

EXCAVATIONS IN THE ROAD TRENCH AREA AND RESEARCH PROSPECTS IN THE FUTURE*

Participation of a northern university in archaeological research in a southern country departs from the fact that even in Finland the millennial Eurasian cultural heritage is reflected. As it is well known, Italy has played a major role in the formation and transmission of this cultural heritage in which the Roman imperial civilization has given the greatest effects. Crustumerium and the related early central Italian cultures are seen in the University of Oulu (Finland) as an important and interesting research object, representing the early phase in the long march of Rome towards its dominant position,¹ the effects of which are seen in many ways all around the world. In the recent research the Roman civilization has been seen even as an important starting point for the today's globalization phenomenon.² Thus the early Roman period, 'Protohistory', can be seen as a prehistory of the globalization process.

Our research is integrated at all levels of archaeological teaching and academic training in national and international collaboration. In the national context all the Finnish universities where archaeology discipline is represented (Helsinki, Oulu and Turku) are included, with the Institutum Romanum Finlandiae as an important home base for the activity. A further starting point for our activity in Crustumerium is the concept to see archaeology as an environmental discipline: it is hoped that the mere presence of research activity on the site could diminish the well-known illegal diggings there.³ Wildfires, too, are a common threat on the site (*Fig. 1*). Moreover, we appreciate that traditionally in the Crustumerium campaigns the local people, the nearest 'owners' of the cultural heritage of the site, are noted with the *Festa delle Lucarie*⁴ recording the battle of Allia which according to our sources was extremely disastrous to the Romans in 18 July 390 (or 387) BC. The local people are recorded also by exposition of the finds from Crustumerium in the Museum of Monterotondo.⁵

* Planning for the participation of the University of Oulu in the international research co-ordinated by Dr Francesco di Gennaro of the Soprintendenza Speciale ai Beni Archeologici di Roma was initiated during the academic year 2002-2003 with contacts between Dr Ulla Rajala, Dr di Gennaro and Dr Eero Jarva. This led to a joint application of the persons mentioned to the Finnish Cultural Foundation, which decided to give a grant for the beginning of excavations by the universities of Cambridge and Oulu in 2004. In the end of 2004 the Academy of Finland made a decision of funding the project from 2005 to 2008.

¹ E.g. recently: S. Lipponen, 'Textile-making tools from Ficana, Italy, Zone 4a', in *Archaeological Textiles Newsletter* 44, Spring 2007, 2-5; T. Sironen, 'Minora Latino-Sabellica II. Un trofeo in osco da Poggio Cinolfo (AQ)', in *Arctos* 40 (2007), 109-130.

² See e.g. U. Østergaard, 'The failure of universal empire', *Between National Histories and Global History* (Historiallinen Arkisto 110:4), Helsinki 1997, 99: "With the exception of the Soviet empire all European empires have at one time or another claimed to inherit traits from the Roman Empire, either from the *Imperium Populi Romanum* of the Republic Empire or from the *Imperium Romanum* governed by the Emperor Augustus and his later Christian successors (the *principate* and the *dominate*)."

³ For the longstanding activity of the "Mozart" of Linz, see <http://www.patrimoniosos.it/rsol.php?op=getarticle&id=14428>. See also: P. Togninelli, 'Crustumerium: il sito e i materiali di recente acquisizione', in F. Di Mario (ed. by) *Il tesoro ritrovato. Il senso del bello nella produzione artigianale del Lazio antico*, Roma 2000, 67-75; P. Togninelli, 'Sequestro A.P.', in B. Adembri (ed. by), *Archeologia ferita. Materiali sequestrati nei territori dei comuni di Monterotondo, Guidonia Montecelio, Mentana, Marcellina*, Monterotondo Scalo 2003, 63-87.

⁴ Festus p. 106 L.

⁵ P. Togninelli, *Monterotondo. Il Museo Archeologico e il Territorio*, Dragoni 2006, 35-42, figs. 35, 37-43. At the moment also part of the grave goods of the tomb 2 mentioned below is exhibited in the museum.



Figure 1. The Road Trench on the south east edge of Crustumarium after willful fire in July 2003.

The research interests of the team of the University of Oulu at Crustumarium were directed in the very beginning towards the rests of the settlement area of the site, and as far as possible towards Archaic and/or Protohistorical remains. These interests were met in the existing problematics regarding one of the prominent features of Crustumarium, the monumental Road Trench situated on the south-eastern corner of the settlement area, interpreted either as a ditch made for a defensive wall⁶ or as a road cutting⁷ as it still works.

In 2004 a small trench (A) was excavated in the mid way of the east slope of the Road Trench (*Fig. 2*). Here the width of the trench is about 30 m and the excavation indicated that the ancient cutting of the tuff hill had penetrated to a depth of more than 8 m. Small test pits (B and C) dug above the slopes of the Road Trench seemed to indicate that the cultural stratigraphy below the cultivation layer in this part is nearly non-existent.

⁶ L. Quilici – S. Quilici Gigli, *Crustumarium* (Latium Vetus III), Roma 1980, 67-70.

⁷ F. di Gennaro, 'Primi risultati degli scavi nella necropoli di Crustumarium. Tre complessi funerari della fase IV A', *Archeologia Laziale* IX (Quaderni del Centro di Studi per l'Archeologia etrusco-italica 16. Roma 1988), 113 – 123, partic. 113-114; F. di Gennaro (ed. by), *Itinerario di visita a Crustumarium*, Roma 1999, 25-26.



Figure 2. The site of the Trench A in the foreground on the right.

During the next campaign (2005) a long trench (D) was excavated on the top of the hill where the road cutting is not visible. It proved out that the original cutting in the tuff bed had penetrated here to a depth of five meters from the present surface. In the very bottom some gravel was met (*Fig. 3*), suggesting that we had reached the west side of a graveled road. The stratigraphy on both sides of the road cutting had been mostly ploughed away, but on the east side remains of an Archaic layer protected by roots of a great oak came to light and proved out to have been sectioned by the road cutting.



Figure 3. Gravel visible in the bottom of the Trench D.

The presence of an ancient road in the Road Trench⁸ line was finally confirmed in the excavations carried out in 2006 in a trench (F) about 80 m towards northwest from the former one. A row of hewn tuff blocks was found lining the west side of a graveled road (*Fig. 4*). On the west side of them remains of an earthen embankment were found.



Figure 4. Graveled road lined with tuff blocks in the Trench F.

The character of the Road Trench was right away monumentalized in the fieldworks carried out in 2007 when a series of superimposed road levels was discovered in a trench (G) located between those of the years 2005 and 2007.⁹ At the depth of ca. 0.85 m below the modern cultivation road, a road pavement constructed of quite homogenous light grey tuff came to light (*Fig. 5*). The probable date of this three-meter-wide road is the Imperial Roman period. Close to one meter deeper there was a series of graveled road levels accumulated above a cutting in the natural tuff bed which was limited on both sides by ditches obviously made to divert rain water from the road surface (*Fig. 6*). The lowermost gravel layer was adjusted to the width of a tuff level cut between the furrows limiting it, about five and a half meters,

⁸ The Road Trench excavation has been the subject in the unpublished master thesis in archaeology of J. Tuppi (*Crustumeriumin tieuran problematiikka: Asuinpaikkatutkimukset vuosilta 2004-2007*. University of Oulu 2007).

⁹ E. Jarva – A. Kuusisto – S. Lipponen, – J. Tuppi, ‘Crustumerium: the Road Trench excavation 2007’, *Fossa* (Societas Archaeologiae Classicae Fennica) 4/2007, 5-9.

whereas the successive gravel surface was about one meter wider. Finds in the second gravel pavement suggest that it was in use during the mid-Republican period. After that the gravelling has been limited to a width of some three meters. To the east of a large ditch limiting the second gravel pavement, a narrow furrow was discovered below a layer containing Archaic material, and again, on its east side there was another ditch in the tuff bed. It seems possible that we are dealing with an Archaic road rut.



Figure 5. Road with a tuff surfacing.



Figure 6. Gravelled road levels of the road cut in the tuff bed.

Road trenches cut into tuff bed are known from the sites of other Archaic Latial and Etruscan cities: for example in Eretum, Fidenae, Gabii, Veii and Narce.¹⁰ One can hypothesize that the emergence of road trenches in Archaic Latial contexts could be seen as another sign of Etruscan influences. On the other hand it has been suggested that the roots of the Roman roads should be seen in Greece where influences came from the east: from Mesopotamia through Persia and the Ionian cities.¹¹

It is obvious that during the phase of the two lowermost graveled roads in the trench G its width was enough to permit the passing of vehicles, although the present knowledge of their width is scarce. A prolific source on the question is given by ruts in ancient roads in giving information regarding the gauge of the vehicles, which have left them. Jean-Pierre Adam has measured ruts in Roman roads and come to a conclusion that their medium is 1.3 m,¹² whereas according to Lorenzo Quilici the Archaic road ruts indicate widths between 1.2 and 1.3 m.¹³ Some measurements of road ruts taken recently by us in the Banditaccia necropolis of Cerveteri and in Blera have given figures slightly more than 1.4 meter. Such gauge measures signify that at least in roads cut into tuff bedrock the minimum width of the road had to be no less than about two meters because great part of the axle, even nearly one meter, was in carts intended for heavy loads covered by the hubs, the navels of the wheels.¹⁴ The suggested minimum finds a parallel in the passage of the Law of the Twelve Tables (VIII 6) where the breadth of a straight road is fixed to eight feet and in a curve to sixteen feet (*in porrectum octo pedes habet, in anfractum, id est ubi flexum est, sedecim*).¹⁵ This suggests an interpretation that the double width of the road in curves was intended for passing of the vehicles.

Even the latest level of the graveled road in Crustumerium, some three meters wide, fills the requirements of the Twelve Tables Law. The same seems probable in the Archaic phase, too, perhaps even in this phase offering a possibility for passing of the vehicles. The bottom width of the road cutting in the excavation trench D – about two meters - did not offer such a maneuver, and probably the situation is the same in the point where the trench A was made in 2004. It is also notable that to the west of the road pavements in the trench G there has been an area more than five meters deep in the tuff bed carved approximately to the same level with the road pavements. Here layers marked by burned surfaces were noted, perhaps indicating some activity connected to the use of the road.

¹⁰ B. Belelli Marchesini — F. di Gennaro, 'Fidenae', *SE* 58 (1993), 521; M. Melis — S. Vardaro, *Gabii. Storia di una città* (Roma 1993), 41-42; L. Quilici — S. Quilici Gigli, *Fidenae* (Latium Vetus V), Roma 1986, pls. C and CI; L. Quilici, 'Gabii: una città alla luce delle antiche e delle nuove scoperte', *Mondo Archeologico* 40 (1979), 16; T.W. Potter, *A Faliscan Town in South Etruria. Excavations at Narce 1966-71*, London 1976, 13-14; R.M. Ogilvie, 'Eretum', *PBSR* 33 (1965), 73-74; J.B. Ward-Perkins, 'Veii: the historical topography of the ancient city', *PBSR* 29 (1961), 4-20.

¹¹ Y.A. Pikoulas, 'The Road-Network of Arkadia', *Defining Ancient Arkadia* (Acts of the Copenhagen Polis Centre 6), Copenhagen 1999, 308.

¹² J.-P. Adam, *L'Arte di costruire presso i Romani. Materiali e tecniche*, Milano 1984, 302.

¹³ L. Quilici, 'Le strade carraie nell'Italia arcaica', in A. Emiliozzi (ed. by), *Carri da Guerra e principi etruschi* (catalogo della mostra, Viterbo, Palazzo dei Papi 24 maggio 1997 – 31 gennaio 1998, Roma Museo del Risorgimento 27 maggio – 4 luglio 1999), Roma 1999, 73-82, partic. 76. However, the section drawings in the article (figs. 5b and 5d) suggest even greater widths. According to Yannis Pikoulas the road rut gauge in Archaic Arkadia in Greece is regularly 1.4 m: Pikoulas, cit. note 11, 248-319, partic. 251-252.

¹⁴ For hubs, see e.g. K.D. White, *Greek and Roman Technology*, London, 136, figs. 133, 137; M.A. Littauer — J.H. Crowell 1999: 'Antefatti nell'Oriente mediterraneo: Vicino Oriente, Egitto e Cipro', in Emiliozzi (ed. by) cit. note 13, 8-9, figs. 5-6.

¹⁵ Cf. also the seven feet axle length suggested by Hesiod (Hes. *Op.* 424).

The Road Trench has inevitably been a major project in Crustumerium: we can estimate that its realization required digging and removal of a notable amount of tuff, probably tens of thousands of cubic meters. Such an operation has required a formidable organizing and labor force. The result was that the southern part of the Road Trench offered a ramp with a rise of about 2.3 grades, which has formed an appreciable logistic facility. Such a project could not be prompted by local interests only but must have been realized with greater interests in mind: to make this route attractive for economic contacts between southern Etruria, especially Veii, and southern Latium and finally Campania.¹⁶ The existence of a canalized road running through the site implies a possibility of control, which together with exchange of products probably has offered an essential economic resource to the community of Crustumerium.¹⁷ The width of the road in the area now excavated could offer possibilities for those using the road to stay and exchange goods with the local people. We can also estimate that the local people had an opportunity to control the traffic in this area, especially from the west side where the terrain was a couple of meters higher in respect to the road level.

Despite concentrating on the problematics regarding the Road Trench the excavations have produced also other discoveries, one of them being remains of walls made of irregular tuff blocks in the east part of the trench F. Close to these walls part of a well (or basin) came to light (*Fig. 7*) and in the west part of the trench G some burials and obvious agricultural canals were met.¹⁸ Use of mortar in the wall remains and pottery fragments including *terra sigillata* and other classes refer to an activity of the late Republican and early Imperial period of the structural remains, obviously representing an example of the rustic complexes referred to in the earlier research.¹⁹ The date and function of the canals is not known for the time being, however use in cultivation can be supposed: perhaps furrows in a vineyard are a promising hypothesis.

¹⁶ F. di Gennaro, 'Crustumerium e la sua necropolis', in M.A Tomei (ed. by), *Roma. Memorie dal sottosuolo ritrovamenti archeologici 1980/2006*, Roma 2006, 222-223.

¹⁷ F. di Gennaro, in F. di Gennaro – P. Togninelli – R. De Puma, 'Crustumerium e l'Etruria', *Etruscan Studies* 9 (2002-2003), 45 – 62, partic. 50.

¹⁸ Agricultural canals were discovered in Crustumerium in the excavation carried out in 1998: A. Amoroso, 'Crustumerium, da città arcaica a suburbium di Roma', in 'Fidenae in età romana. Giornata di studio presso l'Istituto Archeologico Germanico (Roma 26 maggio 2000)', *BCAR* 101 (2000), 268-272, figs. 6-8; idem, 'Nuovi dati per la conoscenza dell'antico centro di Crustumerium', *ArchClass* 53 (2002), 323.

¹⁹ Quilici – Quilici Gigli, cit. note 6, 294-304, pls. CIII, CXVIII-CXX; Amoroso, cit. note 18 (2000), 266-282; idem, cit. note 18 (2002), 323. For the *villae* and their owners in the northern suburbium of Rome, see F. di Gennaro – P. Barbina – M. De Filippis – F. Dell'Era – G. Fratianni – P. Togninelli, 'Il liberto Faonte, il notevole Marco Claudio Ponzio Ponziano Marcello e i loro vicini', in B. Santillo Frizell — A. Klynne (ed. by), *Roman villas around the Urbs. Interaction with landscape and environment. Proceedings of a conference at the Swedish Institute in Rome, September 17-18, 2004*, Rome 2005, 27-48.



Figure 7. Wall remains in the Trench F. A well or water basin in the background on the right.

One of the two burials excavated was of the common type covered by roofing tiles, *a cappuccina* (Fig. 8) and contained remains of a rather slender cremated (female?) individual in the burial pit (*bustum*). Fragments of an oil lamp²⁰ and a partially visible brick stamp on one of the roofing tiles (containing also a foot stamp of a cat?) indicate that the burial is not earlier than the late 1st century AD. Several iron nails in the burial pit obviously result from the wood used in the act of cremation.



Figure 8. A Roman imperial period tile grave discovered in the Trench G.

²⁰ Cf. D.M. Bailey, *A Catalogue of the Lamps in the British Museum 2. Roman Lamps made in Italy*, London 1980, nos. Q957, Q960, Q969, pl. 21 (2nd half of the 1st cent. AD); Q1205-1211, pls. 56-57 (Claudian to early Trajanic); Q1222, pl. 58 (last 3rd of the 1st cent. AD).

A major discovery came during the 2005 excavation season when a trench (E) was made on the west bank of the Road Trench: two Iron Age burials (1-2) were discovered in an area previously regarded as forming part of the settlement.²¹

The tomb 1 was located on the very bank of the Road Trench and came only partially visible in the excavation pit. The excavated part of the tomb indicated that we are probably dealing with a trench tomb (*tomba a fossa*). A shallow cut, approximately one meter below the modern tilling soil, was found in the tuff bed for the deceased, a type of tomb met also in other burial grounds of Crustumerium, for instance in the nearby Monte Del Bufalo.²² The excavated part of the tomb did not reveal any signs of skeletal remains and there was only one small, corroded javelin head in iron. The filling layer of the tomb contained small pieces of red impasto and fine ware pottery, roof tiles and daub, suggesting dating of the tomb to the Orientalizing and early Archaic periods.

The 2006 excavations revealed that tomb 2 is a Narce type *loculus* tomb (Fig. 9). The type has been frequently discovered in the necropolises of Crustumerium.²³ Moreover, it has been suggested that the type reflects larger regional connections of Crustumerium with other centers of that time, since the type has been discovered in the burial grounds of Capena, Narce and Veii, for example.²⁴ The filling layer of the shaft rose above the tuff bed, to a height of 1.4 – 1.6 meters. The *loculus* had been cut to the north wall of the shaft and it was closed by three tuff blocks of different size. Removal of the blocks revealed that at least two successive downfalls of the *loculus* roof had occurred in the past.



Figure 9. Tomb 2 in the Trench E with the closing blocks of the burial alcove (*loculus*).

²¹ These burials have been the subject in the unpublished master thesis in archaeology of A. Kuusisto (*Crustumerium: The Road Trench burial ground. Tombs 1-2 (Sepolcreto della Trincea Viaria*. University of Oulu 2007).

²² di Gennaro et al. cit. note 17, 45-62.

²³ di Gennaro cit. note 7, 113 – 123.

²⁴ A.M. Mura Sommella, 'Aspetti dell'Orientalizzante antico a Capena. La tomba di un principe guerriero', *RPAA* 77 (2004-05) 219-287; F. di Gennaro, 'Le tombe a loculo di età orientalizzante di Crustumerium', in F. Arietti - A. Pasqualini (ed. by), *Tusculum. Storia archeologia Cultura ed Arte del Tuscolano* (Atti del primo incontro di studi, 27-28 maggio e 3 giugno 2000), Roma 2007, 163-176.

A spiral amphora was discovered at the height of 40 cm above the bottom of the *loculus*, perhaps implicating that libation or sprinkling of the body with wine had taken place at the open grave, after which the vessel was deliberately broken in the grave, a ritual previously identified in the burial grounds of other Latial centers such as Castel di Decima, Ficana and Osteria dell'Osa, where it was selectively used in rare occasions.²⁵ Some other grave goods, too, could have been used in a funerary banquet.

The skeletal remains consisted mainly of a small piece of the jaw with a few teeth, the location of which enables to suggest that the deceased had been buried the head towards east. The deeply worn masticatory surface of the teeth suggests that the deceased had been a mature adult, probably been between 40 – 60 years at the time of death.

In total, there were 30 grave goods, which were mainly located in the east part of the *loculus*, behind the head of the deceased as in other burials in Crustumerium. The discovered grave goods consisted of 13 vases of brown-to-black impasto pottery, 9 fine ware pottery, 3 red impasto vases, an iron spearhead and some very fragmentary materials (*Fig. 10*). Among the impasto vases there is a carinated amphora which has been regarded as typical of Crustumerium. The quantity of Italo-Protocorinthian *aryballoi*, in total 7, is a notable feature, witnessing about contacts of Crustumerium with Etruscan centers such as Veii and Caere in the 7th century BC.²⁶ One of these *aryballoi* (SAR, inv. 516543) had been uniquely embellished with small glass rings that formed lines on the mouth and the body of the vessel (*Fig. 11*). Together with the spearhead these *aryballoi* can be regarded as personal objects. Among the vases which can be interpreted as banquet equipment it is noteworthy that the two cups with horizontal handles (cf. Greek *kotyle*) have been posed symmetrically on both sides of the jaw level of the deceased, supporting thus the suggestion of Annette Rathje that these were used in the distribution and drinking of wine.²⁷

²⁵ F. Zevi, 'Alcuni aspetti della necropoli di Castel di Decima', *PP* 32 (1977), 251 – 255; M. Cataldi Dini, 'La necropoli di Ficana', *Ficana. Una pietra miliare sulla strada per Roma*, Roma 1981, 132; A.M. Bietti Sestieri (ed. by), *La Necropoli Laziale di Osteria dell'Osa*, Roma 1992, 241 - 242, 840 - 841, 860.

²⁶ F. di Gennaro, 'Crustumerium', *SE* 58 (1993), 512 - 514; di Gennaro et al. cit. note 17, 45-62.

²⁷ A. Rathje, 'A Banquet Service from the Latin City of Ficana', *ARID* 12 (1983), 7 - 29, partic. 12 – 13.



Figure 10. Tomb 2. Fine ware *aryballois* and impasto vases coming in light.



Figure 11. An Italo-Protocorinthian *aryballos* decorated with small glass rings.

A calculation of the capacity of pottery discovered in the tomb 2 has been done, an approach not often turned to by archaeologists in which the practices and methods are not yet standardized. There are different ways to measure the capacity, e.g. by

filling vases with some liquid or fine-grained dry material.²⁸ In this case reconstruction drawings were used, a method in which the reliability of the results depends on the accuracy of the documentation. In all methods the evaluation of the level to which the potters intended their vases to be filled in the antiquity is problematic.

The capacity of the carinated amphora (SAR, inv. 516529) provided with peaks in the handles can be calculated to about two litres, thus falling out of the two categories defined by Paolo Togninelli among this vessel type in Crustumerium, circa 1.4 litres and 2.4 litres.²⁹ The capacity of 2.4 litres comes close in the very fragmentary spiral amphora (SAR, inv. 516528/30), which could be reconstructed graphically only. The small dipper cup, a type very common in Crustumerium, provided with one vertical handle (SAR, inv. 516540) has a capacity of ca. 0,76 dl, falling thus in the range of 5.5 and 8.5 dl noted by Togninelli among other finds from Crustumerium. Among other vases it is marked that the capacity of two small cups provided with horizontal hands (SAR, inv. 516537 and SAR, inv. 516541), reminding the Greek vases recognized as *kotylai*, arrive respectively to capacities of 2.2 and 2.7, not very different from the Attic unit of a *kotyle*, corresponding the Roman *hemina* (2.73 dl). A Roman metrological parallel seems to be also in the case of the globular impasto olla (SAR, inv. 516526) with the calculated capacity of 4.4 litres (cf. the Roman *semodius*, 4.37-4.38 l). Accordingly in some cases we can find support for the hypothesis of Togninelli that an ancient metrological system existed in Crustumerium.

On the basis of grave goods, especially the Italo-Protocorinthian *aryballoi*, the date of the tomb 2 can be estimated to 650 – 630 BC.

Discovery of the burials of the Orientalizing period in an area previously recognized as making part of the urban area even before this phase³⁰ aroused new interest in the surface materials on the western side of the Road Trench; also, a walkthrough of the east side of the road on the top of the hill has been conducted. The coordinates of the finds have been documented by a GPS instrument. Currently processing of the material is not yet completed, but there is reason to suppose that until the Orientalizing period the settlement in this part of the urban area would have been more restricted than previously thought: there is a marked concentration of Iron Age finds in the area around the level of 100 m a.s.l., whereas on the level of the burials and towards south of them only later material has been found in our survey.³¹

It can be summarized that the excavations conducted in the Road Trench area of Crustumerium between 2004 and 2007 have demonstrated the great potential of research. Despite the fact that, as usual, the uppermost areas are highly consumed by the modern ploughing, reaching commonly to a depth of 0.35 to 0.45 m, a various and deep stratigraphy of ancient activity is remained in the Road Trench proper and in its vicinity. The preliminary collection of GPR data by the Department of Physics, the Third University of Rome, was carried out in 2007 under direction of Dr. Elena Pettinelli and Dr. Pier Matteo Barone on the north side of the Trench F. It proved out

²⁸ A. Nijboer, *From Household Production to Workshops: Archaeological Evidence for Economic Transformations in Central Italy from 800 to 400 B.C.* (<http://www.lcm.rug.nl/publications/>), Groningen 1998, 223.

²⁹ Togninelli cit. note 5, 41 – 42; see also P. Togninelli, 'Prime osservazioni sugli scambi commerciali dall'analisi dei prodotti ceramici', in Arietti - A. Pasqualini (ed. by) cit. note 24, 156.

³⁰ Quilici - Quilici Gigli cit. note 6, 276-281, pls. 104-105, 107-110; Amoroso, cit. note 18 (2002).

³¹ It is possible, of course, that the earliest layers down in the hillside have been covered later ones and thus are not easily brought to light by ploughing. On the effects of ploughing, see J. Ikäheimo, Ploughsoil assemblage of zone 4a at Ficana (Monte Cugno), *OpRom* 28 (2003), 35-45.

that this geophysical technique is useful in the settlement area of Crustumerium: the data showed continuity of the remains previously attested by excavation in the Trench F.

The question of the date and nature of the earliest road passing the area under research remains open in the light of the data received up to now, but the presence of graves of the Orientalizing period may signify that even in the early phase of the settlement a road passed there, perhaps in a less monumental cutting or without such. In the light of the present research the great road trench was dug into the tuff bed during the Archaic period. The great care of the maintenance of the road during the mid-Republican period is a notable feature: such an effort does not seem logical for local needs and as Veii was conquered by the Romans in the early 4th century, one would suppose that in this phase “all roads led to Rome”. As a result of the third Roman conquest at the beginning of the Republican era, as mentioned by Livy (2.19.2), the fields of Crustumerium were assigned to a newly created 21st Roman tribe, the Clustumina³². On the other hand the less careful character of the uppermost level of the graveled road seems to indicate fading of the settlement during the Republican period demonstrated by surface material.³³ It seems that the road trench was gradually abandoned towards the 2nd century BC. Crustumerium thus fell to delivering agricultural products to the markets of Rome. Also the later road provided with the tuff pavement in the trench G is a notable discovery with the Imperial period burials. Its extension and course is not yet known: it was not seen in other trenches and its slightly divergent orientation may mean that it did not follow the line of the Road Trench.

In addition to the obvious research potential of the Road Trench area of Crustumerium, it is noteworthy that in a limited area a many-sided archaeological resource exists which after further excavations and publication could be developed into an interesting visiting site both for scholars and the common people.

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³² A. Amoroso – P. Barbina, ‘L’istituzione delle tribú Claudia e Clustumina nel Latium Vetus. Un esempio di gestione del territorio da parte di Roma nel V secolo a.C.’, *BCAR* 104 (2003), 19-36, partic. 30.

³³ Amoroso cit. note 18 (2002), 322, figs. 6-7, 22.