The Potenza Valley Survey: Preliminary Report on Field Campaign 2003

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Abstract

This contribution presents the fourth report about the on-going survey project of Ghent University in the Adriatic valley of the River Potenza (Marches, Italy). The project investigates the settlement history of the valley, essentially between 1000 BC and AD 1000. In 2003 substantial results in the middle and lower valley have been obtained with the help of remote sensing techniques, while the field surveys, geo-archaeological operations and study of surface finds have focussed on the protohistoric and Roman occupation of the coastal area. Quite spectacular were survey results on and around three Roman towns in the valley, contributing to the topographical knowledge of urbanisation in this part of Italy.

INTRODUCTION

This is the fourth preliminary report on field activities in the Potenza Valley Survey.[1] The aims and methods of this long term geo-archaeological project, as well as the preliminary results of the first three field campaigns, respectively in 2000, 2001 and 2002, have also been published in *BABesch*.[2] The original aim to measure long-term evolutions and changes in the landscape and occupation pattern of a Mediterranean valley between 1000 BC and AD 1000 is still valid. The project's survey-area remains constricted to the circa 80 km long valley of the river Potenza in Adriatic Central-Italy (Marche). Within this broad area three test-zones for more intense fieldwork are chosen, situated in the upper Potenza valley (near Camerino), in the middle valley (near Treia) and in the lower valley (near Porto Recanati).

In 2003 most activities of the PVS-team, especially during field campaigns in spring (April-June) and fall (September-October), were concentrated on the middle and lower valleys. In this report we will present a selection of the most relevant results of these campaigns.[3] We will first go into some preliminary results of work in the middle valley. Here, remarkable results have been obtained through our aerial photographic detections during the spring season, followed up by terrain control, systematic cartography and artefact study.[4] After this, we will focus on the lower valley, where most of our systematic fieldwork during the fall was concentrated. We will present the main conclusions on geo-archaeological work[5] and systematic fieldwalking surveys[6] in the coastal area, integrated with some important data retrieved from the study of the artefacts discovered during our systematic surface collections.[7]

CONTRIBUTION TO THE TOPOGRAPHY OF THE MIDDLE VALLEY ROMAN TOWNS: *TREA* AND *HELVIA RICINA*

In earlier occasions[8] we have underlined that active aerial oblique photography from a low flying aircraft is one of the main detection techniques being applied in the Potenza Valley Survey. In 2003 we further increased the number of flights and helped by the most favourable conditions of a very dry spring season this procured excellent crop marks during the months of April and May. Not only should we mention the general increase of the number of new archaeological sites and ancient field structures (such as fragments of roads, ditches and pits) all over the valley, but much new information could now be gathered by way of a follow up of some known sites. Very spectacular were the shots taken from the Roman urban sites *Trea* and *Helvia Ricina* in the middle valley (*fig. 1*). These sites, now largely taken in by agricultural land, already procured some results (especially *Trea*) during our earlier aerial detections. The remarkable contrasts between 'normal' crop growth and 'archaeologically infected' crop growth during a series of flights in early spring incite us, however, to a first detailed study of their urban topography.[9]

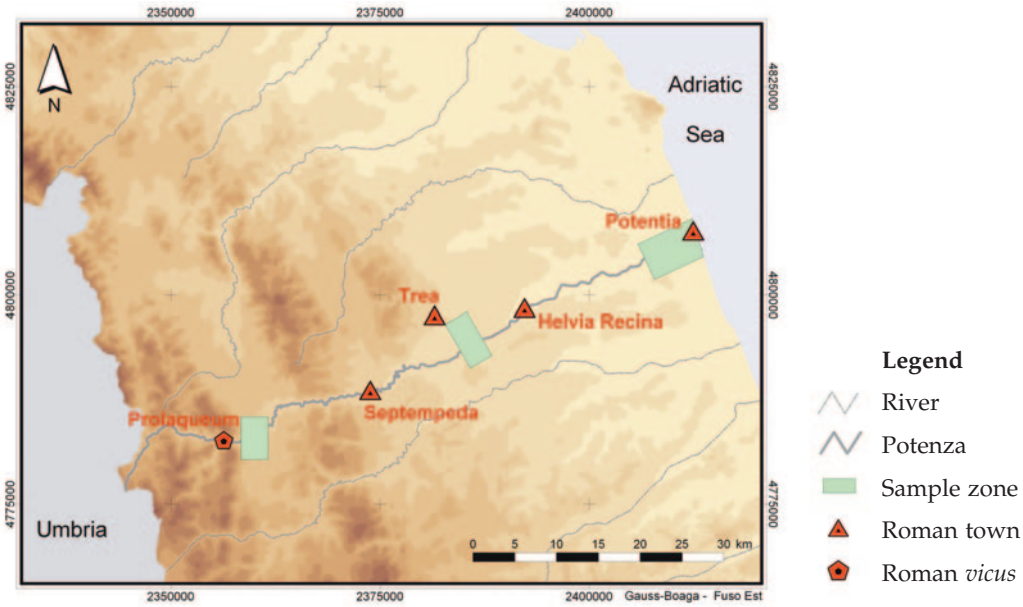


Fig. 1. Localization of the areas of systematic field survey by the PVS-team in the Potenza valley. Indicated are also the Roman towns in the valley.

Trea

The Roman town of *Trea* lies in the middle valley of the Potenza, some 30 km from the Adriatic shore. The hilly area, situated generally between 250 and 350 m above sea level, is characterized here by a narrowing of the valley formed by two axial hill-spurs, now respectively occupied by the medieval town centres of Treia and Pollenza. On a dominant plateau, about one km northwest of present day Treia, lays the site of the Roman *municipium Trea*, in an agrarian area around the convento of SS. Crocifisso. According to the *Itinerarium Antonini* the Roman city was located on the *Via Flaminia per Picenum Anconam*, a diverticulum from the main Rome-Rimini road, leading via *Septempeda*, *Trea* and *Auximum* towards Ancona.The only remaining visible ruins are a small section of the city walls connected to the Western gate. They are partly incorporated in a now abandoned farm house.

Since the 16th century many isolated finds and epigraphic monuments concerning *Trea* were discovered in this general area.[10] The first major excavations by Fortunato Benigni in the late 18th century determined the exact location of the town and revealed parts of its city wall, a *basilica* (not exactly located by him somewhere in the western part of town) and a sanctuary with possible thermal building under the cloister of SS. Crocifisso.[11] Since the 1970's the University of Macerata intensified research in this area, with surveys and topographic studies by Moscatelli based on vertical aerial photographs[12] and excavations by Fabrini in the convento compound, in the eastern part of the city, between 1985 and 1988.[13] These studies produced a first hypothesis about urban organisation, especially the location of the city wall, and evidence that the site of the later monastery and church was in the 2nd century organised as an Egyptian sanctuary.

As a result of this research the main traits of *Trea's* development are now gradually becoming clear, although the precise origin of the site remains unknown. Its location on an elevated plateau could indicate that it was already a pre-Roman centre, possibly later chosen by the Romans to establish one of their controlling *praefecturae*. It became a Roman *municipium* shortly after 49 BC[14] and it is conceivable that its concrete circuit wall, built in a quasi-*reticulatum* technique with blocks of whitish local limestone, was erected around that time.[15] According to the *Liber Coloniarum* the territory of *Trea* was centuriated during the second triumvirate, an intervention which left its trace in the nearby Potenza plain, southwest of the town centre.[16] Many funerary monuments, statuary and epigraphic evidence, now displayed in Treia's Museo Civico, indicate that the Roman town flourished particularly between the reigns of Augustus and Antoninus Pius.[17] Like with many towns in Italy later phases are less well documented. The last epigraphic evidence dates from the 4th century,[18]

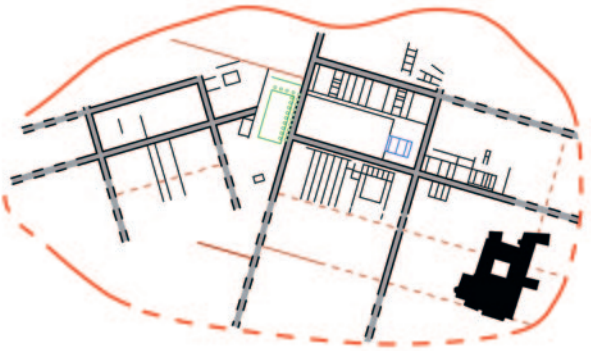


Fig. 2. First tentative reconstruction of the urban topography of Trea with positioning of the city wall (red), the urban grid (with two distinct phases), the forum (central) and the sanctuary of SS. Crocifisso (in black). This scheme, based entirely on the results of our oblique aerial photograpy, is not to be considered a fully restituted plan, as ground measurements are awaited.

but some archaeological finds (ARS pottery, African lamps and coins) from excavations and surveys prove later (5th and 6th century) habitation in *Trea*, with a coin of the Byzantine emperor Phocas (602-610) as the most recent piece.[19] The Lombard 7th century remains obscure, although an ornamental bronze object and a possible grave of that period suggest some continuity at the site. It is conceivable that during the Early Middle Ages the remaining habitation was restructured in connection with an old 'pieve', a simple early Christian sanctuary for the plebs, here to be located at the site of the SS. Crocefisso. Although this sanctuary is only found in documents from the mid-12th century onwards, many early medieval *spolia* used in the later church of SS. Crocefisso indicate the presence of a much older phase. During the main period of *incastellamento* in Italy the population probably moved towards the easily defendable hill-site of Montecchio (later called Treia), sometime around AD 1000, and the original city site remained almost deserted.

Notwithstanding the fact that *Trea* received full scientific attention these last 30 years, information about the precise extent and urban organization of the Roman city remained very limited and partly hypothetical. This did neither change much during our 2001 PVS-campaign of systematic fieldwork in the territory of *Trea*, organized in the eastern part of the territory of the city,[20] nor during the first campaigns of aerial photography. Several of our aerial photography flights in 2002 and especially 2003 over the town-site of *Trea* delivered, however, spectacular results concerning the urban topography. Many traces of buildings and streets were visible in the grain crops of these two spring seasons and are now being studied, restituted and mapped. They completely revolutionize the current knowledge concerning this *municipium*, altering some of the earlier hypotheses and complementing the current data with a whole series of new identifications. A first and still preliminary interpretation scheme of these crop marks (*fig. 2*), indicates the location of among others: parts of the circuit wall, the near complete pattern of city streets delineating several regular *insulae*, the *forum* and most of its surrounding public buildings and a whole series of other town structures. As such, almost 70% of the town infrastructure can now be precisely mapped in the near future, when a series of ground control points will have been measured in the field. A succinct terrain control, with systematic sampling of some surface material on the ploughed fields of this area, performed in September 2003, procured additional information for the comprehension of some of these urban structures. A first synthesis of the urban infrastructure of Roman *Trea* can be presented here.

According to our observations the town wall delimitating the main urban area of *Trea* has an irregular oval shape which agrees well with the general topographic configuration of the hilly plateau determining the location of the town (*fig. 2*). It seems that on its long northern and short western and eastern sides, the trace of the town wall is still more or less preserved in low earthworks bordered by modern roads, while parts of the long southern city limits, lying on the slopes of the small valley of the Rio Palazzolo, have been remarked as distinct crop marks on some of our oblique photographs. The wall traces seen from the air were locally confirmed in the fields in September 2003 as *c*. 6 m wide linear zones with surface concentrations of white limestone rubble and pinkish mortar. As such, the total city area delimited by a circuit wall is probably only about 10 ha.[21] This does however not exclude the existence of extramural habitation areas, particularly in eastern and western directions where the less articulated topography allows it.

The aerial images produced good evidence for the *decumanus maximus*, cutting the city in two halves from east to west. This *c*. 6 m wide pale crop mark of a probably paved structure represents the main street of town around which most of the urban grid was developed. This road enters the city by the western gate, near the upstanding remains of a tower compound in *opus quasi-retic-*

ulatum. After some 150 m this *decumanus maximus* shows a strong knick point, bending its orientation in an ESE direction, to continue in a straight line towards the probable location of an eastern gate. The *decumanus maximus* could well correspond with the *Via Flaminia* towards Ancona, but we suspect that its prolongation in a south-eastern direction, parallel with the Rio Palazzolo, brings it into the Potenza plain, where it joined the valley road towards *Potentia* at the site of a small *vicus* under present-day Villa Patens.[22]

As a result of this knick point, the pattern of the town streets and buildings shows two different predominant orientations (*fig. 2*). The smaller western part of town corresponds with the highest part of the plateau.[23] The crop marks of streets and buildings in this area were more confusing, with indications for several phases of urban development. Still, it is possible to observe the existence of a series of narrower streets parallel with and perpendicular to the main east-west axis. They seem to demarcate several regular *insulae* but the picture is too precarious to conclude about their exact dimensions. Several building structures are present in this amalgam of linear structures, most of which could belong to houses, but it is too early for a definite interpretation. Surface survey showed the presence of several zones with mosaic floors (*fig. 3*), while also different pieces of marble and red painted stucco (*fig. 4.6*) were recovered here. Remarkable building material that came to light were several fragments of *tubuli* and a profiled marble pedestal or cornice of a small monument (*fig. 5*).

Many pottery finds confirm the partial function as habitation quarters: we mention some vernice nera and terra sigillata, e.g. the rim of a rather common plate type Dragendorff 17A (*fig. 6.6*), dated from the Augustan era to the mid 1st century AD.[24] A painted example of the regional terra sigillata medio-adriatica was also found. It is interesting to note that most Republican surface finds were observed in this sector of town. This could mean that this highest part of the city, which comprised the source of the Rio Palazzolo brook,[25] was also the area of the earliest settlement. Also interesting is the presence here of more late Roman finds, such as 4th to 5th century African Red Slip pottery, perhaps an indication for more continuity of settlement in this part of town. This was particularly the case around the area we defined as the Western square, an open possibly more open area near the southern edge of this western part of *Trea*. The few pieces of *tesserae* and marble found here contrasted with a large number of pottery sherds. Some handles of a new type Rhodian amphora (see below) and Lamboglia 2-Dressel 6 must be situated in the last quarter of the 1st century BC or in 1st century AD. Terra sigillata is well represented with the rather common rims of plates type Dragendorff 17A, dated from the Augustan era to the middle of the 1st century AD.[26] Two particular decorated pieces of terra sigillata need special attention: both most probably belong to the group of Dragendorff 11 stemmed *kantharoi* and show respectively an egg frieze and a flower motive (*fig. 6.7-8*).[27] These beakers are alleged to be typically Augustan. Considering glaze (orange to brown), fabric and decoration (incised motives), a profiled rim fragment of a thin walled terra sigillata bowl could be of eastern origin, although no parallel was found (*fig. 6.9*). Another possibility is an Italic origin, maybe to be compared with the types Pucci 31 and 34.[28] Different complete examples of two-handled thin walled beakers with incised decoration from the northern necropolis of *Potentia* can be compared to a rim fragment with a broken-off handle. They seem common in the last quarter of the 1st century and the first quarter of the 2nd century AD. An early African Red Slip type, Hayes 8A/Lamboglia 1b was also found here (*fig. 6.10*).[29] As remarked, especially the late Roman pottery, tableware and amphorae, was fairly abundant. A late amphora worth mentioning is the inferior wall fragment of an Aegean Late Roman 3 (4th-6th century AD; *fig. 6.11*).

The larger eastern part of town gives much more precise information concerning the urban layout. The aerial views made us distinguish a whole series of buildings and public areas, as well as several streets constituting the backbone of the urban space within this orderly laid out sector of town (*fig. 2*). The streets with an estimated average width of some 4 m describe a regular grid of *insulae*, having their longitudinal axis oriented parallel with the central *decumanus maximus*. By extrapolating the visible crop marks on our oblique aerial images with information from earlier topographic observations, such as vertical aerial photographs[30] and the presence of the excavated structures under SS. Crocefisso,[31] we can propose the existence of at least eight rectangular *insulae* with regular dimensions of 3 by 1 *actus* (*c*. 105x35 m). The shape and dimensions of a series of more irregular additional *insulae* lying in the periphery are conditioned by the presence of the circuit wall.

A full *insula*, lying almost centrally in the city, immediately north of the *decumanus maximus* is clearly the *forum* (*fig. 7* and *8*). It is composed of an

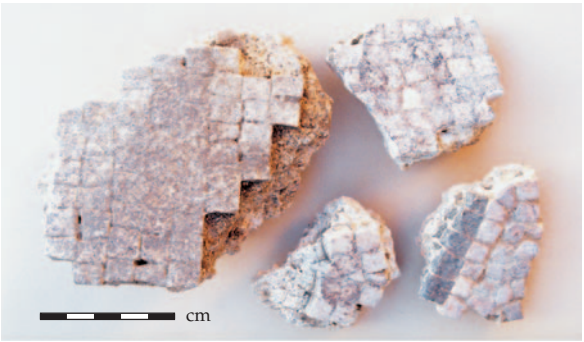


Fig. 3. Tesserae from the Roman town of Trea.

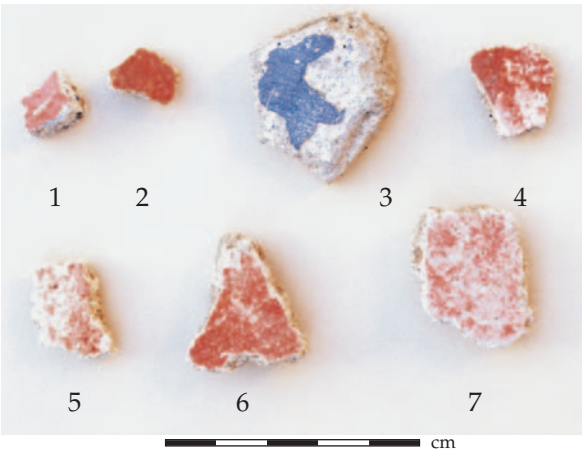


Fig. 4. Stucco from the Roman town of Helvia Ricina *(1), the rural temple area in its vicinity (2) and from the Roman town of* Trea *(3-7).*

open rectangular square,[32] bordered on three sides (north, west and south) by porticoes. Centrally placed on its eastern side is the configuration of a rectangular and axially placed building of some 20 by 10 m. Its position, as well as the large surface concentration of marble *crustae* fragments as well as a few pieces of stucco (*fig. 4.3*) found on this spot, facilitate the determination as temple of the *capitolium* type. The podium building is clearly subdivided in an approach with stairs, a deep *pronaos* and a *cella* with internal infrastructure for the statuary of the venerated deity.[33] Both south and north of the *forum* the porticoes border rows of narrow rectangular buildings with their short sides towards the square, clearly shops or *tabernae*. A larger and more complex building in the southeast corner, however, could well be a *macellum*. It is probably a building with several rooms centred around a paved courtyard. It is oriented towards the square with a northern short side of at least some 25 m, while the exact length cannot be

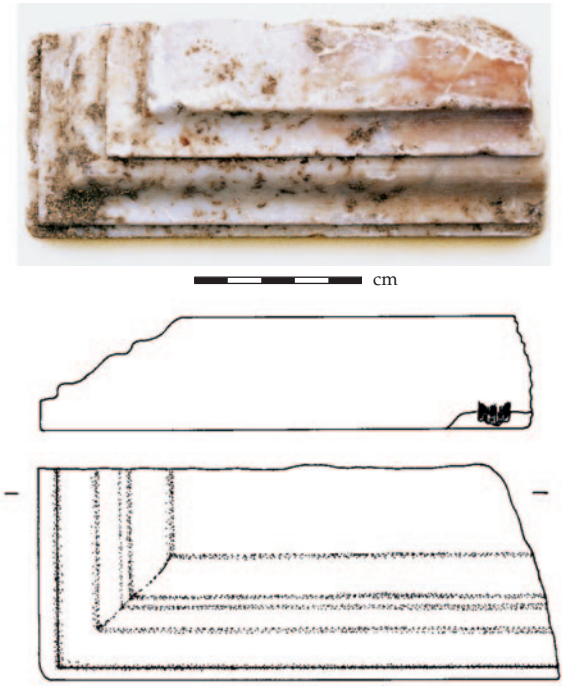


Fig. 5. Marble cornice from the temple area in Trea.

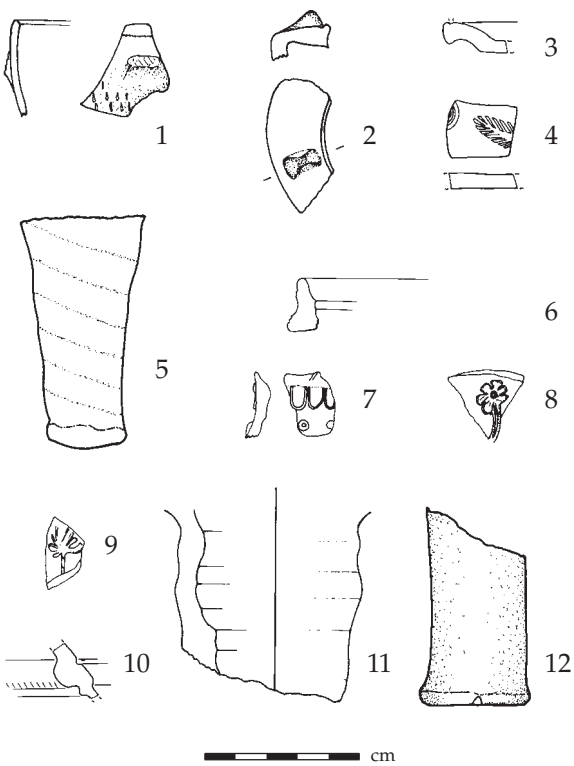


Fig. 6. Material from Trea.

Fig. 7. Oblique aerial view taken in April 2003 on the regularly organised central-eastern part of Trea.

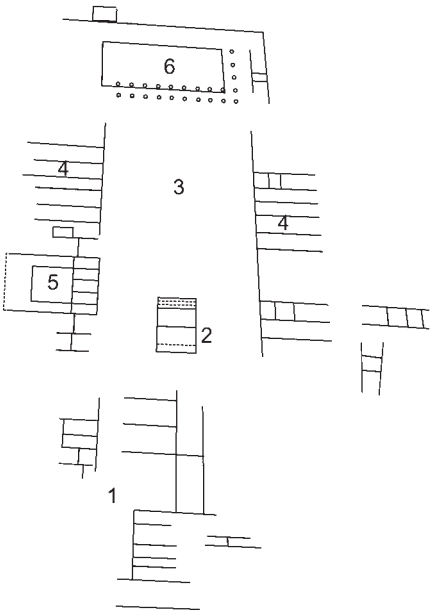


Fig. 8. The (not yet geographically restituted) transcript of the crop marks on fig. 7 clearly shows the presence of among others: 1. decumanus maximus, *2. temple, 3. forum square, 4.* tabernae, *5.* macellum*?, 6.* basilica.

determined yet. The area of the possible *macellum* yielded several pieces of profiled marble, a substantial number of *tesserae* as well as some red painted stucco (*fig. 4.4-5*). The *tesserae* consisted of small cubical examples next to rectangular and baculiform ones, all executed in grey and white. African Red Slip was also present here: Hayes 50 and Hayes 67 (*fig. 6.3*).[34]

Finally, the *forum* is bordered to the west by the long side of a large rectangular building, clearly planned as part of the *forum* complex. The building is probably lined on its other sides by a series of shops and its total dimensions approach 35 by 20 m. A function as *basilica* is not only suggested by its position and typology but also by the many surface fragments of rich marble building materials (*crustae*, *opus sectile* fragments, *tesserae*) as well as a few pieces of red stucco (*fig. 4.7*) found on this location. Among the pottery finds Roman thin walled ware was present as well as fragments of vernice nera. A most remarkable find was a small gem, once part of a ring (*fig. 9*). It is made of green glass-paste and shows the image of a naked Mars with helmet and spear. A large number of African Red Slip sherds were found here such as several pieces of type Hayes 50 as well as a stamped example. The stamp consists of a concentric circle motif (probably type Hayes 26) and a palm motif (type Hayes 1) (*fig. 6.4*). These finds prolong intensive occupation into the 5th century AD.[35] Such a long use is also suggested for a series of undistinguished buildings located immediately south of the *basilica*, in an area now scattered with *tesserae* and pottery. Some typical broad rims of locally made cooking pots (*caccabus*) in coarse, orange brown fabric found here, can be dated in the 1st and 2nd centuries AD. This zone also yielded a lot of late Roman pottery like African Red Slip and two spikes of North African *spatheia* (4th-5th century AD).

The whole spatial setting of this monumental centre displays the typical features of a planned *forum* with a dominating sanctuary of the *capitolium* type, a *basilica* on the opposite side and rows of shops and a food market behind monumental porticoes lined with columns. Although we see an obvious resemblance with several early Imperial

Italian *fora*,[36] and many fragments of Roman pottery were found during surface control, we are unable to propose a date in this stage of research. It seems however likely that this *forum*, and with it the whole gridded central and eastern sector of *Trea* was only constructed under the reign of Augustus, when much epigraphy was produced, or under his immediate successors.

At some distance from this *forum* and especially along the main *decumanus*, which bordered the square on its southern long side, we clearly distinguish crop marks of several buildings oriented in accordance with the grid. According to the surface scatters connected with some of these buildings (e.g. mosaic *tesserae*, *tubuli*, painted stucco and fine pottery) and their more intricate multi-room plans, some seem to display a great deal of comfort. They could be of the extensive *domus* type, although in a few cases a public function (e.g. *thermae*) and simple *tabernae* should be considered. Most of the diagnostic finds are Imperial. A considerable number of very fragmented terra sigillata sherds surfaced in this area. A rim with broken handle of a grey thin walled cup (*fig. 6.1*) is related to some examples in the necropolis 'La Pineta', north of the Roman town of *Potentia*.[37] A Firmalamp (*fig. 6.2*) gives a general date in the 1st and the 2nd centuries AD. Late Roman occupation is attested by the presence of a *spatheion* (*fig. 6.5*).

Fragments of metal slag found in the north-eastern sector of town are possibly indications for local artisan activity in a part of town with less pronounced crop features.

To conclude, the pottery and other finds on the surface do not (yet?) indicate pre-Roman settlement in *Trea*, but late Republican finds are enough frequent to suggest an already important occupation during the 1st century BC. Most survey artefacts confirm the expansion during the first two centuries of Imperial rule, while they also clearly suggest continued human presence into the 5th century. Further fieldwork and more pottery studies are awaited before we can refine these data.

Helvia Ricina

The Roman city of *Helvia Ricina*, of which only a rather well preserved theatre building is fully visible above ground level today, lies in an area where the middle Potenza valley transforms into the lower valley, some 15 km inland from the river mouth (*fig. 1*). Although a series of investigations were done in the past to understand the character and extent of this city, almost nothing

Fig. 9. Gem from Trea.

was known about its general layout and organization until the start of the PVS-project.[38] Already since the 15th century local scolars have studied the many, then still standing remains of this Roman town. These early and often erudite studies have been well synthesised by Nereo Alfieri in 1937. According to most archaeological finds and inscriptions the city has to be located on the immediate left bank of the river Potenza, in an area today partly occupied by the small roadside agglomeration of Villa Potenza, partly still used as arable land. This location was not random as it marks the crossroads of the here in antiquity probably still navigable river[39] and the important crossroads of the *Salaria Gallica* (connecting *Urbs Salvia* with *Aesis*) and a diverticulum of the *Via Flaminia* along the Potenza corridor to *Potentia* (where it joins the coastal road *Ancona-Aternum*/Pescara). According to scarce information from small scale rescue digs in several parts of town, the site knew an already quite extensive occupation since the later 2nd century BC.[40] A segment of a SW-NE oriented street lined with shops, found near the modern day Septempedana road that runs parallel with the river, was probably arranged in that time.[41] Most data about the urbane phase of the site are however to be placed between the 1st century BC and the 4th century AD. *Helvia Ricina*

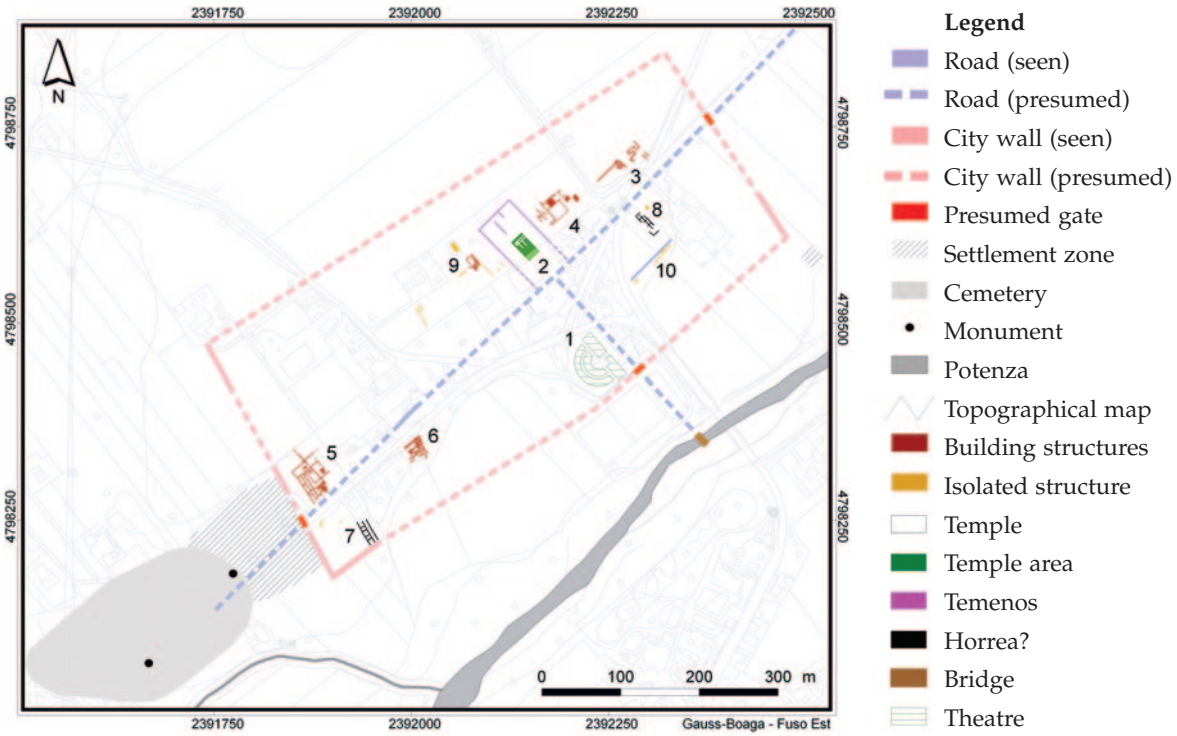


Fig. 10. First tentative plan of the city of Helvia Ricina, including information from our aerial photography, field checks and previous excavations and discoveries. Major structures observed during aerial reconnaissance: 1. theatre, 2. temple, 3.-6. domus, *7.-8.* horrea/tabernae?, *9. monumental building with cistern, 10. street and adjoining structures.*

became a Roman *municipium* from the mid-1st century onwards, when also the first colonists, veterans of the civil wars, were settled here. The city flourished in the time of Augustus and Tiberius, according to a series of funerary monuments and inscriptions probably originating from a cemetery located southwest of the settlement,[42] to the construction of an aqueduct[43] and to the building here of the largest theatre in *Picenum*.[44] During the 2nd century much public building work was accomplished and squares and streets were remetalled.[45] Most discoveries of scarce elements of a thermal complex (near the theatre)[46] and of small parts of houses with mosaic floors[47] are dated in this century. Already in the first half of the 2nd century, city finances seemed to dwindle, when a *curator rei publicae Riciniensium* was installed here. Under Septimius Severus (AD 205) the city became a colony under the name *Helvia Ricina Pertinax*, in honour of his predecessor, and plans were made to restructure the town, but unfinished sculptures seem to indicate that most of these plans were never executed.[48] After this, written sources remain silent and only some building structures (mosaic pavements) found in the south-western part of town date certainly from the 4th century. The area of the street with shops was also occupied until the 4th century, but two graves found above the settlement structures indicate a later shrinking of the city, sometime in Late Antiquity. Not much more is known of the Late Antique evolution of *Ricina*, which suffered possibly from barbaric incursions during the 5th and 6th centuries. The remaining population no doubt sought new living areas in the hills east and west of this valley site. Until late medieval times the ruins were well preserved,[49] but now only the theatre and some minor structural remains are visible above ground.

The first aerial photography campaigns by the PVS-team on the site of *Helvia Ricina* gave no results at all. The spring 2003 campaign, followed up by surface sampling of artefact scatters in September of that year, has however fundamentally altered this state of affairs.[50] At present, we can firmly put forward many new elements regarding the town's topographic situation, its overall layout and its probable extension and wall

Fig. 11. Aerial view made in April 2003 of crop marks in the central and eastern part of Helvia Ricina *with traces of the main temple (2), a* domus *with mosaic floors (4) and a building with preserved cistern (9).*

circuit, and propose functions for several buildings of public and private signature newly discovered from the air (*fig. 10*).

The confrontation of our obliquely photographed information with results of ground survey in arable land shows indeed that the city was situated on the left bank of the river. Pale crop marks, some 5 m wide, noticed in several fields give us a fair idea about the presence of a town wall. The position of the circuit wall is still partly hypothetical in some zones and further checking with geophysical or other methods will be necessary. Nevertheless we can already state that it seems to delimit a fairly regular and quite flat, almost rectangular area of about 22 ha, well positioned between the Potenza valley floor and the trace of a now disappeared subsidiary brook, which once flowed more or less parallel with the river.[51] The wall was traceable in the field by a slight difference in surface level and by the occurrence of concentrations of gravel and fragments of limestone building material. Its position could be well mapped near the southern and eastern corners of the town area, while its trace in the northern and western area remains somewhat uncertain. Part of the southern longitudinal side of the town wall is most probably erased by the action of river erosion and sub-recent human interference, most likely gravel exploitation.[52]

The Roman town was more or less centrally crossed, from southwest to northeast, by the valley road between *Trea* and *Potentia*, acting here as *decumanus maximus* of the street network. This main street, which today is almost completely covered by modern housing and roads, was locally excavated in the 1960's, together with a row of late Republican shops lining its northern fringes.[53] Clear-cut *insulae* cannot yet be distinguished on the aerial images, but some short linear crop marks of possible urban roads in the eastern part of town suggest the existence of a system of several fairly regular streets parallel with or perpendicular to this *decumanus*. One probable main northwest-southeast axis, now covered by the agglomeration of Villa Potenza and therefore not seen from the air, could have been connected with the former Roman bridge over the Potenza, which earlier archaeological observations have located a few meters upstream from the current bridge.[54] This street, if confirmed by further fieldwork, could have linked the *decumanus maximus* with the Roman bridge, passing directly in front of (and parallel with!) the *scaena* building of the theatre along its way.[55]

Near the intersection of this N-S axis (the *cardo maximus*?) and the main *decumanus* we can now propose the location of the *forum* of this town. Although today a major part of this ancient city centre is built over by the houses and streets of Villa Potenza, we were able to distinguish in the crops of the arable fields north of this central area several large Roman buildings. One of them is clearly a temple precinct (*fig. 11* and *8.2*). This can be deduced from its typical plan, some above ground *in situ* remains of Roman concrete walls (*opus testaceum*) and from a series of diagnostic surface finds, such as marble fragments with fine architectural decorations, all pointing at an early Imperial date. The plan suggests the presence of a rectangular building (dimensions min. 18 by 33 m), with a NW-SE orientation and almost centrally placed in a precinct of some 55 m wide and at least 90 m long. The imposing building, probably the main temple of *Helvia Ricina*, was oriented towards and perpendicular to the presumed *decumanus maximus* and possibly bordered a *forum* square located south of the sanctuary.[56] Near the core of the building was found a large piece of an Ionic or Corinthian style marble cornice with dentils (*fig. 12*). Intact and fragmented *tegulae* and *imbrices* were piled up next to the remaining wall structures and some *tesserae* were visible in this area. It is not known to which god the sanctuary was dedicated, but epigraphic ded-

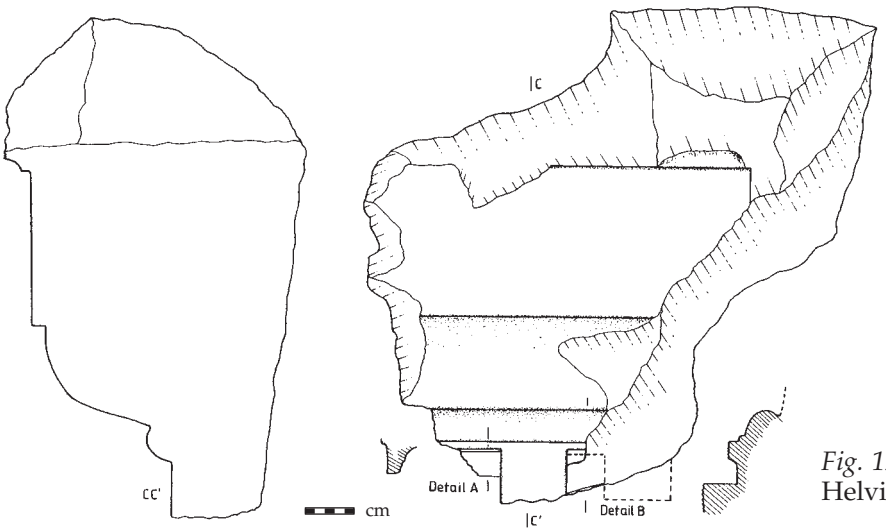


Fig. 12. Marble cornice from Helvia Ricina.

ications to Augustus, Jupiter and Mercury are known from this town[57] and an identification as a *capitolium*-type temple for Jupiter or Augustus seems therefore reasonable.

Traces of other building structures observed in the fields near the temple concern complexes situated near the probable *forum* and along or near the main EW street of the city. Among the structures of several buildings seen immediately NE of the temple, we distinguish a large building with a complex array of rooms, possibly surrounding an *atrium* and a *peristylium*. This entity could represent an important *domus*. Except for its typical plan this interpretation is indicated by the presence of at least two rooms with tessellated or tiled floors, as can be concluded from intense surface scatters of such building materials in corresponding locations of pale rectangular crop marks in the field. In the area of the *domus* floor 1 a great number of *tesserae*, mostly white, some pinkish, were present. The *tesserae* found near *domus* floor 2 were generally rectangular or baculiform, and of a white, grey or pink colour. The presence of much fine and coarse pottery of Imperial date and of painted stucco sustain the domestic hypothesis. The presence of fragments of Forlimpopoli amphorae brings us into the 2nd century AD (f*ig. 13.4*). A piece of African Red Slip belongs to the type Hayes 53B (*fig. 13.6*).

To the SW of the temple at least two separate buildings are indicated by several still standing wall structures in *opus testaceum*, as well as by corresponding crop marks of walls. As one of the standing features is identified in the field as a large cistern, measuring 12 by 5.35 m, one could suppose that a thermal complex or other public facility for the intensive use or storage of water was located in this sector. Most chronological indications from the intense surface scatters of building materials and pottery in this whole central sector of the city point to activities during the Principate, although some Republican and late Imperial sherds were also found. This area SW of the temple was still occupied in late Roman times, as is testified by a late Roman amphora of the *spatheion* type and of a presumably Late Roman 2 amphora found here (*fig. 13.3*).

A probable habitation area situated north-east of the Roman theatre, showed several linear crop marks indicating buildings, whose final plan cannot be drawn yet. This sector revealed however a rich variety of material of the late 1st century BC and the 1st century AD. Early are several vernice nera fragments and amphora handles of the new Rhodian type. An Arretine stamp of Philologus dates from the early Augustan age (*fig. 14*).[58] A rather degenerated type of a Firmalamp points to the 2nd century AD or even later (*fig. 13.2*). Amongst the African Red Slip the common type Hayes 61B, dated in the 5th century AD, was identified. A fragment of African Red Slip Kitchen Ware has a chronological range from early to late Imperial times.[59] Finally a tile of an *opus spicatum* floor was recovered.

Better crop marks of Roman buildings were discovered in the south-western zone of the intramural city area. Most of these structures are connected with the *decumanus maximus*. Two concentrations of buildings with a complex organisation of rooms (*fig. 8.5* and *6*) could again belong to large city houses. Their intricate wall structures, as well as their dense surface scatters of artefacts

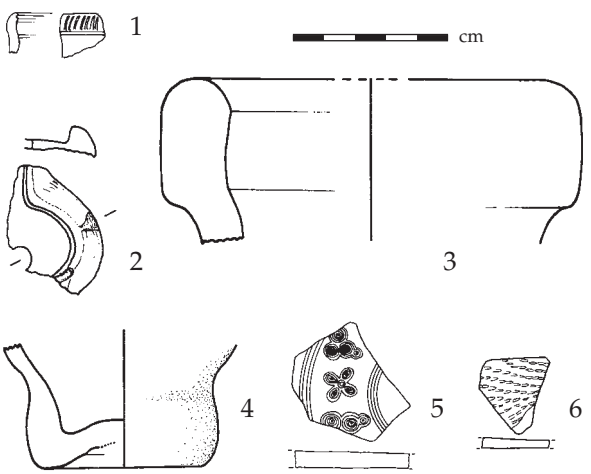


Fig. 13. Material from Helvia Ricina.

Fig. 14. Terra sigillata stamp from Helvia Ricina.

indicate a long life of these houses, with possibly repeated restructuring of the domestic architecture. In the area of a domus located near the former AGIP service station[60] several pieces of hexagonal tiles were found. The presence of square tiles and specific linear crop marks could indicate a *hypocaustum* floor and an aqueduct. Apart from late Republican and early Imperial finds, especially the late Roman phase (4th-5th century) with several imports of African Red Slip seems well represented. Some of the pottery finds illustrate this continuity well. The rim of a cup Ritterling 5-Goudineau 27 points to the first half of the 1st century AD (*fig. 13.1*).[61] A piece of north-Italian sigillata (rim of a plate Dragendorff 15/17-Goudineau 28)[62] and rims of Lamboglia 2-Dressel amphorae (*fig. 13.3*) date in the late 1st century BC and the 1st century AD. In this area was found a fragment of an African Red Slip plate with an elaborate stamp (*fig. 13.5*). The stamp consists of two trefoil patterns without stem and a flower motif with four leaves. The exact pattern could not be traced. The flower stamp resembles a motif often used on lamps (Ennabli I4). This flower motif is related to a stamp from the excavations of the Monte Torto in Osimo.[63] In the area of a *domus* near the Western gate some terra sigillata medio-adriatica and African Red Slip type Hayes 53B were found.

Interesting is also the presence, in this area near the southern city wall, of linear crop marks that could belong to a commercial building complex (*fig. 8.7*). The regular array in a row of similar rectangular rooms, flanked by a corridor or portico suggests a possible identification of *horrea* or a set of *tabernae*. The presence in the field of many *dolia* and some amphora sherds, as well as the economically well suited location of the complex at the city edge and near the (ancient) river bed of the Potenza support this idea.

Finally we must mention a few linear traces visible in two extramural zones, probably indicating an extension of habitation outside the located city wall. To the immediate southwest of town, outside the probable SW-city gate[64] and along the road to *Trea*, such a small settlement area lies between the city wall and the Roman cemetery which was located here by earlier discoveries.[65] Also outside the NE exit of the main road around which this city was developed, some crop marks confirmed by a wider scatter of Roman surface material indicate such an extramural settlement. We cannot exclude that more extramural activity zones existed around this town, such as near the bridge and even on the other side of the Potenza, but the modern village inhibits a good evaluation of these phenomena.

A first and fairly general evaluation of the still small sample of datable surface finds seems to confirm the general date obtained from earlier excavations in *Ricina*. As can be expected from surface material, the late Republican finds are somewhat underrepresented, while the late Roman finds suggest an important occupation of this town at least into the 5th century.

To conclude this presentation of the most exciting discoveries in and around *Helvia Ricina*, we must certainly mention the site of a rural temple, detected and identified by aerial photography in 2003, on a hillslope at short distance northwest of the city centre (*fig. 15*). The structure of a classic rectangular temple with wide walls delimiting a *pronaos* and *cella*, maximum some 18 m long to 9 m

Fig. 15. Oblique aerial photograph taken in 2003 of cropmarks indicating a Roman rural temple near Helvia Ricina.

Fig. 16. Terra sigillata stamp from the rural temple area in the vicinity of Helvia Ricina.

Fig. 17. Glass from the rural temple area in the vicinity of Helvia Ricina.

wide, was well visible in the crops. Field checking in September confirmed this interpretation. The scatter of fragments of white marble from *crustae* and marble building blocks, as well as the concentration of roof tiles and pieces of Roman concrete, neatly covered the area of the crop marks seen in spring. Small bits of red painted stucco were also found (*fig. 4.2*) Many other building materials were discovered at the edge of the arable field, as is often the case in this agricultural landscape, kept clean by the peasants who work the fields. Some pottery and glass found on the premises could indicate a date of the temple in the early Imperial period. The first part of a terra sigillata stamp on an undefined vessel (*fig. 16*), and the find of a wall fragment of a millefiori glass vessel (*fig. 17.2*) suggest a date at the end of the 1st century BC or in the 1st century AD. Also of early Imperial date is the combed handle of a glass bottle Isings 50 or 51 (*fig.17.1*).

SURVEYING THE COASTAL PLAIN AROUND THE POTENZA MOUTH

The area in the lower Potenza valley, which was intensively surveyed in the field during the 2002[66] and 2003 campaigns, is situated near the mouth of the Potenza. The medieval rooted hilltop towns of Potenza Picena (235 m) and Recanati (293 m), as well as the Adriatic coastline border this test zone of some 25 km^2. Porto Recanati is the main seaside resort in a sandy flat beach area, which is crossed from north to south by the railway, the national road Ancona-Pescara and the motorway Bologna-Bari. The hinterland is mostly used for agriculture and dispersed habitation, but there is also an industrial zone in expansion. The most important archaeological foci are the strategic protohistoric hilltop site of Montarice, located on the northern valley slope, and the Roman colonial town of *Potentia*, lying near the original river mouth almost central in the present day alluvial plain.

During the 2003 field season the PVS team was active in different types of research here. Aerial photography comprised our classic technique of detection and follow up of sites and landscape features from a low flying aircraft, including a first test with special digital photography in view of creating a digital terrain model of the Montarice site. Systematic non-destructive line-walking with the collection of surface artefacts continued in those parts of the area that were not yet walked in 2002.[67] The team of geomorphologists continued their fieldwork in order to establish the

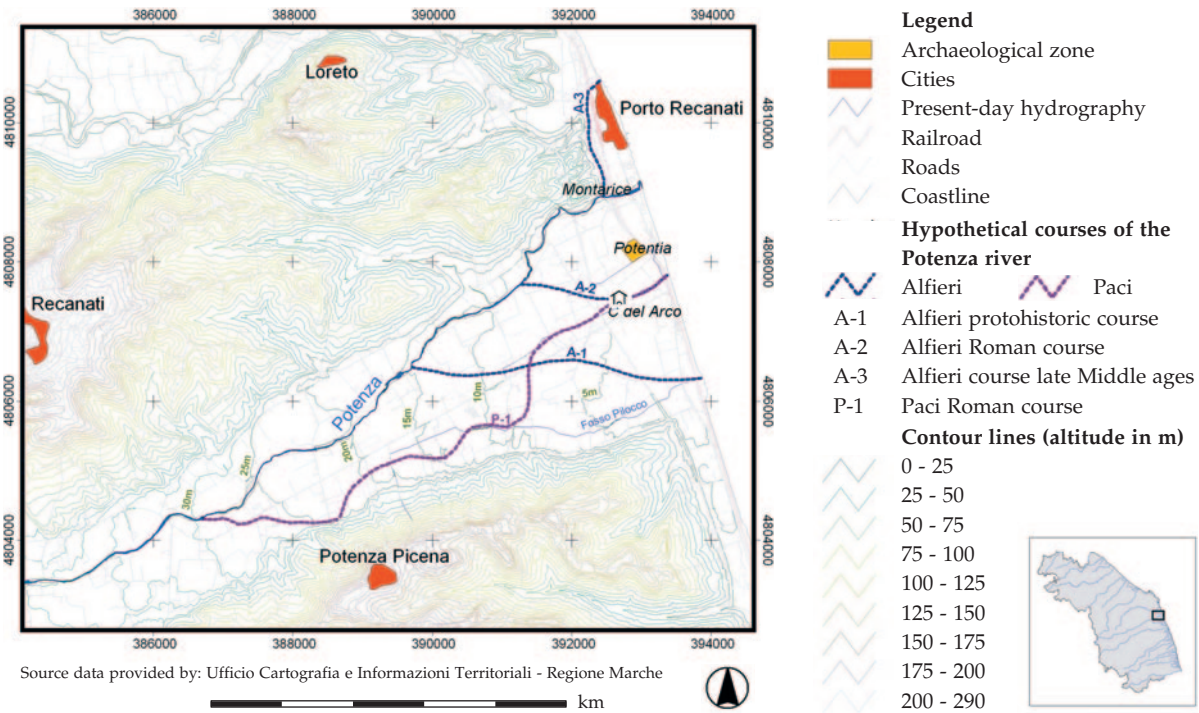


Fig. 18. Hypotheses about diversions of the Potenza river in the most important literature.

ancient river beds of the Potenza, with the use of such techniques as hand-augering, geo-electrical measurements and fine altimetric survey. Finally, the processing and analysis of the surface finds from this area progressed well. In the following pages we will synthesize and integrate the new data obtained so far.

A river landscape in evolution

In our 2002 report we already emphasized the importance of a changing landscape in which natural and anthropogenic causes interact.[68] This is certainly the case during the protohistoric and historic development of the landscape surrounding the Potenza river mouth, where changes of coastline and river bed are predominant features (*fig. 18*). The main aim of the geo-archaeological study in the coastal plain is to reconstruct these river diversions and coastline shifting during the period concerned and to relate them to the archaeological sites present in the area. The used methodology includes: literature study; geomorphologic fieldwork with aid of maps and aerial photographs (both vertical and oblique), geo-electrical survey combined with hand augering (an optimal study method for depositional environments) and altimetric survey for the detection of micro-topographical features. Key field samples will be dated with radiocarbon and OSL in the near future, so will an accurate determination of the molluscs found in the auger samples. Furthermore, a detailed geomorphological map of the area is in construction. So far, 5 geo-electrical transects and 45 augering locations combined in a month of geomorphologic fieldwork in the coastal plain, have enabled us to present some first conclusions.

Our first research hypothesis - before aerial photographs were in our possession - stated that the Potenza in protohistory would have been roughly in the same position as nowadays, fringing Montarice, would then have been displaced to the south to flow under the Roman bridge, and would only recently have been diverted again, possibly with the purpose of reclaiming coastal land. As the partly preserved Roman bridge at Casa dell'Arco,[69] which according to our aerial photographs once carried the road *Urbs Salvia-Pausulae-Potentia*, was the most reliable piece of information, the first augering was carried out on this site. The typical fining upwards sequence affirmed that this is a fluvial type profile (*fig. 19 and 20*). Radiocarbon dating of charcoal in the sediments at this location is consistent, with younger sediments nearer to the surface.[70] The dates pointed out that the Potenza would have

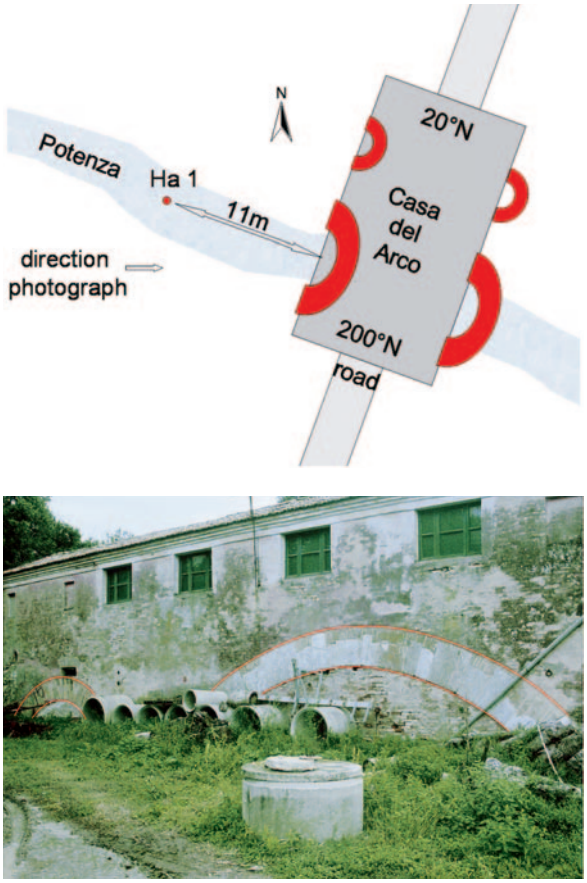


Fig. 19. The probable Roman course of the Potenza river and the Casa dell'Arco site.

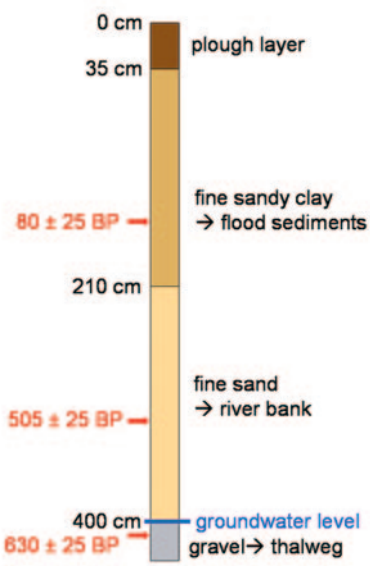
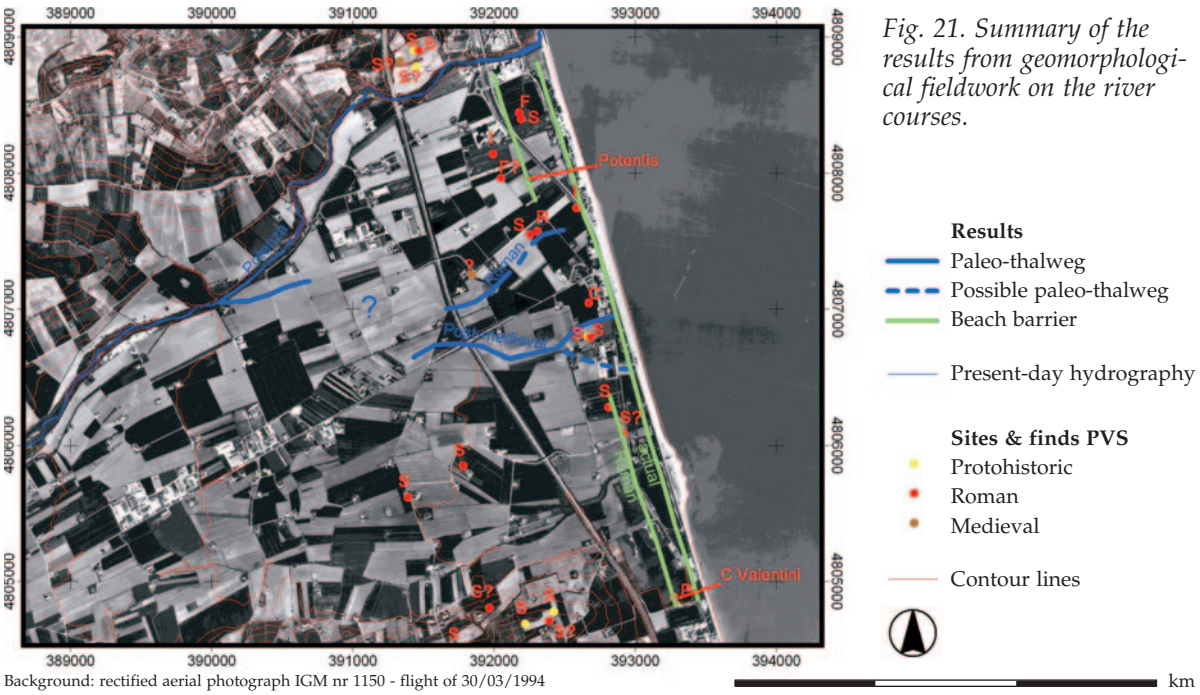


Fig. 20. Core near the Roman bridge of Casa dell'Arco.

flowed under this Roman bridge until the late Middle Ages: the sample just above the gravel bed was dated 630 ± 25 year BP, which can be situated with 95.4% confidence between 1290 and 1400 AD. This means that this river bed was deserted and started silting up in the 14th century. Augering 4, 5 and 7 displayed a similar fining upwards sequence, which makes it very probable that they evidence the same water course. Another radiocarbon dating of the lower filling sediments at augering 5 provided a date of 355 ± 30 year BP, or between 1450 and 1640 AD with 95.4% confidence, which does not impair the postulated start of the silting during the 14th century. Another argument for assuming a more southward course of the Roman Potenza is the position of the two now buried Roman beach ridges investigated by other augerings: they have an opening more southwards than the present river mouth. The resulting reconstruction of the course of the Roman Potenza - at that time called *Flosis* - is reported in fig. 21.

In the post-medieval period more changes have occurred to the river bed and these can again be well traced. On several vertical and oblique photographs, checked in the field, we remarked that some 500 m south of the Roman course of the Potenza, bands of gravel have been ploughed up to the surface. These pale soil marks were investigated with geo-electrical transects (α and β) and a series of hand augerings. The resistivity profile of transect α revealed a number of plateaus (*fig. 22*), each of which received a sedimentological meaning after augering: the highest resistivity in the centre coincides with gravel near the surface, the lower resistivity flanking this was engendered by predominantly sandy sediments, and the lowest resistivity at the beginning and end of the transect indicate the presence of clay. On an interpretation level, this can be correlated with a gravel bed, sandy river banks and clayey overbank sediments, in other words: a thalweg. This thalweg, indicating an ancient river course, should be younger than the 'Roman' one, since it is found nearer to the surface and thus its overbank deposits likely have covered the 'Roman' ones. This explains why the Roman course is much less visible on aerial photographs, and is confirmed by the age and nature of the retrieved sediments in hand augering 1 (*fig. 19*): fine sandy clays.

Today the Potenza flows in the extreme north of its coastal plain, unlike most other rivers in the Marche. Detailed field study helped us demonstrate that the present day itinerary of the river is not natural. Firstly, the exact location where the actual



Background: rectified aerial photograph IGM nr 1150 - flight of 30/03/1994

Fig. 21. Summary of the results from geomorphological fieldwork on the river courses.

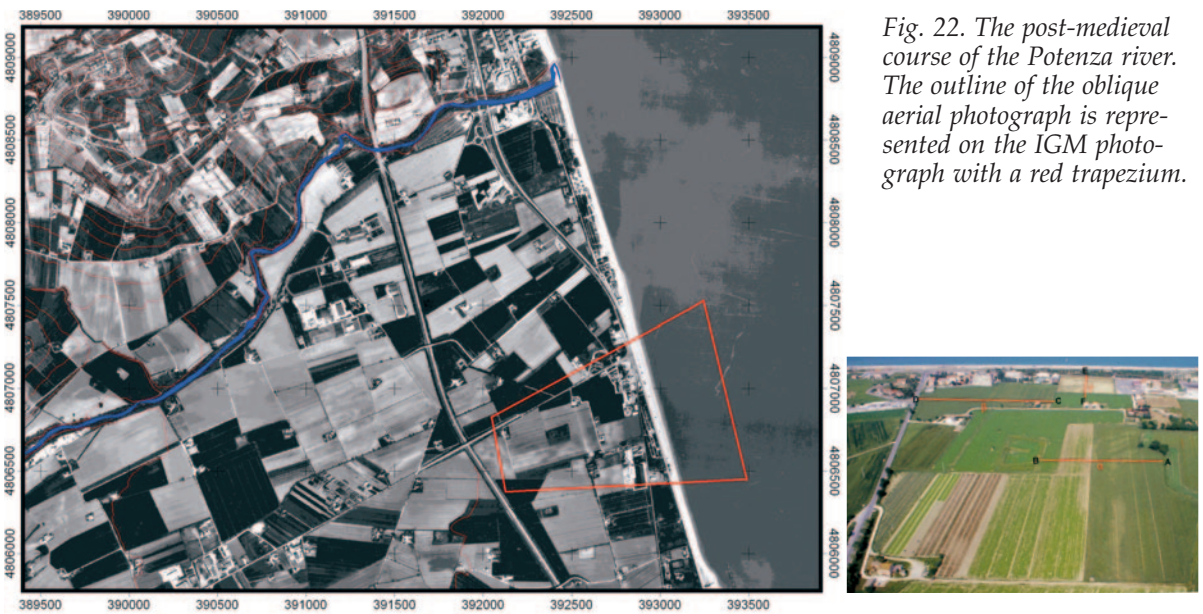


Fig. 22. The post-medieval course of the Potenza river. The outline of the oblique aerial photograph is represented on the IGM photograph with a red trapezium.

Potenza left its previous bed could be retrieved easily by geomorphologic reasoning: the bed of the present Potenza changes drastically in aspect at about 3.5 km from the coast, from a broad and natural looking river bed with ample gravel bars upstream (*fig. 23a*), to a deep and narrow passage downstream (*fig. 23b*). The most convincing argument, however, is furnished by topographical survey. It was found that the broad bed has been formed in a terrace situated 10.9 m above sea level, while the narrower passage downstream incises in a terrace 12.9 m above sea level, as can equally be noted in fig. 22. Considering that water always flows downhill, this course cannot be natural. Furthermore, a buried fluvial fining upwards sequence was found at augering 44 (*fig. 23-A44*),

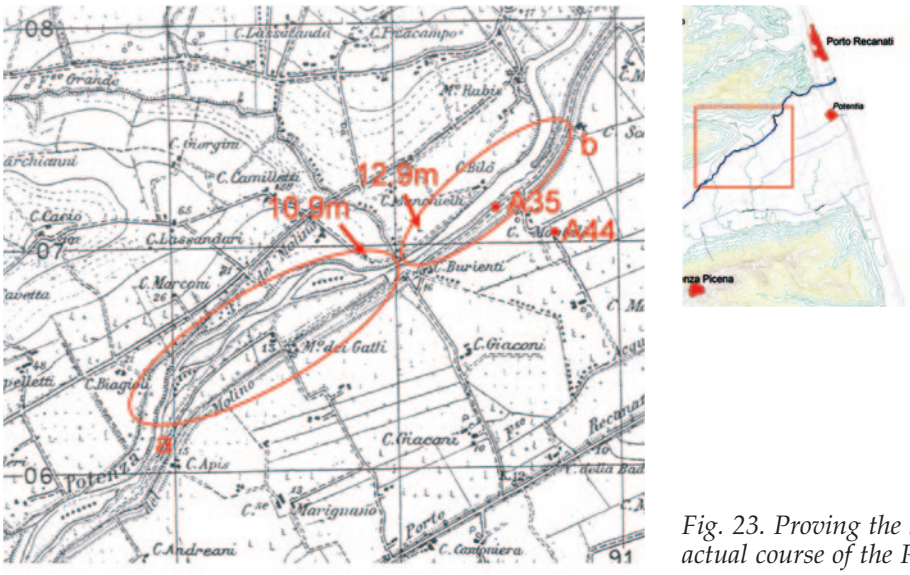


Fig. 23. Proving the human interference in the actual course of the Potenza river.

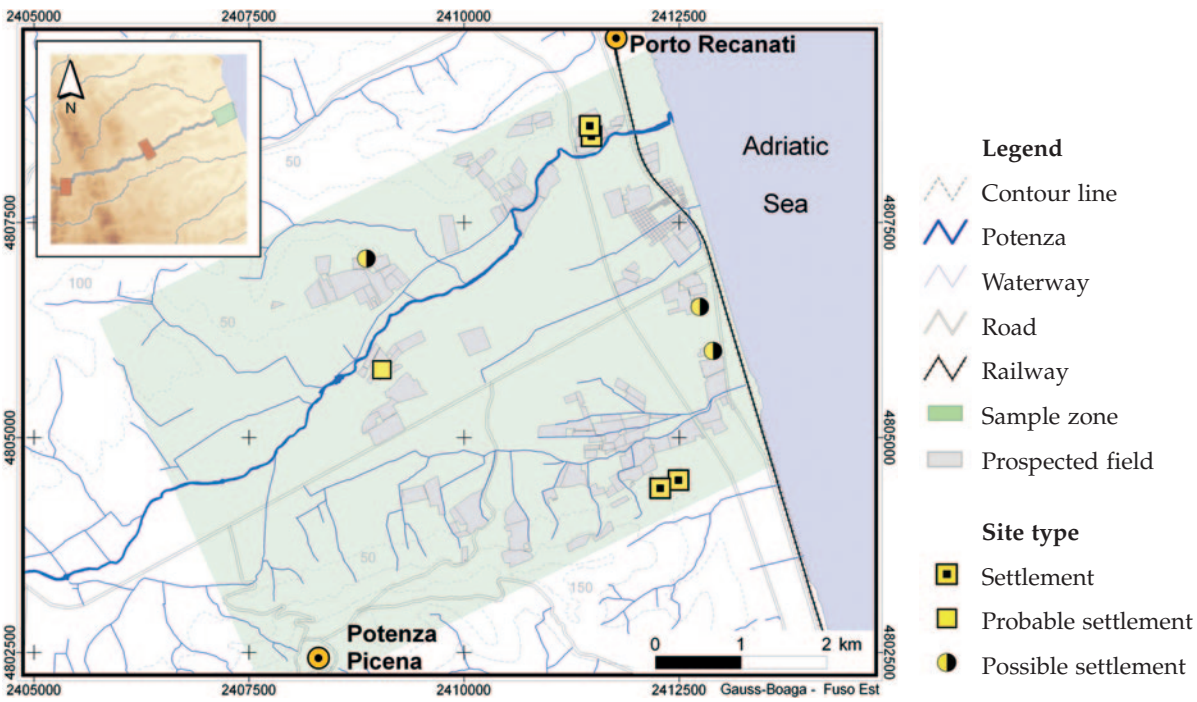


Fig. 24. Protohistoric sites in the lower Potenza valley.

which is situated 600 m ENE from the transition point and about 300 m south of the actual Potenza. Unfortunately, datable material was lacking, so it cannot be ascertained without further investigations whether it is the Roman course of the Potenza that flowed here, or the post-medieval one, or both. However, this cancels any existing doubts about the transition point being a point of tapping, as one might call it. The last kilometres of the present day Potenza channel are therefore certainly dug by human hands, as is suggested by all available historic information.[71] A ^{14}C-sample taken from the flood sediments (*fig. 23-A35*), between the embankments of this channel, should provide a *terminus ante quem* date for the establishment of the current route of the Potenza.

To conclude, we see that everything fits well into the picture. The Roman situation of a Potenza

flowing 700 m south of the town site of *Potentia*, debouching about 200 m inland of the present coastline, lasts until the 14th century. At that time a post-medieval course develops through avulsion, now visible on aerial photographs as a white trace south of the Roman course. At a certain time, to be determined by radiocarbon dating, man decided to reroute the Potenza to its present course, probably to cultivate the newly available land. Only the protohistoric part of the research hypothesis, mentioned before, was refuted: the Potenza can not have flowed at the foot of the Montarice hill, as this course is plainly unnatural.

The protohistoric occupation

Our 2003 survey activities in the lower valley test area did not procure many new data on the Bronze and Iron Age occupation of the coastal area. In the valley floor itself no major sites older than the Roman period were found, although a few very small concentrations occur. It is possible that protohistoric sites are now buried too deep to be found by superficial prospection. The only groupings of protohistoric pottery found here, are located on the ancient beach ridges on which also many Roman coastal sites have been detected.[72] The high density of the Roman sherds here disturb, however, the accessibility to the protohistoric pattern, a recurring problem in survey archaeology.[73] Although this and also more general visibility problems hinder a sheer quantitative interpretation of the survey record,[74] in accordance with Barker's comparable work in Molise, we can distinguish a few probable sites (with more than 20 sherds), possible sites (between 5 and 20 sherds) and sporadic findspots (less than 5 sherds) in this area.[75] In addition we feel that we can label sites with more than 50 protohistoric sherds as settlements as such (*fig. 24*).

Except for some smaller, and still difficult to date protohistoric sites located on the hillsides north and south of the plain,[76] most of our data for this period come from the intensive intra-site survey of Montarice, executed in 2002.[77] This site, located on a promontory immediately north of present day Potenza, near its mouth (*fig. 24*), must certainly be considered as a place for some sort of centralized settlement, probably with an important elite component. The site is situated on a nearly flat surface of about 4.2 hectares large, covered with a thick fluvial or marine gravel stratum upon a substrate of marine sandstones and clays, and with steep slopes bordering the entire plateau except on the NE- and SW-sides (*fig. 25*). The steep

Fig. 25. The Montarice site.

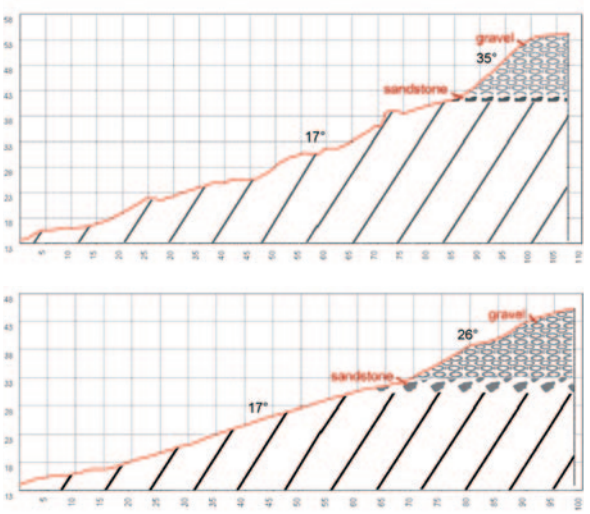


Fig. 26 and 27. Sections of the southern slopes of Montarice.

Fig. 28. Oblique view of the protohistoric hill site of Montarice near the mouth of the Potenza. This photograph, taken in April 2003, shows clear crop marks of a circuit wall around the plateau and of different phases of houses, pits and other settlement traces.

slope at the SW-side is probably partly due to the recent construction of the motorway Bologna-Pescara, but the others seem predominantly natural (*fig. 26 and 27*). The site enjoys ample view on the coastal plain of the Potenza. Already in 2002 our fieldwalking and aerial photography surveys revealed the existence of an important Bronze and Iron Age centre here. Crop marks photographed in the spring of 2003 indicate a huge number of settlement structures, especially the traces of different phases of enclosure walls and ditches, accentuating the natural defence of the site. These crop marks (*fig. 28*) suggest even an almost organised aspect of this imposing site, showing clearly several lined and/or grouped rectangular houses and other structures like pits and possible cisterns. While the mapping and interpretation of the many settlement structures, with the use of oblique digital photographs, is still unfinished, we can present here some data about the processing of the surface material.

The site yielded a great amount of Bronze and Iron Age material, as well as some finds of the Roman period. Due to the huge number of artefacts (more than 10.000) collected on a surface of 4.2 ha in a restricted period of time (one field day), the approach of processing the pottery was adjusted. Per surveyed square the pottery was sorted in protohistoric finds and non-protohistoric finds. Both classes were then subdivided in the bulk of wall sherds and the diagnostic sherds (rims, bases, handles and wall sherds with identifiable or datable decoration). The share of chronologically significant sherds in such a group of 'diagnostic' sherds might be very limited. In that case only fabric study can eventually procure a date, which however often remains uncertain.[78]

Of all the artefacts picked up on Montarice some 9.500 are ceramics, of which a little more than 2.000 pieces can be called diagnostic. Table 1 shows that of these diagnostic ceramics 79% is protohistoric, 2% concerns imported Greek wares, another 17% is certainly not protohistoric and 2% remains undefinable.[79] In the protohistoric class we could define about eighty certain Bronze Age sherds and some 200 Iron Age ones, while for the

remaining (more than) 1.300 pieces, up to now, no more detailed classification is achieved. Finally the Iron Age material has been catalogued on the principle of typology and analogy, in an Early (9th-8th centuries BC), Middle (7th-6th centuries BC) and Late period (5th-3rd centuries BC). Similar information is available for each single surveyed square, which eventually can lead to the identification of shifts in time and/or function of the settlement on the Montarice plateau.

However, it is extremely important to stress that these preliminary results are still greatly dependent on the nature and the state of research related to this type of ceramics. For the difficulties in identifying survey material are well known. Responsible are the lack of context and the mostly fragmentary and eroded state of the pottery. A current lack of familiarity with the pottery of some periods forms an obvious barrier to identification.[80] The help of (regional) experts[81] or comparison within a well-defined survey context can give a clue to some of the most problematic materials. Last but not least, pottery analysis of survey material needs to be based on datable pottery sequences. Well-dated regional reference sites are thus crucial for the identification, typology and chronology of the survey material. Within Italy the Marche region is slightly understudied, especially when compared to the Tyrrhenian regions of the peninsula. Yet, important Bronze Age and Iron Age settlements in the Marche region are amongst others Moscosi di Cingoli (Macerata), S. Paolina di Filottrano (Ancona) and Colle dei Cappuccini in the city of Ancona. There is, however, a severe problem concerning useful reference material for Iron Age superficial settlement debris. Most Mediterranean prehistoric ceramic typologies are mainly based on diagnostic features that are seldom found on the surface. For protohistoric periods in particular, metalwork is often used as the chronological indicators but they are quasi absent in survey records. This resulted in a huge split between the chronologies of (cemetery) excavation and (settlement) survey.[82] Elsewhere[83] we argued that most of the knowledge about the Iron Age Piceni-culture indeed derives from cemeteries, as the scarce epigraphic documentation is of a funeral nature and only few settlements have been discovered and studied till now. The most important settlement research in this context is the one conducted in the 1980's by G. Baldelli[84] at Montedoro di Scapezzano near Senigallia. His excavations yielded important topographic information so that we now start to understand the overall organisation of a major Piceni-settlement.

Montarice diagnostic

not protohistoric	17 %	Iron Age	12 %
protohistoric	63 %	Greek	2 %
Bronze Age	4 %	Undefined	2 %

Table 1. Diagnostic sherds from Montarice.

02-K151 diagnostic

not protohistoric	25 %	Iron Age	33 %
protohistoric	33 %	Greek	3 %
Bronze Age	1 %		

Table 2. Diagnostic sherds found on the southern flank of Montarice.

02-K151 Iron Age

Iron Age	28	9th-8th centuries	0
7th-6th centuries	7	5th-3rd centuries	33

Table 3. Iron Age pottery found on the southern flank of Montarice.

Fig. 29. Soilmarks of settlement occupation on Montarice.

However, the knowledge concerning the Piceni settlement 'impasto' ceramics remains problematic, since publication of the excavated material from this site is still awaited. Also the material of the Piceni-settlement of Cartofaro, although partially presented,[85] needs elaborate study. A useful reference collection concerning Piceni-settlement ceramics is not yet available.

In an earlier report[86] we mentioned the existence of a rich pottery concentration of about 40x15 m on the southern slope of Montarice (*fig. 29*), which could be interpreted as a normal outflow of soil material from the plateau in a gully colluvium or as an isolated unit located on a former terrace. Since the study of the material in 2003 has shown that most of the pottery found in this zone is of

Fig. 30. Middle Bronze Age sherd from the southern flank of Montarice.

Fig. 31. Alto-Adriatic sherds from the southern flank of Montarice.

Fig. 32. Alto-Adriatic sherd from the southern flank of Montarice.

an obvious younger date (*table 2*) than the majority of the finds on the top of the plateau (*table 1*), we tend to consider the second interpretation as the most valuable one. In this concentration zone on Montarice's southern flank only two sherds can be assigned to the Bronze Age (*fig. 30*). The first results of the study of this more homogenous group of Iron Age pottery suggest a preponderance of the latest phases of this era (*table 3*). A distinctive group within the later Iron Age sherds are Alto-Adriatic ceramics. The presence of this type of pottery on Montarice does not surprise as such vases were also found in the protohistoric, later Piceni settlements of Pesaro, Montagnolo di Ancona and Numana. The latter lies only 15 km north of our site.[87] Figure 31 shows that not only the drip or clock-like decoration, but also the bluff clay and black-brown gloss correspond very well with some Alto Adriatic *oinochoai* found at Issa, a Syracusian colony on the island of Vis in Dalmatia. Here they are dated to the late 4th-first half of 3rd centuries BC, in analogy with an example from *Spina*.[88] Finally also the striped motif on figure 32 is recognized on some 3rd century BC Alto Adriatic lids from the Ca' Cima necropolis at *Adria*.[89]

Although the Montarice material is still under study, we can already state that the high density of the pottery finds and a first evaluation of the chronology supports the idea of a long and almost continued occupation of the hill from the Middle Bronze Age into the Late Iron Age and even the Early Roman period. The good quality of the wares, especially of the Greek (black glazed and black- and red-figured pottery) and Adriatic imports, points no doubt to the presence of *Piceni* elites, probably controlling maritime transports and contacts with Numana and other commercial centres along the coast. The 'pre-urban' hill site certainly also had a role to play in the control over the entrance to the river corridor and over the flow of goods to inland sites and ultimately to the Tyrrhenian area. There are however no clear indications yet that the relatively small site was eventually turned into a centre with real urban allure, as should be deduced from the presence of indicators such as a central square or important public building infrastructure.

The Roman and late antique periods

Investigations during the 2003 campaigns in the lower valley were foremost relevant for the period between circa the 3rd c. BC and the 6th c. AD. Further intensification of remote sensing operations, continuation of systematic line-walking in

the 25 km^2 wide test area, study of the survey finds and integrated geomorphological fieldwork all contributed to a further deepening of our knowledge concerning evolutions of the humanized landscape under Roman, Ostrogoth and Byzantine dominance. Later developments, with the advent of the Lombards in the region, are however still archaeologically difficult to trace.

In this lower Potenza valley the Roman impact on the landscape became visible from 184 BC onwards. With the foundation of the colony for Roman citizens *Potentia* a whole series of foundations of maritime colonies on the Adriatic coast, which started shortly after the battle of *Sentinum*, was finalised. In last years' account of our 2002 survey operations we already focussed on the many new data gathered on and around the city site of *Potentia*, now lying almost completely under agricultural land on a former beach ridge at some 300 m from the present day coastline.[90]

Many good crop marks observed in the grain fields during several spring flights of 2003 help to reconstruct with more detail the layout of *Potentia*'s street network and town walls, and procure also the first traces of city buildings. Although the available vertical photographs already revealed much of this regular city plan,[91] and our earlier work could add much to this, many new elements can now be introduced and older ones corrected or interpreted with more detail. Thanks to the computer rectification of these obliquely photographed traces and with the help of 'Airphoto' software and GIS analysis incorporating vertical images and existing map information, we can now produce a fairly consistent map of the city grid (*fig. 33* and *34*).[92]

Systematic field survey of the hinterland of this town continued in 2003 and although a total of only 3.88 km^2 is now fully covered by this linewalking, we can state that all landscape types are now visited on a representative scale in this coastal area. For the period concerned here this produced a total of some 31 settlement sites (*fig. 35*), almost all of which were inhabited during early Imperial times. Of these, only a few contain also late Republican finds, while eight sites showed evidence of late Roman occupation. While further processing of these sites and a revisit of some of them remains

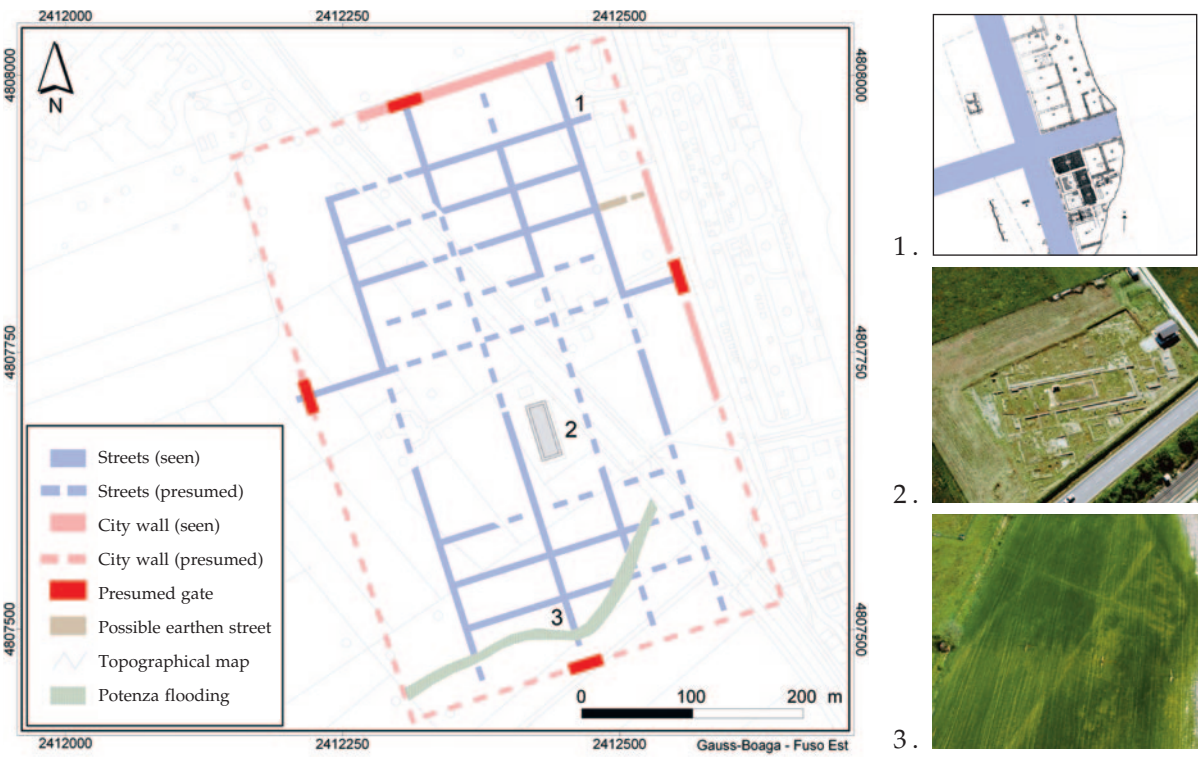


Fig. 33. The new plan of Potentia *with indication of the best-known building sectors: 1. parts of two* insulae *excavated in the 1970's, 2. central temple sector currently under excavation, 3. buildings seen in crop marks during our aerial reconnaissance in 2003.*

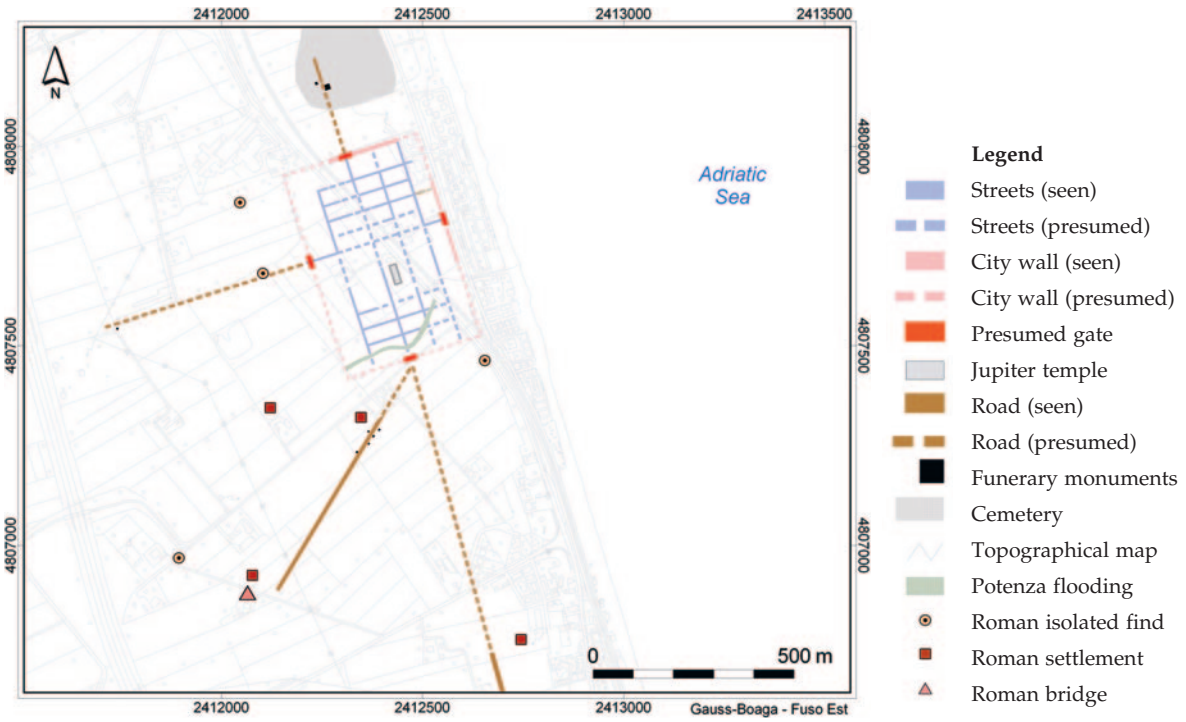


Fig. 34. New plan of Roman Potentia *and its immediate surroundings, based on aerial photography, systematic survey and earlier excavations.*

necessary, we can generally confirm our general observations about site distribution made last year.[93] As the study of part of the pottery found on these sites has progressed, we can at present, also add some significant chronological data.

Although we can observe a very intense use of the coastal area for habitation under Roman dominance, the distribution of settlements (and some probable/possible settlements) is not even. At least five main types of site locations can now be distinguished: suburban, on the beach ridge, in the valley floor, on the lower hillslopes and on the hillcrests.

The suburban zones

Systematic grid-surveys on and around the walled town-site of *Potentia* have demonstrated that some surface concentrations of settlement finds are to be interpreted as indications for suburban habitation activity. This was in particular noted along and near some of the roads leading out of town in a southern and southwestern direction, but also along the coastal road to the north.[94] The identification by aerial photography and recent excavations of several cemetery zones near these roads,[95] makes it still difficult to delineate and characterize some of these sites. We hope to elucidate this in the near future by further grid-walking and geophysical prospections.

The beach ridges

A clearer pattern is that of a series of sites lined along the Roman coastal road from *Potentia* to the south and all situated on top of ancient beach ridges, now lying some 300 m inland. It is clear that at least some of these settlements are partly linked to early Roman amphora production, as is suggested by dense concentrations of amphora fragments in the surface scatters. But the connection with the profitable coastal environment, the city and the coastal road are no doubt further explanations for their density in the late Republican and early Imperial periods. Most of them, however, seem to be abandoned from mid-Imperial times onwards.

The most spectacular discovery in this area was made in 2002 with the identification of an amphora-kiln site near the coast. Unfortunately a major part of the complex has disappeared during the 1970's when much ground was carried away for the construction of the nearby coastal highway. It seems that the presence of the kiln, at that

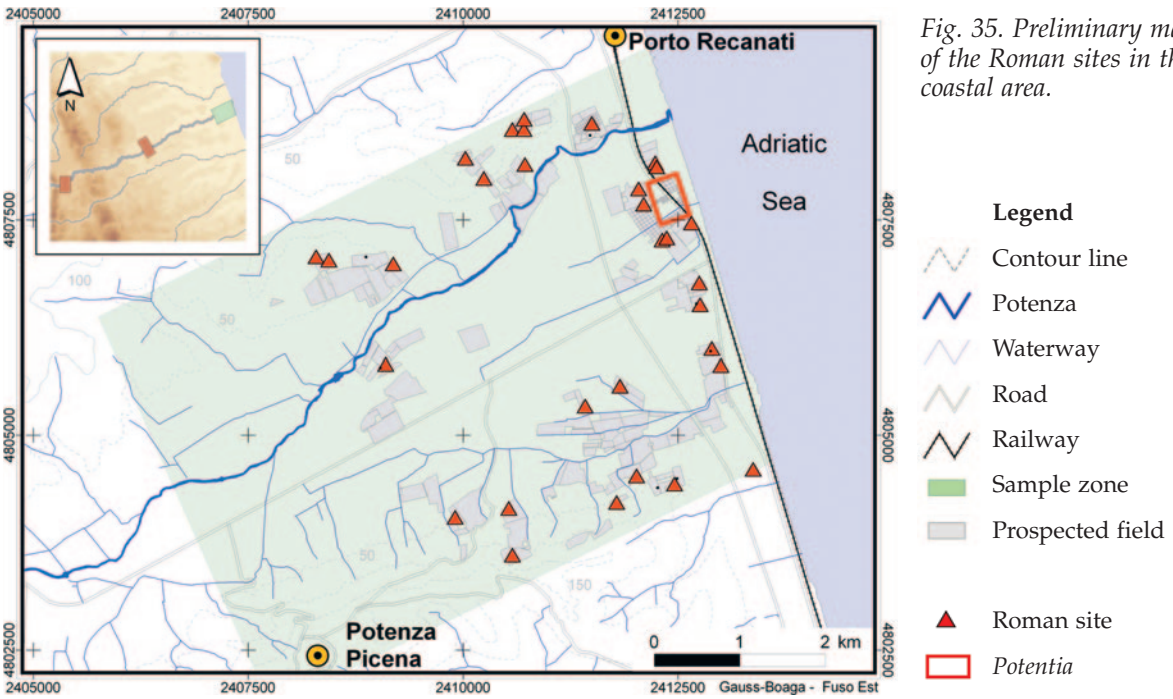


Fig. 35. Preliminary map of the Roman sites in the coastal area.

time not recognized as an amphora production site, was briefly noted during these ground-works, but the site was not investigated further.[96] A preserved hillock represents an interesting stratigraphy of later sea-flooding, bringing in masses of pebbles and gravel, and several layers of dump material, locally covering fragments of Roman walls preserved *in situ*. The huge numbers of misfires (yellowish and greenish coloured pottery fragments, sometimes distorted and glazed) and of different parts of amphorae scattered around leave no doubt about the precise function of this site. The produced amphora types show imitations of late Graeco-Italic, Lamboglia 2 and Dressel 6 models (*fig. 36.2-4*). We noticed at least two types of amphora-stoppers (*fig. 36.1*). Some plain ware and a fragment of a thin walled beaker only refer to the occupation of the site, as does the complete profile of a lamp in coarse orange brown fabric, dating to the Augustan or Tiberian period. Considering the amphorae types that were produced here, the lifetime of the kiln-site lies between the (beginning, middle?) 1st century BC and the third quarter of the 1st century AD.[97] When comparing the amphora fragments found on the site, it is already clear now that a high percentage of the amphora material recovered during our surveys in the whole of the Potenza valley were locally made. And although not recognized on the kiln-site itself, there is a noticeable similarity of the fabric with those of many Dressel 2-4 types proceeding from the surveys. Therefore, we can accept with reason that also the Dressel 2-4 was imitated, bringing the local amphora production to at least 4 types. Finally, we do not exclude that the production lasted longer than the 1st century AD, as also Forlimpopoli types could have been made locally.

The valley floor

A small number of Roman farm sites were found in the almost flat valley floor of the coastal plain. Although their number was probably restricted, this indicates that the enforced late Republican land division (*centuriatio*) in the plain and accompanying land improvements have made this fertile but easily flooded valley floor widely available for habitation and systematic agricultural exploitation. It remains to be understood what the precise connection was between these few farms and the original Roman land division. As these sites situated on the valley floor are less visible due to later valley flooding and clay deposition, their study poses some problems regarding the date of the earlier phase of occupation. This is the case with one of these sites, situated south of the Potenza river. Some amphorae fragments found here may belong to the early Roman period (1 Imperial Rhodian? Some Dressel 6?), but a twisted handle of a jug can be assigned to different periods.

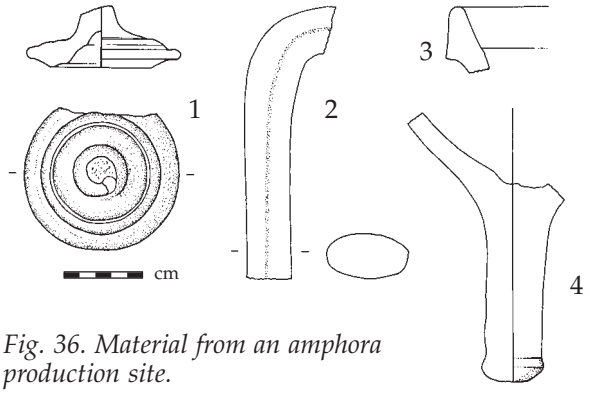


Fig. 36. Material from an amphora production site.

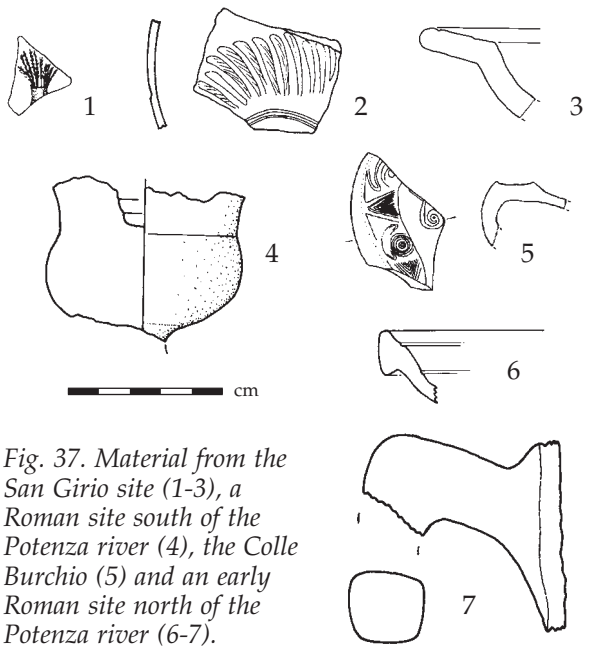


Fig. 37. Material from the San Girio site (1-3), a Roman site south of the Potenza river (4), the Colle Burchio (5) and an early Roman site north of the Potenza river (6-7).

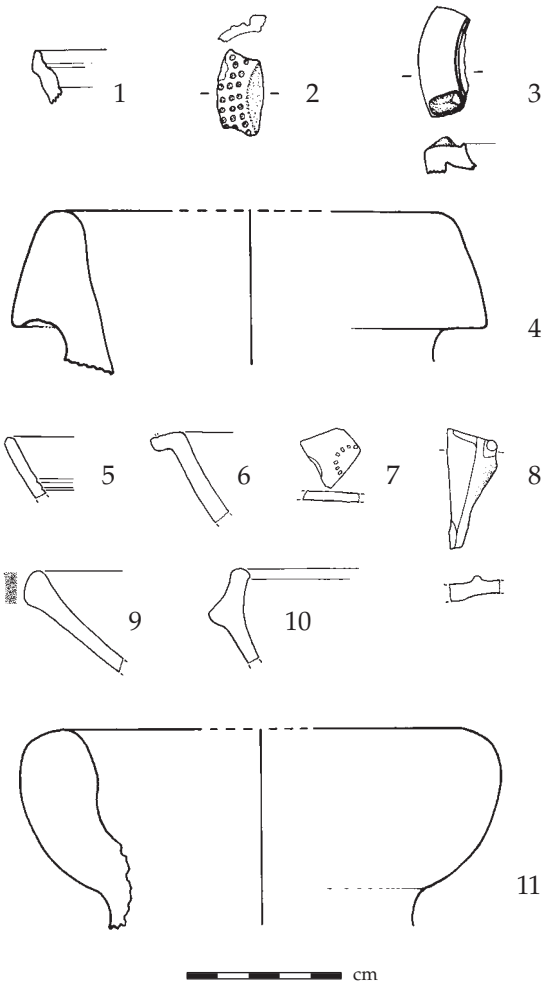


Fig. 38. Material from a Roman site north of the Potenza river.

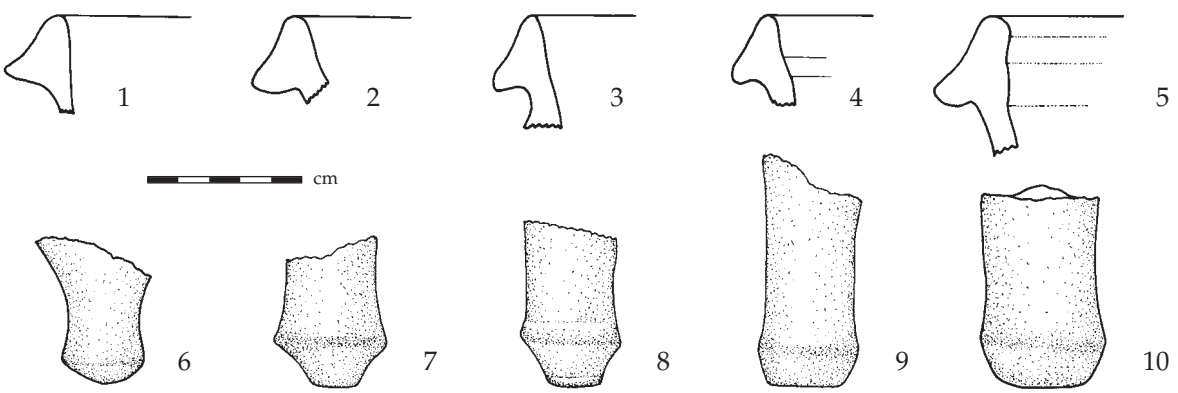


Fig. 39. Material from the Colle Burchio site.

The late Roman period is represented by some African Red Slip types. Type Hayes 50 was well represented, other types like Hayes 58 also occurred. A stamped palm of type Hayes 19, two palm motifs set base to base, date the site into the 5th century AD.[98] A rim of a *spatheion* or a related cylindrical African amphora was also recovered.[99] These late finds are important, as they clearly suggest that the valley floor and possibly its system of drainage and land division were not quickly abandoned in Late Antiquity.

The lower hillslopes

An important segment of the settlements, and especially some villas and larger rural settlements are located on the footslopes of the hills, a few meters above and outside the predominantly agricultural plain. At first sight there seems to be no specific preference for the northern or southern valley edges, as both seem densely settled. Some of these sites show intense surface scatters of more than 100 m long and reveal indications for wealth (varied building materials, fine pottery, thermal installations, etc.) and a long occupation history, from late Republican times into the late Roman period. Sometimes a spatial shift can be noted during this long history. Let us shortly review some chronological evidence for these dominant rural sites.

On the San Girio site south of the Potenza, for example, early Roman finds were scattered all over the hillslope, whereas the late Roman sherds were concentrated in a well defined area. Among the early Roman pottery Dressel 6 amphorae and locally made Dressel 2-4 amphorae were present, both dated in the 1st century AD. A terra sigillata wall fragment of a beaker with a relief decoration of a palm-tree could date in the Augustan age (*fig. 37.1*).[100] Some fragments of Forlimpopoli amphorae, or their imitations, point to an occupation in the Flavian and Antonine eras. More difficult to date are the plain and coarse wares like fragments of jugs, one-handlers, large bowls, flat-knobbed lids, a lid with 'cornice' etc., which are executed in the typical rough fabric of brown-orange colour.[101] The late Roman pottery show clean breaks what could indicate that the pottery was just recently brought to surface. Regional productions like terra sigillata medio-adriatica as well as imported wares, such as African Red Slip, surfaced in this area. Different types of African Red Slip, like Hayes 53B and Hayes 59B, were identified (*fig. 37.2-3*).[102] No pottery was dated later than the first half of the 5th century AD. It is interesting to note that the local church of San Girio is situated nearby. Although of rather recent date, the present-day Christian sanctuary could have replaced a late antique or early Medieval predecessor.

A large site,[103] situated west of the Monte dei Priori, south of the Potenza river, also indicates a long occupation history. The plain and coarse wares were abundant. They are of the same types as the material from the San Girio site and are dated in the late 1st and 2nd century AD. The thin walled and grooved bottom of a lamp, most probably of the Loeschke I-IV type, suggests a date between the late Augustan and the Neronian age. A fragment of a small vessel with incised decoration on the shoulder may refer to the 2nd or 3rd century AD. The knob of an African amphora type Keay Vbis brings us between the 3rd and the 5th centuries AD (*fig. 37.4*). Because of its relationship with the first examples of the Africana II types we prefer the earliest date.[104] The inferior part of a handle belongs most likely to a Late Roman 2 amphora. Some worn fragments of African Red Slip were also present. Two wall sherds with incised wavy lines, belonging to the late Roman or the early Medieval period, are difficult to date more precisely.

During the 2003 campaign a large Roman site was located on a hill north of the Potenza river.[105] This site yielded a variety of building material including a considerable number of mosaic *tesserae*, some of which made of blue glass paste, incised fragments of *tubuli*, a profiled stone and many pieces of painted stucco. Datable ceramics include a terra sigillata rim Goudineau 18/24 (*fig. 38.1*),[106] some late Lamboglia 2 and/or Dressel 6 amphora rims and spikes (*fig. 38.4, 11*), a globular lamp of the Dressel 2-3 type (*fig. 38.2*), fragments of vernice nera ware and several Firmalamps (*fig. 38.3*). These finds date from the end of the 1st century BC to the 1st century AD, possibly going into the 2nd century AD when we consider the large dating range of Firmalamps. The importance of the site for the early Roman period is also illustrated by some glass finds. Occupation of this site is, as with the San Girio site, still of considerable size in the late Roman period. But otherwise than the San Girio site the material from this site has clearly suffered from still active erosion, which scattered the artefacts over the southern flank of the hill and grouped in in gullies at the hill-foot. The late Roman pottery identified here consists of African Red Slip, African Cooking Ware (*fig. 38.9*), an African lamp and Late Roman C. The African Red Slip types identified are Hayes 53B, Hayes 58 and a fragment of a base with a stamp of an indented circle of type Atlante n. 4 (*fig. 38.5-7*).[107] The frag-

Fig. 40. Fragment of a terracotta revetment plate or antefix.

ment of an African lamp consists of parts of the nozzle and disc. These elements point to the type Atlante X/Hayes II (*fig. 38.8*).[108] The fragments of Late Roman C are of type Hayes 3C (*fig. 38.10*).[109] The Late Roman amphorae were represented by a *spatheion* or a related cylindrical amphora and by Africana II. These finds date occupation of the site into the 5th century AD.

The hillcrests

Several settlement sites were located on the crests of the hills that border the Potenza plain to the north and the south. Although these settlements had more difficulties for locally obtaining water, they took in a dominant and favourable position on the generally flat crests of the hills in relation with upper slopes which were very suitable for viticulture. This type of economic exploitation was well connected, it seems, with the amphora production along the coast. In particular the finials of the hills, almost bordering the coast, attracted farms interested in this kind of economic exploitation.

On the Colle Burchio, a hillcrest near the coast overlooking the Potenza plain from the north, field survey and aerial photography located a large settlement with two distinct sectors. A habitation area, with clear soil marks revealing ploughed up walls of a building with rectangular and semi-circular rooms, connects on the surface with a scatter of various Roman household pottery. Next to this was found a remarkably large (circa 120 by 60 m) concentration of amphorae fragments, of which 17 rims, 18 spikes, 71 handles and 36 wall sherds were sampled during our fieldwalking. Nearly all amphora sherds refer to a local imitation of a late Greco-Italic type. However, the identification of the site remains unclear. The location on a hill-top and the lack of misfires do not directly point to a production site. Do the amphorae fragments indicate a storehouse of an agricultural exploitation connected with viticulture or are they part of materials ready to be re-used for construction purposes, a normal activity in this coastal region (*fig. 39*)? On the same site a late Roman lamp was found. There seems to be a volute curl in relief on the disc and the edge shows a relief decoration with an alternating motif of a triangle and concentric circles combined with a crescent (*fig. 37.5*).[110] As this lamp was the only late Roman find, we can not ascertain that this hillcrest site survived the mid-Roman economic downfall of wine production in Italy.

Interesting for the early Roman occupation of the hillcrests is another site located north of the Potenza river. An *unstamped* handle of a Rhodian amphora was retrieved here (*fig. 37.7*). The fragment has a high chronological value. The handle belongs to the latest version of the typical Rhodian Hellenistic type, and can be compared with the unstamped examples of the Antikythera wreck which sank in 80-60 BC. The practice of stamping handles, almost without exception on both of them, disappeared in the course of 1st century BC, probably as a consequence of the political and economic destabilization during the Mithridatic wars, and if not, then almost certainly after the destruction of Rhodes in 43 BC by Cassius. Shortly after this event, or in the beginning of the Augustan age, a new type of Rhodian amphora with pointed handles was created. Considering these arguments a date range of 75-25 BC for our find seems reasonable.[111] Several fragments of vernice nera and an Augustan terra sigillata Dragendorff 16 (*fig. 37.6*) were also found here.

Finally, also worth mentioning is a terracotta revetment plate or antefix decorated with a palm (*fig. 40*) possibly of Augustan age. On the same site a rim of a locally made amphora of the Greco-Italic type was found which suggests that the site was occupied from the 1st century BC onwards.

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In addition to the signatories of this article, the PVS-team of 2003 included: Joris Angenon, Sophie Dralans, Maarten Weyler, Lieven Verdonck, Nele Eggermont, An De Waele, Julie Luyts, Tine Simoens, Elise Martens and Lies Verstraete. We wish to thank all participating members of the team and expli-

citly all voluntary archaeologists and students of archaeology and geography for their enthusiasm and active participation in the fieldwork.

NOTES

1 This multidisciplinary project of Ghent University, directed by the first author, was initiated in 2000 and is financed with grants from the Fund of Scientific Research - Flanders, from Ghent University (BOF-funds) and from the Belgian federal government (IAP V/09: project 'Urban and rural transformation in the western and eastern Roman Empire. Interdisciplinary archaeology of late antique and early medieval times').
2 Vermeulen/Boullart 2001; Vermeulen/Monsieur/Boullart 2002; Vermeulen *et al*. 2003.
3 The September 2003 field campaign was presumably the last to be of such large scale. The coming years will be devoted to the preparation of the final report on all work by the Ghent team in the Potenza valley, as well as on detailed studies of specific topics. Some of the latter, such as 'early urbanisation in the valley' and 'Roman villas in Marche' have recently been published (see: Vermeulen/Verhoeven 2004; Vermeulen/Verdonck 2004).
4 Aerial photography by F. Vermeulen, assisted for processing and cartography by G. Verhoeven and for digital photography by R. Goossens.
5 Fieldwork directed by M. De Dapper, with the help of B.-M. De Vliegher, T. Goethals and L. Verstraete.
6 Surveys coordinated by F. Vermeulen and G. Verhoeven, involving the collaboration of J. Angenon, S. Dralans, M. Weyler, L. Verdonck, C. Boullart, H. Verreyke, N. Eggermont, A. De Waele, J. Luyts, E. Martens and T. Simoens.
7 All artefact processing and analysis was directed by P. Monsieur, assisted by C. Boullart (protohistory) and H. Verreyke (Late Antiquity), with much help from J. Angenon, S. Dralans, M. Weyler, L Verdonck, N. Eggermont, A. De Waele, J. Luyts, E. Martens and T. Simoens.
8 Vermeulen/Boullart 2001; Vermeulen/Monsieur/Boullart 2002; Vermeulen *et al*. 2003; Vermeulen/Verhoeven/Semey forthcoming.
9 The following section is a synthesis and further elaboration of the data presented in Vermeulen/Verhoeven 2004.
10 Most recent summary: Marengo 2000. See also Bejor 1977; Moscatelli 1988; Fabrini 1990, 111-119.
11 Percossi Serenelli 2000.
12 Moscatelli 1985 and 1988. This topographic work was also partly based on observations and on earlier hypotheses of Benigni and Bejor.
13 Fabrini 1990. The excavations gave evidence that a Roman temple base was reused for the construction of the church tower, while several sanctuary rooms with the same orientation as the later monastery buildings contain mosaic floors as well as a system of aqueducts leading to a series of basins and cisterns. Important Egyptian statuary found in this area refers to the cult of Isis and Serapis (Capriotti Vittozi 1999).
14 Paci 1999.
15 Dates proposed for the wall construction vary between the first half (Moscatelli 1985) and the second half (Percossi Serenelli 2000, 75) of the 1st century BC.
16 Moscatelli 1985.
17 Marengo 2000; Percossi Serenelli 2000, 74-105.
18 Marengo 2000.
19 Fabrini 1990.
20 As such, we could complement the excellent surveys executed by Moscatelli in the western part of the territory, published in the *Forma Italiae* series (Moscatelli 1988).
21 This new proposition, which needs further field evidence and more conclusive remote sensing images, leaves us with a much smaller city than proposed by earlier researchers such as Bejor and Moscatelli (see Moscatelli 1988).
22 We deduce this from our recent discovery of an important roadside settlement at Villa Potenza (Vermeulen/Verdonck 2004).
23 More than 300 m above sea level.
24 Mazzeo Saracino 1985, 198.
25 The presence of readily available fresh water could be a good argument for the location of the first settlement.
26 Mazzeo Saracino 1985, 198.
27 Oswald/Price 1920, 65-66, Pl. II, 3-4; Ettlinger 1990, 165-169, 176-177 (types R1, R2, R7).
28 Pucci 1985, 394, Pl. 129, 4-5, 395, Pl. 130, 1.
29 Hayes 1972, 33-35, fig. 4; *Atlante* 1981, 26-27, tav. XIV, 4-5.
30 A few linear traces seen by Moscatelli in the southern part of the city, in line with the present day church, agree well with our new information (Moscatelli 1988).
31 See Fabrini 1990. The insertion of the orientation of this convent and church in the ancient street pattern is at least remarkable.
32 The pale crop marks suggest some sort of pavement. During field checks many grey and white tesserae were noticed here, some still joined together.
33 For *Trea* there is epigraphic evidence of the cults of Minerva, Victoria, Domina, Serapis, Isis and the Emperor (Marengo 2000). The Imperial cult is a likely candidate for this dominant forum temple.
34 Hayes 67: Hayes 1972, 112-116, fig. 19; *Atlante* 1981, 88-89, tav. XXXVII, 9-11; tav. XXXVIII, 5.
35 Stamp Hayes 1: Hayes 1972, 229, fig. 38; *Atlante* 1981, 127 n. 8, tav. LVII, 47-49; CXXXV, 1; CXXXVII, 1. Stamp Hayes 26: Hayes 1972, 235, fig. 39-40; *Atlante* 1981, 125 n. 10, tav. LVI, 13-17.
36 See e.g. the mid-1st century AD f*orum* in Brescia.
37 Mercando 1974b, 207-209, Fig. 84-85b: tomba 27A; 276-277, Fig. 174: tomba 109, with a coin of Domitianus giving a *terminus post quem*; 307, Fig. 221: tomba 140.
38 For the most recent summaries of archaeological finds in *Ricina* see: Capodaglio/Cipolletta 1996 and Percossi Serenelli 1989.
39 There is written evidence that this was certainly the case in late medieval times (Alfieri 1937; Cecchi 1968, 177).
40 Percossi Serenelli 1989, 65; Moscatelli 1985, 85.
41 Mercando 1971b.
42 Mercando/Bachielli/Paci 1984; Percossi Serenelli 1989, 85-86; Capodaglio/Cipolletta 1996, 26-32. This cemetery was used at least until the 3rd century of our era.
43 Cecchi 1968, 178.
44 Excavations in the 1970's and 1980's by the Soprintendenza per i Beni Archeologici delle Marche established the chronology and plan of this building (Percossi Serenelli 1989).
45 Capodaglio/Cipolletta 1996, 9.
46 Mercando 1977-1980.
47 Mercando 1971a; 1971b; 1977-1980; Percossi Serenelli 1989.
48 Capodaglio/Cipolletta 1996, 11.
49 Alfieri 1937.
50 Vermeulen/Verhoeven 2004; Vermeulen/Verhoeven/

Semey forthcoming.

51 Crop marks of this disappeared meandering brook are well visible on the aerial photographs. A field campaign of systematic coring to reconstruct the ancient landscape around *Ricina* is planned for the September 2004 field campaign.

52 Moscatelli already observed that the Roman town could have been partly eroded by the river, whose Roman course could, according to him, have been situated more to the south than the present-day Potenza channel (Moscatelli 1985, 90).

53 Mercando 1971b.

54 Cecchi 1968, 150.

55 This was already suggested by Moscatelli (1985, 90).

56 This position of main temple (*capitolium*?) and theatre dominating the forum is certainly not exceptional and in Marche the situation in the *municipium* of *Suasa* is very similar (Dall'Aglio *et al*. 1991).

57 Cecchi 1968.

58 Oxé/Comfort/Kenrick 2000, 490-491, no. 2449, 2; ca. 15 BC. Erratum: in our previous report (Monsieur/Verreyke/Boullart 2003, p. 88) we erroneously attributed the stamp of Lucius Tettius Samia to Faenza; the provenance should be Arezzo.

59 Hayes 61B: Hayes 1972, 100-107, fig. 16-17; *Atlante* 1981, 83-84, tav. XXXIV, 8.

60 In 1963 a series of Roman structures were excavated when the AGIP service station was being constructed (see Mercando 1970b).

61 Mazzeo Saracino 1985, 197.

62 Mazzeo Saracino 1985, 202.

63 Giuliodoro 2001, 98 n. 146, tav. XVII, 146; Ennabli 1976.

64 Moscatelli already supposed the existence of such a gate in this sector, based on toponymic evidence (Moscatelli 1980).

65 Percossi Serenelli 1989, 85-86. During our recent fieldwork we could locate the base of a hitherto unknown funerary monument, hidden in the bank of the modern Septempedana road.

66 Vermeulen *et al*. 2003.

67 For comments on the methodology see: Vermeulen/Boullart 2001; Vermeulen/Monsieur/Boullart 2002; Vermeulen *et al*. 2003.

68 Goethals/De Dapper/De Vliegher in: Vermeulen *et al*., 2003, 76-79.

69 The most recent study of this bridge is: Lilli 1999.

70 Dating by M. Van Strydonck (IRPA/KIK Brussels).

71 Alfieri/Ortolani 1947. See also: Goethals/De Dapper/De Vliegher in Vermeulen *et al*. 2003, 78-79.

72 Vermeulen/Boullart 2003. Only one concentration of about 23 rough 'protohistoric' sherds has been found in the lowest parts of the valley, somewhat inland and close to the river. It is however also possible that part of these sherds are coarse wares belonging to the Roman site that has been found next to it. A closer look at the ceramic's fabric during the next study campaign should solve this problem.

73 Bintliff 1998, 4.

74 Bintliff 2000.

75 Barker 1995, 160.

76 Vermeulen/Boullart 2003.

77 Vermeulen/Boullart 2003.

78 Malone/Stoddart 2000, 96.

79 This category is 'diagnostic' because they are rims, bases, handles,... There is however no possibility to propose a date.

80 MacDonald 1995.

81 Our particular thanks for the help with the identification of protohistoric pottery goes to Dr. F. di Gennaro and Dr. G. Baldelli.

82 Malone/Stoddart 2000, 95.

83 Boullart 2003.

84 Baldelli 1991a; 1991b; 2001.

85 Silvestrini Lavagnoli/Cazzella 1981, 151-162.

86 Vermeulen/Boullart 2003.

87 Landolfi 1997, 28.

88 Kirigin 2000, 135.

89 Bonomi/Camerin/Tapassia 2000, tavola I and II.

90 Vermeulen *et al*. 2003. For a first account of the Roman landscape situation around this site, see also Goethals/De Dapper/Vermeulen, forthcoming.

91 Moscatelli 1987; see also Percossi Serenelli 2001.

92 An article describing all possible rectification/restitution procedures applicable on oblique images is in preparation (G. Verhoeven). The map of *Potentia* presented here is adapted to the most recent available data and differs slightly from an earlier version presented in Vermeulen *et al*. 2003. For a detailed description of the city plan we refer to Vermeulen/Verhoeven 2004.

93 Vermeulen *et al*. 2003, 84.

94 See especially the distribution map in Vermeulen *et al*. 2003, fig.10.

95 An archaeological dig in the beginning of 2004 by the Soprintendenza per i Beni Archeologici delle Marche has confirmed the existence, demonstrated by our 2003 aerial photographs, of a series of early Imperial funerary monuments lined along the coastal road immediately to the north of *Potentia* (information Dr. E. Percossi)

96 As revealed by some notes found in the archives of the Soprintendenza per i Beni Archeologici delle Marche at Ancona.

97 We prefer not to discuss here the chronological problems concerning the disappearance of Greco-Italic, Lamboglia 2 and Dressel 6 types. In the near future, when a thorough study of the amphorae found in the Potenza valley can start, we will refine the chronology and the relationship with other amphora finds in the Adriatic.

98 Hayes 50: Hayes 1972, 69-73, fig. 12; *Atlante* 1981, 65-66, tav. XXVIII, 9-14; 86-87, tav. XXXVII, 1-2. Stamp Hayes 19: Hayes 1972, 233, fig. 38; *Atlante* 1981, 128, tav. LVIII, 7.

99 For the discussion and bibliography on *spatheia* and related cylindrical amphorae, see Monsieur/Verreyke/Boullart 2003.

100 Possibly belonging to the groups of Sarius- and Acobeakers? No parallel was found actually.

101 For the discussion and the bibliography on plain and coarse wares, and amphorae, see the preceding preliminary reports: Vermeulen/Monsieur/Boullart 2002; Monsieur/Verreyke/Boullart 2003.

102 Hayes 53B: Hayes 1972, 78-82, fig. 13; *Atlante* 1981, 67, tav. XXIX, 5-6; CXXXIV, 3. Hayes 59B: Hayes 1972, 96-100, fig. 15; *Atlante* 1981, 82-83, tav. XXXII, 13; XXXIII, 1, 3-4, 6; CXXXV, 1.

103 02-WF69.

104 Keay 1984; Panella 1973, *passim*.

105 03-WF135, 03-F68, 03-F74.

106 Mazzeo Saracino 1985, 196.

107 Hayes 58: Hayes 1972, 93-96, fig. 14; *Atlante* 1981, 81-82, tav. XXXII, 2-5. Stamp *Atlante* n. 4: *Atlante* 1981, 125, tav. LIV, 4; Hayes 1972, pl. XVb.

108 *Atlante* 1981, 200-203, tav. XCIX, 6-8; C, 1-6.

[109] Hayes 1972, 329-338, fig. 67-69; *Atlante* 1981, 231-232, tav. CXII, 2-4.

[110] No exact parallel was found as yet.

[111] Grace 1965, 6-9, 14-15 and figs. 1-3: of the 5 Rhodian amphorae recovered from the Antikythera wreck, two of them were unstamped; Finkielsztejn 2000, 407, 413-414. It is interesting to note that the Antikythera ship carried also Adriatic amphorae of the Lamboglia 2 type. The new Rhodian type with pointed handles and slender body were rarely stamped; Monsieur 2001, 74 and fig. 11.

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