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POPULONIA (PIOMBINO; LI), THE NECROPOLIS OF PIANO AND POGGIO DELLE GRANATE

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Abstract: This paper discusses the dating and architecture of a number of chamber tombs found in the necropoleis of Piano and Poggio delle Granate near the Etruscan settlement of Populonia in northern Etruria that were excavated as part of a research programme of the Department of Historical Science and Archaeology of the University "La Sapienza" at Rome. Special attention is paid to the excavation of Tomb PPG 7 in the Poggio delle Granate necropolis dating from the first half of the 8th to the 7th c. BC and excavated in 2002-2003. This grave appeared to be quite well preserved despite the fact that it had been looted, possibly already in antiquity. The paper concludes with a discussion of the finds from this tomb.

INVESTIGATIONS OF THE NECROPOLIS

Starting in the 9th century BC, the necropolis of Piano and Poggio delle Granate in the northern area of the gulf of Baratti in the course of the Iron age and Orientalising period developed into one of the principal funeral nuclei of the Etruscan centre of Populonia.* The major part of its graves can be attributed to this period, and no graves of the Archaic and Classical period are known. In the Hellenistic period the necropolis area was used again, but in a less monumental way than before.

Already in the 9th century BC, the chamber tomb was adopted in the necropolis as an architectural model earlier than in any other Etruscan centre. The earliest chamber tomb type used in the necropolis is built on a circular or ellipsoidal plan and covered by a pseudo dome surmounted by earth. The use of the chamber built tomb in Etruria is in the archaeological literature considered as an innovation that probably derives from foreign influence.¹ The type is a rare in the small funerary nucleus of Poggio del Mulino and the grave of Fosso dei Lavatoi is an isolated specimen.² At Piano and Poggio delle Granate it remained in use in the Orientalising period, but in a quite different way than in other necropoleis in the area of Populonia. The chamber tombs of this period found in Piano and Poggio delle Granate are built of irregularly placed pieces of local stone ('*panchina*') of different sizes, well joined together and covered by a mound of compact earth. In the nearby funerary nucleus of San Cerbone the Orientalising tombs are built of regular cylinders made from blocks of '*panchina*', on which protruding corbels are placed and then covered by tumuli of earth.³

Research in the area of Piano and Poggio delle Granate was carried out at various times between 1914 and 1934

under the supervision of Antonio Minto⁴ (Fig. 1). This was in a period when the heaps of ancient *scoriae* in the coastal area of the gulf of Baratti were dug, a commercial activity during which great number of tombs were brought to light.⁵ In those days attention was paid solely to the recovery of grave goods while the graves themselves were poorly recorded. Only summary plans, often illegible, of parts of the necropolis are preserved and rarely relief maps of structures.⁶ This lack of information and the necessity to recuperate useful data of areas that have been dug illegally, encouraged the Department of Historical Science and Archaeology of the University "La Sapienza" at Rome to initiate a research project in the zone. The objective was to obtain an insight into the typological development of the tomb structures and the horizontal stratigraphy of the necropolis.⁷ A second objective was to investigate the geomorphologic characteristics of the area and relate them to its use of the area from the Etruscan period onwards.

The part of the necropolis taken into examination lies close to the slopes of Poggio delle Granate at a short distance from the actual coastline where Minto located the first nucleus of grave pits dating from the Iron Age.⁸ The research area that has been looked into was not included in Minto's investigations of the first half of the last century: in fact, he discovered in 1933 only a small nucleus of chamber-tombs at its outer edge (Fig. 1).⁹ The area is nowadays characterized by two deep depressions (hollows) running parallel to the coast. These do not appear on IGM maps, nor are they reported by Minto. In two surveys campaigns, in 2001 and 2002, the position of these depressions was mapped as well as 61 anomalies in the terrain (i.e. small depressions, a particular disposition of vegetation or clear traces of illegal digs). These

* For the research in the area conducted by A. Minto, see Minto 1943, 57, 72, 77-78, 89-91; Fedeli 1983, 79-82, 89-90, 362-392 (both with ample biographies).

¹ The hypothesis that the architectural typology was influenced by the nuragic architecture was critically dealt with by Bartoloni 2000, 27, point 39. Recently in Bartoloni 2002, 357-362, it was suggested that there was a connection with architectural models found in pre-colonial Sicily.

² Fedeli 1983, 335, n.200; 1985, 47-51; 2000.

³ Minto 1943, 78-83; Fedeli 1983, 105-110; Romualdi 1993, 93-94.

⁴ For the chronicle of the research, Minto 1943, 45-47.

⁵ Contrary to the necropolis near San Cerbone, the necropoleis of Piano and Poggio delle Granate were not covered by piles of slag.

⁶ Minto 1943, detailed paper nr. 3; Fedeli 1983, fig. 334; Bartoloni *et alii* 2001, 105.

⁷ The research project was carried out under an excavation licence obtained in 2001. Thanks are due to the staff of the offices of the Superintendent F. Bottini and the civil servants of the Superintendency of Archaeology in Tuscany, A. Romualdi, A. Patera and A. Camilli for their collaboration during the various phases of the work carried out so far.

⁸ Fedeli 1983, 362-369.

⁹ Minto 1934, 394-403; 1943, 340.

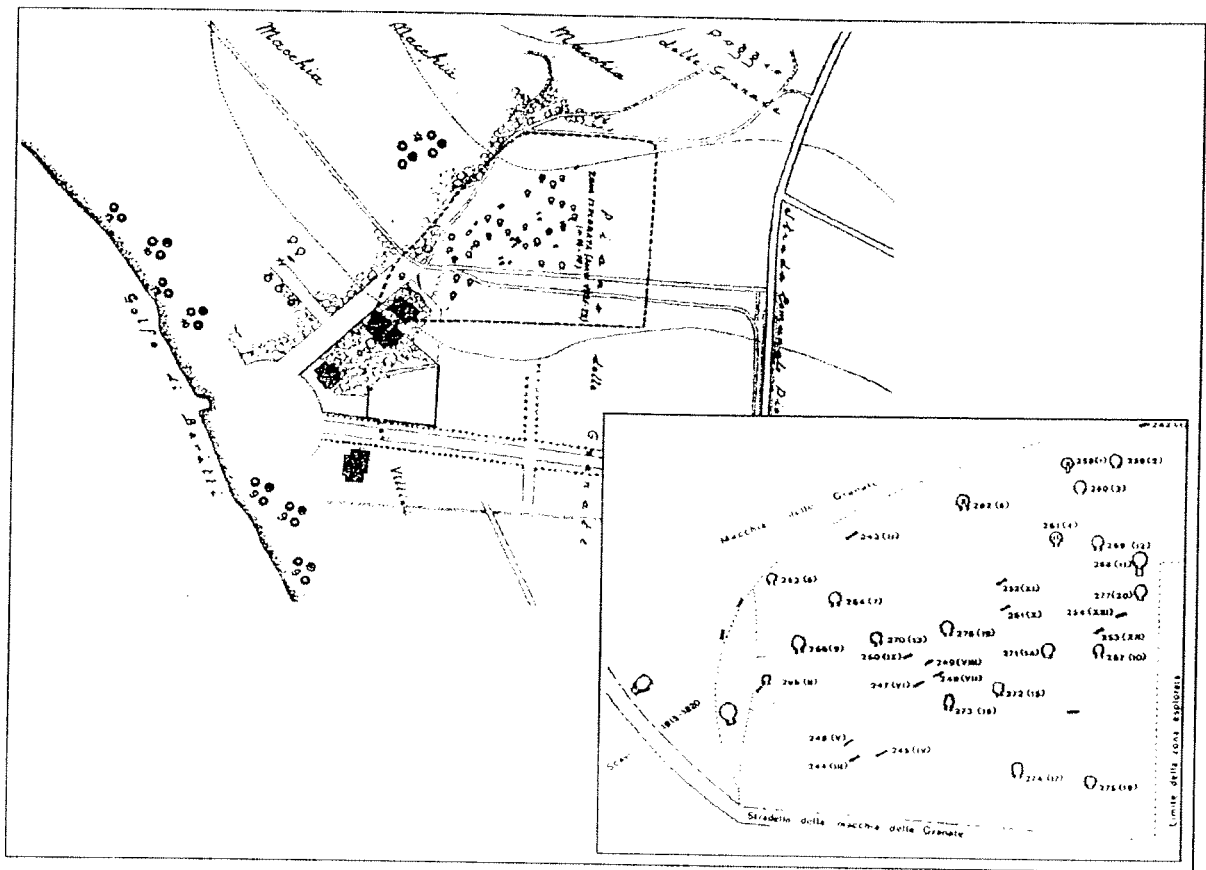


Fig. 1. The area of Piano and Poggio delle Granate investigated by Minto; on the right bottom the map of the necropolis with the small nucleus of chamber tombs discovered in 1933 by Minto (Minto 1943; Fedeli 1983)

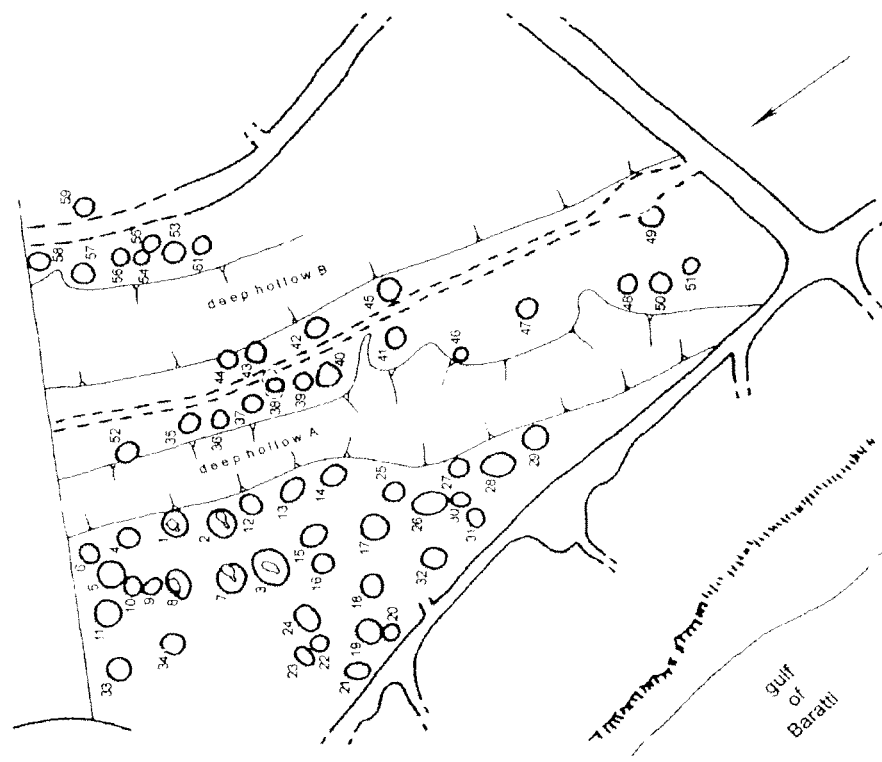


Fig. 2. The topographical positioning of the hollows and the 61 anomalies of the terrain; results of the surveys.

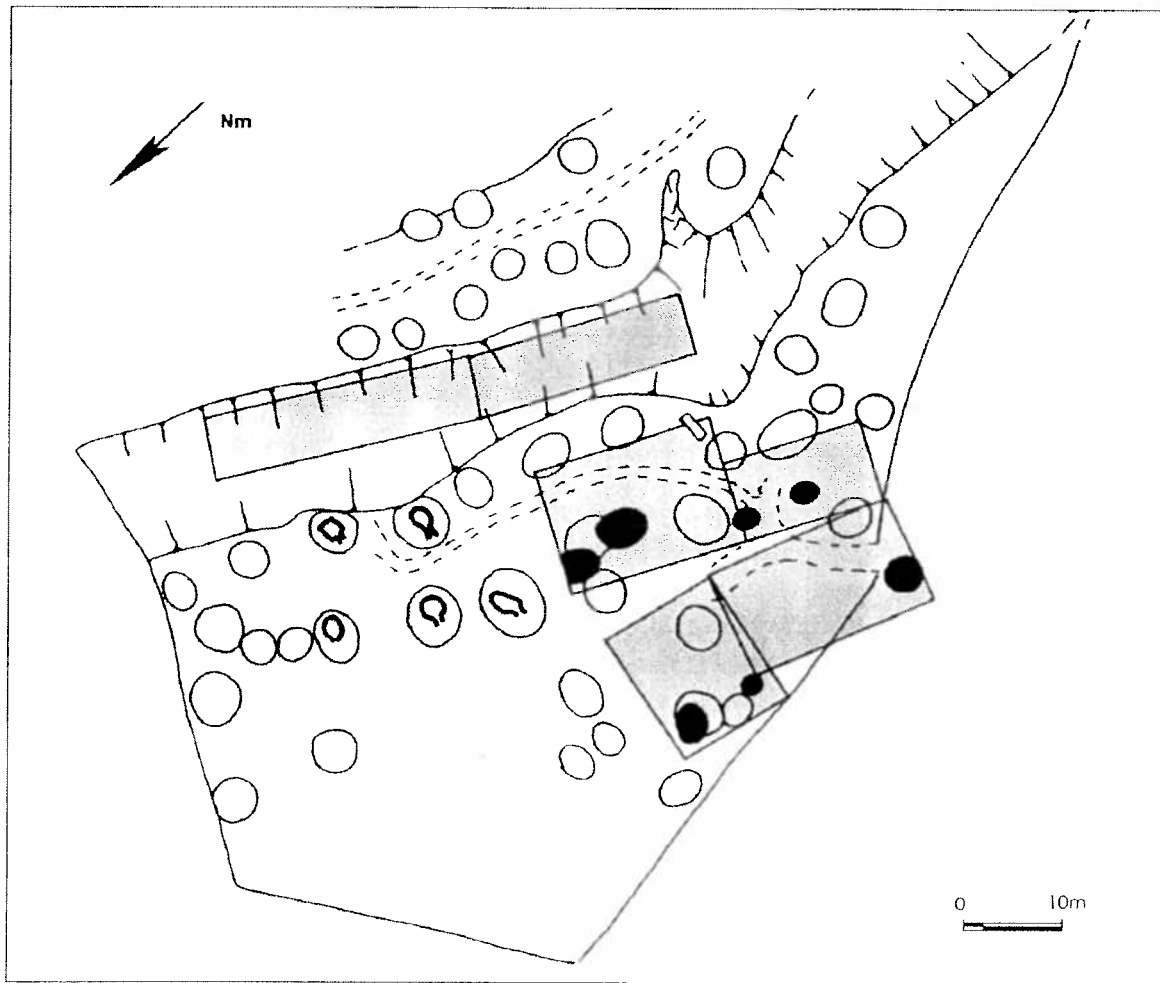


Fig. 3. Map of the necropolis: in light grey the geo-physical prospective readings; in black the anomalies of conductivity (cavities in the subsoil). The different position of the geo-physical prospective readings and the surveyed data are caused by the GPS positioning method used for the geo-physical prospective;

features form possible clues to the presence of chamber-tombs (Fig. 2).¹⁰ Furthermore, in the course of the first research campaign a limited area was subjected to geophysical prospection. The readings showed substantial electromagnetic frequency¹¹ indicating anomalies in the conductivity of the subsoil. These anomalies were not always perceptible at the surface (Fig. 3). On the basis of the results of the geophysical prospection excavations were carried out. In the first excavation campaign¹² one previously robbed grave was excavated (PPG 1), while

two tombs (PPG 2 and PPG 3) found earlier by the Archaeological Office of Tuscany were documented graphically.¹³ In the second campaign three anomalies were investigated, two of which corresponded to chamber-tombs (tombs PPG 7 and PPG 8).¹⁴ Furthermore, two trial trenches were carried out: the first one with the intention to investigate the nature and function of one of the depressions; the second one in order to assess the possible presence of tombs in an area west of tomb PPG 8 where no anomalies had been noted during the prospection (Fig. 2). The latter did, however, not bring to light evidence for new tombs.¹⁵ Regarding

¹⁰ For the method used, see Bartoloni *et alii* 2001, 110-114.

¹¹ The geophysical work was conducted by Doc. Valerio Ridolfi (AREA p.s.c.ar.l.). The method is based on recording resistance values or conductivity of the subsoil of the terrain by emitting and receiving electromagnetic signals. The instrument used is capable of sending simultaneous waves in 12 frequencies (in a spectrum between 300 and 20,000 Hz) with the acquisition of data at different frequencies to enable to build a 3-dimensional image of the subsoil. In our case, the survey was carried out using six simultaneous frequencies, between 300 and 19,000 Hz; the grid used was 1 x 1 or 1 x 0.5 m over eight areas of variable dimensions from between 7 x 22 and 14 x 18 m.

¹² In 2001; for the results of the first campaign see Bartoloni *et alii* 2001.

¹³ Romualdi 2000, 12, figs. 1-2.

¹⁴ Starting from the second excavation campaign, the numeration of the tombs followed that used to indicate the relative anomalies, that is a progressive numeration in which the first three tombs are those excavated and documented in 2001.

¹⁵ The trial excavation was carried out in an area of about 6 x 7.5 m, immediately west of tomb PPG 8. Two thick layers of use/abandon were identified, characterized by fragments of slabs of stone used for tomb structures and of medium-sized ceramic fragments probably of amphorae dated generically to the Hellenistic/Roman period. The two layers were found immediately on top of the virgin soil.

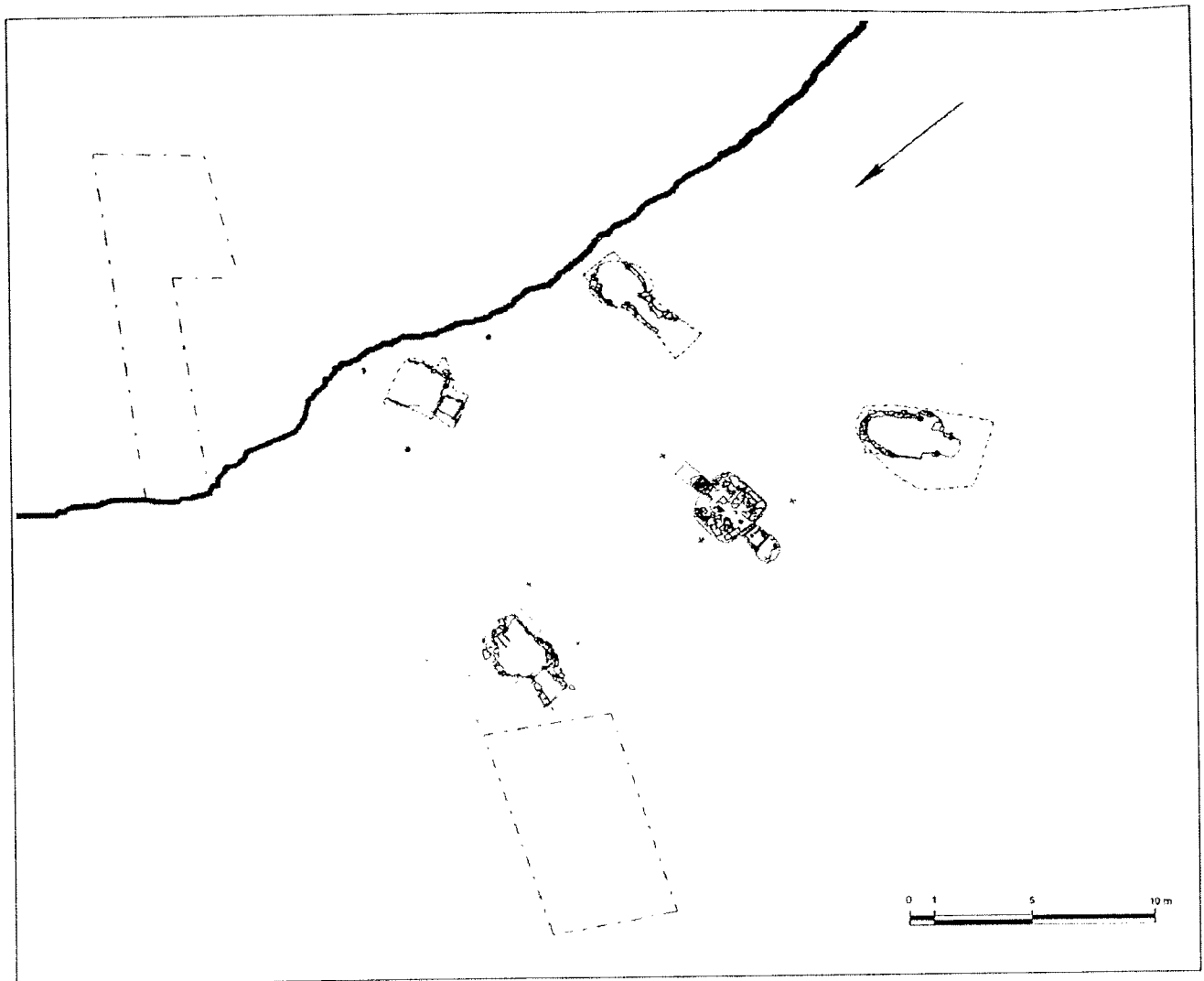


Fig. 4. Map of the necropolis with the chamber tombs and the two trial trenches excavated during the campaigns 2001-2002 (M. Merlo)

the first trial excavation we have difficulty with the interpretation of the stratigraphical deposit. The investigation of the sides and the bottom of the depression revealed traces of human activity between 0.80 cm and 1 metre below the layers that are generically dated from the later antiquity and the Medieval period.¹⁶ The continuous chain of chamber-tombs along the borders of the depression suggest its existence earlier in the Etruscan period.

¹⁶ A tightly packed layer composed of medium-sized stone and ceramic fragments, covered by layers with very few artificial inclusions (if not a small amount of iron slag), was interpreted as the remains of a small footpath of hard packed clay, orientated east-west in line with the first hollow. Some metres west and lower down (80 cm) traces of an artificial canal were found that needs to be investigated better by means of auguring.

The positioning in a GIS of the two hollows is being done by the topographical group at the University of Studies in Siena (Prof. F. Cambi).

The excavation of the tombs allowed us to document the structures better as such broadening our knowledge of the building techniques used and to establish the evolution of the funerary architecture in chronological terms by means of the associated grave goods. We have confirmed the existing idea on the evolution of the chamber-tombs within the necropolis.¹⁷ The oldest type is represented by tomb PPG 7, a nearly circular chamber plan of 2.70 x 2.80 m that is preceded by a short corridor (1 x 0.80 m) orientated east-west¹⁸ (Fig. 7). It was covered by a partially preserved pseudo dome, the original height of which must have been about 1.40 m. It was built of slabs

¹⁷ Bartoloni 2000, 23 ss. The development from circular/elliptical tombs to rectangular ones inside the funerary area of Piano and Poggio delle Granate is not recognized by Minto (Minto 1943, 77) who connects the oldest chamber-tombs to a period of transition between the Villanovan period and that of the Orientalizing period; nor by Fedeli on the basis of Minto's description (Fedeli 1983, 81-82). The only rectangular-based tomb inserted among the more ancient tombs by the historian was tomb number 5 (Fedeli 1983, 370, n. 238 c.).

¹⁸ For a detailed description of the structure, see further on.

and blocks jutting out and bonded with a clay mixture. Only the south-west side of the chamber was preserved integrally, showing a well-jointed covering of slabs of chalk and grey clay. Tomb 1 of the excavation site at Poggio delle Granate in 1981,¹⁹ dated on the basis of grave goods in the late 9th-early 8th century BC, is a good parallel.²⁰

The investigation of the raised structure by means of recording a section of its stone covering furnished new data on its construction.²¹ It appeared to be inserted in a cut of 1.20m deep made in a natural bank just below the topsoil and was only partially raised above the ancient ground level. This solution was probably chosen to increase the stability of the tumulus²² in cases where circular gravestones lack. In this respect tomb PPG 7 resembles the well-known tomb of the so-called 'rasoio lunato di bronzo' of the same necropolis.²³ The section done by Minto of the latter tomb, that is to be dated at the beginning of the 8th century,²⁴ shows that it was also found at a depth of 1.20 m from ground level in a cut that in the upper part was marked by vertically placed stone slabs. The lowered chamber makes a good comparison to the structure found in 2002, suggesting that this type of grave in the necropolis of the Granate may have been used as a distinct element that is not found in the nearby funerary nuclei.²⁵ The use of this architectural solution in the necropolis of Poggio delle Granate as an alternative to the better-known completely above ground tumulus built for such a long period, seems to be confirmed by the analysis of the other graves excavated between 2001 and 2003. Also in tombs dating from the Orientalising period, the chambers seem to be founded in cuts into the virgin soil at a lower level than the one in comparable tumuli where the tumuli were superimposed.²⁶ The grave goods

of the oldest deposition found in tomb PPG 7 date to the middle of the 8th century, and so does its building technique. The construction technique was continually in use until at least the late Orientalising period.²⁷

The rectangular chamber tombs²⁸ were used in the area of Piano and Poggio delle Granate from the middle 7th century BC, as shown in tombs PPG 1 and PPG 8²⁹ (Fig. 4). In the first one, rectangular slabs of limestone were placed vertically delimiting a chamber of 2.30 x 2.00 m. Also in this case, the chamber was preceded by a short corridor with the entrance facing west. On one side a part of the covering in small slabs bonded together with clay, jut out. Only fragile remains of the tumulus were left making the calculation of its length possible, but inhibiting our understanding of the building techniques used. Chronology of the grave goods indicates a period between the late middle Orientalising and late Orientalising period.³⁰

More or less contemporary is tomb PPG 8, which also has a rectangular plan of 2.40 x 1.90 m orientated towards the east-west and a pseudo dome. Of the latter only the south-east and the north-east corners are preserved. The corridor, found completely filled in with earth and stones, measured about 1.80 m in length. The building technique used is similar to the previous one, with slabs and blocks of local stone of various dimensions, placed in irregular lines with the use of stone wedges and lumps of clay sediment to fill in the interstices. The lower course was made from large blocks, also in the corridor. The excavation brought to light the remains of some slabs vertically placed in the earth³¹, probably used to define a deposition parallel to the western side of the chamber. This phenomenon is found in numerous graves in the area of the Granate as well as in other necropoleis in the area of Populonia, and may be dated generically from the early Orientalising period.³² The already mentioned tombs, PPG 2 and PPG 3, belong to this same typology. These, however, were found empty and so were only mapped.

Reuse of the area at the end of the 4th and beginning of the 3rd century BC, as has been noted in the archaeological literature,³³ happened on a large scale. Inside tomb PPG8, a hearth was found on top of the collapsed vault. It is datable from the period of abandonment of the structure and the Hellenistic period.³⁴

¹⁹ Bartoloni 2000, 25, for the latest but generic comparisons.

²⁰ Rosi 1994-95.

²¹ The first pit was made by deepening a clandestine hole on the opposite side of the corridor. During the excavation campaign of 2003 therefore, a portion of the covering layers were sectioned to an extension of about a quarter of the circumference. We have added here the results of this, which could not be presented at the conference itself. (see further on).

²² This layer was subsided into the area in front of the corridor, making a profile impossible.

²³ The existence of chambers with a basement floor, useful in the making of the pseudo dome, was first recognized by Minto (1943, 77), then to be denied (1943, 83).

²⁴ From the last, Bartoloni 2002, 352.

²⁵ In the case of the tomb of the 'Rasoio lunato', the presence of a circle of stones placed about one and a half metres above the opening of the tomb, it is thought that there could be a link between the ideology of the chamber tomb with that of the fossa graves 'con circolo di pietre interrotte' (broken line of stones), well-documented at Vetulonia but also known at Populonia (Bartoloni 2002, 352). In fact, these half-embedded chambers more generally could represent an intermediate type of chamber tomb, with links between fossa graves and chamber tombs with circles, similar to the half-built chamber-tombs of southern Etruria (Colonna 1986, 395-396; for a general picture of the question, Naso 2001, with bibl.).

²⁶ The flooring of tombs PPG1 and that of tomb PPG38 (excavated in 2003) do not seem to have had any type of covering; work was done directly on the geological surface (Bartoloni *et alii* 2001, 116-117). The situation is less clear in tomb PPG8 as the floorings show evidence of heavy grave digging. Furthermore, an embedded position always with a

rectangular plan was found in three excavations done in 1933 (Minto 1934, 400; Bartoloni 2000, 30).

²⁷ See further on.

²⁸ Fedeli 1983, 82.

²⁹ Bartoloni 2000, 26.

³⁰ Bartoloni *et alii* 2001.

³¹ Some fragments of slabs fallen in between two vertical slabs suggest that we are dealing with a closed upper part.

³² Fedeli 1983, 82.

³³ Fedeli 1983, 138.

³⁴ The hearth and the immediate surrounding layers did not hold useful material to give a precise date. Among the abandoned layers of the structure, the earliest remains are dated to the Hellenistic period.

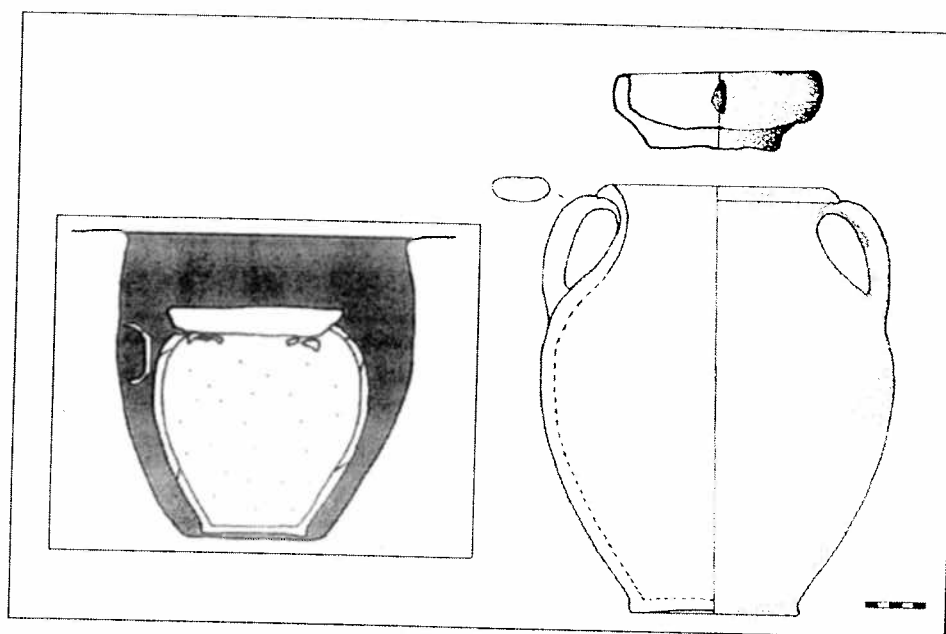


Fig. 5. The cremation burial pit PPG I: the section (*S. ten Kortenaar*) (left), the amphora (*S. Neri*) and the small cup (*V. Scipinotti*) (right).

The stratigraphical deposit found in the second trial trench³⁵ and the thick layers of waste come across during the excavation of various tombs, were rich in ceramic fragments attributed to this period. Further more, a few metres east of tomb PPG 7, a cremation burial pit was found (PPG I) placed in a grave of about 0.35 m deep. So far, cremation graves were not known in the area³⁶ (Fig. 5). Inside the cremation pit an amphora made of impasto was found,³⁷ containing the burnt bones of the deceased, covered by a small slab of a sedimentary rock of clay and chalk placed horizontally on top of the amphora. Inside the pit, a small bowl³⁸ made of impasto, was found. It was put vertically into place with its top side turned towards the lateral walls of the grave. Both are datable to the 4th-3rd century BC (Fig. 5). The anthropological analysis of the remains³⁹ permitted the identification of the body as a female, between 20 and 30 years old at the time of death; there was no evident sequence in which the parts of the skeleton were positioned inside the amphora.

We may conclude that the part of the necropolis investigated was characterized by a rather dense pattern of grave structures placed very near to one another. The tombs are coherently orientated with the entrances pointing eastwards towards the coastline. The number of tombs investigated at present is too small to define the diachronical development of this part of the necropolis. An interesting point is the closeness of the various tombs to each other in the various phases. The presence of fragments among the demolished layers of tomb PPG 1 that date to a period before the erection of the tomb may indicate that in this area the necropolis of the Orientalising period had in part obliterated the precedent sepulchres or maybe, their presence is due to intensive illegal activity.

The investigations confirm at the moment that the necropolis stopped being used after the 6th century BC. This moment is traditionally linked to the start of a new phase in the development of Populonia that is characterized by the first walled circuit and the beginning of metallurgic production on an industrial scale. These developments brought with them the choice of the Poggio della Porcareccia and of San Cerbone and Casone⁴⁰ as urban necropoleis. Regarding the reuse of the area in the Hellenistic period, the hypothesis is that the tumuli were not visible and not valued anymore.

G.B. V.A., M.M., S.t.K.

³⁵ See above.

³⁶ Fedeli 1983, 141.

³⁷ For comparisons: Castelluccio di Pienza: Cimino 1986, n. 507, tav. 99, n. 507, p. 179. The cremation pit is classed under the red paint technique typical of the Hellenistic period Sovana territory: Donati & Michelucci 1981, fig. 477, p. 196, n. 477, p. 196. Human form dated between the middle of the 3rd and the 2nd century BC. Tarquin, Fondo Scatagliini: Serra Ridgway 1996: T. 49, n. 33, tav. CXXXI, n. 49/33 p. 62. Linear decoration in brown paint dated to the 4th and 3rd century BC: T. 64, n. 41; tav. CXXXVIII, n. 64/41, p. 78. Example realized in crude ceramic, 3rd century BC.

³⁸ For comparisons: Romualdi 1986, 195, fig. 23, grup 7, nr. 950; 160, fig. 25, grup. 9, nr. 594; 160, fig. 26, grup. 9, nr. 36439; Cimino 1986, Tav. 107, fig. 534; Jehasse 1973, Pl. 138, fig. 2265; Donati & Michelucci 1981, 102, fig. 181; Serra Ridgway 1996 (form only, not impasto), Tav. CCX, T. 172, nr. 53.

³⁹ Effectuated by Dr.ess R. Vargiu.

⁴⁰ In fact, F. Fedeli speaks of the 'total abandon' of the necropoli during the 6th century BC (1983, 119); Romualdi 1993, 102.

CONTRIBUTION TO THE KNOWLEDGE OF THE BEGINNING OF
FUNERARY ARCHITECTURE IN POPULONIA:
THE EXCAVATION OF TOMB PPG 7 FROM POGGIO DELLE
GRANATE

Tomb PPG 7 in the Poggio delle Granate necropolis, excavated in 2002-2003, seems to be quite well preserved despite the activities of tomb robbers, which probably already took place in ancient times.⁴¹

The excavation, both of the chamber and of a part of the tumulus, has improved the knowledge of the particular building technique. The structure (*Fig. 6*) was located in a large pit, sunken into the bedrock, probably in relation with a natural slope. Inside this setting another circular cut was found, in which the chamber and the *dromos* were arranged.

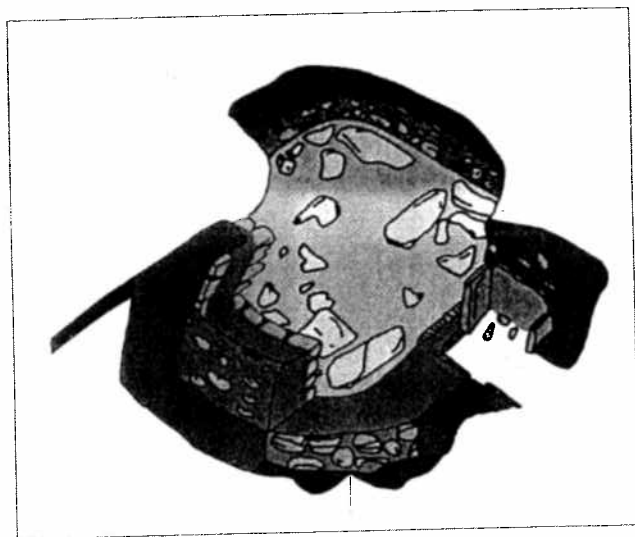


Fig. 6. Axonometric view of the chamber tomb PPG 7 (A. Di Napoli, T. Magliaro).

The foundation of the tomb was made out of big squared blocks carefully laid out creating an indentation. The foundation pit was filled with pieces of 'calcarenite' corresponding with the outer walls of the cutting; small slabs of dark-stone and pebbles were inserted between the blocks, tied with clay, in order to assure a better stability. In the elevation great care in placing several types of stones in horizontal bands can be noticed, answering to different static needs.⁴² The construction was entirely formed by a pseudo-dome erected on the foundation, composed of projecting courses of roughly outlined stones and slabs. The latter, gradually increased in quantity towards the upper side of the chamber, rising to an height of 0.55 m. From this point on, only slabs were used. The pseudo-dome was preserved up to an height of

1.10, but would have had an estimated height of about 1.40 m.

A clay mixture granted not only the connection between the stones, but also the impermeability of the building.⁴³ The complex was coated with a protective layer of sand and 'calcarenite', probably recovered from the natural soil beneath, taken away during the construction of the tomb.

The tomb was covered by a final layer of red, clayish soil, of which the surface lacked its original slope because of the sliding, caused by over pouring of water and by the destruction of the upper part of the vault (*Fig. 6*).⁴⁴

The chamber had an almost circular plan (2.70 x 2.80 m) and was preceded by a short *dromos*, bearing from east to west (length: 1 m; width: 0.80 m) (*Fig. 7*).

The chamber floor (*Fig. 7*), which was found in good condition only in the south-west side, was made of well jointed grey sandstone slabs, and by smaller vertical slabs inserted between them. The floor was bedded on a clayish layer, similar to the clay mixture used for the elevation in the walls. Probably the indoor space of the chamber was divided into two paved areas, running along the south-west and north-east walls, used as benches and parted by a narrow central passage, made of clayish soil.

The *dromos* was enclosed by slabs and blocks in sandstone, and a vertical⁴⁵ slab was arranged at each end. Its pavement was composed of a layer of clayish ground (similar to the one found inside the chamber), extending outside⁴⁶ and was paved with small horizontal slabs.

After the first usage, the tomb has been reopened, probably for following burials: in fact there were two large pits in the area in front of the *dromos*, which afterwards had been filled with earth and pieces of sandstone.

The excavation of the tomb PPG 7 from Poggio delle Granate explains some issues concerning the development of funerary architecture in Populonia. The features of the structure, along with the earliest potsherds found inside the chamber and in the nearby area, suggest a date within the first half of the 8th century BC. As already mentioned,⁴⁷ the whole building was set inside a

⁴¹ As already has been checked for other graves in the same necropolis, such as tomb PPG 1 in Bartoloni *et alii* 2001, 114-118; see above, about the tomb PPG 8.

⁴² An account on the use of stones in Populonia, especially in the Piano and Poggio delle Granate necropolis: Paoletti 2000, 79-98.

⁴³ The use of a clay mixture to connect the slabs is not only recorded in other graves from the same area (see Bartoloni *et alii* in this volume), but also in the 'tumuli' from the Iron age necropolis of Poggio del Molino o del Telegrafo: Fedeli 2000, 41; Barbi 2000, 67-70.

⁴⁴ Regarding the analysis of the forces at work in the 'tumuli': Barbi 2000, 61-66.

⁴⁵ The slab that divided the *dromos* from the chamber rested outside the chamber doorjamb, while the other one, used as a threshold, was stuck on the floor.

⁴⁶ Concerning the importance of the *dromos* in the Populonia and Vetulonia district "come una parte integrante della tomba e non meramente accessoria e di servizio": Colonna 2000, 258.

⁴⁷ See Bartoloni *et alii* in this section.

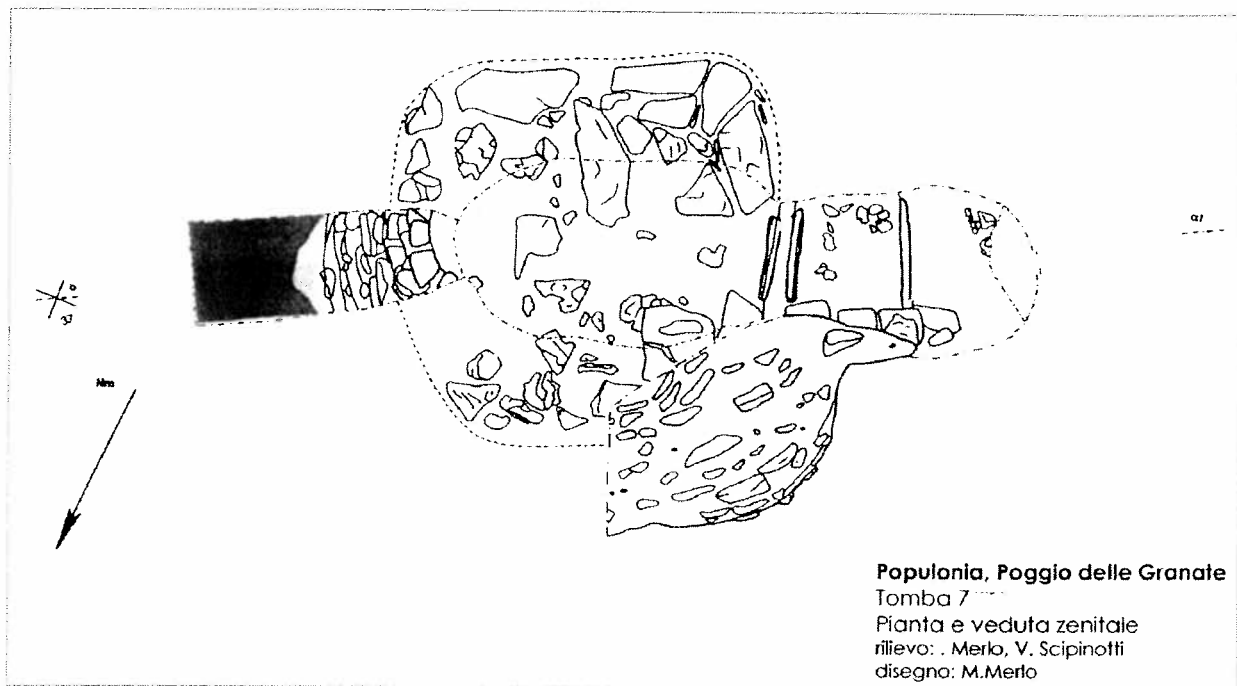


Fig. 7. Plan of the chamber tomb PPG 7 and its tumulus (M. Merlo).



Fig. 8. The first trial trench sectioning the layers of the tumulus of tomb PPG 7 (M. Merlo)



Fig. 9. The chamber floor and the vertical slab closing the chamber. (S. Neri).

cutting in the bedrock, so that only a part of its height emerged from the original ground level: such architectural typology turns out to be an alternative to the better known tumulus (thoroughly built in elevation). In this case, creating a lowered level was the solution chosen to uphold the pressure from the structure and its roofing.

A.D.N., S.N., T.M., F.P., V.S.

THE FINDS⁴⁸

As the tomb has been found in a state of extreme disorder, due to the plundering by tomb robbers, it is not

certain that the association of the materials discovered inside is valid. In fact none of it has been found in a primary deposit, and most of the layers unearthed inside⁴⁹ and outside⁵⁰ the tomb were the result of illegal actions. For these reasons, these finds should be considered with great precaution as belonging to the original context of the tomb, even if this is the most likely interpretation.

⁴⁸ The following presentation of the finds is not complete: in fact here a large group of the materials is reported on that was discovered in the 2002 campaign and only a small selection of those found in 2003.

⁴⁹ Among the layers excavated inside the chamber, US 129 was a thick amount of ground in secondary deposit, while UUSS 171, 172, 173, 178, 182 were small layers that were placed directly on the floor of the tomb (in one case piled up between the closing slab of the chamber and the threshold). The objects inside these layers are likely to belong to the period in which the tomb was used.

⁵⁰ The fact that some objects had been recomposed with pieces coming both from the inside and from the outer layer, seems to prove that these deposits have a common origin. That is why we have chosen to describe here also what has been discovered outside the tomb.

*Personal objects***Fibulae**

N. 1 (inv. 4, US 185, *Fig. 10:1*), fragment of a bronze bow of a fibula, circular-irregular section, enlarged in the middle, thinned and diverging ends. The decoration is composed by incised longitudinal lines converging toward the ends of the bow. The fibula is missing the spring, hilt, and pin. Even if the bad condition of this fragment makes it difficult to place it in a well defined typology, it might nonetheless be interpreted as a fibula 'ad arco serpeggiante' (*cf.* in general Guidi 1993, 50, type 103B, fig. 20, n. 5, II 'fase veiente', but with different pattern⁵¹) and can be dated within the 8th century BC.

N. 2 (inv. 41, US 129, *Fig. 10:2*), fragment of a bronze bow of a fibula, circular-irregular section, similar in shape and decoration to n.1, but one end is enlarged and somewhat elbow-curved. This fragment is also missing its spring, hilt and pin (*cf.* former).

N. 3 (inv. 11, US 140; inv. 1, humus; US 251/2003, *Fig. 10:3*), three fragments of a bronze leafed-bow fibula (can not be reconstructed); along the edges are small bronze rings inserted; missing pin and hilt (*cf.* Sundwall 1943, type C1δ; Minto 1931, Poggio delle Granate, t. a camera 19/1922, 366, fig. 30; Bruni *et alii* 1995, Montepitti, Deposito dell'Ulivo, 197-198, fig. 1.2 n. 2). This fibula belongs to a type dated between the end of the ninth and the beginning of the 8th century BC.

N. 4 (Saggio1/7-2003, *Fig. 10:4*), bronze fibula with short hilt, slightly swollen bow, full circular section, decorated with four incised bands; fragmentary hilt, missing spin (*cf.* in general Toms 1986, 78, type 15 fig. 19, Veii Period IC-IIA; Pacciarelli 1999, 130, fig. 34, type OB2a). The fibula can be dated between the last quarter of the 9th century and the beginning of the 8th century.

N. 5 (inv. 5, US 151, *Fig. 10:5*), fragment of a bronze fibula with a circular section bow, covered towards the spring with a small tube. Its bad condition makes it impossible to understand whether it is made of bronze wire rings or of a sort of moulded sleeve (*cf.* Berlingò 1993, 15-17, fig. 35; Siris-Policoro tomba 11, prima metà del VII sec. a.C.; Pithekoussai I, 403, T. 355, nn. 7-8, tav. 130, LGII, 'manicotto modanato' (moulded sleeve). This fibula belongs to an Anatolian type dated to the first half of the 7th century BC (*cf.* Muscarella 1967, 'Type XII, 13', p. 22, tav. 11, nn. 59-60).

N. 6 (inv. 13 US 140; inv. 61, US 129, *Fig. 10:6*), bronze fibula 'a navicella', ovoid section, remnants of incised decoration with transversal lines on both ends of the bow. Recomposed by several fragments; missing a part of the hilt and of the pin (*cf.* Bietti Sestieri 1992, tomba 148, fig. 3c, 26 n. 8, Latium Period IV). This fibula belongs to a very common type in Italy, and can be dated in the 7th century BC.

N. 7 (inv. 1, US 172, *Fig. 10:7*), bronze fibula 'a sanguisuga piena', circular section; missing pin, spring, hilt (*cf.* Bietti Sestieri 1992, 368, tipo 38ll, tav. 37, Latium Period IV) (for the chronology *cf.* n. 6).

N. 8 (inv. 12, US 140, tab.VI n. 8; 43, US 129), 2 small bronze fibulae 'a sanguisuga piena', circular section; both missing pin, spring and hilt (*cf.* *Fig. 10:7*).

N. 9 (s.n., US 140; US 251/2003, *Fig. 10:9*), small bronze fibula with lozenge bow, small conic tips on the sides, ovoid section; bow decorated with incised transversal lines near each end, and longitudinal lines in the middle (*cf.* in general Bartoloni *et alii* 2001, 122, fig. 11, n. 3).

Bracelets

N. 10 (inv. 19; US 129; *Fig. 10:10*), fragment of a curved silver wire, circular section, maybe belonging to a bracelet.

Three other fragments can be recognized as bracelets: a silver wire with circular section, and two bronze wires (inv. 1; US 182), one with circular section (inv. 9; US 140), the other one with ovoid section (inv. 14; US 140).

Rings

N. 11 (inv. 1; US 203; *Fig. 10:11*), suspension ring, thick bronze wire, ovoid, irregular section.

A huge group of tiny fragments of thin, curved bronze wire, with circular or irregular-elliptical section are recognizable as finger rings or suspension rings or as parts of chains, braid-rings, or just spirals. Four fragments of an iron wire, with circular irregular section, probably belong to suspension rings.

Pin

N. 12 (inv. 2, US 171; *Fig. 10:12*), fragment of an iron band, circular section, probably belonging to a pin.

Beads

N. 13 (inv. 1; US 173), cylindrical fragment of black glass paste (*cf.* Bietti Sestieri 1992, tipo 89n var I, p. 435, tav. 46, green glass paste, Latium Period III).

⁵¹ The pattern of this fibula has no striking parallels. A similar decoration, but on the whole bow, is documented for a Sicilian 'fibule a gomito', dated between the end of the 10th and the 11th century BC (*cf.* Giardino 1994, 514, n. 74, fig. 22; 1995, 241, n. 7, fig. 119/B; McNamara 2002, n. 7, fig. 3, p. 154, p. 153).

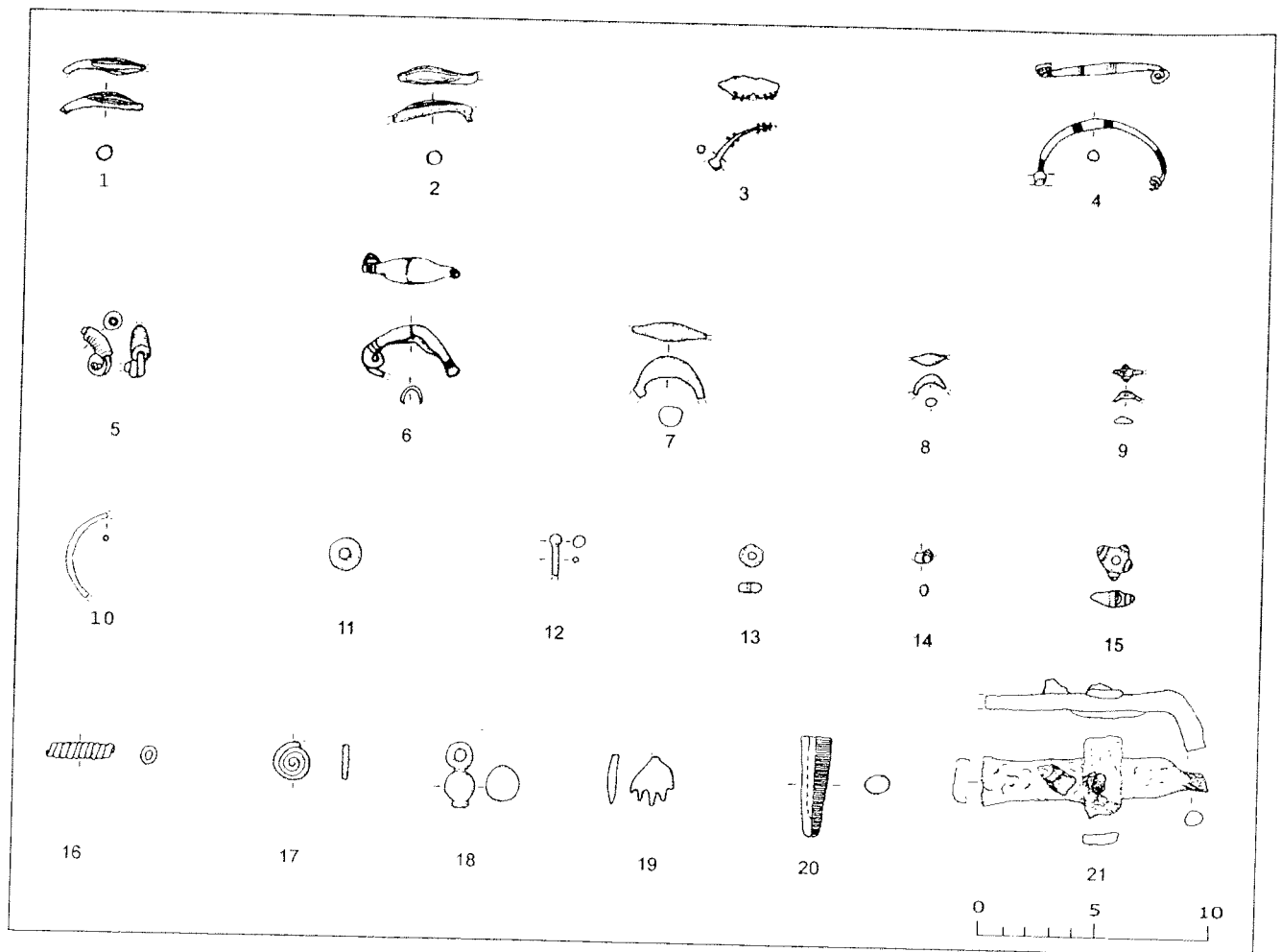


Fig. 10. The finds: the personal objects.

N. 14 (invv. 5, US 185; 60, US 129), fragments of cylindrical amber beads (*cf.* Bietti Sestieri 1992, tipo 89a, p. 429, tav. 46, Latium Period II-III).

N. 15 (inv. 58, US 129), disk-shaped bead of light brown stone.

N. 16 (inv. 57, US 129, Fig. 10:13), globular, flattened bead of dark blue glass paste, with four inserts of white glass paste (*cf.* Bartoloni 1989, 53, tav. XXe, Poggio delle Granate, tomba a camera 4, 8th century BC).

N. 17 (inv. 59, US 129; Fig. 10:14), fragment of flattened globular bead, of light blue glass paste, with an incised eye filled with white paste.

N. 18 (inv. 56, US 129; Fig. 10:15), flattened globular, dark blue, glass paste bead, with four pointed swellings on four sides, decorated with eyes inserted in white paste (*cf.* in general Bietti Sestieri 1992, tipo 89l, p. 433, tav. 46, Latium Period II-III).

Pendants

N. 19 (invv. 16, US 140; Fig. 10:16: s.n., US 251/2003; invv. 3, US 149; 21, US 129), fragments belonging to a few different spindle-shaped pendants, bronze-wired, different thickness, spiral curved and tapering towards each end (*cf.* Bartoloni 1989, 52, tav. XVIII n, Poggio delle Granate, trenched-grave 1, first half of the 8th century BC; *cf.* also Bietti Sestieri 1992, tipo 88l, p. 422, tav. 46, Latium Period II-III).

N. 20 (inv. 7, US 151; Fig. 10:17), spiral curved bronze wire (remnants of 6 spirals), probably belonging to a pendant ending with a double spiral (*cf.* Minto 1943, 64, tav. XIII, n. 2f, 8th-7th century BC, 'fermaglio'; Guidi 1993, 60, tipo 152, fig. 18/14, Veii Period IIA-IIB2).

N. 21 (inv. 20, US 129), drop-shaped bronze pendent with fragmentary eye (*cf.* Bartoloni *et alii* 2001, fig. 11, n. 13, Poggio delle Granate, T. 1, for more parallels; *cf.* also Bietti Sestieri 1992, tipo 88cc, p. 426, tav. 46, Latium Period III).

N. 22 (inv. 15, US 140; *Fig. 10:18*), globular pendant, with a disk shaped swelling in the lower part (*cf.* Minto 1943, 63).

N. 23 (s.n., US 379; *Fig. 10:19*), bronze pendent, hand shaped (*cf.* in general AA.VV. 2001, 78, n. 64, Picenian period III-IVA).

Point

N. 24 (inv. 2, US 379; *Fig. 10:20*), conic bronze point, concave on the upper ending, decorated with horizontal parallel groove lines, probably recognizable as the bronze edge of a not preserved wooden fitting, maybe a spindle (*cf.* Bartoloni 1989, 43, tav. XIII; Bietti Sestieri 1992, 396, tav. 41, tipi 51a and 51b), or a hair-pin (*cf.* in general Pithekoussai I, p. 432, nn. 5-6, tav. 134, T. 432, LG I).

Boss

N. 25 (inv.1; US 178), bronze-sheet boss with hemispheric head, (*cf.* in general Bietti Sestieri 1992, 418, tipo 87a, tav. 44, Latium Period II-III; Moretti Sgubini 2001, 205, III.B.2.15, Vulci, località Marrucattello, Tomba G).

Spits\fire-dogs

N. 26 (invv. 27-30, 52, 53, 55, US 129; 5, US 118; s.n., US 260/2003; *Fig. 10:21*), 6 iron band fragments, with rectangular section quite thick and large. One of them is connected with a transversal element; probably they belong to fire-dogs or stands (*cf.* in general Bartoloni 1972, 55, fig. 23, Poggio Buco, T. IV, n. 32, for further parallels).

N. 27 (invv. 23, 24, 31, 32, 38, US 129; 4, US 118), 6 fragments of iron bar, circular irregular section (a fragment, inv. 31, US 129 is made of two bars connected on one side because of the oxidation), belonging to an unknown number of spits, certainly not less than a pair (on spits and fire dogs in orientaling tombs in central Tyrrhenian Italy, see Kohler-Naso 1991).

Blades

N. 28 (invv. 2, US 172; 2, US 178; 8, taglio dromos; 26, US 129), 4 iron bands fragments, with rectangular section slightly tapering on one side, probably belonging to a knife blade.

N. 29 (inv. 6, US 151), fragment of a thin bronze wire, with a somewhat triangular section, maybe recognizable as a knife blade.

Iron fittings

N. 30 (inv. 3-4; US 171), couple of iron fittings, made of a cylindrical bar, hollow at one end; the interpretation of

this object is difficult: it might be the point or the covering of a wooden furniture.

Instrumentum domesticum

N. 31 (inv.1; US 379; *Fig. 11:1*), quadrangular spindle whorl, circular section (*cf.* Paolucci 1991, 16, tav. IV, n. 35).

N. 32 (inv. 2; US 140; *Fig. 11:2*), biconical spindle whorl, with fake-cord impressed decoration, composed of a pattern of triangle, filled inside with lines and a marked centre on top (*cf.* Bartoloni 1989, 54, tav. XXI, r).

There is also a biconical, facet, spindle whorl (inv. 3; US 140) and a conical one (inv. 18; US 129; *Fig. 11:3*). Three fragments of bobbins, belonging to three different types, have been found too: one has an enlarged, conic head, (inv. 15; US 129; *cf.* Bartoloni 1989, tav. XXI t), and two have enlarged, rounded head (inv. 16; US 129; inv. 17; US 129; Bartoloni 1989, tav. XX f; Bietti Sestieri 1992, 316, tav. 26, tipo 34h).

The pottery

Fine clay

N. 33 (inv. 8; US 129; *Fig. 11:4*), fragment of lip and of the upper part of the body of a *kylix* or a *skyphos* in purified clay; traces of painted bands (*cf.* in general Boldrini 1994, 307, tav. 8, n. 307, dated at the end of 7th-beginning of 6th century BC). A pair of sherds might belong to a similar shape (invv. 9-10; US 129) and also a couple of horizontal roll handles, with different thickness (invv. 12-13; US 129).

N. 34 (inv. 1; US 140), fragment of a wall in purified clay, belonging to an open shape; traces of black-glazed band decoration inside and outside.

Bucchero

N. 35 (inv. 1; US 156; *Fig. 11:5*), fragment of a band handle, decorated along the edges with a double line of fake cord impressions, with in the centre a deep impressed longitudinal line; belonging to an open shape (*kantharos*, *kyathos*) (*cf.* in general Bartoloni *et alii* 2001, 118-120, fig. 10, nn. 1-3, T. 1, 'seconda metà' 7th century BC, without the longitudinal line).

N. 36 (inv. 1; US 118; *Fig. 11:6*), fragment of a band handle, shape and decoration as foregoing, the vertical groove is only on the upper part of the handle, specifically on the curved side; belonging to an open shape, (*kantharos*, *kyathos*).

N. 37 (inv. 1; US 185; *Fig. 11:7*), fragment of a band handle, decorated along the edges with two parallel lines on the sides; belonging to an open shape (*kantharos*, *kyathos*) (*cf.* Bartoloni *et alii* 2001, 119, n. 7, n. 3, fig. 9, T. 1).

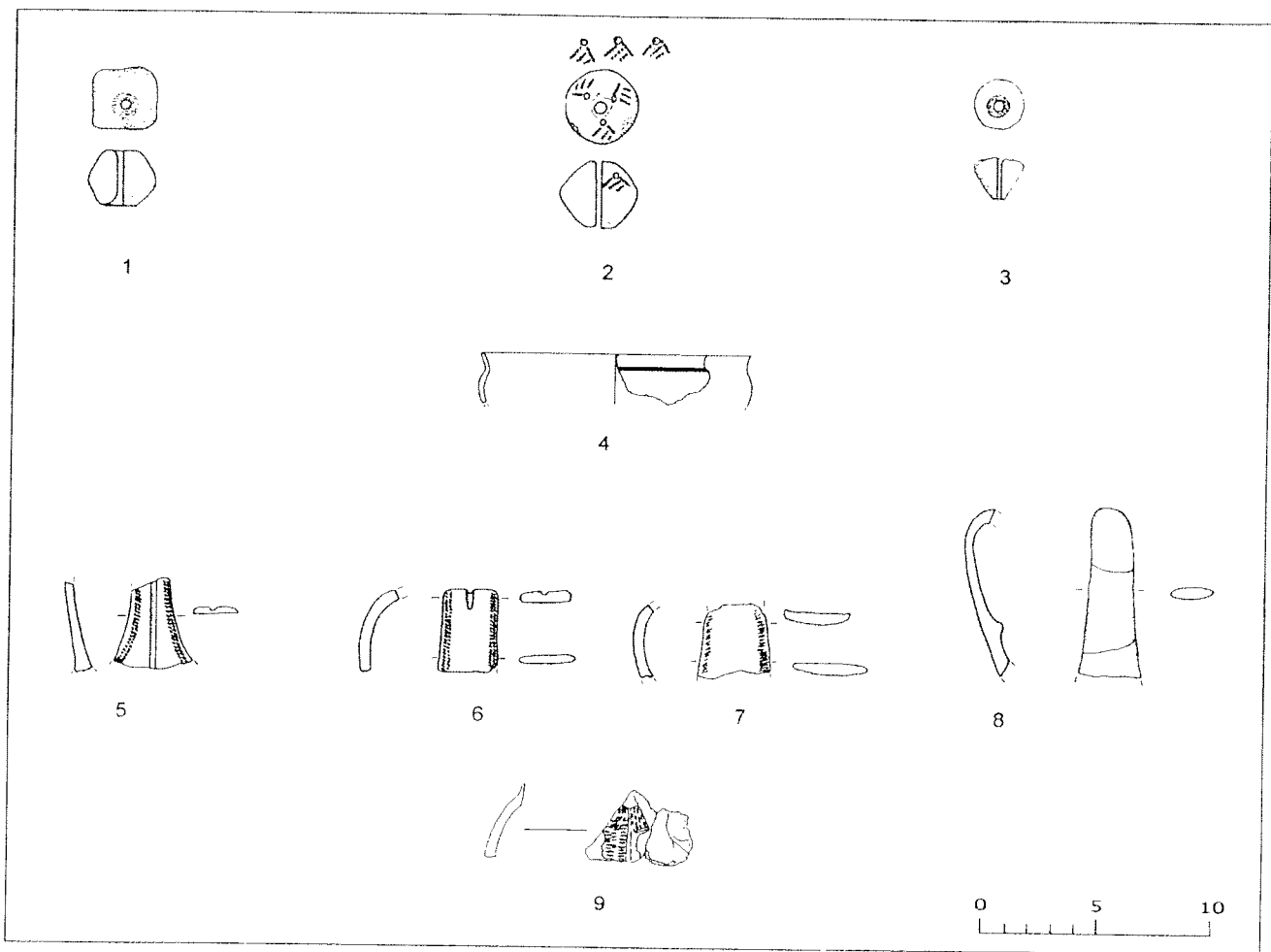


Fig. 11. The finds: the pottery.

N. 38 (inv. 2; US 185; Fig. 11:8). fragment of an high, biforal band-handle; belonging to an open shape (probably a *kyathos*) (cfr. Minto 1943, 139, n. 8, tav XXIX and p. 152, nn. 4-5, tav. XXXVIII, p. 152). Dated between the end of the 7th century and the first half of the 6th century BC.

Two small sherds of lip belonging to an *oinochoe* with trilobate mouth (invv. 3-4; US 129). 1 lip sherd (inv. 2; US 165) and 4 fragments of carinated walls (invv. 5-7, US 129; 1, US 121) belonging to an open shape.

Impasto

N. 39 (inv. 1; US 129; Fig. 11:9). fragment of wall decorated with incised triangles, filled with small horizontal and vertical lines, probably belonging to a closed shape. Brown impasto (cfr. inedited samples from the Acropoli and Lamboglia 1960, 135, t. 9).

N. 40 (inv. 3; US 118), fragment of a biforal band-handle, concave profile and almost circular section. Brown impasto.

There are also some more brown impasto potsherds, such as a lip fragment (inv. 9; US 129, maybe belonging to an open shape), a fragment of flat bottom (inv. 2; US 129), a wall fragment, maybe belonging to a closed shape, with three or four lines of fake-cord impressions (inv. 2, US 118) and a pair of ring-foot fragments in brown-red impasto (invv. 1; US 165; 1; US 149).

Chronology of the finds

The previous materials can be grouped in three different phases, so we can assume that there have been as many moments in which the tomb has been used.⁵² The earliest phase corresponds with artefacts dated within the first half of the 8th century BC (nn. 1-4; 18, 19, 20, 32),⁵³ a date which also fits well to the period in which the tomb was constructed. The presence of a spindle whorl (n. 32) may be considered as an indication for a female burial.

The second phase falls within the early Orientalizing period and is documented by finds nn. 5, 6, 10, 24, 39,

⁵² The stratigraphic excavation has pointed out two phases in which the tomb has been re-opened (see previous paragraph).

⁵³ Undoubtedly belonging to the first phase are nn. 16-18, 21, 22, 25.

40, while there are some doubts about the chronology of some beads, rings, spits, fire-dogs, *instrumentum domesticum*, plus the impasto potsherds that might be considered belonging to the last phase of the tomb.⁵⁴ The third phase, as shown by finds nn. 33-38, can be dated to the middle⁵⁵ and late⁵⁶ Orientalizing period. The huge number of spindle whorls and bobbins in these last two phases indicates the burial of one or more females.⁵⁷ The presence of a particular Anatolian fibula (n. 5) and two silver ring bracelets, along with several spits and fire-dogs, seems to suggest that the deceased belonged to a medium-high social class.

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BIBLIOGRAPHY

- AA.VV., 2001. *Donne, uomini e animali. Oggetti d'arte e di culto nella Preistoria* (catalogo della mostra). Roma-Firenze.
- Barbi, L., 2000. Analisi delle caratteristiche tecnico-costruttive delle tombe dei Carri, in: A. Zifferero, *L'Architettura funeraria a Populonia tra IX e VI secolo a.C.* (Atti del convegno, Populonia). Firenze, 61-78.
- Bartoloni, G., 1972. *Le tombe da Poggio Buco nel Museo Archeologico di Firenze*. Firenze.
- Bartoloni, G., 1986. Relazioni interregionali nell'VIII secolo a.C.: Bologna-Etruria Mineraria-Valle Tiberina. *Studi e documenti di archeologia* 2, 45 ss.
- Bartoloni, G., 1989. Marriage, sale and gift. A proposito di alcuni corredi femminili dalle necropoli popolonesi della prima età del ferro, in: A. Rallo (ed.), *Le donne in Etruria*. Roma, 35 ss.
- Bartoloni, G., 2000. Strutture e rituali funerari: il caso di Populonia, in: A. Zifferero 2000, 19-36.
- Bartoloni, G., 2002. La prima età del ferro a Populonia: le strutture tombali, in: *Etruria e Sardegna Centro-Settentrionale tra l'età del Bronzo finale e l'arcaismo* (Atti del XXI Convegno di Studi Etruschi e Italici, Sassari-Alghero-Oristano-Torralba 1998). Firenze, 343-362.
- Bartoloni, G., V. Acconcia, F. Biagi, A. Di Napoli, T. Magliaro, M. Merlo, S. Neri & S. ten Kortenaar, 2001. La ripresa degli scavi nella necropoli popolonesi di Poggio delle Granate (Piombino-Livorno). *Rassegna di archeologia* 18(A), 103-125.
- Berlingò, I., 1993. Le necropoli di Siris. *Bollettino di archeologia* 22, 1-21.
- Bietti Sestieri, A.M. (ed.), 1992. *La necropoli laziale di Osteria dell'Osa*. Roma.
- Boldrini, M., 1994. *Gravisca. 'Le ceramiche ioniche'*. Bari.
- Bonghi Jovino, M. & C. Chiaramonte Trerè (eds), 1997. *Tarquini. Testimonianze archeologiche e ricostruzione storica. Scavi sistematici nell'abitato (campagne 1982-1988)*. Roma.
- Bruni, S., F. Fedeli, A. Romualdi & E.J. Sheperd, 1995. Montepitti. Materiali, in: S. Bruni (ed.), *Isidoro Falchi un medico al servizio dell'archeologia. Un protagonista della ricerca italiana di fine Ottocento (catalogo della mostra)*. Campiglia Marittima.
- Buchner, G. & D. Ridgway, 1993. *Pithekoussai I* (= MonAnt LV, serie monografica IV). Roma.
- Cimino, L., 1986. *The Mieli collection in the Archaeological Museum of Siena*. Florence.
- Colonna, G., 1986. Urbanistica e architettura, in: *Rasenna. Storia e civiltà degli Etruschi*. Milano, 371-530.
- Colonna, G., 2000. Populonia e l'architettura funeraria etrusca, in: A. Zifferero 2000, 253-267.
- Donati, L. & M. Michelucci, 1981. *The Ciacci collection in the Archaeological Museum of Grosseto*. Roma.
- Fedeli, F., 1983. *Populonia. Storia e territorio*. Firenze.
- Fedeli, F., 1985. Populonia, Poggio del molino o del Telegrafo. Tomba a camera n. 1, in: G. Camporeale (ed.), *L'Etruria Mineraria* (Catalogo della Mostra, Piombino-Portoferraio-Massa Marittima 1985). Milano, 47-51.
- Fedeli, F., 1993. L'età del Ferro, in: A. Romualdi 1993, 76-91.
- Fedeli, F., 2000. Le tombe a camera della necropoli villanoviana di Poggio del molino o del Telegrafo, in: A. Zifferero 2000, 37-46.
- Giardino, A., 1994. Scicli (Ragusa). Il ripostiglio di bronzi in contrada Castelluccio sull'Irminio. *NSc* (1990-1991), 489-546.
- Giardino, A., 1995. *Il Mediterraneo occidentale fra XIV e VIII sec. a.C. Cerchie minerarie e metallurgiche* (= BAR International Series, 612). Oxford.
- Guidi, A., 1993. *La necropoli veiente dei Quattro Fontanili nel quadro della fase recente della prima Età del Ferro italiana*. Firenze.
- Jehasse, J. & L., 1973. *La Necropole preromaine d'Aleria*. Paris.
- Kohler, C. & A. Naso, 1991. Appunti sulla funzione di alari e spiedi nelle società arcaiche dell'Italia centro-meridionale, in: *The archaeology of power* (= Papers of the fourth Conference of Italian Archaeology, 2). London, 41 ss.
- Lamboglia, N., 1960. La necropoli ligure di Chiavari. *Rivista di Studi Liguri* 1-4, 91-220.
- Macnamara, E., 2002. Some bronze typologies Sardinia and Italy, in: *Etruria e Sardegna Centro-Settentrionale tra l'età del Bronzo finale e l'arcaismo* (Atti del XXI Convegno di Studi Etruschi e Italici, Sassari-Alghero-Oristano-Torralba 1998). Firenze, 151-174.
- Minto, A., 1931. Le ultime scoperte archeologiche di Populonia (1927-1931). *MonAnt* 34, 288-404.

⁵⁴ As for the rings and some beads, they could also belong to the first phase.

⁵⁵ Particularly the bucchero handles nn. 35-37, which are comparable to the earliest bucchero fabric in the Populonia district.

⁵⁶ Nn. 33, 38.

⁵⁷ The evidence seems confirmed by a preliminary osteological analysis, carried out by Dr. Massimo Milletti. According to him the bones belong to two individuals, a child (apparent age 4-7 years old) and a grown-up, both females. The presence of miniature 'fibulae' (nn. 8-9) might strengthen this hypothesis.

- Minto, A., 1934. Populonia. Scoperte archeologiche fortuite dai 1931 al 1934. *Not.Sc.*, 351-428.
- Minto, A., 1943. *Populonia*. Firenze.
- Moretti Sgubini, A.M. (ed.), 2001. *Veio, Cerveteri, Vulci. Città d'Etruria a confronto* (catalogo della mostra). Roma, 186 ss.
- Muscarella, O.W., 1967. *Phrygian fibulas from Gordion*. London.
- Naso, A., 2001. Dalla capanna alla casa: riflessi nell'architettura funeraria etrusca, in: R.B. Brandt & L. Karlsson (eds), *From huts to houses. Transformations of ancient societies* (Atti del seminario internazionale, 1997). Roma, 29-39.
- Pacciarelli, M., 1999. *Torre Galli. La necropoli della prima età del ferro (scavi Paolo Orsi 1922-23)*. Soveria Mannelli (Catanzaro).
- Paolucci, G. (ed.), 1991. *La collezione Terrosi nel museo civico di Chianciano Terme*. Chianciano Terme.
- Paoletti, O., 2000. I materiali lapidei, in: A. Zifferero 2000, 79-98.
- Romualdi, A., 1986. *Populonia in età Ellenistica. I materiali dalle necropoli*. Firenze.
- Romualdi, A. (ed.), 1993. *Populonia e il suo territorio. Profilo storico e archeologico*. Firenze.
- Romualdi, A., 2000. Nota introduttiva, in: A. Zifferero 2000, 11-13.
- Rosi, S., 1994-95. Tomba a camera villanoviana scoperta nel 1981 a Poggio Delle Granate – Populonia (Piombino, Livorno), in: *RA* 12, 251-269.
- Serra Ridgway, F.R., 1996. *I Corredi del fondo Scataglini a Tarquinia*. Firenze.
- Sundwall, J., 1943. *Die älteren italischen Fibeln*. Berlin.
- Toms, J., 1986. The relative chronology of the Villanovan cemetery of Quattro Fontanili at Veii. *AION* 8, 41-97.
- Zifferero, A. (ed.), 2000. *L'architettura funeraria a Populonia tra IX e VI secolo a.C.* (Atti del convegno, Populonia 1997). Firenze.