The Sangro Valley Project completed its third and final year of excavations in San Giovanni di Tornareccio (Abruzzo) during the 2013 season. Work focused on three areas of the villa complex: the drain in SG 2000 was reopened to explore its relationship with Structure C and its associated run-off zone to the south; SG 3000 was expanded to determine the extent, function and phasing of Structure D; and exploratory trenches SG 5000 and SG 6000 were placed in the environs of the villa complex to determine the extent of the site.

**Trench SG 2000**

Structure C, a room containing a cocciopesto basin and not connected to Structures A or B, was excavated in 2012, but the drain associated with this structure was only partially uncovered. This drain was constructed of a series of three terracotta pipes leading from Structure C into a larger channel constructed from roof tiles (tegulae). These terracotta pipes were removed in 2012. In 2013 the area of the drain was reopened to further examine the channel of the drain and its fill. In addition, an extension of SG 2000 (ca. 4.5 x 14.25 m) was opened below the drain along the break of slope just below the natural terrace line to the south of Structures B and C.

The southern third of the tile drain was dismantled. The bottom of the drainage channel was constructed of three tegulae, abutting lengthwise. These tiles were modified by the removal of their flanges and placed upside down. The dimensions of these tiles (ca. 61.5 x 44.5 cm) are consistent with tiles found in SG 3000 (see below), associated with Structure D, suggesting that both structures were using the same type of tile and likely constructed in the same phase. The walls of the channel were constructed of pieces of broken tegulae, alternating between flanged and un-flanged pieces, stacked in such a manner as to create the channel wall with their flanges. A yellow, sandy mortar, consistent in appearance with that used in the foundations of Structures A-C and portions of Structure D, was used to bind the tiles together. The exterior of the drain was then packed with clay, some of which was pushed or seeped between the tiles. Excavations to the south of the tile drain in both 2012 and 2013 indicate that effluvia from the tile drain flowed into a channel cut into the earth. It is noteworthy that during heavy rains this summer this drainage channel was still functioning to carry water away downslope. This channel, with gradually sloping sides and base, is ca. 0.7 m wide and 0.3 m deep and is preserved for a length of ca. 4.2 m. Unfortunately, no
diagnostic material was recovered from the dismantling of the tile drain or from excavation of portions of the earthen channel. However, in 2012, a sample of charcoal from the upper channel fill was radiocarbon dated to Cal AD 70 to 230 (Cal BP 1880 to 1720). The drain's association with Structure C (a sample of charcoal from just above the basin yielded a radiocarbon date of Cal AD 20 to 130 (Cal BP 1930 to 1820)), however, suggests that both went out of use at the same time, in the second century C.E.

As seen elsewhere on the site, the stratigraphy in the southern extension of SG 2000 was limited to a plowzone resting above a natural white and compact clay substrate. Traces of a yellow, sandy soil, which is similar to the decayed mortar used in the foundations of Structures B and C, were found down slope from the foundations of these structures. At the eastern end of the trench, an irregular and sporadic line of stones (ca. 4 m in length) likely preserve the footing of a now lost terrace wall. These stones are situated just below the break of slope and align with the extant terrace further to the west. From this point to the preserved section of terracing there is a noticeable saddle where the plateau breaks to the south; previous excavation in this area indicate that this saddle may have been created by landslide, which would account for the
loss of the terrace, the presence of decayed mortar down slope from Structures B and C, as well as some of the irregularities in the eastern walls of Structure D.

**Trench SG 3000**

SG 3000 was reopened this season to clarify the extent of Structure D, as well as its construction, phasing, and function. The site has been badly damaged by agricultural plowing due to the thinness of the soil on this slope. Excavations this year only partly explained the nature of the construction and phasing of the building. The western wall of Structure D runs in a northeasterly direction for a distance of ca. 26 m from the terrace on the south side of the site. There are no clear terminations at either end of this wall, suggesting that the full length of the building has not been preserved. A series of eight cross walls extend to the east from this long wall, varying in length from 2.35-9.36 m; the width of individual walls varies, but range within ca. 0.5-0.7 m. These cross walls indicate that there were at least seven distinct spaces along the long western wall, but only spaces 3-5 are delimited on their eastern sides, clearly indicating that they were fully enclosed rooms. The eastern extent of the structure is marked by a poorly preserved wall, ca. 10 m in length, which runs in a more west/northwesterly - east/southeast-erly direction.

Three distinct construction methods are evident in Structure D, suggesting that the building was expanded and subdivided at least twice:

1. Stone and mortar construction—this technique is consistent with that seen in Structures A-C with limestone, and infrequent pieces of sandstone, of varying sizes set into a yellow, sandy mortar, with a preference for flat surfaces on the faces of the walls; some terracotta fragments are built into the core of the wall.

2. Randomly coursed, dry masonry construction Type I—this construction method features larger pieces of limestone (ca. 20-40 cm) with rough-hewn faces; smaller stones fill the interstices.

3. Randomly coursed, dry masonry construction Type II—this technique varies from Type I in that the materials are smaller and fragments of terracotta are used; while there is some evidence of a distinct facing of the surfaces of the walls, the stones are un-hewn and rough.

Although a series of sondages were made adjacent to and cut through various walls in Structure D, no diagnostic material was recovered to date the different wall constructions. The similarity between the stone and mortar construction in Structure D and in Structures A-C would seem to indicate that these walls belong to Phase I of the site and were constructed in the late Republican–early Imperial period. Second and third phases for the structure could be indicated by the different styles of dry masonry.
Type I walls are present in the core of the building and at the southern end, with especially well-constructed walls associated with Rooms 3-5. Type II walls are represented by the walls comprising Room 1, beneath which is a stratum filled with crushed terracotta and flecks of carbon, and the walls in the eastern portion of the structure. Samples of mortar were taken from all three types of wall construction for analysis.

As was seen in Structures A and B, there are no clearly visible ancient ground levels or floor surfaces in Structure D. Rooms 3 and 4, however, preserve a layer of dense white soil, devoid of stones and other materials that likely served as a subflooring. In addition, Room 4 was subdivided, creating a small alcove at the eastern end. Room 2, although it does not preserve any evidence for a regular subflooring, was covered with a scatter of roof tiles, predominately tegulae, as well as pieces of limestone and limited quantities of ceramic and bone. Three tegulae were found still interlocked with one another and leaning against the interior of the west wall of Room 2; maximum lengths and widths of these tiles were preserved and their dimensions were identical to the tegulae used to pave the bottom of the drain in SG 2000. The presence of these tiles, leaning against Phase I walls, also suggest that Structures C and D were built contemporaneously.

The limited finds discovered within Structure D indicate storage and production: these include fragments of large dolia, loom weights, and a quern stone fragment.
Ceramics are predominately cooking or common wares. Very little metal or glass was recovered; these materials were likely recycled in antiquity as noted in other areas of the site in the 2012 season report. A bronze dupondius of Marcus Aurelius (177/178 C.E.) was found in debris on the northern side of Room 2.

Extensions were made to SG 3000 with a mechanical digger in an attempt to determine the extent of the site—two were made to the east from the north end of the trench and to the west from the south end adjacent the top of the terrace—removal of the plow soil in both extensions revealed only natural substrate and no new structures. A third extension was made to the south, down the slope of the hill, adjacent to the extant terrace. No traces of the terrace wall were preserved here, but a thin layer of decayed mortar or plaster was visible in the east facing section, perhaps debris from the site as it was dismantled and certain types of materials were gathered for recycling and prior to the collapse of the terrace wall in this area.

In order to track the long western wall of Structure D to the north, a ca. 14 x 2 m extension of SG 3000 was opened with a mechanical digger. This area was badly damaged, both in antiquity and by modern agriculture, so no further remains of this wall now exist—it truncates abruptly just before a deep cutting into the natural substrate, probably from deep plowing. Other damage in this area, however, is explained by the discovery of a kiln, similar in construction to pit kilns known to burn limestone in the Roman period.

This lime kiln (Structure E) consists of a circular pit, ca. 3 m in diameter. The original perimeter of the kiln is clearly evident by the burning of the soil to a bright red color. A section made by cutting through the exterior arc of the kiln on the southwestern side reveals that the earth excavated during the construction of the kiln was simply deposited over the side of the pit. Due to time constraints and safety concerns, only a portion of the fill within the kiln was excavated by means of a sondage measuring ca. 1 x 3 x 1.5 m. The excavated fill consisted predominately of ceramic building material (tegulae, imbrices, bipedales, and opus spicatum bricks of several sizes), as well as pieces of burnt limestone and sandstone. While no complete tiles were recovered, several full width tegulae were of the same dimensions as ones found in both Structure D and the drain in SG 2000. Large, thick (ca. 9.5 cm) refractory...
bricks (often preserving deep impressions of finger prints) were found towards the bottom of the pit; these were perhaps used as spacers at the bottom of the kiln. In addition, the fill contained an equine skull, a femur of a young bovine, and a loom weight, but only a few worn pottery sherds. Carbon, however, was present throughout the fill and samples were taken for both carbon-14 and micro-morphological analysis. While the analysis of the latter are still in progress, the two C-14 analyses yielded radiocarbon dates of Cal AD 90 to 100 (Cal BP 1860 to 1850) and Cal AD 120 to 250 (Cal BP 1830 to 1700). These dates are consistent with the chronology provided for Structure C by other C-14 dates and the ceramic assemblage all of which would place the end of the first phase of the site in the second century C.E.. Additionally, the similar type of tegulae found in the fill of the kiln, in situ against the foundations of the mortar wall in Structure D, and in the channel of the drain in Structure C indicate some destruction and/or reworking of the site in the second century C.E. with the debris from phase one being discretely deposited and culled for reusable materials.

The reuse of Structure D is indicated not only by the different wall construction, but also by the later range of ceramics discovered in nearby SG 1000, a dump described in 2011 season report. The date of the ceramics from SG 1000 are consistent with two radiocarbon dates from the dump fill of Cal AD 260 to 300 (Cal BP 1690 to 1650) and Cal AD 340 to 430 (Cal BP 1610 to 1520).

**Exploratory Trenches SG 5000, SG 6000**

During the 2012 season ground penetrating radar (GPR) was conducted in the field adjacent to the western end of the terrace on which the site is located. This area slopes down to the north from the plateau that sits to the west of Structure D. In 2013 a series of three trenches were opened in this area based on the density of the anomalies picked up by the GPR. SG 5000, located just below the break of slope, provided no evidence of anthropogenic activity; the plow soil rested directly above the natural, white substrate. SG 6000 was excavated ca. 10 m further down the slope; at a depth of ca. 1.3 m, beneath the plow zone and a layer of colluviation, a stratum was encountered with small, worn pieces of terracotta, traces of carbon, and ceramics of 2nd - 7th century C.E. date. A third trench was excavated at the base of the slope, and while it contained a stratum of small and heavily worn pieces of terracotta beneath a layer of colluvium, the clay was so wet that excavation proved impossible. Local farmers report this area once had a spring and was tiled in the last century in order to improve drainage. It is evident from the excavation of these exploratory trenches as well as of SG 4000a, during the 2012 season, that the upper portion of this slope is devoid of ancient strata, but an accumulation of anthropogenic debris has collected down the slope to the north. Considering the proximity of the base of the slope to a known spring line and local reports of the area’s swampy nature, human activity was probably limited in this area in antiquity.
Conclusions

Although the 2013 excavations at San Giovanni produced little in the way of diagnostic artifacts, the artifacts that were recovered are consistent with the date of materials found during the 2012 season. The discovery of a lime kiln is proof that the villa complex was recycled, explaining why only the lower foundations of the walls of the bath complex (Structures A and B) remain and the overall lack of material evidence at the site. It also supports the interpretation that metal recycling was conducted near Structure C as noted in the 2012 report.

Structures A-D comprise a villa/bath complex adjacent to a reliable and abundant source of water for use in its bath and agricultural production activities. The room with the cocciopesto basin and drain (Structure C) is not part of the bath complex, but likely shared its water source and was used for work activities associated with Structure D, in a manner similar to the cocciopesto basin found in ACQ 10000, a rural Roman farm site, described in the 2009 season report. Lipid analyses of the cocciopesto from both basins show evidence for both plant and animal sterols, an indication of multiple purpose usage. Based on ceramic and C-14 evidence, the villa complex was likely constructed in the late Republican or early Imperial period, enjoying a significant prosperity throughout the 1st century C.E. that ended in the second century C.E.

Later phases of Structure D are less securely dated due to the lack of ceramic evidence and badly damaged stratigraphy. Current thinking is that Structure D was significantly modified during the recycling and experienced a second peak of activity that continued into the 3rd – 4th centuries C.E.

Trench SG 6000

One the basis of its ceramics (all small in size and heavily weathered), the main period of activity for trench 6000 dates from the 2nd through 7th centuries C.E. Ceramics include examples of regional black gloss (3rd-1st centuries B.C.E.), regional Italian terra sigillata (1st century B.C.E. to 2nd century C.E.), African Red-Slip ware, including one heavily weathered sherd possibly of Production A (2nd-7th centuries C.E.) as well as common ware and cooking ware.

H.C.

Pottery Assemblage - San Giovanni 2013

During the 2013 field season at San Giovanni, two trenches were re-opened from the 2012 field season: SG 2000 and SG 3000, and an exploratory trench was opened that contained ceramic: SG 6000. Though the total volume of pottery from the 2013 season was small, all three trenches produced a range of ceramic material dating from the late Republican–late Roman period, as well as a small amount of Medieval ware.

Trench SG 2000

Ceramics recovered in 2012 and 2013 indicate that the main period of activity for SG 2000 was from the early 1st century C.E. through early 2nd century C.E.

Trench SG 3000

SG 3000, on the basis of its ceramic assemblage, shows multiple activity phases ranging from the Roman Republican Period (with a cluster of activity between the 3rd and 1st centuries B.C.E.) to the Late Roman/Antique Period (with a cluster of activity between the 3rd and 5th centuries C.E.). The stratigraphy in this area is badly damaged from modern agricultural activity. Ceramics from SG 3000 include examples of: a burnished impasto sherd (Iron Age-4th century B.C.E. or later), regional black gloss (3rd-1st centuries B.C.E.), regional red gloss (1st century B.C.E.-1st century C.E.), one non-regional Italian terra sigillata body sherd (ca. 1st century B.C.E.-2nd century C.E. - this sherd appears to have been imported, possibly from a major production center in Campania due to its hard and compact fabric and well-adhering gloss), color-coated ware (1st-3rd centuries C.E.), Late Roman red-painted ware (mid-4th-8th centuries C.E.), and large-size dolia rims (ca. 70-80 cm in diameter). In addition, common and cooking wares were found, as well as fragments of amphorae, and several red slipped lamp body sherds (similar in type to the northern Italian volute Bildenlampe dated to the 1st century C.E. recovered from SG 2000 in 2012). Joins were made across various contexts in SG 3000, evidence for the disturbed nature of the area.

H.C.
Finds

Twenty-two small finds were recovered in 2013 from SG 2000 and SG 3000, comprising mainly ceramic building materials used to construct Structures C and D: opus spicatum bricks of several sizes (SF340, SF341, SF348), a column brick SF335 (from SG 2000, similar to ones found in 2012), and a number of larger sized bricks (SF345) associated with the lime kiln (Structure E). Other finds from Structure D included loom weights, mainly fragmentary, but one whole example (SF344), as well as a quern stone fragment (SF342), and an Aurelian bronze dupondius coin SF338 in poor condition. Two nearly complete tiles of identical size and form (SF343 from SG 2000 and SF346 from SG 3000) may indicate that both structures used the same tiling system and were constructed contemporaneously.

S.K.

Technology and Paperless Recording

The 2013 season was the SVP’s third season using both paperless recording and a fully integrated project database. The first version of the database was created in 2011 by Chris Motz with FileMaker Pro. The paperless workflow remained largely unchanged from previous seasons. Data recording during excavation and survey was performed using Apple iPads with the FileMaker Go app. Special digital camera memory cards from Eye-Fi allowed the wireless transfer of images to the iPads, which enabled excavators to immediately add captions to their photos using the Photosmith app while in the field. All of the data was synchronized with a copy of the database hosted on an Apple Mac mini server in the Project’s computer lab in Tornareccio.

Changes to the existing system in 2013 were minimal and consisted primarily of adjusting procedures and workflows in reaction to app updates, and making minor alterations to the database to accommodate the changing needs of specialists and field staff. Standardized workflows were developed for handling and processing materials, syncing the database, and importing photographs, and produced graphical representations of these workflows to improve awareness of and promote adherence to these procedures among staff and students.

After three seasons of use the database contains over 2,200 primary archaeological records spread among 18 record types, covering everything from Sites to Micromorphology Samples. The database also contains over 1,750 labelled images, each linked to its subject; 349 unique stratigraphic relationships; and permanent records of 16,575 individual edits, allowing researchers to examine the evolution of each record through time. All of this information is searchable, and all of it is linked together in a logical and user-friendly manner. The database is accessible to SVP staff members around the world over the Internet.

The benefits of the SVP’s paperless system have been enumerated in previous reports and publications, and remained apparent during the 2013 season. This season offered many insights in how to run a highly complex paperless recording system without the developer present, which we hope to share with the wider archaeological community in the future.

L.A., C.M., M.R.

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