

THE CAZZANELLO PERINATAL CEMETERY: CONTINUITIES OF ETRUSCAN MORTUARY PRACTICES INTO THE LATE ANTIQUE PERIOD AND BEYOND

Introduction

In early September of 1992 excavations by a Japanese team directed by Prof. Masanori Aoyagi (Institute for the Study of Cultural Exchange, University of Tokyo) focused on the Villa Romana at Cazzanello (hereafter VRC), located a dozen kilometers to

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In particular I should like to thank Dott.ssa Maria Cataldi for her aid in arranging for the use of the 'foresteria' at the Museo Nazionale Archeologico at Tarquinia. Thanks also are due Dott. Gabriella Scapaticci (Ispettrice per la Zona Litorale, Soprintendenza Archeologica per l'Etruria Meridionale). The continuing aid of Dott.ssa Margherita Slaska and the members of the staff of the Museo Nazionale, is most gratefully acknowledged. The assistance of Kunie Miyahara and Mitsuru Haga with translations of related Japanese documents is deeply appreciated.

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the northwest of Tarquinia, Italy. Ancient Tarquinia was perhaps the principal city of ancient South Etruria, an area that was Romanized at an early date. The site now is known for its interesting mosaics (Aoyagi - Foschi 1996), but the infant cemetery provides interesting data on cultural continuities in this region.

The 1992 excavation season focused on a large Roman structure, with an apse at the northeast end, built in the early part of the 1st century CE. In the 4th century a small, trefoil shaped bath was built over these foundations. The excavators were uncertain whether the construction of this 'bath' had been completed, or if later 'robbing' of stone has distorted the archaeological record of the building process. By the 5th-6th century this bath had been abandoned, or its basic structure was reused as part of a kiln.

The excavation team identified, within the abandoned bath structure, a series of 'small tombs' of the Late Roman or Late Antique period. These burials penetrated debris, but generally the graves did not extend below the level of the bath floor. Analysis of the skeletal remains found that these all are infants, most of which can more accurately be identified as perinatal skeletons. The clustering of these infants' graves within adjacent excavation units, identified as Vano (square) 1 and 4, suggested that these burials represent a single cemetery used exclusively for perinatals (Takano 1993, pp. 24-28). All those reported here were located within the South Apse of the abandoned Roman bath. Excavations in this area during the 1993 season uncovered other graves of perinatals or infants, all of which also date from the period after the abandonment of the structure, probably in the 7th or 8th century CE. Beneath some of these small burials were long, thin trenches that may be some kind of 'ovens' or heating structures¹. Four of these trenches measure ca. 0.30 by 1.00 meter and a larger example measures ca. 0.80 by 2.0 meters. These constructions may postdate the 4th century bath, but are not to be linked to the later burials.

The 'infants' burials,' as described by the archaeologists, all are at approximately the same level or elevation, just below the modern plow zone. Any interments made at higher levels would have been plowed away. A cemetery for adults, from a period as yet undetermined by excavations, is believed by Prof. Aoyagi to be located some 100 meters to the north².

Also of note at Cazzanello is the presence, immediately to the southeast of these burials of two cisterns (Vani 6 and 7). The cisterns, possibly contemporary with the 'bath' or perhaps added later, offer a strong 'water' association for these small burials.

¹ A mass of burned material had been recovered in these excavations (M. Slaska, pers. com. 1993). This material was not examined by the author, but I suspect that it relates to the fires used in heating these bath structures and not to human cremations. The East Apse of the 4th century Roman structure, after abandonment, became the site of a kiln, probably used in the manufacture of pottery.

² Prof. Aoyagi suggested that the cemetery associated with the earlier Villa Romana was situated less than 100 meters to the east of the reused bath complex. His suggestion was based on surface findings believed to have been plowed out of some of the shallow graves in that location. The 1995 plans for an extensive investigation of that expected cemetery location were not implemented.

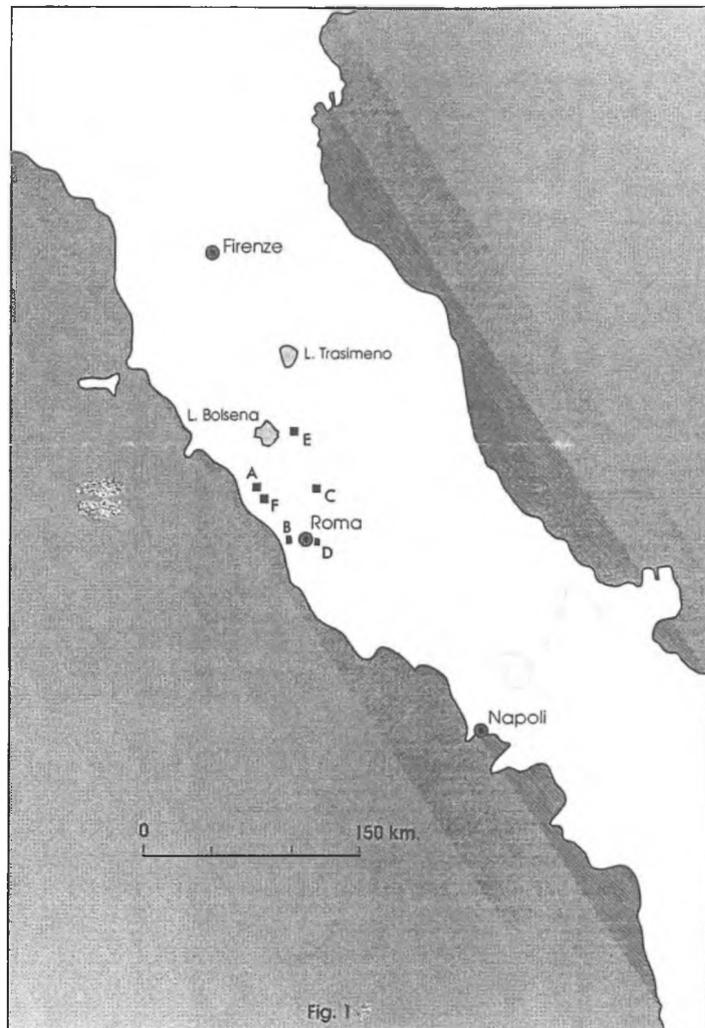


fig. 1 - Map of central Italy, locating: A) Cazzanello; B) Ficana (on Monte Cugno); C) Narce; D) Osteria dell'Osa (ancient Gabii); E) Poggio Gramignano; F) Tarquinia.

The 'crossing of the waters' or some other Etruscan mortuary association appears to be represented. The deliberate burial of the Cazzanello perinatals and child in this location is believed to be related to the crossing of these 'bodies' of water³.

³ During August 1994 excavations in a long room (Vano 11) just to the east of the 'burial area' found a number of amphorae. The alignment of these amphorae plus the configuration of the room suggest that this is a storage magazine. Excavations below the level at which most of these vessels were found encountered another amphora, thought to be a possible container for a child's burial.

Materials and methods

The various 'tombs' identified at the VRC by Prof. Aoyagi's team in 1993 are mostly *enchytrismoï*, or deposits in which the bodies of perinatals were placed within amphorae for burial. The others were found buried under large sherds of amphorae or similar storage vessels. These vessels may actually derive from the storage area nearby (see note 2). The excavation of these small tombs during the early seasons of the project recovered the remains of nine infants (*fig. 2*, see also *table 2*, below). This preliminary report focuses on these data.

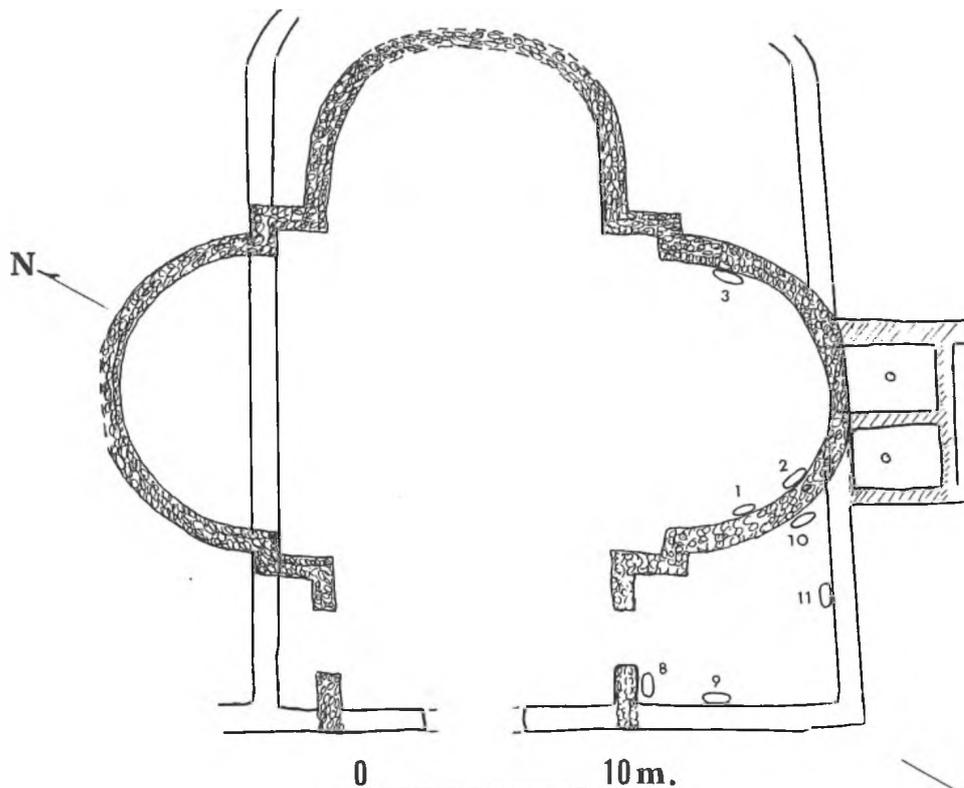


fig. 2 - The Cazzanello Infant Burial Area in the general area of the two cisterns. The pair of cisterns, built onto the 'east' apse of the 4th century bath, predate the burials (see Takano *et al.* 1994, p. 11, *fig. 7*).

During August of 1993 the author continued a program of study directed toward recently excavated human skeletons from Etruscan and other tombs in the area of Tarquinia. These skeletons, recovered by representatives of the Soprintendenza Archeologica per l'Etruria Meridionale, provided the basis for a program that lasted seven years and evaluated more than 200 human skeletons recovered from over 50 different tombs at Tarquinia (Becker 1990, 1993, 2002, In review A-C). During the 1993 and 1994 peri-

ods of research in the Museo Nazionale the author reviewed these perinatal skeletons recovered from the VRC, and those evaluations are detailed here. The evaluation of the other infant skeletons is planned for the near future.

Only those tiny skeletons removed from their containers, or found under sherds, were thoroughly examined in 1994, with the others given preliminary review to confirm their ages. Fortunately, the Cazzanello material includes nearly intact perinatal skeletons, generally with relatively complete sets of dentition that allow age to be determined with considerable accuracy. Dental age was evaluated according to stages reviewed by Ubelaker (1989, pp. 63-69), and were recently compared with information from the work of Liversidge and Molleson (2004). The evaluation of age generally was determined through dental development, but in one case where no dentition was recovered comparative long bone shaft length was employed to estimate age, following Scheuer *et al.* (1980) and Ubelaker (1989, pp. 65-69). During the detailed study of some of these remains, any long bone shafts with fresh breaks were joined using an aqueous PVA solution.

Findings

All of these burials at Cazzanello derive either from the South Apse of the abandoned 4th century structure or from the room immediately to its south. Both of these areas are attached to the two cisterns (Vani 5 and 6), located immediately to the east. A long, narrow room, ca. 1.5 by 7 meters, further to the east was filled with amphorae similar to those in which many of the infants buried (see note 2). The amphorae found in this room were used as storage jars rather than burial containers. Perinatal skeletons were not recovered from the earth within the jars in this location, although many of the containers used for the perinatal burials may have been taken from the examples in this narrow room.

Where dental age can be determined, sex (and possibly race) can be determined through studies of the associated post-cranial skeleton. Dibennardo and Taylor (1986) found that femur length provided a reliable indicator of 'gender', and also speculated that ulnar length enabled them to distinguish race in a mixed 'American' skeletal population where records provided confirmation of this information. These and other data enabled us to determine that all but one of the Cazzanello skeletons were late term fetuses and that one (Tomb 10 C, see below) was a very young child. A brief summary of the evaluations of these skeletons follows (also, see *tables*).

Tomb 1: Perinatal, 1-2 months of age.

Preliminary examination only.

Tomb 2: Fetus, age ca. 8 months.

The skeletal material from this tomb had been 'excavated' before I examined it in the storage area. While the skeletal material appears relatively intact, there is no trace of a left maxilla or left mandible. Encrustations on all of the bone suggests that the skele-

ton was in an open chamber, such as an amphora, which had water in it at some periods, and perhaps was sufficiently well sealed to prevent the entry of enough earth to fill the vessel. However, a quantity of earth in storage clearly derives from this general context, perhaps from inside the vessel.

Found in the right mandible, inverted deep in its socket about at the position of the dI2, is what appears to be two fused tips ('anlagen') of a tooth. This may be actually the dM2 of a fetus ca. 8 months developed, but out of position. Visible in the earth saved from this context were two incisor crowns at least 1/3 formed. Both may be upper lateral incisors, indicating a fetal age of 7.5 to 8 months. Also recognized from this soil was a right (?) malleolus. Careful fine sifting should produce other teeth and bits of bone. The proximal end of the left humerus is missing, but may be in fragments among the loose earth. Long bone measurements appear in *table 2*.

A possible fish bone as well as bits of animal bone, plus a tiny mammalian (mouse?) long bone, also were recovered from this loose soil.

Tomb 3: Infant 0-1 month of age.

Preliminary evaluation only.

(Tomb numbers 4-7 had not been assigned by the excavators).

Tomb 8: Infant 0-1 month of age. Noted as being found in an amphora (see Araki, in Takano *et al.* 1994). Preliminary evaluation only of the skeletal material.

Tomb 9: Full term infant, probably died at birth.

(see Obata, in Takano *et al.* 1994).

Preliminary evaluation suggests that this perinatal died at birth (stillborn), as the bones appear to represent a full term skeleton.

Tomb 10: Remains of three infants.

VRC 93 (27.08.93) Vano 4 - M18 ('anfora parte inf.' 1175; see Muya, in Takano *et al.* 1994).

The skeletal remains from Tomb 10 at Cazzanello were discovered, upon examination, to include most of two perinatals. A complete review identified a piece of a third person, an infant of perhaps 2.5 to 3 years of age. The perinatals may represent two separate burials, possibly made side by side. I suspect that all three individuals were buried in approximately the same locale with each interment disrupting all or some of the bones of the previous skeletons. Each of the two perinatals appears to have been covered by large sherds from amphorae, and the bones also rested on top of some large sherds. No attempt has been made as yet to assemble these fragments of amphora to see if these sherds come from one or more crushed vessels, or if they are associated with other pieces of similar containers recovered from these excavations.

Most of the skeletal remains from one of these children, assigned the letter A for this study, were found in storage lying on top of the large sherds that formed part of its 'tomb'. The bones of the second child, here called B, had been placed in small storage containers prior to this osteological study. The first examination determined that they indeed represented entirely separate individuals rather than pieces of one person or stray bones from some other context. When the presence of two individuals were con-

firmed, note also was made of the presence of a third sub-adult. All of these bones were subjected to further study. The bones from B were cleaned for evaluation, but not for display.

Tomb 10 A: Fetus ca. 8.5 months (stillborn?).

Only a few notes were made during the examination of these bones in order to determine that they represent an intact (complete) second person. The mandible clearly is not fused (cf. Becker 1986), but individual 10 A seems to have been slightly older at death than Individual 10 B. A piece of the left mandible has all of its five sockets clearly formed, but no trace was found of any teeth *in situ*.

Tomb 10 B: Fetus at ca. 8 months (stillborn?).

The right mandible was recovered in 2 pieces. One piece includes the entire area from dI1 - dM2, in which only dI2 is in place (with ca. 2/3 of the crown complete, found in a horizontal position with the anterior surface up and pointing lingually). The left mandible is relatively intact, with the dI1 in place. The crown of this dI1 is nearly complete and appears to have been moving toward eruption. The d2I is rotated 45 degrees clockwise, but this crown (also ca. 2/3 complete) appears to be in the correct position. The 1/2 complete crown of the deciduous left canine is located in a small anterior pocket beneath the sockets for the d2I and d1M. The mandible clearly is not fused (see Becker 1986). This dental evidence (see Ubelaker 1989) suggests a fetus of perhaps 8.5 to 9 months (at term, but see following).

A portion of the right maxilla, from ca. dI2 - dM2, was recovered, but only the tip of the crown of dC. is in place. No trace is found of the deciduous molars in these sockets, but a loose deciduous molar crown may be maxillary. The 4 cusps of this tooth had recently fused, but a slight perforation of the crown area can be noted even though there appears to be some development of the crown after the fusion of these cusps. A loose (not *in situ*) canine tip also was recovered from the surrounding soil. This information suggests a younger fetus, of perhaps 7 to 8 months. The combined evidence suggests a fetus of about 8 months, indicating a stillborn child or prematurely delivered child who died shortly after birth.

The relatively intact left temporal was found with the hammer and anvil (ear bones) in place in the petrosal. The right temporal is somewhat damaged, but the hammer bone (malleolus, also slightly damaged) was recovered. Both femura and ulnae, plus a radius and bits of other long bones as well as numerous rib sections are noted. Some measurements appear in *table 2*, below.

In addition to the fresh breaks identified among the long bones of this infant, a number of old breaks in these small bones indicate that considerable disturbances had disrupted this small grave. Quite possibly these old breaks resulted from the burial of individual A, and thereby provides a separate means by which the sequence of burials may be determined.

Mixed among the small bones of Tomb 10 B was a portion of a small bronze pin (diam. est. 1.5 mm.) with one end bent in the form of a rough loop, several sherds, two tiny (rodent?) bones, and a sliver of glass. The glass most probably is a random fragment in the soil, like the sherds. The bronze material also may have no particular relationship with this tiny tomb, but should be considered as possibly relating to grave goods. No bronze stains were noted on this person nor on any of the other bones studied. The small animal probably made a home among these tombs.

Tomb 10 C: Infant of ca. 2.5-3 years of age.

A piece of what appears to be a left maxilla, initially believed to be from the infant identified here as 10 A. This maxillary fragment, however, was found to include what may be a crown of a permanent 2I, with the crown approximately half formed. The mesial-distal (M-D) length of 6.2 mm. suggests that this is not a deciduous tooth, but that it may derive from a child 2.5-3 years of age at death. This interesting finding may be clarified by a complete study of all of the remains from this general context. The age of death suggests a weaning-related mortality (cf. Moggi-Cecchi *et al.* 1994).

My initial conclusion is that the area of Tomb 10, situated at the base of a wall, had been used for several successive graves, with the first in the sequence probably being that of 10 C. The grave of 10 C was then disturbed by the two later intrusions. This series of burials at the base of a wall is exactly the same pattern as found in a three-grave sequence from a contemporary seventh century Roman site located along the *via Gabina*, to the east of Rome (Becker 1986). Each of the burials in the *via Gabina* group was located at the foot of a stone wall that formed a main wall of an earlier building.

Tomb 11: Fetus of ca. 7.5-8.0 months.

(see Takano, in Takano *et al.* 1994).

As in the example of Tomb 2, the skeletal remains from this context had been removed or 'excavated' before I saw them in storage. No teeth were recovered, although a left malleolus was identified among these tiny fragments of bone. Age was evaluated using the long bones. Among the few intact or reconstructable long bones (see *table 2*) was only a small portion of the left mandible and one vertebral body. Possibly these vertebral bodies, appearing as small round 'objects', had been mistaken for pebbles and discarded. Most of the long bones were damaged and the left femur is missing. Also found among these bones is a small sherd and a scrap of animal bone.

Tomb Number	Age	In amphora (<i>enchytrismos</i>)
1	1-2 months	Yes
2	Fetus (8 mo.)	Yes
3	0-1 month	Yes
(4-7 not assigned)		
8	0-1 month	Yes
9	0 (died at term)	Yes
10 A	Fetus (8.5 mo.)	No
10 B	Fetus (8.0 mo.)	No
10 C	Infant, 2.75 years	No
11	Fetus (7.75 mo.)	No
N=9		

(Tombs 10 A, 10 B, and 10 C are separate interments that were made at the same location).

table 1 - Summary of skeletal findings at Cazzanello through the 1994 season. (Biological sex to be determined).

Tomb Number	2	10B	11
Dental age :	8 mo.		7.75
'Skeletal' age :			F
Sex :			
R. humerus	56.7 : -		
R. radius	47.0 (2.9/3.2)		
L. ulna		58.5 : -	
R. ulna		58.1 : -	57.9 : -
L. femur		71+ (5.8/6.3)	Missing
R. femur	64.4 (5.0/5.8)	72E (6.8/7.5)	D:5.8/6.1
R. fibula	54.0 : -		
D = damaged			

table 2 - Long bone measurements (in mm.). Shaft Lengths are followed by Midshaft Diameters (in parentheses).

Discussion

Extensive study of perinatal and infant remains provides an excellent basis for the identification and evaluation of even the smallest fragments of these skeletons (Becker 1994a, 1994b; 1995a, etc.). The tiny eight perinatals and one infant, a total of nine children, recovered from this specialized burial area at Cazzanello could represent the interments from one or two extended family resident in or around the ruins of a Roman villa that had been in long decline. An estimated seven or eight additional infants remain to be evaluated.

I suspect some infants at Cazzanello may have been inhumed directly into the earth without even a covering of sherds. Considerable numbers of such simple inhumations were identified by Soren and his colleagues at another site, but may have been plowed away or not noted by the crew at Cazzanello. Since my participation was limited to the evaluation of skeletal findings only after they arrived in the storage area of the Museo Nazionale, I was unable to evaluate the field contexts or the back-dirt heaps, where human bones from unrecognized graves commonly are found.

Poor levels of health and nutrition during most of history are reflected in high infant mortality rates and other manifestations of disease (Becker In review A). For example, Salvadei *et al.* (2001) examined the incidence of porotic hyperostosis from human populations recovered from two sites in the immediate vicinity of Tarquinia, one dating from the 1st-3rd centuries and the other from the 7th century. Cribra orbitalia, suggesting iron deficiency anemias, was present at high levels in both communities, but were somewhat higher in incidence during the later period. These levels both fall within the intermediate range when compared with other European populations for which careful studies exist. In general, life for children as well as adults was stressful and disease ridden and every study of the skeletal remains provides us with concrete evidence for these conditions.

Since infant mortality rates of close to 50% would be likely for the Late Antique period, the approximately 17 deaths represented by these skeletons may reflect a total of perhaps 34 or 35 pregnancies. This number of pregnancies could represent the total for two women during their reproductive lifetimes, since pregnancy was a normative state for women of reproductive age in antiquity. A total of 35 pregnancies would be a typical number for two or three women in an agrarian milieu. At most the burials discussed here would represent expected perinatal reproductive losses for four or possibly five women. Based on the sequence of intrusive or disruptive burials identified as Tomb 10 I would suggest that these children represent normal perimortem deaths that took place over two or possibly three generations. Therefore, this small perinatal cemetery may reflect burials from only one extended family resident at this site.

Of the 60 or more perinatal cemeteries known from peninsular Italy that have been reported to me during the course of conversations with Italian archaeologists over the past 15 years, only the example from Lugnano in Teverina has been published in detail (Soren 1999a, 1999b). Soren's exhaustive study provides an extraordinary model for comparing all of the identified perinatal cemeteries or burial areas, most of which are associated with areas of Etruscan hegemony. Papi's (2000) survey of Roman Etruria indicates how little has been published of the archaeology of the period when these two infant cemeteries were in use (also, see Perkins 2003).

The locations of these specialized cemeteries for children, and findings of ancient cultures such as the Messapians in which infants were buried among the graves of adults (Becker 1997a, 1997b, also 1997c), are extremely important in determining the cultural affiliations of the users. Different patterns of disposal of perinatal remains were used by each of the distinct cultures (populations) in the many areas of ancient Italy.

Of particular note in the Lugnano cemetery is that the majority of the infant deaths occurred within a few weeks of term, and most of the burials were in simple inhumations. Burials at Lugnano also include some made under fragments of amphorae as well as in small amphorae that were placed within a larger amphora or jar. At Lugnano only one of these burials represents an older child; a child of 2-3 years of age who had been buried as a simple inhumation. Of the six children at Lugnano in Teverina who died at 3-6 months of age, five were buried in amphorae or 'alla cappuccina', a form that may be noted but once at Cazzanello. This suggests that at Lugnano relatively more elaborate graves were used for children who survived for even a few months.

Summary

The probable date of occupancy of the families of these children was sometime in the 7th or 8th centuries CE. The skeletons of only nine have been evaluated, with those from Tombs 1, 2, 3, 8 and 9 all *enchytrismois*, with amphorae used as 'coffins'. Preliminary evaluation of the skeletal remains of all individuals 'excavated' from this context suggests that four of the nine were born slightly before term. This suggests that most were stillborn or died soon after birth. The evidence for a single individual age ca. 2.75

years (10 C) indicates that not all of the individuals recovered died at approximately the same age, which would suggest a more highly specialized cemetery than is usual. The single, slightly older infant, provides evidence for a statistically normal pattern of burial such as is the case at Poggio Gramignano (Soren 1999b).

Evaluations of biological sex may be possible for all of the children from the Cazzanello 'cemetery'. When the bone lengths and midshaft diameters of all of these infants has been tabulated, and factored for age, sex may be more clearly indicated. At this point I would predict that the results will demonstrate no differences can be detected in the treatment afforded males and females at this stage in their 'lives'. The general context of these burials in a location near a water 'source', reinforces our ideas regarding the importance of a water orientation associated with this pattern of perinatal interments. With no chance for baptism, these stillborn pre-term individuals may have been specifically placed in this water-oriented area along with others who died at a very early age. Note should be made of the Roman goddess Egeria who presided over childbirth as well as fountains. Her Etruscan origins should be pursued.

The nine 'tombs' evaluated here from excavations at Cazzanello reflect the reuse of an abandoned small Roman bath complex that had been associated with a Roman villa. Use was not made of this structure during Late Antiquity, but rather its walls appeared to have served as a preferred burial area for these children, all of whom who died prior to their transition to full status in the community. This point of transition ultimately became associated with what can be documented as baptism in formal Christianity. We may infer from these data that baptism itself, or a similar water-related rite of passage, had its origins with Etruscans, and that the Christian version represents the cultural continuity of an ancient set of beliefs.

The findings of this infants' burial area at Cazzanello, apart from the as yet unidentified area used for adults, reflects an important continuity in Etruscan mortuary customs. The ancient rituals that separated these perinatals and infants from older members of the community were sustained within institutionalized Christianity. An examination of early baptismal rituals associated with Roman Catholicism may be examined for clues to rituals that originated during the Etruscan period. Further infant tombs may be expected in this area, with the entire group providing an interesting perspective to this program of excavation which was primarily directed toward an important Villa Romana.

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