

HABITATION ON PLATEAU I OF THE HILL TIMPONE DELLA MOTTA (FRANCAVILLA MARITTIMA, ITALY):
A PRELIMINARY REPORT BASED ON SURVEYS, TEST PITS AND TEST TRENCHES

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ABSTRACT: The authors report on the archaeological investigations of one of the pre- and protohistoric settlement areas of the site 'Timpone della Motta' near present-day Francavilla Marittima in Calabria (southern Italy) carried out by the Groningen Archaeological Institute (GIA) between 1991 and 1995. Surveys, test pits and test trenches on a large plateau overlooking the valley of the river Raganello revealed ample traces of occupation from the middle Bronze Age to the Archaic period, a time span of almost a millennium. In this period the subsequent indigenous Bronze Age and early Iron Age hut settlements at Francavilla Marittima gave way to colonial inspired stone houses and terrace building. The survey and test excavations led to the identification, and current excavation, of several Bronze Age, Iron Age and Archaic settlement features. Here a general outline is offered of the various occupation episodes on plateau I as could be deduced from the surface record and the various layers and related pottery in the trenches.

Fieldwork at Francavilla Marittima combines settlement excavations, such as reported on in this paper, with research of the site's sacred area on the top of the hill. The investigations are part of the project 'Dominant versus non-dominant, Enotrians and Greeks on the *Timpone della Motta* and in the Sibaritide' directed by prof. Marianne Kleibrink of Groningen University and financed by the Netherlands Organization of Scientific Research (NWO).

KEYWORDS: Excavation, survey, Bronze Age, Iron Age, Greek colonization, South Italy, Magna Graecia, Sibaritide, Francavilla Marittima, Bronze Age pottery, Iron Age pottery, matt-painted pottery, black glaze pottery, smithing activities.

1. INTRODUCTION

1.1. Site and research

The hill 'Timpone della Motta' is situated in the transitional zone between the Apennine mountains and the wide coastal plain of Sibari (today called the Sibaritide). The hill reaches a modest 280 m, whereas further inland the higher peaks of the Apennines exceed 1500 m (fig. 1). Research on 'plateau I' of the 'Timpone della Motta' was started in 1991 as part of a larger fieldwork programme comprising excavations on the top of the hill, where the site's sanctuary is situated, and settlement excavations on flatter surfaces on the flank of this otherwise steep and rugged hill (fig. 2) (Maaskant-Kleibrink, 1993). Although far from level, we refer to these flatter surfaces as 'plateaus', the implication being that they, when adapted, are suited for settlement and farming.

Excavations in the late sixties on plateaus II and III had already revealed 6th century BC houses (Maaskant-Kleibrink, 1971). These were built on the remains of earlier Iron Age huts. Follow-up research in 1992 and 1993 disclosed two more house plans on plateau III.¹

Plateau I, the most spacious plateau of the Timpone della Motta and situated well below the sanctuary area, was, however, archaeologically still *terra incognita* when the Groningen Archaeological Institute reopened

research on the Timpone della Motta. In the sixties the area of plateau I was not available for investigations, as it was private property and used for arable farming and olive cultivation. The ruins of a small farmhouse in the northeast corner still remind of the former situation (Haagsma & Attema, 1994). Plateau I is now protected and under the responsibility of the Soprintendenza making archaeological research possible.² In front of the farm house a small museum was built which in the future will hopefully house an exhibition on the archaeology of the site.

When we started research on plateau I, the construction of the museum as well as a road leading up to it, had just been completed. The road exposed at its side a 5 m deep gully with a fill of pale brown silty soil containing large boulders and pottery fragments (fig. 3). On the plateau itself a deep pit had been dug for the drain of the museum. The sections in this pit contained a stratigraphy of three layers with pottery, charcoal and bone fragments dating from the Bronze Age to the 6th century BC (fig. 4). The 1991/92 intensive survey, the 1992 test-pits and the test trenches (1994/95), indeed revealed the remains of a number of houses dating to the Archaic period (6th to early 5th century BC) as well as earlier occupational features dating to the Iron Age and the Bronze Age.³

Following a short introduction on the physical-geographical setting of the site, we will discuss the

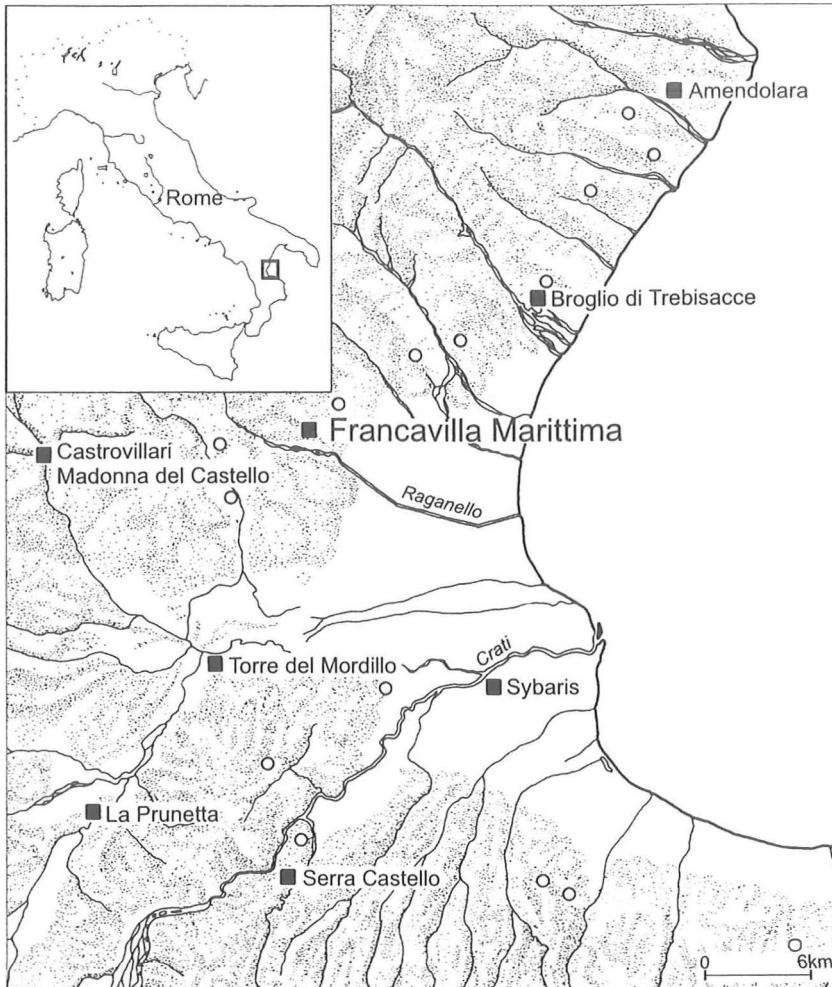


Fig. 1. Location of Francavilla Marittima

results of the survey, the test pits and the test trenches that, in combination, give insight in the relation between the over time changing morphology of plateau I and the various occupational phases. The pottery and iron slags and cinders are discussed in appendices.

1.2. Physical-geographical setting of the site Timpone della Motta

Geologically, the hill Timpone della Motta is composed of conglomerate dating from the Upper Pliocene (Giannini et al., 1973). The conglomerate consists of well-rounded pebbles and boulders of mainly sandstone and limestone composition with only a few lenses of ill-rounded sand. It is cemented by carbonates. Voids in between the stones indicate that fine material not always was sufficiently available when the sediment was formed. In the conglomerate, a coarse stratification can be discerned, with a dip in southsoutheasterly direction of about 25°. A second geological unit is formed by terraces cut into the conglomerate, alluvial fans, and the present floodplain. These sediments resemble the

conglomerate in composition. However, cementation in these Quaternary deposits has hardly or not yet occurred. Geomorphologically, the Timpone della Motta constitutes the somewhat isolated lower part of a valley spur between the large and open Raganello valley and the small and narrow Dardania valley (fig. 2). The Timpone della Motta rises about 150 m above the floodplain of the Raganello river. Between the hill and the floodplain a terrace is found that follows the present-day river course. Its height is about 10 m above the floodplain.

The hill sides are characterized by a break of slope, probably caused by a phase of strong fluvial incision before the just-mentioned terrace surface was formed. In the steep parts below the break, slopes are at places vertical, exposing the conglomerate. The steep slopes have caused rock falls and the formation of debris cones. At various levels above the break of slope somewhat flatter 'plateaus' can be distinguished (fig. 5). Even the top of the Timpone della Motta is regarded as a plateau. The plateaus probably are correlated with the extensive fan-like terraces (marine terraces?) that

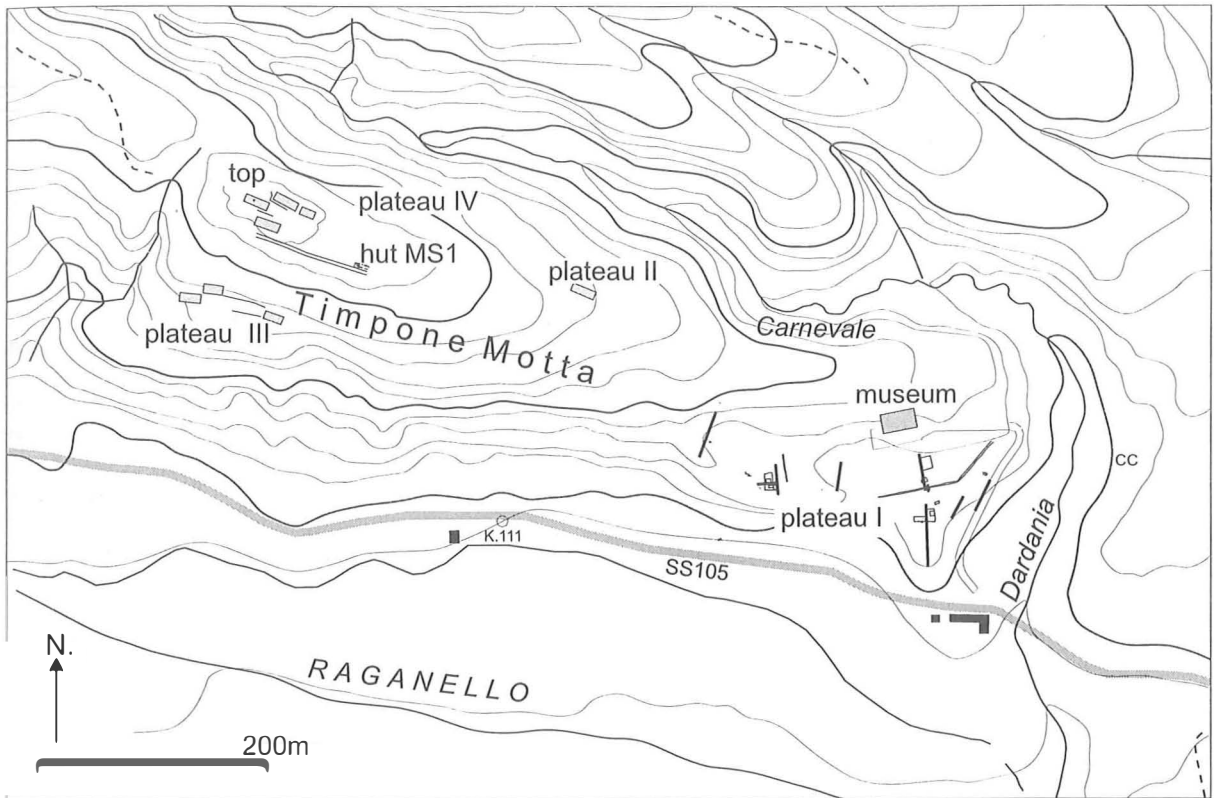


Fig. 2. Map of the Timpone della Motta at Francavilla Marittima showing the sanctuary area and the various plateaus as well as the Macchiabate necropolis.

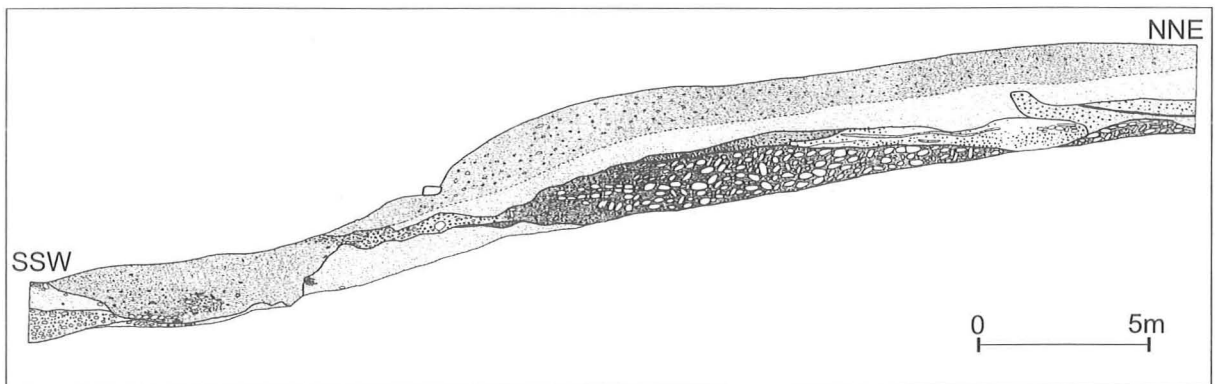


Fig. 3. Roadside section showing fluvial sediments and a gully filled with a pale brown silty deposit containing settlement debris of plateau I.

fringe the coastal plain of Sibari. On the southern side of the Timpone della Motta two plateaus directly border the sharp break of slope. This means that rock falls may have diminished the size of these plateaus.

At the eastern edge of plateau I, unconsolidated well-rounded and sorted sediments are disclosed, proving the fluvial origin of the plateau (fig. 3). Its sloping surface can in easterly direction be continued across the Dardania valley into the Macchiabate area, a terrace that in the Iron Age was used as the site's necropole

(Zancani Montuoro, 1982; 1984). While plateau I and the Macchiabate area are visually in close contact, the Dardania valley in the Iron Age must have formed a clear physical divide between the habitation plateaus of the Timpone della Motta as the areas of the living and the Macchiabate as the domain of the dead. The top of the site, already inhabited in the middle Bronze Age, became in the early Iron Age dedicated to the gods and was from that time on for the larger part reserved for religious activities. From that period settlement concen-

trated on the lower plateaus, with plateau I as the most convenient, being extensive, naturally defended and close to the valley.

2. THE 1991/92 SURVEY AND TEST PITS

2.1. The survey (with Appendix 1)

Goals of the 1991 and 1992 survey on plateau I were to obtain insight in the extent, density, nature and chronology of the surface ceramics and, on the basis of their distribution, be able to decide where to excavate.⁴ From 142 squares of 16 m², aligned along measuring ropes at nine different locations, all archaeological material visible at the surface was collected (fig. 6: A to I).⁵ Survey conditions were very bad due to vegetational

coverage (dry grass) and absence of recently ploughed surfaces. Ground visibility was judged low in 45% of the squares (c. 10% ground visibility) and bad in 42% (almost no ground visibility). Only in 12% visibility was above the average, but it never exceeded 20%.⁶ Despite the bad survey conditions the survey showed a high overall density of 2.28 sherds/m² with an average weight per sherd of 44 grams. In the squares a total of 5459 sherds was collected.

The larger part of the ceramics consisted of pottery dating to the late 7th and 6th centuries BC such as fragments of storage jars, roof tiles, wheelthrown coarse and depurated pottery (Archaic). In minor quantities also the older hand made *impasto* pottery occurred dating between the late Bronze Age (LBA) and the early Iron Age (EIA).

The sherds collected in the survey were classified

Table 1. Highest, lowest and mean scores in percentages of the four groups at locations A-I in figures 6-9.

Pottery group	Lowest score	Highest score	Mean
<i>Impasto</i> pottery	0.26%	7.76%	3.52%
Pithoi/tegulae	16.07%	29.55%	20.98%
<i>Amphorae</i>	8.21%	13.45%	11.33%
Household pottery	57.78%	68.52%	62.17%

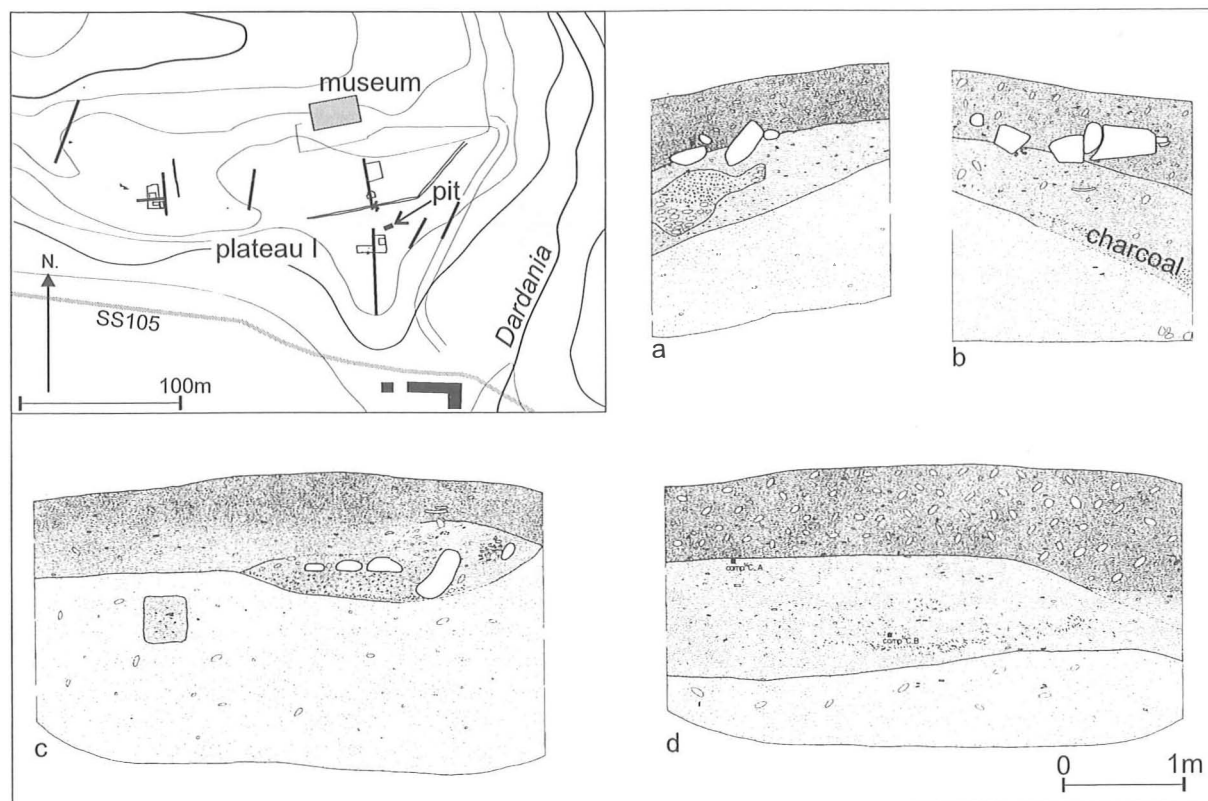


Fig. 4. Sections recorded in a pit dug for the drain of the museum on plateau I.

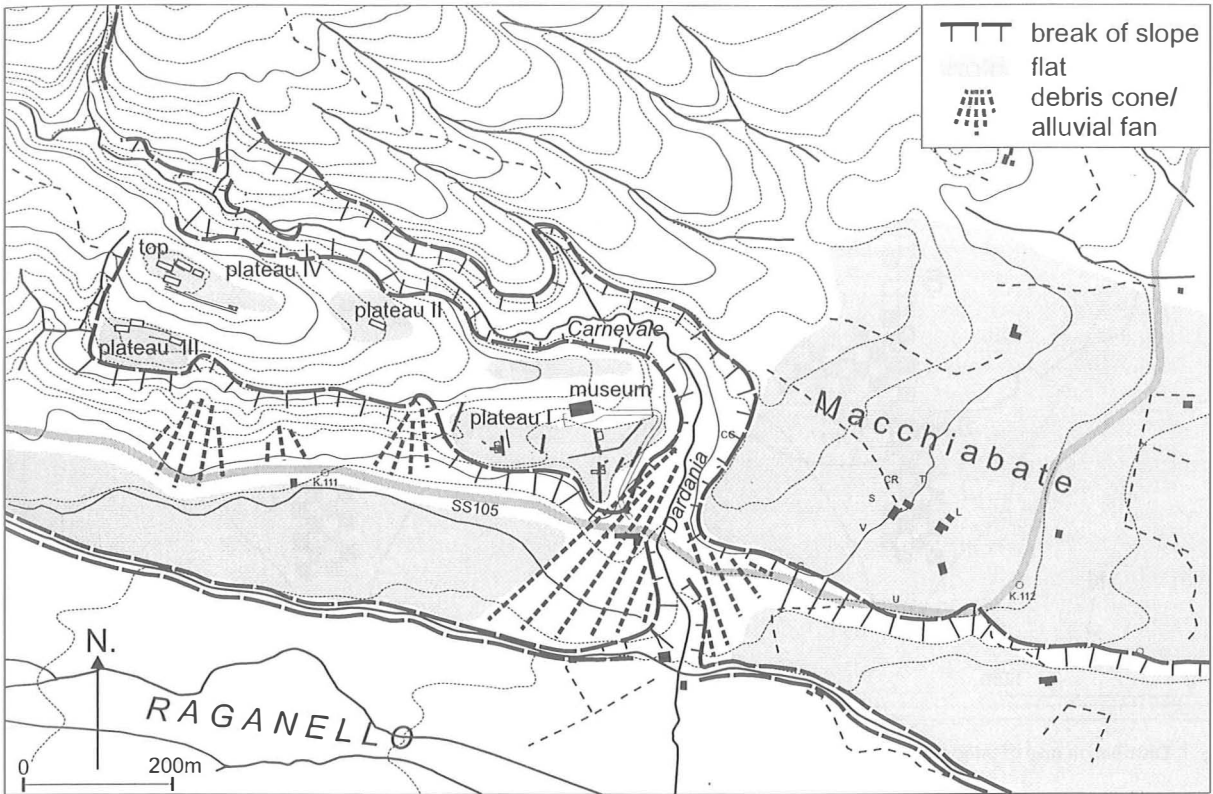


Fig. 5. Morphological map of the Timpone della Motta.

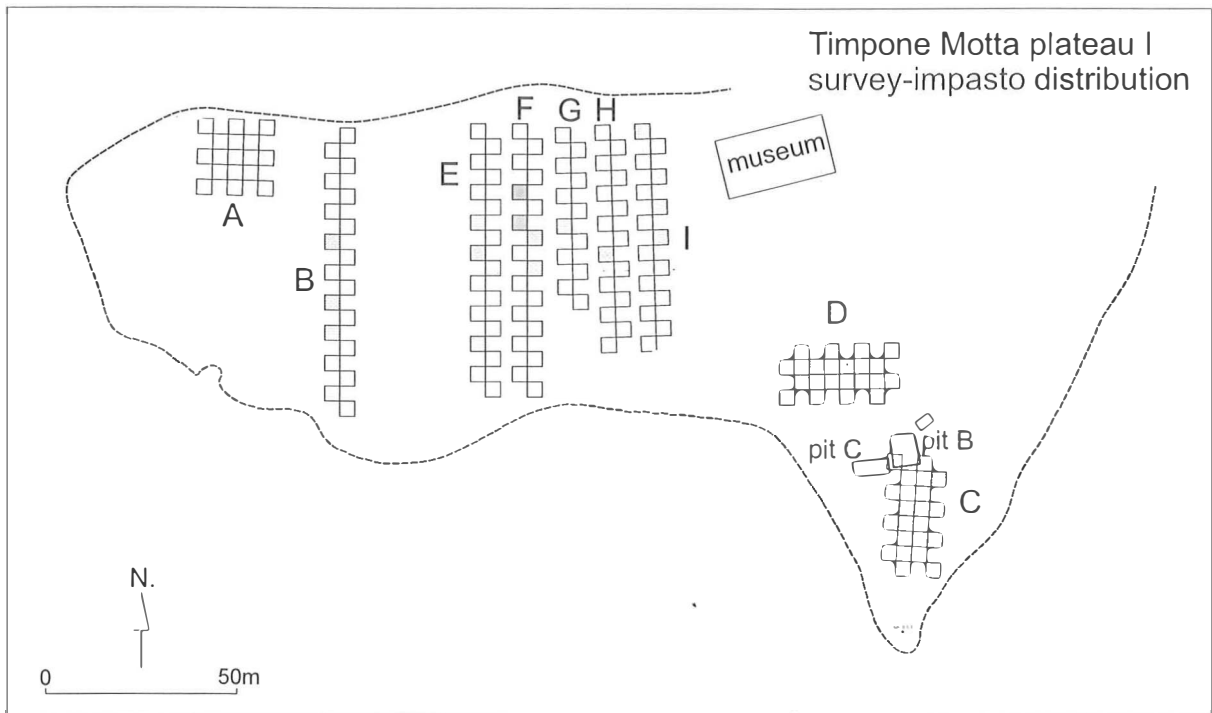


Fig. 6. Distribution map of *impasto* in string squares (LBA-IA).

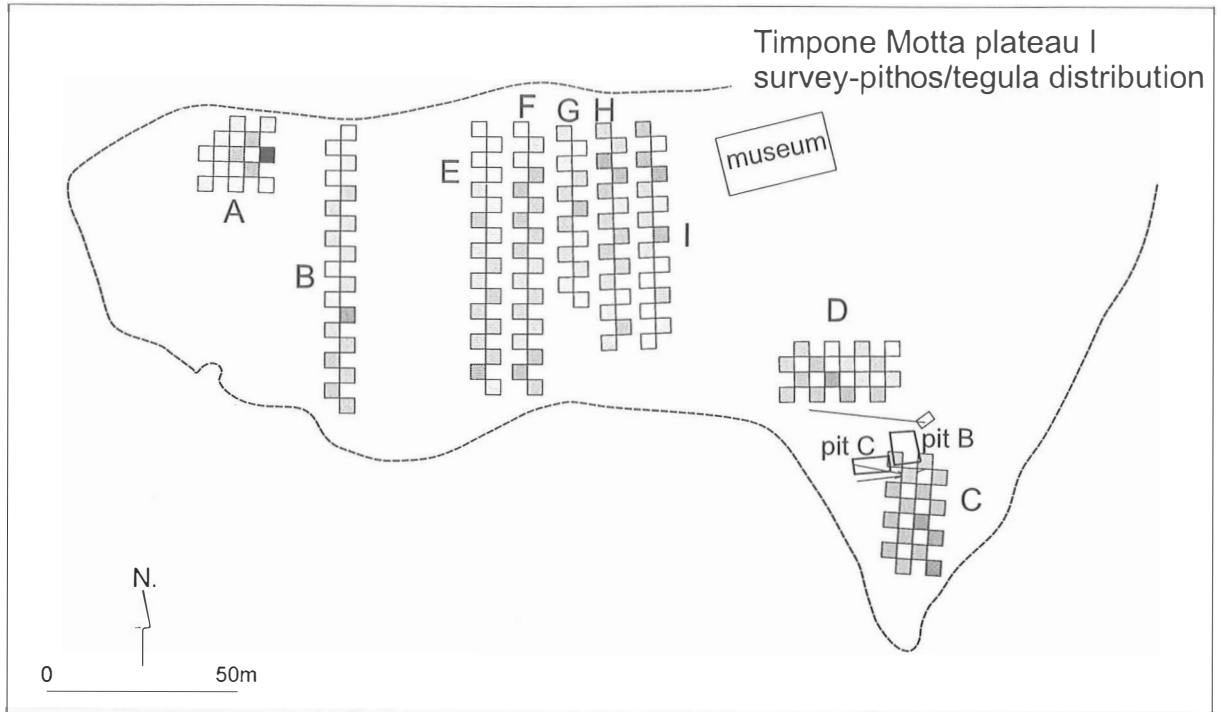


Fig. 7. Distribution map of *pithos* fragments in string squares (including occasional tile fragments) (Archaic period).

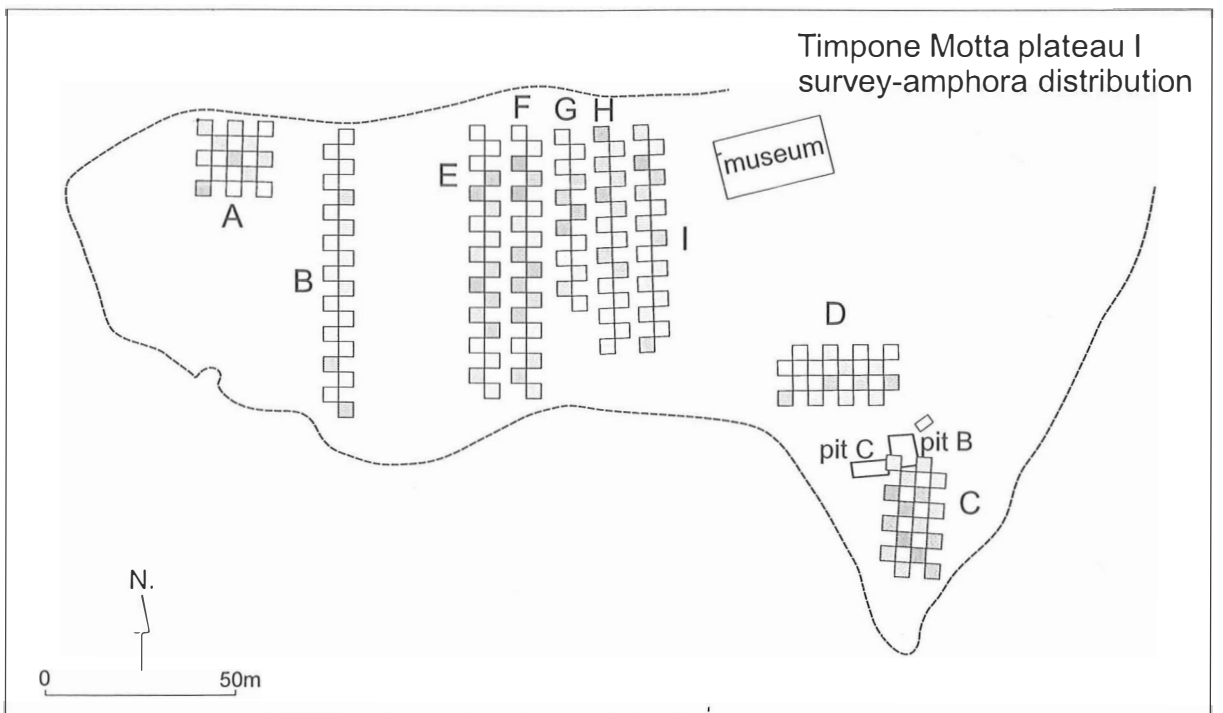


Fig. 8. Distribution map of *amphorae* in string squares (Archaic period).

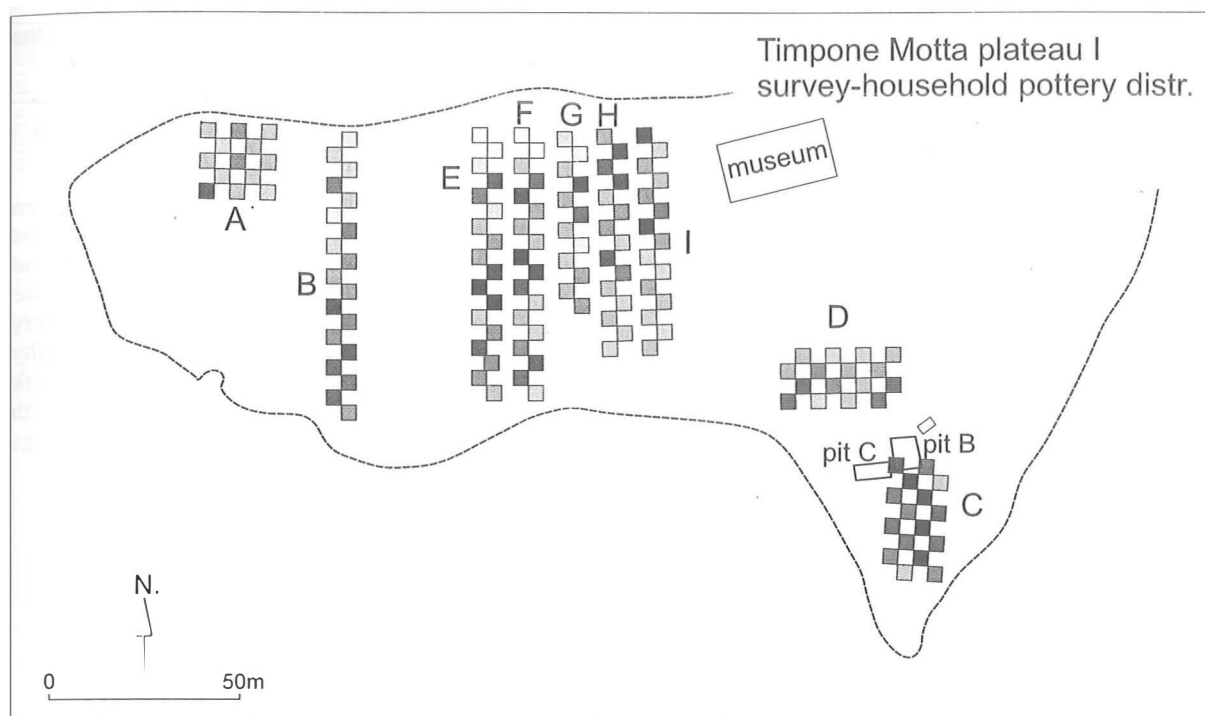


Fig. 9. Distribution map of household pottery in string squares (Archaic period).

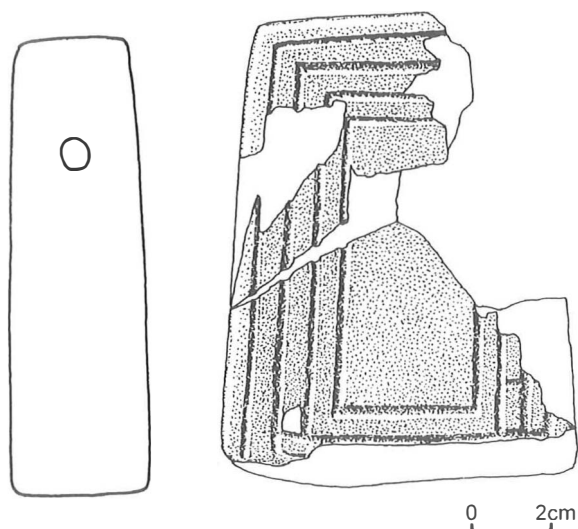


Fig. 10. Labyrinth loomweight found during the survey (EIA).

using fabric criteria (firing colour, inclusions), thickness of the wall and, where appropriate, surface treatment. Sherds were only assigned to a fabric class after study of a fresh fracture, intentionally made by us. In the survey material 43 classes were discerned (for fabric descriptions, quantification and some associated forms, see Appendix 1). These fabrics were grouped in broad functional/chronological categories on the basis of which

four distribution maps were prepared (figs 6-9):

1. Hand made *impasto* pottery (LBA-EIA);
2. *Pithoi* and tile fragments ('colonial');
3. *Amphorae* ('colonial');
4. Wheel turned household pottery ('colonial').

Table 1 gives the highest, lowest and mean scores in percentages of the four groups found at locations A-I in figures 6-9. *Impasto* pottery occurs only sporadically at the surface indicating that probably nowhere on plateau I strata dating before the late 7th century BC will have been touched by the plough. The 15 *impasto* sherds in the northeast corner of block C are almost certainly provenient from the drain pit of the museum that was dug to the north of this spot (see fig. 4). The higher scores of *impasto* halfway transects B, E, F, G, H, I are most probably due to a recent disturbance caused by a trench dug for a conduit pipe that runs west-east over plateau I (see 3.3). A remarkable find was a large *impasto* loomweight with labyrinth decoration dating in the Iron Age that until then was only known from the area of the sanctuary (fig. 10).

Storage (both *pithoi* and *amphorae*) and household pottery occurs over all of the plateau. Tiles occur only sporadically. But then excavation has learnt that the Archaic houses at Francavilla Marittima as a rule did not have tiled roofs. It follows that high density surface scatters of pottery lacking tiles, can point to both buried rubbish pits or heaps (such as were noted in trench III, see 3.3) and actual houses (for instance in pits I A, B and C). At location A, in and around string squares 4, 6, 7

and 9, concentrations of large tiles were recorded accompanied by substantial, but undressed stones. As the terrain is very steep here, it is likely that these remains come from a higher, now overgrown part of plateau I and pertain to one or more large buildings higher up which did have tiled roofs.

The survey pottery indicates that the settlement area was intensively used from the 6th century BC well into the 5th century BC. Household pottery and storage pottery indicate habitation and storage areas, while loomweights and pieces of iron slag indicate that weaving and iron working took place. It is remarkable that no Corinthian pottery (imported or locally produced) was found during the survey, like cups and *aryballoi*, whereas this is omnipresent in the sanctuary area on top of the

Timpone della Motta. It is again an indication that the later 6th century BC prevails in the surface record.

2.2. The test pits (with Appendix 3 on the evidence for smithing activities)

In 1992 an area just below the new museum was chosen for a trial excavation. The excavation comprised 16 test pits that were dug alternately in a chequerboard grid (fig. 11). Main aim of the test pits was to familiarize ourselves with the site's stratigraphy and related pottery and features. The test pits revealed a simple stratigraphy of plough soil (layer 1 according to fig. 15) on a dark brown stratum with wheel turned depurated 6th/5th century BC potsherds, bone and locally also iron slags

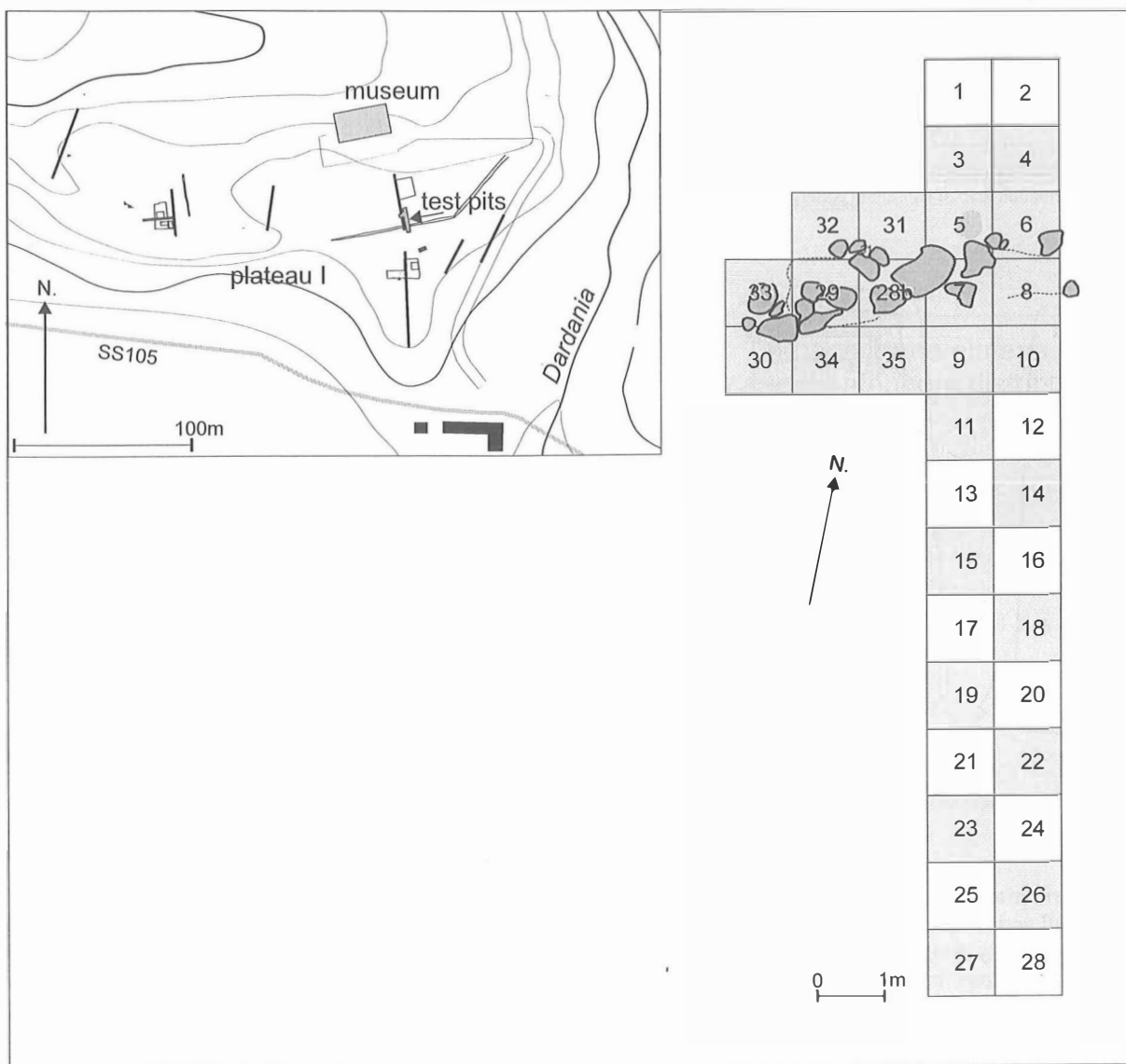


Fig. 11. Plan of test pits on plateau I.

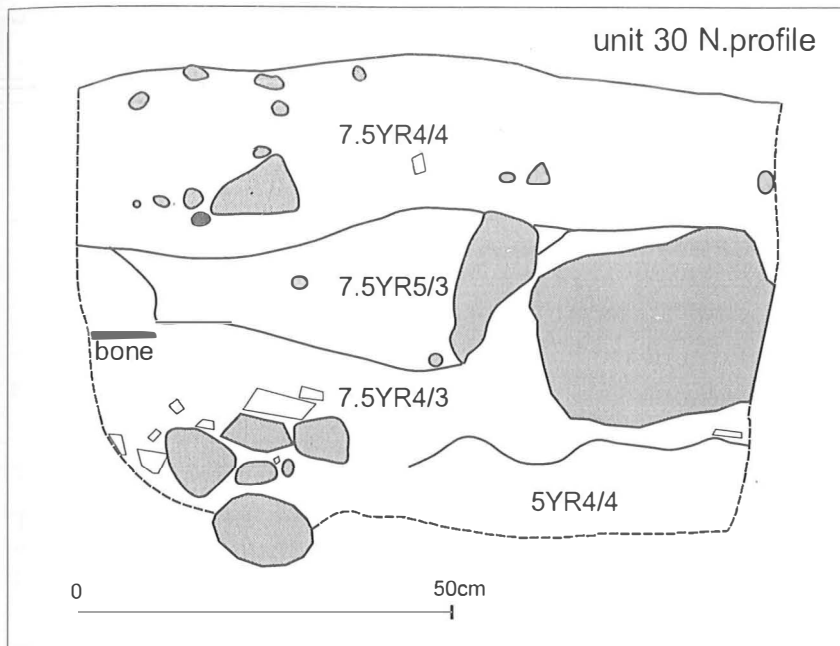


Fig. 12. Section of unit 30.

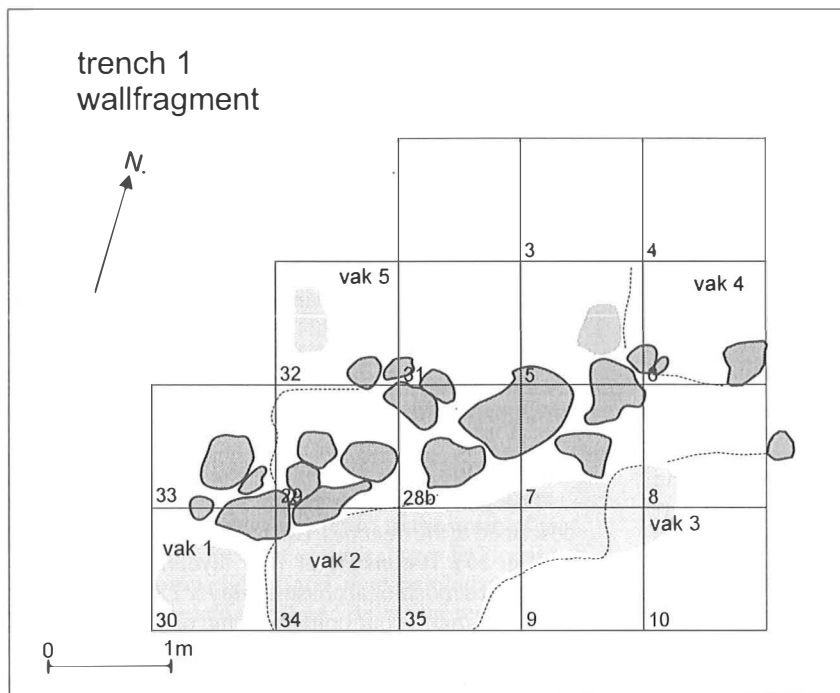


Fig. 13. Plan of walls (dark grey) in test trench; light grey patches indicate zones where soil was sampled to the detection of smithing activities.

(layer 2.1). This horizon was at times separated from the underlying reddish brown soil (layer 3) by a brown stratum containing relatively more *impasto* sherds (layer 2.2) (figs 12 and 15). In 1994 the test pit area was enlarged, bringing to light a row of robust blocks founded partly in layer 2.1 and partly in layer 2.2. Near this wall fragment a large post hole was found. To the

south a stretch of smaller blocks was recorded, founded in layer 2.2 (fig. 13). Also in the pits that are currently being excavated, structures have been noted that plead for more than one 'colonial' building phase.

Although giving evidence of 6th/5th century BC occupational layers and related structures, the 1992 chequerboard test pits did not reveal a stratigraphy

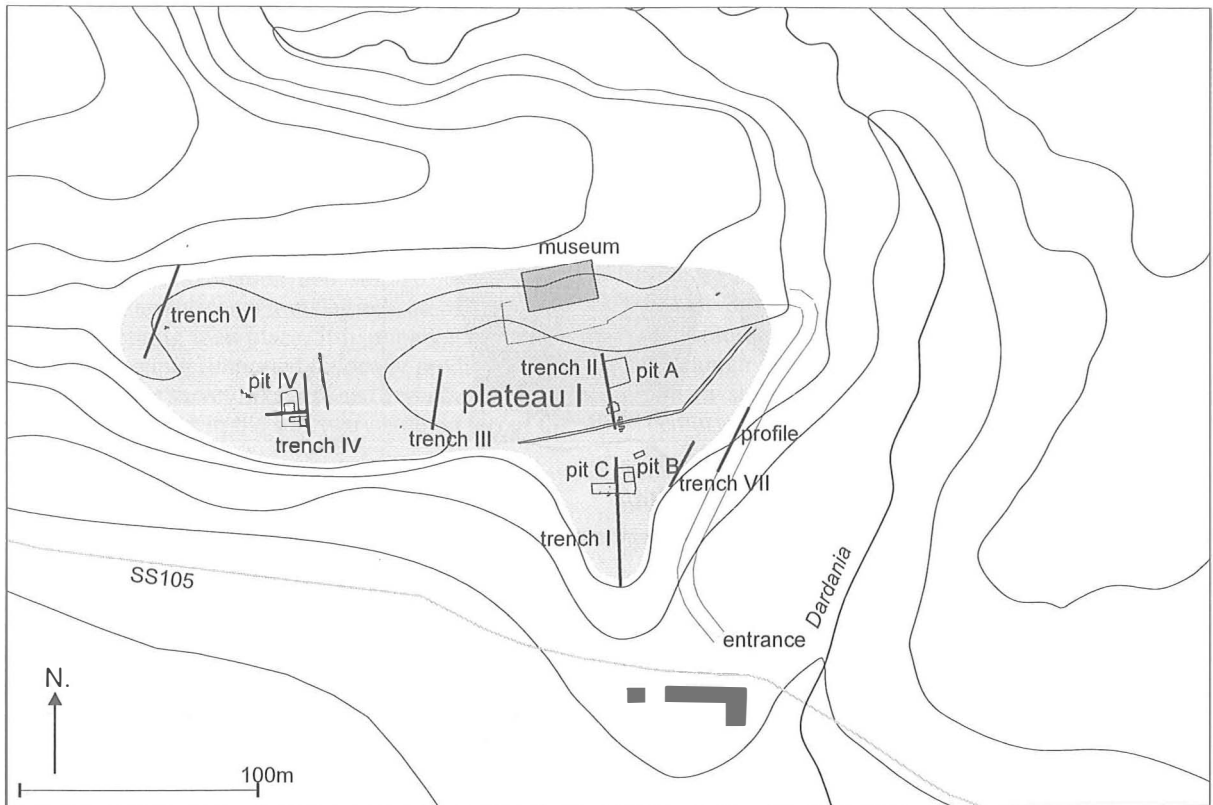


Fig. 14. Location of test trenches and pits.

representing the periods found in the survey, which included the Bronze Age and early Iron Age.

3. SOIL PROFILES RECORDED IN THE 1994 AND 1995 TEST TRENCHES (with Appendix 2)

3.1. Introduction and method of description

To look for suitable excavation areas, test trenches were dug. These had a dual aim, viz. recording and interpreting the overall stratigraphy of plateau I and locating archaeological features suitable for subsequent stratigraphical excavation. Seven trenches, 40 cm wide, having a total length of 226 m, were, with the help of a small mechanical shovel, a so-called *ragno*, dug in two short campaigns. Save trench V all trenches were dug in N/S direction (fig. 14). On the basis of the description of the layers, finds and structural elements in the sections, we will in section 4 correlate the main strata occurring on plateau I with episodes of occupation.

In the pedological description of the soil profiles attention was paid to soil colour, composition and CaCO_3 content. Carbonate content was estimated in a qualitative way by the degree of effervescence with diluted hydrochloric acid. So far, plateau I has been the only place on the hill where leached, carbonate-free soil

horizons have been found, as recorded in the test trenches. This is noteworthy since in general weathering and soil formation on the Timpone della Motta is not well-developed due to the dynamic nature of its surface. The removal of soil material by slope wash inhibits the development of a layer of leached top soil. Ceramics present in the various layers were collected separately, furnishing estimated date ranges for their deposition, in one case a ^{14}C date was obtained from a soil profile (trench V).

The general picture of the soil profiles that were described in the trenches, can be presented schematically (fig. 15). It consists of four layers, i.e. strata that represent depositional phases. In layer 2 a differentiation is present that, in our opinion, is the result of pedological rather than sedimentological processes. The two sublayers are therefore called horizons. Horizon 2.1 is dark brown and formed at the surface as an A-horizon in the same slope wash sediment as the reddish brown horizon 2.2 underneath.

The description of individual trenches shows many deviations from the general picture, especially where prehistoric digging activities have taken place. The scheme and numbering of layers therefore only serves as a general reference.

Soil layer/horizon	Colour	Texture	CaCO ₃ content
1	1 Brown (10YR4/3-4/4-3/4)	Clay loam	Yes
2.1	2.1 Dark brown (10YR3/3-3/2-4/2)	Clay loam	No
2.2	2.2 Brown (10YR4/3-3/4)	Clay loam	Yes
3	3 Grayish to pale brown (10YR5/2-6/3)	Clayey silt	Yes
4	4 Reddish brown (7.5YR4/4-3/4)	Clay	No

Fig. 15. Schematic soil profile of plateau I.

3.2. Trenches I and II and adjacent pits (figs 14, 16)

Trench I with in its wake trench II showed how diverse the soil profile of plateau I is. The trenches were dug from the south rim of plateau I, where plateau I has a triangular shaped protrusion, in northerly direction to just below the new museum, bridging a difference in altitude of 11.80 m. The soil profile in the first 30 m of trench I showed a substantial depression in the underlying rock surface, filled with various deposits. Pottery fragments in these deposits range in time from the early 8th century BC to the late 6th and 5th centuries BC, comprising both Iron Age matt-painted ware, yellow and red firing coarse ware of still uncertain date (but probably 7th century BC), and so-called local soft deperated ware.⁷ The latter ware predominates in layer 2 and 3, a dark brown and brown loam that is present almost everywhere on the plateau and contains debris provenient from the 'colonial' houses (fig. 16: a). Lying too deep, the virgin soil or bedrock in the depression was not reached, meaning that at this point a full stratigraphy could not be established.

Higher up the plateau the soil profile is less thick (fig. 16). Here indications for an in situ stratigraphy were found consisting of superimposed layers of dark greyish, light greyish, reddish brown and again greyish layers (fig. 16: c). The dark grey and reddish brown layer (2, 3 and 4) below the terrace wall just to the north of pit C contained again a mixture of 6th century BC local soft ware (a.o. loomweights) and matt-painted ware and *impasto* from the late Iron Age.⁸ Below the reddish layer 4 a light grey layer (5) was identified having only *impasto* sherds. This induced us to open two excavation pits (IB and IC) (fig. 14).

Pit IB contained several wall fragments having a NE/SW orientation forming the (partial) ground plan of a house, now under excavation.⁹ While clearing the foundations with the *ragno* again much settlement debris was found in the dark grey fill, notably fragments of household pottery and bones, again ranging in time from the 8th century BC to the 6th and 5th centuries BC.¹⁰ Since the southern part of pit B did not contain any traces of walls, here the pit was made deeper in a trench

having an E/W orientation. In it the dark grey layer and the underlying reddish brown layer were removed to reach the light grey layer. The pottery from the removed dark grey and the reddish brown layer did not differ significantly, reinforcing the notion that layer 2.1 and 2.2 do not represent two different cultural horizons, but rather one deposit having two soil horizons. Both layers contained 6th and 5th centuries BC local soft ware, black glazed and coarse ware. A culturally much clearer divide exists between the reddish brown layer and the light grey layer beneath it, as was recorded in pit C. The light grey layer contained a combination of matt-painted and *impasto* ware and occasionally local hard orange and Corinthian imported ware (pits and disturbances?) and is to be dated to the early and later Iron Age.

Pit IC, west of trench I, after removal of the dark grey layer at its western end, also showed wall remains belonging to a house.¹¹ Its foundations rest in the reddish brown layer. East of this wall an ancient rubbish pit was identified filled with settlement debris, presumably belonging to the house. It contained building debris, bones, fragments of storage jars and drinking vessels, datable in the 6th century BC. In the NE corner of pit C a *pithos a cordoni* was found lying on top of a trench filled with pebbles, bones and pottery.¹²

To the north the soil profile rapidly diminishes in thickness. At intervals the trench cuts stretches of walls that pertain to houses and terrace walls.¹³ At the northern end another pit was opened, pit IA, which, like pits B and C, had wall remains of a 6th century BC house in it. Its foundations are, however, severely damaged by the plough, whereas a trench dug for a drain pipe from the new museum has further disturbed the area.

3.3. Trench III (figs 14, 17)

Starting from the south the first 7 m in this trench showed a simple soil profile of top soil (layer 1) underlain by dark brown clay with 6th century BC artefacts in it (horizon 2.1) and then the reddish brown clay, here almost without artefacts (horizon 2.2). At the outstart of the trench, horizon 2.1 contained small fragments of 6th

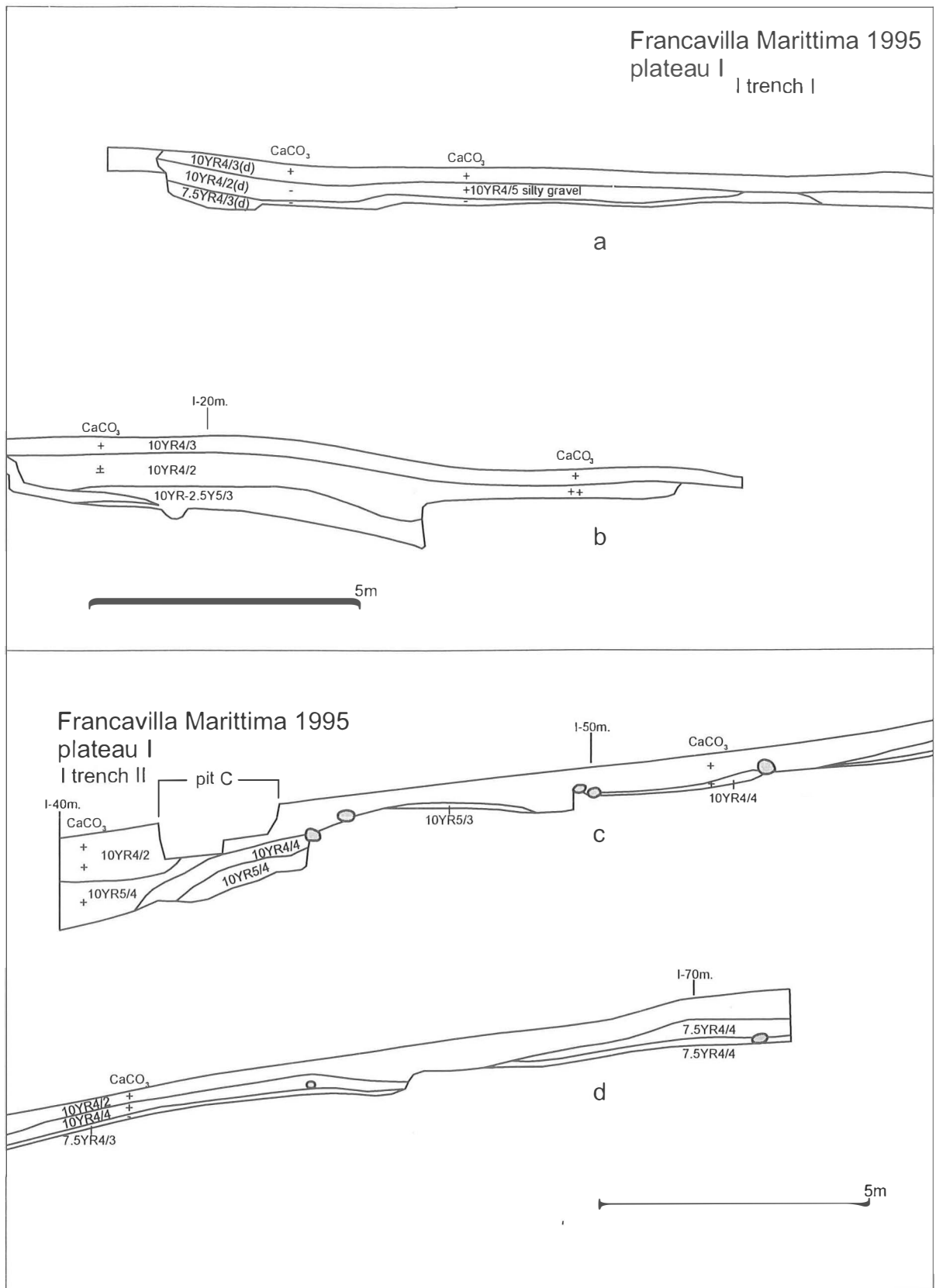


Fig. 16. Profiles trench I and II.

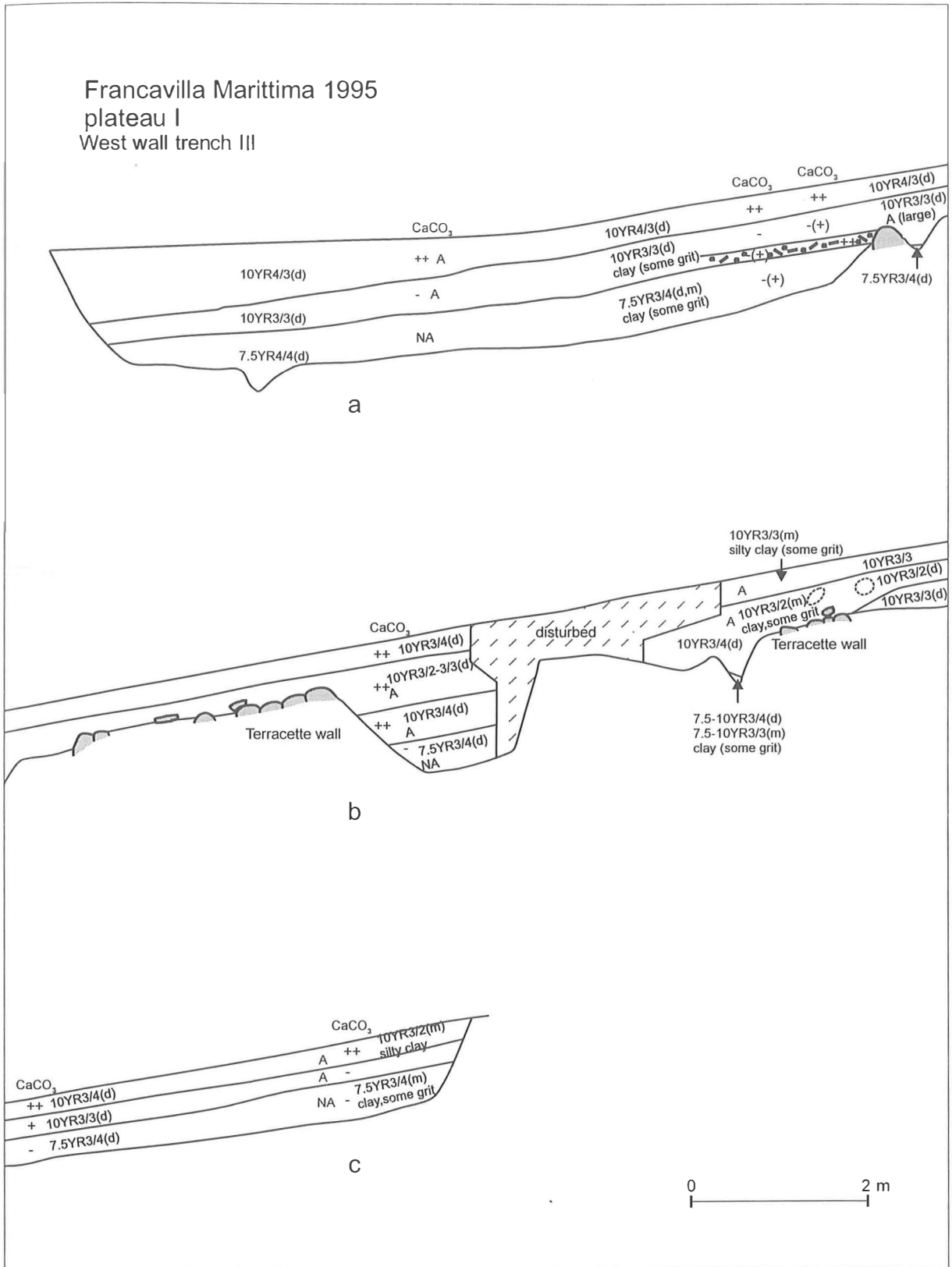


Fig. 17. Profile of trench III.

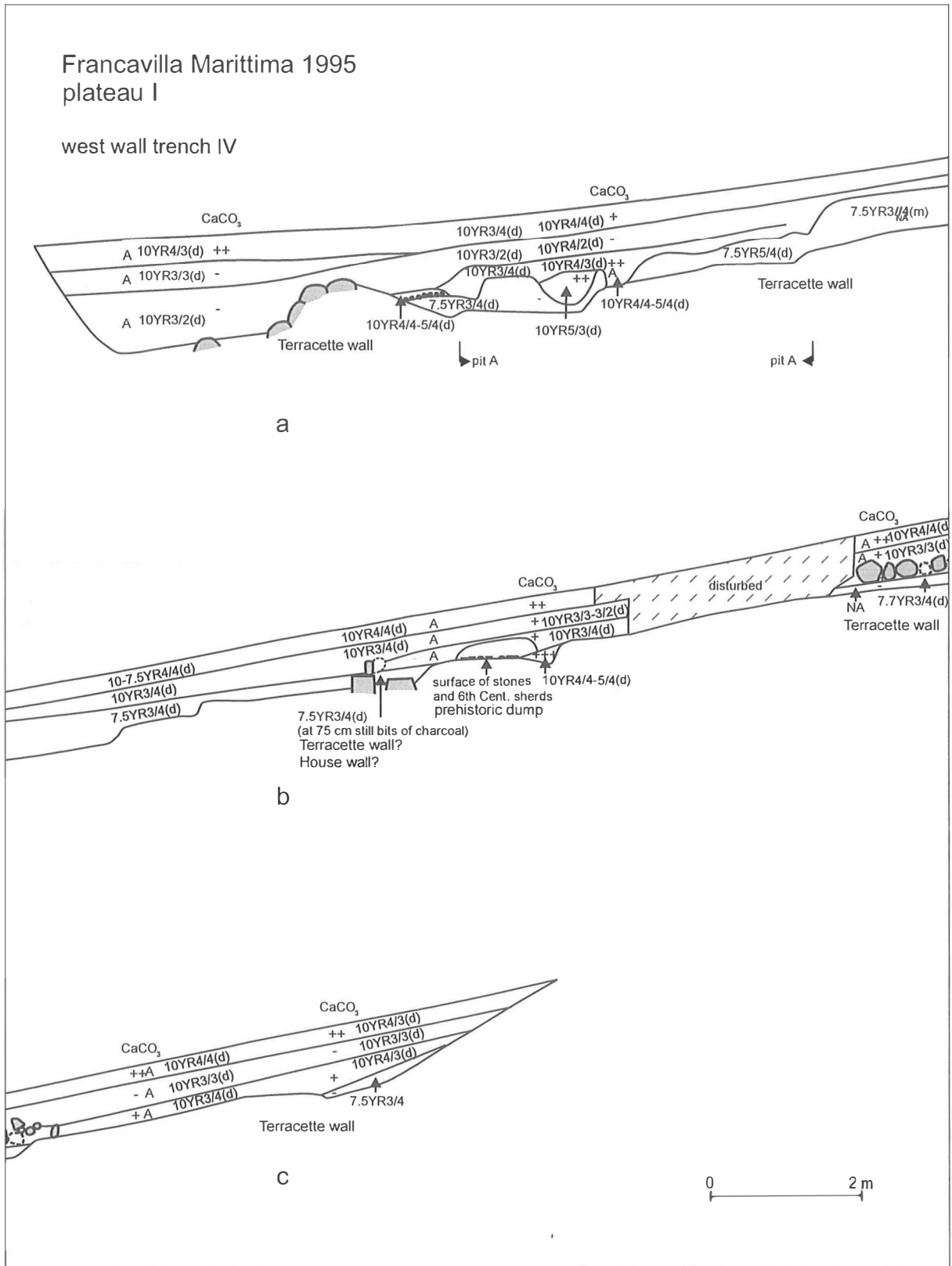


Fig. 18. Profile of trench IV

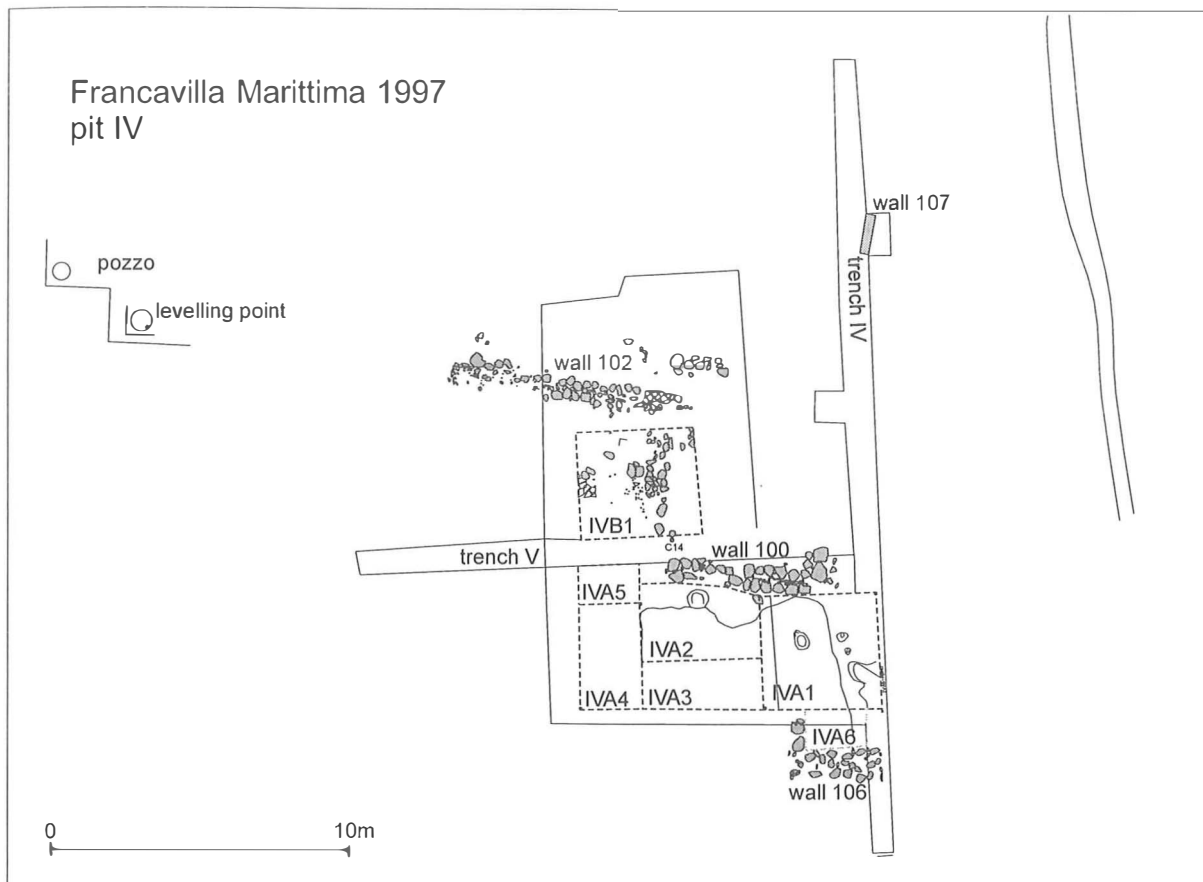


Fig. 19. Plan of trenches and pits of the IV/V area, also showing excavated wall remains during the 1996/1997 campaigns.

century BC artefacts only ('local soft', *amphorae* of a white depurated fabric and *pithos* fragments of a coarse fabric). At 3.5 m along the trench horizon 2.1 increased in thickness and the sherds it contained were larger. On top of the southernmost wall, large fragments of so-called 'Corinthian' imbrices were found.

At 13.50 m in the trench we recorded a wall fragment with behind it a concentration of 6th and 5th centuries BC sherds containing *pithos* and *amphora* fragments, black glazed ware and red firing coarse ware. Slightly to the north the trench crosses a conduit-pipe which from west to east disturbs the stratigraphy over plateau I over a width of c. 2 m and a depth of c. 1.50 m. North of the disturbance another wall fragment was recorded with a fill behind it.

The frequency with which wall remains of houses and terraces appeared also in trench III reinforces the notion of a substantial built-up area to have existed on plateau I in the 6th and 5th centuries BC. After recording the soil profile, trench III was closed.

3.4. Trench IV, V and adjacent pits (figs 14, 18)

Trench IV was dug on the west side of plateau I where

the lower part is now fairly level, due to accumulation of slope wash material. Heavy terrace walls found during the 1996 and 1997 excavations have preserved traces of protohistoric settlement in the lower levels. To the north the plateau again becomes rather steep and the soil profile is much thinner. Upslope much 6th century BC settlement debris was found during the survey, notably a number of fragments of roof tiles, *pithoi* and wash-basins (*louteria*).

In the southern part of the trench we observed down to a depth of c. 1 m the dark brown soil (layer I and horizon 2.1), here mixed with many stones and containing 6th and 5th centuries BC material. The large boulders that are visible at 3 m in the trench belong to a robust terracing wall, part of which was excavated in the 1997 excavation campaign.

At 5.80 m in the trench the east section showed a well-defined cut in the reddish brown soil having a fill of lighter coloured, greyish brown soil containing a few *impasto* and matt-painted sherds and small stones. The presence of an Iron Age feature led us to prepare two excavation pits for the 1996 and subsequent excavations (pits A and B). Both pits are located to the west of trench IV with an east-west orientated trench in between them

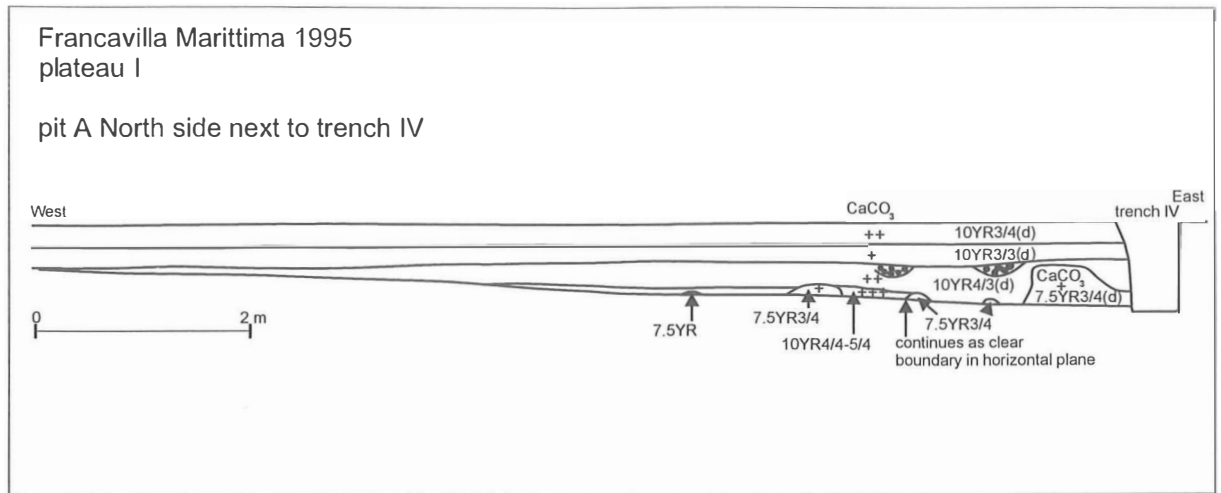


Fig. 20. Pit A, north side next to trench IV.

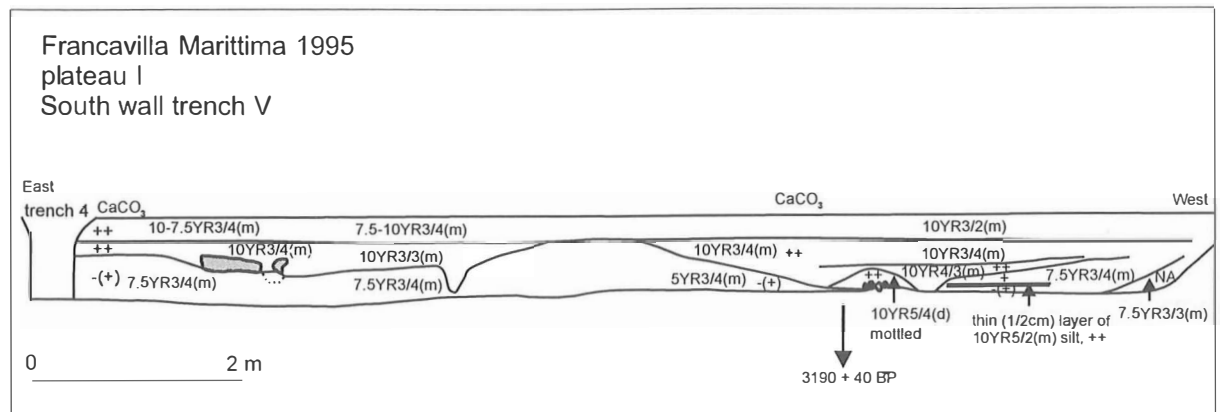


Fig. 21. South profile trench V.

(trench V) (fig. 19). The baulk that was left between pit A and trench V (fig. 19) contained a robust terrace wall, as was found out in the 1997 campaign (fig. 19).

After removal of the topsoil and the dark brown soil, the surface of pit A showed a sharp divide between the reddish brown sterile soil and lighter coloured, yellowish brown soil with an interface of burnt soil. Excavation of this feature brought to light the remains of a burnt early Iron Age hut, now under excavation. In the north baulk of pit A alternating cuts were visible in the reddish brown soil which have not yet been interpreted satisfactorily pending further excavation (fig. 19). Immediately north of pit A a trench was dug in E/W direction (fig. 20). The trench cut a feature of max. 1 m in section, with a fill of pebbles and *impasto* sherds dating to the middle Bronze Age, bones and tiny pieces of charcoal. Some 100 sherds were collected. The charcoal was dated to 3190±40 BP by conventional dating method (uncalibrated).

North of trench V another pit was prepared for

excavation: pit IVB. This pit again revealed 6th century BC wall remains. These were excavated in the 1996 campaign (fig. 19). Further north the soil profile gradually becomes thinner. Also trench IV cuts various wall fragments further sustaining the hypothesis of a densely built-up area in antiquity (fig. 18). At c. 17 m in trench IV a wall fragment was recorded with behind it a steep-sided pit filled with 6th and 5th centuries BC settlement debris (fig. 18).

3.5. Trench VI (figs 14, 22, 23).

This trench was dug at the far western end of plateau I, where the plateau is steeper than elsewhere. The trench showed at the outstart a thick layer of reddish brown (7.5YR 3/4) soil with sporadic 6th and 5th centuries BC sherds instead of the thick layer of dark brown soil, as found at the lower end of other trenches. Higher up in the trench the brownish layer rapidly decreased in thickness and the soil profile became very thin. At 14 m

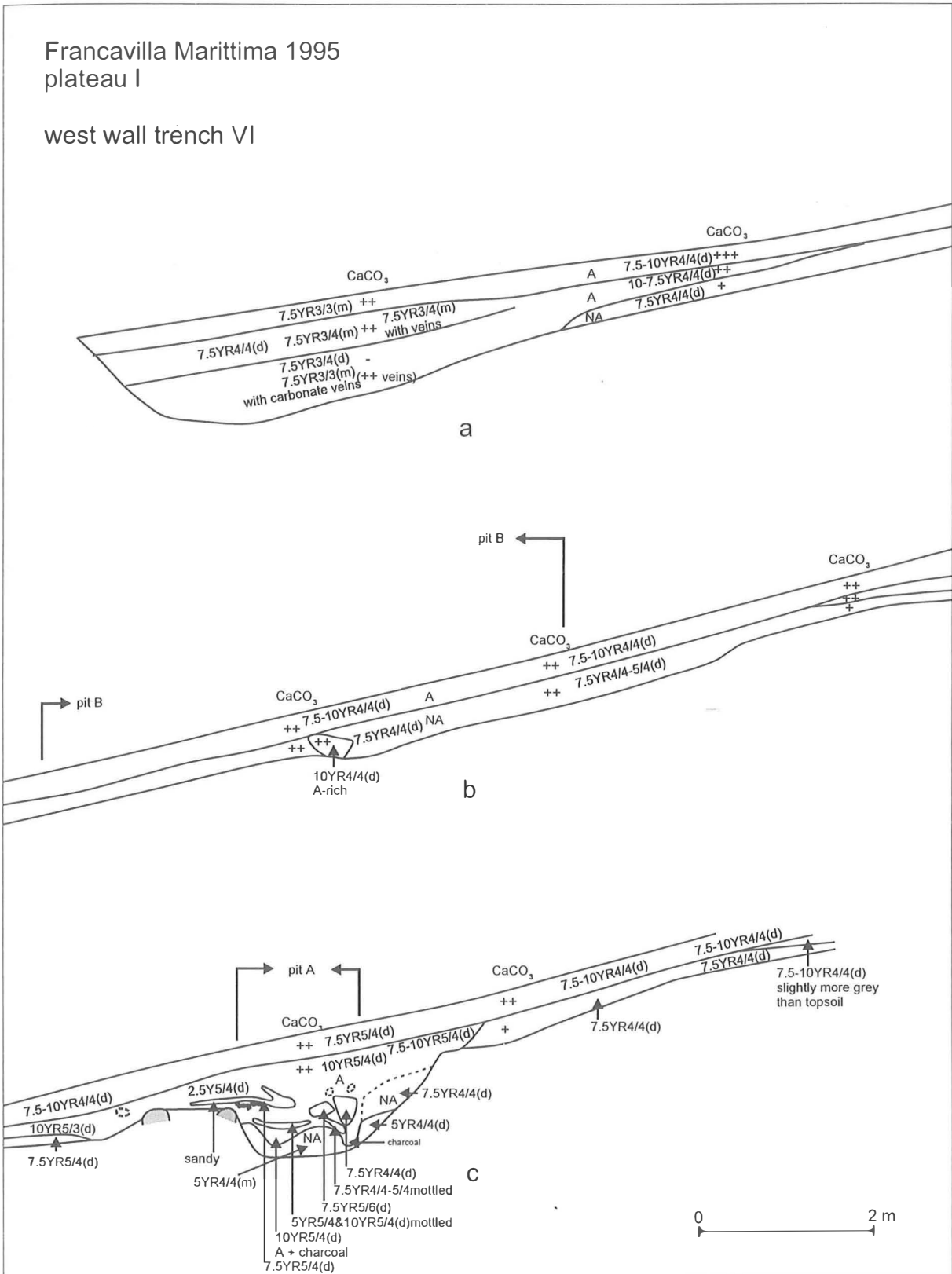


Fig. 22. Profile trench VI.

in trench VI a cut was observed having a lighter coloured fill at a depth of only 50 cm. Two *impasto* sherds were collected from this fill and some bone fragments. This cut prompted us to prepare an excavation area here located to the east of this trench (pit B). After removal of the topsoil the surface of this pit revealed very faint discolorations (trenches and negatives of former stretches of wall). The only substantial feature here were some limestone and conglomerate blocks forming the angle of some structure.

At the northern end of trench VI the soil profile showed a very steep ditch with a complex fill with various later cuts (fig. 21). At this point we slightly enlarged the trench to the east. This pit (pit A) yielded sherds dating to the 6th and 5th centuries BC, the Iron Age and the Bronze Age (fig. 22). The feature is as yet hard to interpret, but it seems that the Bronze Age material is provenient from a V-shaped cut in the lowest level of the pit. The cut is well-visible in the west section, with north of it a posthole-like feature. In the east section the Bronze Age cut is disturbed by wall remains that border the dip at the south side (6th/5th centuries BC?). In the east-section *impasto* sherds were found at a depth of 60-70 cm. In the VI area no excavations have been conducted yet.

3.6. Trench VII (figs 14, 24).

This trench was dug at the far east side in order to catch the deep, filled-up gully that earlier had been recorded in the roadside along the track leading up to the museum

(fig. 3). On both sides of the gully in the roadside exposure, but most clearly on the upslope side, a sharp boundary was visible between the fill of pale brown silty soil and sterile reddish brown clay, followed by a transition to stratified terrace deposits with in the lower levels large boulders and fining-up layers above. The bottom of the feature was flat. To obtain insight in the orientation of the gully, trench VII was dug at about 7 m from the east rim of the plateau (fig. 24).

At its south end, trench VII had dark brown soil with very large boulders which the shovel could not remove. It may be that we have cut a terrace wall here under a very obtuse angle. At c. 14 m the shovel succeeded in reaching a greater depth. The feature that had been visible along the road was 'caught' in the trench as appeared from a layer of pale brown silty clay soil with artefacts. Connecting the feature and fill in the roadside section with the layer in trench VII, it follows that there existed a deep east-west orientated gully on plateau I. The artefacts found in the dark brown soil in trench VII belong to 6th and 5th centuries BC house debris, fragments of *pithoi* and roof tiles. Whether the large boulders belong to an in situ structure is hard to tell on the evidence obtained from trench VII. It was clear, however, that they rest on the (pale) brown silty layer recorded in the roadside section and may have been used to level the depression.

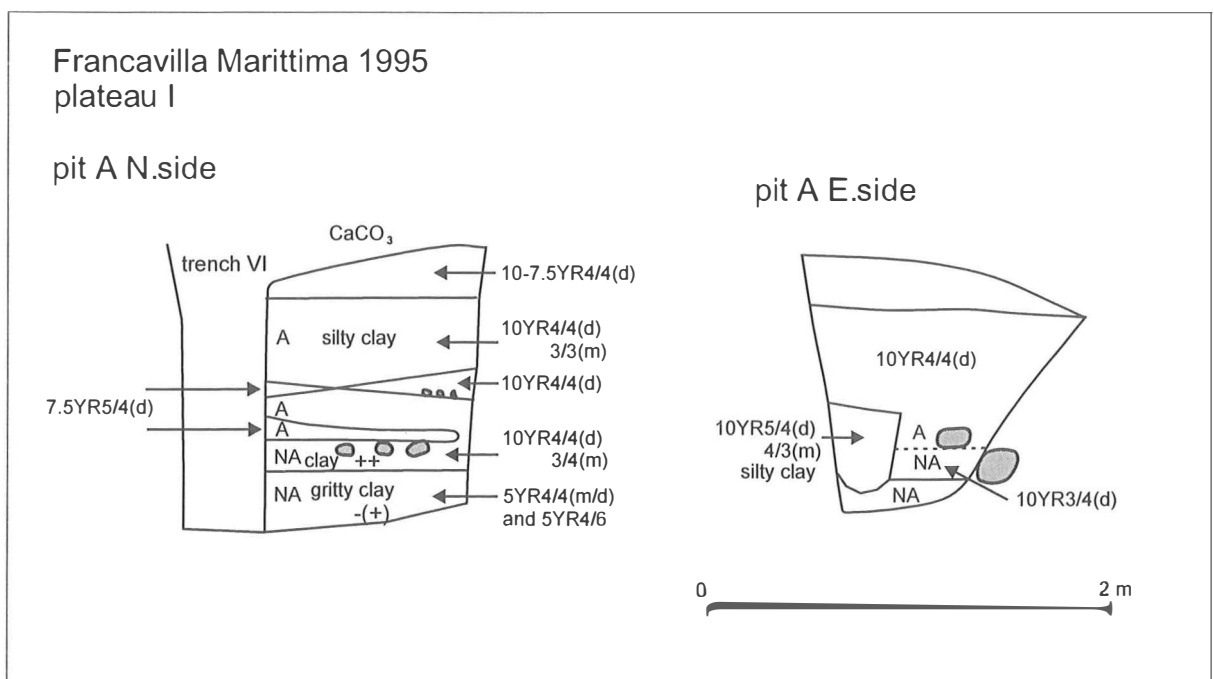


Fig. 23. Profiles pit A in the VI area.

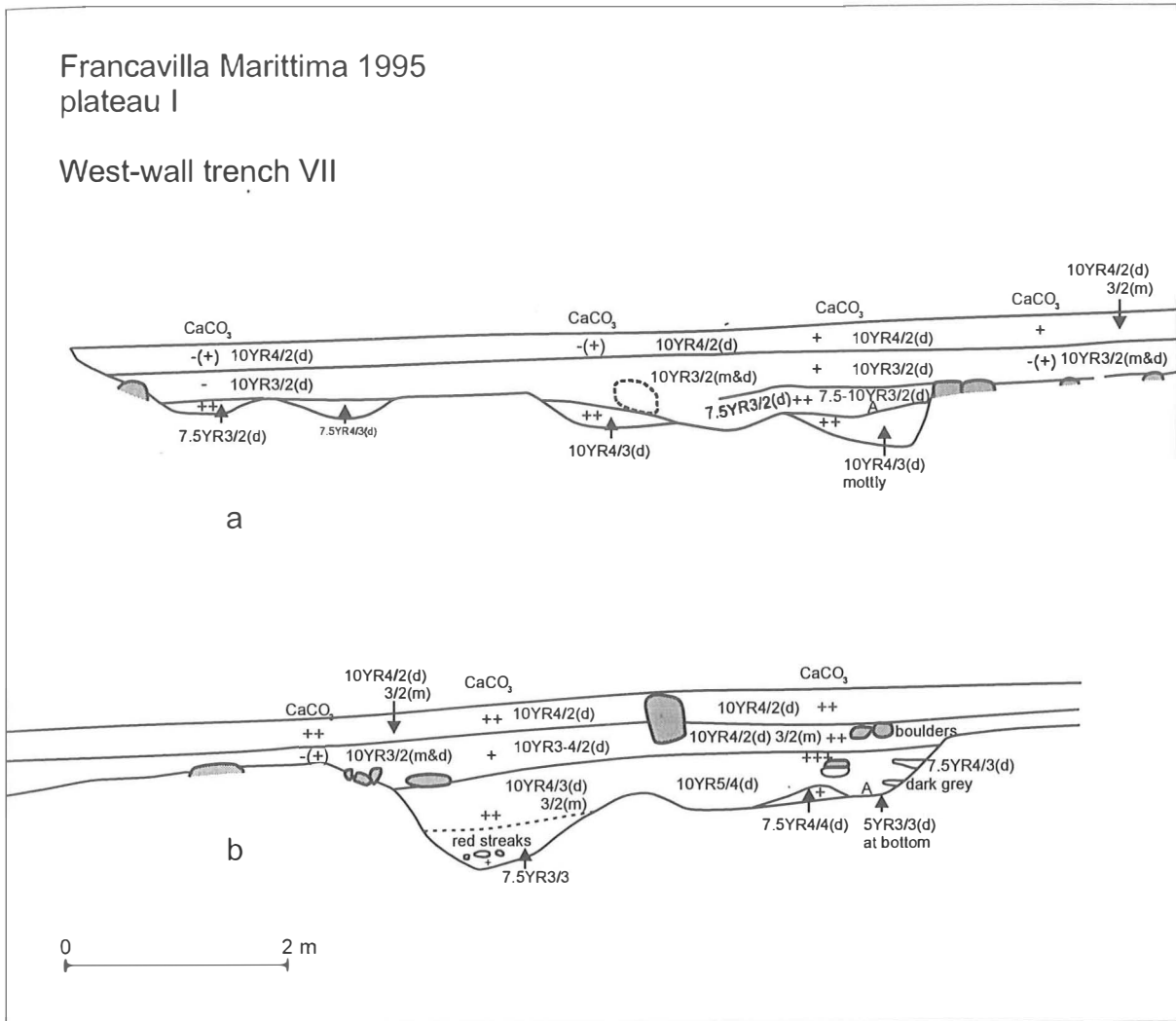


Fig. 24. Profile trench VII.

4. PHASES IN THE DEVELOPMENT OF PLATEAU I AND RELATED EPISODES OF SETTLEMENT AND LAND USE

4.1. Introduction

All the south-north sections, except for trench VI on the west side, show how two layers of soil mixed with sherds have accumulated on the lower side of plateau I: a carbonate-rich brown top soil (layer 1) and a slightly darker layer without carbonate (upper horizon of layer 2). Further down, various sections show a brown layer with relatively more *impasto* sherds (lower horizon of layer 2). At places a greyish to pale brown silty clay soil with prehistoric settlement debris is found (layer 3). The reddish brown virgin clay soil on top of the conglomerate bedrock forms layer 4. Besides these layers there are the various hut and house features and

their fills that are still under excavation and which in the context of this paper will be referred to in a very general way.

The sequence of soil layers and the topography of the bedrock underneath permits us to sketch in broad lines the morphological changes of plateau I which led to its present form. From the test trenches we learnt that the original morphology of the plateau was quite different from what we see now. The bastion-like protuberance in the southeast part of the plateau for example once stood apart from the rest. In prehistory it was cut off from the rest of plateau I by a gully or depression, as was noted in trench I. The plateau itself was somewhat smaller if we take into consideration the substantial soil accumulation on the southern rim visible in trenches II, III, IV and VI. This also indicates that the slope of plateau I on the lower sides was somewhat steeper. This is confirmed by our recent excavations. On the eastern side was a gully as was noted in trench VII and in the

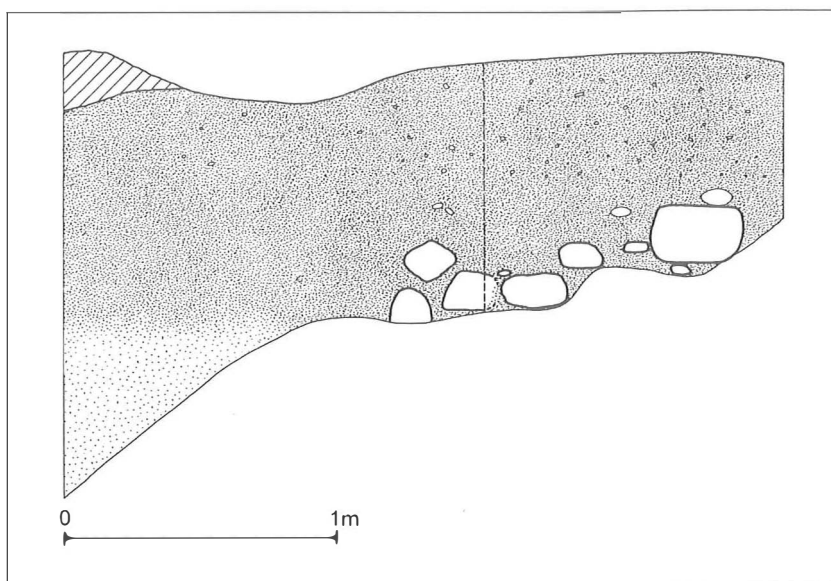


Fig. 25. Profile recorded at the rim of plateau I, showing accumulated soil against and on a terrace wall marking the edge of the plateau.

roadside section. This gully most probably was originally connected with the valley of the Dardania and deliberately filled up. This happened at its latest in the 5th century BC.

From the excavations it appears, however, that the inhabitants of plateau I from protohistoric times onwards strove to create living space on plateau I by means of adaptations of the natural geomorphology. At first this was done by means of artificial cuts in the terrain (as for instance visible in trench I slightly north of pit C, or in the case of pit A in the trench IV area, where an artificial cut was made to create space for a hut). Later the construction of terrace walls served the same purpose. In the first episode soil material will have accumulated in depressions in the terrain, which in certain cases may have led to an inversed chronology in the stratigraphical sequence. In a second episode soil accumulated in a controlled way behind terrace walls (also well-visible in trench I). Another way of soil accumulation occurred by slope wash and downslope transport caused by ploughing. The latter phenomenon is especially evident for the recent period. In the following we will make correlations between the soil profiles recorded in the trenches and episodes of settlement and land use.

4.2. The carbonate-rich top layer (layer 1); sub-recent settlement and land use

Layer 1 usually is 20 to 30 cm thick and is most probably the result of the rather rapid downslope ploughing of carbonate-rich top soil with the aid of a tractor pulled plough. The layer contains artefacts from all periods as both the survey and the trenches indicated. Judging from the thickness of this layer against the rim of the plateau, the rim must have been artificially heightened

at various points in time since the 6th century BC colonial phase. Indications for artificial heightening of the rim by means of terracing is known from an exposure we recorded in 1992 on the edge of plateau I and present usage (fig. 24). This recent phase of change (World War II till the 60's) caused by mechanical ploughing, however modest, nevertheless had immense consequences for both the archaeology and the morphology of plateau I.

4.3. The dark horizon (often) without carbonate (horizon 2.1); clearance related to architectural remains of the second Archaic house phase (second half of the 6th century BC)

This darker horizon, often without carbonate, is present over almost all of the plateau and is, like layer 1, thicker at the lower side of the plateau. The dark colour of this horizon, caused by humus, as well as the absence of carbonates, supports the view of a rather stable surface, as it indicates that there was enough time for the transformations of plant remains into humic matter to express itself in the soil colour and for carbonates to get leached.

The sections discussed above show that the horizon is not continuous, but has 'leaps'. These will have been caused by former terracing and house walls. This phenomenon is especially clear in trench II (fig. 16) and trench IV (fig. 18). The horizon contains much sherd and bone fragments which we date to the 'urban' phase of which it seems to be the, at least partial, clearance. The presence of this horizon over almost all of the plateau reinforces, as stated earlier, the notion that plateau I knew a large built-up area of substantial 6th and 5th centuries BC houses.

It is possible that horizon 2.1 is the result of neglect

and/or removal of the ancient stone structures and the subsequent erection of one continuous terrace wall along, in any case, the southwestern part of plateau I. It is not always clear whether carbonate leaching occurred in situ, or whether we deal with washed down, already leached, soil material, or both. The thickness of the dark horizon against the rim of plateau I sustains the washing down opinion. The southern part of trench IV shows such a situation (fig. 18): almost against the present-day rim of the plateau the section shows robust walls with to the north the dark brown layer without carbonate which, however, clearly spills over the wall. The fact that in the period after the house phase no mixing of this layer occurred with new soil from higher up the slope that is rich in carbonate, may be due to a simple way of soil treatment, for example superficial ploughing with an ox. It is as yet unclear to which period this phase should be dated. It could be the last century, but in fact all of the period after the ancient settlement was left, deserves consideration.

4.4. The brown horizon (horizon 2.2) and the transition to the pale brown layer (layer 3); debris of the first colonial house phase (perhaps first half of the 6th century BC)

From the colonial period we know by now quite a number of wall remains belonging to the foundations of houses. The chequerboard excavation in 1992 and 1994 indicated the superposition of two types of wall remains, a broad wall foundation of conglomerate and limestone blocks and a structure of smaller stones having another orientation (see 2.2). Part of the heavy wall was founded in the dark brown horizon on top of a layer of sherds and is certainly to be dated in the advanced 6th century or early 5th century BC. The wall having smaller stones was founded in the brown horizon 2.2. Also the wall segments found in pit IC rest in horizon 2.2. On the evidence of this, horizon 2.2 for the larger part will correlate with an early 6th century BC house phase. It must be remarked, however, that the ceramics of horizon 2.2 and horizon 2.1 above it do not differ much. The brown horizon 2.2 is in any case the *post quem* horizon of the house fundaments found till now.

4.5. The greyish to pale brown silty layer (layer 3); the Iron Age and Bronze Age

As we have seen above in the description of the trenches, a number of sections shows at deeper levels features containing relatively light coloured silty soil material. The silty nature of the soil shows in the trench walls by the absence of soil structure and desiccation cracks. Sometimes these are large accumulations such as the one which filled the depression visible in the lower part of trench I (fig. 16). The question was raised whether this layer was formed in situ or whether we deal with removed soil material, either induced by man or by

natural processes. In the latter case we may think of soil erosion and deposition due to desertion of the prehistoric settlement on the lower side of plateau I at the end of the second millennium BC. In the case of the former suggestion, we may think of the deliberate removal of the prehistoric settlement in the Archaic period in order to improve and enlarge plateau I for house building. The fact that layer 3 always has a high carbonate content and thus cannot have been at the surface for very long, favours deliberate removal. We know from elsewhere that the Bronze Age people chose locations on the rims of plateaus. This is confirmed on plateau I: on two spots near the former rim of the plateau the relatively light coloured layer occurs in situ, such as in trench I, pit C (middle Bronze Age traces) and trench IV, pit A, (late 9th century BC Iron Age hut).

An interesting aspect of the pale brown silty soil is its origin. Unlike the other layers, it does not occur over large areas and always seems to be associated with human activities in the soil. The latter suggests that the silty soil material is not 'indigenous' on plateau I but may be brought here by man. It often has a high ash content.

5. THE COLONIAL PHASE OF THE SETTLEMENT AT TIMPONE DELLA MOTTA

The 1991/92 survey of plateau I, the test pits and test trenches showed that plateau I developed in the Archaic period (the 6th century BC) into the site's central settlement area featuring colonial inspired dwellings on stone sockles. Already in the middle of the 7th century BC, the earlier indigenous wooden sanctuary buildings on the top had been replaced by Greek-style temples in stone, and these stone temples underwent further embellishments and additions in the 6th century BC (Maaskant-Kleibrink, 1997). On plateau I the Iron Age dwellings probably were concentrated on terraces near the rim of the plateau, just as their Bronze Age predecessors. The building of houses on stone foundations in the 6th century BC, however, also took place on the higher parts of the slope, as surface artefact distribution on plateau I indicates. The present excavations show how the lower part of plateau I was adapted for house building by means of constructing large terraces in the southwestern part of the plateau and the levelling of irregularities and depressions in the terrain in the south-east to create the necessary space. Large amounts of 6th and 5th centuries BC pottery and animal bones in the top soil and in the thick deposits of soil moved downslope by ploughing, testifies to the intensive occupation of the area in this period. The pottery dates show that from the middle of the 6th century BC the entire plateau will have been covered by houses on stone foundations. Evidently in this period in the entire Sibaritide house building underwent a major change, which we may connect with the building program of the Greek colony Sybaris,

where in the same period for instance large housing projects were laid out far from the centre. At Amendolara a similar building program with regular houses is known (De la Genière, 1978). At Timpone della Motta until now we have, however, no evidence for paved streets, which makes a veritable urban lay-out on plateau I doubtful, whereas the absence of tiled roofs is indicative of the rural character of the settlement. The 6th century BC occupational phase on plateau I is accompanied by a growing Greek influence on material culture in the Macchiabate graves. In spite of this strong Greek influence, it is thought that the site remained occupied by the indigenous people, given the facts that the earlier Iron Age 'family' burial areas on the Macchiabate continued to be used and that indigenous objects remained present among the grave goods (Vink, 1995). On the evidence of the pottery, the site of Timpone della Motta seems to have been largely deserted in the first half of the 5th century BC after the Sibaritide had undergone a political and economic crisis with the destruction of its central Greek colony Sybaris, down in the plain.

5. NOTES

1. These have been published in internal reports and await final publication.
2. The research is possible thanks to the permission of the Soprintendenza per il Calabria. We are grateful to dr. E. Lattanzi and dr. S. Luppino.
3. Under excavation are a 6th century BC house, a 9th century BC hut feature as well as various Bronze Age occupational features dating to various phases between the middle Bronze Age and the late Bronze Age.
4. In 1991 the survey team consisted of P.A.J. Attema and B.J. Haagsma; in 1992 of M. Kleibrink and B. Hijmans, and members of the 'Archeoclub del Pollino' directed by C. Zicari to whom we are grateful for their co-operation.
5. The string square technique of sampling involves pinning squares on the ground using a 21.66 m long rope. The string diagonal ensures that the collection area thus established is exactly square in shape. The method was propagated by R. Whallon in the Keban Reservoir survey (Whallon, 1985). In the surveys of the Pontine Region Project in Central Italy the method was used to survey an overgrown protohistoric hill site (Attema, 1991) and to sample large and dense pottery scatters in rural survey contexts (Attema, this volume).
6. In almost all of the string squares of the locations E to I holes dug by clandestine diggers were found. Rather than bronze and gold objects, their metal detectors will have, however, detected iron slags, such as were found in the 1992 test pits (cf. Appendix 3).
7. Find Nos 2861, 2858, 2865, 2859.
8. Find No. 2862.
9. Excavation of this house, called the *Casa Aperta*, took place during the 1996, 1997 and 1998 campaigns.
10. Find Nos 2862, 2857, 2863.
11. Find No. crate 12, pit C, saggio 1, removal of dark grey layer including top soil; crate 14 and 15, pit C, saggio 1, removal of reddish brown layer; crate 16, pit C, saggio 1, removal of light greyish layer (partly transition to reddish brown layer).
12. The *pithos* fragment, of a well-defined type of storage jar that is also found at various other sites in the Sibaritide, dates to the latter part of the Bronze Age. Excavation of pit C in 1995 and 1996 proved the trench to date to the middle Bronze Age.
13. Find Nos 2867, 2869 and 2868.

6. REFERENCES

- ATTEMA, P.A.J., 1991. The Contrada Casali: An intensive survey of a new Archaic hilltop settlement in the Monte Lepini, South Lazio. *Mededelingen van het Nederlands Instituut te Rome, Antiquity* 50, pp. 7-62.
- DE LA GENIÈRE, 1978. C'è un modello Amendolara? *Annali della Scuola Normale Superiore Pisa, Classe di Lettere e Filosofia* 8, pp. 335-454.
- GIANNINI, G., A.N. BURTON, G. GHEZZI & C. GRANDJACKET, 1973. *Castrovillari: Nota illustrativa delle tavolette appartenenti al foglio 221 della Carta Geologica della Calabria, Cassa per il Mezzogiorno*. Rome.
- HAAGSMA, B.J. & P.A.J. ATTEMA, 1994. Het Casa di Angelina, een traditionele boerderij bij de opgraving te Francavilla Marittima. *Paleo-aktueel* 5, pp. 55-59.
- MAASKANT-KLEIBRINK, M., 1971. Abitato sulle pendici della Motta. *Atti e Memorie Società Magna Grecia* 11-12, pp. 75-80.
- MAASKANT-KLEIBRINK, M., 1993. Religious activities on the 'Timpone della Motta', Francavilla Marittima – and the identification of Lagaria. *Bulletin van de Antieke Beschaving* 68, pp. 1-47.
- PERONI, R. & F. TRUCCO et al., 1994. *Enotri ed micenei nella Sibaritide*. Taranto.
- VINK, M., 1995. Confrontatie of coëxistentie? De verhouding tussen lokale bewoners en Griekse kolonisten in Zuid-Italië. *Tijdschrift voor Mediterrane Archeologie* 7(2), pp. 16-24.
- WHALLON, R., 1985. Methods of controlled surface collection in archaeological survey. In: D.R. Keller & D.W. Rupp (eds), *Archaeological survey in the Mediterranean area* (= BAR International Series 155). B.A.R., Oxford, pp. 311-313.
- ZANCANI MONTUORO, P., 1976. Francavilla Marittima, necropoli di Macchiabate. *Atti e Memorie Società Magna Grecia* 15-17, pp. 9-106.
- ZANCANI MONTUORO, P., 1982. Francavilla Marittima, necropoli e ceramico a Macchiabate, zona T, fornaci e botteghe antecedenti: Tomba T1-54. *Atti e Memorie Società Magna Peter* 21-23, pp. 7-129.
- ZANCANI MONTUORO, P., 1984. Necropoli e ceramico a Macchiabate, zona T (continuazione), fornaci e botteghe antecedenti: Tombe 55-93 e resti di botteghe e abitazioni anteriori. *Atti e Memorie Società Magna Grecia* 24-25, pp. 7-110.

APPENDIX 1: Fabrics and forms of sherds collected in the survey. MBA. Middle Bronze Age; LBA. Late Bronze Age; EIA. Early Iron Age.

1. Inclusions

Coarse fabrics contain small limestone fragments, quartz/feldspar, mica and grog. Fabrics used for the manufacture of *pithoi* and tiles have as a rule larger limestone fragments and quartz/feldspar particles than depurated orange and pale fabrics. Five main ceramic groups were discerned (figs 12-14):

1.1. *Impasto* fabrics

The *impasto* group makes up 4% of the total and is here subdivided in four fabrics. Fabric 6 is sandy and somewhat soft (MBA/LBA). Fabrics 34 and 35 have a coarse and hackly fracture (EIA). Fabric 33 is gritty on account of the high percentage of quartz/feldspar (LIA). Fabric descriptions and quantification

Fabric 6. *Impasto* – brown, only few dark limestones/stones (<5%), very poorly sorted, black core, polished; 17 fragments/15 observations;

Fabric 34. *Impasto* – black, with few black angular stones (<5%) and some quartz/feldspar, very poorly sorted; 83 fragments/36 observations;

Fabric 35. *Impasto* – black, coarse paste with some black angular stones (5%), some quartz/feldspar, some FeMn, very poorly sorted, hackly fracture; 6 fragments/4 observations;

Fabric 33. *Impasto* – orange/red (5YR 7/8, 7/6), much quartz/feldspar (15-20%), some small red and black angular stones, gritty/sandy paste, poorly sorted; 106 fragments/53 observations.

1.2. *Pithos/tegula* group

This is the second largest group, making up 21% of the total. Eight different fabrics were discerned in the *pithos/tegula* group. Four have varying percentages of smaller and larger limestone fragments (Nos 1, 2, 4, 38). In four fabrics grog dominates next to quartz/feldspar or mica (Nos 3, 20, 24, 41). It is assumed that all fabrics date to the Archaic period and/or early 5th century BC. As yet we do not have chronological criteria based on stratigraphy.

Group with limestone fragments

Fabric 1. *Pithos/tegula* – orange (5YR 7/8, 6/8), large limestones dominate (5-10%), some quartz/feldspar, some mica, some small pores, the paste is fairly soft, very poorly sorted; 275 fragments/86 observations;

Fabric 2. *pithos/tegula* – orange (5YR 7/8, 7/6, 6/8, 6/6), small limestones and quartz/feldspar dominate (10-20%, some larger limestones, soft, gritty paste, only a few pores, poorly sorted. N.B. *tegulae* are slightly redder than the *pithoi*; 425 fragments/115 observations;

Fabric 4. *Tegula* – orange (5YR 7/8, 6/8), many medium sized limestones (10-20%), some quartz/feldspar, many small pores, hard paste, poorly to moderately sorted; 88 fragments/55 observations;

Fabric 38. *Tegula* – dark red, many quartz/feldspar and limestones 20-30%, gritty, moderately sorted; 120 fragments/47 observations.

Group with grog inclusions

Fabric 3. *Pithos/tegula* – orange (5YR 7/8, 6/8), some small limestones with dark red grog (5-10%), very small mica particles and chalk, poorly sorted; 79 fragments/41 observations;

Fabric 20. *Pithos/tegula* – pale (10YR 8/2), many mica particles, some limestones and dark red grog (20-30%), poorly to medium sorted; 103 fragments/60 observations;

Fabric 24. *Pithos/tegula* – pale (10YR 8/2, 8/3), grog, mica and small limestones (15-20%), fine and hard paste, moderately sorted; 9 fragments/8 observations;

Fabric 41. *Pithos/tegula* – orange (5YR 7/8, 6/8), much dark red grog (15-20%), also many large limestones, hard paste, long flat pores, moderately sorted; 116 fragments/58 observations.

1.3. *Amphorae*

Of the total amount of fragments 11% can be attributed to the group of amphorae. Eight fabrics can be discerned in the *amphorae* group. Fabric 36 has grog in an otherwise pure clay. Fabrics 26, 29 are gritty having a high percentages of quartz/feldspar. Two other fabrics contain varying amounts of small limestone fragments (Nos 16, 31). In fabric 15 larger and smaller grey and reddish inclusions dominate (either shale, schist or silt). Fabric 5B is almost a pure clay.

Lack of forms make it as yet hard to date and classify the *amphorae*. But presumably they date, as the *pithoi* and tiles, to the 6th/early 5th century BC, being the remains of the storage facilities of the houses.

Fabric 36. *Amphora* – orange (5YR 7/8, 7/6), red grog and white chalk (5-10%), poorly sorted, some pores, pure paste, some mica; 42 fragments/31 observations;

Fabric 26. *Amphora* – pale (10YR 8/3), much quartz/feldspar (30%), gritty, moderately sorted; 17 fragments/15 observations;

Fabric 29. *Amphora* – pale (10YR 8/3), pure, quartz/feldspar and mica (5%), hard paste, some pores, poorly to moderately sorted; 5 fragments/3 observations;

Fabric 15. *Amphora* – orange (5YR 7/8), large grey and red inclusions (shale/schist or silt?) (15-25%), poorly to moderately sorted; 261 fragments/110 observations;

Fabric 5B. *Amphora* – pale (2.5YR 8/2, 10YR 8/3), almost pure, many small pores dominate, some quartz/feldspar and chalk (<5%), powdery, some very small mica particles, moderately sorted; 35 fragments/24 observations;

Fabric 16. *Amphora* – orange (5YR 7/8, 6/8), many limestones small and large, quartz/feldspar 20-30%, moderately sorted, gritty; 292 fragments/115 observations;

Fabric 31. *Amphora* – orange (5YR 7/8, 6/8), some quartz/feldspar and red inclusions (silt) (10%), poorly sorted; 7 fragments/7 observations;

Fabric 37. *Amphora* – pale, pure paste with very small quartz/feldspar particles and small round pores, a little sandy, moderately sorted; 65 fragments/38 observations.

1.4. Wheelthrown coarse and deputed household pottery

Sherds belonging to household pottery make up 62% of the ceramic sample. Four fabric groups can be distinguished that were used for the manufacture of household pottery. The main forms are *hydriae*, bowls, small jars, jugs and small pyramidal or flat loomweights.

The local hard fabric group (No. 21) can be identified by its hard fired quality and the fact that the pots were predominantly hand made. Unfortunately all pottery fragments found in the survey were undecorated, meaning that one of the most distinguishing aspects of the group, i.e. the matt-painted decoration, is entirely absent. The matt-painted dates in the 8th century BC. The thousands of 7th century BC *hydriae* found in the sanctuary area are also of a local hard fabric. It is assumed that part of the local hard pottery found on plateau I in the survey must be considered as transitional between the matt-painted wares and the locally produced *figulina* wares in group 2 and comparable to the *hydria* group as to their fabric.

Group two is the locally made *figulina* pottery, so-called because of its deputed fabric. It is often found without surface treatment, but surface treatments may disappear over time due to both the poor quality of the pottery and the poor circumstances of conservation. *Figulina* pottery seldom contains inclusions visible to the naked eye, although sometimes there are quartz/feldspar or micaceous inclusions visible. Two qualities are distinguished, No. 43 *local medium* and No. 9 *local soft* (so named for the powdery paste).

Group three consists of deputed fabrics with traces of decoration in black glaze (or other colours) (Nos 12, 8, 14, 10, mainly cups). They belong to the first half of the 5th century BC.

A fourth group is formed by the gritty or coarse fabrics that have quartz/feldspar and small limestone inclusions. Differentiation of the fabrics in the coarser ones is dependent on percentages of such inclusions and their sorting (Nos 13, 18A, 18B, 23, 25, 28, 30). This group can, as the black glazed group, certainly be ascribed to the 6th/first half of the 5th century BC, as excavation of house features has learnt. Only Nos 18A and 18B may belong to the 7th century BC.

'Local hard' pottery

Fabric 21. Household pottery – orange (5YR 7/8, 7/6, 6/8, 6/6), pure, some quartz/feldspar or mica (<5%), hard paste, moderately sorted; 194 fragments/83 observations.

Figulina pottery

Fabric 43. Household pottery (medium hard) – orange (5YR 7/8, 6/8), pure, some quartz/feldspar or limestones (<5%), poorly to moderately sorted; 90 fragments/34 observations;

Fabric 9. Household pottery (soft) – orange (5YR 7/8, 7/6, 6/6, 6/8; 7.5YR 7/6, 7/8, 6/6), pure, powdery, some small pores; 2130 fragments/164 observations.

Black glaze pottery

Fabric 12. Household pottery – orange (5YR 7/8, 6/8), pure, little powdery paste, some small quartz/feldspar (<5%), moderately sorted, resistant black glaze; 201 fragments/82 observations;

Fabric 8. Household pottery – orange (5YR 7/8, 6/8), many small limestones (15-25%), very gritty, some orange grog, poorly to moderately sorted, many very small pores; 22 fragments/16 observations;

Fabric 5A. Household pottery – pale (2.5YR 8/2, 10YR 8/3), almost pure, many small pores dominate, some quartz/feldspar and chalk (<5%), powdery, some very small mica, moderately sorted; 102 fragments/42 observations;

Fabric 14. Household pottery – orange (5YR 6/6, 6/8), pure, few quartz/feldspar and mica particles (<5%), flat pores, moderately sorted, black glaze of bad quality; 138 fragments/74 observations;

Fabric 10. Household pottery – pale (10YR 8/3), pure, hard and thin paste, some decoration on the interior and exterior; 6 fragments/6 observations.

Coarse group

Fabric 13. Household pottery – orange (5YR 7/8), some small quartz/feldspar (5-10%), gritty paste, poorly sorted; 75 fragments/39 observations;

Fabric 18A. Household pottery – orange (5YR 6/6, 6/8), small limestones and quartz/feldspar dominate (15-20%), coarse and gritty, moderately sorted; 270 fragments/105 observations;

Fabric 18B. Household pottery – orange (5YR 6/6, 6/8), fine gritty paste, small quartz/feldspar particles and limestones (20%), well-sorted; 101 fragments/47 observations;

Fabric 11. Amphora – orange (5YR 7/8), some small limestones and chalk (5-10%), small flat pores, poorly sorted, hard paste; 26 fragments/17 observations;

Fabric 23. Household pottery – orange (5YR 7/8, 7/6), a few small quartz/feldspar fragments (<5%), pure paste, poorly sorted; 273 fragments/95 observations;

Fabric 28. Household pottery – brown, many quartz/feldspar particles (15-20%), gritty, some larger inclusions; 9 fragments/9 observations;

Fabric 25. Household pottery – orange (5YR 7/8, 6/8), a few quartz/feldspar particles, grog and limestone (5%), many pores, poorly sorted limestones, poorly to moderately sorted, thin; 25 fragments/20 observations;

Fabric 30. Household pottery – orange (5YR 7/8, 6/8), quartz/feldspar and limestones (5-10%), poorly to moderately sorted, some mica and dark red grog; 47 fragments/32 observations.

1.5. Late fabrics

Finally there is a group of 'Byzantine' fabrics

Fabric 17. Tegula – brown/beige (Byzantine), hard, pure, smoothed exterior; 74 fragments/29 observations;

Fabric 19. Household pottery – orange (Byzantine), pure, some quartz/feldspar and limestones (<5%); 13 fragments/11 observations.

APPENDIX 2: Catalogue of the sherds selected from the trenches. h. Height; lxb. Length x breadth; s. Section; d. Diameter; measurements are in cm; scale as indicated on the plates (either 1:2 or 1:4).

1. *Impasto* wares (MBA, LBA, EIA periods)

Middle Bronze Age (fig. 26: 1-7)

1) 15-19. Fragment of a handle with upturning and rounded outflaring sides; h. 3.2. Clay: fine sandy *impasto* with low percentage of fine quartz/feldspar inclusions (10%) and many small pores, poorly to moderately sorted and a few larger inclusions, hand made. Colour: 2.5YR N 5/ grey (cf. Peroni & Trucco, 1994: pl. 6, nr. 11, pl. 13, nr. 3).

2) 15-7-2. Fragment of a handle with upturning and rounded outflaring sides; h. 4.6. Clay: fine sandy *impasto* with a low percentage of fine quartz/feldspar inclusions (<3%), very poorly sorted, hand made. Colour: 2.5YR N 5/ grey (cf. Peroni & Trucco, 1994: pl. 6, nr. 11, pl. 13, nr. 3).

3) 15-1. Wide band-handle with part of wall; d. 32.0 (but inclination uncertain); s. handle 1.0. Clay: very coarse *impasto*, quartz/feldspar and larger calcareous particles (20-30%), very poorly sorted, hand made. Colour: 5YR 5/6 yellowish red.

4) 15-7.3. Fragment of a wide band-handle with flattened sides; lxb 5.0x2.6; s. 0.6. Clay: very coarse *impasto* with a high percentage of calcareous and quartz/feldspar particles (40%), poorly to moderately sorted, hand made. Colour: 7.5YR 2N2 black.

5) 15-2. Wide band-handle with flattened sides. Meas.: 0.9 cm. Clay: fine sandy *impasto* with a low percentage of fine quartz <5%, poorly sorted and a few calcareous particles, hand made. Colour: 2.5YR N 4/ dark grey.

6) 15-3. Fragment of wide band-handle with flattened sides; h. 5.2; s. 1.2. Clay: gritty, but fine sandy *impasto* with low percentage of fine quartz-feldspar inclusions <5%, poorly sorted and a few larger calcareous particles, hand made. Colour: 7.5YR N 3/ dark grey, surface yellowish red 5YR 5/6.

7) 15-8. Wide band-handle with flattened sides; h. 7.4, in section 1.0. Clay: fine sandy *impasto* with low percentage of fine quartz-feldspar inclusions (5%), poorly sorted and a few larger quartzes, hand-made. Colour: 7.5YR N 3/ dark grey, surface yellowish red 5YR 5/6.

Recent Bronze Age (fig. 27: 1-2)

1) 15-17. Wall fragment of a carinated bowl; d. at carena 17.0; s. wall at carena 0.7. Clay: coarse *impasto* with low percentage of quartz/feldspar and small limestone particles (<5%), very poorly sorted, hand made. Colour: 2.5YR N3 very dark grey.

2) 14-3.37. Fragment of a band handle with convex side; h. 3.8; s. 1.4. Clay: fine gritty *impasto* with low percentage of quartz-feldspar and small limestone particles (<5%), very poorly sorted, hand made. Colour: 2.5YR 5/8 red.

Late Bronze Age/Early Iron Age (fig. 28: 1-9)

1) 15-6. Rim fragment of a jar with out-turning rim with slightly tapering lip; decorated with a cord-band; d. 17; lxb 6.4x8.6; s. wall 1.0; s. wall and cord 1.8. Clay: coarse *impasto*, quartz/feldspar and calcareous particles (5-10%), larger than 2000 µ, very poorly to poorly sorted, hand made. Colour: 2.5YR N3 very dark grey, exterior cord-decoration 5YR 5/6 yellowish red.

2) 2883-24. Rim fragment of a jar with outcurving long rim and tapering lip; decorated with a plastic band on the neck; d. 17, lxb 8.0x5.2; s. wall 1.2; s. wall and cord 1.4. Clay: gritty *impasto* with quartz/feldspar and calcareous particles in all sizes to over 2000 µ, moderately to poorly sorted, probably wheel turned. Colour: dark reddish grey core 5YR 4/2, yellowish red 5YR 5/6.

3) 15-7.0. Rim fragment of a jar with inturning rim and bevelled lip; d. 12. Clay: coarse *impasto*, quartz/feldspar and calcareous particles (5%) very poorly sorted, hand made. Colour: probably 2.5YR 4N4 dark grey.

4) 15-7.5. Rim fragment of a mug or small jar with irregularly out-turning rim and tapering lip; lxb 2.2x2.1; s. wall 0.8. Clay: *impasto*, small pores, quartz/feldspar and calcareous particles (5%) poorly sorted, hand made. Colour: 2.5YR 4N4 dark grey.

5) 14-3.28. Lug with a hole, probably of a tray; lxb 6.6x3.2; s. 3.2. Clay: gritty *impasto* because of high percentage of quartz-feldspar and small stones (10-20%), poorly sorted, hand made. Colour: 5YR 4/1 grey paste with reddish yellow surface.

6) 15-7.4. Rim fragment of a mug or small jar with outcurving rim and tapering lip; lxb 2.8x2.0; s. wall 0.4. Clay: coarse *impasto*, quartz/feldspar and calcareous particles (10%) poorly sorted, hand made. Colour: 2.5YR 4N4 dark grey.

7) 15-7.1. Rim fragment of a handle with outcurving rim; lxb 5.0x3.0; s. handle 1.0. Clay: coarse *impasto*, quartz/feldspar and calcareous particles, hand made. Colour: in strata pink 7.5 7/4 and 2.5YR 4N4 dark grey.

8) 2883-26. Rim fragment of a jar with outcurving rim and rounded lip; lxb 2.0x2.2; s. of wall 1.2. Clay: coarse *impasto* with small quartz/feldspar and calcareous particles (5%) poorly sorted, hand made. Colour: red 2.5YR 4/8.

9) 2883-27. Rim fragment of a jar with out-turning short rim and tapering lip; decorated with a plastic cord on the neck; d. 15.6; lxb 4.6x3.6; s. wall and cord 1.2. Clay: very coarse *impasto* with quartz/feldspar and calcareous particles, also FeMn (20%), very poorly sorted, layered, hand made. Colour: dark grey 5YR 5/4.

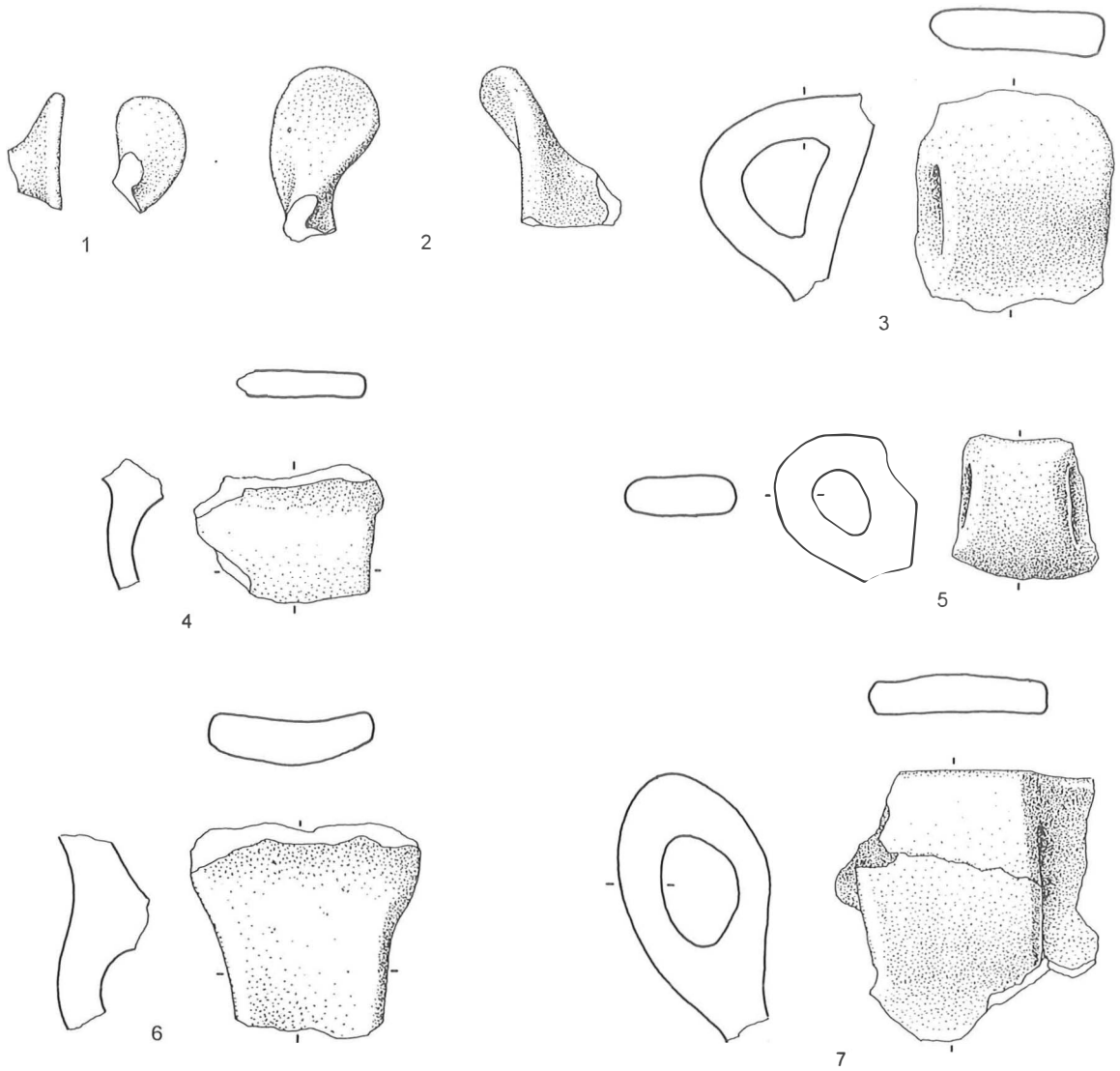


Fig. 26. *Impasto* wares (scale 1:2).

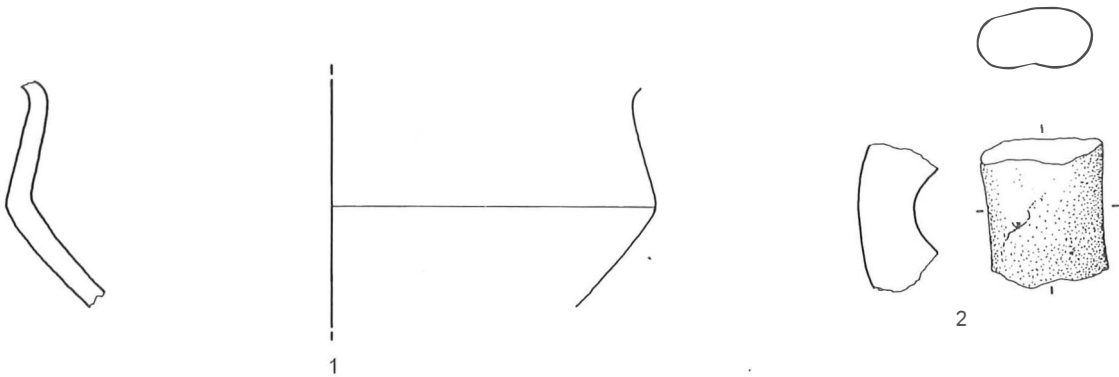


Fig. 27. *Impasto* wares (scale 1:2).

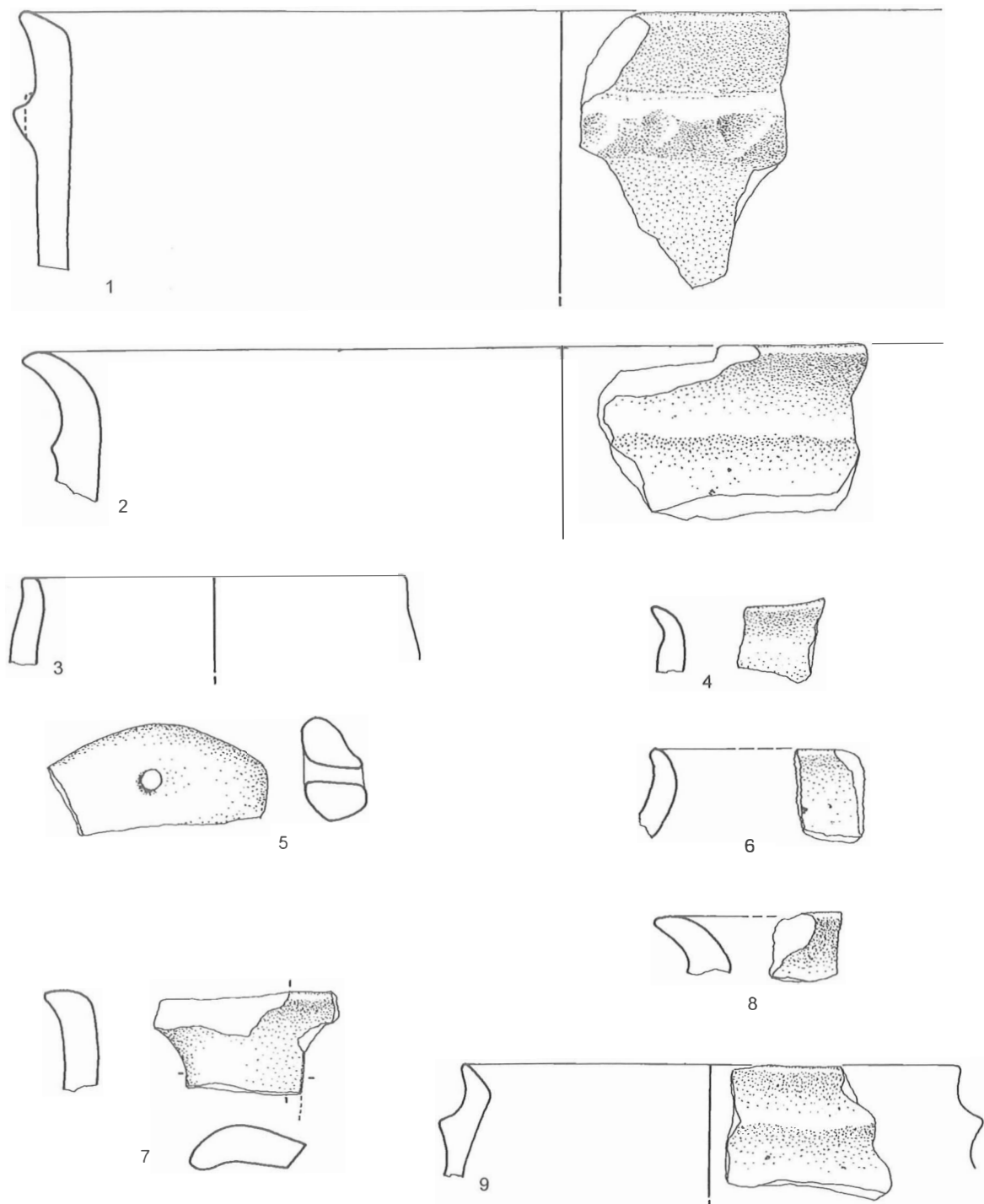


Fig. 28. *Impasto* wares (scale 1:2).

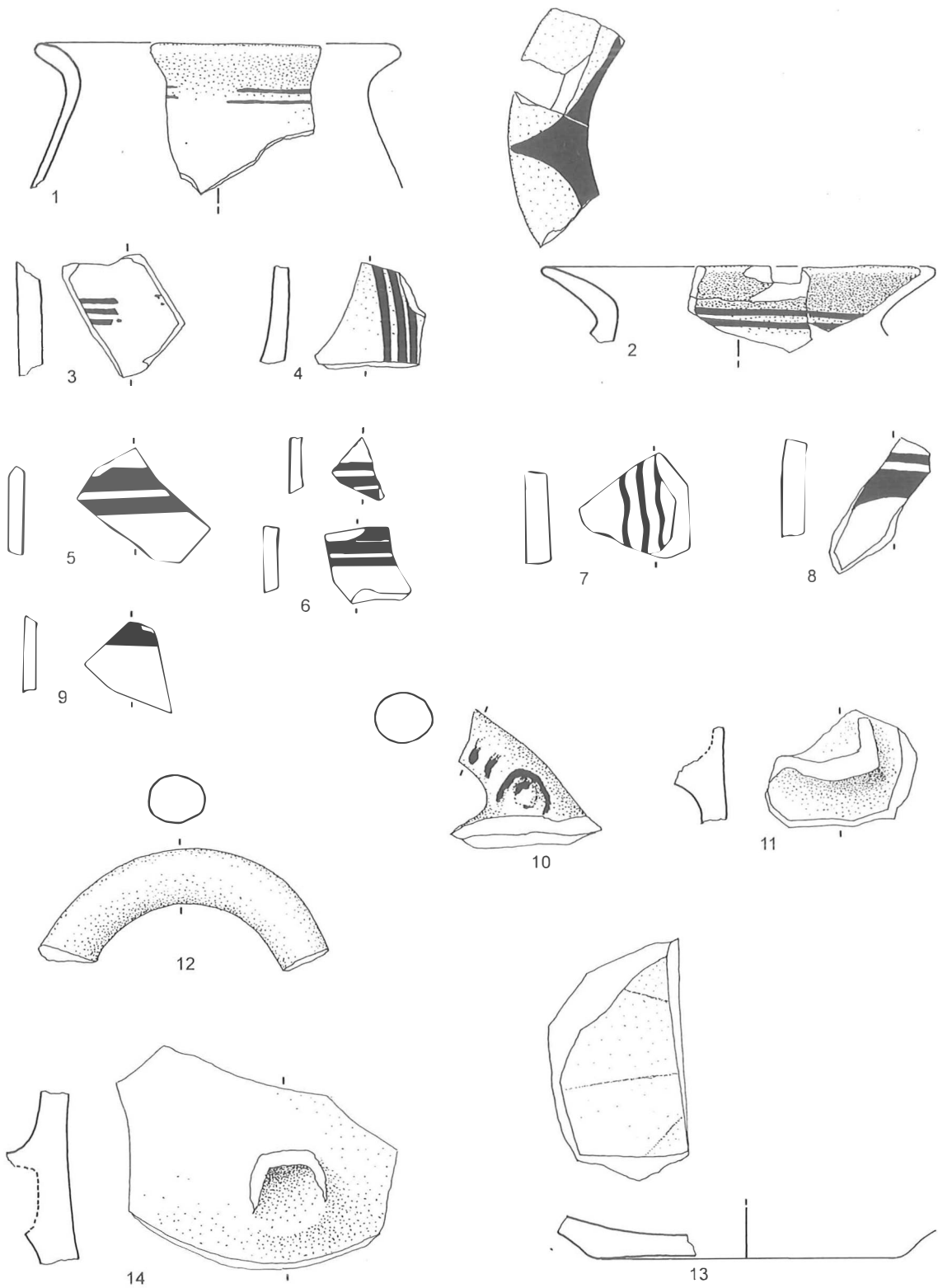


Fig. 29. Matt painted wares (scale 1:4).

2. Matt-painted wares (8th century BC) (fig. 29: 1-14)

1) 14-3.8. Rim fragment of a closed vessel with out-turning rim and tapering lip; decorated with two bands over the rim's exterior; d. 1.1.6; lxb 4.6x4.6; s. wall 0.3-0.4. Clay: depurated, fired hard. Colour: secondarily burnt.

2) 2883-10. Rim fragment of a closed vessel with out-turning rim and tapering lip; decorated with two bands over the rim's exterior and filled triangles on the interior lip; d. 12.6; lxb 7.2x2.6; s. wall 0.6. Clay: depurated, fired hard. Colour: secondarily burnt 7.5YR 5 grey.

3) 2883-15. Wall fragment of a closed vessel; decorated with three bands; lxb 3.0x3.6; s. wall 0.8. Clay: depurated, fired hard. Colour: pink 5YR 7/6.

4) 2883-4. Wall fragment of a closed vessel; decorated with three bands, white slip on exterior; lxb 3.2x3.2; s. wall 0.6. Clay: depurated, fired hard. Colour: pink 5YR 7/6.

5) 2883-23. Wall fragment of a closed vessel; decorated with two broad bands; lxb 3.0x3.4; s. wall 0.4. Clay: depurated, fired hard. Colour: reddish yellow 7.5YR 7/6.

6) 2883-12+13. Wall fragment of an open vessel; decorated with two broad bands and covered on both sides with an ivory coloured slip; lxb 1.4x1.6; s. of wall 0.4 and 2.2x2.2; s. of wall 0.4. Clay: depurated, fired hard. Colour: pink 7.5YR 7/4.

7) 2883-21. Wall fragments of a vessel; decorated with three wavy

lines and covered on the exterior with an ivory coloured slip; lxb 3.6x3.2; s. of wall 0.6. Clay: depurated, fired hard. Colour: red 2.5YR 5/8. Matt-painted, 7th C. BC?

8) 2883-29. Wall fragment of a vessel; decorated with two lines one broad one smaller; lxb 4.8x1.6; s. of wall 0.7. Clay: depurated, fired hard. Colour: reddish yellow 5YR 7/6.

9) 2883-26. Wall fragment of a vessel; decorated with a line; lxb 2.4x2.6; s. of wall 0.4. Clay: depurated, fired hard. Colour: reddish yellow 5YR 7/6.

10) 2883-7. Solid ring handle of a vessel; decorated with small stripes; l. 4.2; s. 1.8. Clay: depurated, fired hard. Colour: reddish yellow 5YR 7/6-6/6. Middle Geometric.

11) 2883-nn2. Attachment of handle from a closed vessel; lxb 4.6x3.2; s. of wall 0.8. Clay: depurated, fired hard. Colour: reddish yellow 5YR 6/8.

12) 2883-5. Solid ring handle of a vessel; s. 1.6-1.8. Clay: depurated, fired hard. Colour: reddish yellow 5YR 7/6-6/6.

13) 2883-nn1. Base fragment of a large bowl (scodella); d. 6; s. of base 0.6. Clay: depurated, fired hard. Colour: reddish yellow 5YR 7/6-6/6.

14) 2883-9. Attachment of handle from a jar; lxb 8.4x6.2; s. of wall 0.8. Clay: depurated, fired hard. Colour: reddish yellow 5YR 6/8.

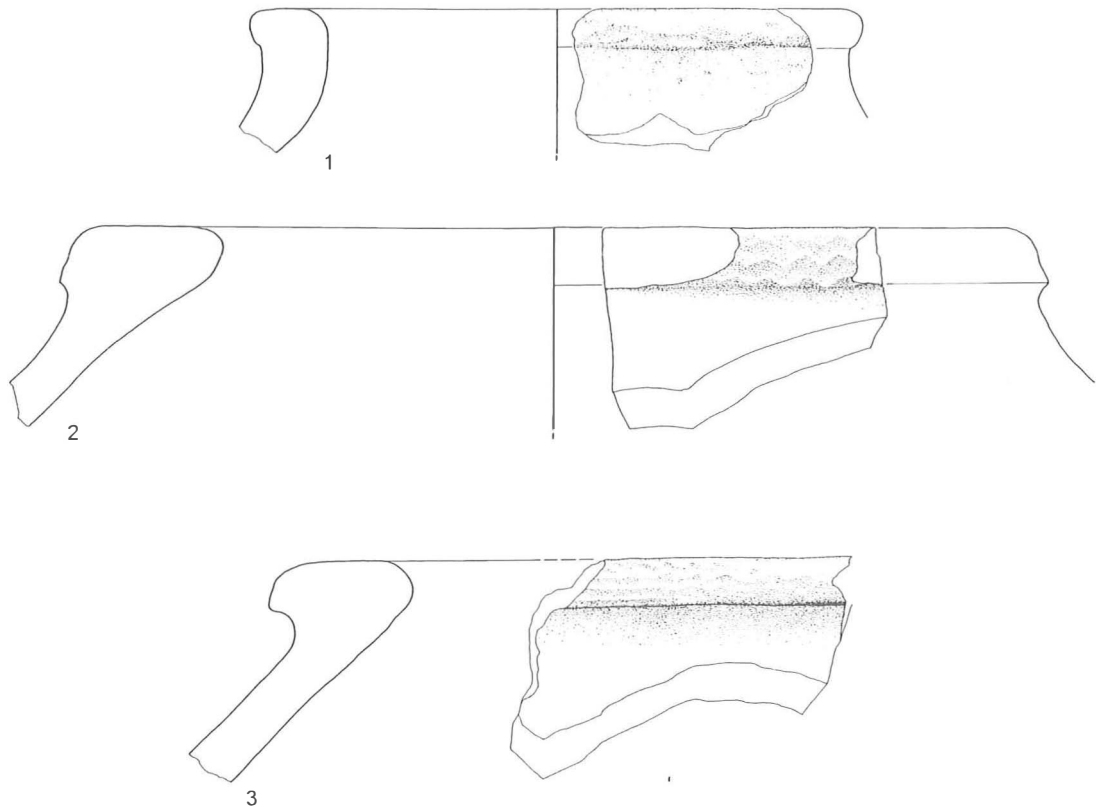


Fig. 30. Coarse wares and depurated wares (scale 1:4).

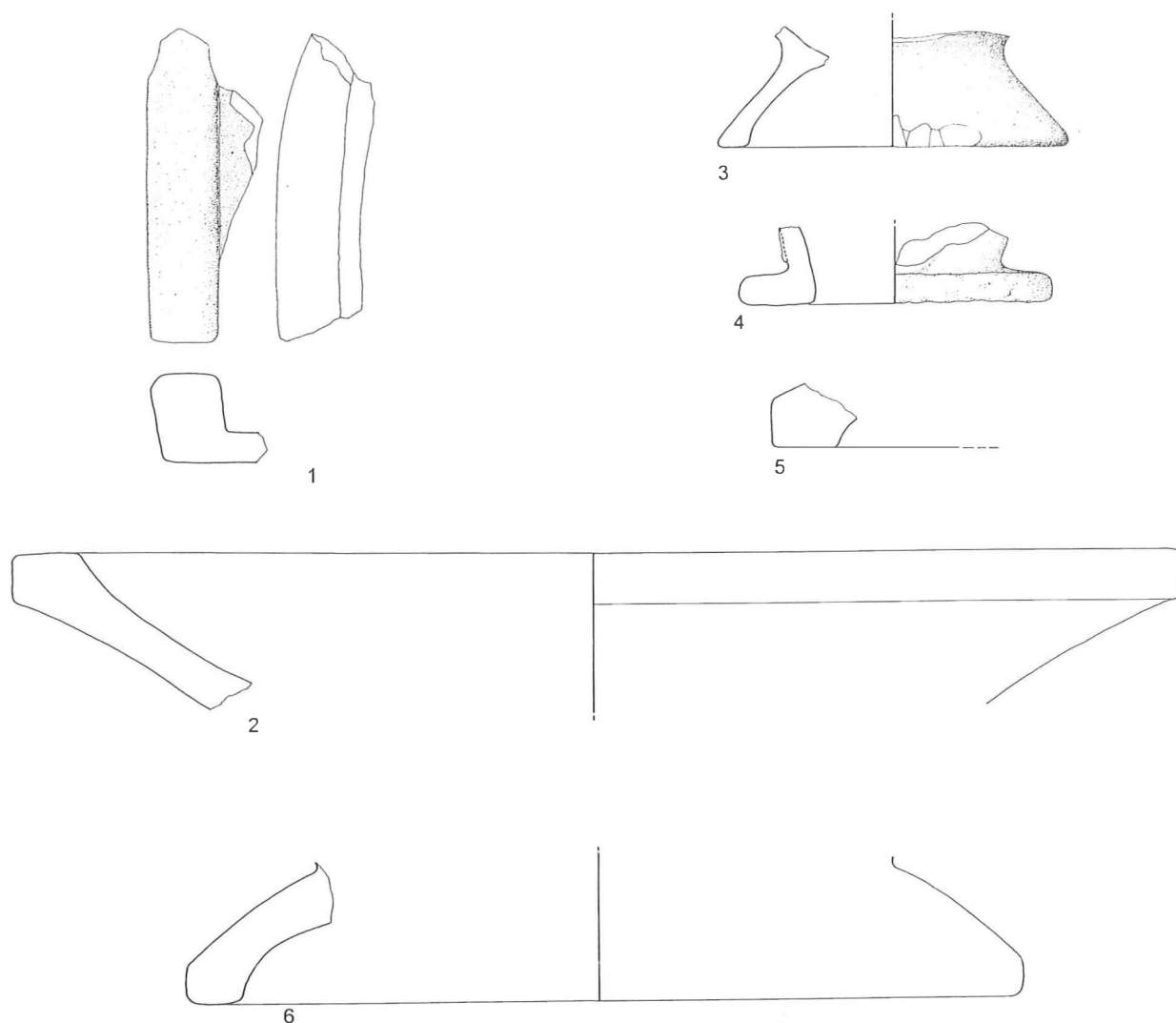


Fig. 31. Coarse wares and depurated wares (scale 1:2).

3. Coarse wares and depurated wares (up to c. 450 BC)

a. *Pithoi of uncertain date, but occurring either previous of or contemporary with the colonial coarse wares* (fig. 30: 1-3)

1) I4-3.40. Rim fragment of a pithos with thickened upright rim and flattened lip; d. 32.4; lxb 12x7.2; s. of wall 3.2. Clay: dark red firing clay with many gross limestone particles, c. 40%, moderately sorted. Colour: yellowish red 5YR 5/6.

2) I4-3.6. Rim fragment of a pithos with an inturning, thickened rim and flattened lip which on the exterior is decorated with a pattern of wavy lines; d. 50; lxb 14.8x10.4; s. of wall 2.4. Clay: orange firing clay with many gross limestone particles and some quartz/ feldspar, very poorly sorted 5-10%, some pores. Colour: reddish yellow 5YR 6/8.

3) I4-3.27. Rim fragment of a pithos with an inturning, thickened rim and flattened lip which on the exterior is decorated with a pattern of wavy lines; d. uncertain; lxb 16x10.4; s. of wall 2.4. Clay: orange firing clay with many gross limestone particles and some quartz/

feldspar, very poorly sorted 5-10%, some pores. Colour: reddish yellow 5YR 6/8 (cf. Appendix 1, fabric 1).

b. *Colonial coarse wares* (figs 31: 1-6 and 32: 7-14)

1) I4-3.25. Architectural fragment (unidentified) with thick rim, square in section and flat reverse; l. 17.2; s. of rim 4. Clay: orange firing coarse fabric (small chalk fragments and quartz/ feldspar), poorly sorted. Colour: reddish yellow 5YR 7/8 (cf. Appendix 1, fabric 2).

2) I4-3.7. Rim fragment of a large basin (*louterion*) with thickened rim with two flat facets; d. 65.1; s. of wall 2. Clay: orange firing coarse ware with small calcareous inclusions 2000 nm and larger ones, 10-15% (cf. Appendix 1, fabric 2). Colour: reddish yellow 5YR 7/6.

3) 2881-1. Fragment of a high base ring; d. 19.2. Pale firing clay with some quartz/ feldspar a few micaceous particles and many pores. Reddish yellow 5YR 7/6 with yellow slip.

4) I4-3.6. Base of stand; d. 19.2. Clay: pale firing fairly depurated clay with large grey and red inclusions (shale) 5%, very poorly to

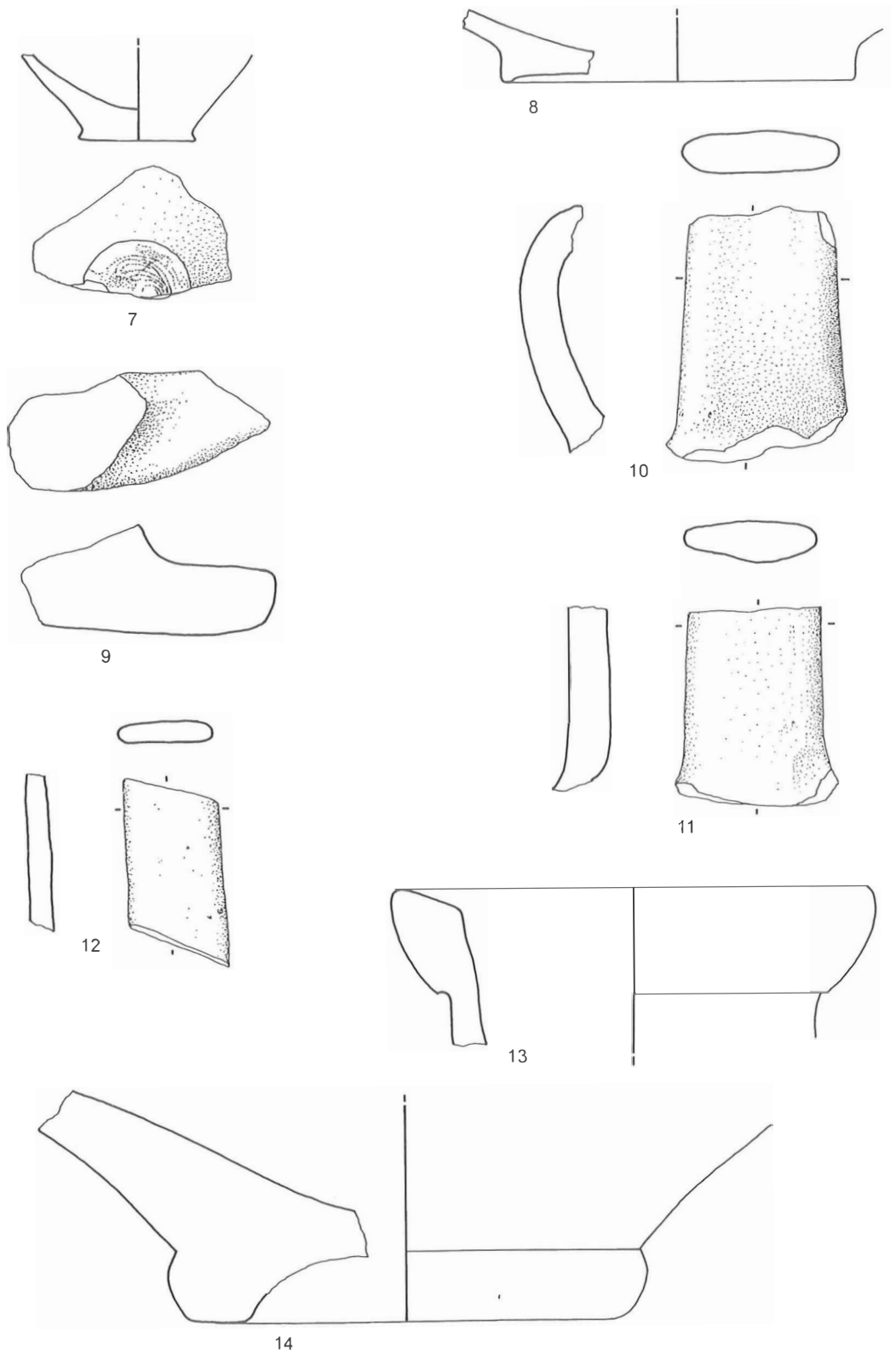


Fig. 32. Coarse wares and depurated wares (scale 1:2).

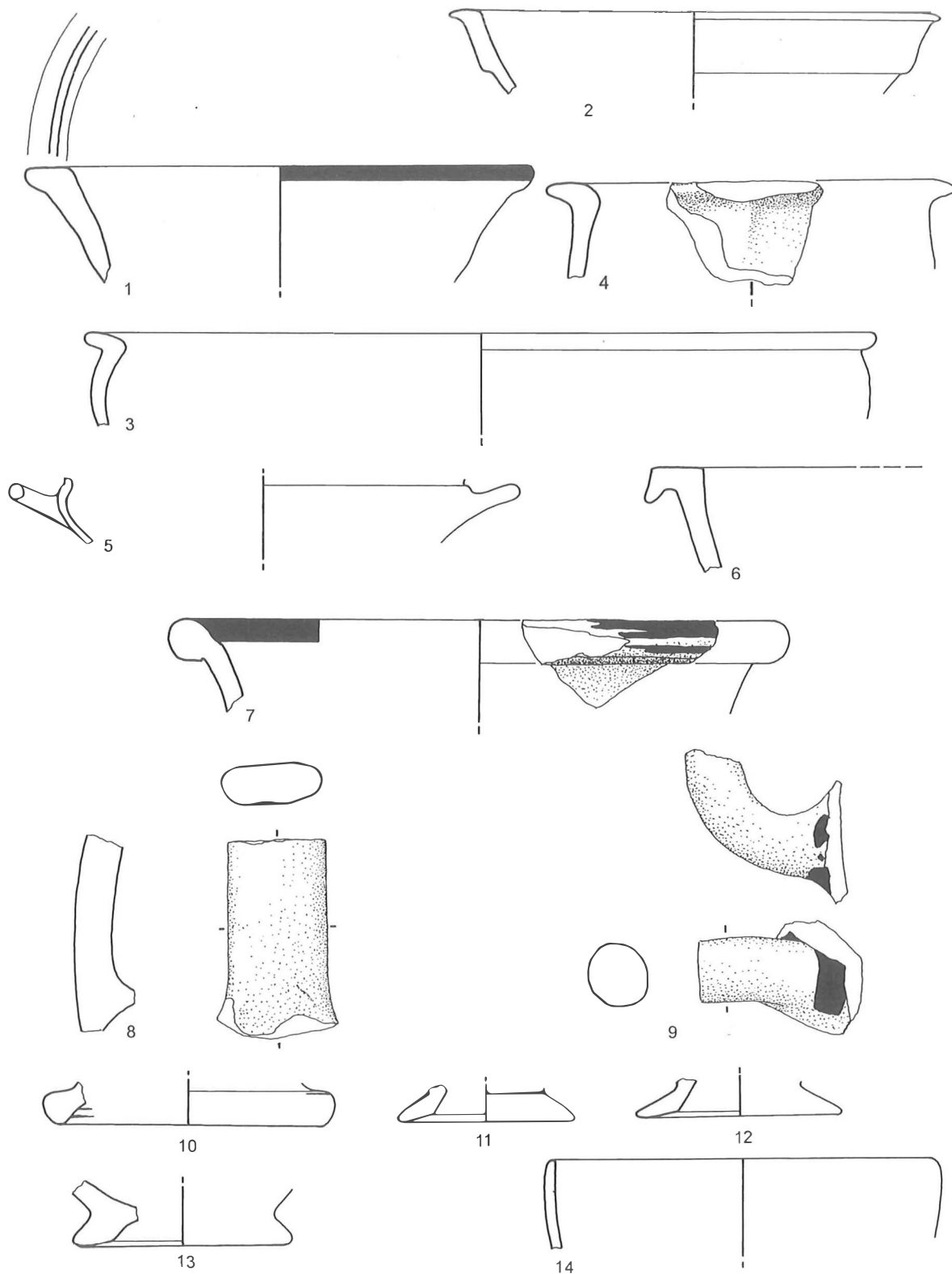


Fig. 33. Black glaze wares (scale 1:2).

moderately sorted, fairly soft. Colour: pink 5YR 7/4 (cf. Appendix 1, fabric 15).

5) I4-3.10. Rim fragment of a large basin (*louterion*) with thickened convex rim; d. uncertain. Clay: pale firing coarse ware with small calcareous inclusions 10-20% ps-ms. Colour: reddish yellow 5YR 7/8 reddish yellow 5YR 7/6.

6) I4-3.30. Fragment of a basin (*louterion*), interpreted as the base (but may be the bowl); d. 46. Clay: orange firing fairly depurated clay with large grey and red inclusions (shale) 20-30%, poorly to moderately sorted, fairly soft (cf. Appendix 1, fabric 15). Colour: pink 5YR 7/4.

7) 2882-14. Fragment of a solid profiled ring base of a vessel; d. 3.6; s. of wall 0.4. Clay: soft fired depurated paste with small inclusions and mica. Colour: yellow 10YR 8/6 (cf. Appendix 1, fabric 9).

8) 2882-6. Fragment of a low, profiled ring base of a vessel with a wide tapering lower body; d. 11; s. of base 0.8. Clay: pale firing hard depurated paste, quartz/feldspar and mica, a few pores (cf. Appendix 1, fabric 37). Colour: white 2.5YR 8/2, pink 5YR 7/4.

9) I4-3.35. Lug handle; l. 4.8; s. 2.8-0.6. Clay: orange firing, depurated, much quartz/feldspar and calcareous fragments. Colour: reddish yellow 5YR 7/8. (cf. Appendix 1, fabric 16).

10) 2882-12. Fragment of a thick band-handle of a large amphora; l. 7.8; s. 4.8x1.2. Clay: depurated, some quartz/feldspar many pores. Colour: very pale brown 10YR 8/3 (cf. Appendix 1, fabric 5B).

11) 2882-11. Fragment of a thick band-handle of a large amphora; l. 6.0; s. 4x1.2. Clay: depurated, some quartz/feldspar many pores. Colour: very pale brown 10YR 8/3 (cf. Appendix 1, fabric 5B).

12) I4-3.16. Fragment of a band handle of a large amphora; l. 4.8; s. 2.8-0.6. Clay: depurated and gritty paste, low percentage of quartz/feldspar. Colour: reddish yellow 5YR 6/6 (cf. Appendix 1, fabric 18B).

13) 2882-3. Fragment of an amphora; d. 15.0; s. of wall 1.0. Clay: depurated, some quartz/feldspar, poorly sorted (cf. Appendix 1, fabric 5). Colour: white 2.5Y 8/2.

14) I4-3.15. Base fragment of a low, profiled ring-base, exterior

strongly convex; d. 15; s. of base 3.2. Clay: soft, depurated paste with grey and red large particles of shale? Colour: 5YR 7/6 (cf. Appendix 1, fabric 15).

4. Black glaze wares and banded wares (figs 33: 1-14 and 34: 15-17)

1) I4-3.31. Rim fragment of a closed vessel, with thickened rim and flattened lip; d. 16.6; s. of wall 0.6-1.0. Clay: depurated, powdery, quartz/feldspar and mica, pores. Colour: reddish yellow 5YR 7/6.

2) I4-3.4. Rim fragment of a bowl with a thickened upper rim-part and flattened lip, with externally and internally traces of black glaze; d. 16; s. of wall 0.4; s. of rim 0.7. Clay: depurated, powdery, with quartz and feldspar, chalk and mica, pores. Colour: pink 5YR 8/4.

3) 2882-15. Rim fragment of a bowl with a thickened upper rim-part and flattened lip; d. 26; s. of wall 0.4. Clay: depurated, powdery, with quartz and feldspar, chalk and mica, pores (cf. Appendix 1, fabric 9). Colour: reddish-yellow 5YR 7/6.

4) I4-3.24. Rim fragment of a bowl with a thickened upper rim-part and flattened lip; d. 13; lxb 4.6x3.2; s. of wall 0.5. Clay: depurated, powdery, with quartz and feldspar, chalk and mica, pores. Colour: pink 5YR 8/4 (cf. Appendix 1, fabric 9).

5) I4-3.34. Wall and handle fragment of a bowl, type Ionian cup, with black glaze; d. 25; s. of wall 0.25 cm. Clay: depurated, powdery, with quartz and feldspar, chalk and mica, pores (cf. Appendix 1, fabric 12). Colour: very pale brown 10YR 7/4.

6) I4-3.22. Rim fragment of krater with large, profiled, overhanging rim; d. uncertain; s. of wall 0.6. Clay: depurated with some grog, limestone particles and some mica, black glaze on exterior only. Colour: 7.5YR 8/6.

7) 2882-9. Rim fragment of a closed vessel with thickened and rounded rim, black glaze on the exterior; d. 21; lxb 6.2x2.8; s. of wall 0.6. Clay: depurated, powdery, quartz/feldspar and mica. Colour: reddish yellow 5YR 7/6.

8) 2883-2. Fragment of a thick band handle of a large closed

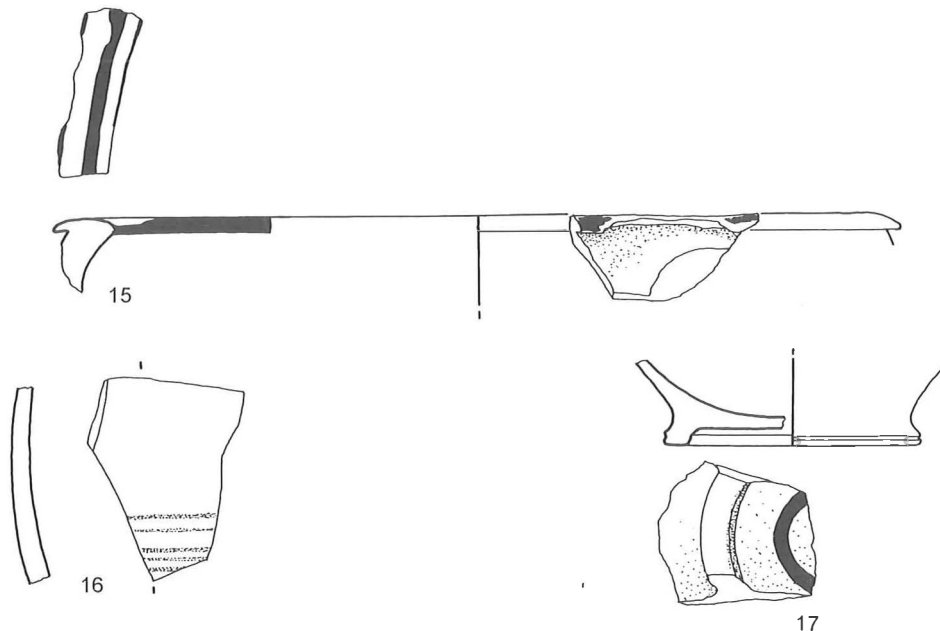


Fig. 34. Local hard banded ware (scale 1:2).

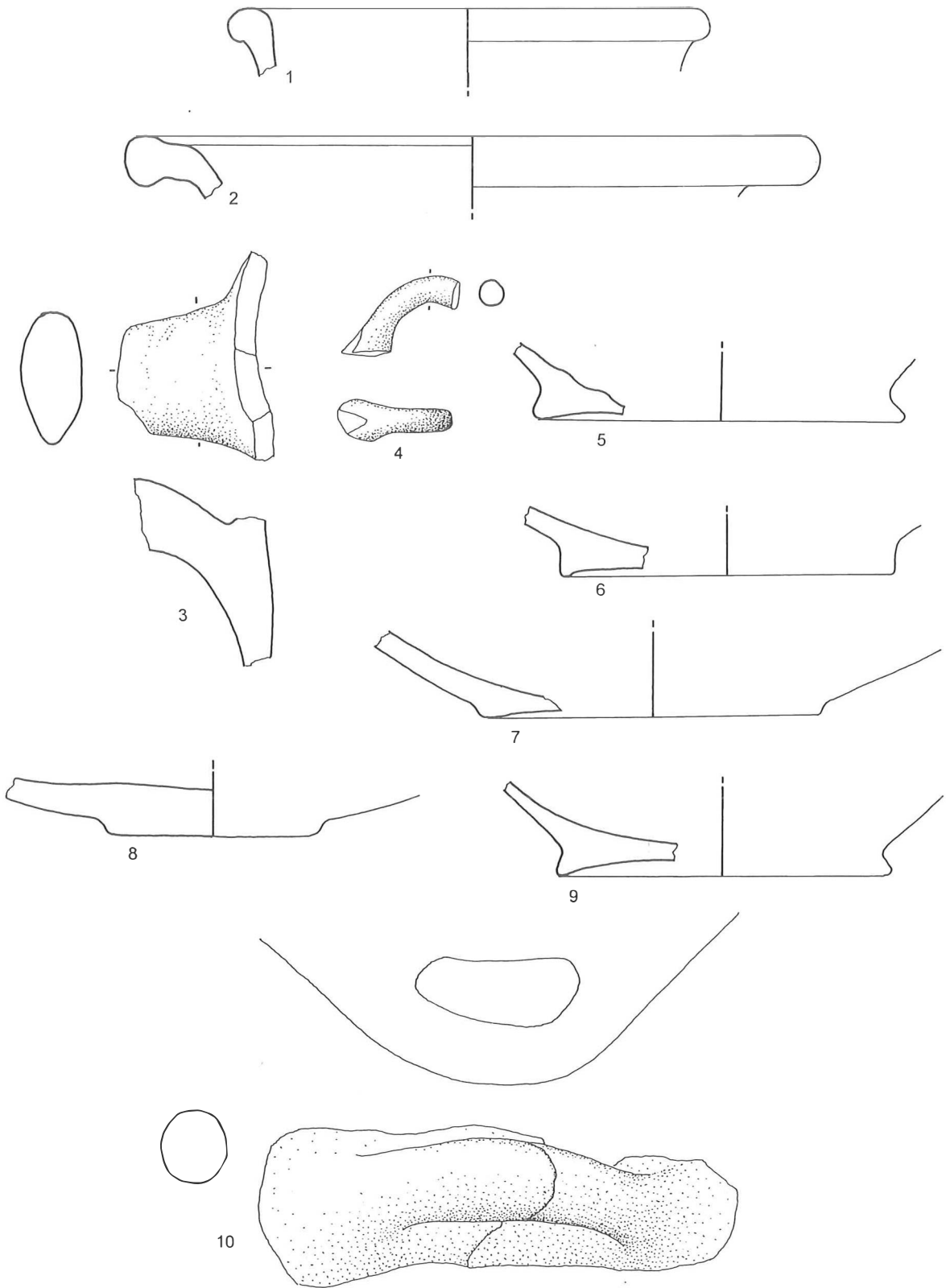


Fig. 35. Local hard ware (scale 1:2).

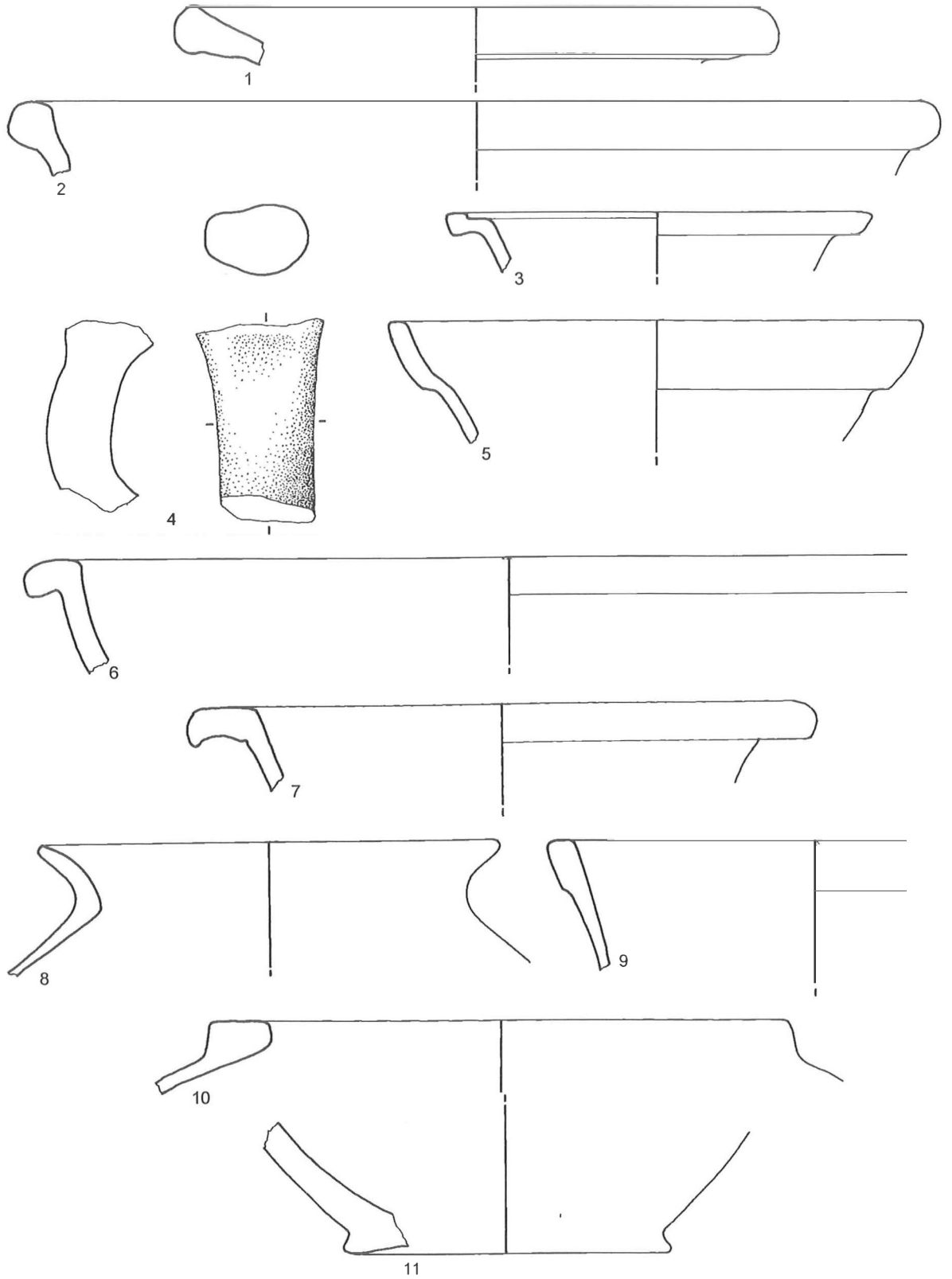


Fig. 36. Local soft ware (scale 1:2).

vessel; exterior decorated with black glaze; l. 6.4; s. 3.2-1.2. Clay: depurated, quartz/feldspar and mica. Colour: light red 2.5YR 6/6 (cf. Appendix 1, fabric 14).

9) I4-3.2. Fragment of a thick ring handle of a large vessel, black glaze on the centre of the handle and near the attachment; l. 5.4; s. 1.8. Clay: depurated, quartz/feldspar, some pores: medium hard. Colour: pink 5YR 7/4.

10) I4-3.21. Fragment of a profiled ring-base of a vessel, black glaze on the exterior. Meas.: 1.2 cm. Clay: depurated, powdery, quartz/feldspar and mica, pores: medium? Colour: reddish yellow 5YR 7/6.

11) 2882-4. Raised, profiled, hollow base-ring of a drinking cup, type Ionian cup, on exterior black glaze; d. 5.8; s. base-ring 0.4. Clay: depurated, mica and quartz/feldspar, some pores. Colour: 7.5YR 8/4 pink.

12) 2882-13. Raised, profiled, hollow base-ring of a drinking cup, type Ionian cup, on exterior black glaze; d. 6.6; s. of base-ring 0.5. Clay: depurated, mica and quartz/feldspar, some pores. Colour: 7.5YR 7/8 reddish-yellow.

13) 2882-16. Raised, profiled, hollow base ring of a drinking cup, type Ionian cup, on exterior black glaze; d. 7.2; s. base-ring 1.0. Clay: depurated, mica and quartz/feldspar, some pores. Colour: 7.5YR 8/4 pink.

14) 2882-17. Rim fragment of a kotyle with a slightly inturning rim, with externally and internally traces of black glaze; d. 12.8; s. of wall 0.4. Clay: depurated, powdery, with quartz and feldspar, fairly hard. Colour: pink 7.5YR 8/4.

15) 2882-22. Rim fragment of a large bowl with inturning, thickened upper rim and convex lip; decorated with thin black glaze bands on rim and lip; d. 25; lxb 0.5x2.2; s. of wall 0.8. Clay: depurated, with quartz/feldspar, and some mica. Colour: pink 7.5YR 8/4 (cf. Appendix 1, fabric 12, local hard).

16) 2882-18. Wall fragment of a bowl (presumably); exterior decorated with orange-red bands; lxb 5.2x3.6; s. of wall 0.6. Clay: hard fired depurated paste with small inclusions and pores (cf. Appendix 1, fabric 21, local hard). Colour: reddish yellow 5YR 7/6.

17) 2882-5. Fragment of a low profiled ring-base of a bowl; decorated on the exterior with concentric black lines; d. 6.8; s. of wall 0.3; s. of ring 0.7. Clay: hard fired depurated paste with small inclusions and pores. Colour: reddish yellow 5YR 7/8 (cf. Appendix 1, fabric 21).

5. Local hard ware (fig. 35: 1-10)

1) I4-3.14. Rim fragment of an amphora/jar with out-turning rim and very convex, thickened lip; d. 15.8; s. of wall 0.6. Clay: depurated, with little quartz/feldspar. Colour: pink 7.5YR 7/8 reddish yellow (cf. Appendix 1, fabric 21).

2) 2882-8. Rim fragment of a vessel with thickened and sharply outcurving rim with very convex lip; d. 22.6; s. of wall 0.8 cm. Clay: depurated, powdery, quartz/feldspar and mica, pores dominant. Colour: reddish yellow 5YR 7/6, slip yellow (cf. Appendix 1, fabric 5A/B).

3) I4-3.33. Fragment of a thick band handle of a large amphora; l. 2.3; s. 2.0-4.2. Clay: pale firing, depurated, 10% quartz/feldspar, some round and flat pores, poorly to moderately sorted (cf. Appendix 1, fabric 21). Colour: very pale brown 10YR 7/4.

4) I4-3.23. Ring-handle of a drinking cup; l. 1.8; s. 0.8. Clay: depurated with small quartz/feldspar particles, a number of small pores. Colour: yellowish red 5YR 5/6 (cf. Appendix 1, fabric 21).

5) 2882-77. Raised base fragment of a large closed vessel; d. 12.2; s. of 0.4. Clay: hard fired depurated paste with small inclusions and pores. Colour: reddish yellow 5YR 6/6 (cf. Appendix 1, fabric 21).

6) 2882-6. Fragment of a low solid base of a plate or tray; decorated with incised lines in the interior; d. 11; s. of wall 0.6. Clay: hard fired, depurated paste, some quartz/feldspar and pores. Colour: light red 2.5YR 6/8 (cf. Appendix 1, fabric 21).

7) 2883-8. Raised solid base fragment of a large vessel; d. 11; s. of wall 0.6. Clay: hard fired depurated paste with small inclusions and pores. Colour: reddish yellow 5YR 7/6, white slip (cf. Appendix 1, fabric 21).

8) 2883-4a. Raised base fragment of a plate or bowl; d. 7; s. of wall

0.8. Clay: hard fired depurated paste with small inclusion and pores. Colour: reddish yellow 5YR 6/6 (cf. Appendix 1, fabric 21).

9) 2882-7. Fragment of a raised and profiled, solid base; d. 11; s. of wall 0.6. Clay: depurated, powdery, quartz/feldspar and mica. Colour: reddish yellow 5YR 7/8.

10) I4-3.1+3. Wall fragment of a jar with horizontal ring-handle; lxb 15.8x4.8. Clay: depurated, fired hard. Colour: reddish yellow 5YR 6/8.

6. Local soft ware (fig. 36: 1-11)

1) 2882-10. Rim fragment of a plate with thickened rim and very convex lip; d. 19; s. of wall 0.9. Clay: depurated, powdery, quartz/feldspar and mica. Colour: very pale brown 10YR 8/4 (cf. Appendix 1, fabric 9).

2) I4-3.32. Rim fragment of a closed vessel with thickened and rounded rim; d. 31; s. of wall 0.7. Clay: depurated, powdery, quartz/feldspar and mica, pores: local soft. Colour: reddish yellow 5YR 7/6 (cf. Appendix 1, fabric 9).

3) I4-3.10. Rim fragment of a closed vessel with sharply outcurving rim and squared lip; d. 14; s. of wall 0.4. Clay: depurated, powdery, quartz/feldspar and mica. Colour: reddish yellow 7.5YR 8/6 (cf. Appendix 1, fabric 9).

4) I4-3.20. Fragment of a ring handle, of a large vessel. l. 3.2; s. 2.2-3.4. Clay: depurated, some quartz/feldspar many pores. Colour: reddish yellow 7.5YR 7/6 (cf. Appendix 1, fabric 9).

5) I4-3.26. Rim fragment of a closed vessel, with thickened rim and flattened lip; d. 17; s. of wall 0.4-0.6. Clay: depurated, powdery, some quartz/feldspar and some mica, small round pores. Colour: pink 5YR 7/4, core 17.5 YR-N6 grey (cf. Appendix 1, fabric 9).

6) I4-3.18. Rim fragment of a bowl with a thickened upper rim and overhanging, flattened lip; d. 32; s. of wall 0.6. Clay: gritty with much quartz, feldspar, limestone particles >2000 µm, some grog and small mica. Colour: reddish-yellow 7.5YR 6/8.

7) I4-3.29. Rim fragment of large vessel with out-turning rim and overhanging lip; d. 21; s. of wall 0.6. Clay: depurated, powdery, some quartz/feldspar, mica and limestone particles, pores. Colour: pink 5YR 7/4 (cf. Appendix 1, fabric 9).

8) I4-3.38. Rim fragment of a globular jar with out-curving rim and tapering lip; d. 15; s. of wall 0.2-0.8. Clay: depurated, powdery, some quartz/feldspar and some mica particles, pores. Colour: reddish yellow 5YR 7/6 (cf. Appendix 1, fabric 9).

9) 2882-1. Rim fragment of an amphora with thickened rim and flattened lip; d. 9; s. of wall 0.4-0.6; s. of rim 0.9. Clay: depurated, powdery, some quartz/feldspar and some mica and grog particles, pores. Colour: reddish yellow 5YR 7/6 (cf. Appendix 1, fabric 9).

10) 2882-19. Rim fragment of a closed globular vessel with inturning rim and horizontally flattened lip; d. 19; s. of wall 0.4. Clay: depurated, some quartz/feldspar and some mica particles. Colour: reddish yellow 7.5YR 8/6 (cf. Appendix 1, fabric 9).

11) 2883-6. Fragment of a low, profiled ring-base of a vessel with ovoidal lower body; d. 11; s. of wall 1. Clay: depurated, powdery, quartz/feldspar and mica, pores. Colour: reddish yellow 7.5YR 8/6 (cf. Appendix 1, fabric 9).

APPENDIX 3: The evidence for smithing activities on plateau I.

In a number of the small pits of trench I, 87 fragments of iron slags and cinders were found (fig. 13). These materials must be considered to represent wasters of iron smithing activities. A description of the fragments is given in table 1. Many of the fragments are identifiable as normal iron slag, rest products of smithing activities. Other rest products are the many small cinders which were found together with the slags in the same area. Interesting are the larger pieces of slag among the finds, especially those with a plano-convex shape. The latter often show a straight side and cutting marks that may be caused during smithing. The form of these planoconvex slags, either deliberately cut into pieces or broken incidentally, indicates that these

fragments may have formed the fill of a pit in the ground. Physical examination and X-ray photographs of these fragments have shown that the fragments contain relatively much iron.

The presence of many such slag fragments in the south part of trench I indicates that smithing took place nearby. The layer in which the pieces of slag were found contained badly conserved pottery fragments datable to the 6th century BC. The large wall uncovered near the area of the iron slag perhaps may be connected with the smithing activities (fig. 13). In order to control the possibility of a locally present smithy, the excavated pits were further cleaned and from two areas, which by naked eye seemed to contain tiny fragments

of iron, batches of soil were removed, sieved and checked with magnets. From soil-batch No. 1 remained 2.4 grams of metal grainy material; from soil-batch No. 2 remained 8.1 grams, but this batch also contained small pellets and fragments of iron. The particles of iron detected amount to a substantial number. Certainly the material obtained from the batches cannot be described as so-called 'fayalitic' iron hammerscale. The presence of hammerscale in the neighbourhood of the large wall in trench I, together with the many fragments of iron slag and cinders is a clear indication that somewhere near this spot smithing occurred.

Object No.	Colour	Weight	Texture	Porosity	Specific gravity	Identity	Inclusion
846/01	Black with rusty patches	44.5	Uneven to smooth	Medium		Smithing slag	With sand and partly vetrified
1336/02	Rusty brown	86.3	Very uneven on one side, rest flat, planoconvex	Medium	3.08	Iron slag	With charcoal, partly vetrified
1336/03	Black int./brown ext.	41.1	Uneven, round	Very, with air bubbles	0.411	Slag	Charcoal, partly vetrified
1336/04	Black int./brown ext.	5.9	Uneven	Very, with air bubbles	0.66	Smithing slag	Partly vetrified
1336/05	Black int./brown ext.	1.7	Uneven	Very, with air bubbles	Too small	Slag	Vetrified, fayalithic properties
1336/06	Black int./brown ext.	0.9	Uneven	Very		Smithing slag	Sand
1325/07	Black int./brown ext.	5.2	Uneven	Very	Too small	Smithing slag	With chalk, vetrified
1325/08	Dark grey	0.6	Pellet, air bubbles	Very	Too small	Cinder	Vetrified
1325/09	Reddish/brown	2.3	Uneven	Very	Too small	Slag	Partly vetrified
1325/10	?	1.5	Uneven	Very	Too small	Part of 08	Partly vetrified
848/011	Black int./brown ext.	5.4	Uneven, air bubbles	Very	0.56	Smithing slag	Partly vetrified
848/012	Black int./brown ext.	8.6	Uneven, air bubbles	Very	0.56	Part of 011	Partly vetrified
848/013	Black int./brown ext.	3.6	Uneven	Medium	Too small	Glass droplet with particles of iron	Vetrified
547/014	Black int./brown ext.	6.5	Uneven	Very	Too small	Drop with pieces of iron	Vetrified with charcoal
457/015	Black int./brown ext.	2.6	Uneven	Very	Too small	Drop with pieces of iron	Vetrified with charcoal
457/016	Black int./brown ext.	4.5	Uneven	Very	Too small	Drop with pieces of iron	Vetrified with charcoal
457/017	Black int./brown ext.	4.4	Uneven	Very	Too small	Drop with pieces of iron	Vetrified with charcoal
457/018	Black int./brown ext.	1.1	Uneven	Very	Too small	Drop with pieces of iron	Vetrified with charcoal
547/019	Black int./brown ext.	0.9	Uneven	Very	Too small	Drop with pieces of iron	Vetrified with charcoal
687/020	Black int./brown ext.	23.8	Very uneven	Very	0.29	Smithing slag, good one	Vetrified with sulphur
687/021	Black int./brown ext.	22.2	Very uneven	Very	0.27	Smithing slag, good one	Vetrified
800/022	Black int./brown ext.	27.1	Uneven to smooth	Medium	0.22	Smithing slag	Partly vetrified
1330/023	Black int./brown ext.	31.1	Regular to smooth	Medium	0.26	Smithing slag, pieces of iron in glass droplet	Vetrified with sulphur
1330/024	Black int./brown ext.	5.3	Regular	Hardly		Smithing slag	Vetrified/glass
1334/025	Black/brown	271.1	Planoconvex	Hardly	5.89	Smithing slag	Partly vetrified
1334/026	Black/brown	253.9	Flat	Hardly	5.29	Smithing slag	Partly vetrified
1334/027	Red/brown	14.3	Uneven	Medium	2.86	Smithing slag	Partly
1334/028	Red/brown	7.5	Round	none	Too small	Loam	
1334/029	Blue/black	4.3	Uneven	Very	Too small	Cinder	Vetrified
1334/030	Brown/yellow	3.0	Smooth	Very		Cinder	Partly
1334/031		8.9	Smooth	Very		Slag	Vetrified
1344/032	Black int./brown ext.	86.8	Planoconvex and smooth	Medium	2.99	Smithing slag	Partly
890/033	Black int./brown ext.	41.5	Uneven	Very	2.66	Smithing slag	Vetrified
890/034	Black int./brown ext.	14.3	Uneven	Very	2.66	Part of 033	Vetrified
898/035	Black int./brown ext.	50.7	Smooth	Medium	3.17	Slag	Vetrified
898/036	Black int./brown ext.	39.1	Smooth	Medium	3.26	Slag	Vetrified
1361/037	Black int./brown ext.	760	Planoconvex	Medium to very	2.53	Slag	Vetrified, charcoal
1361/038	Dark grey	2.5	Uneven	Very		Cinder	Vetrified
1361/039	Grey brown	2.1	Loose	none		Loam?	None
1337/040	Black int./brown ext.	89.3	Uneven	Medium	2.71	Smithing slag	Partly vetrified
1337/041	Black int./brown ext.	100.8	Planoconvex and smooth	Hardly	3.6	Slag	Partly vetrified

1337/042	Orange	18.7	Round	none	2.38	Loam?	
1337/043	Orange	5.1	Round	none	2.38	Loam?	
1337/044	Brown	5.6	Uneven	Medium		Cinder	
1337/045	Brown and black	14.4	Smooth	Very	2.88	Cinder	With sulphur
1337/046	Bluish/black	6.9	Very uneven	Very	2.3	Cinder	Sulphur
1337/047	Bluish/black	3.3	Uneven	Very	Too small	Glass droplet with particles of iron	Partly vetrified
1337/048	Bluish/black	2.8	Uneven	Very	Too small	Cinder	White material in air bubbles
1323/049	Black int./brown ext.	16.4	Uneven	Very	3.28	Smithing slag	Vetrified
1323/050	Black int./brown ext.	7.6	Rounded	Medium	5.07	Smithing slag	With charcoal
839/051	Brown with green glass	31.6	Very uneven	Very	1.76	Smithing slag	Vetrified
840/052	Black int./brown ext.	232.8	Fairly smooth, planoconvex	Medium	4.16	Smithing slag	With charcoal
556/053	Black/brown	55.8	Uneven, planoconvex	Medium	2.94	Smithing slag	Partly vetrified
1327/054	Black/brown	176.4	Uneven, planoconvex	Medium	3.83	Smithing slag	Chalk? partly vetrified
1327/055	Black and brown	4.0	Uneven	Very	Too small	Glass drop with pieces of	Chalk, vetrified
834/056	Black int./brown ext.	80.6	Fairly uneven, planoconvex	Medium	3.224	Straight side, smithing slag	Chalk? partly vetrified
834/057	Grey	3.3	Uneven and rounded	Medium		From hearth	Sand, vetrified
834/058	Black and brown	49.7	Uneven and rounded	Medium	3.106	Smithing slag	Partly vetrified
692/059	Black and glazed in all colours	148.3	Compact smooth	Medium	2.966	Smithing slag	Vetrified with flux on both sides
692/060	Reddish brown	8.7	Uneven	Medium	Too small	Smithing slag	
677/061	Black int./brown ext.	378.4	Uneven, planoconvex	Very	2.98	Smithing slag	Charcoal, loam
618/062	Black int./brown ext.	148.7	Compact, uneven, planoconvex	Medium	3.16	Smithing slag	
878/063	Black int./brown ext.	144.4	Solid, planoconvex	Medium	2.95	Smithing slag	Charcoal, chalk
830/064	Black int./brown ext.	57.9	Thin smooth, planoconvex	Very	2.76	Smithing slag	Sand and chalk, partly vetrified
893/065	Black int./brown ext.	16.1	Uneven	Very	3.22	Smithing slag	Vetrified
893/066	Black int./brown ext.	27.6	Uneven	Very	2.76	Smithing slag, iron particles in glass droplet	Vetrified
893/067	Black int./brown ext.	135.5	Very uneven	Very	2.56	Smithing slag, or too large for that?	Vetrified
1343/068	Black int./brown ext.	116.8	Solid, uneven, planoconvex	Medium	4.87	Smithing slag	Partly vetrified
1310/069	Black int./brown ext.	17.9	Uneven	Very	2.98	From heart	Vetrified
1310/070		1.6				Too small	
1310/071		4.1				Too small	
1310/072		1.4				Too small	
1310/073		2.1				Too small	
074	Black and brown	75.6	Solid uneven	Medium	3.29	Smithing slag, partly forged	Partly vetrified
816/075	Blackish	29.9	Solid, uneven, planoconvex	Medium	3.06	Smithing slag	Partly vetrified
816/076	Blackish	12.9	Solid, uneven, planoconvex	Medium	3.06	Piece of 075	Partly vetrified
1318/077	Black int./brown ext.	33.1	Solid, uneven	Hardly	3.68	Smithing slag reheated, together with 078, 079	Partly vetrified
1318/078	Black int./brown ext.	11.6	Solid, uneven	Hardly	3.87	Together with 077, 079	Partly vetrified
1318/079	Black int./brown ext.	39.6	Solid, uneven	Hardly	3.87	Together with 077, 078	Partly vetrified
621/080	Black int./brown ext.	18.1	Solid, uneven	Hardly	3.62	Reheated wolf, magnetite?	Partly vetrified
1342/081	Black with brown patches	6.0	Uneven	Medium	3.0	Smithing slag, glass droplet with particles of iron	Vetrified
1342/082	Black with brown patches	4.1	Uneven	Very	Too small	Smithing slag, glass droplet with particles of iron	Vetrified
1342/083	Brown	4.7	Laminated	Hardly	3.13	?	Not vetrified
1342/084	Black with brown patches	1.3	Very uneven	Medium	Too small	Smithing slag, glass droplet with particles of iron	Vetrified
1342/085	Black and green	1.5	Shape of droplet	Very	Too small	Cinder	Vetrified
1342/086		1.9	Uneven	Very	Too small	Together with 082	Vetrified
602/087	Black	3.6	Solid, uneven	Hardly	Too small	Smithing slag	Partly vetrified