometric; EG = Early Geometric; EM = Early Minoan; EO = Early Orientalizing; EPAR = Early Protoarchaic; EPG = Early Protogeometric; FN = Final Neolithic; G = Geometric; L. = length; LC = Late Cypriot; LG = Late Geometric; LM = Late Minoan; LO = Late Orientalizing; LPG = Late Protogeometric; MG = Middle Geometric; MO = Middle Orientalizing; MPG = Middle Protogeometric; MNI = Minimum Number of Individuals; NISP = Number of Identified Specimens; PAR = Protoarchaic; PG = Protogeometric; PGB = Protogeometric B; SM = Subminoan; SubPG = Sub Protogeometric.

Foreword

About ten years ago, thanks to a generous INSTAP grant [1], a group of members of the Italian Archaeological Mission in Prinias embarked on a long and complex project: the study and publication of the great necropolis of Siderospilia (Figs. 1-2), discovered by Giovanni Rizza in 1969 and excavated by him until 1978. The project, coordinated by a group of CNR researchers, began with the agreement of the then Director of the Mission, Dario Palermo, who joined the initiative, reserving to himself the history of the excavation. His choice was in part justified by the fact that of all the participants in the publication project, he was the only one who had been present at Prinias since 1974, although he had not been directly involved in the excavation of the necropolis. We are all too aware that with his death we have lost not only an excellent scholar, but also the only precious witness who could have told the story of this extraordinary discovery from having personally experienced it.

It is worth noting that the first few years of work were largely devoted to the lengthy task of comprehensive contextualization, inventory and documentation of as yet unclassified material and, above all, the restoration of some of it. This preliminary report aims to provide an updated summary of the research work carried out over these years by a few members of the research team involved in the project [2].

Antonella Pautasso

1. The Siderospilia necropolis: the long story of an exceptional discovery and the project for its publication

The necropolis in the Siderospilia site was discovered on 12 August 1969, according to Rizza's excavation diary (Fig. 3), the first year of the Italian Archaeological Mission in Prinias. For this initial campaign, Rizza planned two weeks of work: for the first, he limited himself to a few excavation trenches on the Patela plateau and in the second he had envisaged a survey in an area along the Prinias-Asites road, where he already thought the necropolis could be located [3]. The argument was based on the fact that in 1959, on the occasion of the opening of the road [4], Nikolaos Platon reported the accidental discovery of some engraved stone stelai [5], of the same type as those discovered by Pernier at the beginning of the 20th c. in the area of the Hellenistic fortress on Patela and at its foot, on the Chalavra site [6]. During the first week of work on the Patela plateau, the accidental discovery of a group of tombs in the site of Siderospilia, due to the action of a tractor, gave an unexpected turn to the research.

In the first year the excavation brought to light the first 18 tombs (in the area W of the road), whilst in the following the exploration was extended to the E of the road, bringing to light the low northeastern hill with the chamber tombs, and to the W a tumulus containing tombs within it, the area of the enclosures along its northern perimeter wall, and the first remains of horse burials (1970-1971). That the presence of horse and dog burials was a recurring feature of the necropolis became clear in the following years (1972-1974) when finds of this type followed one another, with a greater concentration in the western area. The

[1] A three years INSTAP grant (2012-2014), designed to begin and continue with the study and publication project of the large necropolis, was obtained by me to support the opening stage *The first phase of the Siderospilia necropolis of Prinias (Crete)*. I am very grateful to the Institute for the Aegean Prehistory for supporting the initial parts of this long and complicated work.

[2] The researchers involved in the project so far are (in alphabetical order): Andrea Babbi, Giacomo Biondi, Flavio Ferlito, Rossella Gigli Patané, Valeria Rita Guarnera, Gabriella Longhitano, Hartmut Matthäus, Eleonora Pappalardo, Lighea Pappalardo, Antonella Pautasso, Katia Perna, Salvatore Rizza, Nikos Vasilakis, Barbara Wilkens. Some numerically limited classes of material (such as the coroplastic finds, fragments of sculpture, architectural elements, small stone finds and textile tools) are still at an early stage of study and for this reason have not been included in this first report. Archaeobotanical (especially seeds and charcoal) and anthropological-physical analyses of the cremated remains have not yet been carried out. However, the archaeozoological analyses have been completed. Over the years, the necropolis publication project has suffered some setbacks due to the need for some of us to complete previous responsibilities. Contributions on the work carried out within the necropolis project have been regularly presented in groups or individually by some of the scholars involved. Among the main contributions: Pappalardo 2015; Matthäus 2016a; 2016b; 2018; Pautasso 2018; Biondi 2019; Gigli Patanè 2019; Mallegni 2019; Matthäus 2019; Palermo 2019; Pappalardo 2019; Pautasso 2019a; 2019b; Perna 2019; Rizza 2019a; 2019b; Biondi 2020; Gigli Patané 2020; Pautasso 2020a; 2020b; Perna 2020; Rizza 2020a; 2020b; Biondi forth.; Pautasso forth. a; c.d.s. b; Pautasso-Rizza forth.; Rizza c.d.s.

[3] Rizza 2011b, 23.

[4] For the Prinias-Asites road and its impact on the necropolis, see *infra*, Rizza, 516-519.

[5] Πλατων 1959, 368. The *stelai* were studied and published in 1976 (Λεμπεση 1976).

[6] Pernier 1908, 446-447. The events are summarised briefly by Rizza 2011b, 22-23.

Fig. 1. The Siderospilia necropolis (planimetry revised by S. Rizza) (© Archivi SAIA, NIG 8599).

entire area of the necropolis, with an astonishing number of different funerary contexts, was brought to light during the excavations that ended in 1978. The last two campaigns (1977-1978) concentrated mainly on the area of the south-western hill, with special attention to some structures (enclosures and small funerary monuments) (Fig. 1).

Apart from a few articles on specific aspects and two general reports [7], Rizza was not able to undertake the complete publication of the necropolis [8]. However, in what was published, the scholar had outlined a sequence of the main phases in the development of the necropolis, identifying two main phases, the first (11th to 9th c. BC) characterized by the coexistence of the two rites of inhumation and cremation, the second (second half of the 9th to 6th c. BC) by the exclusive urn cremation ritual for adults and partial inhumation in pithoi (enchytrismoi) for children and sub-adults [9]. This

[7] Rizza 1969; 1971; 1978; 2011b; 2011c.

[8] The year 1978, when the excavation of the necropolis was completed and closed, marked the beginning of a period of break in the Rizza's activities. At the end of the same year, injuries sustained in a car accident kept him away from active archaeology for several years. He resumed his work at Prinias in the mid-1980s, and from then on he concentrated on the excavation of the settlement at Patela, to which he dedicated a last volume published in 2008 (*Id.* 2008).

[9] Initially, Rizza (1978, 106-126) identified three phases, by distinguishing the older pit tombs from the chamber tombs in two distinct phases (resumed by Eaby 2007, 104-108). Later, the same scholar (Rizza 2011b; 2011c) unified these phases, thus distinguishing two main phases, the second characterized by the exclusive rite of adult cremation and dated from the second half of the 9th c. BC. See also: Biondi 2019, esp. 4, fn. 4.

Fig. 2. The Siderospilia necropolis (zenithal photo S. Rizza) (© Archivi SAIA, U/13466).

framework still constitutes the fundamental basis on which the study and publication project is being carried out, though in time some adjustments or revisions may be required, based on a more comprehensive view of the complex. In particular, Perna has recently dated the beginning of the first phase of the necropolis to SM (11th c. BC) on the basis of a typological-stylistic study of the pottery from the oldest tombs [10].

The chronology of the two main phases of the necropolis corresponds perfectly with that of the settlement on the Patela, making the two contexts complementary [11]. The importance of the funerary context goes beyond this fundamental aspect, however, and is even more evident when one considers the quality of the findings, the number of imports and the variety of rituals and architectural solutions attested over the centuries.

In addition to the two main phases between the 11th and 6th c. BC, the necropolis has also yielded both earlier and later evidence, chronologically unrelated to the development of the settlement on the Patela (Tab. 1). An earlier phase, consisting of inhumations, was identified in the western part of the necropolis and is generally associated with the existence of a Late Neolithic and Early Minoan settlement identified in the eastern part of it [12].

A later phase is documented first by the two Hellenistic chamber tombs excavated in the rock along the Prinias-Asites road [13], and then by a group of inhumations in shaft graves of the Roman period (2nd c. AD) identified in the northern sector of the western part [14].

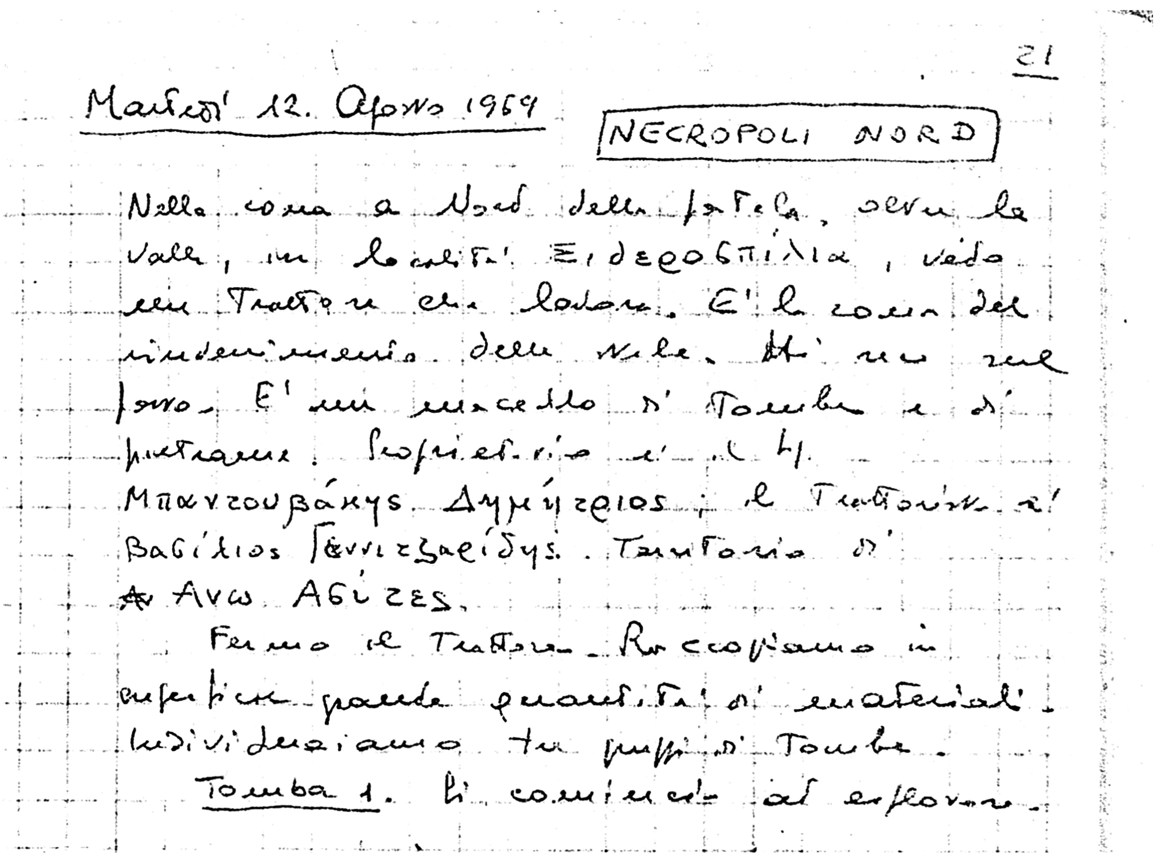
[10] See *infra*, Perna, 529-536.

[11] In Rizza's words: «La possibilità di mettere a confronto i dati provenienti dallo scavo della necropoli con quelli forniti dalle indagini condotte nell'area della città permette di utilizzare al meglio i risultati dei due scavi, che si integrano a vicenda, e forniscono...due prospettive diverse e parallele per tutto l'arco di tempo in cui si sviluppò l'insediamento» (Rizza 2011b, 24-25).

[12] For the remains of the FN/EM settlement, see: Rizza 1978, 126-127; Rizza-Rizzo 1984, 235, fig. 436; Rizza *et alii* 2005, 615-620 [M. Cultraro]. For these first tombs, see also *infra*, Pautasso, 553.

[13] Architectural study of the Hellenistic chamber tombs has been carried out by Rizza c.d.s.

[14] The Roman tombs are currently being studied by Nikos Vasilakis.



Martedì 12. Agosto 1969

NECROPOLI NORD

21

Nella zona a Nord della Patela, verso la valle, in località Σιδεροσπίλια, vedo un trattore che lavora. E' la zona del rimboschimento della valle. Lì mi reco sul posto. E' un macello di tombe e di pietrame. Proprietario è il Sig. Μπαντουβάκης Δημήτριος; il trattorista è Βασίλειος Γεννιτσαρίδης. Territorio di Άνω Ασίτες.

Fermo il trattore. Raccogliamo in superficie grande quantità di materiali. Individuiamo tre gruppi di tombe.

Tomba 1. Si comincia ad esplorare.

Fig. 3. The Giovanni Rizza's excavation notebook of 12 August 1969 the day of the discovery of the necropolis.

-	Inhumations	FN/EM
PHASE IN RELATION TO THE SETTLEMENT	Inhumations in chamber tombs and secondary cremation in pits; partial inhumation for children	11th - first half of the 9th c. BC
PHASE IN RELATION TO THE SETTLEMENT	Secondary cremation in urns placed in the ground; partial inhumation for children	second half of the 9th - first half of the 6th c. BC
-	Hellenistic chamber tombs	3rd-2nd c. BC
-	Inhumation in shaft	2nd c. AD

Tab. 1. Outline of the necropolis' phases of use.

In total, the excavated area covered approximately one hectare. The task of classifying the numerous burials found in the necropolis and the associated grave goods is still in progress. The revision of the excavation reports and the available drawn and photographic documentation has allowed us to reconsider the actual contexts of the individual finds, distinguishing between those that can reasonably be classified as tombs and/or burials, and others that can be provisionally interpreted as deposits of burnt material. The number of graves excavated and actually verified during the revision work we have carried out thus far is more than 300, whilst the number of deposits of burnt material and/or objects exceeds 100 [15]. To these is to be added a noticeable series of some tombs (not datable) consisting simply of cremated bones [16].

[15] Both the number of graves and the number of burials should not be considered definitive, but any departure from them should not be substantial. In his latest reports, Rizza (2011b, 24) had counted around 680 tombs, a collective number that included deposits and sometimes the discovery of just a single or a group of objects without a definite context.

[16] See *infra*, Biondi, 557.

The excavation of such a vast and chronologically extensive necropolis has produced a wealth of documentation. The written, drawn and photographic documentation assembled over time, from the excavation years onwards, is huge and sometimes can exist in several formats. Given the difficulty of managing such a large amount of data and finds, it was necessary to create, in parallel with the publication project, the digital archive ARCHIAS, which is presented at the end of this report [17].

Antonella Pautasso

2. The topography of the Siderospilia site

The necropolis of Siderospilia is located about m 500 NW of the village of Prinias, on a wide SE facing slope separated from the Patela plateau by a deep valley. Today the cemetery is roughly divided into two parts (eastern and western) by the modern Prinias-Asites road, built in 1959 (Fig. 2).

The area occupied by the necropolis of Siderospilia is not very different today from what it must have been in ancient times. The element that is clearly alien to the context is the Prinias-Asites road, which has deeply eroded and destroyed a large strip in the center of the necropolis running in a SE/NW direction (Fig. 4a-d). The entire area is characterized by the presence of large rocky outcrops with a layer of earth of extremely variable consistency from one area to another along the road [18]. Before the opening of the road, only the two Hellenistic tombs were known in the area [19], located on the southernmost boundary of the necropolis area of Siderospilia. The modern work began immediately to the E of these two tombs and the point where the sandstone bank was cut into can still be clearly seen today.

When analysing this area, it is important to bear in mind the documented existence of an ancient pathway, different from the modern road, which climbed in a S-N direction, skirting the eastern flank of the so-called south-western hill (Fig. 5) [20]. This was the only means linking Prinias and Asites before 1959, when the main road was built. The route of the pathway was adapted to the ground conditions, characterized by rocky outcrops. The pathway, about m 1.20 wide, was sometimes simply dug into the rock, sometimes dug and "stepped" (*i.e.* taking advantage of the natural slope of the rock), and sometimes dug and then filled with a mixture of white gravel.

The opening of the modern road is well documented. A photograph taken in 1969 (Fig. 6), ten years after its opening, clearly shows the areas where the limestone had been cut and the debris dumped. In order to understand the topographical changes made to this area, it is also useful to compare the present and the past state of the sites, especially in relation to the ground levels in the areas W and E of the main road [21]. To the E of the main road the earthworks are less obvious. On the other hand, the so-called northeastern hill (Fig. 4d), at the base of which most of the monumental tombs are located (mostly chambers embedded in the slope), has been significantly lowered due to agricultural work in preparation for planting, which is obviously inappropriate for an area so dense with archaeological remains [22]. This is confirmed by the photograph of the Siderospilia area taken from the Patela at the end of the 1960s after the road had been cut: this clearly shows how both the south-western hill and the north-eastern hill were not affected at all by the earthworks.

Important for the understanding of this area is the analysis of the cartographic base at 5000 [23], for many years the only cartographic reference available for the location of topographic and detailed surveys. The analysis of the map and the comparison with what is on the ground made it possible to develop a hypothesis for a "reconfiguration" of the earlier layout of the area, before the major earthworks began in 1959 (Fig. 7b).

The works for the road involved an enormous excavation [24] into the strip of land immediately below the m 632 a.s.l. (Fig. 7a), more or less parallel to which the road was to run, until it intersected its course at the

[17] See *infra*, Guarnera, 576-580.

[18] This characteristic has influenced the choice of burial types, sometimes leading to different solutions being found within the same typology.

[19] See Taramelli 1899, 333-334, figs. 15-16; Halbherr 1901, 400, fig. 12. See fn.13.

[20] The starting point of the pathway and part of it can still be seen today, about forty meters W of the bend that leads to the straight road that divides the necropolis of Siderospilia in two parts.

[21] Compared to the years when the archaeological excavations were carried out (1969 to 1978), there is a significant difference in the level of the ground, especially on the western side (around m -2).

[22] Only a few years ago, thanks to the contribution of some conscientious citizens, the local Εφορία was able to prevent the planting of olive trees, which would have led to the total destruction of a large part of the chamber tombs excavated in the 1970s.

[23] It is a topographic map with main contour lines every m 20 and subsidiary every 4, produced by the Hellenic Military Geographical Service in raster and vector format with different levels of detail (contour lines digitised at 1:5000 or 1:50.000.

[24] Taking into account the plan of the two road layouts (before and after 1959) and the volume of naturally sloping land affected by the works, a total excavation volume of just over m^3 2000 can be calculated.

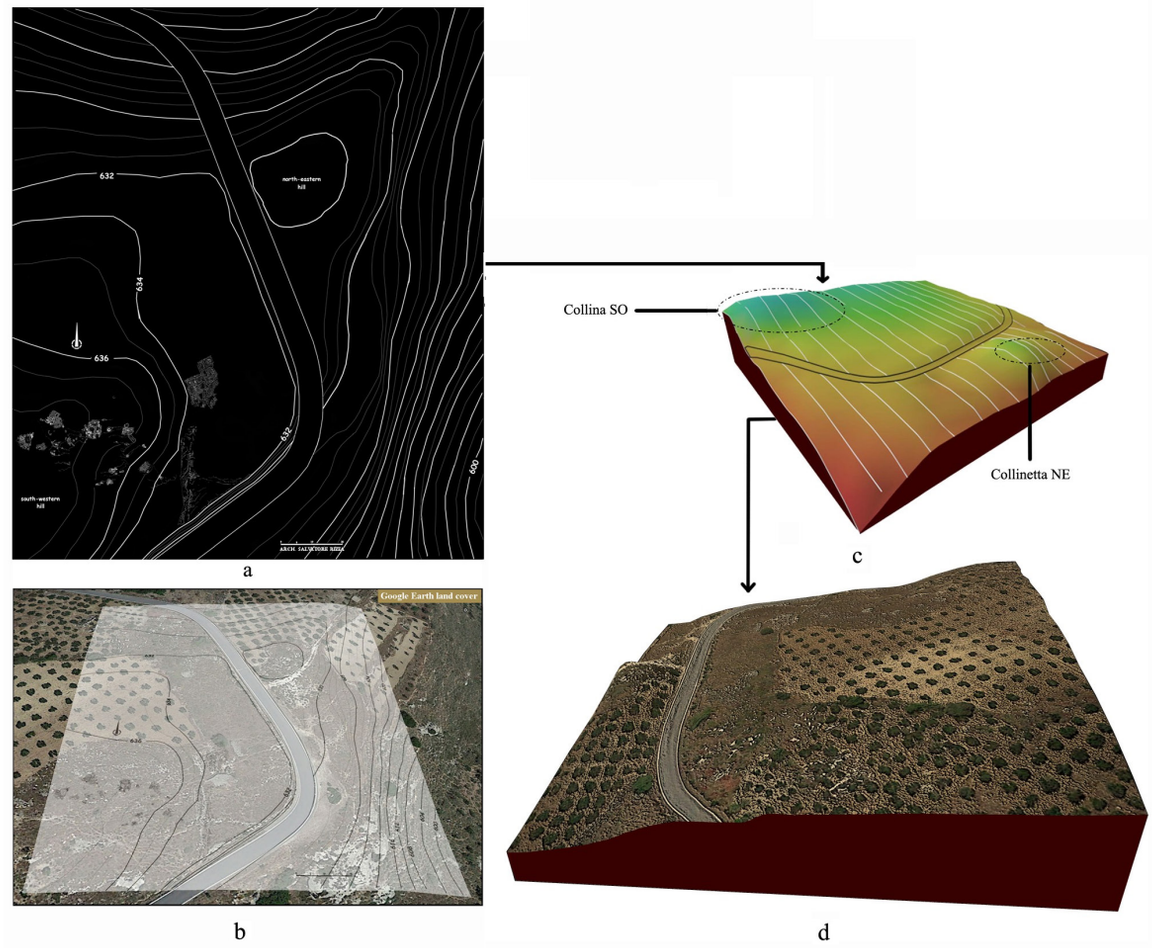


Fig. 4. a) Planimetry of the Siderospilia area with the road built in 1959 (© Archivi SAIA, NIG 8674); b) overlay of the planimetry on the Google Earth map; c) false colour model of the area with identification of the south-west and north-east hills; d) 3D model of the area (© Archivi SAIA, U/13467).

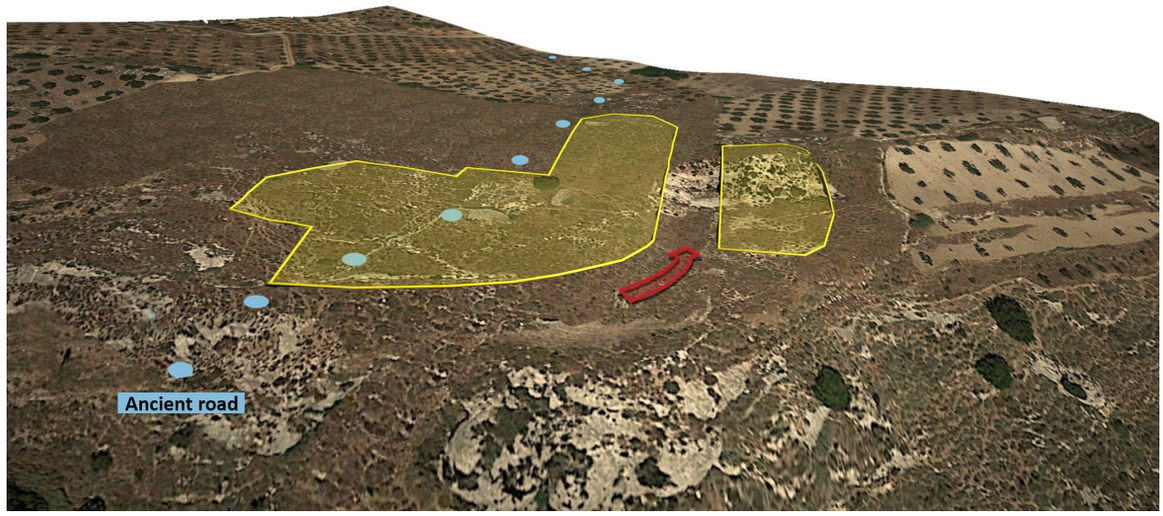


Fig. 5. The areas of maximum extension of the Siderospilia necropolis to the W and E of the Priniàs-Asites road, the gutting area and the ancient road layout (© Archivi SAIA, U/13468).

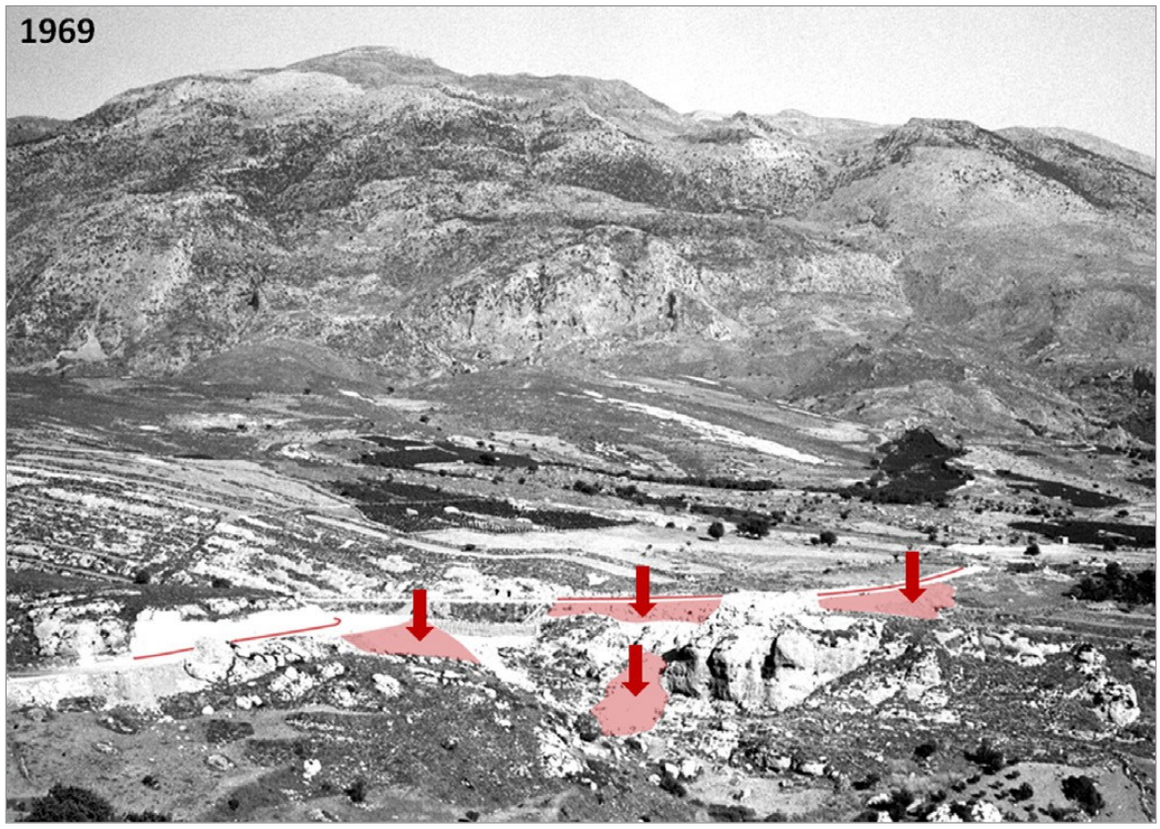


Fig. 6. The area of the necropolis of Siderospilia as seen from Patela in a 1969 photograph: in red the cut lines of the calcarenite banks. The areas where the waste was dumped are indicated by arrows (© Archivi SAIA, U/13469).

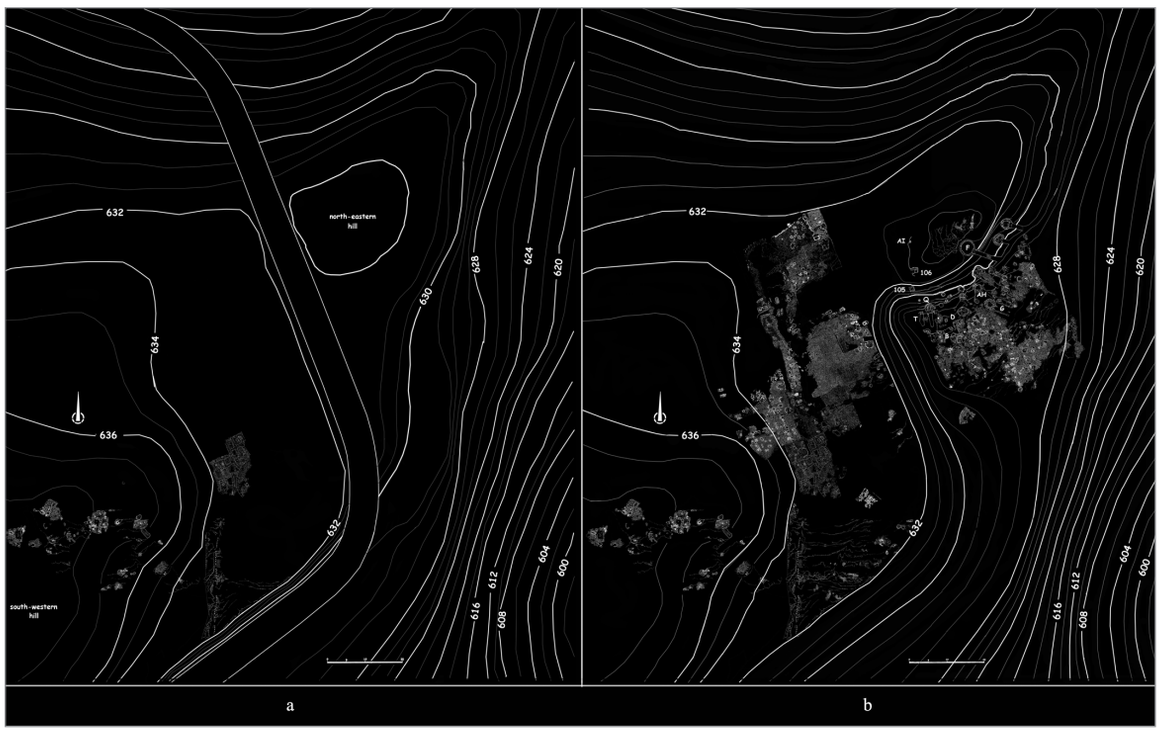


Fig. 7. a) Planimetry of the necropolis area (current state) (© Archivi SAIA, NIG 8674); b) reconfiguration hypothesis. Topography of the necropolis area before the excavation caused by the construction of the Priniàs-Asites road (© Archivi SAIA, NIG 8675).

level of the north-eastern ridge. Here the route of the road sank deeply into the ground, destroying part of the south-eastern slope of the hill (Fig. 5). Many of the monumental tombs of the PG period found in the necropolis of Siderospilia (Fig. 7b) had been placed along the same slope; it is reasonable to assume that a considerable number of them were lost as a result of the roadworks. As evidence that the first route of the state road was rather irregular and different from the present one, it can be observed that the 1959 road works also damaged some tombs that were not actually on the road's axis, but several meters further E. This can be deduced from the extensive drawn and photographic documentation produced in the 1970s.

Salvatore Rizza

3. Architectural analysis

The necropolis of Siderospilia yielded a considerable number of tombs types. The analysis of the contexts studied so far has made it possible to draw up a typological classification, which may be modified and extended as the work progresses. It is based on a first distinction between deposits and tombs, and is then further divided into groups and subgroups based on structural and formal characteristics (Fig. 8).

This report focuses on a specific group of tombs to illustrate the methodology used and the results obtained. The tombs considered in this paper belong to a few specific subgroups of the **G group** (built tombs) (Fig. 8). A separate case is the tumulus (**G 0**) in the western part of the necropolis, which contains the oldest burials [25].

It should be noted that only a selection of tombs belonging to this group are considered here; they are taken from the following subgroups: **G4**: burial chamber excavated on the ground or dug into the rock, lined with dry stones, with architectural elements and real or false dromos; **G7**: pseudo-tholos cut into the rock, lined with dry stones, with architectural elements and a monumental dromos [26]. The latter subgroup consists only of the T. F which stands out for the size of the chamber and the architectural solution of the roofing. It is the only one of this type documented within the Siderospilia necropolis. All chamber tombs are built during the first phase of the necropolis (SM-PG) [27].

3.1 Built tombs: main features

Among the built tombs (**Group G**) [28], Q, AQ, G and J (**Group G4**), have in particular characteristics similar to T. F in terms of "shape" and construction technique of the facing of the chamber wall, have a more or less regular internal lining, albeit certainly less well made than that documented in T. F, an irregular circular ground plan (Fig. 9b, d) and, above all, a dromos that is considerably shorter and set into the ground level (Fig. 9a, e) [29]. The overall dimensions of these tombs suggest that, up to the level of the monolithic lintel [30], the chamber was given a proper facing and, above this height, built up from large, more or less regular slabs. These slabs, arranged in a few progressively protruding rows (corbelling), made it possible to limit the internal height of the chamber and then to close it off with a slab as a keystone at the apex.

On the other hand, an examination of the profile of the facing wall up to the limit of the excavation pit reveals a curvature that would hardly have been compatible with the development of a real vaulted roof (Fig. 9c), due to the height of the ground surface, which at that point must have been slightly higher than the upper curve of the architrave. The roof of the chamber was therefore covered by a projecting corbel system, the linear profile of which was perhaps closer to a depressed arch than to a true vault/dome. The part of the chamber roof that rose above the top of the excavation pit could have been

[25] The tumulus (about m 13 in diam.), to which the so-called "camerette" (enclosures) were attached, was excavated and published by Rizza (2011b, 26, fig. 7). The interpretation of the structure as a tumulus proposed by Rizza, has been confirmed by Kanta (2001, 19), according to whom it is the earliest tumulus in Crete. This claim seems to be confirmed by the very recent finds of some G tumuli by F. Gaignerot Driessen at Anavlochos (Gaignerot-Driessen 2018; Gaignerot-Driessen *et alii* 2022). For the tumulus, also Eaby 2007, 104-105, 327. For an interpretation of the monument as the remains of a Bronze Age tholos tomb: Palermo 2015. For the tombs within the tumulus, see *infra*, Perna, 531.

[26] Eaby (2009; 2011) has proposed a classification of the built tombs of Crete into three groups. It corresponds almost entirely to that proposed for the built tombs of Prinias, with some terminological distinctions related to the use of the term tholos (the issue is addressed in Rizza 2020a, 266).

[27] For the first phase, see *infra*, Perna and Biondi, 529-541.

[28] For the typological framework of the Prinias burials and their first division into homogeneous groups, see Rizza 2020a.

[29] The cut in the rock is deep m -0.70 for the Q and approximately m -1.0 for the AQ.

[30] In these tombs, too, the lintel rests directly on the large slabs that serve as the door frame. Furthermore, the width of the stomion is roughly equal to the distance between the lintel's soffit (underside) and the floor level.

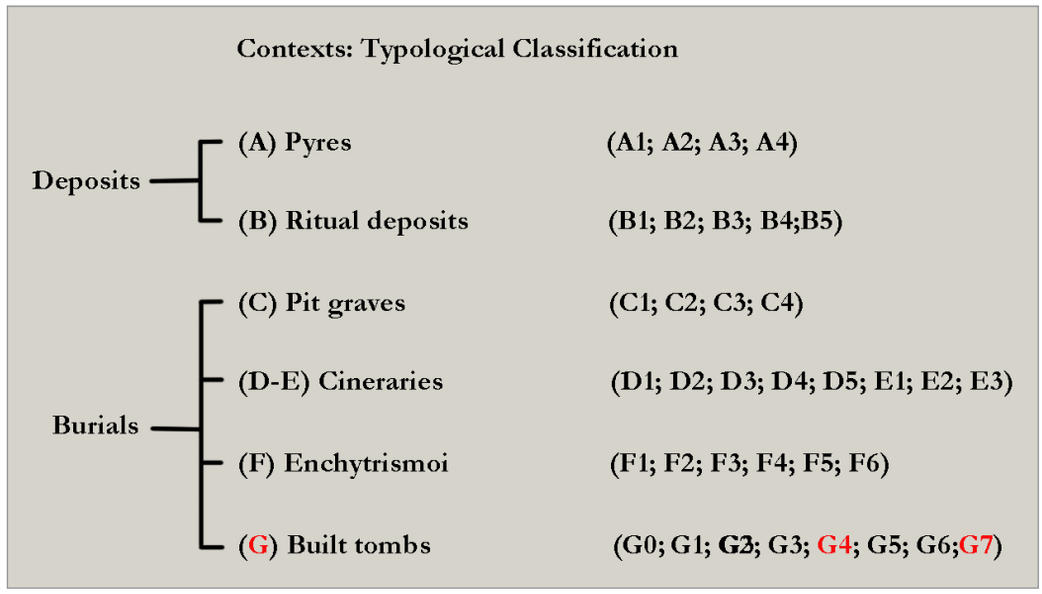


Fig. 8. Overview of the "first classification" of burials in the Siderospilia necropolis.

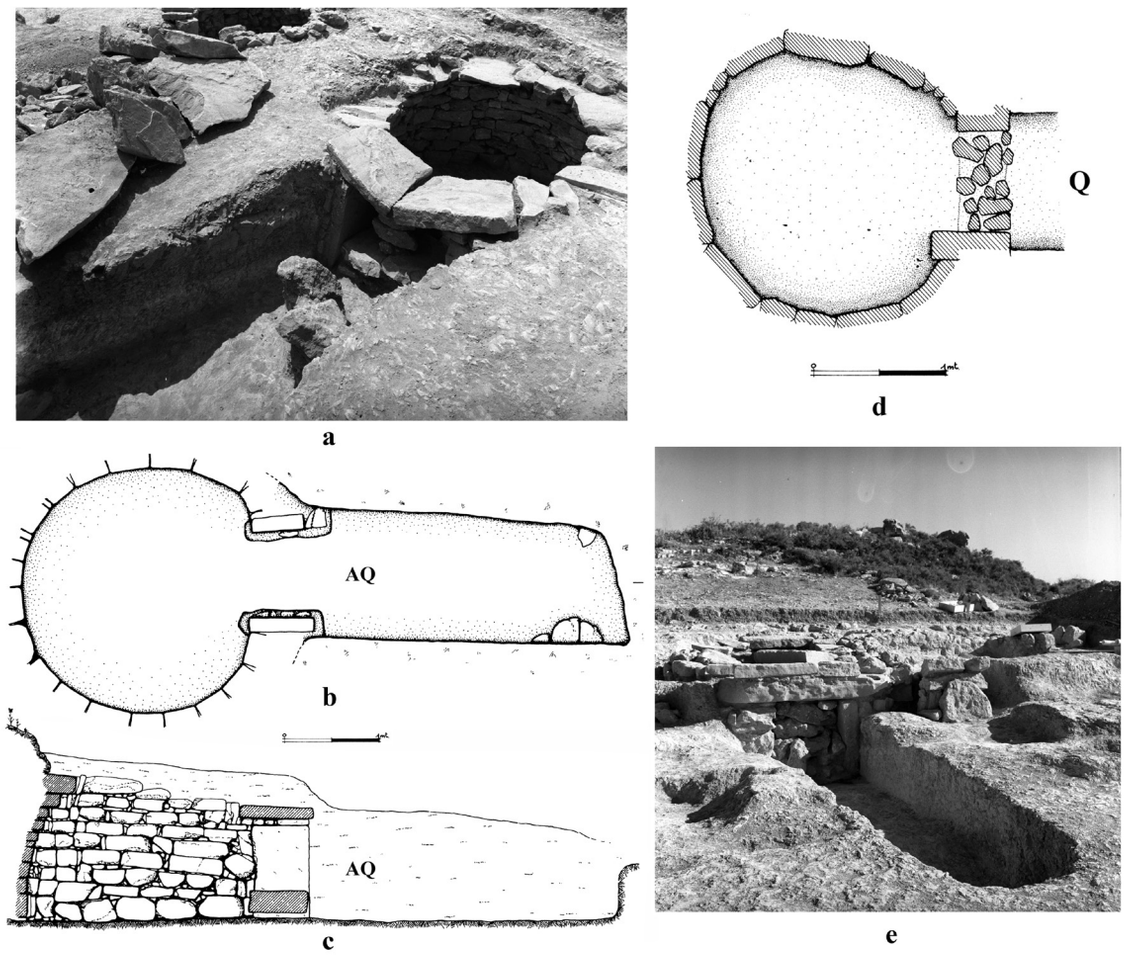


Fig. 9. TT. Q and AQ: a) view of AQ and its dromos (© Archivi SAIA, U/13509); b-c) plan and section of AQ (© Archivi SAIA, NIG 8620); d) plan of Q (drawing R. Simoncini; © Archivi SAIA, NIG 8623); e) view of T. Q and its dromos (© Archivi SAIA, U/13510).

Fig. 10. T. G. View from the E of the stomion and dromos with the walls partially covered with stone (© Archivi SAIA, U/13470).

visible [31] or, alternatively, covered by a sort of mini-tumulus. A small mound would indeed be compatible with a more or less flat ground surface. It may have had the function of marking the burial as well as protecting it.

T. G (Fig. 10), ovoid and with a diam. varying between m 1.70 and m 1.95, had a dromos m 4.56 long, which differed from the previous ones in that it was built on the ground. The dromos did not have a slope, and its walls, up to m 0.65 high, are partly lined with stones. The chamber was built on an almost flat ground surface [32], with only a slight slope on the northern side. The front of the chamber was only preserved up to a certain height. However, considering its dimensions in plan and its position in relation to the terrain at this point, it must have had an internal height of no more than m 1.40. As a whole, this is a small tomb which, despite the presence of an important dromos and the "shape" of its plan, has little to do with the type of T. F.

Of the tombs in this group, the one that most resembles T. F is probably T. J (Fig. 11) [33]. Built higher up on the slope of the north-eastern hill, it had a chamber dug deep into the ground, with a dromos similar in length and width to that of F and, above all, with a lining of the chamber made by a fairly precise technique. Six rows of blocks were preserved, varying in height from m 0.17 to m 0.25, with a more or less elongated rectangular face (from about m 0.25 to m 0.50). The facing wall had a maximum preserved height of m 1.35 and a rather pronounced inward inclination (m 0.25 from the vertical in every m 1.00 height).

The chamber had a plan that can be set within a circle of m 3.10 diam., which is distorted along its axis of symmetry by approximately m 0.40 [34]. Although the chamber was not geometrically regular, J showed a higher quality of construction than TT. Q, AQ and G and was overall more similar to T. F. In the T. J, however, the facing wall's profile is more than twice as steep and the distortion along the axis of the tomb

[31] The hypothesis that a closing slab was left to facilitate later burials, *i.e.* to provide access to the chamber, if not in use from the first burial, does not seem plausible. Such a solution would have made the tomb particularly "vulnerable" to potential intruders and generally more exposed to the elements.

[32] This area, just above the bend at m 628 a.s.l., must have appeared in ancient times as a kind of large, almost triangular terraces the western and northern sides of which rise abruptly to m 630 a.s.l.

[33] For dating of the T. J to the PG period on the basis of pottery, see Biondi 2019, *passim* and fig. 12.

[34] The dimensions of the chamber on the floor level and at the highest point where the facing was preserved are m 2.70 and m 2.30 along its axis of symmetry and m 3.10 and 2.70 in the direction perpendicular to it. The size of the chamber, the slope of the walls, and the height of the ground behind the tomb suggest an internal height of between m 1.90 and 1.95.

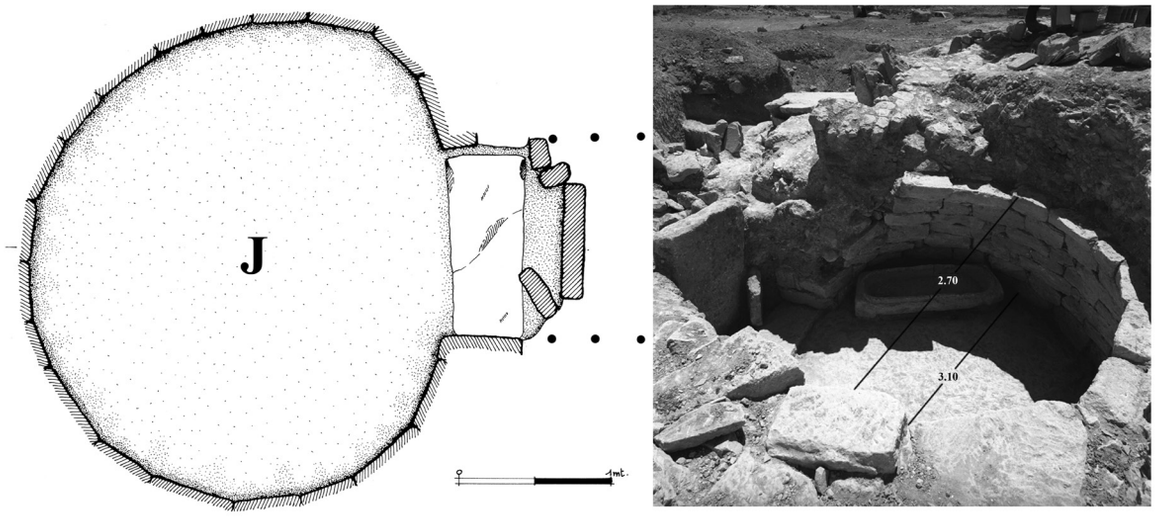


Fig. 11. T. J. The apparent flattening in plan along the axis of symmetry and the strong inclination of the face (© Archivi SAIA, U/13511; NIG 8622).

results in an even steeper profile at the stomion. The 1971-1972 notebook also states that during the cleaning of the interior of the chamber «si trovarono alcuni grandi lastroni caduti, pertinenti alla copertura ed un certo numero di pietre in posizione di caduta» [35]. This also suggests that the builders of T. J used the same system of projecting slabs for the roof, although this tomb was larger and of a higher quality than the others.

Moreover, F and J shared another peculiarity: they are the only two lined chamber tombs found in Siderospilia in which stone sarcophagi have been found [36]. Both were found robbed. They contained inhumed [37] and cremated remains and the remnants of human bones with traces of burning. In both cases, a large number of pottery fragments of various dates were found in the surrounding areas [38]. In terms of construction, J could perhaps represent the transition point between the TT. Q, AQ, and G and T. F. The former set, with an almost flat roof, was already defined by Belli as a "degenerate" tholos [39], and the latter, finally, the only true tholos in the necropolis of Prinias.

3.2 Tomb F

Of all the tombs discovered in the necropolis of Prinias, only T. F (sub-group **G7**, Fig. 8) can be considered a tholos tomb. It is almost perfectly circular (int. diam. m 3.60/3.80) and had a stomion m 0.92 wide, stone slabs for jambs, a limestone threshold and a large dromos on the south-eastern side. Discovered in 1970, it was located about m 25 E of the modern Prinias-Asites road [40], on the south side of the so-called north-eastern hill (Fig. 15a). The excavation revealed a semicircular cut in the rock that followed the line of the slope. At a depth of less than a meter down from the ground surface, part of the perimeter wall was brought to light. At the same level, a pile of rubble of various sizes was uncovered [41], in which numerous square blocks were found. The layer of blocks was about one meter thick, and rested on a layer of soil that filled the last m 0.50 of the tomb down to the floor. Some fragments of a limestone sarcophagus were recovered from the layer of soil. On the south side, immediately to the left of the entrance, a crack of about m 1.50 in the wall was identified, which the robbers used to enter the tomb. Here, the facing wall consisted of

[35] Notebook from 1971-1972 (G. Rizza, Notebook III, 61).

[36] The lower half of a sarcophagus was found in J, carved from a block of parallelepiped stone (m 1.50x0.53x0.26), with a recess for the insertion of the lid. Some fragments of another sarcophagus were found on the western side of F, close to the perimeter wall, opposite the entrance. In addition to the above examples from F and J, a stone "container" for burials was found in T. D; it was actually a limestone "edicola", a small structure containing tiny fragments of a child's bones.

[37] See Biondi forth.

[38] In the 1971-72 notebook (G. Rizza, Notebook III, 64) about the J tomb: «...in mezzo al pietrame e ai blocchi che la colmavano, furono raccolti abbondanti frammenti di ceramica che, per la qualità e la quantità ricordavano il materiale della Tholos F».

[39] Belli 1991, 449.

[40] For the topographical outline of the area, cf. Rizza 1978, 106-108; Rizza c.d.s.

[41] Among the materials found in the surface layer of interest is the discovery of a parallelepiped stone block with a Greek cross in relief on one of its main faces.

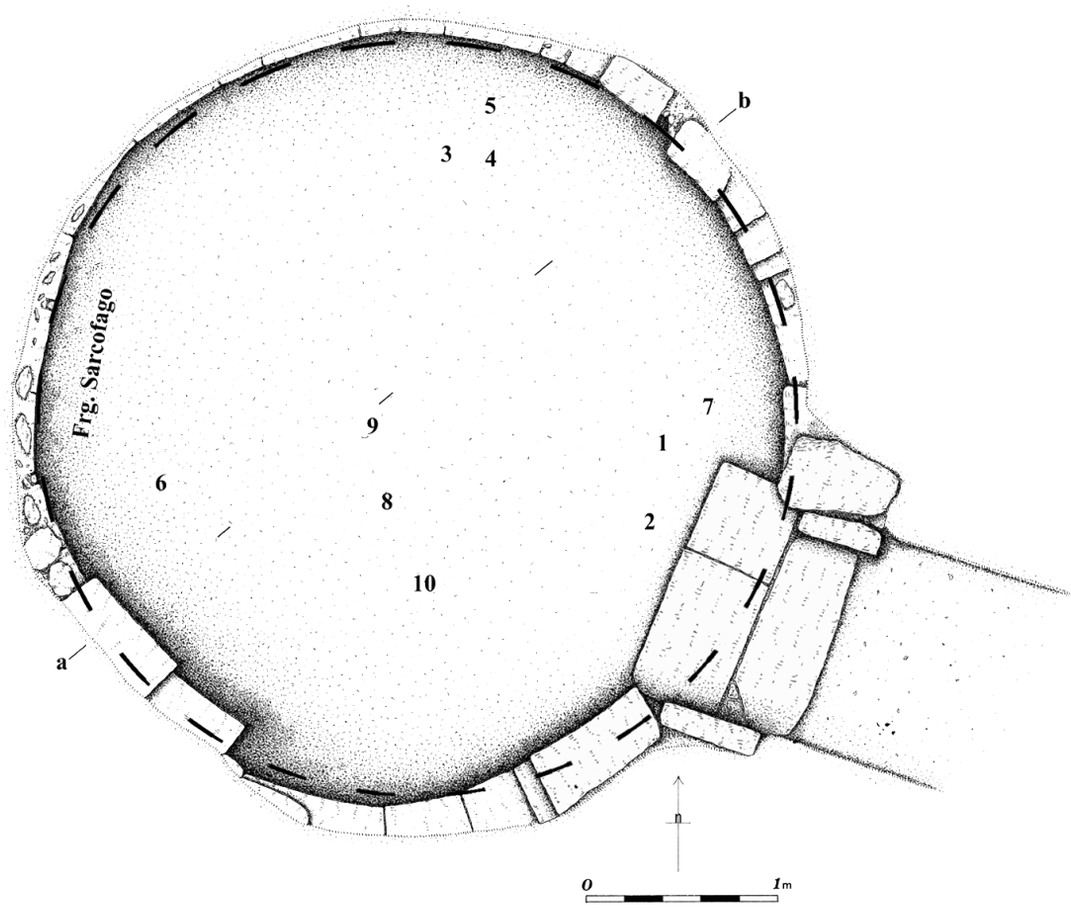


Fig. 12. Plan of T. F. The points where objects and fragments of the sarcophagus were found are indicated and, in hatched lines, the ideal circumference at the foot of the chamber wall (drawing R. Simoncini; © Archivi SAIA, NIG 8600).

only the first three rows of ashlars from the floor. According to the excavation notebook of August 1970, when the tomb was breached, both the roof and the entrance were still intact [42]. A large amount of pottery fragments were recovered from the tomb, both in the rubble and in the soil deposit below, down to the level of the floor. The finds were scattered throughout the tomb, and many of the vases collected inside the chamber (Fig. 12) were later found to have attachments with fragments found outside the tomb [43] and along the slope.

The excavation reached the base of the perimeter wall, which was not embedded into the bedrock, but rested on its surface. The first course of the wall cannot be considered to have been used to divide off the rock from the wall proper, as it does not differ from the rows above in terms of block size or technique used. At the entrance, on the SE side of the chamber, the N and S jambs of the stomion are slightly offset by about m 0.10 (Fig. 13) [44]. A closer look at the tomb reveals several errors, not only in the planning, but also in the alignments of the component parts. Although the builders had already noticed these during the construction, they did not correct them but sought to solve the errors by resorting to a few compromises. For example, the stomion and the dromos were not built on the median axis with the ideal center of the

[42] «...Era evidente che la tomba era stata violata, depredata e devastata, e si può supporre che i violatori si siano introdotti nella camera attraverso lo squarcio praticato nel lato sud del muro perimetrale quando la copertura era ancora in posto; il piano del crollo di pietrame coincide infatti con la base dello squarcio e l'ingresso fu trovato ancora chiuso» (G. Rizza, Notebook I, 1969-1970, 119, 130-132).

[43] Inside the chamber, in the first m 0.20 of the soil deposit above the rock, a number of objects were found, the location of which is documented on the plan (see Fig. 12). Several remains of weapons (the handles of three daggers, spear and javelin shafts, 11 fragments of dagger blades) were collected from the same deposit. It is likely that most of the metal objects in the chamber were taken by the robbers. The material found can be dated between the PG and PAR periods.

[44] The misalignment of the N and S terminals is not the only planning error. The chamber is actually slightly flattened at the sections on the SW-NE axis, resulting in some variability in the size of the internal diameter (between m 3.70 and 3.80). Perhaps as a result of this distortion, the profile of the facing masonry appears slightly more sloping to the right than to the left in the survey section (see Fig. 14), which was drawn exactly on this line.

Fig. 13. View of T. F after the excavation. The offset of the southern end of the enclosure wall is accentuated by the rotation and misalignment of the stomion (© Archivi SAIA, U/13471).

chamber [45]: the stomion is rotated about 8° off the median axis of the facing wall, and the axis of the dromos is oriented 109° SE. The stomion is m 1.05 wide and is flanked by two large vertical slabs, m 0.12 in thickness, which act as jambs (Figs. 12-13) [46].

These side-slabs were positioned to reduce, at least visually, both the misalignment of the line of the chamber walls at the doorway and the rotation off line of the stomion. The floor slabs of the threshold were also arranged in such a way as to adapt to the misalignment of the jambs [47]. The perimeter wall is made of limestone blocks arranged in rows, dry laid, with staggered vertical joints and a slight but progressive overhang. This overhang can be estimated at around 10 centimeters in 1 meter's height. The surface is less regular in some places, due to the presence of infilling wedges and variations in the inclination and height of the blocks within the same row, especially in the section of the wall opposite the entrance (Fig. 14). On the basis of the 1970 drawn documentation, it can be also concluded that the facing wall had a thickness of about m 0.20/0.25, and the size of the blocks in cross-section varies from m 0.20x0.20 to a maximum of m 0.25x0.30, with a length of between m 0.20 and 0.50.

The surface is preserved for an average of five rows, except in two places: on the north-eastern side, where there are up to seven, attaining a maximum height from the ground of m 1.50, and on the southern side, where, as already mentioned, the breach in the masonry had left only the first three rows of the wall in place. The dromos, m 1.15 wide and about m 4.80 long, was dug into the slope and slightly inclined down towards the chamber; it had no traces of lining along its walls. The entrance to the dromos must have been

[45] By extending the central axis of the dromos, an eccentricity of about m 0.43 can be measured in relation to the center of the tomb. For the realisation of the radial dromos, see Wilkie 1992, 231.

[46] The jambs measure m 0.43 (N) and m 0.52 (S) in length and are preserved in height for about m 0.96. We have no certainty about the original dimensions of the jambs and lintel, but given the height and size of the preserved rows just beyond the N side of the door (see Fig. 3), it seems reasonable to assume a thickness of m 0.18-0.20 for the lintel and a clear height at its intrados of m 1.05, *i.e.* equal to the width of the stomion. The perfect verticality of the jambs also rules out the possibility of the stomion tapering to its top there.

[47] A m 0.40 wide slab covering the entire width of the stomion was aligned with the left edge of the northern jamb. Towards the interior of the chamber, a second m 0.48 wide slab, divided into two sections, was aligned with the southern end and recessed by approximately m 0.30 with respect to the northern end. The lengths of the two sections are m 0.76 and m 0.48 respectively.

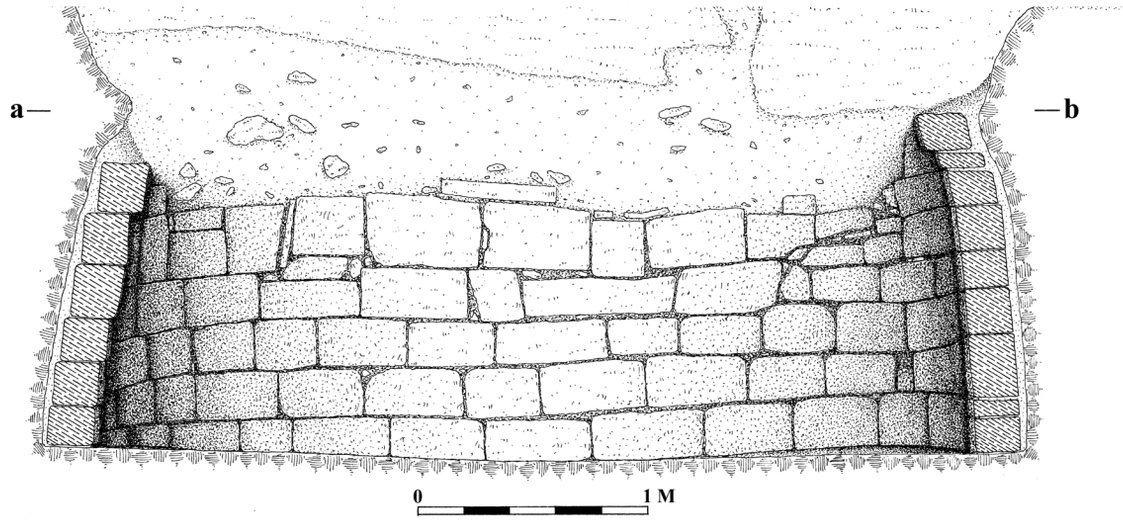


Fig. 14. Survey section drawn with SW-NE orientation. Some irregularities in the placement of the facing rows are documented, and the parts of the facing shown in the section on the left and right have a different "slope" profile (drawing R. Simoncini; © Archivi SAIA, NIG 8601).

at ground level [48] and its walls rose progressively to a height of about m 2.00 or slightly more, until they reached the outside face of the tomb wall. This last was set directly on the lintel of the stomion, in order to contain the soil above. This type of dromos is one of the elements that distinguishes F from the other tombs with a stone-lined chamber documented in the necropolis of Siderospilia [49], and excavated along the eastern and southern edges of the north-eastern hill [50]. It is likely that the number of tombs of this type at Siderospilia was originally much higher, since a significant part of the necropolis was certainly destroyed during the construction of the Prinias-Asites road in the late 1950s (Fig. 15a-b) [51].

The chamber dug deep into the ground and the presence of a long dromos represent important points of similarity with the Mycenaean tholos of the Late Bronze Age [52] and distinguish it from the so-called Mesara type, which is widely documented in Minoan Crete [53]. However, as far as the covering of the chamber is concerned, it shares with both the types the system of roofing in horizontal planes and progressively protruding rows, also known as corbelling [54]. In fact, the thickness of the covering masonry documented in F is rather reduced (at most m 0.25) and, even considering that the chamber was totally underground, was unsuitable for the construction of a structure whose roof exerted a sideways thrust. On the contrary, a so-called pseudo-dome structure, with an adequate load distribution and predominantly compressive stresses, would have been able to maintain equilibrium, and easily absorb horizontal thrusts, aided by the supportive presence of the excavation pit. In Crete [55], the tholos type is adopted in the Late Bronze Age, but it remained in use for a long time, until the Early Iron Age. It is almost always reinterpreted, producing local forms by mixing with it elements of different origins, often resulting in hybrids. For this reason, we will define the term tholos as proposed by Pelon in 1976 [56], whose classification we will also adopt [57].

[48] The dromos, from its mouth to its end, is on a gentle slope that, according to the reconstruction of the topographical layout of the area before the construction of the road, would be between m 630 and 632 a.s.l.

[49] The layout of the dromos, with an almost level entrance and walls set deep into the slope, is immediately reminiscent of the Late Bronze Age tholos type, which is widespread mainly on the continent but is also present in Crete, where, when adopted, it is almost always reinterpreted in a local manner.

[50] In all, there are about ten tombs with circular, ovoid and even trapezoidal ground plans, all with dromos and of varying sizes, among which F stands out for its size and quality of construction.

[51] The topographical analysis carried out in the area suggests that the road was built by cutting through the area on a natural slope between m 632 and 630 a.s.l., precisely on the slope where other chamber tombs and perhaps other tholoi may have been located.

[52] For an analytical and technical-constructive approach to the study of Mycenaean tholos (and in particular the so-called Treasure of Atreus), see the important study by Como 2007.

[53] For a catalogue of Minoan tholoi, see Goodison-Guarita 2005.

[54] On how corbelling works and the technical-practical solution for setting up a false dome, see Cavanagh-Laxton 1981.

[55] See Belli 1991, 427.

[56] Pelon 1976, 154. He proposes the division of the tholoi into three homogeneous groups, which are chronologically comparable and can be used to trace the progressive evolution of the architectural type from a technical-constructive point of view. For Pelon, the diameter of the chamber is an important indicator of the technical, economic and creative capacity that gradually developed to produce the most monumental examples of this architectural type.

[57] Classification of tholoi according to diameter: Class A (diam. up to m 6.00), Class B (diam. between m 6.00 and 10.00), Class C (diam. over m 10.00).

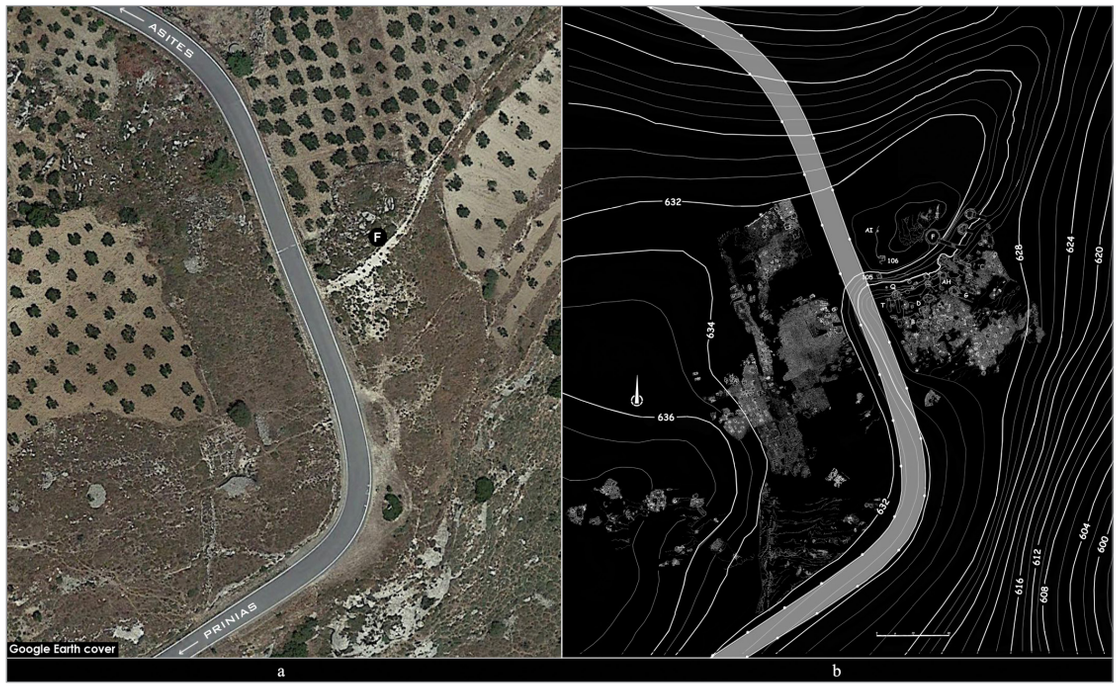


Fig. 15. The necropolis of Siderospilia. a) Google Earth image of the area and location of the tholos F (detail of © Archivi SAIA, U/13466); b) hypothesis of the topographical layout of the site in antiquity and superimposition of the Prinias-Asites road layout carried out in 1959 (drawing B. Salmeri *et alii*, rev. by S. Rizza; © Archivi SAIA, NIG 8675).

T. F of Prinias can be compared with some tholoi of the Iron Age (of the PG period), excavated in Crete in the 20th c. [58]. These include a tholos with an underground chamber, near Skouriasmenos (Kavousi), investigated by Boyd in 1900 [59], the Rho tomb at Arkades [60], excavated by Levi in 1927 and defined by Belli as «the almost perfect reproduction of a Mycenaean type tholos» [61], with a chamber of an irregular circular shape (m 3.57x3.75) set deep in the slope, the Tholos at the Agricultural School (Gortyn) [62], built in an isolated position, with a diam. of m 2.70, a chamber height of m 3.00 and a false dome. Finally, another underground tholos, with a short access dromos and a false dome, was discovered in 1993 not far from Aghios Ioannis (Poroi) in an isolated position [63]. The discovery of PG pottery in the tomb and its immediate surroundings confirms the dating to the full Protogeometric period [64].

3.3 Tomb F: reconstruction hypothesis

The abovementioned characteristics distinguish T. F from all the other built tombs in Siderospilia, although it shares with them certain elements that are obviously part of the local building tradition, such as the unlined dromos, and the stomion which is always made with a monolithic threshold, jambs and lintel. The inclination of the inner facing wall is more pronounced and presupposes the existence of a vaulted roof. The diameter of the pit within which it was built could not have been less than m 4.80, taking into account the internal dimensions of the chamber. The shaft was sunk well into the hillside to a depth of about m 3.00, and had straight sides. The excavation method used for the pit was different from that of continental tholoi where the dome had to be entirely contained within the slope of the land and the height of the pit had therefore to be greater than the maximum height of the stones of the dome (Fig. 16). When the lie of the land was not sufficient to guarantee an excavation of more or less 40% of the total height of the chamber, or when the slope of the ground made it difficult to construct the mound above it, ad hoc construction methods were resorted to [65]. In the case of the Prinias T. F, the chamber was completely

[58] For a list, see Eaby 2009.

[59] Boyd 1901; Eaby 2007, 55.

[60] Levi 1927-1929, 202-304; Eaby 2007, 116.

[61] Belli 1991, 444.

[62] Eaby 2007, 96-97; Anzalone 2015, 88, with bibliography.

[63] Cucuzza 2005, 292.

[64] See Biondi 2019, *passim*, figs. 1, 11, 13.

[65] At Thorikos, for example, a masonry "shoulder" was built on the downstream side of the slope for the construction of Tholos B, to give the excavation pit more depth (Como 2007, 49-50, with bibliography).

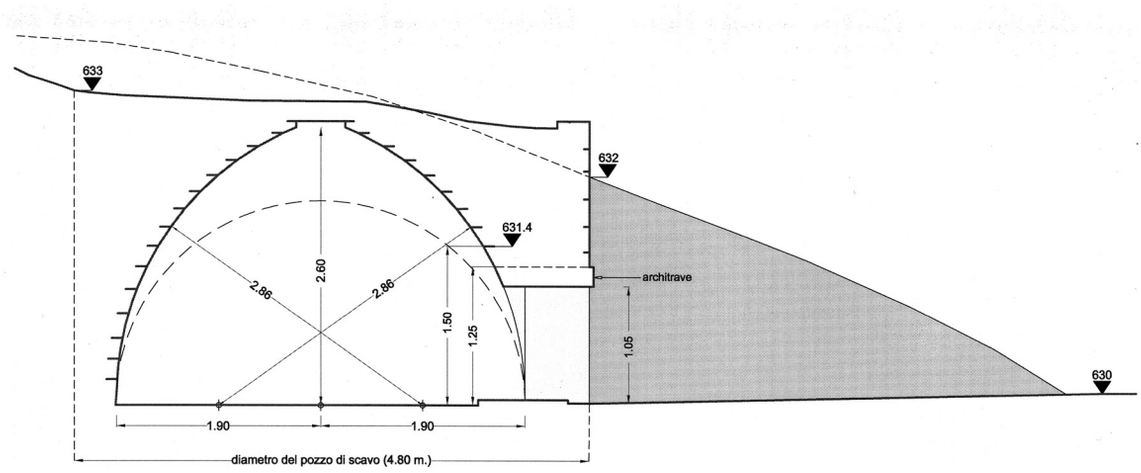


Fig. 16. T. F. Reconstruction hypothesis (drawing S. Rizza; © Archivi SAIA, NIG 8602).

underground. Furthermore, the profile of the dome was much less sloping than the continental examples. The ratio of diameter to internal height of the most representative continental tholoi ranges from 0.9 to 1.09. In these tholoi, the profile of the dome has a constant curvature in the first section (up to the height of the lintel) and then is much more steeply sloped above this height [66]. For T. F, such complexity is unthinkable. Taking into account the nature of the site, and estimating the height available for the installation of the chamber at just over m 3.00, we can assume that the profile of the dome is not particularly sloped, although the dome itself is not really depressed (Fig. 16).

Although it is difficult to reconstruct the construction sequence of dromos, stomion and excavation pit, we do know that the stomion was a very simple element, consisting of a "trilithon" of small dimensions (m 1.05x1.05). It allowed easy access from the dromos and its dimensions were suitable for supporting the load of the masonry above it. In large monumental tholoi, the stomion could play such an important static role that it was built after the dromos but before the excavation pit. For the T. F, I suppose that the pit and the dromos were built together and that the stomion was built at the same time as the lining and creation of the chamber.

The reconstruction hypothesis for the roof of T. F is that of a false dome whose building blocks are always arranged in horizontal courses. Balance is ensured by the presence of only vertical loads, and the dome is comparable to a structure composed of false arches. Such a structure resists stress "by shape" [67] and the pressure curve must be contained within its mean area [68].

In order to verify the compatibility of the hypothetical profile for the pseudo-dome and its stability, a series of tests were carried out under different loading conditions. The hypothesis of a real mound was discarded *a priori*, which in this case is considered incompatible for the reasons already explained above regarding the topography of the area and the position of the chamber in relation to the natural slope. In order to test the stability conditions of the hypothetical structure, a double check was carried out based on the false dome model and the dome-shell model [69]. The configuration of the dome to be verified includes 6 rows up to the lintel height and 10 rows from the lintel to the apex, with proportionally decreasing thicknesses to the blocks. The dome was divided into 24 segments, with the section to be verified being a meridian slices with an angular width of 15° (Tab. 2). For the sake of simplicity, the rows of the dome are considered to be monolithic. The load analysis has also taken into account the effect of the soil covering the dome. A specific weight of kg/m^3 2200 was assumed for the stone material (soft limestone) and kg/m^3 2000 for the soil (earth and breccia).

The check allowed one to calculate stabilizing and overturning moments for all the rows between the 7th and the 16th ("out of shaft" rows), and to extract, from the safety coefficients (Ms/Mr) for each single row (Tab. 2). The results show a substantially balanced situation of the dome with an overall safety factor

[66] See Como 2007, 34, 114.

[67] This behaviour is comparable to that of a shell or membrane.

[68] Heyman 1982, 34.

[69] The false dome model predicts that the equilibrium of the structure is only guaranteed if each meridian segment is able to support itself. The second, which is solved by a drawing on paper, makes it possible to determine the values of the expulsion thrusts and is extended to all the rows from the floor to the apex of the vault.

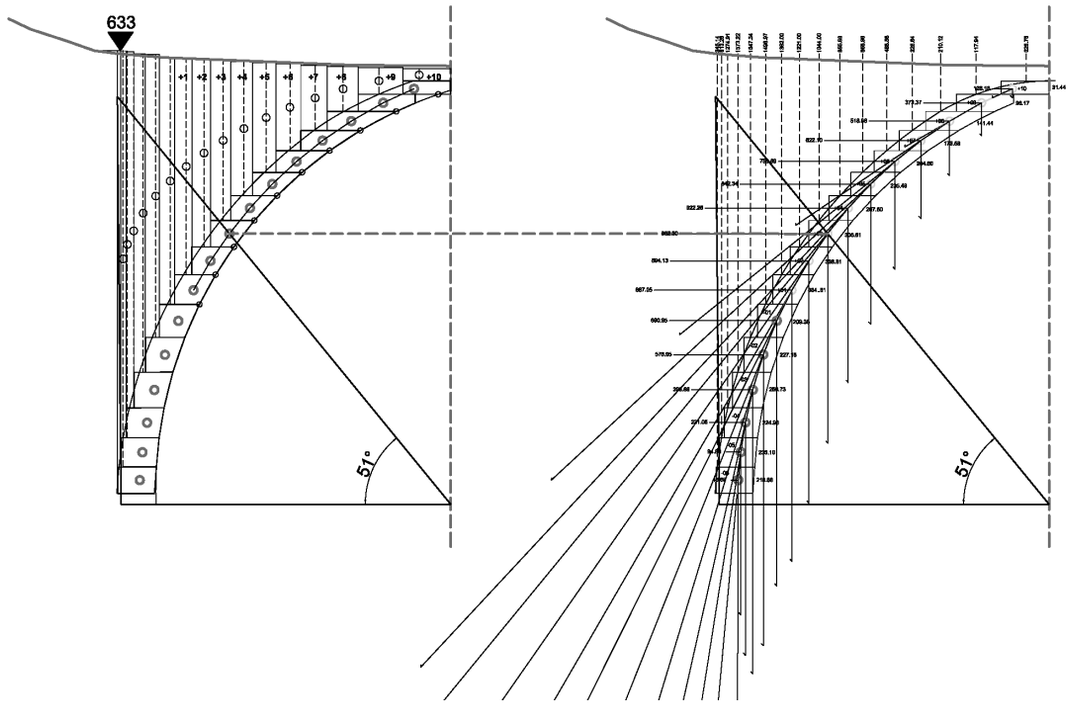


Fig. 17. T. F. Verification according to the two geometric models: false dome and cupola (drawing S. Rizza; © Archivi SAIA, NIG 8625).

of 4.11. The lowest value, slightly less than 1, relates to the bed of the 3rd row outside the excavation pit. This condition is also confirmed by the static graphic verification which shows the maximum value of the horizontal thrust (51° of colatitude) precisely at that point (Fig. 17). The tests also confirm the positive contribution to stability made by the presence of the ground around and soil above, especially on the perimeter of the dome where it is in contact with the sides of the excavation pit. Finally, the fact that the structure of the tomb was entirely contained within the excavation pit provided greater resistance to horizontal shocks and was a further guarantee of the equilibrium of the structure.

Salvatore Rizza

	Loads on the sixteen rows. Meridian slices with 15° amplitude				
	row	**masonry-weight**	**soil-weight**	**total load**	**graphic scale**
+	10	31.11	26.76	58.2	5.82
+	9	96.17	117.94	214.11	21.41
+	8	141.44	210.12	351.56	31.156
+	7	173.58	328.64	502.22	50.22
+	6	204.6	488.58	693.18	69.318
+	5	235.49	666.98	902.47	90.247
+	4	267.5	855.89	1123.39	112.339
+	3	305.61	1044	1349.61	134.961
+	2	338.81	1221	1559.81	155.981
+	1	384.61	1362	1746.61	174661
-	1	209.35	1498.97	1708.32	170.832
-	2	227.18	1647.34	1874.52	187.452
-	3	256.73	1573.22	1829.95	182.995
-	4	224.98	1274.91	1499.89	149.989
-	5	235.1	813.26	1048.36	104.836
-	6	218.88	345.14	564.02	56.402

Tab. 2. Table summarizing the loads relative to the dead load of the masonry for each of the 16 assumed rows and the soil bearing on them.

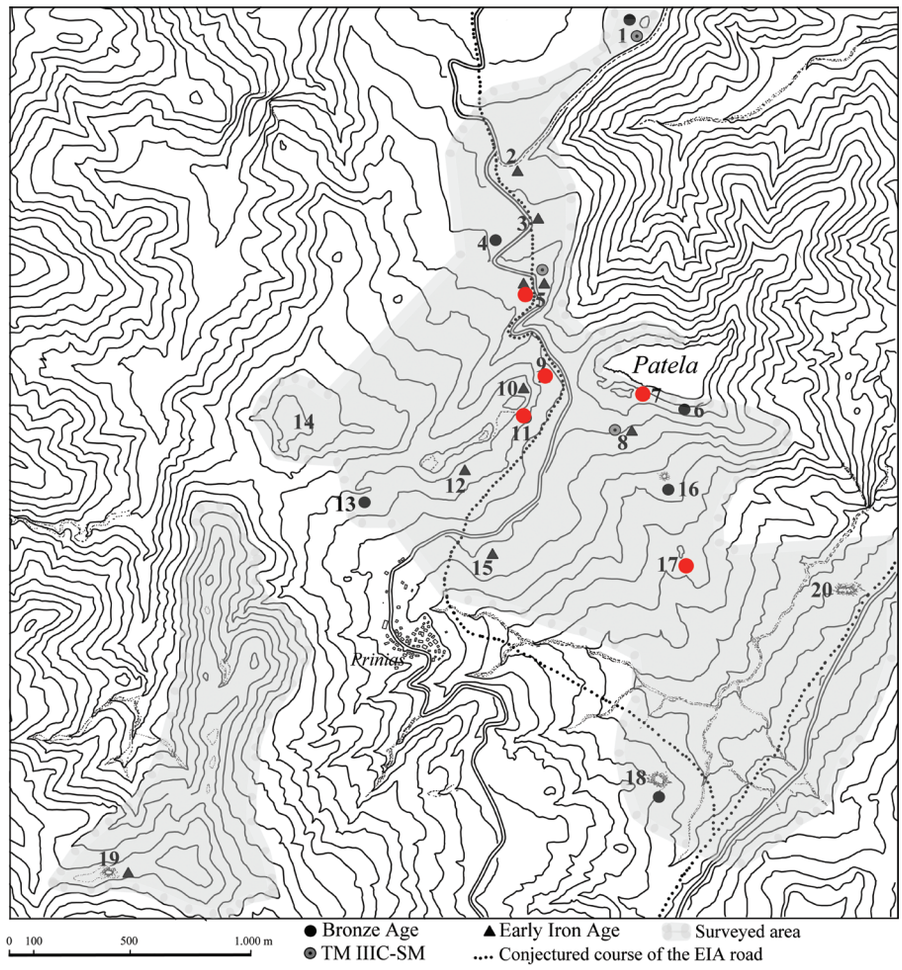


Fig. 18. Late Bronze-Early Iron Age sites and find-spots in the territory surrounding Prinias (after Biondi 2015; © Archivi SAIA, NIG 8676).

4. The first phase of the necropolis (11th - first half of 9th c. BC)

4.1 The necropolis in the Subminoan phase

The rise of the settlement on the Patela hill near Prinias takes place in the middle of the LM IIIC period (1150-1100 BC), when the political geography of Crete was changed profoundly [70]. After the intense occupation of the interior regions that had characterized the island since the end of LM IIIB, in the middle of LM IIIC new settlements arise, some of which reached a high degree of complexity both in the social organization, as well as in the codification of the cult and of the funerary customs.

The first phase of the settlement's life is represented by a fragmentary but significant body of evidence, consisting of pottery found in the LM IIIC layers identified in the area of Temple A and the monumental building to the S of the building B, as well as fragments recovered from post-Minoan layers [71].

A considerable number of votives, found at the eastern edge of the settlement and elsewhere on the Patela, complete the framework of the LM IIIC evidence on the site and allow it to be fully included among the centers active in the period, both for its ceramic production and for its cult organization. The cult environment on the Patela, in fact, is characterized by the presence of the statues with up-raised arms with their accompanying pottery sets, but also by figurines of animals and fantastic beings of the same

[70] The political and economic transformation which affected the island of Crete involved every ambit (Perna 2009): settlement patterns (Nowicki 2000; Borgna 2003), religious habits (D'Agata 2001; Gaignerot-Driessen 2014), funerary customs (Eaby 2007; Perna 2011b).

[71] Rizza 2008, 296-298, figs. 114-116; Perna 2011a; Palermo *et alii* 2017, 469-476 [K. Perna].

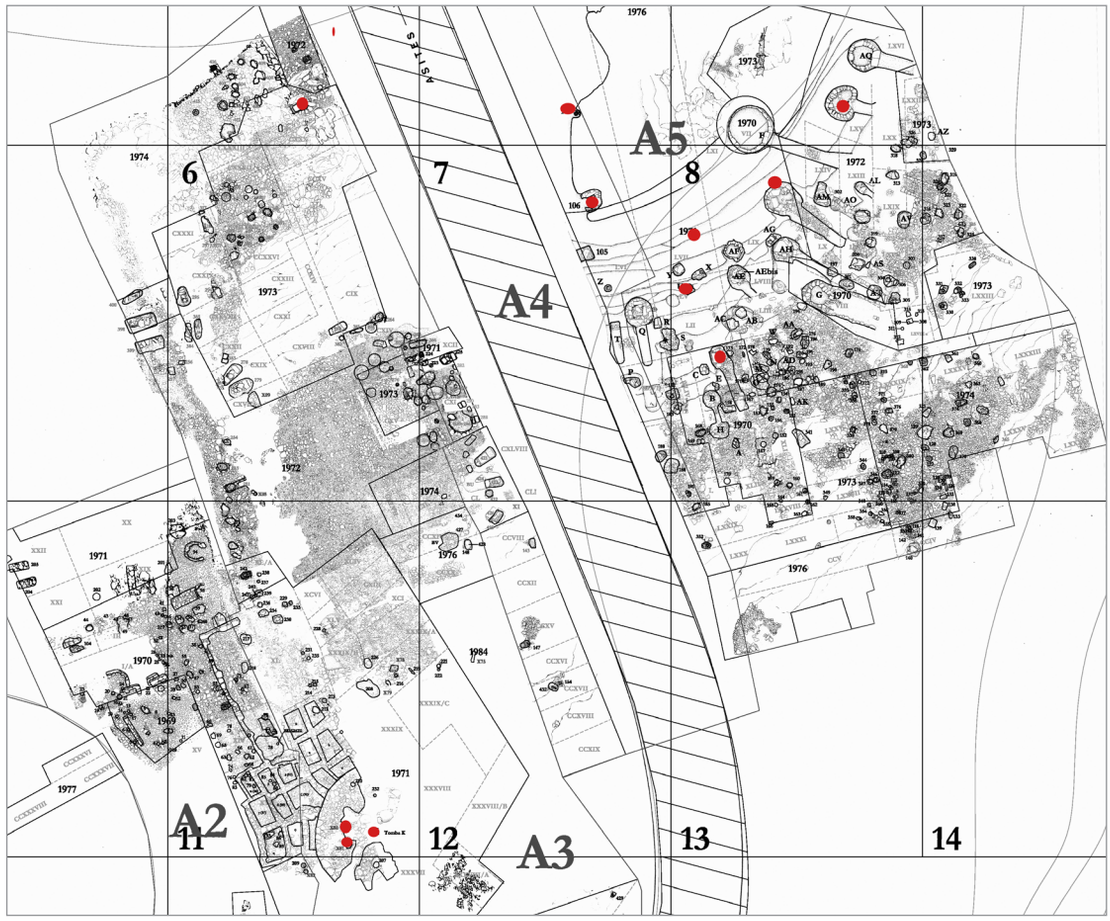


Fig. 19. Tombs with SM materials (© Archivi SAIA, NIG 8603).

types attested elsewhere in such similar contexts as the sanctuary at Haghia Triada and the sacred cave at Patsos. This co-presence testifies the receptivity of Prinias to stimuli that appear to be outcomes of new and different cultural processes [72].

The necropolis of Siderospilia was exploited from Subminoan period (1070/1050 - 970 BC) [73]. It is the main burial site of the settlement, although probably not the only one: a chamber tomb on the southern slope of the Patela hill (Fig. 18, No. 7) and a tholos tomb in the location of Ammoudara (Fig. 18, No. 17), even further S, testify to the existence of other burials sites in the area (Fig. 18) [74]. Furthermore, some other vases could have belonged to funerary contexts, as their size, type and state of conservation suggest. They consist of a small stirrup jar and a belly-handled amphora, found together during agricultural works in the Korakia district (Fig. 18, No. 11), about m 100 from the ProtoArchaic pottery workshop at Mandra di Gipari [75]. The stirrup jar was found resting on the mouth of the amphora, acting as a lid. The first vessel can be dated between the end of the LM IIIC and the SM period, while the belly-handled amphora can be dated to SM/PG. A similar stirrup jar was found in Mandra di Gipari (Fig. 18, No. 9), nearby the ProtoArchaic workshop, together with a krateriskos and an amphora [76], which D. Palermo dates in the PG period. It is therefore possible that the area around the Mandra di Gipari, at the W of the Patela, was occupied by tombs contemporary with the earliest ones of Siderospilia [77].

The rise of the necropolis of Siderospilia (Fig. 19) appears as the conscious act of a community in formation, with specific needs and manners in how it expressed itself, the same ones in fact that seem to emerge in other coeval necropoleis [78].

[72] Palermo 1999; Perna 2015b; 2018a; 2018b.

[73] The identification of the Subminoan as a chronological phase has long been the subject of debate. In this regard, please refer to the considerations made in *Ead*. 2015a, 262.

[74] Biondi 2015.

[75] Perna 2020, 271, fig. 2.

[76] Palermo 1992, 30-31, fig. 5.

[77] Perna 2020, 271.

[78] For an overview of the LM IIIC/SM Cretan necropoleis, see Perna 2011b.

As in other Aegean necropoleis, at Siderospilia two types of tombs coexist – pit tombs and chamber tombs – and two different rites were adopted cremation and inhumation. In addition, some tombs contained precious objects and weapons.

There are not separate sectors identified for specific types of tombs, but a nucleus of the earliest tombs in the cemetery was placed in a "monumental" structure and can thus be distinguished from the other burials. It seems that among the people who first exploited the burial site one group decided to set their members apart. The same thing happened at much the same time in the North Cemetery of Knossos (see the TT. 200-202) [79].

Therefore, since its first exploitation, the necropolis of Siderospilia appears receptive to cultural stimuli seen across the island and more generally the Aegean, even though employing local ways of expression too.

4.1.1 Pit tombs

The earliest tombs in the necropolis belong to this type, which continues in use during PG; they all contain cremations. These ovoid-shaped pits are dug into the rock, closed by carefully prepared stone slabs.

This type of tomb does not fit into the traditional burial background of the island and, although it can be conceptually linked to the Mycenaean shaft graves, it appears as a novelty in this period.

The first group of burials was located in the south-western sector of the necropolis, in an apparently isolated position. The TT. K, 207 and 232, in fact, were found inside an area delimited by a semicircular wall and covered with stones (Fig. 20a). The structure was considered by G. Rizza, who discovered it, to be the retaining wall of a tumulus [80].

Its purpose seems to have been intended to identify some individuals and/or their group, but also to concretely mark the first occupation of the area for a funeral purpose.

The tombs were dug into the rocky surface on which the circular enclosure is set up. The tomb K occupied the central position in the area and was covered by a well-worked stone slab. It contained a cremated individual, a stirrup jar and two pins. The stirrup jar inv. P 341 is the oldest one in the necropolis [81]. It has a globular body, tapered towards the bottom, with a pronounced shoulder and a low foot with an oblique profile. The decoration extends towards the belly; it is typical of late LM IIIC period: triangles with concave sides, some of which are filled with three vertical lines, alternate with an oval motive. The oval motives, as well as the three wavy lines on the upper part of the handle, recur on other stirrup jars found in some chamber tombs of the necropolis (Fig. 20b).

Further S of T. K, was the T. 207; it is emphasized by a low circular wall, which surrounded a large pit filled by stones [82]. At its bottom there was a smaller pit tomb, closed by a stone slab. It contained just the remains of a cremation. Indeed, the only vessel probably connected to the tomb was a stirrup jar, found together with animal bones and charcoal over the slab, inside the larger pit. Its shape is very similar to the stirrup jar inv. P 341, but its decoration has completely vanished (Fig. 21).

The other pit tombs were identified about m 70 N of the tumulus, in the north-eastern sector of the necropolis, where most of the chamber tombs were located. The T. BA (Fig. 22a-b) was the richest one in this phase. It is an ovoid pit dug into the rock and closed by a slab, carefully worked on its lower part – where an artificial concavity presents the same diameter as the mouth of the pit – and contained a cremated individual.

Weapons (spearheads and daggers) were laid on the bottom of the pit together with an axe, a whetstone and a gold foil piece with the representation of a "flower of life" (inv. P 514), a type widespread in the Aegean world [83]. A jug with a trilobed mouth (inv. P 2173) and a stirrup jar (inv. P 2172) were located among the bones, while a Cypriot bronze basin [84] and a stirrup jar, placed upside down, were placed in last. The vases of T. BA, at first dated to LM IIIC [85], are better placed in the SM period [86] (Fig. 22c).

The jug inv. P 2173 is decorated on the shoulder with a series of multilinear zig-zags. The shape is identical to some LM IIIC/SM jugs with engraved and painted decoration, produced in Crete [87] and also exported to

[79] Coldstream-Catling 1996a, 191-195.
[80] For the tumulus, see *supra*, Rizza, 519, fn. 25.
[81] Perna 2020, fig. 5.
[82] Rizza 1996, 1102, 1105. Kanta considers it a smaller tumulus incorporated into a bigger one (Kanta 2001, 19).
[83] Gigli Patanè 2020, 294, fig. 3.
[84] Matthäus 2016a, 185; 2019, 9-10, fig. 14; *infra*, *Id.*, 564.
[85] Rizza 2011b.
[86] Perna 2015a, 266-267.
[87] Σταμπολιδης-Καρετσου 1998, 74, No. 40 [Α. Καρέτσου].

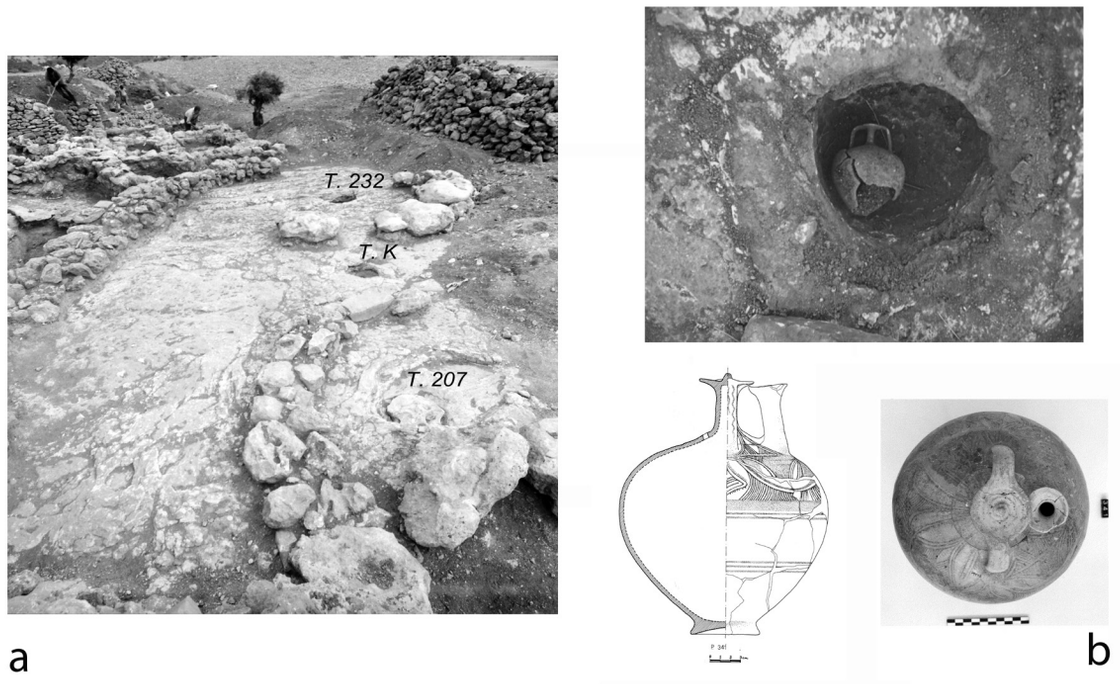


Fig. 20. a) TT. K, 207 e 232 (© Archivi SAIA, U/13506); b) T. K (© Archivi SAIA, U/13507); stirrup jar inv. P 341 (© Archivi SAIA, NIG 8616; U/13499).

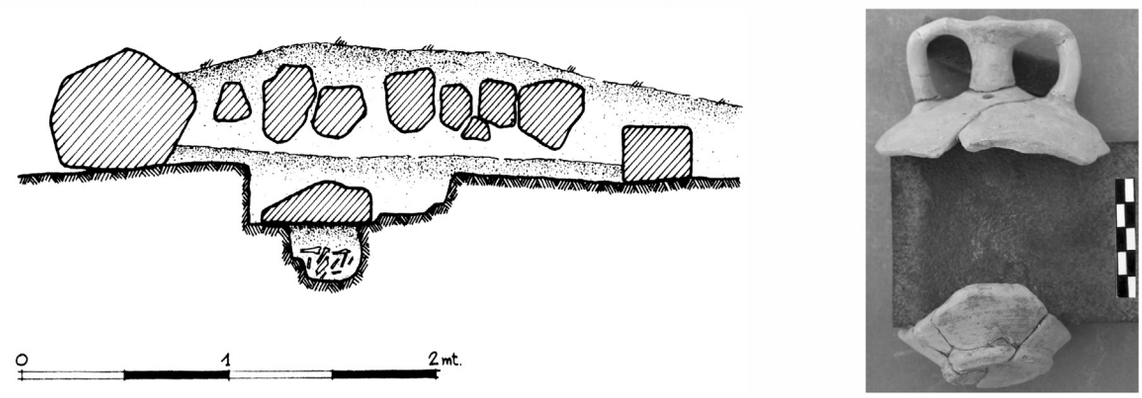


Fig. 21. T. 207 (© Archivi SAIA, NIG 8619); stirrup jar inv. P 4017 (© Archivi SAIA, U/13505).

Cyprus. The specimens found at Karphì [88], Enkomi [89], and Arkadhes [90] are well known. Some sherds from vases of the same type, which are not manufactured locally, are also attested in the settlement on the Patela [91].

Therefore, the T. BA shows the salient features of the SM burials of contemporary Cretan centers: it is among the oldest tombs in a necropolis that will be used for a long time; it contains a cremation, weapons and valuable objects along with a Cypriot import. These characteristic combinations are found, for example, in the rich tombs of the North Cemetery of Knossos [92], Pantanassa [93], Tylissos Atzolou [94], and Archanes Kato Lakkos [95], but also turn up in other Aegean contexts [96].

[88] Seiradaki 1960, 14, fig. 9; Σταμπολιδης-Καρετσου 1998, 74, No. 38 [A. Καρέτσου].
[89] *Ibid*., 74, No. 39 [Π. Φουρεντίνος]. The vase is considered a Cretan import (Kanta-Karetsou 1998, 165).
[90] For the specimen from Karphi, see Day 2011a, 157-159, pl. 18e; for that from Arkadhes, see Σταμπολιδης-Καρετσου 1998, 74, No. 40 [A. Καρέτσου]; Perna 2019, figs. 5-6.
[91] Rizza 2008, 64, 128, pls. XXIII, OW 65, LXVII, A50, A53, A54 and A59; Palermo *et alii* 2017, 476 [K. Perna].
[92] See, above all, the TT. 186 and 200: Coldstream-Catling 1996a, 191-195; Catling 1996b, 646-648.
[93] Tegou 2001.
[94] Marinatos 1931.
[95] Sapouna Sakellarakis 1990, 75-76.
[96] Catling 1995.

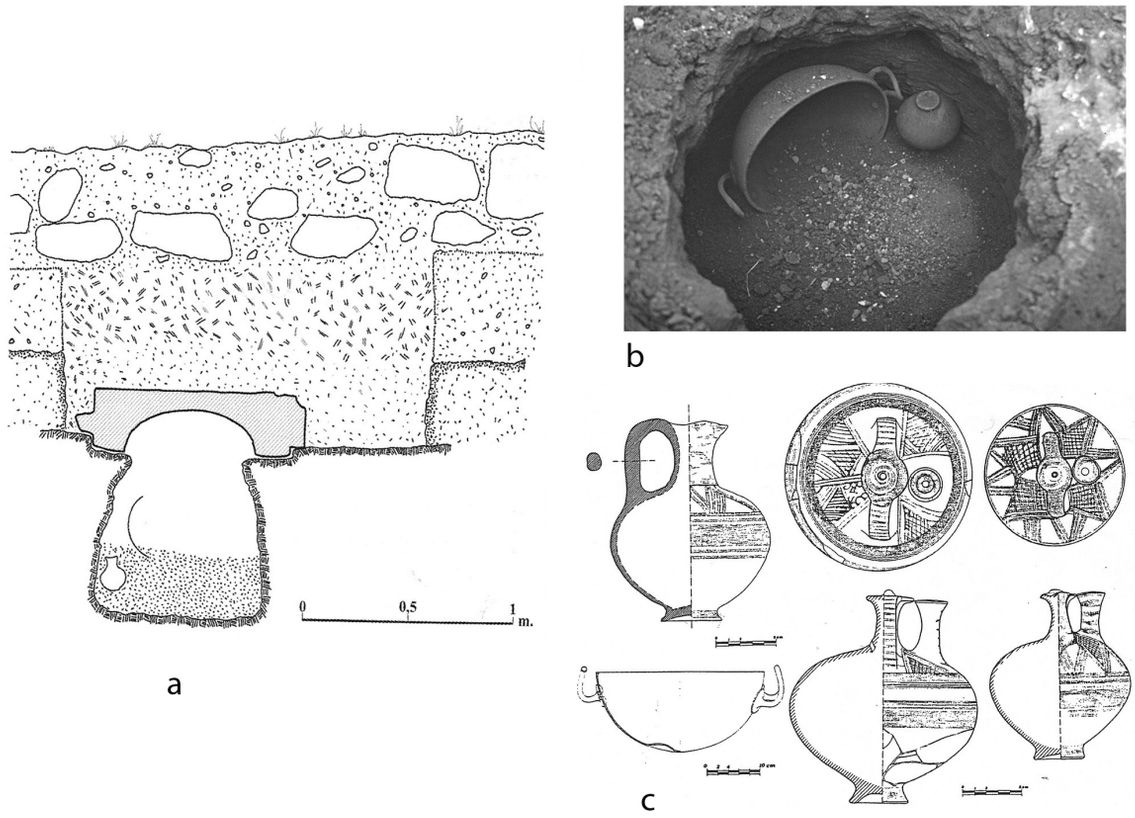


Fig. 22. T. BA: a) section (© Archivi SAIA, NIG 8621); b) the tomb during the excavation (© Archivi SAIA, U/13465); c) pottery assemblage and bronze bowl from the tomb (© Archivi SAIA, NIG 8590, 8594-8596).

The other SM or PG tombs containing cremations were simple pits, sometimes surrounded by carefully built enclosures (this is the case with the DD grave). They all contained an amphoriskos – decorated with zig-zag patterns or dashes [97] and/or a pseudo-dipped painted oinochoe. Along with the vases there were a few other objects, some in precious materials, such as the gold plaque from T. U, whose decoration (a cross motif inserted in a circle, in turn inserted in a square, with angles between the arms of the cross) confirms the existence of cross-Aegean relations [98].

4.1.2 The chamber tombs

The chamber tombs occupy the north-eastern area of the cemetery, near to some of the pit tombs described above.

With the exception of the T. 106 (in which a corpse accompanied by an amphoriskos was buried) [99], chamber tombs with sub-Minoan materials were used continuously until into PG.

Among these, the most interesting is certainly the T. D (Fig. 23a-b), where four inhumed people were buried [100]. The eastern part of the chamber was occupied by a stone sarcophagus, which was found open; the stone closing slab had collapsed over some vases. The sarcophagus contained a few human remains and three ornamental objects: an earring, a gold sheet and an amber necklace [101]. Above and around the sarcophagus the group of oldest vases was concentrated. They comprise a neck-handled amphora (inv. P 213), a type well attested in the Sub-Minoan period, similar in shape to some specimens from the North Cemetery of Knossos and from the settlement on the Patela [102]; the double wavy line on the neck is a motif peculiar on Cypriot amphorae and jugs between the end of the Mycenaean age and during the PG period [103].

[97] The vases are very similar to those of the same type found in the Spring Chamber at Knossos (Popham 1992, pl. 50.e).

[98] Gigli Patanè 2020, 295, fig. 6.

[99] The tomb, however, was intercepted and partially destroyed during the works for the construction of the Prinias-Asites road.

[100] Rizza 2011a, 31-32; Perna 2015a, 267.

[101] Gigli Patanè 2019, 3, fig. 2, 14, fig. 20.

[102] See in particular the amphora No. 16 found in T. 40 (Coldstream-Catling 1996a, 88, fig. 84).

[103] Karageorghis 1975, 21, pl. LXII; Kling 1989, 148.

Fig. 23. T. D: a) the interior of the tomb during the excavation (© Archivi SAIA, U/13508); b) a part of the pottery assemblage from the tomb (© Archivi SAIA, U/13500).

Next is a pyxis (inv. P 201) with the typical decoration of the period: a panel with a fringed checkerboard motif alternates with spaces occupied by triangles filled with network and linear motifs, which in some case resting on a triple arch; and finally a stirrup jar (inv. P 216) – found under the collapsed closing slab of stone – decorated, on the shoulder in the space opposite the spout, by adjacent triangles whose curved sides create an oval, filled with a scale motif.

The motif on inv. P 216 finds a precise comparison in the stirrup jar from a pit tomb at Tylissos Atzolou [104] and in the amphora inv. P 2734 from the PG chamber tomb AN of Siderospilia. The amphora inv. P 2734 shows a very elaborate decoration on the shoulders: triangles with curved sides create ovals, exactly as in the stirrup jar of T. D. On the handles, the amphora shows small hollows destined to contain little globular elements, probably of different materials, an additional decorative element attested occasionally in other handles from the necropolis [105], but also in a PG hydria from tomb VIII of Aghios Ioannis in Knossos [106].

[104] See *supra*, fn. 94.

[105] See the imported Knossian one Pautasso *et alii* 2021, cat. Nos. 25, 38, 51, fig. 48.

[106] Boardman 1960, 140; Coldstream 1996, 341.

4.1.3 Concluding remarks

The center on the Patela hill occupies a role by no means marginal in the central region of Crete. It arose in a strategic position and it is to be counted among those that now contributed – autonomously but within a network of relationships with other Aegean centers – to the creation of a new cultural climate [107], in which heterogeneous inputs often found a synthesis in the creation of a completely new iconography and stylistic approach, communicating novel coded messages [108].

This process is typical of a period of crisis, when the much increased mobility of the population and thereby the exchange of goods, ideas and knowledge perform a driving role in the defining of new balances and means of expression. Therefore, it affected all sectors of social life.

The outcome of these phenomena is the birth of mixed communities with people of different origins [109]; with this goes a marked propensity to elaborate, define and negotiate new ideological codes and strategies.

From this perspective, the analysis of the tombs of Siderospilia demonstrates that Prinias was affected by tensions of this type – an interesting point to observe.

Since its first phase of use, the necropolis of Siderospilia was characterized by non-homogeneous funerary customs, a mirror – perhaps in some cases distorting – of processes of formation and transformation involving the community and that was the outcome of strategies put in action by groups which represented the élite (or aspired to become such).

The introduction of cremation and the simultaneous use of different burial methods, associated with specific graves, offer multiple interpretations [110]. For long this habit has been considered as the cultural expression of different ethnic groups present in the social body, but this is an explanation that does not seem sufficient to explain the complexity of the Aegean funerary evidence of the period.

The LM IIIC/Subminoan is characterized by a fluid communication both between the centers of the central-northern region of Crete and between them and the rest of the Aegean. This is testified to by the regional circulation and sharing of decorative motifs and formal elements, both on pottery production and involving other artefacts [111]. This evidence is associated with the presence of imported objects among the grave goods, which allow us to reconstruct the network of relationships with which the center was involved [112].

Similar to what happens in other sites in the region, Cyprus emerges as a privileged partner also for Prinias, if we read aright the presence of Cypriot imports and the use of Cypriot shapes and decorative elements in the pottery and in the jewelry [113].

A *trait d'union* connects the Aegean necropoleis of the period. This consists of the adoption of new funerary practices and the celebration – within the same cemetery – of different burial rites, which outline the coexistence of different – if not conflicting – attitudes [114].

On the one hand, in fact, a sense of individuality prevails, as evidenced by the deposition of a cremated individual in a single tomb. This custom materializes a specific code of representation, which in some cases places emphasis either on the military sphere – through the deposition of weapons in the tombs – or on the economic one, through the sacrifice of valuables. It is a code already attested in the Mycenaean age, but which is now associated in this period with the choice of cremation [115]. However, many people still prefer inhumation and choose the more traditional method of multiple burials in chamber tombs.

There is no a great or significant economic difference between the two groups, even if more valuables were placed in chamber tombs, where though weapons seem to be absent in this phase.

The choice of different tombs and rites reflects the presence in the social body of groups that are protagonists in some strong social dialectic, probably involved in processes of élite formation. These dynamics are materialized both in the adherence to ideological codes shared at an interregional level and in the elaboration of communication strategies aimed at satisfying specific social needs at a local level.

[107] Biondi 2015.

[108] Perna 2015b; 2020.

[109] *Ead*. 2009 with previous bibliography.

[110] Important contributions on this topic in Σταμπολιδης 2001. Further references: Catling 1995; Ruppestein 2013 (but the scholar does not consider the cremations of Prinias in his work) and Perna 2011b.

[111] *Ead*. 2011a; 2015b.

[112] Matthäus 2016a; 2018; 2019; see *infra*, *Id*., 561-568.

[113] Perna 2020, 274; Gigli Patanè 2020.

[114] Dickinson 2006; Eaby 2007; Perna 2011b; Hatzaki-Keswani 2012.

[115] Catling 1995.

This competition triggered processes of redefinition and negotiation of traditions, ideas and customs and probably also influenced cult practices, as seems to be revealed in the analysis of the votive materials found on the Patela [116].

The necropolis of Siderospilia, therefore, reproduces the tensions, desires and strategies of the living in the city of the dead, with a plurality of outcomes inevitably produced by the cultural encounters that were creating a new world.

Katia Perna

4.2 The necropolis in the Protogeometric (PG) period

The burials containing PG material – 970-840 BC – are concentrated in a rocky outcrop in the north-eastern quadrant of the cemetery of Siderospilia (Fig. 24) [117]. As in the previous 11th c. [118], two rites are attested: secondary remains of incinerations in individual pit tombs and collective inhumations in built chamber tombs [119]. Some of the latter had been constructed as early as the 11th c. (SM) and not all of them were abandoned after the end of the PG. From the second half of the 9th c. BC (PGB) onwards a layer of stones of various size and shapes progressively overlapped the necropolis area and some of the earlier tombs [120]. Such a layer distinguishes the first from the second phase of the necropolis, when the stones surrounded and covered cinerary urns and collective pithos burials, mostly of inhumed infants.

Some chamber tombs – D, AM, AQ – contained only inhumed remains, others – J, Q, AH, AN – also incinerated remains. Two – J and Q – contained some already skeletonized bones later exposed to fire [121], probably as a result of ritual fumigations in the tomb.

As in mainland Greece [122], some urns contained bones of cremated animals which had been presumably burned together with the deceased [123]. In the chamber tombs, on the other hand, unburned animal bones were found [124]. Remains of animals inside chamber tombs have been found elsewhere in Early Iron Age Crete: in Karphi (LM IIIC - EPG) [125], Kavousi Vrondà (PG) [126], Vrokastro (G?) [127], and Afrati-Arkades (G?) [128]. In the last site, moreover, a deposition of snails («una quantità straordinaria di chiocciole») [129] related to a pithos burial corresponds to the similar snail deposition of Siderospilia (trench XIV) [130].

Horses and dogs were also buried separately from the humans: about twenty burials of such animals were found below the layer of stones of the second phase [131]. Some burials contained only dogs, others only horses, still others both dogs and horses. The depositions could be both single and multiple, as well as primary or secondary [132]. Six of these burials were located on the southern slopes of the rocky outcrop of the Protogeometric necropolis (Fig. 24). The remaining ones were concentrated on the western edge of this area (Fig. 1).

As for their chronology, many have not yielded any element of dating other than that of being under the layer of stones of the second phase. A few others, however, contained datable material. The burial BR [133] yielded three PG ceramic fragments, which were found among the stone fill. A sherd from an early PG krater (Fig. 25) [134] was found in the soil that covered the so-called "Pit with the three horses" (Fig. 24.1). The eastern part of the same pit, with an anomalous L-shaped plan, was probably part of an

[116] In this regard, see what is emerging from the analysis of the LM IIIC/SM cult contexts of the Patela, in which one may perceive the echo of a dialectical relationship between different groups and a high degree of experimentation (Perna 2015b; 2018b).

[117] It is likely that the modern toponym of Siderospilia (the Iron Cave) derives from the discovery, in the past, of burials containing many iron weapons, such as those found in T. J.

[118] Perna 2020; see *supra*, *Ead.*, 529-536.

[119] See *supra*, Rizza, 519-528.

[120] Rizza 1983, 50. In fact, the vases of the earliest burials identified so far among the stones date back to this phase: *Id.* 1971, pl. X.3; Rizza-Rizzo 1984, fig. 475; Biondi 1994, 81.

[121] See *infra*, Mallegni, 571.

[122] Andronikos 1968, 84-85, 87-89; Kurtz-Boardman 1971, 66; Ruscillo 2017, 561.

[123] See *infra*, Wilkens, 574.

[124] Wilkens 2003, 88 and *infra*, 573-574.

[125] T. M16 contained bones from dog, sheep and ox; T. M17 contained bones of horse, sheep/goat and ox (Pendlebury *et alii* 1937/38, 107; Day 2011a, 237-240).

[126] Dog, fox (or marten) and donkey bones were in a pit under the tholos X (*Ead*. 1984).

[127] Remains of cattle were inside T. 2 (Hall 1914, 140).

[128] Remains of a bird in grave R and remains of cattle and pigs in graves A and B (Levi 1927-1929, 40, 180, 184).

[129] *Ibid.*, 383-384.

[130] See *infra*, Wilkens, 573 and the excavation journal of F. Giudice (July 21, 1973): «A nord delle tombe 61 e 62 è una grande fossa piena di gusci di lumache, parte dei quali sono stati raccolti in un sacchetto. Sono presenti pure sporadici frammenti».

[131] Rizza 1979; Rizza-Rizzo 1984, 247-248.

[132] Wilkens 2003, 88 and see *infra*, 574-576.

[133] Excavation journal of F. Giudice (August 2, 1973): «Tolte le pietre (della massicciata) si rinvengono numerose ossa di animali, alcuni frammenti ceramici e frammenti di carbone misti a terra giallastra».

[134] Biondi 2019, 7, fig. 10. The sherd of Fig. 26 (inv. P 363) was found «nell'interramento che colmava il lato E della fossa (dei tre cavalli) in mezzo al terreno biancastro sottostante alla massicciata» (Excavation journal of H. Anagnostou, July 30, 1971).

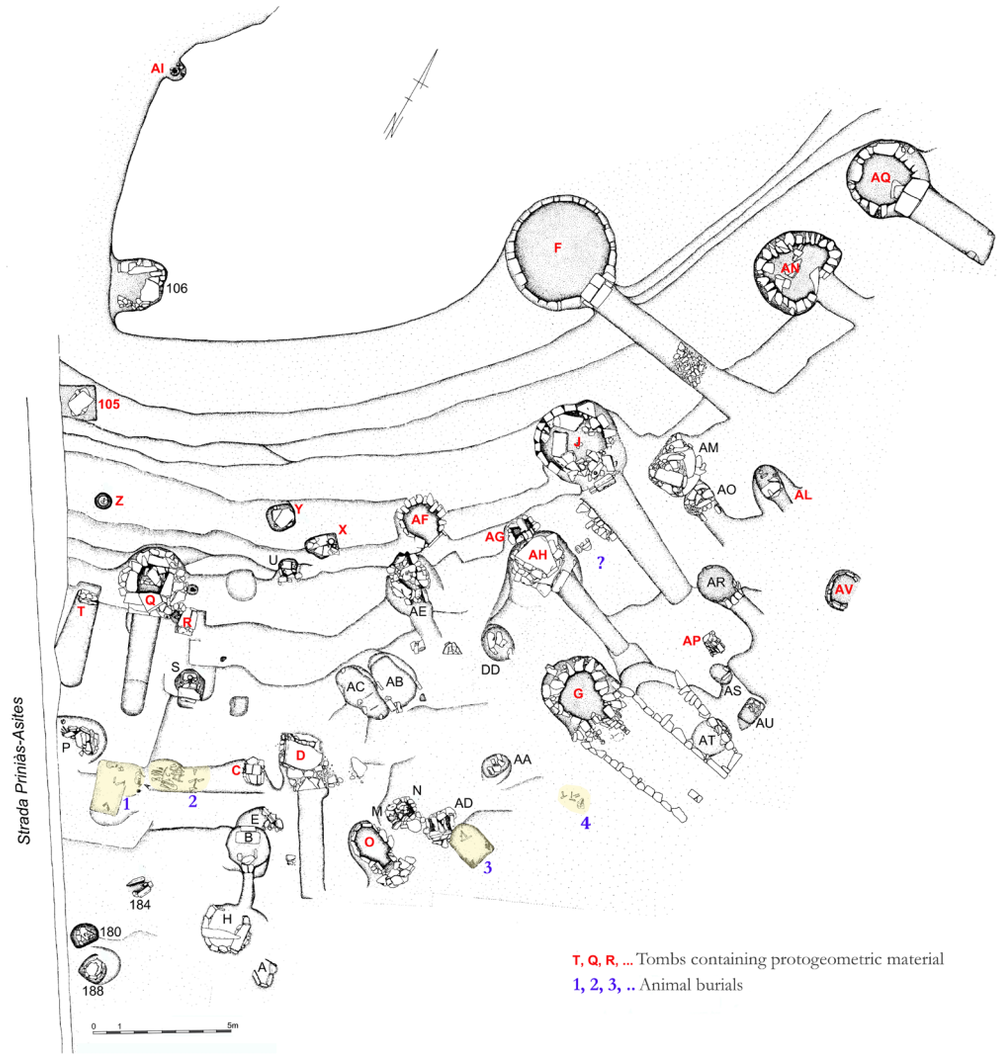


Fig. 24. Siderospilia. Map of the north-eastern quadrant of the cemetery under the second phase layer of stones (© Archivi SAIA, NIG 8604).

adjacent animal burial (Fig. 24.2) which had been excavated the previous year (1970). On the basis of the stratigraphical evidence, the latter is later than chamber tomb D, which was in use between the 11th and the beginning of the 10th c. BC, and earlier than the nearby so-called T. C, a sort of small cist built with stone slabs [135], inside which a bronze fibula (inv. P 192) dating back to the 10th-8th c. BC [136] was recovered.

In some burials items of horse-harness were deposited [137]. The cheek-pieces in many cases belong to the type VI (sub-type E) of the classification of H. Donder [138]. One of these (inv. P 900) was found in a stratigraphic context of the 10th c. BC [139] or better no later than the second half of the 9th c. BC, the so-called "fossa 152", as suggested by the presence of a sherd from a ribbed juglet (inv. P 2683) [140]. T. BB was a large circular pit dug out of the limestone rock (m 2.00 in diam. and m 1.85 deep), surrounded by an enclosure of stones. It was partially cut by a later tomb. Here were found the remains of many horses and of some dogs in a secondary deposition, a cheek-piece and an entire horse-bit (Fig. 51e-f) [141] whose cheek-pieces are of the same type as the one just mentioned. The pottery fragments found in the pit here are also PG (Fig. 26.1-6): among them are two fragments of an imported Attic belly-handled amphora with bucranium

[135] A similar cist-shaped structure is the so-called "Ripostiglio R" of the cemetery of Afrati-Arkades: Levi 1927-1929, 182, fig. 200.

[136] Sapouna Sakellarakis 1978, 49, cat. No. 191, pl. 6.

[137] Donder 1980, cat. No. 65, pl. 34; Rizza-Rizzo 1984, fig. 460; Matthäus 2019, 4-5, figs. 5-6.

[138] Donder 1980, 43-44, 130.

[139] According to Matthäus 2016a, 194.

[140] See Coldstream 2001, 61-63, pl. 31e-f and Biondi 2020, 279, fn. 20.

[141] Matthäus 2019, 4, fig. 5, and *infra*, 562.

Fig. 25. Sherd from an EPG krater (inv. P363) found in the soil which covered an animal burial (© Archivi SAIA, U/13472).

Fig. 26. Sherds found inside the animal burial BB (© Archivi SAIA, U/13473).

handles (Fig. 26.5-6). Their surface being entirely covered with black glaze allows us to date them between Attic EG I and MG I[142], *i.e.* to the 9th c. BC. Consequently, even such cheek-pieces can be considered as dating elements. Some animal burials, whose materials and related excavation documentation are in progress, contained PGB and G pottery sherds. Some of these, however, were damaged by tombs of the later Roman imperial age that were dug into them.

The earliest examples of horse inhumations date back to the Mycenaean world[143]. Dogs, from the same period, were generally placed inside the tombs together with human remains[144]. As regards the early Iron Age[145], graves exclusively intended for horses and dogs buried together in the same pit are

[142] See COLDSTREAM 1968, 8-21, pls. 1-3.

[143] Bibliography in CROUWEL 1981, 34; ANTIKAS 2005; TRANTALIDOU 2005, 30.

[144] ANDRONIKOS 1968, 87-88; DAY 1984; HAMILAKIS 2003, 243-244. See also TRANTALIDOU 2006.

[145] For later examples (Akanthos), see references in CHRYSOULAKI-PAPPAS 2022.

attested only in the North Cemetery of Knossos [146], where two horses and two dogs were buried in grave 79 and as many animals near the grave F [147]. Also in Crete, a dog was buried in connection with its presumed young master in the necropolis of Orthi Petra-Eleutherna [148]. A similar case is that of the dog buried inside a necked jar (vase No. 25) of the T. W [149]. The burial pithos of the same tomb contained the remains of at least eight infants [150]. It is the only case in Crete of a dog being buried inside a type of vessel usually meant to contain incinerated human remains. Horse burials (without dogs) are well known in various areas of the ancient world. As for Early Iron Age Greece, the best known example is that of the Toumba-Lefkandi PG pit with four horses in the Heroon building. This was adjacent to the pit containing the incinerated remains of a man and the skeleton of his presumed wife. Elsewhere in the building the possible remnants of a pyre yielded remains of dog bones. Furthermore, another burial with two horses was discovered in the same cemetery area [151]. Also in Eretria, in 1903, the skeleton of an equid («σκελετός ίππου») was identified among the G graves [152]. Other animal burials, in Greece, date after the 8th c. BC [153].

In many influential works concerning the presence of animals in Early Iron Age Greek cemeteries there is mentioned the well-known passage from the *Iliad* with the description of the funeral of Patroclus, on whose pyre, Achilles threw two slaughtered dogs, four horses and the bodies of twelve young Trojans killed on the spot [154]. According to L. Preston Day the dog and horse burials of Siderospilia and Knossos were the survival of a Mycenaean tradition and a practice very close to that described in the funeral of Patroclus. For that scholar, therefore, Homer may have described an actual Cretan burial practice (that probably had survived in a place other than Crete [155]). Since the cutting and collection of wood for the Patroclus' pyre took place under the guidance of the Cretan Meriones [156], N.Ch. Stampolidis also wonders whether the nucleus of the description of Patroclus' funeral originated in Crete [157]. In addition, A. Kotsonas hypothesizes that echoes of local poems about the Cretan heroes Idomeneus and Meriones can be found in the *Iliad* and the *Odyssey* [158]. The choice of dogs and horses to accompany the masters on the otherworldly journey [159] was certainly not accidental. Whatever the meaning of the custom of killing and burying dogs and horses separately from humans inside the necropolis, these animals are closely connected to the aristocratic world of the Early Iron Age. The Cypriot ritual of killing horses and donkeys often still yoked to carts, in use between the end of the 8th and 6th c. BC [160], is different and later than the one just described [161]. The presence of a single horse associated with a single dog in the burial BV [162] rules out the possibility that the horses were the ones that had pulled the hearse. Rather it calls to mind the same type of association in the *imagerie* of the Iron Age Cretan ruling élite [163].

The PG period was only sporadically attested S of Knossos up to now. Therefore the PG phase of Siderospilia is an important testimony in central Crete [164]. During the SM [165] and PG periods, that is for the first phase of the cemetery (11th - first half of the 9th c. BC), Prinias and Knossos are part of a single cultural area. The features shared between the wares of the two areas are evident and derive from a common substratum dating back to LM IIIC. This is the case, *e.g.* of a typical shape of the period, the bell-krater. The Siderospilia items, as the Knossian ones [166], are both with a slightly protruding lip with antithetical spiral decoration, and in the later version with a slight ridge below the rim with concentric circles, of Attic derivation [167]. Both

[146] D.S. Reese reports a Submycenaean tomb in Syntagma square, in Athens, with a horse and a dog (Reese 1995, 36). The source was a newspaper article (*Kathimerini* 12 May 1994). It is not clear whether they were buried apart from humans.

[147] Catling 1996c, 570-571; Cavanagh 1996, 674; Coldstream-Catling 1996b, 720-721; Wall-Crowther 1996, 703-710.

[148] Σταμπολιδης 2020, 30, fig. 11.

[149] See *infra*, Wilkens, 573. For the T. W, Rizza-Rizzo 1984, fig. 477 and see also *infra*, Pappalardo, 545-546.

[150] Courtesy of Francesco Mallegni.

[151] Lemos 2002, 140-146, figs. 13-14, 166-167, with bibliography. Concerning the probable presence of pet dogs in the funeral pyre, see Popham *et alii* 1993, 22 and Lemos 2002, 167, fn. 188.

[152] Κουρουνιωτης 1903, 8, fn. 1; Blandin 2007, 124-125.

[153] See references in Schäfer 1999 and in Chrysoulaki-Pappas 2022.

[154] Hom. *Il*. XXIII.165-176.

[155] Day 1984, 30.

[156] Hom. *Il*. XXIII 110-126.

[157] Σταμπολιδης 1996, 122.

[158] Kotsonas 2018.

[159] As for horses this is the agreed opinion of many scholars: Mylonas 1948, 59; Andronikos 1968, 84-85; Vermeule 1979, 58-60. As for dogs: Ruscillo 2017, 572-573.

[160] See an excellent synthesis in Hermary 2005.

[161] The same observations apply to the aforementioned tombs of Knossos: Catling 1996c, 570-571.

[162] See *infra* and Biondi 2020, fig. 2.

[163] See, for example, the association of helmeted, shielded, and sometimes whip-bearing riders on racing horses, racing chariots, dogs chasing hares, and tripod cauldrons (intended as prizes for racing) on the relief-figured bands of several pithoi from Prinias (Gigli Patanè 2015, 183-185, figs. 1-4).

[164] See: Βασιλακης 2000; Callaghan-Johnston 2000; Cucuza 2011; Santaniello 2013; Bonetto *et alii* 2021.

[165] Perna 2015a, 268; 2020.

[166] See Coldstream 2001, 47.

[167] Biondi 2019, 7, figs. 10, 12.

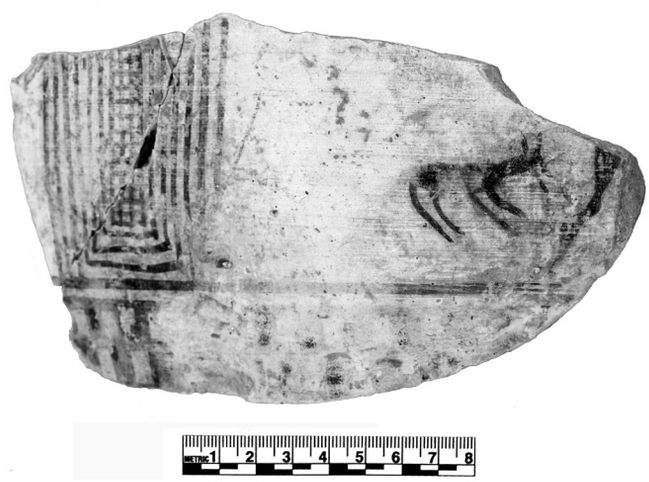


Fig. 27. Fragment of a figured vase (inv. P 1439) (© Archivi SAIA, U/13474).

Fig. 28. Sherds from a large-sized LPG Attic krater (inv. P 266) (© Archivi SAIA, U/12299) and reconstruction drawing (el. O. Pulvirenti; © Archivi SAIA, NIG 8353).

versions are documented at Phaistos[168] and, just the second one, at Kommos[169]. Skyphoi inspired by CG I (1050-950 BC) types with a half-circular body-profile, hitherto known just in the local ceramic production of Knossos[170], appear in the T. AN of Siderospilia[171]. Different decorative preferences are witnessed in each of the two centers.

As in the Knossian production[172], a sherd from a large vase with a painted hunting scene[173] (Fig. 27) testifies to a precocious figurative style.

The majestic kraters imitating the Attic PG prototypes, well known in the Knossian MPG and PGB[174], are missing. At Siderospilia, however, there was found one of the large-sized prototypes[175] (Fig. 28), which is the only imported Attic specimen of this shape known in Crete[176]. Its shape and decoration – with

[168] ROCCHETTI 1967/68, 186-187.
[169] CALLAGHAN-JOHNSTON 2000, Nos. 132, 17, 40, 42, 132 (imported from Knossos).
[170] COLDSTREAM 1996, 381.
[171] BIONDI 2019, 11, fig. 18.
[172] COLDSTREAM 2001, 47.
[173] BIONDI 2019, 5, fig. 5.
[174] COLDSTREAM 2001, 47-51.
[175] BIONDI 2019, 8-9, fig. 13; 2020, 281, fig. 7; PAUTASSO *et alii* 2021, 33, No. 8, figs. 41-42, 56; BIONDI 2023.
[176] Just one fragment of what could be a similar vessel was found in the settlement area of Knossos: COLDSTREAM-MACDONALD 1997, 235, No. B43, pl. 36.

bucranium handles and central panel filled with rectilinear motifs between two sets of vertical circles – are of the same design as a probably earlier Attic krater kept in Munich [177]. The decorative syntax of the central panel (chequerboard between vertical zigzags) and of vertical bands on either side (alternating diagonals between vertical zig-zags) make it possible to attribute it to the same workshop that produced a specimen found above a pyre of the cemetery at Nea Ionia, just outside Athens [178], namely to the second half of the 10th c. BC "Jewel Workshop" [179]. The Siderospilia specimen is the third Attic LPG large-sized krater whose shape and decoration are well preserved and the only one preserving the profile of the foot (missing in the Munich and Nea Ionia ones). The sherds of two other specimens from the Cycladic islands (Naxos and Paros) could belong to locally made vases [180]. Other Attic LPG shapes, however, were widely exported (and imitated) in many sites of the Aegean [181]. Lefkandi and Knossos were the most receptive ones [182]. The causes of such distribution are matter of speculation (practice of gift exchange, intermarriage, trade...) [183].

As for the Siderospilia cemetery, the recipients of the krater and of other, valuable, imported metal products from Egypt [184] and Cyprus [185] must have been the members of a wealthy local aristocracy. Their need to exhibit these products, and ultimately in the context of expensive mortuary practices, which were in use among the social élites of the Aegean area at the beginning of the first millennium, had to be the leading cause for attracting such prestige goods from the outside world. Such practices at Siderospilia included also the killing of horses and dogs and the deposition of weapons [186] and jewelry [187] among the grave goods. The central position of the settlement of the Patela hill on the route connecting the northern and southern coasts of central Crete made it easier to establish contacts with the Aegean world. Various hypotheses on what Crete could offer in exchange for these products, on their carriers, on the nature of the exchanges and on the possible centrality of the island in the Aegean routes have recently been proposed by Hartmut Matthäus, to which reference is here made for an in-depth study of a historical nature as well [188].

Giacomo Biondi

5. The second phase (second half of the 9th - first half of the 6th c. BC)

5.1 The Protogeometric B (PGB) at Siderospilia

Research on the Cretan PG period is crucial for the understanding of the more general socio-political dynamics of the Mediterranean Early Iron Age, since it involves a period of reconfiguration of complex societies [189].

Questions are raised in this about E-W relations, new trade routes and enterprises, encounters between distant cultures, the formation and then the transformation of social structures [190]. This is the period in which the roots of the concept of the "Greek polis" are put down: and the formation of a particular social and ideological substratum takes place.

PGB is a Cretan prerogative. It seems to be a short-lived phenomenon, first described by Desborough in his book *Protogeometric Pottery* [191] to define a discrete class of vases, and later identified by Brock in the Fortetsa assemblage [192]. The term Protogeometric B refers to a period that coincides with the second half of the 9th c. BC in Crete, when several interesting phenomena are detectable in different aspects of Cretan society and material culture [193]. This phase chronologically corresponds with the Attic MG I, but in

[177] *CVA* München 3, 9, pls. 103-104.1-2 [R. Lullies]; Lemos 2002, 51, pl. 75.1-2 (LPG); Bohen 2017, 134-136, fig. 97 (EPG).
[178] Smithson 1961, 151-152, 167-168, No. 48, pl. 29; Lemos 2002, 51, pl. 76.1; Bohen 2017, 142-143, fig. 107.
[179] For the "Jeweils Workshop" see *ibid*., 155-156.
[180] Lemos 2002, 51.
[181] Coldstream-Catling 1996b, 716; Catling 1998, 368-378, fig. 1; Seroglou 2009.
[182] Coldstream-Catling 1996b, 716; Seroglou 2009.
[183] *Ibid*., 30.
[184] Matthäus 2014; 2017; see *infra*, *Id.*, 566-567.
[185] *Id.* 2016a; see *infra*, *Id*., 564-566.
[186] *Id.* 2016a, 180-181; 2019, 3-4; see *infra*, *Id.*, 561-562.
[187] Gigli Patanè 2020, and *infra*, 568-571.
[188] Matthäus 2017, and *infra*, 567-568.
[189] Lemos 2002; Pappalardo 2021. For a bibliographic synthesis, see Chaniotis-Kotsonas 2020; see also the contributions in Lemos-Kotsonas 2019.
[190] Σταμπολιδης 1998; Stampolidis-Karageorghis 2002; Pappalardo 2012.
[191] Desborough 1952.
[192] Brock 1957, 143; Pappalardo 2015, 420. The definition of PGB style originally provided by Brock and based on the analysis of the Fortetsa assemblage, as well as the chronology fixed at the second half of 9th c. on the base of the internal associations between local and imported pottery, was not immediately accepted: Courbin 1966, 530-531; Demargne 1968, 138; Schweitzer 1969, 71-72; Ανδρεαδακι-Vlazaki 1990, 96-99. See Kotsonas 2013, 234.
[193] See Prent 2015.

comparison with the latter it is characterized by innovative stylistic features, especially as concerns pottery production.

The central role of Crete in the renewed contacts with the Near East, already under way from the beginning of the 10th c. BC [194], resulted in a quite sudden adoption on the island of an artistic production rich in figurative elements, strongly influenced by the composite Oriental repertoire. This reached its apogee in the PGB, when first experiments brought about a mixture of Middle Eastern, Egyptian and Minoan features [195].

As far as pottery production is concerned, there is a marked improvement in the techniques of decoration and materials, together with an exponential increase in the use of freehand figures [196] and the appearance of a series of "orientalising" motifs similar to those found on contemporary imports from the Near East [197]. The second half of the 9th c. is, in this respect, the period in which figurative bronzes and carved ivories of eastern origin begin to spread throughout the eastern Mediterranean. Crete must be counted among the regions where the greatest quantities of both classes of imports have been found [198].

The uniqueness of the PGB style has caused much controversy as to its origins and cultural implications. Until about twenty years ago, Knossos seemed to be the epicenter of the style, where it was in vogue for much of the second half of the 9th c. It rarely appeared outside the Knossos area and seemed to be a very localised style. More recently, a PGB phase has been identified at Eleutherna and PGB style vessels have been found in eastern Crete [199].

5.1.1 The pottery

The PGB pottery of the Prinias workshop is characterized by its peculiar forms and the richness of its figurative repertoire. It appears mainly in funerary contexts [200] and seems to consist of abundantly decorated straight-sided pithoi, used as cremation urns, often covered with a clay lid with the same scheme of decoration. The typological and stylistic originality within the general panorama of PG pottery, in particular the wide use of figurative elements (such as trees, birds, fish and human figures) freely painted on the entire surface of the vases, has led to speculation about its true meaning and origin.

The study of the necropolis of Siderospilia (Fig. 1) provides a new tool of this enigmatic pottery production in relation to the respective contexts of the finds [201].

Indeed, it is now possible to try to clarify the role played by the PGB vases at the transition from PG to G production, by identifying those features already present in the LPG pottery and those developed in the EG. Thus, for example, the cemetery of Siderospilia provides important information on the adoption on bell kraters (typologically belonging to the LPG period) of the decoration considered proper for PGB straight-sided pithoi. Further, it offers the possibility of definitively underscoring the continuity of precise aspects into the EG.

It is more difficult to link the stylistic phenomenon of PGB (which is more evident on "decorated" straight-sided pithoi) to precise archaeological contexts, because the analysis of individual assemblages, particularly within the chamber tombs, is influenced by the state of preservation of the burials.

The largest quantity of PGB straight-sided pithoi was found inside two of the largest chamber tombs of the cemetery, TT. J and F (Fig. 1) [202]. Both tombs were robbed in ancient times and a large number of finds were found in the debris and partly outside the tombs themselves. The interior of T. J contained a large quantity of pottery, including a complete drinking set of bell-skyphoi and one-handed cups, which may be associated with rituals performed in honor of the dead (Fig. 29). The large number of bell-skyphoi is owed to their occurrence in large homogeneous groups, associated with single-handled cups, which become more common in Siderospilia from PGB onwards. As at Knossos, the specimens from PGB are

[194] Pappalardo forth.

[195] *Ead*. 2019.

[196] *Ead*. 2011a; 2011b; Kotsonas 2013; Pappalardo 2021.

[197] Brock 1957, 143; Coldstream 1968, 235-239; Ανδρεαδακι -Vlazaki 1990; Kotsonas 2013, 234-238.

[198] Markoe 1985; Matthäus 2000; Pappalardo 2005; 2012; 2019.

[199] At the present Knossos and Prinias figure as the major centers providing PGB production; more sporadic finds come also from Eltyna and Arkanes; in central-western Crete, Eleutherna offers interesting data on this respect. Αλεξιου 1950; Σακελλαρακη 1986; Englezou 2004, 423-425; Kotsonas 2008, 44-45. See also Coulson 1990; Τσιποπουλου 2005, 557; Judson 2018.

[200] Brock 1957; Rizza 1974; Coldstream-Catling 1996a (283.11, 292.144 and 107.114). For the recognition of the Tree Painter, see Coldstream 1996, 315-316. For the tomb where the straight-sided pithos with nature Goddess was found, see Coldstream-Catling 1996a, 155, pl. 155, fig. 109; Pappalardo 2015; 2019.

[201] *Ead*. 2015; Pautasso 2018; Palermo 2019; Pappalardo 2019; Pautasso 2019b; Rizza 2019a.

[202] For the two tombs, see *supra*, Rizza, 521-528.

Fig. 29. PGB bell-skyphoi from T. J (© Archivi SAIA, U/13475).

Fig. 30. Fragment of PGB straight-sided pithos inv. P 246 (© Archivi SAIA, U/13476).

wider than those from PG and have a squarish appearance with an almost vertical wall and a straight and conical lower body [203].

Only a large part of the upper wall of a straight-sided PGB pithos comes from this tomb, of exceptional quality in clay and painting, with a line of small "S" along the rim and a row of birds resting on trees on the body. A high conical lid was found in connection with the pithos.

More numerous are the examples of PGB pithoi from T. F.

As well as its dimensions, T. F stands out for the nature of the finds: in addition to the figured PGB vases, a number of metal objects and coroplastic items were found within it [204].

A large fragment of straight-sided pithos is decorated with a brown band at the base and three trees (inv. P 246) [205] (Fig. 30): the trunk is represented by two tiny lines to which spiral branches are attached. The style of the trees is very linear and simple: the trunk rises directly from the thin lines decorating the base. A second fragment (inv. P 243 + 245) [206] (Fig. 31) has slightly convex upper walls. On the shoulder, a series of arcs filled with small lines is painted; on the upper wall, a wide panel contains two large birds facing each other: the body is curved and recalls the decorative pattern on the shoulder; in the middle, a kind of spiral pinwheel is drawn. In the center, on the left, part of a frame is preserved, corresponding to the handle, and in the main area, the lower part of a large bird with a curved body, completely covered in scales, a fan-shaped tail and tiny bent legs is represented. The rest of the surface of the vase is filled with stylised trees with spiral branches crowned by small oval leaves.

Another fragment of a straight-sided pithos (inv. P 244/244b) [207] (Fig. 32) comes from the tomb: it is a large part of the convex walls and shoulder with inlaid rim; the base of the double handle, very high,

[203] Coldstream 1996, 378-382.

[204] For a first publication of the fragments, Rizza 1974. For the tomb, see *supra*, Rizza, 522-528.

[205] Rizza 1974, 156, pl. XIII.

[206] *Ibid*., 154, pl. XII.

[207] *Ibid*., 156-157, pl. XIV.

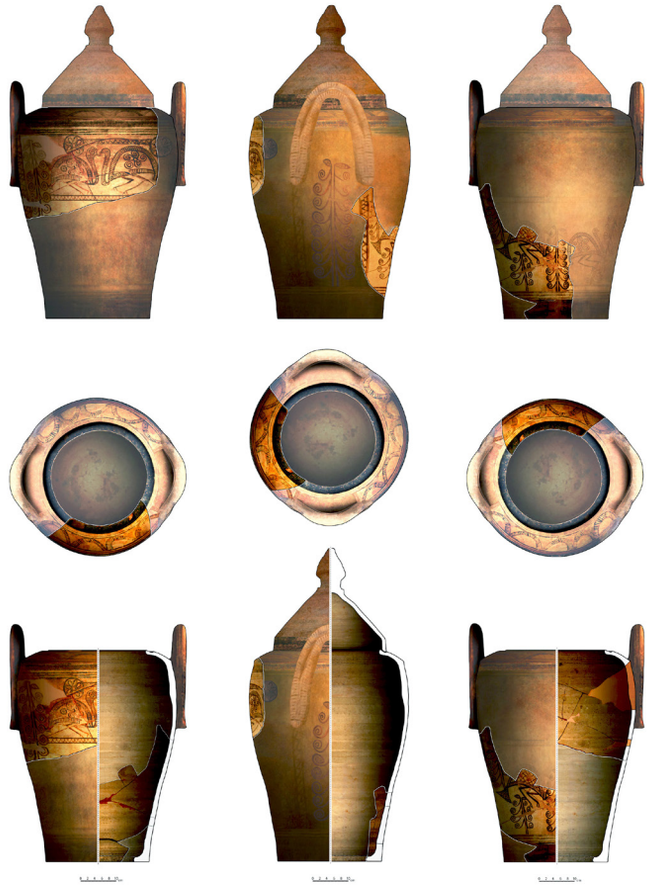


Fig. 31. PGB straight-sided pithos invv. P 243 + 245
(reconstruction drawing O. Pulvirenti; © Archivi SAIA, NIG 8605)

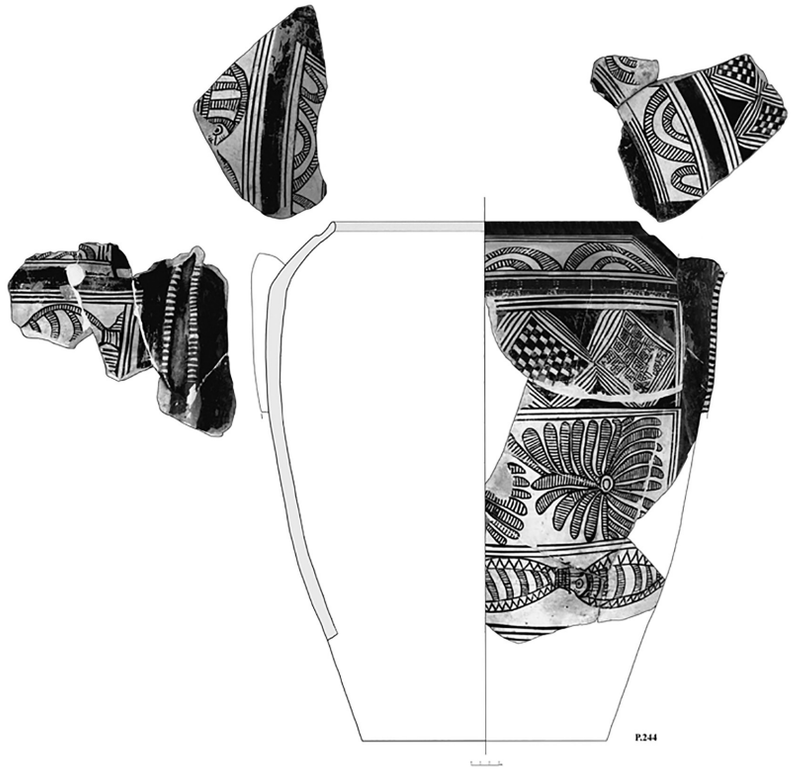


Fig. 32. PGB straight-sided pithos inv. P 244
(drawing O. Pulvirenti; © Archivi SAIA, NIG 8606).

is placed about halfway up the wall of the vase. Unlike the previous example, the decoration is divided into three registers: the upper one is decorated with diamonds on a black ground, filled with checkerboard decoration; the middle register has stylised vegetal features, characterized by peculiar elongated and sinuous petals filled with small lines reminiscent of sea plants; finally, the lower register has a chain of fishes whose bodies are bordered by a double outline filled with zigzags, while their interiors carry parallel bands. The face of the fish is trapezoidal, with a round eye, and the tails are fan-shaped.

From T. F again comes another fragment of a pithos (inv. P 242 + 253) [208]: a part of the wall and the shoulder with the vertical handle with two bars rising directly from the base of the shoulder, and where the lid was inserted, the rim has a slightly convex profile. The vase is completely covered with chains of "S", infilled with small lines. A sacred tree with spiral branches is painted under the handles. The same motif of the body is repeated if in a simplified manner on the shoulder, which is unusually large.

In general, the painted decoration on PGB vases is with a matt paint, often applied on a whitish slip, in accordance with the Protogeometric tradition. The preeminent shape produced seems to have been the straight-sided pithos, which appears only in the second half of the 9th c. and continues into the early G period, in many cases retaining the free decoration and the adoption of sinuous lines, but arranged according to a more rigid scheme organized in parallel registers.

As far as the general picture of the shapes and types attested is concerned, the area offers an almost complete repertoire of PGB pottery, from the vases of large dimensions to the smaller ones, which also include the miniature specimens [209].

Among the most common shapes in PGB, we must also mention the hydria and some types of aryballoi and oinochoai. These last usually have a peculiar carinated structure, with triangles painted on the upper part of the shoulder, filled with lines or left empty, with the triangles compound or simple.

As far as drinking vessels are concerned, the large cup with a flat base, painted by being dipped, gradually replaced the bell-skyphos, though in the very first phase, as mentioned above, both shapes appeared together in the same T. J. Even the kalathos was maintained, if reduced in size, and the conical specimens often used as a lid for cinerary urns (these last kalathoi were often produced specifically to act as lids, their decoration matching that of the corresponding pithos). Kalathoi are often decorated with plastic decoration, usually consisting of small birds standing on the rim.

The most conservative classes of material carry the most traditional patterns, such as concentric circles, something inherited from the PG period. This phenomenon concerns both kalathoi and kraters. The latter, in particular, form a much appreciated shape in Iron Age Prinias, starting from the PG, and include both small and large size specimens. It is probably for this reason that the kraters of Siderospilia are particularly useful, in comparison with those of Knossos and Phaistos, in trying to trace some sort of evolution of decoration. The largest examples still show the canonical arrangement of wide concentric circles between the handles flanking a vertical or horizontal composition of geometric and linear motifs, the whole organised and grouped into rich decorative panels.

The smaller ones, on the other hand, show the transition between the rigid geometric criteria of vase decoration and the more freely distributed arrangements of PGB, where a naturalistic element is placed between the groups of concentric circles, which are now at their smallest and simplest.

Two examples, almost complete, that carry this important evidence can be found on the kraters inv. P 257 of T. F and P 835 of T. W (Figs. 33-34).

This last burial in particular seems to provide a great deal of information on the transition from the PGB to later periods.

T. W was not a chamber tomb, but a pithos burial (enchytrismos) (Fig. 35) in a pit delimited by a wall of regular blocks, the entrance of which was marked by two vertical and pointed stones. The pithos contained several bones of children aged between a few months and 6 years. The deposits included several miniature vases, mostly kalathoi, and small carinated PGB jugs. Beside the large pithos was the belly krater inv. P 835, whose decoration, as mentioned above, consists of concentric circles flanking a stylised tree surmounted by a bird.

[208] Rizza 1974, 155-156, pl. XIII (for inv. P 242).

[209] Pappalardo 2021. According to a preliminary counting of all the PGB pottery from the necropolis, almost 100 vases and large fragments from tombs are available to be studied, while a huge number of sherds from the superficial stratum covering the whole area of the necropolis must still be documented (about 20 boxes). Another important assemblage is held at the Heraklion Museum, mainly consisting of those vases more or less preserved and brought to the Museum at the time of their discovery.

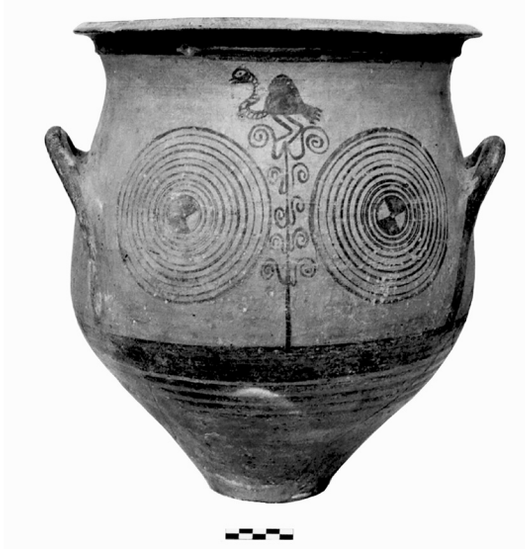


Fig. 33. PGB krater inv. P 835 side A (© Archivi SAIA, U/13477).

Fig. 34. PGB krater inv. P 835 side B (detail) (© Archivi SAIA, U/13478).

The shape is rather squat and cube-like, the lower part being almost straight and vertical with the upper walls only slightly converging. The rim is strongly curved and high. Two large groups of concentric circles decorate the body of the vase, the center of which is filled with a cross. Between the circles, on either side, is an elongated tree with spiral branches, on which two birds are perched facing left. On one side of the vase, the tree is clearly drawn after the circles, and the painter obviously had to sacrifice the dimensions and correct shape of the branches in order to place the tree between them; on the other side, however, the circles are placed closer to the handles, leaving enough space for the plant to be correctly and naturally portrayed. The birds are quite different, the first being completely filled with black matt paint, the second with an empty band.

5.1.2 Social implications

During the PGB period at Prinias, in line with what happened at Knossos and Eleutherna, an increase in metal depositions [210], both local and imported, is widely attested, inaugurating a trend that was destined to continue into the G period. In this respect, the necropolis of Siderospilia seems to neatly reflect the new wealth available at the time.

PGB pottery is well represented in the cemetery and is characterized by a wide distribution in the area, as Salvatore Rizza has recently shown [211].

In general, the study of graves and offerings provides a complex mass of information on funerary architecture, burial costumes, craftsmanship, spatial organisation, social and economic dynamics from the Late Bronze Age to the 7th c.

Prinias can be considered an almost unique study case, since the results of the investigations carried out on the cemetery can be compared with the evidence from the settlement and the sacred area. Thus, the more holistic study enabled has given rise to some interesting considerations concerning the role of the site in the general Cretan context and its direct involvement in the dynamics of mobility and cultural exchange [212].

The recognition of differences should be a fundamental step in advancing the hypothesis of an internal development (from the LPG to the EG period). Meanwhile, the systematic analysis of the other classes of pottery from the same tombs where PGB figured vases were found seems to testify to an internal development almost identical to that recorded at Knossos and Phaistos. As a result, the hypothesis that Prinias was merely a peripheral center of PGB production compared to Knossos is now definitively refuted.

[210] See *infra*, Matthäus, 561.
[211] Rizza 2019a; 2019b.
[212] Pappalardo 2019; forth.

Fig. 35. The T. W under excavation (© Archivi SAIA, U/13479).

The analysis has already shown that a local workshop produced straight-sided pithoi of high quality, all slightly different in shape and style.

At the time of the publication of the cemetery of Fortetsa near Knossos, and then of the North Cemetery too [213], the use of these distinct vases had already been considered indicative of the social status of those buried in the cinerary urns. The fact that PGB straight-sided pithoi were mainly found inside chamber tombs (in one famous case near a Minoan figured larnax [214]), associated with rich funerary goods, led to the interpretation of their use as a symbol of common membership to be linked to the Minoan past; to others, their rich figurative apparatus, associated with the sudden increase of Near Eastern imports in Crete, was interpreted as a clear and deliberate adoption of new (Oriental) artistic influences.

[213] Coldstream-Catling 1996a.

[214] *Iid*. 1996b, 719: «This larnax introduces us to a more tangible instance of Minoan inspiration for the Knossians of the later ninth century. The form itself was reproduced on a modest scale (104. 118), just large enough to contain the inhumation of a child. Many elements in the decoration of 107.214 – goddess of vegetation, spiral tree, alighting bird – are rendered in a geometricized form on a PGB straight-sided pithos, 107.114, which had evidently housed one of the first cremations in the tomb where most pieces of the larnax were found».

More recently, Whitley has put forward a new hypothesis for the social significance of the PGB decorated pottery at Knossos, analysing the pattern of their distribution compared with that of the undecorated, and further relating them, where feasible, with the presence of other grave goods. To provide a secure comparison, the same association has been used in the PAR. Whitley's conclusions are quite consistent with the evidence from Prinias.

Whitley rightly emphasises the presence of a "fluid" process in action. From a methodological point of view, the quantitative-associative analysis he carries out on the urn/assemblage groups becomes more instructive when it is conducted over time. The variable urn/assemblage association is indeed to be observed at the end of the 9th c. (PGB) and in the first half of the 7th c. ("MO", according to Whitley's periodization), if one deliberately omits the wide and controversial geometric range which, due to the eclecticism of forms and decoration, would have made the analysis difficult. The necropoleis considered are Fortetsa, Lower Gypsades and the North Cemetery [215], and for the 9th c. BC the comparative analysis of the association decorated urn/assemblage and simple urn/assemblage tends towards the latter variable.

The limitations of this type of analysis are clearly dictated by the nature of the context, particularly in the case of burials, where it is often very difficult to relate the deceased (in our case the urn) to a particular assemblage of objects. The continuous use of tombs over generations, as in the Cretan Iron Age cemeteries, could demand the removal or displacement of vases that cluttered the area when the tomb was reopened; or, as in the case of Prinias, parts of earlier grave goods were often displaced into areas outside the tomb itself, in pits whose contents were ritually burned.

However, one has to try to quantify and associate the elements of the grave goods and the burials as, and despite the limits of the evidence itself, the results can provide indispensable building blocks for an at least partial historical-cultural reconstruction of the communities involved.

So if we take Coldstream's position to answer the question: «were the fanciest people buried in the fanciest pots?», the answer would necessarily be that «there is no correlation between the richness of grave assemblages and the richness of pottery decoration in the ninth century» [216]. If however we reconsider Coldstream's original assertion, we could find ourselves faced with the association of decorated urn/chamber tombs (in some cases containing a LM larnax, whose presence Coldstream believes is an explicit reference to a sense of ancestral belonging). This would argue that the production of PGB decorated urns was done to express a definite determination to identify with a social and, even more so, family background. Then again, according to Whitley's 2004 analysis, we would have an almost opposite situation, in which the richly decorated PGB urns are associated with qualitatively and quantitatively inferior sets of items than those accompanying contemporary simple urns.

The explanation for the use of richly decorated pithoi with straight walls could therefore, according to Whitley, be linked to elements not of a social (and even less of family) nature, but to one of gender (a hypothesis that cannot be ruled out either).

Even more difficult is the biographical reconstruction of the same ceramic type at Prinias, where, as we have seen, it was widely used as an urn in the tholos F, while only a single example (a large fragment) comes from that of J.

The process of creating meaning is not static or merely inherent to the objects themselves, but fluid and dynamic [217]. The meaning changes while the object remains unchanged. Whereas at Knossos figured PGB pottery is found in many tombs, at Prinias it was found in significant concentration in only one, the largest and probably the richest.

Although the production of functionally and stylistically defined pottery is likely to be associated with phenomena of identity affirmation – most clearly so when analysis takes into account the entire context (which, in our opinion, should be extended as far as possible beyond the cemetery area and include settlement dynamics and processes of spatial transformation), these will not necessarily be common to all producing centers.

It is also possible and plausible that the ornate urns and their lids at Knossos satisfied a precise need for self-representation, which was obviously felt by the occupants of more than one tomb, one which may

[215] Brock 1957; Coldstream *et alii* 1981; Coldstream-Catling 1996a.

[216] Whitley 2004, 435, pl. 38.1.

[217] Pappalardo 2018. Matters relating to the personality of objects, in particular figurative ones, focus on the nature of their role within the processes of formation/transformation of complex societies and on the creation of a precise meaning attributable to them in a given context (agency). Bann 2003; Hoskins 2006; Keane 2006; Pinney 2006.

have materialised a connection with the departed Minoan-Mycenaean world or perhaps with the gender of the deceased. The same pottery typology was clearly also felt to be appropriate by a group at Prinias (though certainly smaller than the Knossian one), which in PGB possessed the largest tomb of the cemetery [218].

In the fifty years that PGB is held to have lasted, the bold stylistic choices do not concern all the ceramic production, but only a specific and small part of it, mainly involving those vessels designed to contain ashes and therefore destined for funerary contexts.

Unfortunately, the state of preservation of the tombs containing straight-sided pithoi from the Prinias workshop does not allow us to associate the vase typology with elements indicating gender or status. However, the monumental element of T. F, which contained most of these vases and which undoubtedly occupied a prominent position in the general context of the cemetery, is based on this feature.

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5.2 The 8th-c. phase: a general overview

The 8th-c. phase (810-700 BC after Coldstream; 815-710 BC after Kotsonas) is the most extensive one in the necropolis area. Geometric burials are widespread in both the eastern and western parts of the cemetery [219]. They consisted mainly of cremations deposited in upright cinerary urns surrounded and covered by stones, but could also be deposited inside some of the older chamber tombs. Single or multiple infant burials in large pithoi containing one or more skulls or other infant remains are also well represented [220]. Characteristic of the Geometric phase are the tombs placed in and around a burial enclosure, which clearly demarcated the particular burial site, or in some cases around a small funerary monument. Some of the small enclosures joined to the large and earlier circular tumulus from the PGB onwards, contained burnt layers and tombs of the G period [221].

First, a general review of materials from 8th-c. contexts was undertaken, and then the study of individual grave assemblages, which is still ongoing, with particular reference to the ceramics. Similarly, the large amount of pottery found outside the tombs and, more generally, in the excavation trenches, which often lacks a secure excavation context, has also been the subject of documentation and study. From the preliminary results of these years of work, a few main points have been selected for this report and are illustrated by some specific examples.

A first remark concerns a significant difference between the two areas of the necropolis. If the western part is generally better preserved, then the eastern part has instead undergone several interventions over time, mainly affecting the chamber tombs of the earlier phase, some of which were still in use in the 8th c. BC. This situation made it particularly difficult, if not impossible, to reassemble the G grave assemblages contained in the chamber tombs that had been largely emptied of their contents [222]. Throughout the area of the north-eastern hill, with a particular concentration in the area of TT. F, G, J and AN (Fig. 1), fragments of the same vessel (mainly large vases, such as straight-sided and ovoid pithoi, but also amphorae and kraters) were found both inside and outside these tombs, even at considerable distances away, as already noted in a recent article on some large figured kraters [223].

An attempt has therefore been made to document, as far as possible, the number and chronology of those fragmentary vessels commonly used as cinerary urns (pithoi, but also amphorae, mainly belly-handled) from this area, in order to derive data that will allow an approximate number (a minimum number of specimens) of 8th-c. burials in chamber tombs to be determined. Accordingly and for instance, 33 (mostly fragmentary) straight-sided or ovoid pithoi have been catalogued so far from fragments found inside the T. F, but the number could increase. They can all be represented by two or more fragments. Of these, 11 were reassembled with fragments both from the area of nearby T. J and from Trench LXIV,

[218] Rizza 2019b.

[219] Although artificial and dictated by the route of the modern road, the division between the eastern and western parts of the tomb area is used here for clarity.

[220] The ambiguous use of the term "pithos" to denote a large vessel and a smaller cinerary urn, albeit with specific references to the morphology of the vase (*e.g.* straight-sided or ovoid), has been discussed by Kotsonas 2008, 80, 100-101, who prefers the term "jar" for the smaller vessel. Although I agree with him on the need to distinguish the two forms, in this article I will follow the traditional terminology.

[221] For some tombs of the G period in the enclosures joined to the tumulus, see Rizza 2011b, 36-37, fig. 23a, for the TT. 80, 84-85.

[222] See *supra*, Rizza, 522-523 for the tomb F.

[223] Pautasso 2018, esp. fig. 5.

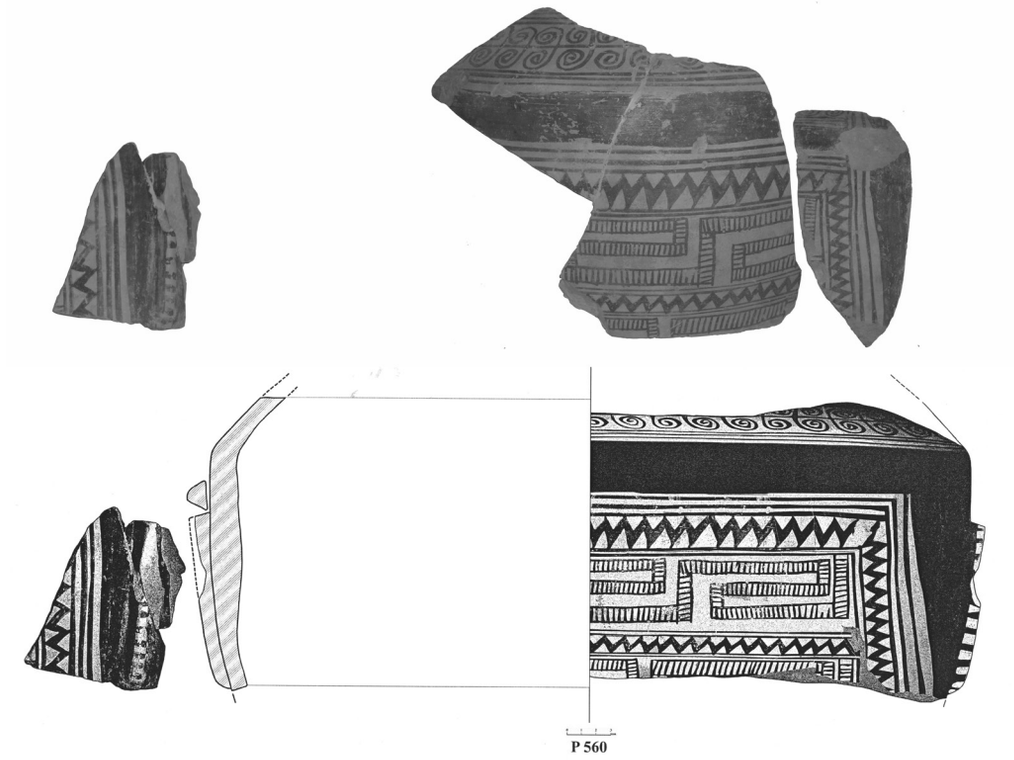

Fig. 36. EG straight-sided pithos inv. P 560 (drawing O. Pulvirenti; © Archivi SAIA, NIG 8607).

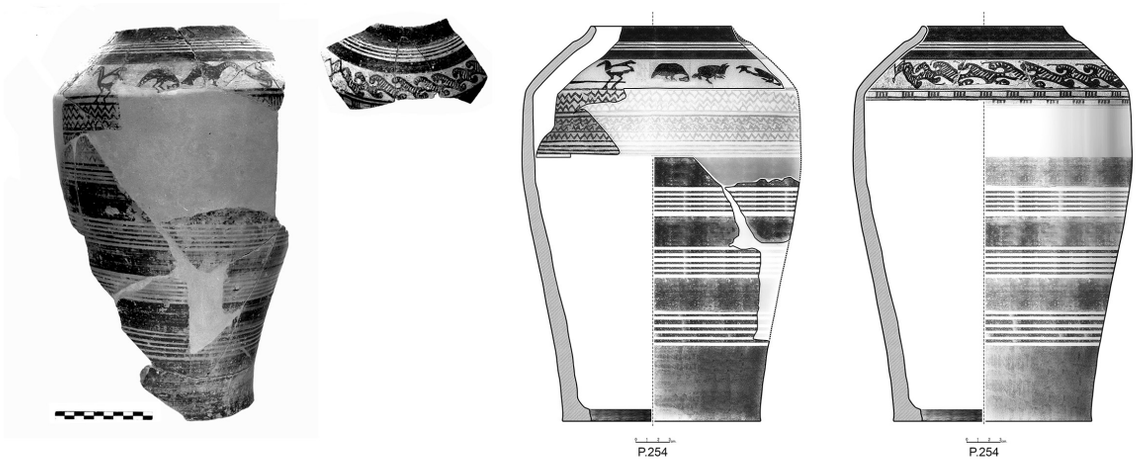

Fig. 37. G straight-sided pithos inv. P 254 (reconstruction drawing O. Pulvirenti; © Archivi SAIA, U/13512; NIG 8608).

which corresponds to the area of the first half of the dromos of T. F [224]. The cinerary urns from the area of TT. F, G, J and AN are of excellent quality.

The cinerary urns documented in the area of the chamber tombs are both straight-sided and neckless ovoid pithoi. Some of them borrow, within an otherwise fully Geometric decorative syntax, motifs from the PGB repertoire, such as the tree of life (Fig. 36) and the two running loops (Fig. 37) [225]. In this, they follow a well-documented trend in Prinias for a good part of the 8th c. and one already observed by

[224] For the T. F, see *supra*, Rizza, 522-528.

[225] For the tree of life: straight side pithos inv. P 560. For the use of the tree of life motif within a horizontal band on 8th-c. vases, see COLDSTREAM-CATLING 1996a, 218.135, pl. 197 (EG). For the running loops: straight side pithos inv. P 239. The decorative motif is rare in the G age, see an example from Fortetsa, BROCK 1957, 125-126, P 72, pl. 77, 179, 11n for the motif.

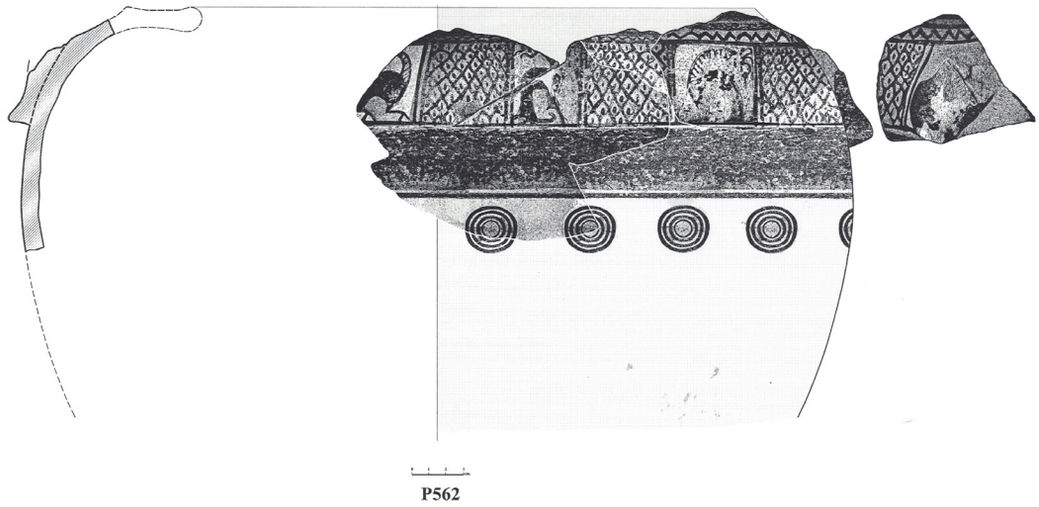

Fig. 38. G ovoid pithos inv. P 562 (drawing O. Pulvirenti; © Archivi SAIA, NIG 8609).

Fig. 39. LG-EO ovoid pithos inv. P 2694 (drawing O. Pulvirenti) (© Archivi SAIA, NIG 8610).

Coldstream at Knossos for the EG [226]. Neckless ovoid pithoi decorated with a band of small metopes between the handles filled with geometric or bird motifs typical of the LG (inv. P 562, Fig. 38) [227], or with concentric circles in parallel rows in the white-on-dark technique (inv. P 2694, Fig. 39) [228], attest to the use of a few chamber tombs still in the late 8th c. BC - beginning of the 7th c.

In addition to the two impressive figurative kraters of the "Heraldic Lions" (inv. P 4144) and the "Striding Sphinxes" (inv. P 4149) [229], other figured fragments, generally of small dimensions, have been found in the area of the chamber tombs, testifying to the sophistication of the figurative pottery tradition at the site and to the richness of the burial goods contained in the chamber tombs. The highest concentration of figurative fragments is recorded on the north-eastern hill, particularly in the area of TT. F, J and G. Among these fragments, inv. P 409 (Fig. 40) [230], a piece of a large krater with the representation of a hindquarters of a sphynx, is of special interest. In fact, this fragment has a different drawing technique – characterized

[226] Coldstream 2008, 239.
[227] The ovoid pithos inv. P 562 was reassembled, only in its upper part, from fragments found in T. F and the surrounding area.
[228] Inv. P 2694 is an ovoid pithos found in 1971 inside the T. J. Just under a third of the vase has been preserved.
[229] Pautasso 2018.
[230] The fragment has been found in the T. F. H. cm 8.4; W. cm 12.

Fig. 40. Fr. of a figured krater inv. P 409
(© Archivi SAIA, U/13480).

Fig. 41. Fr. of the side A of the krater of the "Master of lions" invv. P 1219-1220 (© Archivi SAIA, U/13481).

by the double out-line and the representation of the paws with strokes – from that of the krater of the "Striding Sphinxes", which was reassembled from fragments from TT. F, J and the surrounding area. On the other hand, the technique of inv. P 409 is much closer to that used by the painter of the krater of the "Master of Lions" (inv. P 1219-20) (Fig. 41) [231], found in the western part of the necropolis and older than the other two (inv. P 4144 and 4149). The study of all the figurative fragments from the two areas will make it possible to clarify the succession of different hands within a figurative tradition (or a local workshop) that comprises a specific and unique ceramic production of the G period in Prinas [232].

In the G period, the eastern remaining part of the necropolis is dominated by small clusters of cremations or isolated tombs. Burials bounded by irregular walls and enclosures (common in the western part) seem to be rarer. Although the data are still being studied and therefore need to be verified and discussed, the occurrence of cremations in plain unpainted necked vessels, or cooking pots, often accompanied by a lekythos, seems to prevail. Numerous also were the enchytrismoi. It is not yet possible to say whether these

[231] For the krater of the "Master of Lions", PAUTASSO 2018, *passim*, figs. 11a-b, 12.

[232] For the results of archaeometric analyses confirming the local production of the figured kraters, see PAUTASSO *et alii* 2021, 30-52, especially with regard to No. 6 (32-33, fig. 35).

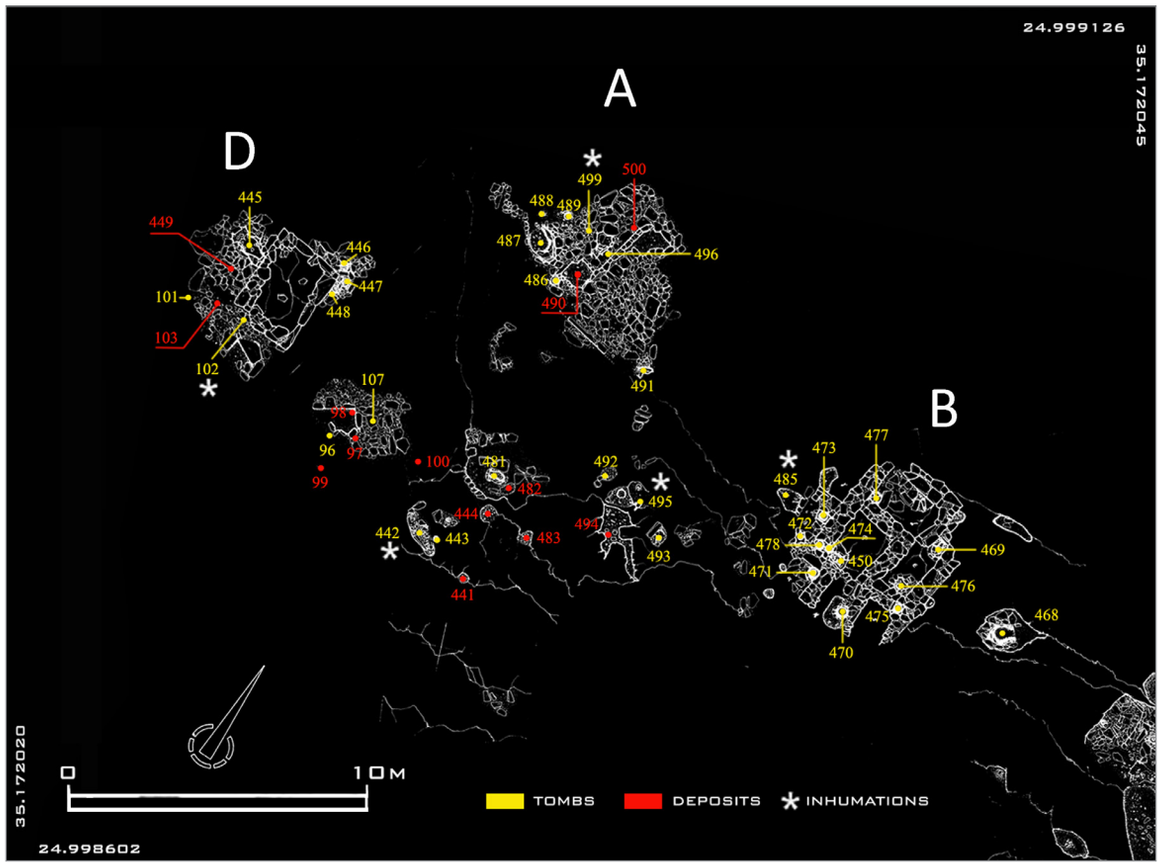

Fig. 42. South-western hill: the structures A, B, D with oldest inhumations, Iron Age tombs and deposits indicated (el. S. Rizza) (© Archivi SAIA, NIG 8611).

burials were in any way related to those deposited in the large chamber tombs, where the G urns and the pottery generally were carefully painted. It should be noted, however, that the burials of G period outside the chamber tombs are mainly concentrated along the lower slope of the hill.

A different picture is provided by the western part, where the identification of a series of clusters instead is made clearer by the presence of structures of different morphologies and (perhaps) function. In this sector, three areas are of particular interest in the 8th c. with a noteworthy concentration of G tombs: the area of the abovementioned enclosures attached to the tumulus, the area of the so-called "L-shaped wall", and the south-western hill which will be discussed in more detail now.

On the south-western hill, four structures from the EG period, built in close proximity to each other, served as "landmarks" for later burials up to the beginning of the PAR. The four structures (Fig. 1.A, B and D), together with other less well preserved remains, characterized this lower part of the cemetery and seem to form a fairly homogeneous group. However, although close to each other and on the same orientation (more or less NE/SW), they seem to be different in plan, construction technique and perhaps function [233]. All four are built on the remains of older inhumations in the soil [234], which can be linked to a FN-EM settlement identified in the necropolis area [235]. On the basis of the assemblages, the chronology of the tombs added to the three better preserved structures (D, A, B) lies between EG and LG/EPAR (from the beginning of the 8th c. BC to the late 8th - beginning of the 7th c. BC). In these three cases, the old inhumations are incorporated and respected in the new structures (Fig. 42).

Building D, which was not found intact, could have been a funerary enclosure – like the one excavated in 2002 by Biondi at Dodeka Apostoloi [236], not far from Siderospilia (in which case we must assume that

[233] The structures are located in an area where the rock, by forming depressions, has protected them from destruction by agricultural vehicles. The places where the ground has remained intact are those used by the farmers to collect the stones from the clearing of the land.

[234] See *supra*, Pautasso, 514, Tab. 1.

[235] See *supra*, Tab. 1.

[236] Biondi 2011.

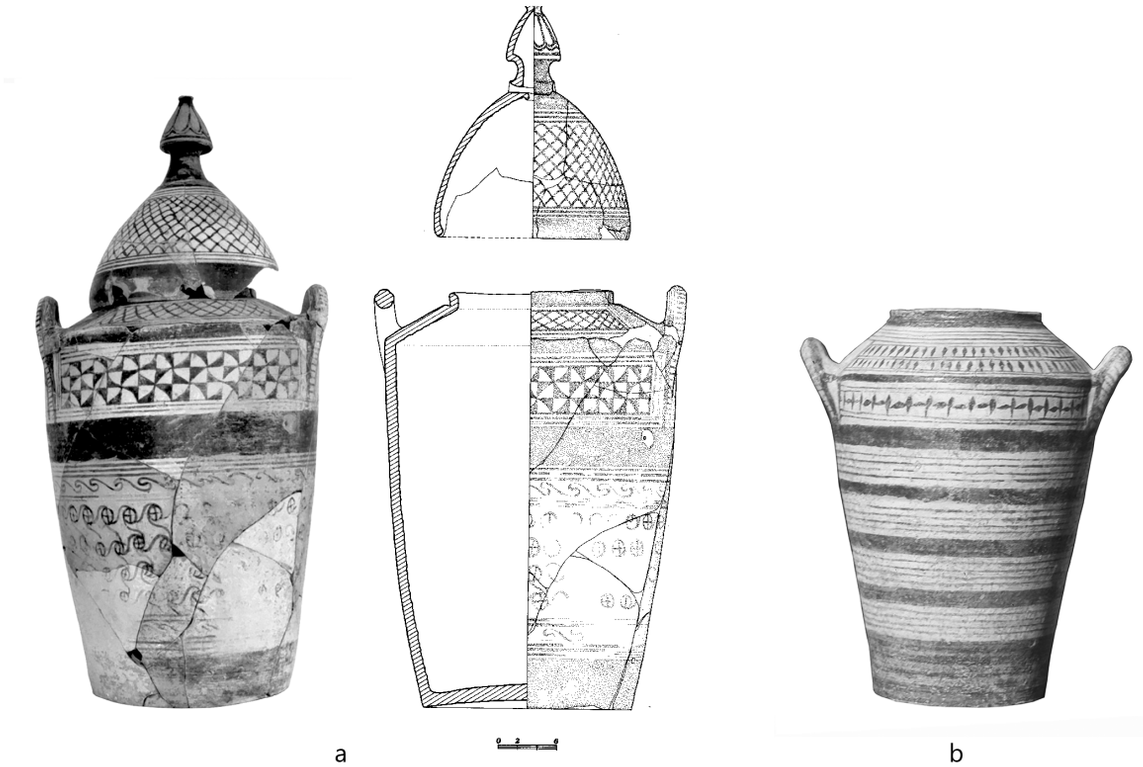

Fig. 43. a) EG straight-sided pithos inv. P 1281 (© Archivi SAIA, U/13501; NIG 8592); b) G straight-sided pithos inv. P 1244 (© Archivi SAIA, U/13464).

the tomb(s) inside D have been lost), or it could be a small monument. The building was built above and nearby a large layer of burning (Fig. 42, 449). It is worth remembering, to underline the importance of this structure, that a fragment of the large krater with the "Master of Lions" (inv. P 1219-20, Fig. 41) was found inside [237]. A number of tombs dating from between the G and the beginning of the PAR period were found outside the building, set against it and embedded in the layer of stones. Of these, T. 478 consisted of a straight-sided pithos (inv. P 1244 Fig. 43b) with a slender body and decorated in a very schematic syntax, all features that characterize a number of straight-sided pithoi of the mature G period and of EPAR, widespread in sites in central-southern Crete, but not at Knossos, and attested by a few other examples at Prinias [238]. It will be interesting to try to verify, as the study advances, whether the choice (or the revival) of this vase-type, which coexists with the neckless ovoid pithoi so widespread in the mature Geometric age, may indicate competitive dynamics at work in the group in terms of conservatism, or if it refers to an older form, perceived as an expression of a deep-rooted local tradition and of relevance to matters of identity.

Structure A (Fig. 42), whose stones were well finished, is the worst preserved. It was also the last structure to be investigated at the end of the last year of excavation (1978): unfortunately the investigation was not extended further into the eastern area, nor have we found any information about the interior of the building in the excavation notebooks. The comparison with some later structures in the Orthi Petra necropolis at Eleutherna [239], as well as the presence of the foundation deposit – an EG aryballos inserted into a gap in the foundation of the small building (Fig. 44) [240] – can support the suggestion that it is a funerary monument. If so, D and A would be the oldest examples of this type of funerary monument in Crete.

[237] The krater (inv. P 1219-20, for which see *supra*, fn. 231) has been reassembled from other fragments found inside and outside the structure D. One such was used to wedge a nearby EO cinerary urn.

[238] On this production, which testifies to the survival of the form of the straight-sided pithos at a time when it is no longer present at Knossos, see Coldstream 2008, 255-257; recently Ερταεζογ 2011, 281-283, fig. 2, 298, No. 1.

[239] Stampolidis 2004b, 124-125, fig. 10, 132-134, figs. 23-24.

[240] Inv. P 1420; H. max. cm 12; diam. max. cm 9.7. For the shape (plump body and tall neck and handle), see the plain aryballos A 190 from Eleutherna (Kotsonas 2008, 117, fig. 42, EG).

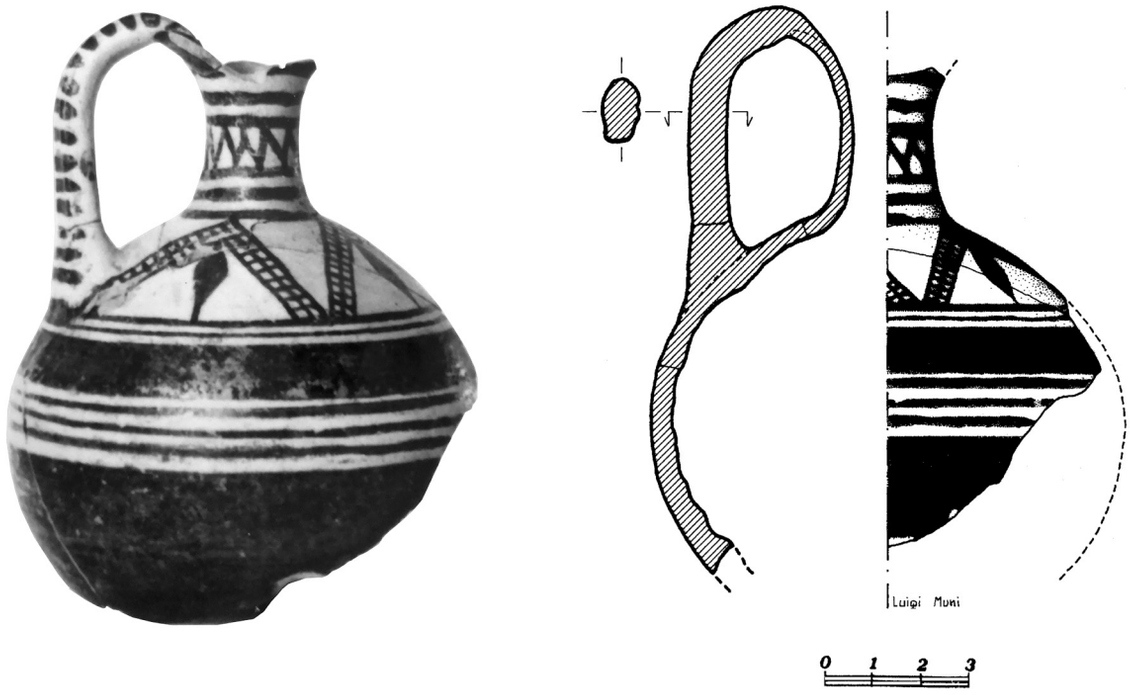

Fig. 44. The EG aryballos inv. P 1420 from the foundation deposit of the funerary monument A (© Archivi SAIA, U/13502; NIG 8593).

As for the building B, the construction of the walls surrounding small spaces and the deposition of the first tombs began in EG around a central space hosting an enchytrismos (PGB/EG), and went on until the LG/PAR period. To the EG date tombs characterized by straight-sided pithoi with a geometric decorative syntax in which decorative motifs from the PGB survive, as in the inv. P 1281 (Fig. 43a), comparable to a trend detected in some Early Knossian EG examples [241]. In a few cases, the EG urns contained a set of weapons, as do some of the contemporary urns in the area N of the tumulus and inside the chamber tombs.

It has already been pointed out that [242], in the case of the three buildings in question, the concept of memory implies the search for a fixed-point in past providing ancestral ties to the site, here expressed through respect for earlier burials, most likely dating back to the FN/EM period [243].

It is interesting to note – and the topic deserves a broader and more in-depth reflection than the space available in this report can offer – that the earliest tombs of the three structures D, A and B are of children or subadults (TT. 495, 496, 450, all enchytrismoi). This requires more consideration on the degree of inclusion of children in regular burials in the Iron Age community of Prinias, as well as on the role these early deaths were made to play in the identity dynamics and claims of particular social groups or families [244].

The search for this past fixed-point to help consolidate the structure of social groups, largely linked by *syngeneia* – a term used here in a broad sense – is a phenomenon that varies in its articulation and expression. At Kavousi Vronda, spanning from PGB to PAR, a necropolis is established on the abandoned settlement of LM IIIC [245]. The installation of tombs on the ruins of an ancient settlement makes it possible to strengthen and anchor groups linked by real family lines (as Liston's anthropological analyses seem to have made clear) in an imagined past that is actually not so from a strictly genealogical point of view [246].

[241] See, *e.g.* Coldstream-Catling 1996a, 15-16, G6-7, pl. 51 (EG).

[242] Pautasso forth. a; c.d.s. b; Pautasso-Rizza forth.

[243] See *supra*, Tab. 1.

[244] For general remarks (albeit with a focus on Thera) on the treatment of children in Iron Age necropoleis, see Kalamani 2020, in particular 97, with an updated bibliography. For Crete, Pomadère 2010.

[245] For the necropolis of Kavousi Vronda, Day 2011b, with bibliography.

[246] Liston 2007, esp. 60. However, for a certain prudence in automatically extending the idea of family ties to all contexts – especially to chamber tombs – to the detriment of a broader concept of social group, see Kotsonas 2011, esp. 131-132.

Fig. 45. Two lekythoi of Praisos type from the deposit 363+367: a) inv. P 2369 (© Archivi SAIA, U/13503; NIG 8597); b) inv. P 2371 (© Archivi SAIA, U/13504; NIG 8598).

In the Siderospilia necropolis and at the same time, different groups used different strategies to connect with the past and create a kind of "genealogy of place". On the one hand, through the continued use of some of the larger chamber tombs; on the other hand, through the construction and continued use of small enclosures or monuments erected over older burials, which were respected, incorporated and preserved by the new structures; and finally, through the addition of tombs, small enclosures, and a long L-shaped wall to the large tumulus containing the oldest burials [247], which was a highly visible and significant element in the funerary landscape. At the same time, on the Patela plateau, a new phase of reconstruction and expansion of the settlement involved the opening of streets and a small public square, the construction of multi-roomed household units and of large buildings (such as Building B and the later VA-VD) with communal, cultic and storage functions. All this suggests an increase in social complexity and the growth of some influential and competitive groups within the community in the 8th c. BC.

Ritual deposits of the G period have also been identified: in some cases they are simple – a single cup, perhaps employed in a libation ritual, often embedded in the layer of stones, more rarely inserted within a small precinct, and sometimes in connection with layers of burnt material [248].

Sporadic, but relevant, are the cases where large quantities of material are deposited in a limited areas. One of the most interesting examples is deposit 363+367, characterized by the presence of a large burnt layer and numerous MG-LG lekythoi of the Praisos type (Fig. 45a-b) [249], some vessels for pouring (oinochoai) and for containing (amphorae) liquids, as well as other items. The considerable number of lekythoi of the Praisos type that can be reconstructed (MNI restored so far 12, but there are still many small fragments to be recomposed) may indicate that the area was used for repeated ritual activities. The ground, characterized by small depressions in the surface of the rock, was most suitable for the deposition of groups of objects; their associations cannot be safely reconstructed today.

Before concluding, some further remarks on the G pottery are pertinent: some, as we have mentioned throughout the article, concern the painted and figurative output. However, the necropolis has also yielded a substantial core of coarse ware cinerary urns, unlike the North Cemetery at Knossos where the number is small compared to Prinias [250]. This product, which is not only limited to the G period, but is diachronically represented over the life span of the necropolis, makes it possible to reconstruct the development of the shape of the coarse ware urn across the different periods and raises the question of the social dimension of this production. For the 8th c., the necked jar prevails, but there is attested also the neckless ovoid type, in one case with three handles in imitation of painted ovoid pithoi (Fig. 46).

Antonella Pautasso

[247] See *supra*, Perna, 531.

[248] As in the deposit 127, where the LG cup has the inv. P 1761. For the shape, see Coldstream-Catling 1996a, 131, 98.4, fig. 101 (LG-EO).

[249] On the lekythoi of Praisos type, see Coldstream 1996, 355.

[250] The case of Eleutherna is interesting, where the T. A1K1 has yielded about ten plain-necked vessels (Kotsonas 2008, 129-133).

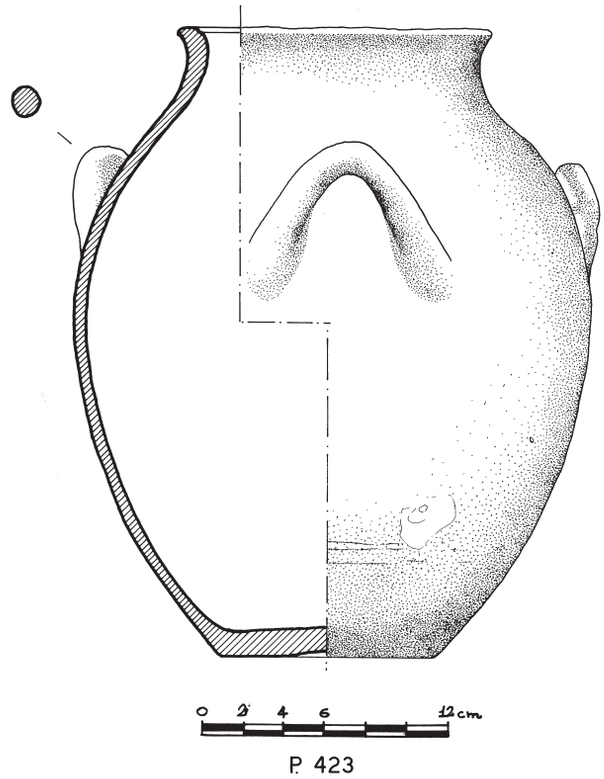

Fig. 46. The coarse ware ovoid pithos inv. P 423
(© Archivi SAIA, NIG 8612).

5.3 The last use of the Iron Age cemetery: 7th and first half of the 6th c. BC

About 30 tombs from the 7th c. BC have been identified so far, but their number is expected to increase. The well-known stelai and an unpublished limestone torso (inv. P 1213) prove the presence of 7th-c. BC funerary monuments and prominent tombs that have sadly not survived [251].

The graves consist of urned cremations and of pithos burials that generally contain remains of infants. The range of variety in the profiles of the numerous vases placed inside the pithoi and the numerous infants buried inside each of them suggest a prolonged use and reuse of this type of collective burial. In the absence of off-island imports associated with local pottery at Prinias, the Knossian imports remain the reference point for dating. Thus a Praisos-type lekythos (Fig. 47.1) and a bottle of typical "EO" Knossian style (Fig. 47.2) [252], alongside some one-handled cups with the typical "LO" profile (Fig. 47.3-4) – with a tall offset lip and tapering lower body [253] – date the use of the pithos burial No. 453 throughout most of the 7th c. BC. The pithos, in fact, contained dozens of small vases (Fig. 48) and the remains of at least 13 individuals who died at a very early age [254], as well as the remains of fetuses. Such human remains, therefore, are evidence of a high infant mortality rate, which was quite common in the ancient world, and not of a single episode of epidemic. It should be emphasized that some tombs (not datable) consisted simply of cremated bones [255], perhaps originally wrapped in cloth, placed without any clay or metal container and no grave goods among the layer of stones of the second phase [256]. In other cases, heaps of un-cremated bones belonging to several individuals were placed among the stones, also in this case, without any grave goods. T. 258 (Fig. 49), for example, contained un-cremated bones belonging to at least five adults, three children and a cremated bone fragment [257].

[251] Λεμπεση 1976.

[252] See Coldstream 2001, 42, fig. 1.11l-m and 44, pl. 21b, respectively. "EO" refers to Coldstream's terminology.

[253] See *ibid*., 57, fig. 1.19m. "LO" refers to Coldstream's terminology.

[254] Mallegni 2019.

[255] The cremated bones have not yet been studied.

[256] *E.g.* T. 182: «È una deposizione in mezzo al pietrame. Le ossa sono combuste. Questa deposizione è a -0,08 di profondità. Attorno e sopra c'è pietrame» (Excavation Journal of H. Anagnostou, July 19, 1971).

[257] Courtesy of Francesco Mallegni.

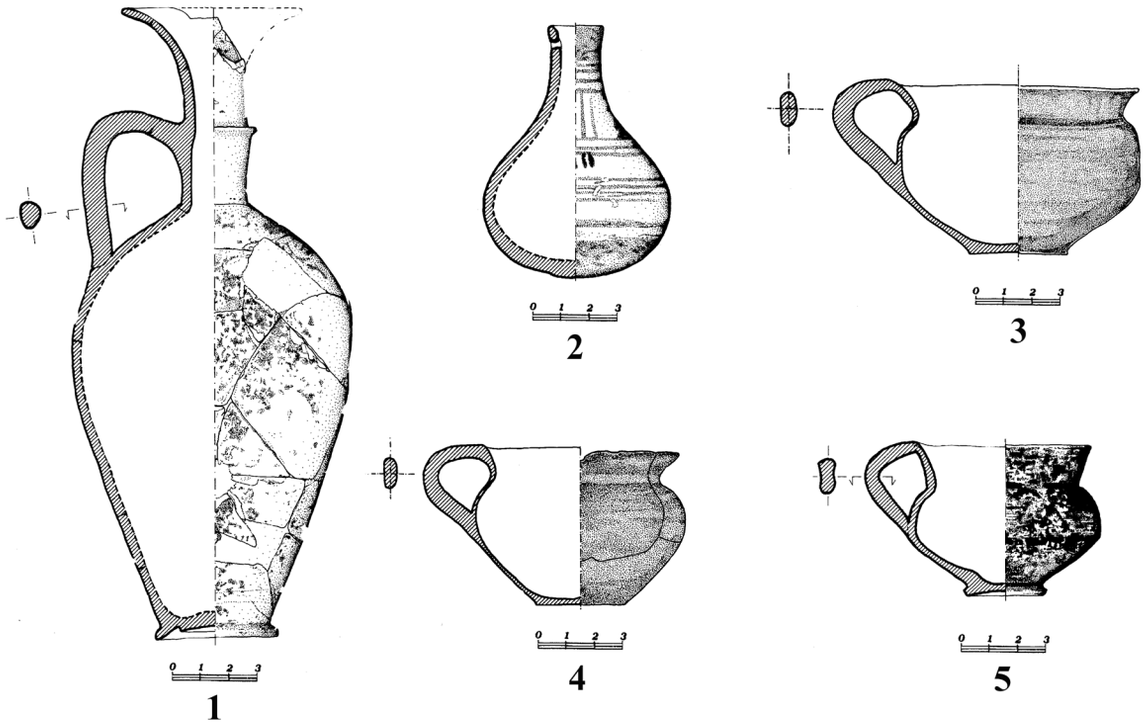

Fig. 47. Selected pottery from T. 453 (© Archivi SAIA, NIG 8613).

A true PAR decoration does not seem to have ever taken root in the pottery of Siderospilia, which is largely unadorned. Despite this, figured pottery did continue to be produced continuously after the PG period. Some fragments, which unfortunately cannot be associated with individual tombs, bear witness to this. The sherd from a large (cinerary?) vase with a group of hoplites (Fig. 50.1) – datable to the early 7th c. BC by its silhouette and contour-drawn technique – recalls the warriors of the limestone stelai. Towards the middle of the 7th c., narrative scenes also appear, such as on the fragment depicting one of the earliest Heracles and Cerberus scenes (Fig. 50.2) [258]. The sherds of a contemporary vase in the shape of a couchant lion (inv. P 2784) – which is the second to be reported in the necropolis [259] – and other examples from central Crete (the Idaean Cave [260], Knossos [261] and Gortina [262]) indicate that the well-known example of Afrati-Arkades [263] is not an isolated piece as was once believed [264].

Since the settlement on the Patela had ceased by the first half of the 6th c. BC [265], the connected necropolis had to presumably be abandoned in that period too. Indeed, the last phase of frequentation to the cemetery can be inferred by a fragment of a Siana cup, dating to 575-550 BC [266], though it was found outside a stratigraphical context. However, there is no other imported pottery datable to that period, much less anything found within individual tombs. Notwithstanding this and despite our insufficient knowledge of the Cretan Archaic pottery, some local vases can be provisionally dated to the 6th c. for cross reference with those of other sites. This applies, for example, to a one-handled cup with a wide offset lip from the mentioned pithos burial 453 (Fig. 47.5). In fact, its angular shape is similar both to a Tarra specimen associated with a cup of the Class of Athens 1104 (575-550 BC) [267] and to a base fragment found on the surface and dated to 575-525 BC [268].

Giacomo Biondi

[258] Rizza-Rizzo 1984, 256, fig. 491. As regards the narrative and mythological scenes in Crete, cf. Sporn 2013; Pilz 2014.
[259] Λεμπεση 1976, 18, pl. 54γ and Biondi forth., fig. 6.
[260] Boardman 1961, 62-63, No. 269, pl. 22.
[261] *Id.* 1962, 33-34, pl. 5.f-g.
[262] Johannowsky 2002, 64, Nos. 441, 441a.
[263] Levi 1927-1929, 239, fig. 281.
[264] For an extensive bibliography on lion vases of different types and on other trick vases found in Crete, see Kotsonas 2008, 255-256.
[265] Rizza 2008, 298-302.
[266] Λεμπεση 1976, 45-46, pl. 54α.
[267] Τzanakakη 2013, 213, 215, figs. 25γ, 29α.
[268] Erickson 2010, 202-203, fig. 8.5.

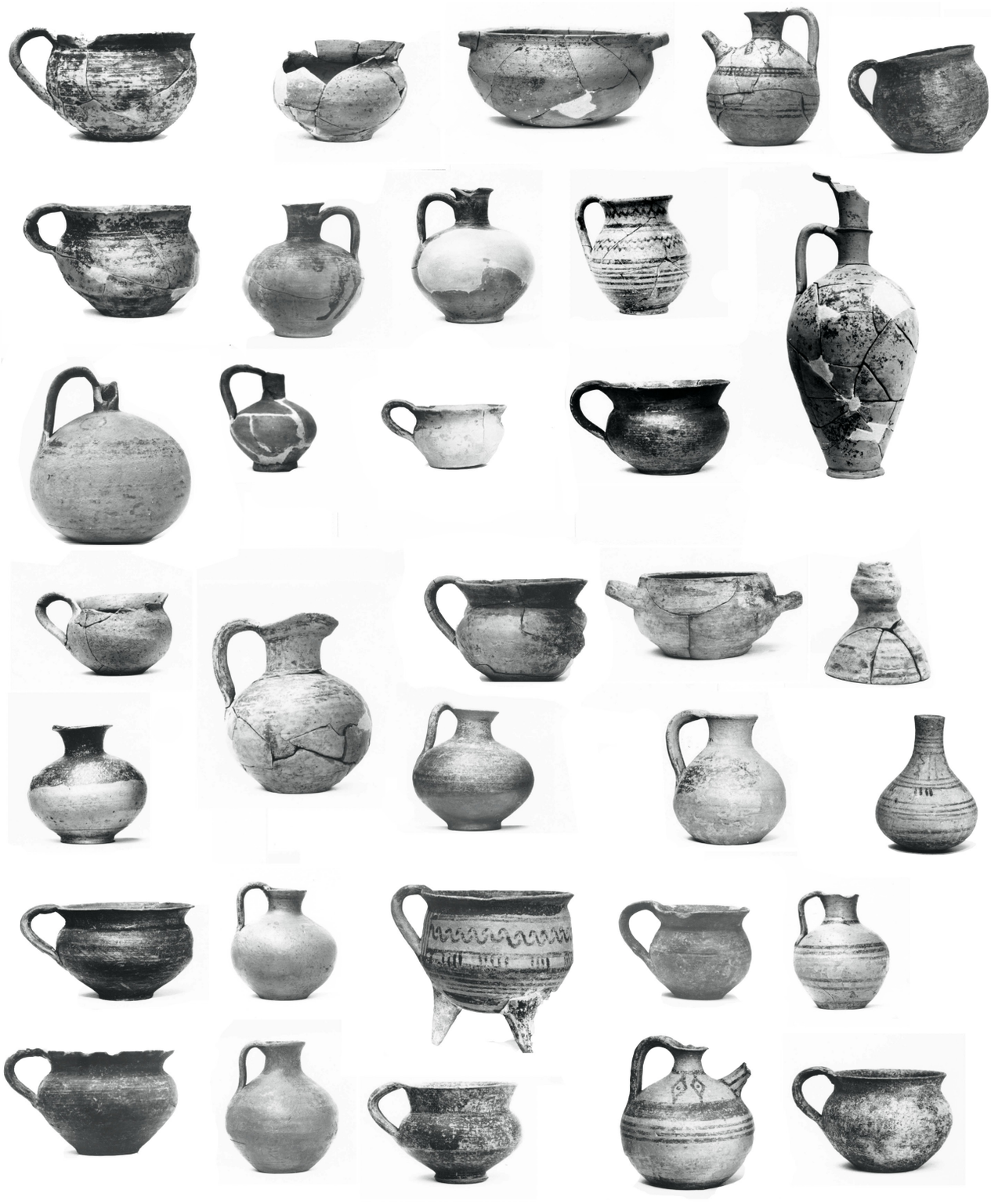

Fig. 48. Pottery from T. 453 (© Archivi SAIA, U/13482).

Fig. 49. The T. 258 (© Archivi SAIA, U/13483).

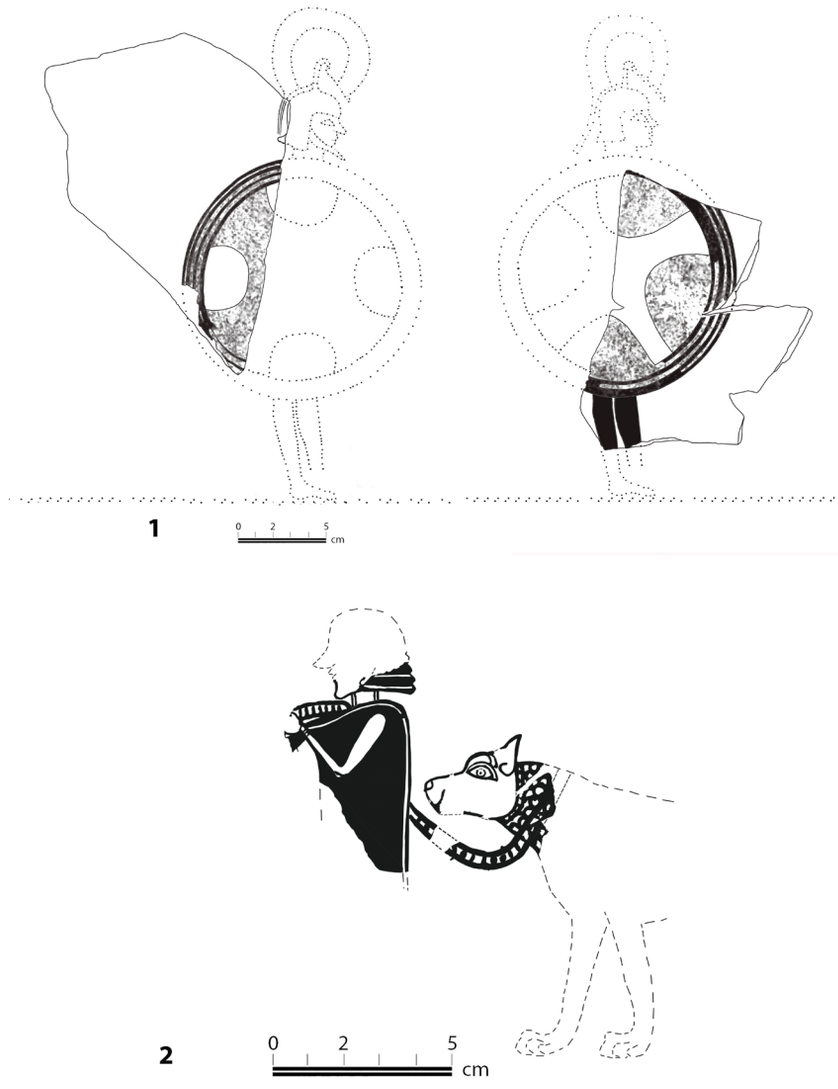

Fig. 50. Drawing of the figured pottery: 1) frr. invv. P 258, P 557; 2) P 299 (drawing G. Biondi; © Archivi SAIA, NIG 8614).

6. The metal finds [269]

The Siderospilia necropolis of Prinias is extraordinarily rich in metal finds, richer than the North Cemetery of Knossos or the Orthi Petra necropolis of Eleutherna. The study was carried out by Hartmut Matthäus and Gisela Schumacher-Matthäus (Erlangen). In total, almost 1600 bronze and iron objects have been catalogued [270].

The necropolis can be divided into two main phases. An older one between the SM and LPG period, *i.e.* between ca. 1070/1050 and the first half of the 9th c. BC, when chamber tombs for inhumations and burial pits for cremations dominated, and a second phase starting during the second half of the 9th c. BC, when cremations in pithoi became the predominant form of burial. There are also some early burials of horse teams with their harnesses.

The earlier burials in particular, some individual and some collective, are rich in metal objects such as weapons, clothing ornaments, jewelry, horse harnesses, tools and utensils and, finally, an extraordinary number of bronze vessels. Most of the metals date from the 10th-9th c. BC, *i.e.* the PG period and the subsequent PGB.

Unfortunately, most of the metal grave goods are in a very poor state of preservation. This is partly due to the looting of the graves and the modern agricultural use of the area, but also to the ancient burial customs. Many of the metal objects, especially the bronze vessels, were burned in the funeral pyres or – especially in the case of iron spearheads and swords – made unusable by breaking or bending them, presumably to identify them as the sole property of the deceased, a ritual also found in other Early Iron Age necropoleis [271]. Parts of burnt and fragmented objects were apparently only placed *pars pro toto* in the graves. What happened to the rest remains unknown.

In the necropolis of Siderospilia, several pits – later called fosse – were found containing almost exclusively metal fragments. In no case could the fragments found there be identified as matching or belonging to those in the tombs themselves.

6.1 Weapons, harness, tools

Typical for male burials of the Prinias aristocracy are spearheads, sometimes combined with short swords or longer iron daggers (L. ca. cm 40) [272]. The typologically differentiated short swords of the PG and G periods (about 70 specimens) are derived from Late Bronze Age models of the Naue II type (Fig. 51a-b). The iron long swords of the type found as votive offerings in Greek sanctuaries are missing. The spear- and javelin-heads are also made of iron (about 150 examples, mostly very fragmentary, Fig. 51c-d), only a few bronze examples are found in early tombs. Particularly typical of the Cretan area are slender spearheads, the blade of which has a horizontally angled base on the slit socket. They are often found in pairs in tombs. The weapon types find parallels in the cemeteries of Knossos (Fortetsa and the North Cemetery), Eltyna, Dreros and Eleutherna [273], and can therefore largely be identified as local Cretan creations. Arrowheads are rare, and there are no traces of protective armor such as corselets, mitres, greaves or helmets. Similarly, unlike Knossos, Eltyna or Eleutherna, there are no remains of obeloi or fire dogs, the typical utensils of aristocratic banquets.

The range of grave goods in the men's tombs is completed by tools and implements such as trunnion axes, flat axes, chisels, hammers and knives made of iron.

[269] Thanks are due to the members of the Italian excavation at Prinias, first of all to the late D. Palermo (Catania), who died all too soon and who invited my wife and me to work on the metal finds of the Siderospilia necropolis, and to the present director of the Archaeological Mission, A. Pautasso (Catania). We would also like to thank the members of the Greek Antiquities Service, who supported our work at Prinias as well as at the Museum of Heraklion with great cooperation and generosity: S. Mandalaki, Director of the Museum of Heraklion, and especially her assistant I. Galli, as well as V. Sythiakaki and I. Serpetsidaki of the Ephoria in Heraklion. Our work in Crete was supported by the members of the Italian Mission of Prinias, R. Gigli Patanè, E. Pappalardo and S. Rizza, to whom we are deeply grateful. In Cyprus, D. Pilides and E. Zachariou assisted us in our work at the Cyprus Museum. We benefited from the unsurpassed expertise of V. Karageorghis and the help of E. Raptou. We are deeply indebted to them. We are also indebted to a number of colleagues in Germany: R. and St. Nawracala (Erlangen) for the preparation of published drawings and the electronic processing of photographs, G. Pöhlein (Erlangen) and the late Chr. Vonhoff (Bochum). G. Rizza, the long-time excavation director of Prinias, did not live to see the beginning of our work. Finally, we would like to thank the Fritz Thyssen Foundation for the Promotion of Science (Cologne), which supported our work financially in 2012 and 2013.

[270] Preliminary reports: Matthäus 2014; 2016a; 2018; 2019: see further *Id*. 2020 und Matthäus-Vonhoff 2019.

[271] Cf. Hom. *Il.* VI.416-420, burial of Eetion.

[272] Types of weapons and horse harness: Matthäus 2019, 3-5.

[273] For the iron weapons: Brock 1957, 201-202 (Fortetsa); Snodgrass 1996, 577-585 (North Cemetery); Effezoy 2010 (Eltyna); Stampolidis 2004a, 281, No. 359 [N. Stampolidis] (Eleutherna).

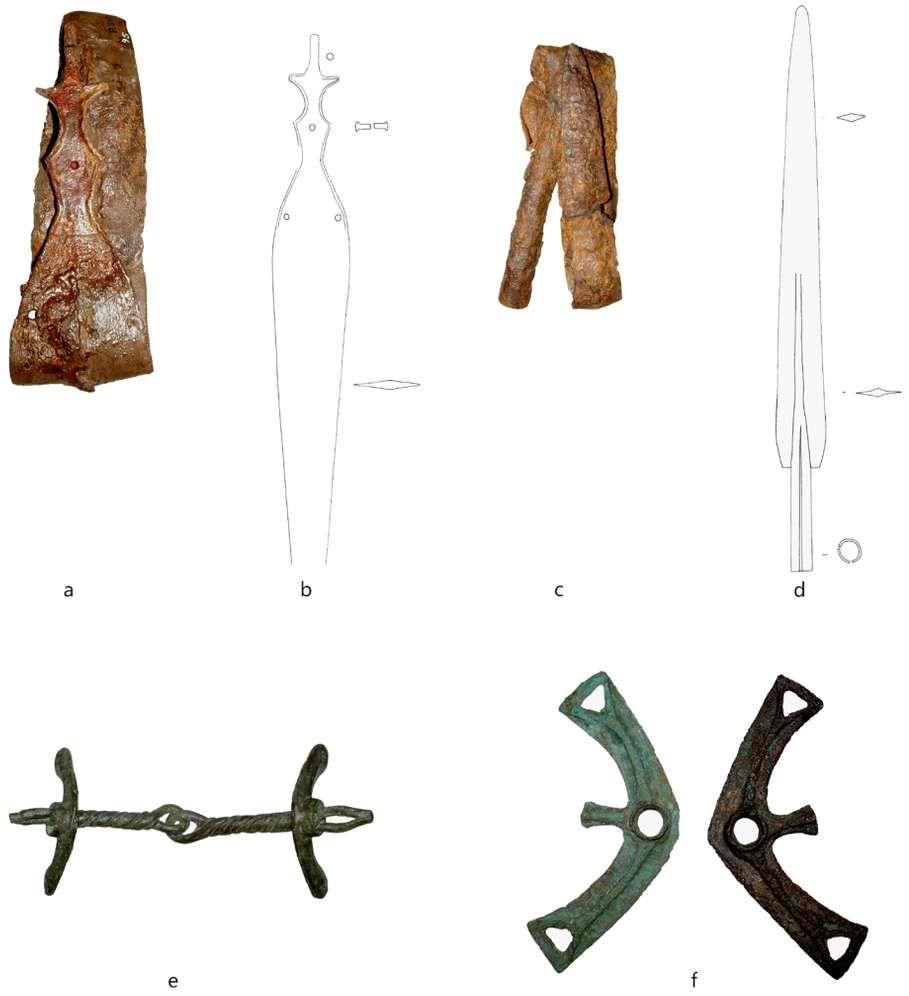

Fig. 51. Prinias, Siderospilia necropolis. Iron weapons and bronze horse harness (Museum Iraklion): a) T. 213, short sword, inv. P 310 (© Archivi SAIA, U/13489); b) T. 213, reconstruction drawing of the short sword (© Archivi SAIA, NIG 8615); c) trincea XL, spearhead, inv. P 1324 (© Archivi SAIA, U/13491); d) trincea XL, reconstruction drawing of the spearhead (© Archivi SAIA, NIG 8617); e) grave BB, complete bronze snaffle bit, inv. P 481 (© Archivi SAIA, U/13494); f) grave BC, crescent-shaped cheek-pieces, inv. P 495 (© Archivi SAIA, U/13495).

A unique spectrum of metal horse-bits was found in the animal burials BB, BC, BE, BF, BU [274]; in addition, in Fosse 78 and 152 there are fragments of cheek-pieces dating to the PG or PGB period, *i.e.* the 10th/9th c. BC. A complete bronze snaffle bit was found in T. BB (Fig. 51e) [275]; otherwise it is the crescent-shaped cheek-pieces with three perforations for the attachment of the reins (Fig. 51f) that have been preserved. The ends can be round or square, and the cheek-pieces are decorated with relief ridges. At T. BF, a mouth-piece made of twisted iron bars has also survived. Parallels are found exclusively on the island of Crete, in the North Cemetery of Knossos [276] and in Arkades [277]. They are Cretan local forms of the Early Iron Age.

6.2 Fibulae and needles

Predominantly, but not exclusively, the grave goods consist of clothing ornaments, often bronze and iron pins, singly or in pairs (about 200 examples in total). The pins belong to a good part of the usual Submycenaean and PG types, which I. Kilian-Dirlmeier has classified [278] as "Submycenaean/Protogeometric forms", pins with a globular swelling on the shaft and a round "nail" head (Fig. 52a).

[274] See *supra*, Biondi, 536-539, and *infra*, Wilkens, 574-575.

[275] See *supra*, Biondi, 537-538, and *infra*, Wilkens, 580-581, for the tomb BB.

[276] Catling 1996c, 569-570, pl. 282, f92.

[277] Levi 1927-1929, pl. VIII (P 11-12).

[278] Kilian-Dirlmeier 1984, 66-83.

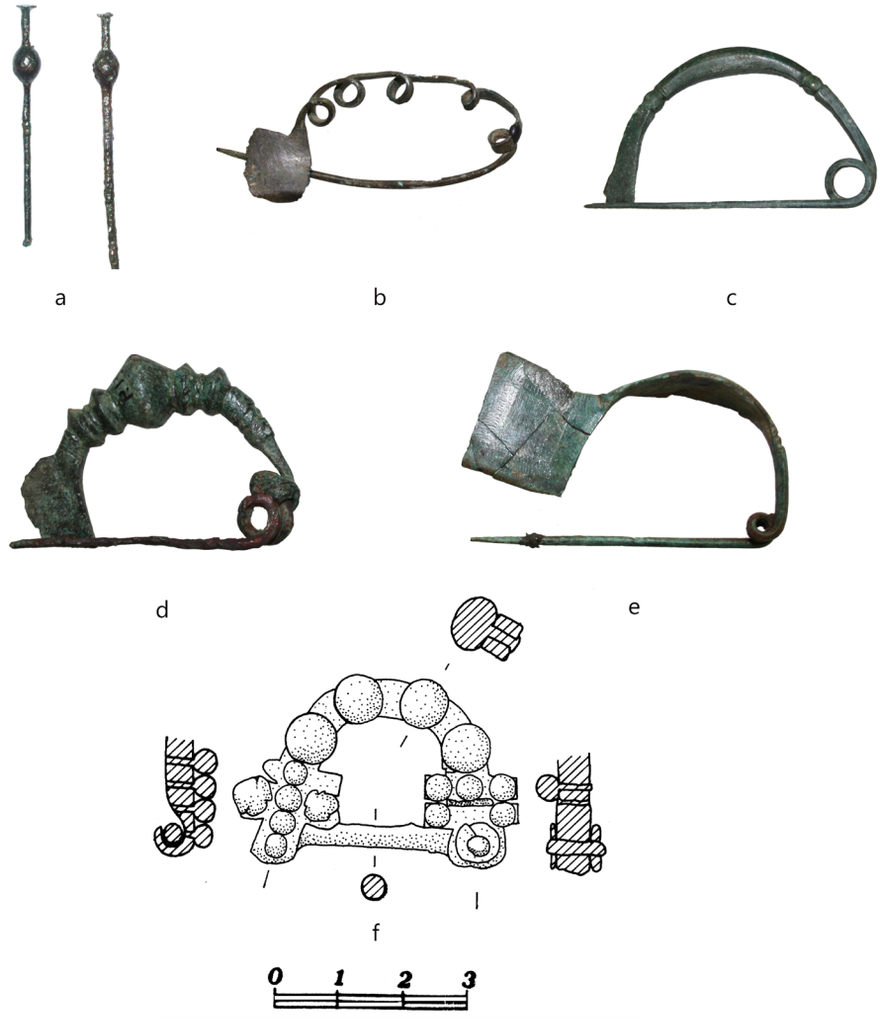

Fig. 52. Prinias, Siderospilia necropolis. Bronze pins and fibulae (Museum Iraklion): a) T. AI, pair of pin, inv. P 2210, P 2265 (© Archivi SAIA, U/13496); b) trincea CCXIV, arch-bow fibula with bow loops, inv. P 1032 (© Archivi SAIA, U/13486); c) T. W, arch-bow fibulae with swollen bow, inv. P 204 (© Archivi SAIA, U/13490); d) grave 93, fibulae with angularly profiled spherical bosses, inv. P 131 (© Archivi SAIA, U/13487); e) grave 45, fibula of continental type, inv. P 205 (© Archivi SAIA, U/13488); f) trincea CCLV, fibula of Phrygian type, inv. P 1161 (© Archivi SAIA, NIG 8591).

In contexts from LG to PAR, small pins (with an average length of around cm 8) dominate, characterized by a small disc or conical head with a button-like swelling underneath, bordered by relief ridges. This is a typical local Cretan type of pin, which has numerous parallels on the island, such as on the Patela of Prinias, in the North Cemetery of Knossos, in Fortetsa, Atsalenio, Arkades, Dreros and, last but not least, in the cave of Psychro. In the necropolis of Siderospilia, about 40 of these pins have been found, unfortunately many of them without a burial context [279].

Among the fibulae (about 85 specimens), the PG and G periods are dominated by types whose main distribution is on the Greek islands. There are simple arch-bow fibulae of various types, including a single specimen with bow loops, unfortunately without a burial context (type II g according to E. Sapouna-Sakellarakis, Fig. 52b). A larger number of arch-bow fibulae with swollen bow (type IV, Fig. 52c), fibulae with spherical bosses (types III a and b) as well as fibulae with angularly profiled spherical bosses (type III c, Fig. 52d), "island fibulae" of type Va were deposited in the graves. On the other hand, Greek mainland variants of type IX (Fig. 52e) and spectacle fibulae ("Brillenfibeln", type X a and b), whose origin is to be sought in the north, are rarer [280].

[279] Matthäus 2023.

[280] Sapouna-Sakellarakis 1978; Matthäus 2019, 5-6.

Unfortunately without context, the only example imported from the East, a bow fibula of Phrygian type with riveted ornamental bosses, is indeed a Phrygian original and not one of the well-known East Ionian imitations (Figs 52f) [281]. A repair to the needle attachment indicates a longer period of use. Imported objects from the Phrygian cultural area are extremely rare on the island of Crete. Only simple omphalos and lotus phialai from the Orthi-Petra necropolis at Eleutherna [282] and the Eileithyia cave at Inatos [283] can be taken as evidence of direct cultural contacts.

6.3 Metal vessels

6.3.1 General

The total number of bronze vessels in the Siderospilia necropolis cannot be determined with certainty because of the fragmentary state of preservation, but it is probably close to two hundred. Only two bronze vessels have survived intact, a two-handled basin of Cypriot provenance and a plain calotte bowl. Most of the rim, wall and base of an imported ribbed bowl (patera baccellata, Zungenphiale) have also survived. Otherwise, the corpus of finds consists of rim fragments, handles and base parts, most of which are badly corroded, and many of which were additionally melted in the pyres.

As far as typological identification is possible, the predominant vessel types are hemispherical bowls, round-bottomed cauldrons and basins of large and small format, with and without handles. Some of the vessels, such as the smaller hemispherical bowls, may well have been made by local Cretan metalworkers, but the better preserved vessel remains, *i.e.* clearly identifiable vessel types, illustrate that a remarkable percentage were imported from the civilisations of the eastern and southern Mediterranean – Cyprus, the Levant and Egypt.

6.3.2 *Kypriaka*

The oldest Cypriot import is a Late Bronze Age beak-spouted oinochoe from fossa 39, preserved in fragments of the mouth and handle (Fig. 53a) [284]. Cypriot parallels from Enkomi date its origin to the years around 1200 BC (LC IIC - LC IIIA), while the find context in Prinias points to the period around 900 BC. It is therefore an heirloom that has been preserved for centuries, a well-known phenomenon that can also be observed in other Cypriot imports to the Aegean (bronze amphorae, rod tripods). The finds may testify to an appreciation of the quality of craftsmanship, but they may also be rooted in an ideology that can be traced back to the Homeric epics, which glorified the heroic past and its material evidence [285].

All other *Kypriaka* are contemporary Early Iron Age imports, such as some fragments of bowls with figure-of-eight attachment plates, crowned with lotus buds, a type that was widespread throughout the Mediterranean in the early 1st millennium BC, from the Near East via the Aegean and Italy to the Iberian Peninsula, and which has been discussed many times in literature, underlining the outstanding quality of Cypriot toreutics [286]. A comparable handle variant can be traced in Prinias on a number of examples of round-bottomed large and small bowls: handles with figure-of-eight escutcheons whilst the horizontal handle itself remains plain, *i.e.* without a lotus flower. The oldest example, a bowl with a diam. of cm 30.5, was found in the SM pit tomb BA (Fig. 53b) [287]. Cypriot prototypes, particularly well represented in Palaepaphos, have a long period of life between CG I and CG III (*i.e.* ca. 1050-750 BC). This span of time corresponds to different variations of the handle shape in the Siderospilia necropolis in later burials (Fig. 53c), although the lack of exact parallels does not yet allow us to distinguish with certainty between imports and local adaptations.

6.3.3 Rod tripods

Finally, from the Siderospilia necropolis come fragments of five bronze rod tripods. The best-preserved example, in the presumably PG fossa 78, is decorated with a delicate relief of spiral ornament on the legs and rim, made by the lost-wax casting process (Fig. 53d).

[281] Matthäus 2019, 6, fig. 12 with further references.
[282] Σταμπολιδης 1994, 30-31, 114-116, Nos. 67-68.
[283] Kanta *et alii* 2022, 158 [A. Kanta].
[284] Matthäus 2016a, 182-185; 2018.
[285] For long preserved valuable objects cf. *e.g.* Hom. *Il.* X.260-270 (boar's tusk helmet of Meriones); *Od.* 4.614-619, 15.112-120 (silver krater of Phaidimos, king of the Sidonians). On *Kypriaka* preserved for a long time cf. Matthäus - Schumacher-Matthäus 2015, 29-37, 60-62, and *passim*.
[286] Cypriot bowl types: Matthäus 2016a, 185-191.
[287] Inv. P 482. Perna 2020, 273-274, fig. 7 and *supra*, 531-532.

Fig. 53. Prinias, Siderospilia necropolis. Bronze vessels and vessel fragments (a-d, f) Prinias, Italian excavation house, e) Museum Iraklion): a) fossa 39, beak-spouted oinochoe of Cypriot type, reconstruction drawing (© Archivi SAIA, NIG 8618); b) T. BA, bowl of Cypriot provenance, inv. P 482 (© Archivi SAIA, U/13492); c) fossa 152, bowl handle of Cypriot type; d) fossa 152, fragments of a bronze rod tripod (© Archivi SAIA, U/13485); e) T. X, bronze hemispherical bowl, inv. P 734 (© Archivi SAIA, U/13493).

It is not a Cypriot original, but a testimony of the well-known Cretan Iron Age workshop group, defined by the author as well as by Papasavvas: this is indicated by the wide rim closed at the top by a strong ledge, and also by the clearly band-shaped, no longer rod-shaped legs [288]. A nice parallel is the – much smaller – tripod from the PG tomb XI at Fortetsa [289].

The other small fragments from Prinias are also likely to be locally Cretan, continuing the tradition of locally adapted Cypriot metalwork. The workshops may have been in the vicinity of Knossos, which also has many parallels with Prinias in its ceramic repertoire, but a production site at Prinias itself is also possible.

6.3.4 Imports from Cyprus or the Levant

A number of vessels do not allow of a precise determination of local origin due to a lack of sufficient parallels, such as a bronze hemispherical bowl from T. X (Fig. 53e), a type that is widespread in Cyprus, but also occurs in the Near East in the 1st millennium BC, as well as in the Greek cultural area, on Crete itself, in Argos and in Athens [290]. A ribbed bronze cup (fossa 39, *i.e.* 9th c. BC; Fig. 54) belongs to the type studied by Sciacca in a monumental study in 2005, which has its roots in Egypt at the time of the

[288] Matthäus 2016a, 193-195; Παπασαββας 2001.
[289] Brock 1957, 22, 188, pl. 13.
[290] Matthäus 2016a, 191, fig. 13.

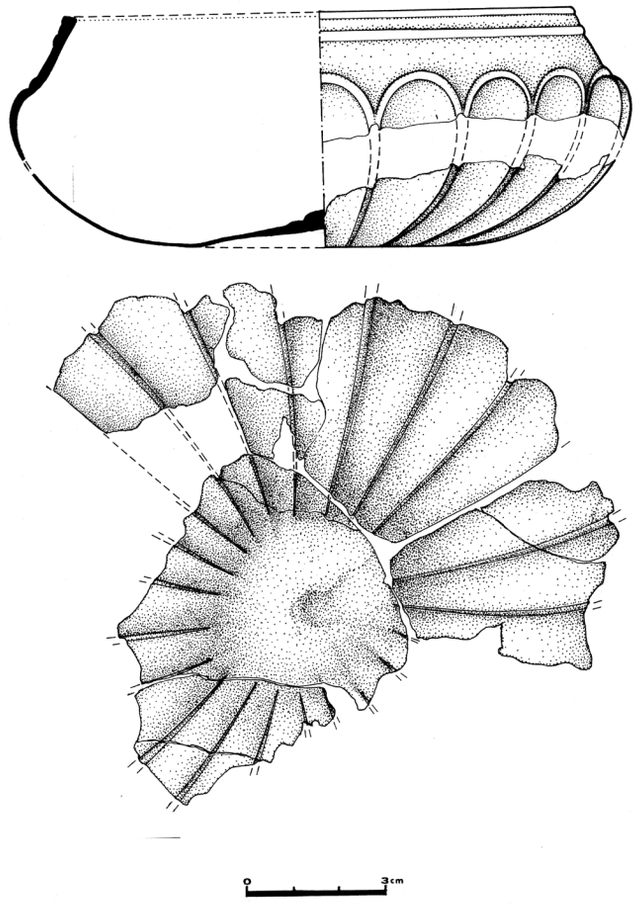

Fig. 54. Fossa 39, ribbed bronze cup, inv. P 144
(© Archivi SAIA, NIG 8589).

Pharaoh Psusennes (whose reign began around 1040 BC). In the 1st millennium BC, it is found distributed throughout the Levant, Mesopotamia, Urartu and Luristan, in the west across the Aegean to the Apennine Peninsula and the Iberian Peninsula, where imports developed alongside local adaptations [291]. The handle construction of a large bowl or a small cauldron (Trincea XVIII), a moderately long band-shaped attachment with a spool from which a movable ring handle is suspended (Fig. 55a), belongs to the same series, with parallels in Palaepaphos, but also in the North Syrian region (*e.g.* Tell Halaf). Finally, there are fragments of three round bottomed carinated cauldrons (from Trincea XVIII and fossa 152, 9th c. BC; Fig. 55b), which have parallels in Eleutherna (T. A1K1, EG) and point to predecessors in the Levant, *e.g.* Tell es-Sa'idiyeh or Jatt [292].

6.3.5 *Aigyptiaka*

A horizon of imported *Aigyptiaka* stands out among the metal vessels [293]. They are limited to two types that are also found in other Aegean sites: small squat jugs with a lotus flower ornament in fine relief on the handle (fossa 39 and 152; Fig. 55c) and situlae (fossa 152; Fig. 55d). The more common form is represented by handles and a few fragments of mouths of lotus jugs, a type that originated in the metalworking tradition of the New Kingdom, at the latest from the 18th dynasty onwards, but survived well into the 1st millennium BC, as shown by Egyptian or Egyptianising bronze juglets from the Kushite region. This is a clear indication of the conservative character of Egyptian toreutics, even beyond the transition from the 2nd to the 1st millennia BC. They occur in contexts from the period around 900 and the second half of

[291] Sciacca 2005. Prinias: Matthäus 2016a, 192-193, figs. 14-15.
[292] See *Id.* 2019, 10-13; on the cauldron types also *Id.* 2016a, 193-194; 2020.
[293] In detail on the *Aigyptiaka*: *Id.* 2014; further *Id.* 2016a, 195-197; 2019, 13-14.

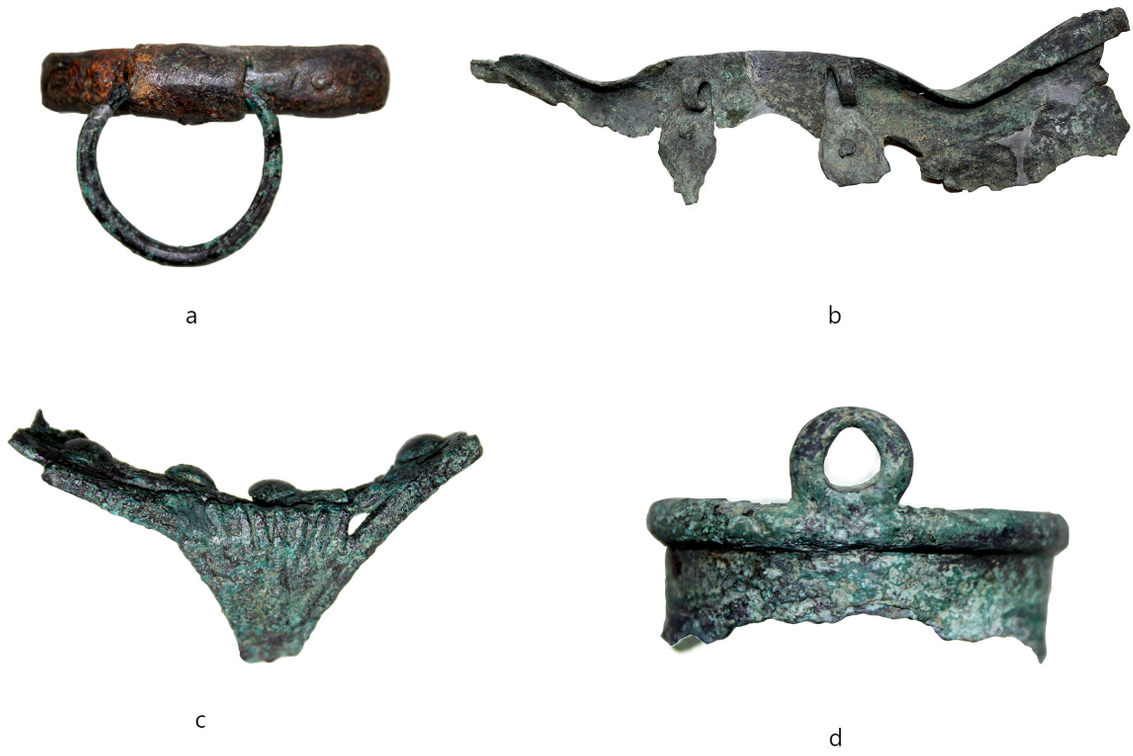

Fig. 55. Prinias, Siderospilia necropolis. Bronze vessel fragments (Prinias, Italian excavation house): a) trincea XVIII, ring handle of a small cauldron; b) trincea XVIII, fr. of a cauldron; c) fossa 152, handle of an Egyptian lotus jug; d) fossa 152, fr. of an Egyptian situla (© Archivi SAIA, U/13484).

the 9th c. BC (PG and PGB, respectively). In the Aegean, this type is common on the island of Crete, for example in the Idaean Cave (about 15 examples in total, both complete jugs and fragments of handles), in the Knossos North Cemetery, in Fortetsa and in the sanctuary of Hermes-Aphrodite at Kato Syme [294]. In the Toumba necropolis of Lefkandi on the island of Euboia, two jugs are found in LPG contexts, in TT. 39 and 70, and also a technically singular, molded heavy vessel in grave 33 in a context of the SubPG III period, contemporary with the Attic MG phase [295]. Situlae are rarer in the Greek cultural area, examples from Lefkandi, Toumba, TT. 42 (PG or Sub-PG I) and 70 (LPG) and from the Idaean Cave [296]. The loops on the rim of one situla from fossa 152 of the Siderospilia necropolis at Prinias (Fig. 55d) show clear signs of use, suggesting that the vessel was used for a long time at Prinias before its deposition in the fossa.

The series of imported *Aigyptiaka* seem to have started around 900 BC, contemporary with the beginning of the 22nd (Libyan) dynasty, a phase of renaissance of Egyptian power and politico-military expansion, evident, for example, in the conquest of Jerusalem by Pharaoh Sheshonk I around 925 BC and the extension of the Egyptian presence into the Phoenician area. The archaeological evidence in the Aegean seems to suggest that these expansive political tendencies were accompanied by an expansion of economic relations as well [297].

6.4 Conclusions

The metal funerary objects from the Siderospilia necropolis of Prinias attest to a craftsmanship rooted in strong local traditions, but also provide an insight into the extensive networks of a social upper class that benefited from splendid imported *keimelia* from all over the eastern Mediterranean, from Cyprus, the

[294] For the lotus jugs from the Idaean Cave, Matthäus 2011, 114-115, figs. 8-11. Furthermore, for the other examples: Coldstream-Catling 1996a, 137, 100.f31, fig. 160, pl. 271 (North Cemetery); Brock 1957, 136, 1572, pl. 113 (Fortetsa); the fragment from Kato Syme is unpublished (see Matthäus 2011, 114, fn. 23).

[295] Popham *et alii* 1982, 219, No. 31, fig. 8, pl. 33e, 239 with reference to the example from T. 33; see also Matthäus 2011, 114.

[296] *Ibid*., 115, with bibliography.

[297] Matthäus 2014 provides more details.

Levant and Egypt. This is all the more remarkable as Prinias was a center in the interior of the island, with no access to the sea, and transmaritime contacts had to be made through the port of Knossos, indicating a strong link with the dominant Cretan metropolis. Prinias must have benefited from its privileged position on one of the main routes between the N coast and the Mesara in the S, and from its control of this route.

It remains to be investigated whether the trade with Cyprus was limited to the exchange of luxurious metal tableware, or whether these precious objects only accompanied an economically much more important trade in raw materials, namely the import of Cypriot copper, a metal that was hardly available locally in the Aegean, *i.e.* as diplomatic gifts, as already described in the 2nd millennium BC in the Amarna Letters or in the Wenamun Story. What remains unclear is what the Cretan customers had to offer in exchange: the Homeric epics mention products of agriculture and animal husbandry, with iron among the raw materials traded. In the archaeological tradition, such trade contacts remain invisible [298].

Beyond the religious concern for the deceased, there were political and social motives for giving luxury goods to the afterlife: ostentatious funeral ceremonies provided a stage for the public self-expression of aristocratic families in the social life of a city through the display of such *keimelia*.

Hartmut Matthäus

7. Jewelry from the necropolis

The main aim of this contribution is to present some preliminary remarks on the study of the jewelry found in the tombs of the necropolis of Siderospilia. The finds consist mostly of small gold artefacts – pendants, finger rings, earrings, beads, clothing plaques – and of rock crystal, faience, glass and hard stone beads, most of which were once part of necklaces. This group of precious objects represents one of the most significant complexes of materials of its kind, more than those found in the necropolis of Knossos and second only to those of Eleutherna in terms of quantity [299].

The gold artifacts come mostly from the first phase of the necropolis, characterized by pit tombs (with cremated individuals) and tholoi or chamber tombs carved into the rock with a tholos cover (with inhumed corpses). They were not always part of the grave goods but in many cases they were found in pits dug in the rock or on the ground near the tombs, together with remains of burnt material – charcoal, bones – and fragments of metal weapons and vessels probably used in funeral rituals linked to the moment of burial, whose dynamics are not yet clear. The ornaments are mostly made of thin sheets of gold obtained from the original ingot by hammering and then decorated using the *repoussé* technique – often accompanied by lines of small relief dots obtained with the use of a small punch – or by stamping, or by using a mold. The thinness of the sheet – sometimes we are talking about tenths of a millimeter – has made the conservation conditions extremely precarious, often making it difficult to reconstruct the original shape (Fig. 56a). The most represented category is that of the gold discs (about cm 4 in diameter and weighing even less than a gram), that were originally sewn onto clothes (Fig. 56b-c). The custom of adorning clothes or shrouds with gold elements goes back to the Mycenaean period: in the tombs at Mycenae there are a number of similar discs, albeit smaller [300]. The Mycenaean tradition seems to have survived in Cyprus, where discs with rosette patterns are common in Geometric contexts; from there, it could have spread back to Crete and other areas of Greece [301]. The type of gold rosette is very common too in the Cretan necropoleis of the LM [302]. Some scholars have hypothesised that these pieces of jewelry had a purely sepulchral function, both because of their extreme fragility and because of their not always accurate manufacture.

The two plaques inv. P 45 and P 46 (Fig. 56d-e) also belong to the category of clothing ornaments. They were found together in "fossa 39", which is not a tomb but a sort of rectangular pit with strong traces of combustion, in which were also found numerous weapons and bronze objects, including a ribbed bronze cup, which suggests for the whole complex a dating in the full PG age [303]. The decoration is embossed. Along the edges there is a row of dots in dot-*repoussé* technique and [304], further inside, a zigzag

[298] See *e.g.* Hom. *Od*. I.181-185; *Il*. VII.467-475.
[299] Gigli Patanè 2019; 2020.
[300] Catling 1996a, 531, fnn. 1012-1018, with bibliography.
[301] *Ibid*., 531.
[302] Popham *et alii* 1974, 11.5 and pl. 36b; Coldstream-Catling 1996a, 40.f2, 89, fig. 153, pl. 263; 200.f3, 193, fig. 153, pl. 265. Both are of "LM II-III type".
[303] Matthäus 2016a, 192-193, figs. 14-15; 2019, 11-12, fig. 16.
[304] On the technique dot-*repoussé* see Prévalet 2014, 427.

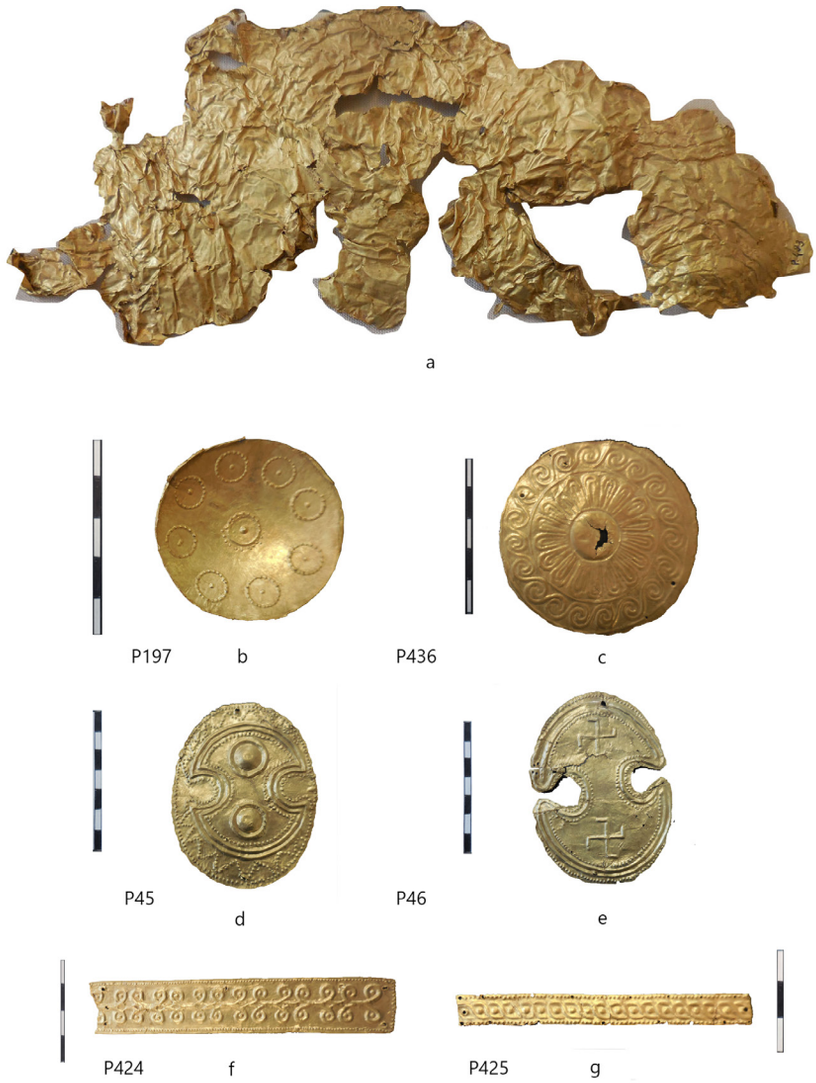

Fig. 56. a) Gold sheet P 483, from trincea LXXI; b-c) Disc P 197 from T. D; disc P 436 from fossa V; d-e) plaques P 45 and P 46, from fossa 39; f-g) Strips P 424 (from fossa 208) and P 425 (from deposit 227) (© Archivi SAIA, U/13497).

pattern, made with embossed dots simulating the granulation technique; in the central part there is a "figure-of-eight" shield motif. The motif of the Boeotian shield finds comparisons with the decoration of a shield from the Idaean Cave with hunting scenes and with miniature bronze shields [305], such as an example from Kommos also considered to be a clothing ornament and dated to LPG [306]. The swastika is frequently found in the same chronological context on vases from the Prinias necropolis and, combined with the "figure-of-eight" shield, on some G vases from Dipylon.

Gold earrings, finger rings and beads of various shapes are very common in the Prinias tombs.

There are also some gold foil strips (Fig. 56f-g) used as diadems or to decorate the forehead of the deceased: the strip inv. P. 424, from the pit 208, has a rectangular shape, with tiny holes pierced at both ends (for the insertion of rivets?), lines of dot-*repoussé* around the edges, and double opposed spirals connected by X-shaped elements in the center, which find comparisons with the decoration on a bronze shield from Palaikastro, in turn close to the bronzes of Ida.

Inv. P 425, from the deposit 227 dated to the PGB-EG, is similar but smaller in size. Such bands, interpreted as the remains of diadems or frontlets placed on the forehead of the deceased, have been attested

[305] Σακελλαρακη - Σαπουνα-Σακελλαρακη 2013, 40, pl. 22.

[306] Shaw-Shaw 2000, 345, No. 14, pl. 5.5.

Fig. 57. a) Pendants P 428 (from T. Q); b) P 125 (from fossa 78) (© Archivi SAIA U/13498).

since the Minoan age: items of the same type are known mainly from the tombs of Mochlos, dated to the EM II, associated with discs of very thin gold leaf, also pierced [307]. They also seem to have been widespread in Cyprus. Strips of gold leaf, often decorated with geometric motifs, also appear in the PG at Lefkandi and later in the G period in Athens. At Fortetsa there is a specimen decorated only with embossed dots along the edge, dated to LPG [308].

Among the pendants (Fig. 57a), inv. P 428 is a rarity in the jewelry repertoire of Prinias, as it yields one of the very few examples of granulation, a technique of ancient tradition that reappeared in Crete around the 9th c. BC after a long period of absence. Even more interesting is the fact that, in this case, the granulation appears to be associated on the upper edge with filigree work [309]. Our pendant recalls in the shape and decoration the type of the bull-head earring, that is common in Cypriot jewelry of the late Cypriot II and III periods, which shows the same type of granulation characterized by rather large caliber spheres arranged in a disorderly manner. In some specimens we find a similarly rounded and shaped filigree work forming the apex of the cone. Pendant (or *applique?*) inv. P 125 (Fig. 57b), in the shape of a star inscribed in a circle, shows a complex working technique, involving engraving, filigree, twisted wire and welding. The motif of the six-pointed star, probably of Eastern origin, is attested in Mesopotamia, where it is associated with astral symbolism. Granulation and filigree are also found in pendants inv. P 94 and P 431.

Precious ornaments particularly appreciated in Prinias were the beads of faience and glass paste of different colors – golden, reddish, blue, green [310]. It should be noted that sometimes beads were found isolated, that is, they were not part of necklaces but were placed in the grave (usually in a pithos) perhaps with a talismanic and apotropaic function. Many of them come from burials of children. Both the faience beads – whose presence in the Eastern Mediterranean is sporadic between the PG and G periods, being linked to the Cypriot trade – and the glass paste beads, whose appearance is a little later – are to be compared with specimens from Fortetsa and Knossos, where they seem to be a kind of Minoan revival, a return to the fashion of the past [311]. In Prinias, they are often found in PGB contexts, sometimes put in pits together with burnt remains undoubtedly linked with a funeral ceremony, usually associated with metal vessels of various types, *e.g.* lotus jugs and bronze situlae. The form is the canonical one, widely distributed throughout the Mediterranean in the first millennium BC, produced by workshops in northern Syria, Phoenicia and Mesopotamia.

Rock crystal beads are also very common in the Prinias necropolis. Most are necklace elements, usually spherical or cylindrical; there are also small piriform pendants, which have close parallels in other

[307] Davaras 1975, 104, pls. 21b, 22a.
[308] Brock 1957, 34, 197, No. 336, pl. 21.
[309] On the granulation, see De Callataÿ 1983; Prévalet 2010.
[310] Gigli Patanè 2019, fig. 15.
[311] Fortetsa: Brock 1957, 208; Knossos: Coldstream-Catling 1996a, 200.f2, f6, f9, fig. 164, pl. 275; Catling 1996a, 535.

Cretan necropoleis, a bezel, a ring [312]. The quality of the crystal varies: it can be very transparent, lustrous or satiny, or in flakes; sometimes it has a yellowish tinge. Like the glass paste beads, rock crystal beads are often associated with children's graves, probably as amulets for magical protection. Rock crystal, widely used in the Mycenaean age both for seals and for the finials of pins and other objects, has a wide diffusion in Crete; it was probably imported from Egypt – the Nile area – and from the Near East. In this last area some workshops used to embellish the inside of the stringhole with a cylinder of gold leaf, in order to increase their transparency. In Prinias, we have two examples of this type: inv. P 99 from T. F, with a flattened spherical shape pierced by a hole in which a small thin gold leaf has been inserted, and inv. P 187 from pit 152. They find comparisons with specimens from Lefkandi, dating from the first half of the 9th c. BC, and from Khaniale Tekke, Eleutherna in Crete and Cyprus, dating up to the second quarter of the 8th c. BC [313].

Rossella Gigli Patanè

8. The inhumed human remains of the Siderospilia cemetery

The human remains found in the necropolis of Siderospilia, near the modern village of Prinias, dating back to the Iron Age, are here considered from an anthropological and palaeopathological point of view. Not all the finds were analysed, but roughly 85% of the wooden boxes were, containing human remains from burials, trenches, tholoi and from other contexts discovered during the excavation works. The work has been and will continue to be long drawn-out because it seems that in most cases burials are secondary or have undergone post-depositional occurrences, which have little to do with such as the carrying out of customs, particular rites *etc*.

However, the analyses of human skeletal remains does allow us to observe that the corpses underwent at least two types of treatments, inhumation (the most usual) and cremation (present at a reasonable level). The exposure to fire of remains already skeletonized by previous inhumation (?) is also documented [314]. Due to this state of affairs and to the scarcity of remains in anatomically-correct articulation, a sure estimate of the number of deceased in the necropolis of Prinias is particularly difficult. In addition, the cremated remains are difficult to determine as to numbers, let alone to the genders and different ages of an individual, especially if the remains are further fragmented by other actions in addition to that of fire.

From the consistency and state of conservation of the inhumed remains (widespread fragmentation) one gets the impression that in some way the burials have generally been disturbed (due to later burials?). This is to the detriment of the metric and morphometric surveys which, as is known, are used to deduce the shapes of the skulls. It is the latter, much more than the postcranial bones, that usually allow comparisons of a certain reliability within synchronous and diachronic populations, homo- or heterotopic. The aim here is to highlight possible phenomena of genetic exchanges with other human groups, if any occurred.

The anthropometric data on those skull remains, where surveys of this nature were feasible, would indicate a certain repetition of shapes and sizes (probable due to the isolation of the population: endogamy?), with respect to the other human groups on the island. As mentioned above, the quantity of material still to be viewed and that to be double-checked to increase the reliability of identification, however, forces us not to express conclusions on the matter now. To do so would be to risk fundamental changes of opinion, once all the finds have been analysed.

However, the value of the total number of entities represented is not certain. One could hypothesize more than a hundred entities, of both genders and all ages, but the number is susceptible to a further shifts up or down due to the state of conservation of the material.

In adults, the male presence predominates over the female – either due to a targeted choice in the burial of corpses or due to the greater fragility of female bones compared to male ones. In Siderospilia, however,

[312] See Gigli Patanè 2019, fig. 18.

[313] See for Lefkandi, Σταμπολιδης 2003, 559, No. 1110 (mid-9th c. BC) [A. Ψάλτη]; for Eleutherna, *Id.* 1993, 74-75, pl. 36; for Cyprus, Dikaios 1963, 147-148, pl. 15.

[314] The bones, when already devoid of soft parts, that are touched by fire are not twisted and whitish like those of the cremated corpses (in this last case the degrees reached by the heat even exceed 600-700 Celsius degrees). They only have black spots and usually they are cream-coloured.

this aspect does not seem to have to be taken into consideration given the considerable amount of findings of children's' bones, evidently much more fragile than females.

Most bones restored and analysed both from a metric and morphological point of view show in the postcranial part of the limbs of an adult male notable muscular imprints. Especially for muscles of the tibia (popliteus and long flexor of the toes) but even in those that attach to the femur (gluteus maximus, vastus externus and internus and adductor of the toes). This can be explained by ambulatory and/or ergonomic activities under stress, due to the ruggedness of the Prinias territory, to sheep farming (?), to agricultural work (?). In females, on the other hand, it is the upper limb that is most characterized by this phenomenon: consider the strong imprint of the deltoid muscle in the humerus, of the flexor muscles of the fingers and thumb which start from the forearm bones. This is probably due to the activity of cereal milling on a quern and to other jobs usually relegated to women, as well as textile manufacturing activities such as the fulling, spinning and weaving of wool.

The remarkably high presence of individuals who died in the perinatal period or in the first decade of life is particularly interesting. The number of neonates, toddlers and children (not including the 15% of wooden boxes containing human remains still to be examined) is over seventy (out of a sample of both genders of adults at over a hundred).

Pithos burial No. 453, for example, contained at least thirteen individuals who died at ages ranging from a few months to nine years. Furthermore, the remains of fetuses were contained in some of the "vasetti" found within the same pithos burial.

This phenomenon can perhaps be explained by stress of an environmental nature, for example by the climatic conditions during winter (?). In this season the mountainous area where the ancient city on the Patela of Prinias was located is subjected, due to its particular position, to the north winds – the Etesiani, also known as Meltemi – which still contribute to snowfalls that often last until early spring. We certainly cannot generalize, but cold usually impact upon the health of the poorest human groups even currently. Indeed, we must not forget the impact of a precarious subsistence level for the population, at least in its lower social levels. Many cranial findings show signs of anaemia (*cribra orbitalia* e *cribra crani*) [315], and frequent pathological stigmata especially in infants and children bones. The phenomenon is also often found in adults (whose deaths usually fell within full maturity), a sign that the population, probably the entire population, was often affected by periods of malnutrition.

More or less complete cranial remains associated with a few bone remnants occur in secondary deposition. This phenomenon, perhaps due to the disturbance of the primary burials to make way for new inhumations (?), could be explained by particular burial customs. In contrast to what had been speculated in the past, for the bones of Siderospilia there is no traces of ritual decapitation. None of the skulls examined so far clearly shows decapitation marks, at least for the more complete ones. In the fragmentary ones, it is quite impossible to perceive certain marks, if they ever existed. True, a certain importance must have been accorded the skulls in later exhumations and chance finds of burials of which the memory had perhaps been lost (consider the case of the bones found among the layer of stones that characterizes the second phase of the necropolis). This does not mean that cases of decapitation will not be found in the remaining wooden boxes, which contain still unanalysed osteological material (it will be necessary that at least the first cervical vertebrae/s are preserved, because after decapitation the soft parts that surround them keep them attached to the skull until decomposition). In my long experience as a paleoanthropologist, I have been able to detect two only cases of beheading. In the skeletal (still associated) remains of a child of about nine years old, which was found in a sacred context of the Etruscan Tarquinia [316], and with the skull of Henry VII of Luxembourg, the emperor of the Holy Roman Empire, who at death was beheaded and the head boiled separately from the body, according to certain Germanic practices of that period [317].

Francesco Mallegni

[315] Walker *et alii* 2009. These are bone perforations in the skull (vault and ceiling of the eye sockets) mainly due to nutritional deficiency (the phenomenon is called "Porotic Hyperostosis"). The ailment is caused precisely by the lack of iron in the diet, and therefore by the lack of animal protein intake.

[316] Fornaciari-Mallegni 1986; Mallegni *et alii* 1997.

[317] Mallegni 2015; 2016; Scorrano *et alii* 2017.

9. The animal remains [318]

The necropolis of Siderospilia has returned a large number of animal remains that can give indications on the rituals associated with death and the treatment of the deceased. The identified animals can be interpreted as species of food interest, as a gift for the deceased on their otherworldly journey or as remains of meals consumed by the living in honor of the deceased at the time of burial or in any commemoration ceremonies. Alternatively, animals of prestige and life companions were buried, such as a dog, which could be placed in the human burial or in its own grave, and a horse, which seems to be found mainly in animal burials. In the use of this necropolis two phases have been distinguished, dated between the 11th and the first half of the 6th c. BC [319].

9.1 Inhumation tombs (Tabs. 3-4)

Inhumation burials belong to the oldest phase of use of the necropolis, with inhumed depositions, often mixed with incinerated and partially burnt remains [320]. Above the earliest burials there is a sort of make-up of stones, which served as a support for the burials of the second phase, formed by urns containing cremated bodies. However, inside this layer there are also remains of inhumed depositions from disturbed burials.

The identified species are numerous, both domestic and wild. Among the wild species, small reptiles (*Lacertidae*), birds and a few fragments of beech marten (*Martes foina*) have been identified, which probably lived on the slope among the stones. More numerous are the remains of hare (*Lepus europaeus*) that could have been part of the offerings, as well as the scarce remains of agrimi (*Capra aegagrus*). Some species of terrestrial and marine molluscs have also been identified. A good group of terrestrial pulmonates (slugs and snails) was found in a pit in trench XIV. These are species of food interest (*Cornu aspersum* and *Eobania vermiculata*) whose presence may be due to a ritual offering. There are 226 individuals, too high a number to attribute it to a natural concentration during a period of hibernation or aestivation; not all present were collected. The deposit was large at about cm 60 in diam., placed among some cinerary urns and bordered by stone slabs. It can be compared with a deposition from the necropolis of Arkades, contained and protected by some vases and possibly related to a nearby pithos [321].

The species of these snails were not identified. It can be assumed that in both cases they were cooked products. The deposits of marine molluscs are certainly deliberate, among which *Bolinus brandaris*, *Cerastoderma glaucum*, *Chamelea gallina* and *Donax trunculus* have been identified. Of the domestic mammals, prestige species such as dogs (*Canis familiaris*) and equines, horses (*Equus caballus*) and perhaps hybrids prevail. The dogs appear both in animal and human burials; they are mostly of the greyhound-like type, with elongated snouts and limbs. The donkey (*Equus asinus*), as a typically pack animal, is however represented by a single fragment. Among the domestic mammals of food interest, pigs (*Sus scrofa*) are very scarce, whilst caprines, goats (*Capra hircus*) and sheep (*Ovis aries*), prevail.

It should be noted that the oldest burials could have been monumental in nature and served several generations (chamber tombs J, D, AM, AQ, AH, AN). In chamber tombs J and AQ the remains of food offerings of caprines (goat and sheep) are more abundant, while deposits of dogs are found in chamber tombs J, AI, D, in the vase 25 of T. W and trench XCII. In the chamber tomb AH there is a deposition of an indeterminate equine nature, whilst remains of equines are found almost everywhere, especially in the stony layer.

9.2 Cremation burials (Tab. 5)

The cremation burials are dated from the 11th to the first half of 6th c. and have yielded little faunal material, as it is either hardly recognizable when cremated or difficult to attach to a specific burial if placed nearby. Homer, in the description of the funeral of Patroclus makes Achilles say:

[318] I would like to thank G. Biondi for the help with the photos, the comparisons and the excavation details. As for the methodological criteria, the age at death was calculated according to Habermehl 1961. The withers height of horses was calculated according to the coefficients of Kiesewalter 1888, while the coefficients of Koudelka 1885 were used for the heights of dogs. The minimum number of individuals was calculated according to the method of Bökönyi 1970. Measurements were made according to Von den Driesch 1976 and for horses according to Eisenmann *et alii* 1988.

[319] See *supra*, Pautasso, 514, Tab. 1.

[320] Biondi 2020.

[321] Levi 1927-1929, 383-384.

> Son of Atreus, and you other princes of the hosts of Achaea, first quench with flaming wine the burning pyre, even all whereon the might of the fire hath come, and thereafter let us gather the bones of Patroclus, Menoetius' son, singling them out well from the rest; [240] and easy they are to discern, for he lay in the midst of the pyre, while the others burned apart on the edges thereof, horses and men mingled together [322].

In our case this does not happen because we do not have animal bones cremated separately from a human dead and instead we have evidence of cremated animals (often unidentifiable) mixed with cremated human bones. This is the case of the two fragments of a dog cremated in T. 215 of trench XL. This dog must therefore have been placed right next to the body of the deceased human. In other cases we have remains of goats, probable food offerings. For the rest, sporadic remains of equines have been found, both horses and donkeys, and animals of food interest (cattle, sheep and goats) which could have been part of the grave goods, as well as a fragment of a hare and two of a bird. Two deposits of dogs come from T. 227 trench XIII and from sector F trench XLVI. A mollusc shell fragment, unidentified because damaged by fire, was found in trench C in a cremation burial in the ballast and could have belonged to a personal ornament.

9.3 The animal graves (Tab. 6)

There are twenty-one graves intended for the deposition of animal remains only. They are below the stony layer and therefore can be attributed to the first phase of the necropolis [323]. The animals involved in this form of treatment are horses and dogs, to indicate the role of man's companions that they enjoyed n this historical period in the culture of the island. Dogs or horses were buried individually or both species together (see Appendix 1).

9.3.1 Dogs (*Canis familiaris L.*), NMI from animal burials 42

Most of the dogs whose state of preservation allows us to know their physical characteristics, have an elongated muzzle, with well-spaced premolars and elongated and thin limb bones, characteristics that bring them closer to the morphology of the greyhounds, a racial type which was already widespread in the Near East and used for fast hunting in the open environment. The elongated structure of the distal ends of the limbs, metapodia and phalanges can be observed too. Some remains of skulls and mandibles of medium length may fall within the variability of this group, while a few individuals of smaller size can be distinguished. A withers-height derived from a left tibia not yet fully developed (unfused proximal epiphysis) provides a juvenile height of cm 64.2 for an animal between 15 and 18 months (T. BV, Fig. 73). The height of an adult individual from pit BO was calculated at cm 61.3. Unfortunately, the poor state of conservation did not allow us to calculate any other heights. However, what we have seems to fall within the group of medium-sized greyhounds, close to the current salukis. Among the subjects of different types and of smaller size we can mention the dog E, from the pit BO recognizable only by some postcranial bones, of small size; dog A from pit BG, a subadult individual of about 8 months, of small size with shortened muzzle; dog C from pit BE, adult subject, represented by two fragments of tibia. With regard to their sex, despite the large number of subjects examined, no penis bone was found, which could suggest a preference for females. However, it must be taken into account that it is a fragile bone and the state of preservation of the remains from this necropolis is never good (Figs. 67c, 69, 74c).

9.3.2 Horses (*Equus caballus* L.) and other equines, NMI from animal burials: 46

The horses, and possible hybrids, are rather small in size, from cm 115 to 130 at the withers. In most cases equines are easily recognizable as horses, both by the characteristics of the postcranial bones which exclude the donkey, and for the conformation of the enamel folds of the teeth which fall within the range of variability of the horse. However, in the case of very old subjects with very advanced wear, the horselike characteristics are no longer observable and the subjects are referred to as *Equus sp*. Some subjects have suggested the presence of hybrids. It should be remembered that in antiquity the mule did not have the connotation of a purely pack animal that it has had in our more recent past. Donkeys and horses do not mate of their own accord and creating a hybrid required commitment. Mules were particularly appreciated for

[322] Hom. *Il*. XXIII.236-242. After transl. by A.T. Murray.

[323] See *supra*, Biondi, 536-539.

funereal ceremonies and as a mount for women and priests; they could reach a considerable monetary value. The examination of the age at death, calculated through the eruption and wear of the teeth and in some cases through the fusion of the epiphyses, shows the presence of a few young subjects starting from the age of three and a half, a nucleus of individuals suitable for work, aged five, and a smaller group of elderly subjects aged 20 and even over 24. In this latter case the symbolism linked to the deposition of a horse has perhaps diminished, which has led to the sacrifice of subjects who due to the age were of less value. The determination of sex, because of the poor state of conservation of the postcranial skeleton and in particular of the pelvis, is based solely on the presence or absence of the canine. As is known, canines are present in all males, but only in a low percentage of females (ca. 9%).

9.4 The rite

The arrival of the domestic horse in the Mediterranean basin marked notable changes in hunting, warfare and in transport. It will have had a noted influence on social relationships too. A reflection of this is also visible in ritual in general and in funerary ritual in particular. In late protohistory it is common among some populations to bury one or more horses or other equine animals such as the mule, in the tombs of important personalities, often accompanied by carts. In the Mediterranean basin the horse appears in the Eneolithic, but its use increases in the Bronze Age. In the late and final Bronze Age times the remains of horses become more frequent and seem to be correlated to a type of society where war and hunting are a distinctive element of the leading social groups. Generally these are male burials, but this should not be taken for granted and in some cases the role and rank of the family was more important than the sex of the deceased. Suffice it to recall the female burial in the Picene necropolis of Sirolo in the Marche region (6th/5th c. BC) containing the remains of two carts and two equines, probably mules [324]. There is also the case of burials of horsemen accompanied by their horses. In Prinias, the association of horse, dog (greyhound) and hare identified in large numbers in the tombs can be seen as an exaltation of the male and aristocratic virtues expressed by a type of hunting aimed more at personal pleasure and at the exaltation of family wealth than to food procurement. It should be noted that the hare, common in the necropolis, is much less frequent in the urban environment of the Patela. Moreover, the importance of the hare-dog-horse trio is evident in a relief from Prinias. The scene can be seen on a pithos from temple A: it depicts a hare hunt by men in a two-horse chariot, with the help of a dog. A man on horseback follows [325].

It is difficult to say whether the animals buried apart from humans were offerings dedicated to some human burial, kept apart due to problems of room, were graves of horses in their own right, as animals that had distinguished themselves for some reason, or were sacrifices addressed to some divinity. Since these are located within a cemetery, one would think that whatever the case there is some reference to death and the afterlife. Another difference between the situation of the funerary ritual of Siderospilia and that of the urban environment is given by the frequency of the pig remains, very scarce in the necropolis and normally present in the urban environment, where, although secondary to caprines, they reach 17% of the fragments in the South Building [326]. The almost total absence of pigs here also marks a difference with the Homeric funeral of Patroclus, where pigs are abundantly used for sacrifices.

> And they put off, each man of them, their shining harnesses of bronze, and loosed their loud-neighing horses, and themselves sat down beside the ship of the swift-footed son of Aeacus, a countless host; and he made them a funeral feast to satisfy their hearts. Many sleek bulls bellowed about the knife, as they were slaughtered, many sheep and bleating goats, and many white-tusked swine, rich with fat, were stretched to singe over the flame of Hephaestus; and everywhere about the corpse the blood ran... [327].

The closest comparison is with the burials of horses and dogs in the N cemetery of Knossos [328]. These are two burials, T. F and T. 79, each containing the remains of two horses and two dogs. The heights at the withers of the horses are close to those calculated with the Kiesewalter method for Prinias and range from cm 279 to 131 [329]. Another horse outside the two pits reaches a height of cm 135. Outside Crete and Greece, the usual sizes for horses did not differ much. In Ancona, the heights range from cm 120 to 128,

[324] Wilkens 2000.
[325] Pernier 1914.
[326] Masala-Wilkens 2023.
[327] Hom. *Il.* XXIII.26-34. After transl. of A.T. Murray
[328] Wall-Crowter 1996.
[329] Kiesewalter 1888.

in Syria at Tell Afis there is a recorded height of cm 122 for one in the levels of the early Iron Age. At this site the horses appear to increase in size in the more recent phases of Iron II, up to cm 142. The heights of the dogs from Knossos, calculated with the Koudelka coefficients used for Siderospilia [330], range from 54.6 to 57.9, therefore slightly lower than ours for Prinias. One of the dogs in T. 79 is said to be similar to a modern greyhound or whippet. As is known, these dogs were also bred in the Near East. A bitch from Tell Afis in Syria with greyhound characteristics reaches a height of cm 54.4 [331]. In Crete, remains of animals deposited inside chamber tombs have been identified in other localities such as Karphì, Kavousi, Vrondà, Vrokastro and Arkades [332]. Outside the island we can recall at Lefkandi a pit in the Heroon with four horses and a tomb nearby with two horses and in Eretria the skeleton of an equine [333]. We also have the horses of Phaleron in Attica [334], partly associated with human graves, partly placed in their own which nevertheless seem to be part of the funeral ritual in honor of some deceased human. Some bear incisions on the bones that suggest manipulations to make them assume particular positions in the grave and which may recall the case of our horse in the pit BV (Fig. 73).

10. The ARCHIAS project (digital ARCHive of the Iron Age Siderospilia necropolis)

10.1 Introduction

The digital revolution, especially in recent years, has been of great assistance to research and especially to archaeology, which today would be unthinkable without such media. The photographs of contexts and artefacts, the graphic and topographic documentation, and the vast amount of data collected in the field or in the laboratory are all now digitally stored. A true Digital Archaeology [335] exists, one capable of collecting research results in a non-invasive way, providing timely documentation of complete sites, structures or artefacts, and preserving the cultural heritage they represent [336].

The ARCHIAS (digital **Archi**ve of the **I**ron **A**ge necropolis of **S**iderospilia) project was born from the need to have a tool "within everyone's reach" capable of organising all the available information on the structures and materials of the necropolis of Siderospilia investigated between 1969 and 1978.

The aim is to complete a systematic indexing of the complexes, monuments and archaeological finds discovered in the necropolis, with the creation of graphic, photographic and possibly video archives held outside the database and connected to it by hyperlinks. We also aim to develop a GIS (Geographical Information System) in which all the data in the database will be arranged on overlapping layers so that they can be compared with each other. This platform will ensure that the data is constantly updated and will allow the documentation of spatio-temporal relationships with other contexts that have similar geographical and environmental characteristics.

10.2 The ARCHIAS relational database and its use

The need for a project to manage a large amount of data is the result of observing the ever-increasing role and importance of digital documentation over the last twenty years. If the creation of a database was a novelty in the 1990s, it can now be considered a standard practice [337].

The intention is to have quantitative and qualitative data available for quick reference, concise yet easily accessible, albeit schematic, in a synoptic framework that allows rapid grouping of uniformities and/or differences in the patterns of use of the archaeological finds, with the general location and specific type of context of the find given. The relational model on which the research project is based is the simplest way

[330] Koudelka 1885.
[331] Wilkens 1998.
[332] Biondi 2020; see also *supra*, *Id.*, 536.
[333] *Id.* 2020; see also *supra*, *Id.*, 539.
[334] Chrysoulaki-Pappas 2022.
[335] The word for the first time is used by Seamus Ross and Ann Gow with the meaning of to "investigate the rescue of digital materials" with the intention of emphasizing the need to preserve and preserve cultural resources created or converted to digital format in order to ensure their accessibility over time: Ross-Grow 1999; most recently see Evans-Daly 2006.
[336] An example of a database is the Aristeia Project, a web database of all the relevant evidences for the study of Early Iron Age and Early Archaic settlements, necropoleis and sanctuaries. The project therefore focuses on the organisation of communities, their beliefs about religion and death, see Mazarakis Ainian 2017, 17-22.
[337] Niccolucci 2013, 154-61.

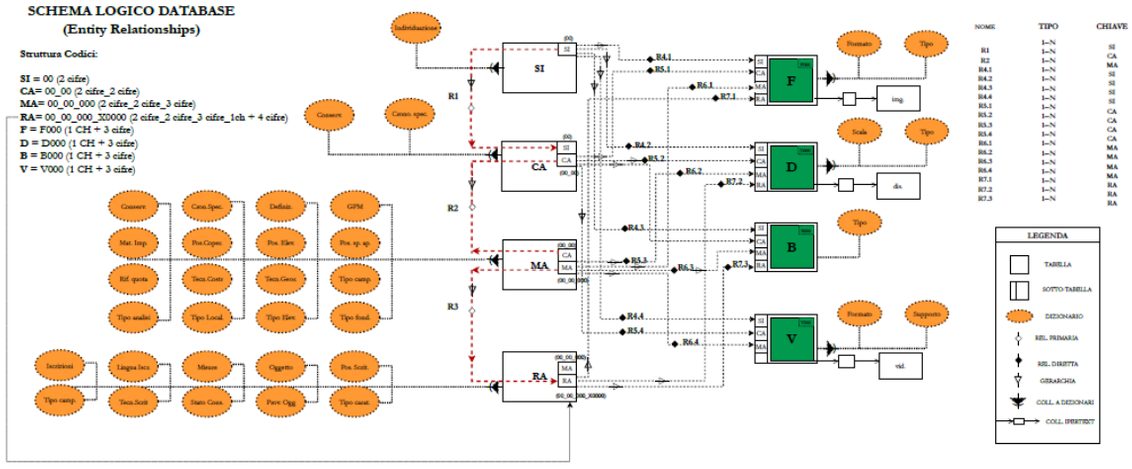

Fig. 58. Relational diagram Entity Relationships.

to manage the complex relationships between stored information [338]. This tool works at different levels of the analytical process: from the conceptual model to the logical model to the physical model.

The choice of software package from which the long process of digitization commences is Microsoft Access, which has a relational database management system (RDBMS) interface that uses the Microsoft Jet database engine and integrates a module for the rapid development of management applications [339]. As well as being the most popular database model at the moment, this type of repository offers a number of tools that make it extremely user-friendly. The simplicity of its tabular structure is easily understood by most users and is designed to identify entities and the relationships that bind them together (Fig. 58). For the creation of the "catalogue cards", those provided by the ICCD (Istituto Centrale per il Catalogo e la Documentazione) are most suitable [340]. They contain all the fields and entries required for the analytical description of everything that is studied and excavated: site, context, finds, possible analysis and restoration (Fig. 59).

Each card is given a unique code. In addition to the database control cards, several "controlled" dictionaries (descriptors or keywords) have been created for the monument cards (TSK MA) and the archaeological find cards (TSK RA) [341]. They are an important tool for checking the accuracy and coherence of the definitions stored in the system, thus avoiding "accidental" errors at the data entry stage. These dictionaries/menus can be updated at any time with the addition of new descriptive terms that meet new search criteria (Fig. 60).

In addition, the project aims to reconstruct and preserve all the documentation obtained in the field. Given that excavation is a destructive activity, extensive documentation will be used to record all the data from which it will be possible to reconstruct in detail the path taken by the research, should that be required for future work.

Among the features of the database, in addition to those already described, *i.e.* the ability to manage a considerable amount of information, attention has been paid to some aspects that are considered fundamental for the management of archaeological data. In particular, data from previous excavation campaigns can be linked to the results of new studies, thanks to the integrated consultation of all previous documentation (inventory sheets, photographs, drawings *etc.*). Further, dynamic data interaction becomes possible, aimed at highlighting links between artefacts through contextual, typological, morphological and statistical analysis, as said data contained in the database would be available to other users (currently under development).

[338] On the theorization of the relational model see: Codd 1970.

[339] This program ensures excellent search management and data integrity through consistency checks of various types.

[340] MiBACT 2014-2015a, «Normativa RA, Reperti Archeologici, Versione 3.00», Norme Di Compilazione, aggiornamento 2014-2015_01, Roma. e MiBACT 2014-2015b, «Normativa SI, Siti Archeologici, Versione 3.00», Norme Di Compilazione, aggiornamento 2014-2015_01, Roma, with reference to version 3.00 regulations.

[341] Materials for the different types of boards are available in the section of the institutional website http://www.iccd.beniculturali.it/it/standard-catalografici.

ACRONIMO	DEFINIZIONE	LUNG.	OBB.	VOC.
NCSI	Numero Codice Sito	2	*	C
ESC	Ente Schedatore	25	*	C
EPC	Ente Competente	25	*	C
PVC	Localizzazione Geografico-Amministrativa		*	C
PVCS	Stato	50	*	C
PVCR	Regione	25	*	C
PVCP	Provincia	3	*	C
PVCC	Comune	50	*	C
PVCL	Località	50	*	C
LCSI	Insediamento/Località	50	*	C
LTST	Toponimo	250	*	
LVSD	Denominazione	250	*	
LVSN	Note e osservazioni	1000	*	
GEOD	Defininzione geologica	5000	*	
GELC	Riferimento carta geologica	500	*	
USD	Uso del suolo	5000	*	
USDT	Tipo di utilizzo	5000	*	
CASD	Caratteri ambientali-descrizione	10000	*	
ACQT	Tipo di acquisizione vincoli	50		A
ACQD	Data di acquisizione	50		

ACRONIMO	DEFINIZIONE	LUNG.	OBB.	VOC.
NCCA	Numero Codice Complesso Monumentale	2	*	C
ESC	Ente Schedatore	25	*	C
EPC	Ente Competente	25	*	C
PVC	Localizzazione Geografico-Amministrativa		*	C
PVCS	Stato	50	*	C
PVCR	Regione	25	*	C
PVCP	Provincia	3	*	C
PVCC	Comune	50	*	C
PVCL	Località	50	*	C
LCSI	Insediamento/Località	50	*	C
LTST	Toponimo	250	*	
LVSD	Denominazione	250	*	
GEOD	Defininzione geologica	5000	*	
GELC	Riferimento carta geologica	500	*	

ACRONIMO	DEFINIZIONE	LUNG.	OBB.	VOC.
NCMA	Numero Codice Monumentale	2	*	C
ESC	Ente Schedatore	25	*	C
EPC	Ente Competente	25	*	C
PVC	Localizzazione Geografico-Amministrativa		*	C
PVCS	Stato	50	*	C
PVCR	Regione	25	*	C
PVCP	Provincia	3	*	C
PVCC	Comune	50	*	C
PVCL	Località	50	*	C
LCSI	Insediamento/Località	50	*	C
LTST	Toponimo	250	*	
LVSD	Denominazione	250	*	
LVSN	Note e osservazioni	1000	*	

ACRONIMO	DEFINIZIONE	LUNG.	OBB.	VOC.
NCRA	Numero Codice Reperto Archeologico	2	*	C
ESC	Ente Schedatore	25	*	C
EPC	Ente Competente	25	*	C
PVC	Localizzazione Geografico-Amministrativa		*	C
PVCS	Stato	50	*	C
PVCR	Regione	25	*	C
PVCP	Provincia	3	*	C
PVCC	Comune	50	*	C
PVCL	Località	50	*	C
LCSI	Insediamento/Località	50	*	C
UB	Ubicazione	50		
INV	Numero di inventario	25		
INVD	Data	10		
INVC	Collocazione	50		
RP	Reperimento	50		
DSC	Dati di Scavo	25		
DSCF	Ente responsabile	250		
DSCA	Autori dello scavo	25		
DSCD	Data di scavo	50		
OGT	Oggetto		*	
OGTD	Definizione	50	*	A
OGTT	Tipologia	50		

Fig. 59. Organization of records based on ICCD.

10.3 Database management and development.

ARCHIAS currently manages 3246 "catalogue cards": one card for the Site [342], 66 for Archaeological Complexes [343], 575 for Monuments [344], and 2605 for Archaeological Finds [345].

At this preliminary stage, it is appropriate to say a few words about some methodological problems and the solutions adopted in order to enter the available data as correctly and consistently as possible. Having identified some problems related to the individual monument or archaeological find in terms of provenance and chronology, we have relied on cataloguing rules governed by several processes, such as the choice of primary keys.

In particular, for the Monument Sheet and the Archaeological Find Sheet, a set of mandatory subfields as OGTD (object definition) and non-mandatory subfields as OGTF (object function) have been

[342] Tab. Sito in which general information about the site is collected.
[343] Tabs. in which reference areas grouped on the basis of origin and chronology are identified.
[344] Tabs. describing individual monuments and objects found.
[345] Tabs. in which individual artifacts are identified and described, along with their measurements, and/or any restorations.

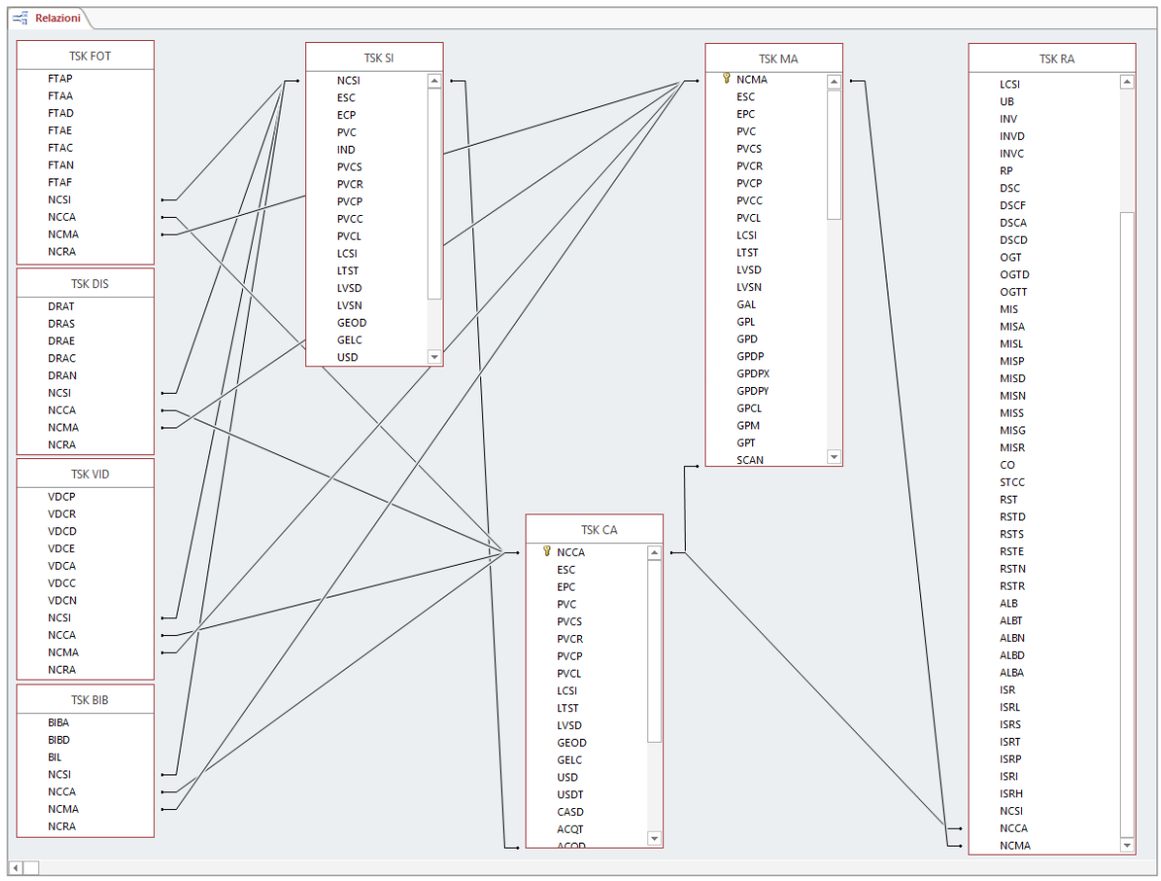

Fig. 60. Example of interconnectivity of data recorded in the database.

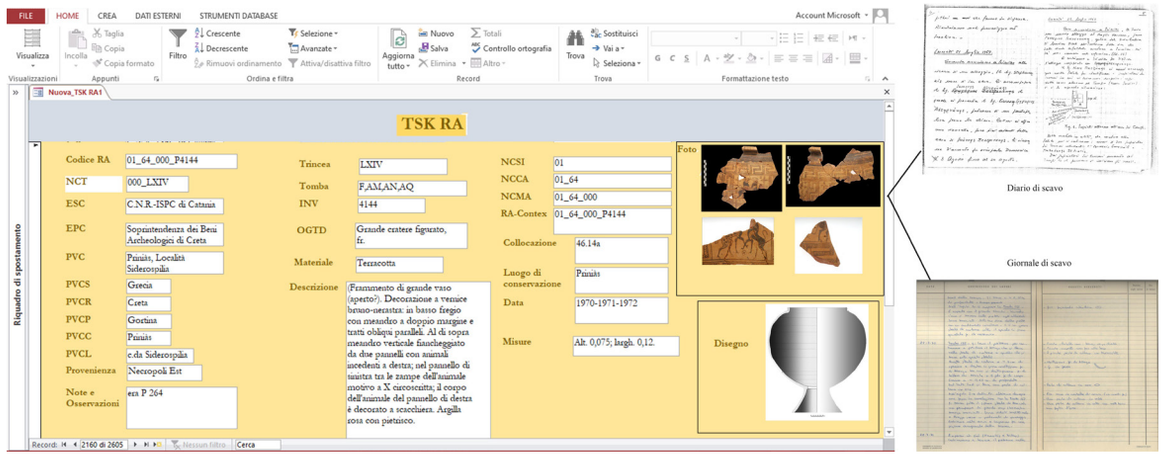

Fig. 61. Example of mask: krater inv. P4144 with external linkage to photo, drawing, excavation diary and excavation journal.

developed on the basis of functional and typological criteria. All of the above vocabularies are "open": they will therefore be used in cataloguing activities to test their suitability for different uses and to evaluate any refinements, modifications and additions to be made. These repositories make it possible to organise vocabularies in such a way as to manage the relationships between logically related information and to control the subordination relationships between entries. Both are linked to the extension specifications of the OG (subject) data field, which contains all the typological and terminological data relating to the cataloged item (specifically the OGT field, with subfields OGTD, OGTT *etc.*).

It is also important to note that read/write access and general database management functions are managed through an interface that allows them to be generated using specific wizards for creating masks,

queries and reports. Reports, also known as information reports, are documents consisting of tabular and graphical displays presented in a synoptic way (Fig. 61) and provide a means of extracting and presenting a specific subset of information from a large database. Users viewing the reports have access to data filtered according to the criteria specified in the queries.

The language used for the query is SQL (Structured Query Language) and allows you to extract data selections from one or more linked tables or create new ones as you go (derived tables)[346]. This method of interoperability ensures the integrity of data and relationships as they are managed by a single search engine. The implementation of the GIS platform makes it possible to create an ideal working environment by including alphanumeric tabular data together with geographic data in a single software. The purpose of GIS is to manage digital data in order to associate topographical and archaeological features with their geographical position on the earth's surface, to process this information with the aim of extracting information through queries.

10.4 Conclusions

The creation of a database on the necropolis of Siderospilia is an important tool for the management of archaeological data for researchers, due to the volume of data collected during the almost ten years of excavations.

The ARCHIAS database has the basic purpose of archiving and documenting all the information related to the archaeological complexes, monuments and artefacts found. On the one hand, it will facilitate the management of a large amount of data and, on the other hand, it will allow the definition of the various contextual associations, thus constituting one of the basic tools for the study of the necropolis and the funerary practices attested in it.

The final objective of the project is to arrive at the definition of a management system that is flexible (given the nature of archaeological data, which is sometimes subject to new readings and interpretations) and, with all the necessary caution, open to the sharing of information also on online platforms.

Valeria Rita Guarnera

Appendix 1: the animal graves

East necropolis, Trench XLVII Pit with the three horses
Equus caballus MNI 4
Horse A: Small individual about 10 years old, more likely male. Upper and lower incisors and canines.
Horse C: Small individual about 10 years old, more likely male. Upper and lower incisors and canines.
A set of upper and lower jugal teeth is to be referred to the above individuals.
Horse B: Individual about 5 years old. Upper and lower incisors, no canines were found, but a complete set of upper and lower jugal teeth.
Horse D: A 3½-4½ year old subadult, most likely male, upper and lower incisors and canines, and humerus with unfused proximal epiphysis.
The bones of the postcranial skeleton are small in number and, apart from the humerus already mentioned, they pertain to horses A, B, C.
Ovis aries: A first phalanx of sheep was found.
Canis familiaris MNI 1
An adult subject. Remains of the upper and lower teeth and several bones of the postcranial skeleton were found.
Fig. 62a-b.

West necropolis, Trench CXI pit 286 = BB
Equus caballus MNI 10
The horses placed in this pit were at least 10 in number, of which 1 was aged 4 and a half years, 5 aged 5, 1 aged 5 and a half, 1 aged between 15 and 20, with 2 adults or sub-adults of unspecified age. It is probable that these are secondary depositions of skeletal remains recovered from other structures and gathered here.
Horse A: 4 and a half years old, bite wear. Upper teeth and lower teeth, no canine.
Horse B: 5 years old. Lower teeth.
Horse C: 5 years old. Lower teeth.
Horse D: 5 years old. Upper teeth and lower teeth, no plica caballina.
Horse E: 5 years old. Lower teeth
Horse F: 5 and a half years old. Upper and lower teeth.
Horse G: 5 years old. Upper and lower teeth
Horse H: 15-20 years old. One upper and one lower tooth.
Three sets of upper teeth attributable to 5-year-old individuals B, C and E were also found. At least two of these are equipped with canines, therefore possible males. Two other individuals were identified only by one radius. Withers heights from

[346] Chen 1976, 311-339.

metacarpus, tibia and metatarsus were calculated, ranging from cm 124.3 to 136.4 with an average of 130.4. In the case of the metacarpals it is possible to combine right and left in five groups, obtaining for five horses the average heights of cm 135.8; 135.5; 124.6; 128.8 and 128.8. Two fused lumbar vertebrae with osteophytes were found, possibly pertaining to the older horse.

Canis familiaris MNI 6

Dog A: an elderly subject with a long muzzle identified by the mandibles, with the two P_4, right and left, lost while alive. Five other individuals can be recognized from the mandibles, including another elderly subject with a long snout, an elderly subject that cannot be better defined, and a subject with a medium-length snout. There are two cases of P_4 (1 right and 1 left) lost when the animal was alive.

Sus scrofa MNI 1

A carved lower male canine was found, probable riser of an equine bit[347] perhaps of a wild boar.

Capra hircus NMI 1

A bone fragment aged less than three and a half years (distal unfused radius).

The fact that the horses and dogs bones were not in anatomical articulation at the time of discovery and that the MNI of horses is unusually high (10), suggests a secondary deposition of remains recovered from other contexts and deposited here as consecrated remains worthy of respect.

Fig. 63a-l.

West necropolis, Trench CXI Pit 287 = BC

Equus caballus MNI 5

Horse A: 5-year-old individual most likely male due to the presence of canines. Upper and some lower teeth.

Horse B: 6-year-old individual, upper and lower teeth. Canines absent. Spots of copper on the left maxilla at the level of P^4.

Horse C: 9-year-old individual most likely male due to presence of canines. Upper and lower teeth.

Horse D: individual between 13 and 20 years old. Canines absent. Upper and lower teeth. Bite wear on right and left P^2.

Horse E: Individual in his 20s, absent canines, upper and lower teeth.

Bones of the postcranial skeleton pertaining to the 5 individuals, indistinguishable. Different withers heights were calculated. In particular, the pairs of metacarpals provide the heights for each of the five individuals, even if it is not possible to attribute them to each individual in particular:

1) average height of cm 115.3;

2) average height of cm 118.8 with variability from 118.6 to 119.1;

3) average height of cm 118.7 with variability from 118.5 to 118.9;

4) average height of cm 122.3 with variability from 122.3 to 122.4;

5) height of cm 123.1.

In addition to these, heights from humerus of cm 1198 and 1159 were calculated; from radius of cm 1232, 1180 and 1241; from tibia of cm 120.7 and 129.9. Also for the metatarsals it was possible to match the remains of four individuals which give the respective heights:

1) height of cm 123.6;

2) height of cm 119.3;

3) height of cm 120.4;

4) height of cm 125.7.

Pathologies: a fused lumbar vertebra with osteophytes; two vertebral spinous processes with signs of arthrosis; a sesamoid with osteophytes. It can be assumed that these remains are to be attributed to older subjects.

Bos taurus, an upper molar (M1/M2) of bovine was found.

Canis familiaris MNI 4

Dog A: Elderly individual with advanced tooth wear, molars spaced and flat denoting a long snout.

Dog B: Young dog (5/7 months) which presents in the right mandible teeth completely formed but not worn, with open roots and without dentin ($P_3P_4M_1M_2M_3$) while in the left the Pd_2 (deciduous second premolar) is still present next to the permanent teeth.

Dog C: Adult individual with agenesiac M^3.

Dog D: individual identified by postcranial bones only. Also in this case the bone remains were not in anatomical connection at the time of discovery.

A shell of Clausiliidae was found, a family of terrestrial pulmonates that preferentially live in a stony environment.

Fig. 64a-e.

West necropolis, Trench CXI pit 293 = BD

Equus sp./Equus caballus MNI 4

Horse A: 6-year-old individual. Upper and lower teeth without trace of canines. No bite marks.

Equine B: 10-year-old individual, upper and lower teeth. Canines absent as well as bite marks. Upper and lower teeth. The plica caballina is missing in the upper jugals, in the lower ones V-shape of the linguaflexid between metaconid and metastylid. Possible hybrid?

Equine C: Individual aged 13/14 years, more likely male due to the presence of canines. Slight bite wear on P_2. Presence of upper and lower teeth. Occlusal caries on all upper teeth.

Equine D: Represented only by one upper and one lower tooth.

Bones of the postcranial skeleton pertaining to the three (or four) individuals, indistinguishable. Some withers heights have been calculated. In particular, the pairs of metacarpals provide the heights for each of the three mainly represented individuals, even if of course it is not possible to attribute them to each individual in particular:

1) average height of cm 111.2 with variability from 110.8 to 111.7.

2) average height of cm 117.2.

3) average height of cm 117.9 with variability from 117.3 to 118.5.

In addition to these, other heights were calculated: from metatarsus of cm 111.3; from radius of cm 118.4 and 111.5 (from two different individuals) and from tibia measuring cm 121.6 and 118.1 (from two different individuals). Pathologies: one fused lumbar pathological vertebra.

Canis familiaris MNI 2

Dog A: young individual about 6/8 months.

Dog B: Adult individual over two years of age, elongated snout, spaced premolars.

Fig. 65.

West necropolis, Trench CXI, Pit BE

Equus caballus MNI 3

Horse A: Individual in his 20s, more likely male due to the presence of C, with bite wear on right P^2 and copper spots on

[347] See *supra*, Matthäus, 562.

Fig. 62a-b. Remains of horses from Trench XLVII (© Archivi SAIA, U/13513-13514).

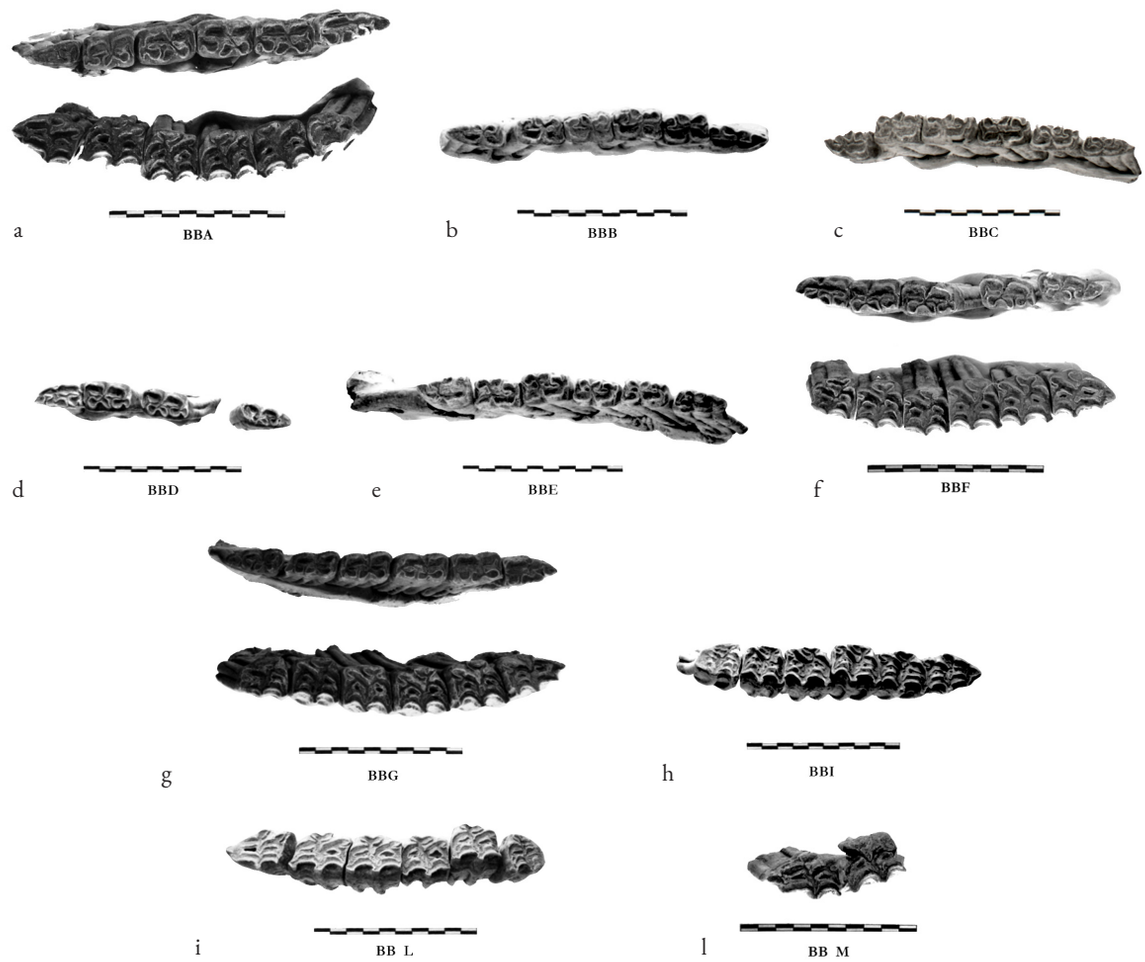

Fig. 63a-l. Remains from pit BB (© Archivi SAIA, U/13515-13524).

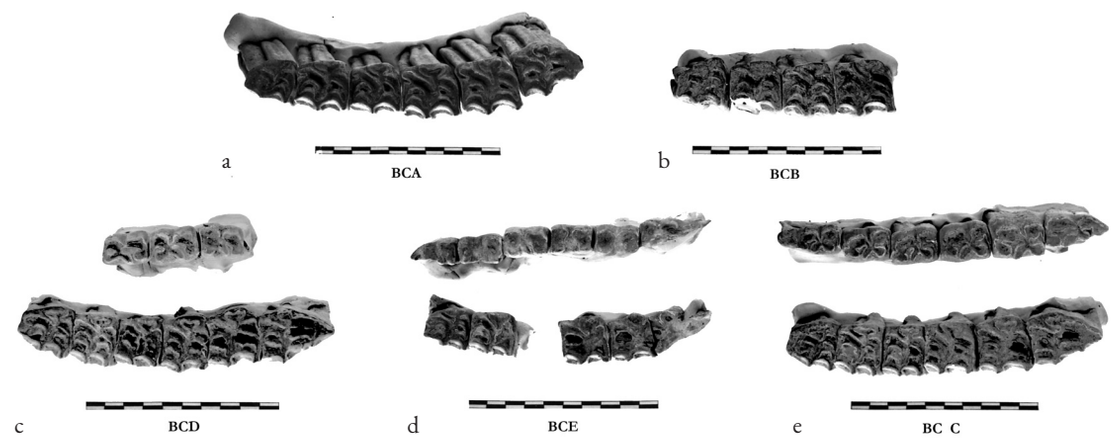

Fig. 64a-e. Remains from pit BC (© Archivi SAIA, U/13525-13529).

the left mandible near P_2), upper and lower teeth are preserved. Numerous occlusal caries on the upper premolars and molars. Both P_2 fallen during life. The postcranial bones, apart from two astragalus, can be attributed with a certain reliability to horse A, to which the height from metatarsus of cm 120.9 must also be attributed.
Horses B and **C** represented by a single astragalus each.
Canis familiaris MNI 3
Dog A: medium-sized adult, long muzzle, note the lossof right P_4 during life. Most of the bones of the postcranial skeleton should belong to this subject.
Dog B: Identified by a left humerus of a subadult aged between 8 and 13 months, of large size.
Dog C: Two fused proximal epiphises of right and left tibias belong to a subject of small size.
Fig. 66.

West necropolis, Trench CXII, Pit BF
Equus caballus MNI 2
Horse A: 7-year-old individual, more likely male due to presence of canines, no bite marks, mandible and teeth, few upper teeth.
Horse B: Individual in its 20s, without bite marks, upper and lower teeth, no canines. Abnormal wear on right P^4 and left P_4.
Bones of the postcranial skeleton pertaining to the two individuals and not attributable. A height from metacarpus of cm 126.9 and an average height from metatarsals of the same individual of cm 129.2 (variability from 127.9 to 130.5) were calculated.
Canis familiaris MNI 4
Dogs A and **B** have a long muzzle with spaced P, but M_3 slightly sloping. The other two individuals are represented only by fragments of the postcranial skeleton.
Fig. 67a-c.

West necropolis, Trenches CXII and CXIV, Pit BG
Equus caballus MNI 5
Horse A: most of the bones from this pit appear to this individual. Aged about 20 years with no bit marks. Upper and lower teeth preserved, without trace of canines, one occlusal caries at the level of left M^1.
Horse B: aged 5 and a half/6 years. Some upper incisors preserved.
Horse C: Much over 24 years old. Some upper teeth are preserved, partly worn down to the root.
Horse D: About 20 years old. Some upper teeth are preserved.
Horse E: between 9 and 14 years. Some upper and lower teeth are preserved.
The numerous remains of the postcranial skeleton are largely attributable to horse A. A height from metacarpus of cm 126.2 was calculated. Pathologies: a fractured and poorly welded rib.
Canis familiaris MNI 2
Dog A: Subadult individual of about 8 months, small in size with a shortened snout.
Dog B: medium sized adult individual.
Fig. 68.

West necropolis, Trench CXIII, Pit BH
Canis familiaris MNI 2
Dog A: Large sized subadult individual. Skull remains with unfused interparietal suture and low sagittal crest. Generally this is a female characteristic but it can also be due to the young age of the subject.
Dog B: Large sized subadult individual.

21/8/1972 West necropolis Trench CXIII Pit BI
Canis familiaris MNI 5
Dog A: Adult individual with elongated snout (spaced P, but M_3 slightly rising)
Dog B: Adult individual with elongated snout. Jaw curved in the horizontal plane
Dog C: Adult individual with regular teeth.
Dog D: Adult individual with regular teeth.
Dog E: Adult individual with regular teeth.
Numerous postcranial skeleton remains pertain to the five individuals above.

West necropolis, Trench CXIV, Pit BL
Mammalia 13
Equus sp. 1 accessory metapodial.
Canis familiaris MNI 1
Remains of an individual in poor condition including mandibles and lower teeth, atlas, humerus and tibia. It means of a subject with long muzzle.

23/8/72 necropolis O Trench CXI Pit BM
Mammalia 5
Canis familiaris MNI 2
Dog A and **Dog B** The remains of two skulls were recovered, at least in one case of an elongated shape, and of the front and rear limbs of two adults, difficult to distinguish from each other. Three connected metatarsals are conserved, with an elongated shape.

West necropolis, Trench CXV, Pit BO
Equus caballus MNI 3
Horse A: over 24 years of age, more likely male due to the presence of canines. A few heavily worn upper teeth are preserved.
Horse B: over 20 years of age. Few upper and lower teeth are preserved.
Horse C: age 8-9 years, more likely male due to the presence of canines.
Numerous postcranial remains pertaining to the three horses have been found without chance to attribute them to a single individual. Height from tibia cm 134.7; from metacarpal 127.5; from metatarsus 130.5 and 128.4.
Canis familiaris MNI 5
Four individuals were identified from mandible remains.
Dog A: this individual has regular teeth with horizontally placed M_3 and little worn. Unfused lumbar vertebra could be attributed to this dog.
Dog B: also has regular teeth with horizontally placed M_3.
Dogs C and **D** are not identifiable because of fragmentation of the mandibles. A tibia height of cm 61.3 was calculated. The phalanges and metapodia are always very elongated.
Dog E, recognizable only by some bones of the postcranial skeleton, is of small size. The diaphysis of the right fibula is fused to tibia.

West necropolis, Trench CXV, Pit BP
Equus caballus MNI 2
Horse A: a 9-year-old individual represented by the upper incisors
Horse B: a 20-year-old individual represented by the upper teeth.
Remains of the postcranial skeleton of the two individuals. The mean height of one of the horses (from metatarsus) was cm 120.6 with variability from 120.4 to 120.9. The other subject reached a height of cm 126.8, again from the metatarsus. A metacarpal height of 126.9 was also calculated. The

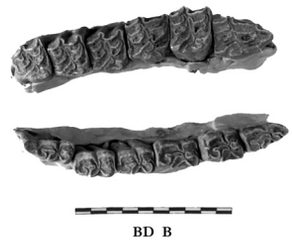

Fig. 65. Remains from pit BD
(© Archivi SAIA, U/13530).

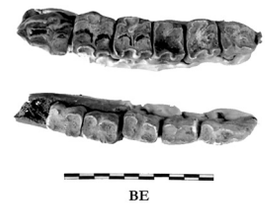

Fig. 66. Remains from pit BE
(© Archivi SAIA, U/13531).

Fig. 67a-c: Remains from pit BF (© Archivi SAIA, U/13532-13534).

Fig. 68. Remains from pit BG
(© Archivi SAIA, U/13535).

Fig. 69. Remains from pit BP
(© Archivi SAIA, U/13536).

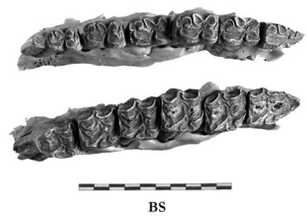

Fig. 70. Remains from pit BS
(© Archivi SAIA, U/13537).

Fig. 71. Pit BS: horse burial (© Archivi SAIA, U/13538).

remains of at least one horse were anatomically connected at the time of discovery.
Pathologies: 4 thoracic fused and 4 lumbar fused vertebrae with osteophytes presumably related to the older horse.
Canis familiaris MNI 6
Dog A: individual represented by part of the right maxilla and the two right and left hemimandibles. Regular teeth.
The other five individuals, all adults, are represented by fragments of mandibles. It is not possible to attribute the remains of the postcranial skeleton.
Fig. 69.

West necropolis, Trench CXXXII, Pit BS
Equus caballus MNI 1
One individual, probably male due to the presence of well-developed canines, age 9 years, average height cm 121 (from metacarpus and metatarsus, var. from 120.9 to 121.1). The remains of this individual were connected at the time of discovery. The skull, which could not be preserved intact, has a short and broad shape.
Figs. 70-71.

West necropolis, Pit BU
Remains of two horses and a dog in connection. This burial was excavated, a plaster cast made, but the bones were not recovered and consequently could not be studied. The following observations are based on the photos.
Equus caballus MNI 2
Horse A: on the right in the photo. Placed on its side, skull resting on the left cheek. A well-developed upper canine can be noted and therefore it is more probable that it was a male. From the occlusion of the incisors it can be assumed that the age of death is around 10 years.
Horse B: on the left in the photo. Lying on its side, with the neck rotated and the skull resting on its right cheek, younger than the other, about 5 years old. No canine appears to be present and the hypothesis can be advanced that it was a female. The bronze risers of the bit are preserved, which, however, were not in the correct position in the burial.
Canis familiaris MNI 1
The skeleton of the dog is more disconnected than that of horses due to its smaller size which makes it more sensitive to the movements of the ground and of burrowing animals. It can be considered in original connection, but upset by animals. It is placed on the right side, with the head rotated so as to show the throat. It appears to be a subject with thin and slender limb bone.
Fig. 72a-d.

West necropolis, Trech CCXIV, Pit BV
Equus caballus MNI 1
A three-year-old individual, average height cm 126.1 (from metacarpals and metatarsals, variability from 124.9 to 128.4). Some scratches and signs of human handling were found. Left femur, scratch near distal epiphysis; left coxal cut on posterior ischium; left radius perforation on distal epiphysis; left ulna scratches on the head of right olecranon; tibia three posterior scratches to cut the ligaments of the lateral flexor of the finger; scratches on the right calcaneus. The remains of this horse were anatomically connected at the time of discovery. It is the only one that shows signs due to human action. Given that these are not signs of slaughter nor presumably of skinning, given that only the ulna and the calcaneus are poorly protected by the muscle mass, the hypothesis is that these are operations aimed at truncating some muscle attachments to adapt the body to the small size of the pit. Even the position of the head, forcibly turned backwards, supports this theory. Perforation of the radius at the distate epiphysis may be due to the use of ropes for dragging and placing the body. It should be noted how the front legs are exactly overlapping, as if they had been tied.

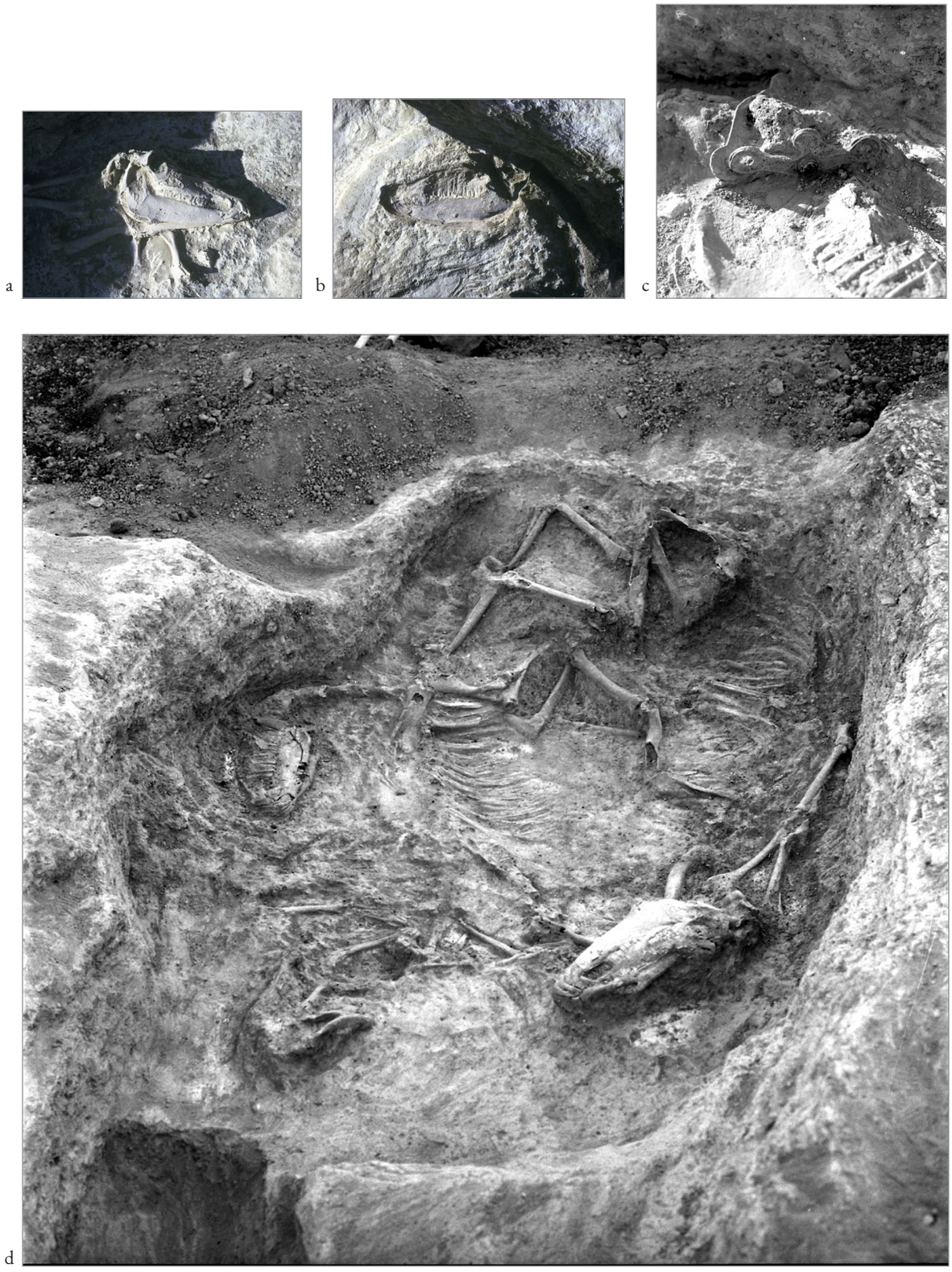

Fig. 72a-d. Pit BU: two horses and a dog (© Archivi SAIA, U/13539-13542).

Fig. 73. Pit BV: horse and dog burial (© Archivi SAIA, U/13543).

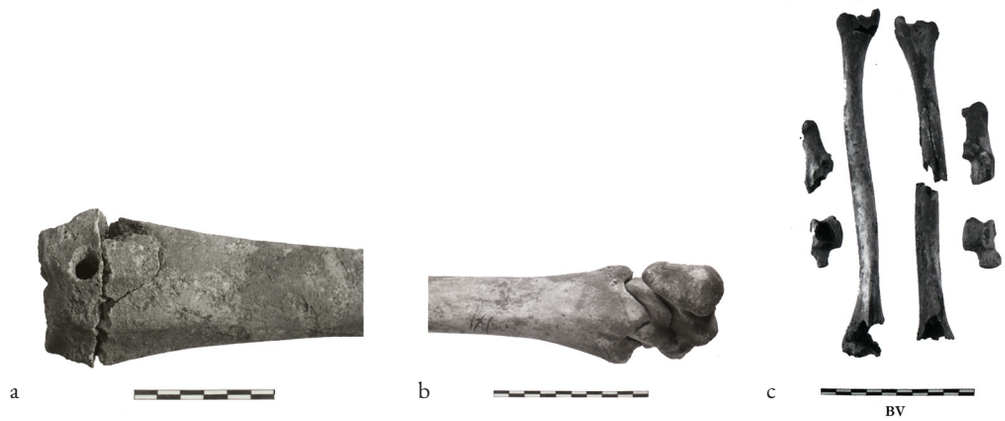

Fig. 74a-c. Remains of horse and dog from pit BV (© Archivi SAIA, U/13544-13546).

Fig. 75. Trench XLIV, remains of horse (© Archivi SAIA, U/13457).

Canis familiaris MNI 1
An individual aged between 15 and 18 months, from proximal unfused femur and proximal unfused tibia, fused calcaneus and distal tibia. Pathologies: left tibia thinner and curved than right one, left calcaneus and talus thinner and more fragile than right one. Height from left tibia (pathological and unfused in the proximal part) 64.2.
The dog was placed on top of the horse's fore and hind legs.
A fragment of goat (*Capra hircus*) radius was found, probably a chance find present in the ground.
Figs. 73-74a-c.

East necropolis, Trench XLIV, above the rock facing W of T. C
Equus caballus*/*Equus sp. MNI 2
Horse A: An 8-year-old individual most likely male, represented by complete upper and lower teeth (including canines) and much of the postcranial. A height of cm 129.7 from the radius was calculated.

Equine B: An individual younger than three and a half years represented by vertebrae, sacrum and two caput femoris NF.
Fig. 75.

East necropolis, Trench LXXXI Sept. A3 unburned bones (animal) placed in a cavity in the rock
Aves 1 fragment
Canis familiaris MNI 2
Dog A: Long-snouted individual
Dog B: another individual not well distinguishable from the previous one.

West necropolis, Trench CXI remains of a quadruped on the ballast
Equus caballus MNI 3
Horse A: an elderly subject.
Horse B: an individual aged between 5 and 7 years.
Horse C: one individual from middle to older age identified by a few lower teeth.

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date	trench	tomb	*Lacerta*	*Martes foina*	*Aves*	*Lepus europaeus*	*Canis familiaris*	*Sus scrofa*	*Caprinae*	*Ovis aries*	*Capra aegagrus*	*Capra hircus*	*Bos taurus*	gr.Rumin.	*Equus sp.*	*Equus asinus*	*Equus caballus*	Mammalia
19/21/23-8-1971		Tholos J					44		100	23		11		4				127
22-6-1984	CCCV								1									
23-8-1971		T AI					20											36
19/20-8-1971		Tholos D							4									1
23-8-1971		T D					98		2			1						9
2-8-1972	LXVI	Tholos AQ							26			18						9
23-7-1974	CXLIV	T409				3												
1-8-1974	CXXXIV-CXLV	stones				7		1		3			14					
20-7-1974	CXLI				2	7			1	3			1					3
23-6-1984	CCCI	T 501							1									
14-7-1971	XLVIII	T P							1									
31-7-1974	CXXXIV	stones			1				2									
20-7-1974	CXLI				1	1		3										
20-7-1974	CXLI				1	8			2									
17-7-1974	CXLIV								1									
17-7-1974	CXLIV	stones				15			1	2		1						
31-7-1974	CXXXIV	T 411				1												
5-8-1974	CXXXVII	stones											1					
31-7-1974	CXXXIV					4			2				1					
22-7-1974	CXLIV	T 408				3			2									
1-8-1974	CXLV	T 414			1	5				1								
22-7-1974	CXLIV	Sector A3				1												
1971		T W vase 25					12											27
20-8-1971		Tholos AH							1									
21-7-1973	CXV	Sector B															36	
4-8-1971	XLVI	Sector FH															15	
13-8-1970		room 2													1			
6-7-1971		Essay 5ª t.2						1										
02/08/73	LXXV	Sector A1							4									8

	LI	under ballast															1	17
17-7-1973	CXV	ballast					5								1			
4-8-1977	CCXLIV						8											
31-7-1973	CXX	ballast													1			1
29-7-1977	CCXL						1											1
19-7-1973	CXV	under ballast					1											
20-7-1973	CXV	Out T 274-277					7								7			8
18-7-1973	CXV	Out T 274					24								1			2
13-7-1971	XXXVII			1		5												1
24-7-1971	XXXVIX?	ballast							1									
16-7-1971		N Tomb K							1									
19-7-1974	CXLIV	T 402															1	6
9-8-1972	CVI	T 260						1	2			1	2					
9-8-1971	XCII				1		52										1	1
18-8-1973	AZ	ballast											1					
1-8-1977	CCLXII	T 445							7									18
3-8-1977	CCXLIII								2									
20-7-1974	CXLI	T 406				6			15	4			1					
24-7-1971	XLVIII														1			
24-7-1971													1					
7-7-1971															2			
13-8-1974		T 380				2			2									3
24-7-1971	XXXIXA	square C							2									1
18-7-1973	CXV	T 275											1					
20-7-1974	CXLI	T 405			1	2												
2-8-1974	N CXLV	T 416				1												2
22-7-1974	CXLIV	T 401				8			2	1								
12-7-1971	XXXVII	over T. K				1							1					2
12-7-1971	XXXVII	Out T K											1					
3-8-1971	XXXVIII A	ballast				2			2									

1-8-1974	CLXIV	T 403											2					
18-7-1974	CXLIV	T 404				7			3	3								
12-8-1974	CXLVIII														7		2	108
10-8-1974	CXLVIII	under ballast													1			11
19-8-1974	CLI	surface					100											
7-8-1974	CXLVIII	2 floor													1		1	
	CI	Sector B											1					3
21-7-1973	CXV	Sector DCH													4			
20-8-1983	CXXXIII	ballast							5	3								
21-8-1973	CXXXIV	Sector A1				7												
18-8-1976	CCXIV	North side													3			16
23-8-1976	CCXX	under ballast															1	
23-8-1976	CCXX	rock													7			
21-8-1971	CCXX	under ballast							1								1	
14-8-1972	IC	surface								1								
6-7-1971	XXI	square Q															2	2
6-7-1971	XXI	surface															2	23
13-7-1971	XXXIII	Out T.K													1			
2-8-1972	CXI	surface					1								11			14
4-8-1972	CXI	ballast					8								3		3	2
1-8-1970	VI	under T.104					14											
25-7-1970	XLI	T 152							3			3						2
		TF										1						
19-8-1972	CXIII	T 268													1			
27-7-1970	CXIII	pit																
8-7-1970	XLIII	Front TC													2		1	
20-8-1970	XXXIII	Out t.96					3											
29-7-1970	XLI A	Widening S							6	1								
21-8-1971	CXIII	under ballast					1										7	
16-9-1972	CXIII	T 270															5	
4-8-1972	CIV	T.255													1			

30-7-1970	XLIII	under ballast								2								
21-8-1972	CXII	under ballast													3			14
10-8-1972	CXI	ballast					5								1		1	31
4-7-1972	CXI	surface													2			
14-8-1970		Layer 2						14	29	3	1	2	5					94
16-8-1976	CCXXV	T 433								1								
23-8-1973	LXXXII	sett.A3											1					
10-8-1972	CVI	massicciata				1			2									
8/9-8-1972	CVI-CXI	massicciata		1		36	1	6	20			1	3			1	1	3
1-8-1973	LXXV	Sector B							15			6						26
4-8-1973	LXXVI	Sector A1								1								
2-8-1973	LXXV	Sector B4											2					
3-8-1973	LXXV	Sector B4				1			1			2						10
10-7-1978	CCXLV	heap A				8	1		5	2								6
23-8-1971		T.AI							14	8		4						
18-7-1978	CCXLV	Dep. 490							1									
11-7-1978	CCXLV	heap A				1			1									
1970	CXI	surface															13	
11-7-1978	CCXLV	heap A													15		2	178
31-7-1972	CIII	Sector C													11			
22-7-1972	CI	ballast													6			
22-8-1972	CIX	Sector C					6								10			97
18-7-1974	LXXXIV	under ballast																4
20-7-1972	C	ballast									1							
20-7-1972	C	Sector NP									1							
12-8-1972	CIX	under ballast													4			83
5-8-1971	XCV	ballast															5	
5-8-1972	CVI	surface		1	1	3				2							6	85
20-8-1971		Tholos AH					7		6						43			167
5-8-1972	CXI	ballast						1									11	14
8-9-1972	CVI-CXI	ballast								17								

2-8-1972	CXI	ballast					1						1		13		8	164
20-7-1970	XVI																	1
17-7-1971	IC	widening													1			
1977	CCXLIV	482					31											102
24-7-1971	XXXIX B	burnt											1					
28-7-1971	XCII	surface					1								1			23
17-7-1973	CXV	ballast													1			
15-7-1977	CCLVI	surface								1								
31-7-1971	XI	room η				1												
	CVI	ballast											1					
	CXI	ballast					1								6			1
3-8-1977	CCLII	ballast								1								
25-7-1975	CCLVI	dig					11											22
24-7-1971		T 219											1					
22-7-1970	V	T 36					1											
8-7-1974		T 374								3					1			
11-8-1976	CCXIV														9			105
23-7-1974	CXLIV					4			3				2					
3-8-1972	CVI	T 258				2												
21-7-1970	IV	T 33								1								
21-7-1978	CCXLV	T 499		1														
1-8-1972	CXI	ballast															1	12
12-7-1978	CCXLV	T 487			2				1	1								
15-7-1970	1/A	T 23																
20-7-1970	XVI								1									
1-8-1974	CXXXIV-CXLV	stones											2					2
29-7-1971	XXXIX B	T.226																2
20-7-1974	CXLI	Sector B1																4
20-7-1974	CXLI	Sector A1				1		3	2									1
31-7-1974	CXXXIV	stones				1												
6-8-1971	XCV	area O											1					

23-7-1974	CXLIV	T 409							1									1
29-7-1971	XXXIX B	T.226	1															
12-7-1971	XXXVII	area S																1
26-7-1971	XXXIX C	T.220																1
12-7-1978	CCXLV	T 487							1									
16-8-1973	CXXXII	T 395				1												1
1971	pithos	tomb W	2															1
20-7-1974	CXLI	stones			1	1		1		1								5
2-8-1972	LXVI	Tholos AQ							5									8
2-8-1972	CXI	T 283						2									1	29

Tab. 3. Number of fragments (NIS) at inhumation burials.

date	trench	tomb	*Bolinus brandaris*	*Cerastoderma glaucum*	*Donax trunculus*	*Chamelea gallina*	*Helicidae*	*Clausiliidae*	*Cornu aspersum*	*Eobania vermiculata*
19/21/23-8-1971		Tholos J								1
18-7-1974	CXLIV	404					1			
21-7-1970	XIV	pit							24	202
10-7-1978	CCXLV	under stones						1		
21-7-1970	IVA	pit south T 33			2	2				
15-7-1970	I/A	23		1						
1971		T.W pithos	1							

Tab. 4. Molluscs (MNI) in inhumation burials.

date	trench	Tomb	Mollusca	Aves	*Lepus europaeus*	*Canis familiaris*	*Caprinae*	*Ovis aries*	*Bos taurus*	*Equus sp.*	*Equus asinus*	*Equus caballus*	Mammalia
03/08/71	XLVI	Sector F				37							
04/08/72	XCII	ballast			1					4		3	5
05/08/71	XIII	T.227		2		21				11			168
22/08/72	CXIV	ballast								8			36
19/08/72	CXIII	T 270										1	
18/08/72	CXIII	Sector C								5		1	19
09/08/74	LXXXVIII	T 375					1						
13/07/78	CCXLVI	T 493					1	1					
10/08/72	CXI	T 292							1				
03/08/72	CXI	T 284									1		
21/07/71	XL	T 215				2							
16/08/76	CCXI	Dep.431							1				
11/08/72	CIX	Sector C									1		11
03/08/72	C	ballast	1										

Tab. 5. NISP (number of identified fragments) from cremation burials.

date	Trench	pit	*Clausiliidae*	*Aves*	Mammalia	*Canis familiaris*	*Equus caballus*	*Equus sp.*	*Caprinae*	*Ovis aries*	*Bos taurus*
20/30-7-1971	XLVII	Pit 3 horses				37	105			1	
7-8-1972	CXI	pit 286 = BB									
7-8-1972	CXI	pit 287 = BC	1			290	814				1
11/12-8-1972	CXI	pit 293 = BD				26	369				
14/21-8-1972	CXI	pit BE				124	118				
22-8-1971	CXII	pit BF				99	147				
22-8-1972	CXII-CXIV	pit BG				20	152				
21-8-1972	CXIII	pit BH				154					
21-8-1972	CXIII	pit BI				345					
22-8-1972	CXIV	pit BL			13	15		1			
23-8-1972	CXI	pit BM			5	32					
20-7-73	CXV	pit BN				6					
24-7-1973	CXV	pit BO				83	81				
24-7-1973	CXV	pit BP				166	185				
	CXXXII	pit BS					129				
16-8-1976	CCXIV	pit BV				79	267		1		
10-8-1970	XLIV	West Tomb C					94	6			
11/08/76	CCXIV	West 148-427			55			3			
05/08/71	LIV	Sector B, horse pit				6					
22/08/73	LXXXI	Sector A3, well		1		157					
03/08/72	CXI	ballast			31		17				

Tab. 6. NISP (number of identified fragments) from animal graves.