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A New Plan for an Ancient Italian City: Gabii Revealed

JEFFREY A. BECKER, MARCELLO MOGETTA, AND NICOLA TERRENATO

Abstract

The city of Gabii was one of the main centers of ancient Latium, yet very little of the settlement is known through archaeology. The site has been the focus of only sporadic exploration, and the available evidence for the urban history and development of the city is extremely fragmentary. New fieldwork has investigated the urban area with magnetometry and core sampling in preparation for a major campaign of new excavations. The results show that Gabii was orthogonally planned around a main, hitherto unknown thoroughfare and that significant structures and associated stratifications are relatively well preserved. The new work has the potential to yield much-needed information, not just about this important center but also about first-millennium B.C.E. urbanism in the Italian peninsula.*

INTRODUCTION

The emergence of urban centers in central Italy has been the focus of a very active debate in recent years.¹ While there has been exponential growth in funerary data for the Iron Age and Orientalizing period,² contemporary settlement evidence is still scarce and fragmentary. For major centers such as Rome, Tarquinia, Caere, or Ardea, our data set is still essentially limited to small-scale excavations³ and extensive surface surveys.⁴ This severely limits our ability to grasp in full the path that led to the urban explosion of late first-millennium B.C.E. Italy. In this context, Gabii represents an almost completely unexploited resource and appears to hold great research potential, since it is a site that was occupied almost continuously from the end of the Bronze Age until its progressive

abandonment during the Late Roman and Early Medieval periods and that is relatively unencumbered by extensive imperial remains. Moreover, the land on which it lies is easily accessible and mostly owned by the Italian government. With these considerations in mind, our team started planning an in-depth investigation of the urban area at Gabii, but it soon became clear that the existing knowledge was insufficient for a proper understanding of its structure, topography, or even simply of its extent. The situation clearly called for a program of preliminary diagnostic work, whose results are presented here.

This study is the final report on a large-scale magnetometry and core sampling survey of the site of ancient Gabii. The aim of this two-pronged survey was to establish, to the extent possible, a plan of subsurface remains as well as to assess the nature and depth of the associated stratified deposits. In recent years, the utility of surveys of this kind at urban sites in central Italy has been highlighted by groundbreaking work conducted in the context of the Tiber Valley Project.⁵ At sites such as Falerii Novi, Forum Novum, Capena, Otricoli, and Portus, new-generation magnetometry has revealed not only overall urban layouts but also the plans of individual public buildings and blocks of domestic architecture.⁶ The potential of these approaches for the discovery of buried features is enormous and may overshadow aerial photography and other kinds of surveys as the most efficient tool for future investigations of Italian cities. The newly discovered plan of Gabii is proof of this, and the results

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Anna Gallone served as the field director, and Stephen Kay and other members of the Archaeological Prospection Services of Southampton conducted the geophysical survey. Flavio Cavazza Borghese kindly permitted us to survey on his property. The field crew in 2008 was composed of Jason Farr, Elizabeth C. Robinson, and Carlo Virili.

¹ Becker 2007; Gros and Torelli 2007; Wallace-Hadrill 2008.

² Bietti Sestieri 1992a, 1992b.

³ Smith 1996; Paoletti and Camporeale 2005.

⁴ Pacciarelli 2000.

⁵ Patterson 2004.

⁶ Keay et al. 2000, 2006; Keay and Millett 2005.

of the survey there represent an important new step for our understanding of urban formation and town planning in Italy. Finding a regular layout in a city that was not intentionally founded opens a vast array of new historical and archaeological perspectives and challenges us with new questions.

BACKGROUND

Historical and Literary Sources for Gabii

Gabii was one of the largest cities in Latium. It emerged in the Early Iron Age (ca. 900–700 B.C.E. in the traditional chronology) in the context of the same wave of urbanization that brought nearby Rome into existence. The site is located 12 miles east of Rome on a narrow ledge delimited to the north and to the south by two volcanic craters—Lake Castiglione and Lake Pantano, respectively (figs. 1, 2). This strategic position allowed Gabii to control a fundamental choke point at the intersection of important interregional roadways. One of these ran from the coast and the mouth of the Tiber toward the Apennines, and the other from Veii and south Etruria to Capua and Campania.⁷

The textual evidence pertaining to Gabii offers some tantalizing glimpses into the origins, development, and eventual decline of the city during the Late Republican period. The earliest bit of information comes from an inscription in Greek letters scratched on a vessel from a burial dating within the first quarter of the eighth century B.C.E. at the latest (which makes it the earliest ever found in the western Mediterranean). This sensational discovery has brought Gabii to the forefront of the debate on the colonial interactions between the Euboean presence in southern Italy and native polities, even if much around this exceptional find remains controversial.⁸ It comes as no surprise, then, that the Roman antiquarian tradition of the first century B.C.E., in the context of the controversy regarding the “barbarian” origins of Rome, identified Gabii as the locus of culture par excellence, where Romulus and Remus were supposed to have been educated in letters, music, and the use of weapons.⁹ Also worth mentioning is a Latin inscription incised on a

Fig. 1. Map of central Italy, showing the location of Gabii (courtesy University of North Carolina at Chapel Hill, Ancient World Mapping Center).

local vessel imitating the morphology and function of the Greek *dinos*, found in a grave dating to the mid to late seventh century B.C.E. and thus attesting to the adoption of specific Greek social practices.¹⁰

A cluster of historical references pertains to the last period of the Roman monarchy and the beginning of the republic, suggesting that Gabii played an important role in Rome's expansion in Latium.¹¹ Sextus Tarquinius captured the city by means of guile in a Livian narrative that adapts the Herodotean episodes of the capture of Babylon by Darius and of the fight between Thrasybulus of Miletus and Periander of Samos.¹² In the aftermath of these events, Rome and Gabii went on to strike the *foedus Gabinum*, the earliest treaty based on equal terms ever stipulated between Rome and an autonomous polity (interestingly referred to by Dionysius of Halicarnassus as an *isopoliteia*).¹³ Significantly, the shield on which the *foedus Gabinum* was inscribed—still visible in the time of Dionysius of Halicarnassus—had been dedicated in the Temple of Semo Sancus/Dius Fidius in Rome;¹⁴ this temple had been built in 466

⁷ Balil 1969; Zaccagni 1978.

⁸ On this inscription, see Watkins 1995; Ridgway 1996; Ampolo 1997.

⁹ This tradition was soon accepted within the rationalizing and Hellenocentric versions of Rome's origins (Dion. Hal. *Ant. Rom.* 1.84, 4.53; Plut. *Mor. De fort. Rom.* 8; *Vit. Rom.* 6; see also *Origo gentis romanae* 21; Ampolo 1997).

¹⁰ The inscription literally recalls the toasting expressions that were recited during Greek symposia, as we know from inscriptions on Attic cups (Colonna 1980); a different interpretation is argued by Peruzzi (1992, 1995) (the inscriptions

from both of the tombs [482 and 115] at Osteria dell'Osa would, in his view, refer to a sorority involved in the cult of Dionysos).

¹¹ The literary testimonia on ancient Gabii are collected in Almagro Basch 1958.

¹² Mastrocinque 1984. For a general historical reconstruction, see Ampolo 1990; Meulder 2005.

¹³ On the treaty and relevant literary testimonia, see Bruun 1967; Montero Herrero 1981.

¹⁴ The memory of the *foedus Gabinum* was still largely advertised during the Augustan age by *triumviri monetales* belonging

Fig. 2. Gabii's main archaeological areas. Diamonds indicate the locations of the new excavations.

B.C.E. by Sp. Postumius Albus Regillensis, son of the dictator A. Postumius Albus (who had commanded the Roman army at the Battle of Lake Regillus) and member of a gens that had maintained close ties with Gabii throughout the Republican period.¹⁵

In addition, the antiquarian tradition has preserved material attesting to an active role for Gabii in the cultural and religious interaction with Rome. We know, for instance, that the *cinctus Gabinus* was the prescribed way to wear and fold the toga at a number of significant occasions: by the founder of a city or colony during the rite of the *sulcus primigenius* (as Romulus himself was said to have done), by the consul for the opening

of the *iugum Iani* whenever a war was to be declared, by a general for a *devotio* on the battlefield, and by the participants to the lustral procession of the *amburbia*.¹⁶ Furthermore, Varro states that in the official augural doctrine, an exceptional status was conferred upon the *ager Gabinus* (in all likelihood as a corollary to the *foedus Gabinum*); there, Roman magistrates could take *auspicia singularia* that would have the same validity of those taken within the *ager Romanus*.¹⁷ The famous bronze figurine depicting an augur found in the late sixth- to early fifth-century B.C.E. votive deposit excavated at the so-called Santuario Orientale may best illustrate the importance of augural practices within

to the gens of the Antestii, who traced their genealogy back to Antestius Petro, the (mytho)historical *rex/tyrannus* of Gabii at the time of the Tarquins (Almagro Basch 1958). Significantly, on coins the treaty was advertised as a *foedus populi Romani* and not as a *foedus regum*, as in Livy and Ovid. The inclusion of the gens Antestia within Rome's political body dates back to 422 B.C.E. at the latest (when a Ti.[?] Antestius was plebeian tribune).

¹⁵ E.g., L. Postumius Megellus (consul 305, 294, and 291 B.C.E.) had a property in the vicinity of Gabii; A. Postumius Albinus (consul 180 B.C.E.) was *duumvir aedi dedicandae* ca.

175 B.C.E. possibly together with the P. Cornelius Cethegus who may have been responsible for the monumentalization of the Sanctuary of Juno Gabina (Coarelli 1982). On the genealogy of the Postumii, see Palmer 1990. On the basis of a fragment of Livy's book 11 and of a corrupt passage in Macrobius (*Sat.* 13.8.5), Palmer argues that Gabii would have been refounded by the Postumii after the defeat of the Latin League in 338 B.C.E. A skeptical view about the fifth-century Postumii is presented in Wiseman 1998, 35–52.

¹⁶ Dubourdieu 1986.

¹⁷ Varro *Ling.* 5.33.

Gabii's religious system.¹⁸ After this period, Gabii fades into the historical background until 382 B.C.E., when the city sided with Rome in the war against Praeneste,¹⁹ while Gabii's participation in the Latin War (340–338 B.C.E.) is a matter of controversy.²⁰

Early Exploration of the Site

When compared with this diverse body of textual evidence, the data obtained from earlier archaeological fieldwork at Gabii offers a very fragmented and incomplete picture. Gavin Hamilton, a Scottish antiquarian, first excavated a portion of the city in the 1790s, resulting in the discovery of what he identified as the forum area. Subsequently, Visconti sketched a plan of Hamilton's finds shortly before the area was backfilled.²¹ Hamilton's poorly documented excavations uncovered a large square opening onto a major east–west road, believed to be the Via Praenestina, and surrounded by a porticus on three sides as well as portions of adjacent buildings (fig. 3). Fragments of at least 200 statues and a number of inscriptions were found in association with these structures.²² A well-preserved assemblage of sculptural pieces was retrieved from a shrine/heroon originally dedicated to Domitia Longina Augusta (the wife of Domitian and the daughter of Cn. Domitius Corbulo) by one of her freedwomen but subsequently transformed into a temple dedicated to the imperial cult.²³ These sculptures include one of the finest known busts of Marcus Agrippa, busts of Germanicus and Tiberius, a statue of Claudius, a portrait of Nero, a bust of Corbulo, a head of Hadrian, a portrait of Marcus Aurelius, and busts of Geta and Septimius Severus, all of which are now in the Louvre in Paris. Most of the associated inscriptions refer to statues set up for local notables by the city council, but some record extensive building activities undertaken especially by Hadrian, including a curia and an aqueduct.²⁴

Previous Systematic Fieldwork at Gabii

The site of Gabii saw only sporadic fieldwork in the 19th and early 20th centuries,²⁵ with the first systematic

Fig. 3. Visconti's plan of Hamilton's excavations at Gabii (Visconti 1797).

exploration occurring in the 1950s, when the major temple generally attributed to Juno Gabina (whose cella walls had always remained visible) was thoroughly investigated by a Spanish team.²⁶ This team published extensive reports and clearly demonstrated the presence of a temple-theater complex not unlike the Sanctuary of Hercules at nearby Tibur.²⁷ The monumental structures date to the mid second century B.C.E., with minor improvements in the Augustan age and in the second century C.E. The Late Republican sanctuary seemingly respected an earlier shrine to Fortuna, associated with several late fourth- to early third-century

¹⁸ Cristofani 1985, 287–88, cat. no. 10.33. A similar interpretation (i.e., augural *templum*) has been advanced for a rock-cut throne located on the slopes of the hill of the Torre di Castiglione toward the lake by De Tallenay 1925. For a more recent publication of this monument (but with a different interpretation), see Prayon 1979.

¹⁹ Livy 6.21–7.

²⁰ Dion. Hal. *Ant. Rom.* 5.61.3.

²¹ Visconti 1797; Canina 1856, 5:92 n. 11; 6:pl. 109; Cozza and Pasqui 1885; Lanciani 1901, 306–8; Ashby 1902, 185 n. 1; Pinza 1903, 328.

²² Smith 1901, 318.

²³ *CIL* 14 2795.

²⁴ *CIL* 14 2796–99. Among other inscriptions is a copy of the Roman consular list, the so-called *Fasti Gabini* (*ILLRP* 13[1]:257–58; Cozza and Pasqui 1885, 427–28). On the building activities promoted by Trajan and Hadrian, see also the inscriptions found at the Sanctuary of Juno in Alföldy 1998.

²⁵ The sporadic discoveries made during the 1800s are listed in Guaitoli 1981a, 155 n. 29. For the Etruscan bronze oinochoe of the late fifth/early fourth century B.C.E., possibly from a votive deposit, see Haynes 1995.

²⁶ For the Spanish excavations, see Almagro Basch 1958; Almagro Gorbea 1982.

²⁷ Almagro Basch 1958; Almagro Gorbea 1982.

B.C.E. inscribed stelae found *in situ*. Hut remains dating to the late eighth to early seventh centuries and votive deposits dating to the sixth and fifth centuries B.C.E. were discovered beneath the Late Republican levels.²⁸ In 1976–1977, another sanctuary complex known as the Santuario Orientale was discovered immediately outside the walls on the eastern side of the city. This shrine was apparently in use from the late seventh through the second centuries B.C.E. and is now the subject of new investigations by the University of Rome Tor Vergata and the University of Basilicata following preliminary work by the Soprintendenza Archeologica di Roma (SAR) carried out in 1999.²⁹

Several clusters of Early Iron Age habitations have been identified thanks to extensive field surveys conducted in the late 1970s throughout the area within the city walls.³⁰ The entire urban area appears to have been densely occupied during the Archaic and Early and Middle Republican periods. The preliminary results showed a major qualitative and quantitative contraction of surface evidence from the Late Republican period onward. This contraction likely involved the concentration of population in the center of the urban area, as well as the possible abandonment of the city wall at the same time the Juno Gabina sanctuary was being built.³¹ The site was eventually abandoned by the Late Roman–Early Medieval period, leaving the vast urban area (60+ ha) virtually unoccupied to this day. Yet, unlike the majority of Italian cities, where the building activities promoted by the imperial administration dramatically affected earlier phases, at Gabii this seems not to have been the case; evidence for a clear continuity of occupation during the Imperial period is only attested in a limited area centered on the Juno temple. At the same time, an extensive system of local stone quarries (the *lapis Gabinus*) was developed along the rim of the volcanic crater, including some within the walled area.³²

For its part, the SAR has focused primarily on the Iron Age necropolis of Osteria dell'Osa, which was threatened by urban development and has provided a wealth of information about Iron Age funerary practices in Latium.³³ In the city proper, the SAR has only excavated limited areas in the last few decades, exposing a tract of a main, basalt-paved roadway flanked by private houses and a pillared structure.³⁴ While the re-

sults of the latest work by the SAR remain unpublished, the latter structure is tentatively interpreted as the one originally unearthed by Hamilton. The remainder of the urban area remains completely uninvestigated.

FIELDWORK IN 2007 AND 2008

Magnetometry

During the first season, a portion (8 ha) of the site was selected as a sample area to test the effectiveness and utility of geophysical survey at Gabii. The results of this work were extremely encouraging. A number of linear anomalies seemed to reveal the presence of roads and other features (fig. 4); additionally, some of the anomalies corresponded to crop marks evident in aerial photography published in the early 1980s.³⁵ The test demonstrated that magnetometry yielded good results at Gabii and that further investigation of the rest of the site was warranted. Therefore, in the summer and early autumn of 2008, the majority of the urban area inside the line of the city walls was surveyed in the same way, for an overall extension of about 35 ha. The surveyed tracts lie to the east and south of the Temple of Juno, and they are delimited on their northern side by the modern access road to the site; the eastern edge was defined by the Fosso di San Giuliano, whereas the southern one followed the contour line of the northern fringes of the Pantano crater. Three main sectors can be identified based on land use and ownership: (1) the public archaeological area owned by the Italian state, largely consisting of fallow, open fields relatively free of obstacles and occasionally harvested for animal fodder; (2) a private property that includes a narrow ledge stretching north of the modern Via Prenestina, occupied by an olive grove; (3) the area south of that road, rented by a local flying school and used as a training facility, in all likelihood subject to processes of land amelioration in recent years.

A georeferenced grid of 30 x 30 m squares (i.e., the standard recording unit of geophysical instruments) was established on the site using a Leica TC 805 Total Station along a baseline oriented so that the survey would cross the alignment of potential archaeological features, as inferred from the standing structures, at the optimum angle of 30°; the availability of newly acquired GPS data for a number of fixed points es-

²⁸ Le Glay 1985.

²⁹ A preliminary report on the 2007 campaign is available online at <http://www.unibas.it/ssa/gabii.htm>. For the 1999 excavations, see Mancini and Pilo 2006. A sixth-century B.C.E. terracotta pedimental relief representing a harpy had already been found in that area by Stefani (1942); see also Guaitoli 1981a. For an overview of the cults attested at Gabii,

see Granino Cecere 1986.

³⁰ Guaitoli 1981b.

³¹ Guaitoli 1981b, 50–1.

³² Piccarreta 1981.

³³ Bietti Sestieri 1992a, 1992b.

³⁴ Preliminary report in Majorini and Musco 2001.

³⁵ Guaitoli 1981b.

Fig. 4. The interpreted results of the 2007 magnetometry survey.

established by the Deutsches Archäologisches Institut (DAI) Rome within and around the survey area gave us extremely precise georeferencing in terms of absolute geographic coordinates. The magnetometer survey was carried out using two Bartington Grad601–2 dual array, twin fluxgate gradiometers at 0.1nT resolution; readings were taken at 0.25 m intervals along transects every 0.5 m within the 30 x 30 m squares. The data were recorded on each machine using a Grad-01 data logger and downloaded onto a laptop computer twice daily. GeoPlot software was used to filter the data, deleting both positive and negative anomalous peaks and subsequently interpolating the deleted values, balancing the geological background noise and correcting for the boustrophedism of the transect readings.³⁶ The magnetometer survey allowed for the identification of a range of subsurface anthropogenic features that provide a very interesting picture of the urban landscape and layout of the site (fig. 5). Yet it

should be noted that the underlying geology has disturbed surface topography reconnaissance in those areas (particularly the northeastern sector) characterized by shallow ground cover and subsoil; elsewhere, thanks to the significant depth of the soil overburden, distortions caused by the amplification of bedrock response were avoided.

The clearest archaeological feature revealed by the survey is a double-dipole anomaly that traverses the entire site in a northeast to southwest direction (fig. 6).³⁷ The characteristics of this anomaly, as well as its estimated width and direction, suggest it may be interpreted as a road most probably paved with stone slabs. This interpretation is supported by the structures observed in the open SAR excavation trenches (the so-called Area Urbana), where a basalt-paved road has been traced for approximately 100 m along the same alignment. Another stretch of the same road is clearly marked by magnetic anomalies detected in the olive

³⁶ The magnetometer readings are taken in rows with alternating direction for reasons of speed. This boustrophedism introduces biases that need to be filtered out statistically.

³⁷ See Clark (1996, 82–3) for a discussion of the nature of magnetic anomalies in the context of geophysical survey; see also Scollar et al. 1990.

Fig. 5. The overall results of the magnetometry survey.

Fig. 6. The interpreted results of the magnetometry survey.

grove. A main urban artery can thus be reconstructed, hugging the southern and eastern slopes of the Castiglione crater; this road leaves Gabii near the Santuario Orientale and heads north toward Corcolle and Tibur.³⁸ This important new road was never identified by 19th-century or later topographers, who instead generally considered the main thoroughfare of Gabii to be the ancient Via Praenestina, for which they reconstructed an east–west course roughly parallel and to the north of the modern Via Prenestina.³⁹ The newly discovered trunk road appears associated with a series of roughly perpendicular anomalies branching off from it. In the north sector of the surveyed area, the clarity of these anomalies, which in some parts are masked by other anthropogenic features, may have been affected by the undulating topography; it is also probable that in some areas the remains are buried at a depth beyond the reach of the magnetometer. In the olive grove, major linear anomalies that follow the same alignment, as well as their continuation in the sector south of the modern Via Prenestina, were clearly detected at regular intervals; these linear features match almost perfectly with a series of crop marks identified by Guaitoli on aerial photographs.⁴⁰

These anomalies can in all likelihood be interpreted as side streets delimiting very elongated city blocks. It is worth noting that the blocks widen out progressively from the edge of the crater, following the gradient and morphology of the terrain, so that they tend to be slightly wedge-shaped rather than strictly rectangular. Significantly, both the temple-theater complex of Juno and the pillared structure currently under excavation by the SAR appear to conform to the overall alignment of this layout. Similarly, the buildings on the northwest and northeast sides of the Area Urbana follow the direction of the minor perpendicular streets branching off from the main artery. In contrast, the excavated road running east toward the Church of San Primitivo follows an orientation that intersects the main grid at an odd angle; this might be an indication of a later reorganization of the site. The same explanation may

account for the presence of a very strong rectilinear anomaly traversing the entire extent of the surveyed area along its southern limit with a west–northwest/east–southeast orientation, unless this proves to be a modern feature like a water pipe or a utility line.

Traces of archaeological activity are clearer, most probably as the result of shallower topsoil that allows a stronger magnetic response, in the sector north of the Area Urbana and in the central part of the area south of the modern Via Prenestina, where alignments of ashlar blocks are actually visible on the surface. Furthermore, several square and/or linear positive anomalies have been identified within the individual blocks; their alignment and proximity to the side streets suggest that these represent walls and floors of buildings. Occasionally, though, the anomalies do not conform to the grid; this might be interpreted as the result of subsequent phases of use and occupation at the site, as modifications to buildings are clearly visible in the areas that have been excavated.

As has already been noted, the northeastern survey area was significantly more affected by the site's geology and by modern interference. To the east of the surveyed area, the terrain drops off, in some areas almost vertically, into the Fosso di San Giuliano. A strong negative anomaly, partially masked by modern interferences, is visible at the top of this sharp ridge; this large feature is generally aligned on a north–south axis, but at its southern end, it bends sharply to the west. The magnetic signal suggests a stone structure that can be interpreted as a stretch of the city wall; this is consistent with the hypothesis advanced by Guaitoli on the basis of crop mark evidence⁴¹ and with the results of current excavations undertaken by the University of Rome Tor Vergata, the University of Basilicata, and DAI Rome at several locations along the fortification circuit, just to the north of the survey area.

Core Sampling

The magnetometry survey was complemented by a parallel program of core sampling (both manual and

³⁸ As postulated by Ashby (1902, 193, map IV). Kahane (1973) identified another road that leaves from almost halfway around the eastern rim of Lake Castiglione, bordering the Santuario Orientale and climbing up the Piano di Corzano in the direction of modern Passerano, giving access to the bridges and tunnels of the four main aqueducts crossing that area (Anio Vetus, Marcia, Claudia, Anio Novus).

³⁹ It is still unclear whether the stretch of paved road excavated in the late 1960s along the south side of the modern Via Prenestina, ca. 200 m west of the survey area, may represent the extraurban extension of this artery toward the Casale del Pescatore and Osteria dell'Osa. Quilici (1988), who con-

ducted a salvage archaeology project during the construction works for the modern Aqua Marcia aqueduct and recorded the finds (which included numerous Imperial funerary monuments facing both sides of the road), has proposed an identification with a stretch of the ancient Via Praenestina; in this, he followed an alternative itinerary mapped by Pietro Rosa in the 19th century, challenging the canonical interpretation established by Lanciani (1901) and Ashby (1902), who placed the ancient Via Praenestina just to the north of its modern counterpart.

⁴⁰ Guaitoli 2003, 276.

⁴¹ Guaitoli 1981a, 2003.

mechanical) aimed at collecting information about the preservation and depth of archaeological deposits at the site. During the 2008 campaign, geoarchaeological data were collected at 52 sample points located within the surveyed area (fig. 7). A total of 47 manual core samples were drilled using a 4 in. Eijkelkamp bucket auger. This portable equipment allows for a speedy process of data collection; the auger sets are widely available at a limited cost, and significant depths (up to 8–10 m) can be achieved through the use of extension rods; furthermore, the relatively wide diameter allows for the analysis of soil and sediment composition in ways that facilitate the separation of strata and the differentiation between geologic and anthropogenic deposits. On five occasions, when retaining the structural integrity of the sediment matrix was considered a major concern, and/or manual augering at crucial locations was blocked due to impenetrable obstructions, samples were obtained using a machine-operated corer.

The project was aimed primarily at assessing the depth of the soil overburden as well as the profile of the underlying geology to obtain a cross-section of the site's stratigraphy along significant baselines. In the north sector of the survey area, samples were taken every 20 or 40 m along a georeferenced baseline intersecting at a right angle the contour lines of surface topography from the edge of the Castiglione crater toward the Church of San Primitivo and beyond. At several locations, clustered samples were taken, such as in the vicinity of the Area Urbana, where the balks of the open excavation provided a set of reference points for the distinction between topsoil and archaeological layers. Other samples were retrieved in the northernmost part of the north sector, confirming the shallow underlying geology already suggested by the response to the magnetometer; five additional manual samples were taken in the area delimited to the east by the Area Urbana excavation and to the west by the open trench currently under excavation by the SAR. The sampling strategy adopted in both the olive grove and the sector south of the modern Via Prenestina was designed to extensively cover the entire survey area. Manual boreholes were drilled every 100 m along three parallel east–west baselines. In addition, four mechanical core samples, as well as several closely spaced manual ones, were taken on a baseline that crossed the pillared structure south of the Temple of Juno with an orientation roughly coinciding with the basic alignment of the orthogonal city blocks.

The recording and analysis of the soil samples allowed us tentatively to identify and interpret the stratigraphic sequence of the archaeological deposits. To further refine the interpretation of the magnetic

anomalies, it was necessary to consider some other variables as well. These included the cumulative density of artifacts collected (i.e., the number of pottery sherds per unit volume) and a measure of the stratigraphic complexity of the sample sequence. The latter variable ranged from a null value (assigned to samples consisting of natural, post-depositional, or leveling layers only) to a maximum value (assigned to samples that clearly crossed more than two anthropogenic horizons and other archaeological features).

Absolute chronology was factored in by means of a broad distinction between pre-mortar (i.e., Middle Republican and earlier) and mortar (i.e., Late Republican/Imperial) horizons. This distinction was useful in light of a general scarcity of diagnostic materials in the samples, with the exception of sherds of impasto pottery and burnt adobe fragments clearly indicative of occupation dating to the Archaic period at the latest. The combined results provided an ideal guide for the planning of large-scale excavation in those areas that yielded a consistent and possibly multiphased stratigraphic sequence at least 1.5 m in thickness.

Site Profile

The profile obtained along the main sampling baseline in the north sector of the survey area demonstrates that the magnetic anomalies are associated with a substantial stratigraphic basin (fig. 8). The depth of the topsoil averages 0.70 m, while the preserved archaeological stratigraphy varies between 1 m (CS-6) and 2.80 m (CSM-4). The volcanic bedrock, outcropping at the edge of the Castiglione crater, slopes down progressively toward the southeast as it consists of a cone of hydromagmatic products; it would seem, however, that its natural gradient may have been altered and/or truncated in some places. This is particularly the case at CSM-4, as well as at the junction of the side streets and the main artery of the urban layout (southeast of CS-6 and northwest of CS-8). Stratified pre-mortar horizons have been detected only occasionally; in fact, as observed in the open excavation of the Area Urbana, this sector of the city may have been in use down to the Late Antique period, and the continuity of occupation may have resulted in the destruction, obliteration, or redeposition of earlier layers. The limit of the stratigraphic basin toward the southeast is represented by a compact sequence of natural layers (mostly compact levels of coarse volcanic sand alternating with thick, clayish levels) deposited on top of the bedrock as indicated by the core samples. In the area around the church of San Primitivo, these colluvial deposits are found right beneath the shallow topsoil; it seems likely that the archaeological stratigraphy in this part of the site has been seriously degraded by plowing.

Fig. 7. Map showing the location of the core samples and the profiles.

The profile obtained along the alignment crossing the pillared structure shows a similar picture (fig. 9). The standing remains clearly suggest that the general layout of the city was articulated in a series of terraces that would have served the same scenographic purpose as the Juno Gabina temple-theater. The mechanical core samples taken both in the olive grove (CSM-5) and in the sector south of the modern Via Prenestina (CSM-1, 2, 3) suggest that the rock-cut terrace occupied by the pillared structure was followed by another horizontal level facing the south side of the main road. This terrace is apparently at a slightly lower elevation, to judge from the relative depth of the natural deposits beneath the lowest archaeological layers. It is not inconceivable that the terrace occupied by the pillared structure extended on the same level south of the road, for those lower layers could represent a floor preparation. In the northern part of this sector, the subsurface stratigraphy consists mostly of thick deposits (up to 1.20 m deep) frequently containing building debris, rubble, and mortar; the magnetic anomalies associated with these deposits may indeed be preserved in elevation for a considerable height. As one moves south, the terrain drops quite sharply. This is most probably the result of a general reworking of the surface, which must have been regularized for use as the runway and landing strip of the airfield, as a large number of tuff blocks and lava slabs now piled

at the eastern edge of the field suggest. All along the southern extent of this sector, mortar horizons are virtually absent, and stratified levels (more than 2 m deep) containing black-gloss pottery (third and second century B.C.E.) and possibly fragments of burnt adobe have been detected (CS-1 and CS-36). A probable explanation for this phenomenon is that this area of the site fell into disuse at a relatively early stage (i.e., the Late Republican period); this hypothesis already had been advanced by Guaitoli on grounds of the chronology of the vast majority of surface finds he recorded here during his field survey.⁴²

THE IMPLICATIONS OF THE NEW WORK

The new survey of the urban area of Gabii confidently can be said to have revolutionized our understanding of the topography of this important Latin metropolis and of its immediate hinterland. The course of the ancient Via Praenestina at Gabii as previously posited is no longer tenable, since the road network that was discovered is largely incompatible with traditional reconstructions. Far from being the main thoroughfare of Gabii, as universally assumed, the Via Praenestina (which at this point is not easily located) seems to have had little or no role as a controlling element for the urban grid of the city. The urban grid appears to be based upon another previously unknown trunk road (a stretch of this road had

⁴² Guaitoli 1981b.

Fig. 8. Profile 1, based on core sample data.

Fig. 9. Profile 2, based on core sample data.

actually been uncovered decades ago but had been interpreted as the Via Praenestina). Following a contour line around the Castiglione crater, it bends far to the north, presumably in the direction of Tibur. Further work is needed to reconstruct the associated road system that could in part predate the earliest consular roads. What can already be observed is that this newly discovered road at Gabii has the same alignment as the Temple of Juno and the pillared structure recently uncovered by the SAR.

The evidence for a regular street pattern in a vast portion of the city constitutes another unexpected result with potentially tremendous relevance for early Italian urbanism. The city blocks so far discovered seem to all belong to the same master plan, dictated by the curving trunk road. While perfectly adapted to the sloping terrain, a layout of this kind, with a single major road serving as a sort of “backbone” and secondary orthogonal “ribs” delineating very elongated blocks, is highly unusual. In the complete absence of

close comparanda, it is worth noting that this plan vaguely resembles some archaic Greek layouts, such as the acropolis at Selinus in Sicily (fig. 10), where a single main road crosses the city lengthwise and in a straight line, while at Gabii the pattern is naturally wrapped around the truncated cone formed by the volcanic crater.⁴³

Even more surprising is that Gabii seems to have had a regular layout. There are virtually no cases of planned street systems in cities that are not colonies nor otherwise intentionally founded. The origins of Gabii, as is well known, belong to that earliest wave of urban formation in Iron Age central Italy that produced almost exclusively irregular patterns, probably as the result of the slow agglomeration process of these settlements. Like Rome itself, the Etruscan and Latin metropoleis were *urbes occupatae, non divisae* (to paraphrase Livy 5.55). Veii and its acropolis of Piazza d'Armi, as well as Doganella, Capua, Pompeii, and Ardea may be mentioned as possible (but not incontrovertible) exceptions.⁴⁴ In all of these cases, however, the layouts tend to be less regular, less unified (often with the appearance of different phases), and on a much smaller scale. In light of these considerations, the newly discovered plan of Gabii has the potential, when further verified and investigated, to become a key point of reference in future discussions of planned urbanism in Italy.

The tantalizing new evidence from Gabii leaves many important questions unanswered. As is most often the case in geophysical surveys, there is very little firm chronological evidence that can be associated with the discovered anomalies. It is unlikely that the layout of Gabii dates after the first century B.C.E., when by most accounts the city had shrunk far inside the gridded area. There is no way at present to determine whether the layout of Gabii may be Hellenistic or even archaic in date, which would of course make an enormous difference for the key question of how it relates to the plan of Latin colonies founded in the late fourth and third centuries B.C.E. Extensive excavation is clearly required to investigate the problem and establish a secure chronological sequence for the phases of the city.

The subsurface work carried out at Gabii has yielded important results in this context. They incontrovertibly demonstrate the existence of rich and well-stratified archaeological deposits in the vast majority of the sampled area. Aside from the very edge of the volcanic

Fig. 10. Layout of Selinus (after Mertens and Greco 1996, 281).

crater, where conspicuous rock outcrops are visible, and possibly some portions of the southeastern quadrant of the city, where erosion and plowing have done serious damage, the stratigraphic sequence of the settlement seems to have survived in reasonably good condition. There is evidence of terracing, which may suggest both some cutting into previous layers and also some sealing of substantial parts of the earlier levels. In terms of the city plan, its ubiquity, uniformity, and extension suggest it is well preserved and thus able to be contextualized, at least in part.

CONCLUSIONS

The excavation of a large area within the walled area of ancient Gabii began in June 2009. On the basis of features identified within the survey area, two large excavation areas will be opened in the course of the first few years of the project. The area currently under excavation includes substantial portions both of two city blocks and of a side street whose sequence will be carefully investigated. Another large excavation area will be opened on the south side of the modern Via Prenestina; it will include sections of at least three

⁴³Jannelli 2004.

⁴⁴Castagnoli 1971, 46–51 (Capua); Walker 1985 (Dogan-

ella); Nappo 1997 (Pompeii).

blocks and may further our understanding of the structure of the settlement. Over the next two to four years, it is expected that the results of the excavation will offer abundant new data with regard to the urban history of Gabii and archaeological material of the first millennium B.C.E. in particular. The newly discovered plan of Gabii will thus mark, in all likelihood, the beginning of a new era for Sabine archaeology and perhaps a significant landmark in the progress of the archaeology of the Republican period in general.

JEFFREY A. BECKER
DEPARTMENT OF CLASSICS
MCMASTER UNIVERSITY
1280 MAIN STREET WEST
HAMILTON
ONTARIO L8S 4M2
CANADA
GABIIPROJECT@UMICH.EDU

MARCELLO MOGETTA
DEPARTMENT OF CLASSICAL STUDIES
UNIVERSITY OF MICHIGAN
435 S. STATE STREET
ANN ARBOR, MICHIGAN 48109-1003
MOGETTA@UMICH.EDU

NICOLA TERRENATO
DEPARTMENT OF CLASSICAL STUDIES
UNIVERSITY OF MICHIGAN
435 S. STATE STREET
ANN ARBOR, MICHIGAN 48109-1003
TERRENAT@UMICH.EDU

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