

University of Kentucky and Langara College archaeological investigations at località Cocolédi, contrada Bregatorto, and in the hinterland of Antonimina (Reggio Calabria) in 2017-2019

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Due campagne di prospezioni geofisiche e saggi di scavo in località Cocolédi e in contrada Bregatorto, due siti contigui ubicati sul margine orientale della Dorsale Tabulare tra Jonio e Tirreno, alla quota di 980 m s.l.m. e a 14 km di distanza dalla costa jonica, hanno accertato la presenza di un grande edificio e di una fortificazione rurale attribuibili a Locri Epizephyrii. L'edificio in località Cocolédi, esteso su un'area di c. 600 m², venne costruito verso la fine del VI secolo e fu distrutto e abbandonato prima della metà del V sec. a.C.; le sue funzioni non sono ancora definibili. La fortificazione in contrada Bregatorto, coprente un'area di oltre 1900 m², fu occupata dagli inizi del V secolo fino al III sec. a.C.; in essa si individua il principale punto di controllo del percorso di collegamento più diretto da Locri ai centri di Métauros e Medma sul versante tirrenico meridionale. L'identità culturale locrese di entrambi i siti si evince anche dall'evidenza dei rinvenimenti ceramici, che trovano stretti confronti in ambito locrese. Altri tre siti contigui con materiali di età greca (un probabile insediamento rurale e due posti di vedetta) sono stati identificati presso Monte S. Mauro, lungo il percorso in direzione di contrada Bregatorto proveniente dalla costa jonica. Questa concentrazione di siti ai margini della chora e l'esistenza di un sito fortificato in una posizione strategica sulla Dorsale Tabulare documentano un'organizzazione del territorio locrese e un sistema di controllo della viabilità interna fin dall'età tardo arcaica.

Introduction

After three Greek sites were located within the Aspromonte National Park in the area between today's Passo del Mercante and Villaggio Zomaro, on the Dorsale Tabulare – a high ridge connecting the Aspromonte Massif to the Serre highlands – geophysical surveys and test excavations were conducted in 2017 and 2018 at località Cocolédi and contrada Bregatorto, two of the sites which are in close proximity to each other and appeared undisturbed (fig. 1)¹. Their position on the eastern edge of the Dorsale Tabulare at a linear distance of 14 km from the Jonian coast placed them on the most direct and least strenuous overland route from Locri Epizephyrii to the western coast of Italy. This route would have followed the Fiumara Portigliola and the Fiumara di Antonimina to the Dorsale Tabulare past Monte S. Mauro (836 m) and Monte Cola (931.2 m). The remains of a fortification at contrada Bregatorto, in particular, hinted at the importance of this route for Locri's communications and trade with the Tyrrhenian seaboard².

¹ See *Taurianova* 1998 and *NANIA* 2007: 167 and 257. For the third site (contrada Palazzo di Cittanova) see *VISONÀ* 2016a: 3-6; *VISONÀ* 2016b: 248-250.

² *WONDER, JANSSON* 2018: 54-56.

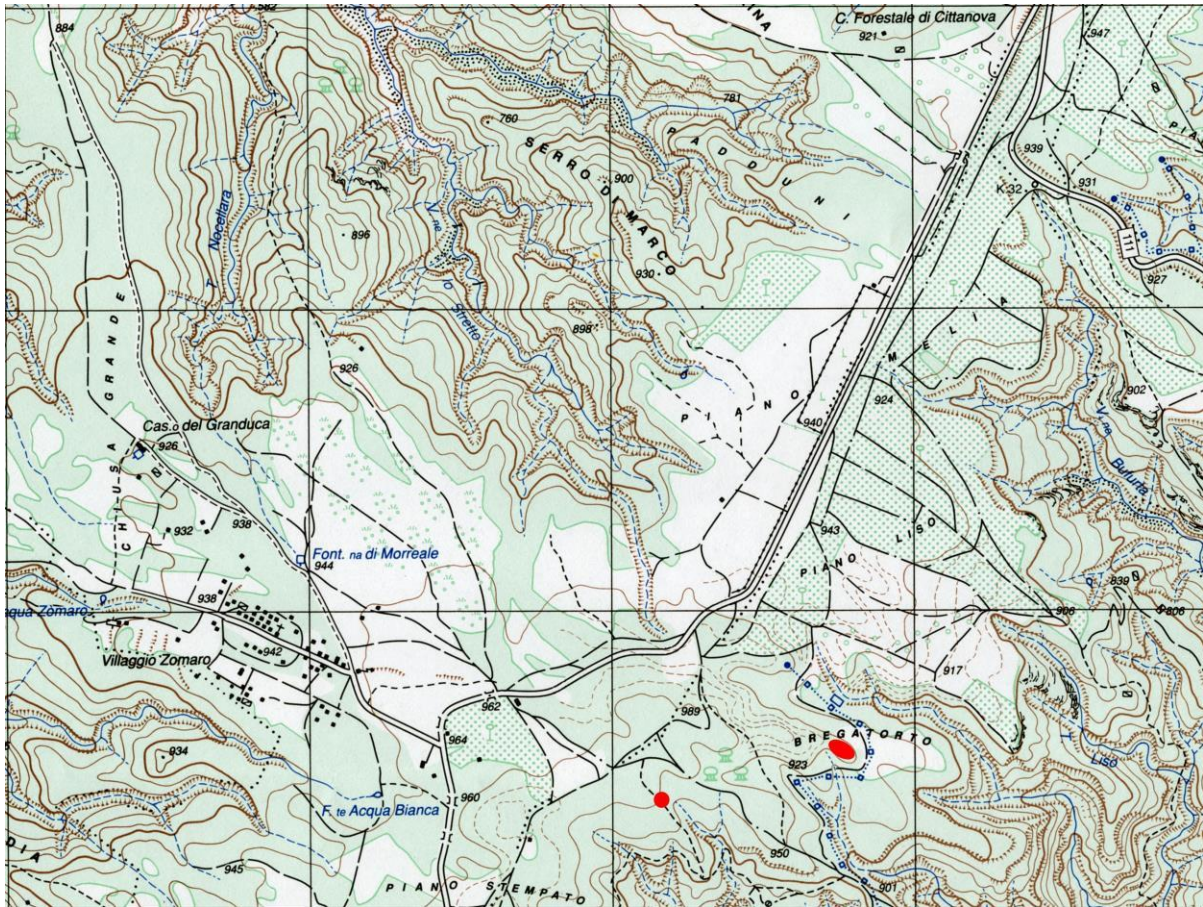


Fig. 1. Località Cocolédi (left) and contrada Bregatorto (right) in Carta Topografica d'Italia Scala 1: 25000 F. 590 Sezione IV Taurianova. Ed. 1/A. IGMI, Firenze 1998.

This project, which sought to determine the boundaries, the architectural features, and the main periods of occupation of each site, was carried out by faculty and students of the University of Kentucky (U.S.A.) and Langara College (British Columbia, Canada) with yearly permits granted by the Ministero dei beni e delle attività culturali e del turismo and under the aegis of the Soprintendenza Archeologia Calabria. It was sponsored by the Foundation for Calabrian Archaeology (Parker, Colorado, U.S.A.) and it entailed mapping, geomagnetic and ground-penetrating radar (GPR) surveys, and targeted excavations. Fieldwalking also led to the identification of three more Greek sites near Monte S. Mauro³, c. 2 km to the southeast of contrada Bregatorto (fig. 2), and of a prehistoric site at Pietra della Morte (484 m), a peak c. 1 km to the southeast of the village of Tre Arie overlooking the Fiumara di S. Paolo and the Fiumara Gerace, in the lower Antonimina Valley. These previously unknown Greek sites are clustered together on the route leading to Bregatorto.

Paolo Visonà

The mapping and geophysical surveys at località Cocolédi and contrada Bregatorto

In 2017 a preliminary survey of località Cocolédi and contrada Bregatorto using a Trimble Juno SB GPS receiver and a Total Station Pentax MD made it possible to understand the topography and to produce reliable maps of both sites⁴. As a precursor to excavation, two complementary geophysical survey techniques, magnetometry and GPR, were employed to identify buried archaeological features. Since magnetometry measures

³ See *Plati* 1992 and (for preliminary data) VISONÀ 2019: 124, n. 28; 125, n. 30.

⁴ The topographical survey was conducted by E. Sapienza, P. Mazzaglia, and G.M. Crothers.

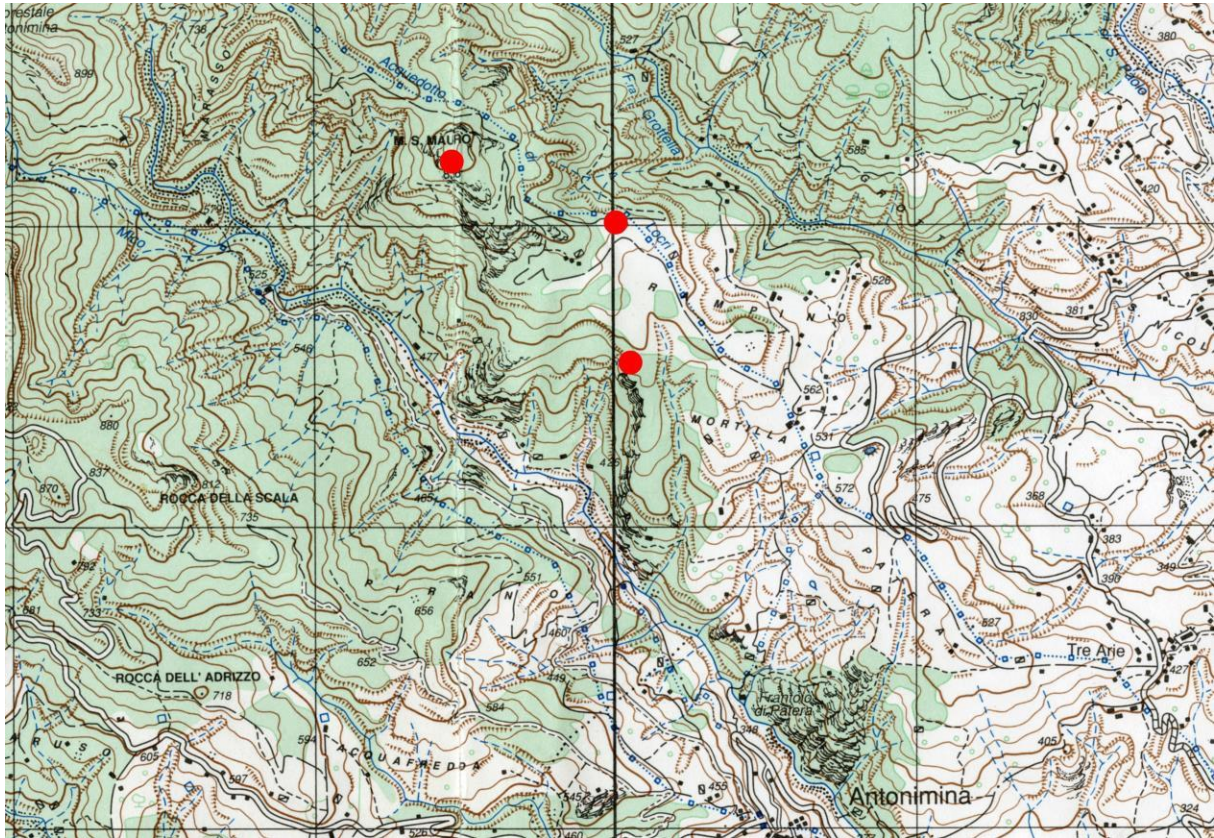


Fig. 2. Location of Greek sites at contrada Rampino in Carta Topografica d'Italia Scala 1: 25000 F. 590 Sezione III Plati. Ed. 1. IGM, Firenze 1992.

magnetic properties, while GPR is primarily sensitive to electrical properties of the subsurface, combining these methods covers the broadest range of feature types found at archaeological sites⁵. The presence of large beech trees, tree stumps, small shrubs, and the rocky terrain, were the primary obstacles to collecting continuous, high quality data.

A single Geoscan FM256 fluxgate gradiometer was used for the magnetometer surveys. After staking out 20 x 20 m grid units at each site, data was collected using the parallel traverse mode at 50 cm intervals. The sample interval of each traverse was 25 cm (4 readings per meter) with a range of 200 nT and resolution of 0.1 nT. Five complete or partial grids were collected at località Cocolédi, covering approximately 1660 m² and eleven grids at contrada Bregatorto, covering approximately 3800 m². The gradiometer data was processed with Geoplot (Ver. 3.00t), companion software for Geoscan instruments. The 2017 GPR survey was conducted with a Malå Ramac CU11 GeoSystem with a 500 MHz shielded antenna and a time window of 97.9 ns; in 2018, a 800 MHz shielded antenna with a time window of 79.3 ns was used for a GPR survey focusing on the interior portion of the fortification at contrada Bregatorto and the eastern edge of the site where there appeared to be an exterior structure. The 2017 radar profiles were collected in 50 cm transects in a zig-zag fashion, oriented grid north-south, and covering the same area as the magnetometer survey. The 2018 GPR data was collected in 25 cm transects using the parallel traverse mode covering approximately 1825 m² of the site. The GPR data was processed with GPR-Slice (Ver. 7.0) imaging software to produce amplitude slice maps.

Fig. 3 shows the gradiometer images of località Cocolédi and contrada Bregatorto superimposed on the local topography and modern landscape features.

⁵ CONYERS 2017. For a case study combining different geophysical techniques see CAPOZZOLI *et al.* 2020.

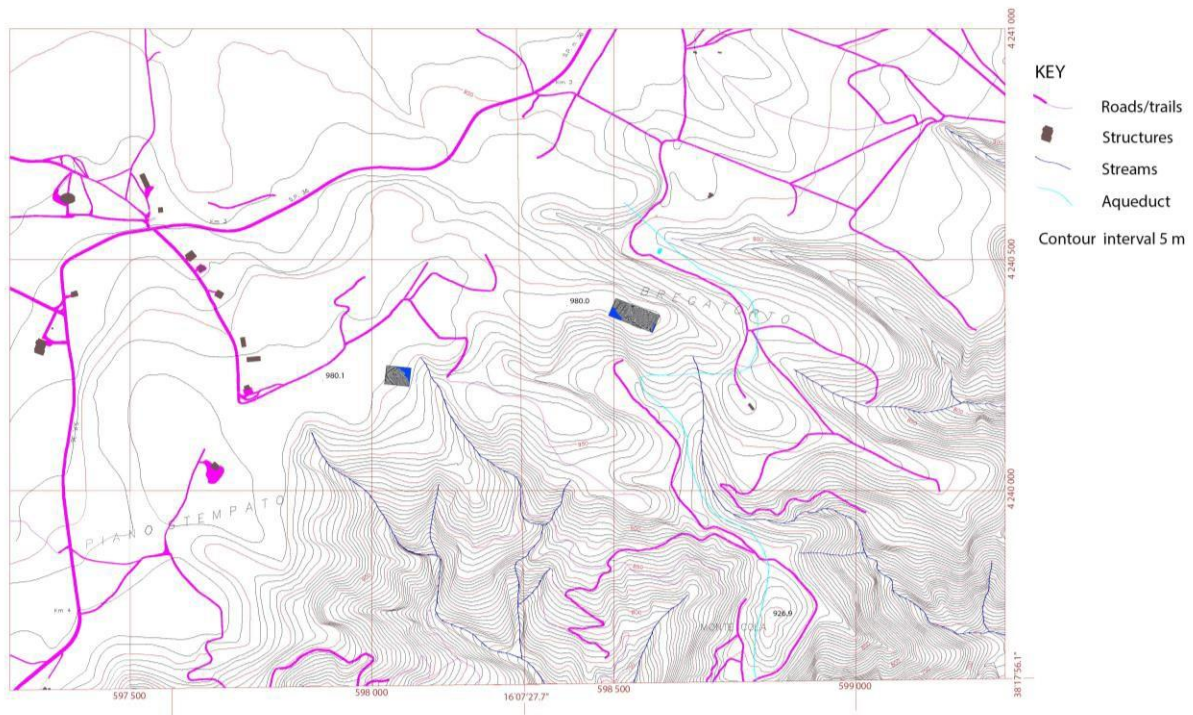


Fig. 3. Position of località Cocolédi and contrada Bregartorto on Antonimina's Carta Tecnica Regionale.

Località Cocolédi

The results of the magnetometer survey at località Cocolédi are illustrated by fig. 4, annotated with an interpretation of various features as determined by the excavations described below⁶. Although the GPR survey produced similar results, they are less evident; the interpretations presented here will refer only to the gradiometer image. Two types of anomalies are especially noteworthy in this image. First, several parallel, linear features with high magnetic readings can be seen oriented southeast to northwest and, orthogonally to that, southwest to northeast. High positive anomalies are typically produced by magnetically enriched iron oxides, which form in organic topsoil that becomes concentrated in ditches or pit-like features. Second, extreme dipolar anomalies (high positive readings paired with low negative readings) are typically caused by ferrous metal, fired brick or tile, hearths, or possibly concentrations of iron-rich rocks. In 2017, Test Units (=TU) 1, 2, and 4 were positioned to investigate the linear magnetic anomalies on the western edge; TU3 examined the dipolar anomaly on the northern edge of the site. Building upon the results of these first excavations, which identified the perimeter wall of a masonry building, TU7, TU7a, TU8, and TU9 were excavated in 2018 to further define the architectural characteristics of this structure⁷.

In the gradiometer image, the largest linear feature on the western and northern edge of the plot corresponds to the natural drainage pattern of the large tableland to the west of the site, which forms the head of the steep ravines to the east and south (fig. 3). This drainage feature is identified as f1 in fig. 4 and demarcated with arrows showing the direction of water flow; it is conspicuous on the surface and indicated by the contour lines of the topographic map in fig. 5.

The second linear feature, f2, was first identified in TU1 and then fully exposed in the southern profile of this test unit and of its westward extension, TU9 (fig. 9). It is a broad ditch, 2.5 m wide at its deepest extent (75

⁶ This supersedes the image illustrated in VISONÀ 2019: 129, Fig. 7 and CROTHERS 2020: 281, Fig. 4.

⁷ CROTHERS 2020: 281-282.

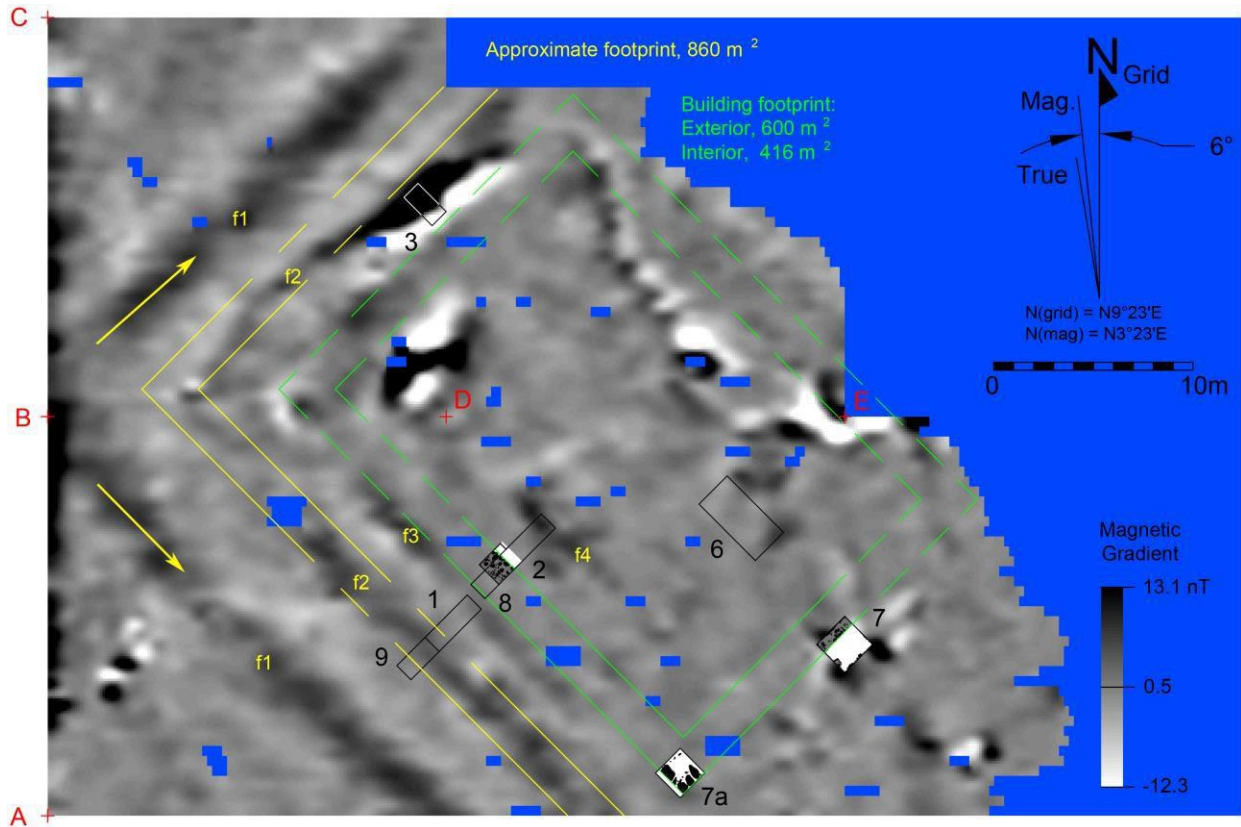


Fig. 4. Gradiometric map of località Cocolédi, showing the anomalies f1-f4, the test units TU1- TU3 and TU4-TU9 excavated in 2017-2018, and the estimated dimensions of the Greek building. Mapping and visualization by G.M. Crothers.

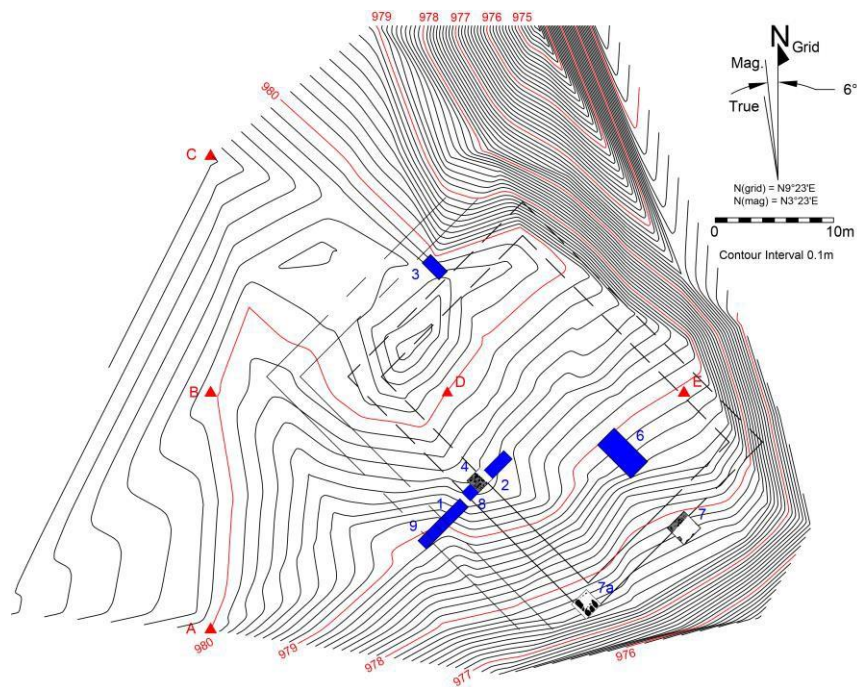


Fig. 5. Topographic map of località Cocolédi (scale 1:200) showing the test units TU1-TU3, and TU4-TU9 excavated in 2017-2018, the overall dimensions of the building and the filter drain. Mapping and visualization by G.M. Crothers.

cm below ground surface), filled with cobbles, cut pieces of granite, and roof tile fragments. This feature is interpreted as a filter drain purposefully constructed on the western and possibly the northern edges of the building, parallel to and intermediary between the natural runoff (identified as feature f1) and the structure. Although the filter drain is most distinct along the western wall of the structure in the gradiometer image, a weaker anomaly in fig. 4 indicates that it may also be preserved along the northern wall.

Linear feature f3, located along the outer edge of western exterior wall, could be the remnants of a foundation trench or, less likely, a concentration of roof tile fallen outside this wall. However, this feature was not investigated further.

Two exterior walls of the structure were uncovered in TU2, TU4, TU7, and with the *sondages* TU7a, and TU8. The interior face of the western wall of the building, **TU2007**, was first identified in TU2 and TU4 (fig. 10 a-b). An extension of both units to the west (TU8) showed that this wall is approximately 2 m in width. After the excavation of TU7 revealed the exterior face of the southern wall, **TU7004** (fig. 14), triangulating from the edge of the southern and western walls pinpointed the southwestern corner of the structure, which was exposed with the *sondage* TU7a. Fig. 4 shows that, while the southern and western walls of the buildings are well defined, the northern and eastern walls remain hypothetical. Headward erosion of the ravine may have caused the partial collapse or the loss of the eastern wall.

Test Unit TU3 was positioned to investigate the large dipolar anomaly on the northern edge of the structure, which initially was believed to be a well-preserved architectural feature. However, this anomaly appears to result from a concentration of buried roof tile fragments. TU3 was excavated to a depth of 35 to 40 cm below surface and yielded 10.7 kg of tile, most of which came from the northern half of the unit. It is possible that the concentration of tile may indicate the edge of the presumed filter drain on the north side of the structure (feature f2). There was not sufficient time to extend this trench in either direction to confirm presence of the drain or locate the edge of the northern wall of the building.

Feature f4 (identified in fig. 4) also appears to be associated with a concentration of tile, since TU2, the test unit that intersected it, contained 65.2 kg of tile, 95 % of which came from the eastern half of this trench. In this case, the depth at which the tile is buried may explain why the dipolar response of the anomaly is muted. Significantly, TU7 – a test unit associated with a strong dipolar anomaly, which was excavated in 2018 to locate the southern wall of the building – also contained a large quantity of tile (24.2 kg) that was concentrated along the southern edge of the unit.

These geophysical data, integrated by the results of targeted excavations, show that località Cocolédi contains a substantial structure with a stone foundation c. 2 m wide at the base, whose western and southern walls have been identified. Although the northern and eastern walls remain hypothetical, the structure may have measured 20.9 x 28.7 m with an exterior footprint of c. 600 m². A filter drain was constructed on the western and possibly the northern edges of the structure to prevent moisture from weakening its foundations. The total footprint of the site (including the filter drain) is approximately 860 m². This rectangular structure is oriented from the northwest to the southeast on the long axis and is situated at a distance of c. 500 m from the site at contrada Bregatorto, which lies at nearly the same elevation (fig. 3).

George M. Crothers

The excavations at località Cocolédi

The Greek site identified in 2014 at località Cocolédi, a tableland of Pliocenic origin situated between Piano Melia and Piano Stempato⁸, occupies a low hill jutting out on the eastern edges of the Dorsale Tabulare at the elevation of c. 980 m above sea level (fig. 6). Twelve chert and sandstone flakes and core fragments⁹ and a rim with Stentinello-style impressed decoration collected in the vicinity of the site attest to the movement of people across this locale in the late Neolithic (fig. 7)¹⁰. Other surface finds of undatable pottery from nearby Pi-

⁸ See *Carta Geologica d'Italia, Foglio 590*. There is no mention of the name Cocolédi in VALENTE 1973, ROHLFS 1982, or PENSABENE 1987, and in the most recent IGMI map (*Taurianova* 1998).

⁹ Data from S. Ahler. All lithics from the 2017-2019 archaeological investigations were examined under directional light with magnification between 10x and 40x using a stereozoom binocular dissecting microscope.

¹⁰ VISONÀ 2016b: 10; VISONÀ 2020: 284, n. 20.



Fig. 6. The Greek site at località Cocolédi, seen from the north in October, 2015.



Fig. 7. Località Cocolédi, 2017 surface find. Rim of late Neolithic vessel with impressed decoration. Dimensions: width 3.45 cm; max. thickness 0.9 mm. From VISONÀ 2020: 284, Fig. 8.



Fig. 8. Località Cocolédi, 2017. The fill (context **TU1003**) of the filter drain in the southern profile of the western end of trench TU1, after excavation.

ano Liso and Piano Melia – an area known as “Passo del Mercato” in the early 1800s¹¹ – suggest that this ridgetop has continued to be frequented by travelers and traders until the late modern period. Since a trail coming from the Jonian coast via Monte S. Mauro and Monte Cola passed near località Cocolédi¹², the presence of a water source (now accessible at a lower elevation) and of a granite outcropping may have been among the reasons why this hilltop was settled by the Locrians. It seems unlikely that it was selected for defensive purposes, being naturally protected only by a gully to the

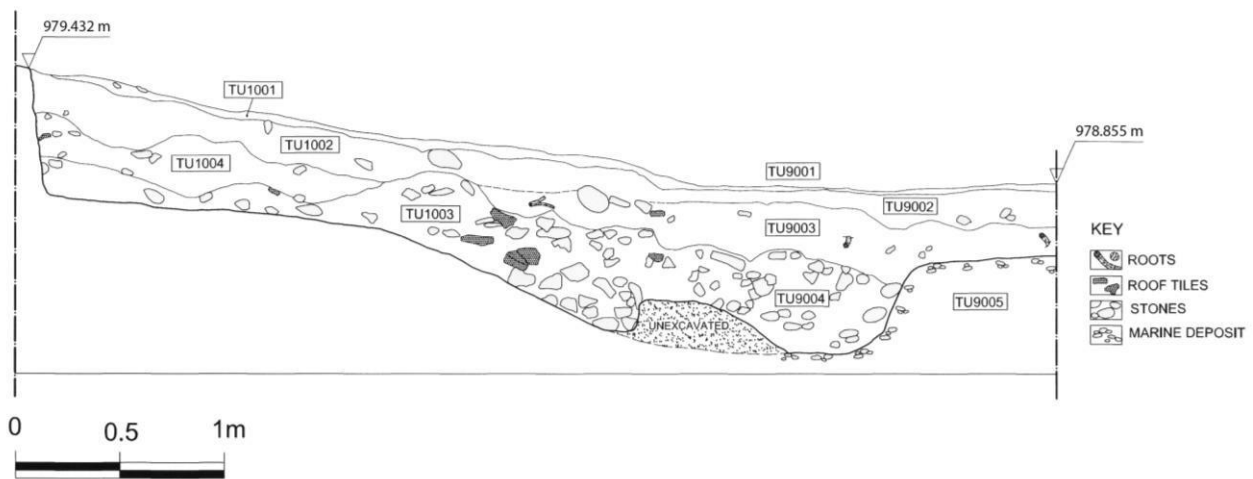


Fig. 9. Località Cocolédi. Cumulative view of the southern profile of TU1 (excavated in 2017) and TU9 (excavated in 2018) showing the filter drain and its fill. Drawing by P. Mazzaglia.

north and by a ravine on its northeastern and southeastern sides facing towards the Locrian *chora*, from which no attack was expected. After the data from the geophysical survey conducted in 2017 showed that a single structure occupied the entire area of the hill, the first test excavations targeted some of the most distinctive magnetic anomalies, in order to discern the layout and orientation of the building and its occupational history. Test Units, TU1, TU2 and its westward extension TU4, were focused upon three parallel anomalies in the southwestern area of the site, while TU3 investigated an anomaly in the northern area of the site (fig. 4). The latter unit did not produce archaeological features or narrowly datable finds.

TU1, a 1 x 3 m trench, and its 2-m extension TU9, were excavated to the east of the anomaly corresponding to a natural drainage (fig. 4, f1). In both units subsurface layers covered a thick stratum of cobbles, pieces of granite of uniform size, and roof tile fragments, in a soil matrix that contained potsherds datable between c. 550 and 480 BCE (fig. 8; fig. 9, contexts **TU1003-TU9004**). The granite probably came from an out-

¹¹ See Sezione 14, Colonna VIII of the “ricognizione eseguita dal 1821 al 1825 dagli Ufficiali dello Stato Maggiore I.R. Austriaco sulla Gran Carta del Regno di Rizzi Zannoni”, accessible at [https:// anticabibliotecacoriglianorossano.it/mappe-e-carte-geografiche/carta-austriaca-del-regno-delle-due-sicilie/](https://anticabibliotecacoriglianorossano.it/mappe-e-carte-geografiche/carta-austriaca-del-regno-delle-due-sicilie/).

¹² A *mulattiera* shown in an 1879 IGMI map (Gerace, Foglio 255) and the road shown on the map of *Villaggio Zòmaro* 1958 follow a similar route.

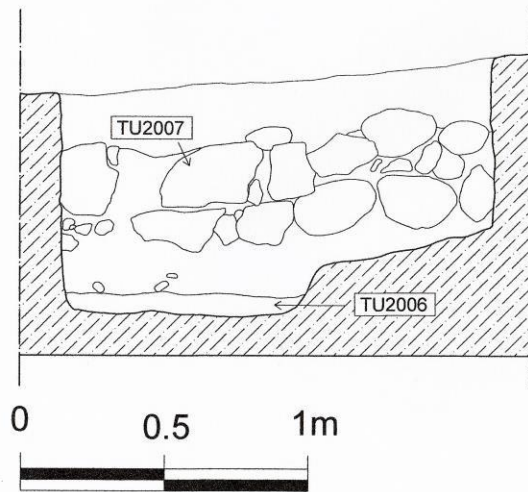


Fig. 10. a. Località Cocolédi 2017. View of the western wall of the building (TU2007), seen from the north. b. Profile of the inner face of the western wall of the building (TU2007). Drawing by P. Mazzaglia.

cropping located less than 50 m to the southwest of the site. A cutting into the basal Pliocenic gravels (TU9009) at the western end of TU9, which was exposed in 2018, shows that this mix of stone and tile fragments, some of which had surface accretions, is the fill of a ditch (fig. 4, f2) that was excavated in front of the building to prevent meteoric water from undermining its foundations. The ditch, interpreted as a filter drain, appears to have followed the northern and western sides of the building, whose western perimeter wall (TU2007) was located in TU2 and TU4. A portion of the wall's inner face was uncovered by the excavation of these Test Units (fig. 10, a). Preserved to a height of two courses, it was built upon a bedding of soil (fig. 10, b). Its masonry technique consists of a revetment of roughly hewn granite blocks and cobbles enclosing a tightly packed rubble core which resembles that of the north and south walls of the Locrian fort on Monte Palazzi¹³.

In Test Unit TU2, a layer representing the phases of destruction and abandonment of the site (fig. 11, context TU2003) covered the remnants of a roof fall (context TU2004) above a habitation layer (TU2005) that was deposited directly upon the basal gravels (TU2006). These gravels seemingly provided the earliest surface or *piano di calpestio* inside the building. The small quantity of broken tile found in the roof collapse (which also yielded a fragmented iron implement)¹⁴ suggests that most of the destruction debris was robbed out. The habitation layer or floor fill contained pottery datable from the mid-6th to the early 5th centuries BCE, including the overturned toe of a Corinthian style amphora (fig. 12) and fragments of different fineware vessels that may have been used in a votive context. As the most recent pottery associated with and overlying the roof fall can be dated to the early 5th century, the building probably was constructed towards 500 BCE and appears to have been used for a short period of time. The causes of its destruction are unknown.

In 2018, Test Units TU6 and TU7 were aimed at identifying the building's southern perimeter wall while TU9 explore the area outside the building to the west of TU1; two small *sondages* (TU 7a and TU8) also determined the width of the western perimeter wall to be at least 2 m and exposed the foundations of the building's

¹³ VISONÀ 2016b: 221-224, 236, 238-239, Figs. 29-30.

¹⁴ This implement may have been a sickle or a pruning hook: see VISONÀ 2019: 130, Fig. 8; VISONÀ 2020: 287, Fig. 12.

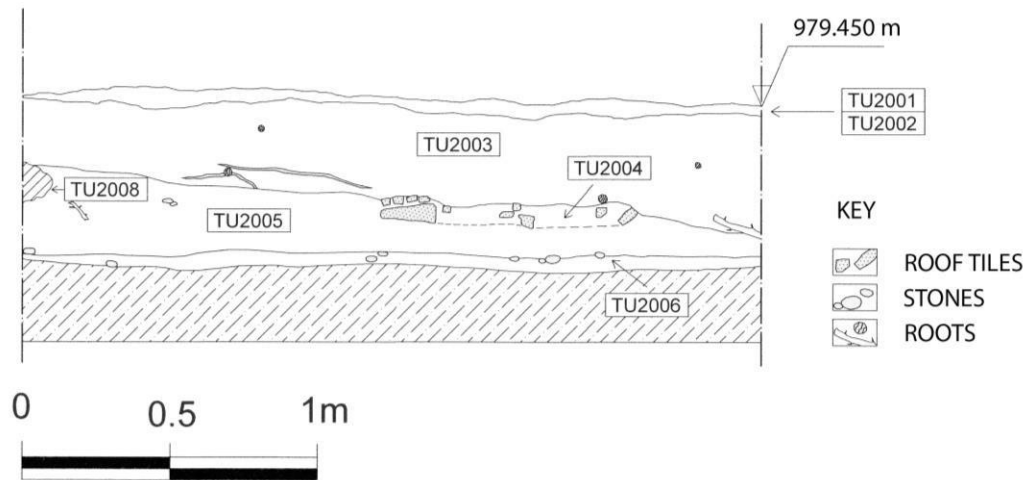


Fig. 11. Località Cocolédi 2017. Northern profile of trench TU2. Drawing by P. Mazzaglia.



Fig. 12. Località Cocolédi 2017. Overturned Corinthian-style amphora toe covering the rim of a band cup (550-500 BCE) in context TU4004. From VISONÀ 2020: 288-289, Fig. 16.

southwestern corner. In TU6, a 2 x 4 m trench, a layer of charcoaly soil located in the southern half of the trench at a depth of c. 40 cm overlay a concentration of head-size cobbles above sterile soil (fig. 13). This lens of burnt soil extends into the eastern baulk and may represent a hearth that was used briefly, since it did not leave a strong magnetic signature. Most of the cookingware from TU6 came from the southern half of the trench and was associated with this feature. In contrast, fragments of vessels related to food preparation and storage were recovered from the northern half of the trench, where a single cut block of granite found *in situ* may have been used as a stand. It is uncertain whether this area of the building was roofed over, given that only a small quantity of tile fragments was found in the northwestern corner of the trench. As in TU2, all the ceramic fragments from this Test Unit are also datable between the late 6th and the early 5th centuries BCE. The



Fig. 13. Località Cocolédi 2018. Detail of the eastern half of TU6, showing a cut granite block in situ at the northern end and a concentration of cobbles covered by burnt soil at the southern end of the trench.

analysis of two samples of charcoal from TU2 and a sample of charcoal from the area of burnt soil has yielded calibrated (with 2σ error) calendar radiocarbon dates (rounded to the nearest 10 years) ranging between 540-400 BCE, 760-430 BCE, and 750-410 BCE, and two samples of charcoal from TU1 and TU9 have produced calibrated calendar dates ranging between 800-550 BCE and 750-420 BCE, respectively (Table A)¹⁵. These consistent sets of data corroborate the possibility that the building went out of use in the 5th century, even though less than 3% of the total area of the site has been excavated thus far.

The excavation of TU7, a 2 x 2 m trench opened on the brow of the hill, 5 m to the south of TU6, uncovered the outer face of the southern perimeter wall (fig. 14, **TU7004**), whose extant courses were built directly upon the gravelly marine deposit. Stacked layers of tile fragments found in the southern area of this trench are probably related to the collapse of the roof of the building. Exposing a segment of the southern wall also allowed locating the foundations of the building's southwestern corner, which consist of two rows of granite boulders (fig. 15). As a result, two exterior walls of this structure have been identified. However, its functions remain enigmatic. There is no compelling evidence at present that this building was used as a frontier sanctuary, as has been suggested¹⁶, although this could yet be determined by future investigations, since less than 3 % of the structure has been systematically explored to date. An example of ritual activity documented in TU4 and a base of a miniature *kotyle* from a recent soil layer in TU7 outside the southern wall of the building have parallels at Monte Palazzi¹⁷.

Finds of fragments of glazed pottery found in surface layers in TU2 and TU4, a 20 centesimi nickel coin of the Kingdom of Italy minted between 1918 and 1920, and lead shot, show that the site has been visited in recent years.

Paolo Visonà

¹⁵ All radiocarbon analyses were performed by DirectAMS Radiocarbon Dating Service, Bothell, WA, USA. Calibrations with CALIB Radiocarbon Calibration Program, REIMER *et al.* 2013.

¹⁶ Cf. VISONÀ 2016b: 251; SUDANO 2018: 127; SUDANO 2019; DE SENSI SESTITO 2020: 113.

¹⁷ VISONÀ 2016b: 225-227.

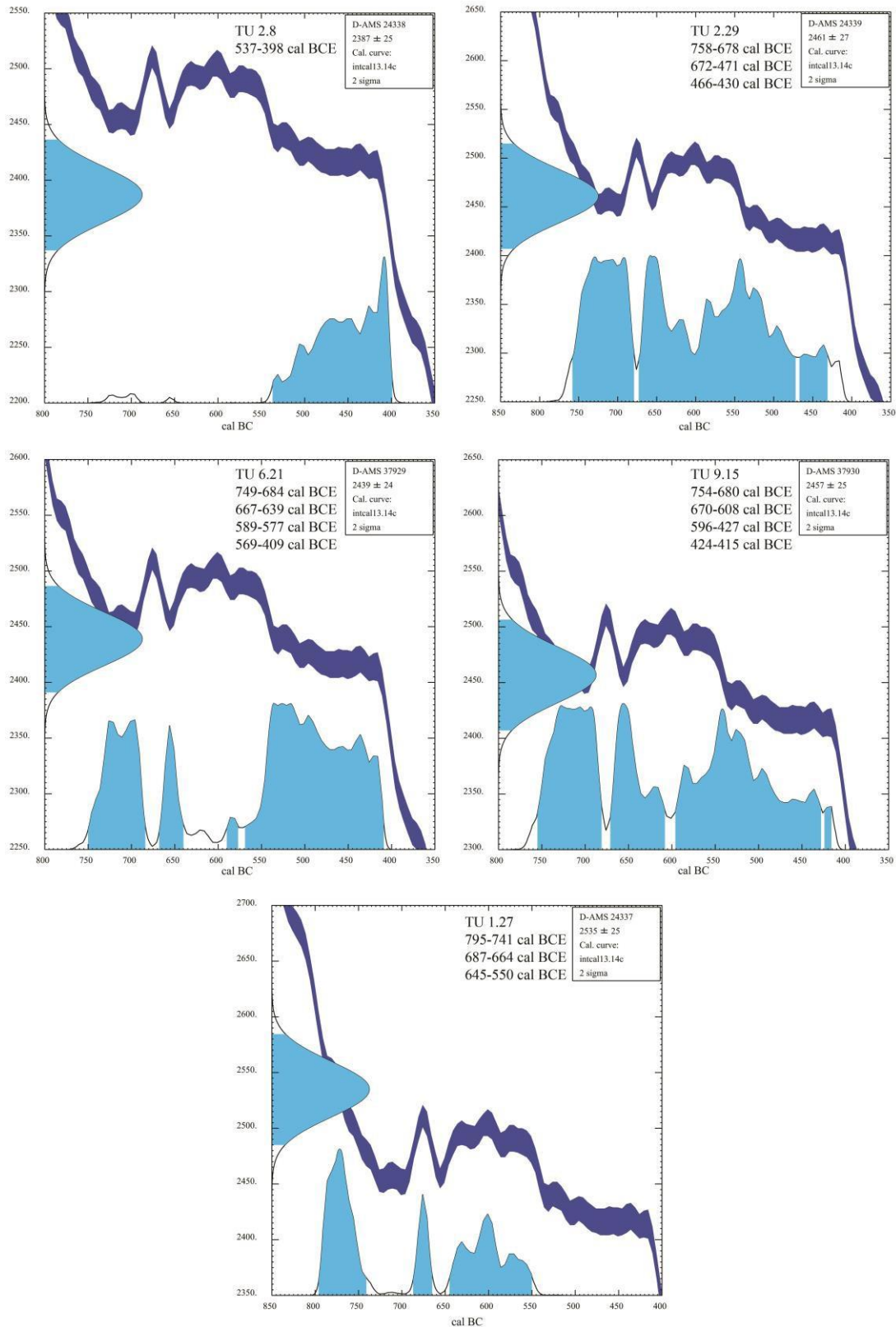


Table A. Calibrated radiocarbon dates of charcoal samples from località Cocolùdi. Data processing and visualization by G.M. Crothers.

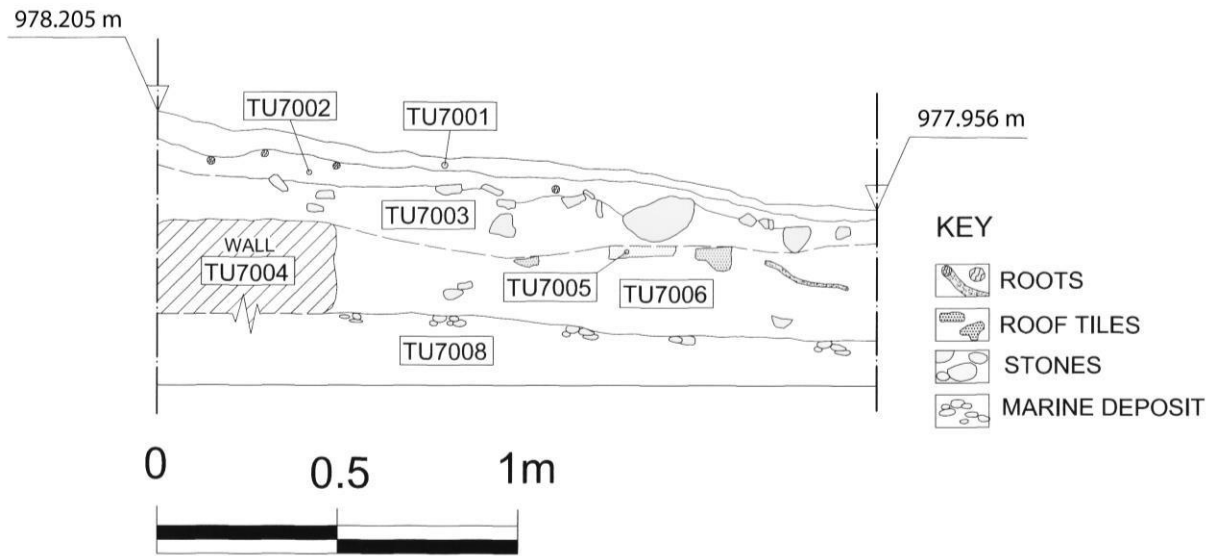


Fig. 14. Località Cocolédi 2018. Eastern profile of trench TU7. Drawing by P. Mazzaglia.

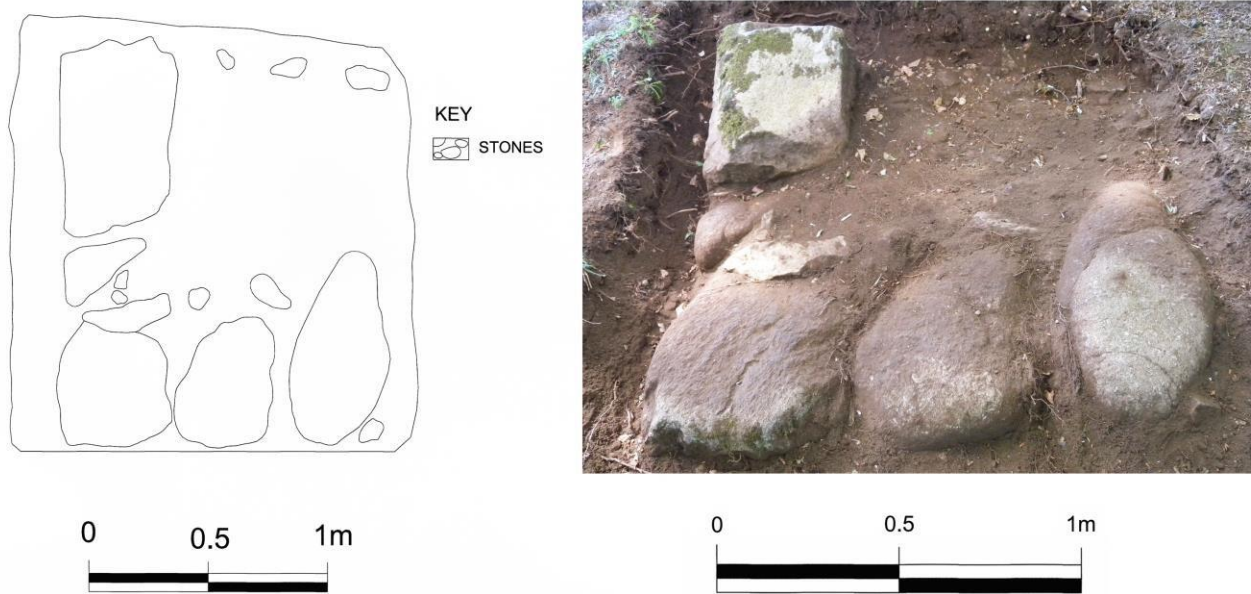


Fig. 15. Località Cocolédi 2018. The foundations of the southwestern corner of the building. Drawing by P. Mazzaglia.

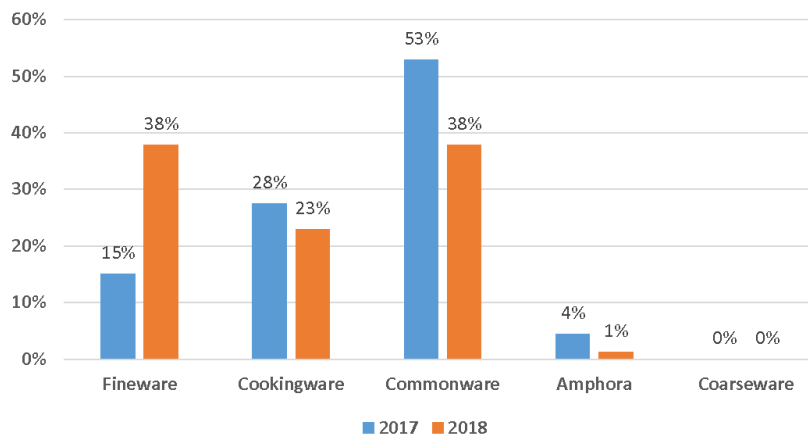
The ceramic finds from località Cocolédi

A larger quantity of pottery was found in 2017 at località Cocolédi, where four trenches were excavated, while only one trench could be opened at contrada Bregatorto. In contrast, since more and larger test units were excavated at Bregatorto in 2018, less ceramic material was expected from Cocolédi than in the previous campaign.

The pottery found at località Cocolédi is consistently dated from the mid-6th century BCE through the early 5th century BCE and comprises a large proportion of body sherds. In the second field season fineware accounted for an increased proportion of the total count (38 % in 2018 vs. 15% in 2017) and weight (24% in

2018 vs. 12% in 2017); all other wares accounted for a lower percentage of the total quantity of pottery than they did in 2017 (fig. 16). Common and cookingwares are most common; amphorae and coarseware vessels are rare. Fabrics for all wares are local in nature and similar to those found at nearby sites, such as Monte Palazzi, Locri, and Kaulonia.

SHERD COUNT



SHERD WEIGHT

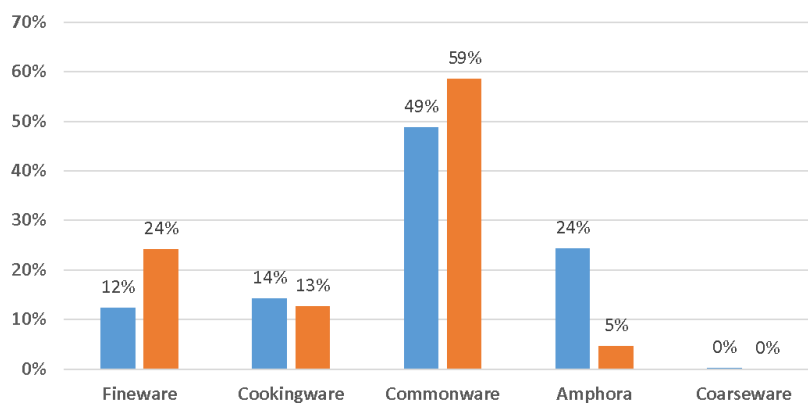


Fig. 16. Sherd count and weight from the 2017 and 2018 excavations at località Cocolúdi.

Among the earliest datable fragments of pottery from TU1 is the partial base of an Ionic cup B2 dating to 550-500 BCE. This base came from a debris layer representing the collapse of the western wall of the building (fig. 9, context **TU1004**), which overlay a fill (contexts **TU1003–TU9004**) that contained mostly commonware body sherds (probably from storage and functional kitchen vessels, such as jugs and jars), and some fineware fragments datable to the early 5th century BCE.

A larger quantity of datable sherds was found in a destruction and abandonment layer excavated in TU2 (fig. 11, context **TU2003**). These forms, primarily cookingware, date to ranges overlapping in the early 5th century BCE, and are consistent with those found in TU1. The commonware includes a mortarium rim likely dating from the mid-6th to the early 5th centuries; another mortarium rim comes from baulk trim (fig. 17, a-b)¹⁸. The pottery from the remnants of a roof collapse in TU2 (fig. 11, context **TU2004**) is datable to this horizon. A habitation layer beneath the roof fall also yielded ceramic fragments datable to the early 5th century BCE,

¹⁸ KNAPP 2020: 301-302, nos. 17-18.

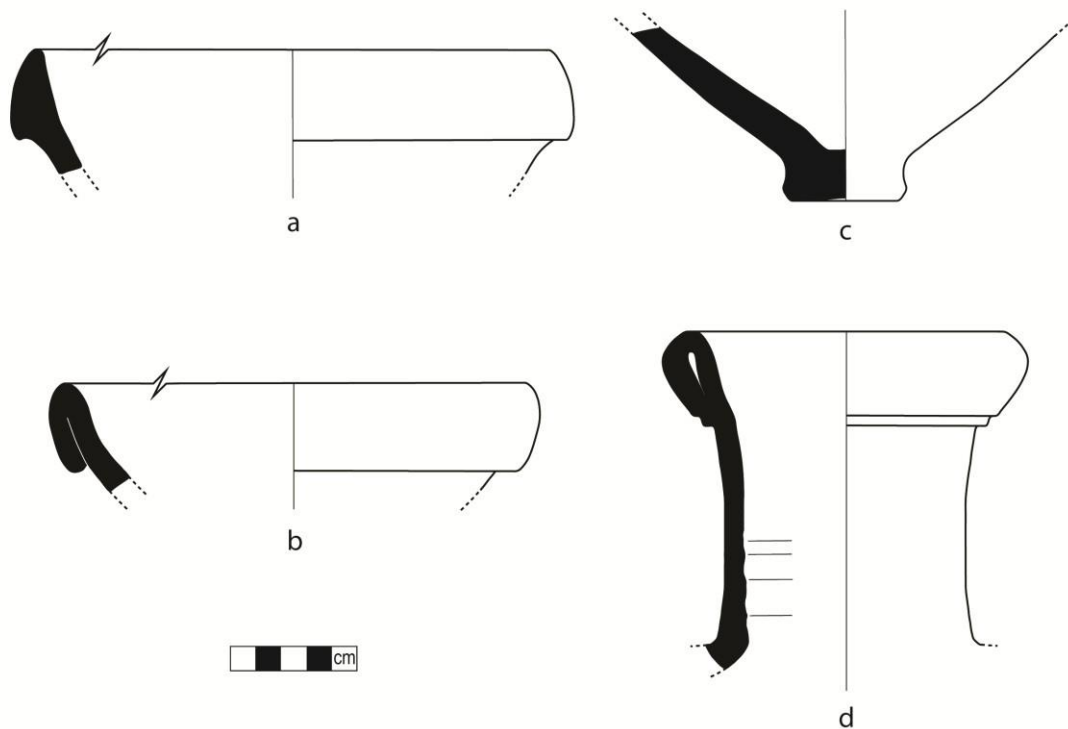


Fig. 17. Commonware and transport amphorae found at località Cocolédi in 2017. a. mortarium rim, mid-5th through 5th centuries BCE; b. mortarium rim, 5th century BCE; c. toe of Corinthian A or B (or related) amphora, late 6th to early 5th centuries BCE; d. neck and orlo a cuscinetto rigonfio of Locrian A3 amphora, c. 50-450 BCE. From KNAPP 2020: 302, Fig. 29.

comprising mainly commonware, with one concentration of fineware and one of cookingware, including a distinctive type of *chytra* (fig. 18, a)¹⁹. This context yielded several partially reconstructable vessels, including early 5th century BCE skyphoid cups²⁰ and a Locrian transport amphora with *orlo a cuscinetto rigonfio* A3, datable between 500-450 BCE (fig. 17, d)²¹.

Several fineware vessels datable to the second half of the 6th century BCE and the early 5th century BCE came from TU4, an extension of trench TU2. The earliest cultural layer above sterile soil in TU4 (context **TU4004**) contained an apparently intentionally overturned toe of a Corinthian A or B (or related) amphora datable to the late 6th to early 5th centuries BCE (fig. 17, c)²² that covered fragments of a band cup (fig. 19, b)²³. Considering the types of vessels found in this layer, which include fragments of an Ionian B2 cup (fig. 19, a), a *kylix*, and skyphoid cups, their relative completeness, and the overturned amphora, this context could be votive in nature. The small, likely intentional, hole in the lower wall of a skyphoid cup from this layer (fig. 19, c)²⁴, is additional evidence of a votive function.

Within TU6, which produced the largest quantity of ceramic fragments of all the test units excavated at località Cocolédi in 2018, the pottery also dates consistently to the late 6th or early 5th centuries BCE. It was concentrated especially in the cultural layers overlying a burnt area in the southeastern end of this trench and adjacent to a cut block in the northeastern corner (see above, fig. 13). A relatively even proportion of fine-, cooking-, and commonwares used for dining, cooking, and food preparation and service, suggests that the area of the building in which this trench was placed had domestic functions. Vessels associated with food prepara-

¹⁹ KNAPP 2020: 299, no. 10.

²⁰ Similar to Locrian skyphoid cups type A6, 500-480 BCE: KNAPP 2020: 298, no. 4.

²¹ BARRA BAGNASCO 1992a: 231, no. 183; KNAPP 2020: 301, no. 20.

²² KNAPP 2020: 301, no. 19. For amphora toes buried upside down in votive deposits at Motya in the Archaic period see ISSERLIN, DU PLAT-TAYLOR 1974: 77-78.

²³ KNAPP, CRESTANI 2020: 293; KNAPP 2020: 297, no. 1.

²⁴ KNAPP 2020: 298, no. 6, Fig. 26e.



Fig. 18. Cooking and commonware vessels found in 2017 and 2018: a. chytira, rim, 6th to 5th centuries BCE; b. frying pan, handle, 4th to 3rd centuries BCE; c. juglet, rim, 5th to 3rd centuries BCE; d. table amphora, rim, mid-5th century BCE; e. basin, rim, 3rd century BCE.

tion and storage, including a mortarium rim similar to that from layer **TU2003**²⁵, a single amphora sherd, and commonware sherds with heavy interior ribbing (likely from storage jars) came from the northern end of TU6, while the vast majority of the cookingware found in 2018 came from the southern half of the trench, possibly attesting to a different activity area.

In contrast, the ceramics found in TU7, a small test unit in which a segment of the southern perimeter wall and a small area outside the building were uncovered, consisted primarily of body sherds with a high proportion of fineware, mostly identified as late 6th and early 5th century BCE cups (primarily Ionic B2 cups, skyphoid cups, *kylikes*, and *skyphoi*). Nearly all of them came from a subsurface layer that also contained the base of a miniature *kotyle* similar to a Locrian form of the second half of the 6th century BCE (fig. 19, d)²⁶. Although this type of vessel was generally used for ritual purposes, it was not found in a stratigraphically relevant con-

²⁵ See above, footnote 18.

²⁶ RUBINICH 1992: 89 and 96-97, '*kotyle a fasce*', no. 12, tav. XLIV.

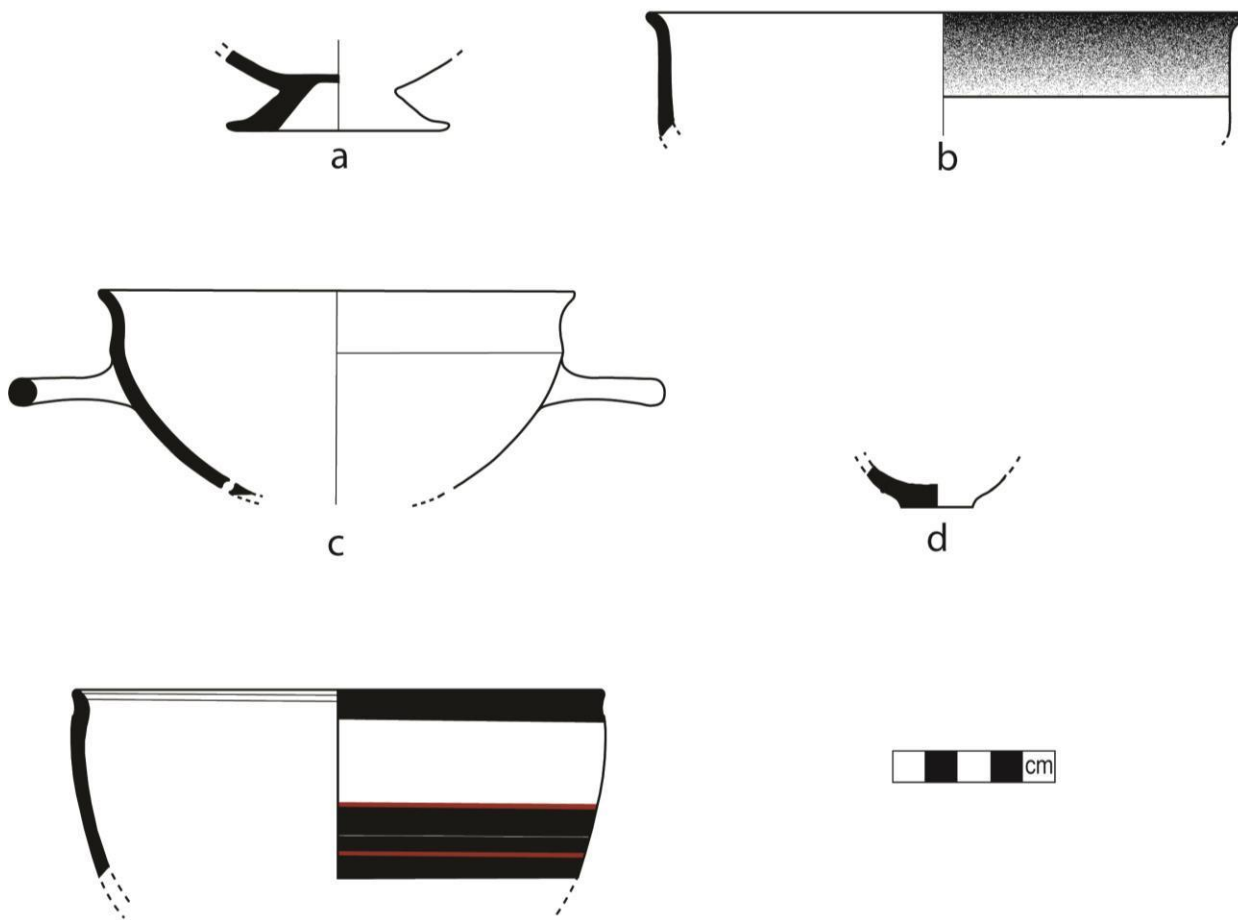


Fig. 19. Fineware vessels found at località Cocolédi and contrada Bregatorto in 2017 and 2018. a. Ionic cup B2, base, 550-500 BCE; b. band cup, rim, 550-500 BCE; c. skyphoid cup rim with intentional hole, 500-480 BCE; d. miniature kotyle, base, 550-500 BCE; e. banded skyphoid cup, rim, 550-480 BCE.

text. A small quantity of pottery was also found with the remnants of a roof fall and in the soil underneath it, but none of it was datable.

Overall, the pottery from località Cocolédi supports the possibility that this site was occupied for a short period of time from the late Archaic to the early Classical periods. However, in view of the scant amount of ceramic material found thus far, any quantitative analysis must be approached with caution and conclusions considered tentative.

Jennifer E. Knapp and Paolo A.L. Crestani

Contrada Bregatorto

The hypothesized layout of the fortification walls superimposed on figs. 20 and 21, which illustrate the main results of the geophysical surveys conducted at contrada Bregatorto, is a combination of the gradiometric and GPR data, local topography, and exposure of rock on the surface. As at the Cocolédi site, large dipolar linear anomalies in the gradiometer image (fig. 20)²⁷ were presumed to be either concentrations of roof tile or

²⁷ This supersedes the image illustrated in VISONÀ 2019: 125, Fig. 3 and CROTHERS 2020: 283, Fig. 6.

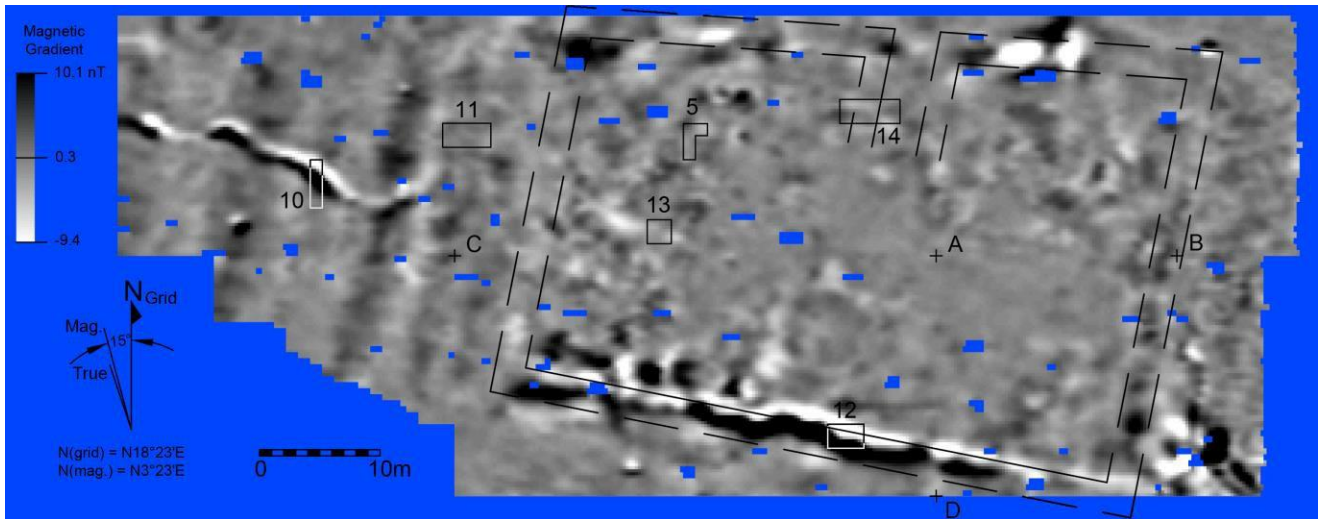


Fig.20. Gradiometric map of contrada Bregatorto showing the test units TU5, TU10-TU14 excavated in 2017-2018. Data processing and visualization by G.M. Crothers.

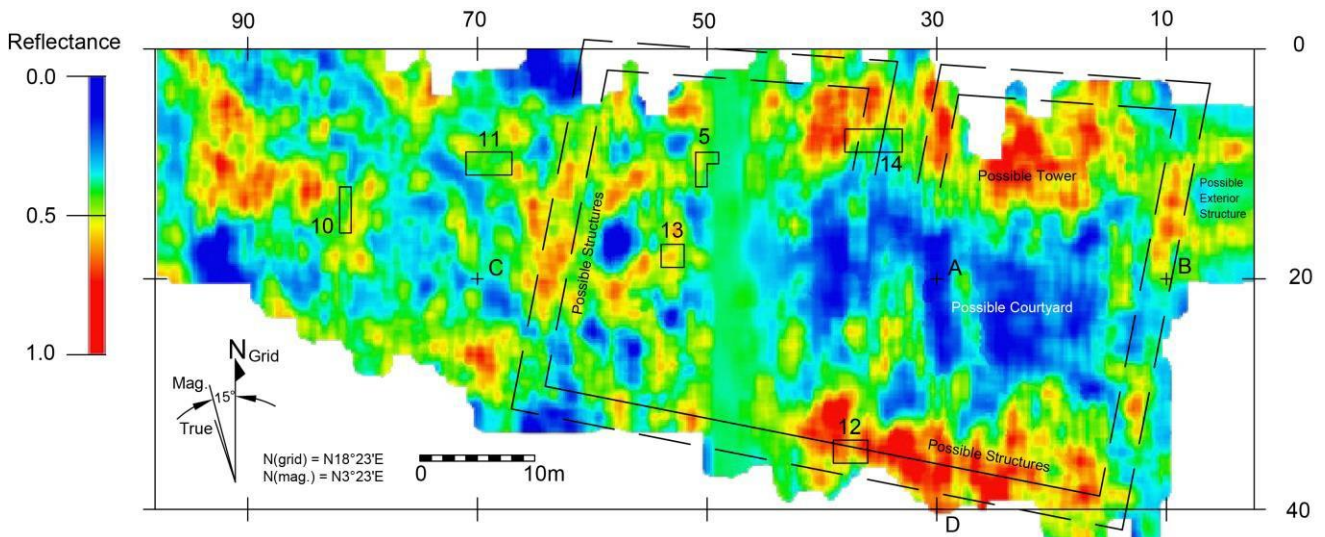


Fig. 21. GPR amplitude slice of the fortification at contrada Bregatorto from c. 69 to 103 cm below surface with tentative diagram of the perimeter walls, interior features, and presumed observation tower in the northeastern corner of the complex. Data processing and visualization by G.M. Crothers.

remnants of stone walls. A linear anomaly corresponding to a wall line was particularly intense on the southern edge, less so on the northern edge, and not evident on the western or eastern edges of the site.

An unexpected linear anomaly on the extreme western edge of the survey area runs east-west approximately in the middle of the area connecting the site to the flat ridgetop of the Dorsale. Initially believing that this feature could be a paved trail leading to an entrance in the western wall of the fortification, Test Unit TU10 was placed to investigate it. However, it contained a single roof tile fragment (0.16 kg) and produced no flagstones or remnants of walls. This feature, therefore, may be relatively recent and possibly an artifact of the modern trail which runs through the site. Foot, animal, and wheeled traffic over several decades could have compacted the sediments and the underlying gravelly marine deposits that are near the surface, enhancing the magnetic signature of the soil.

The massive southern wall of the fort is the most visible, as is evident from the strong dipolar linear anomaly in the gradiometer image (fig. 20) and partially in the GPR slice (fig. 21). This wall also follows very closely the edge of the contour of the topographic map (fig. 22). At least two intense lines of rock exposed on

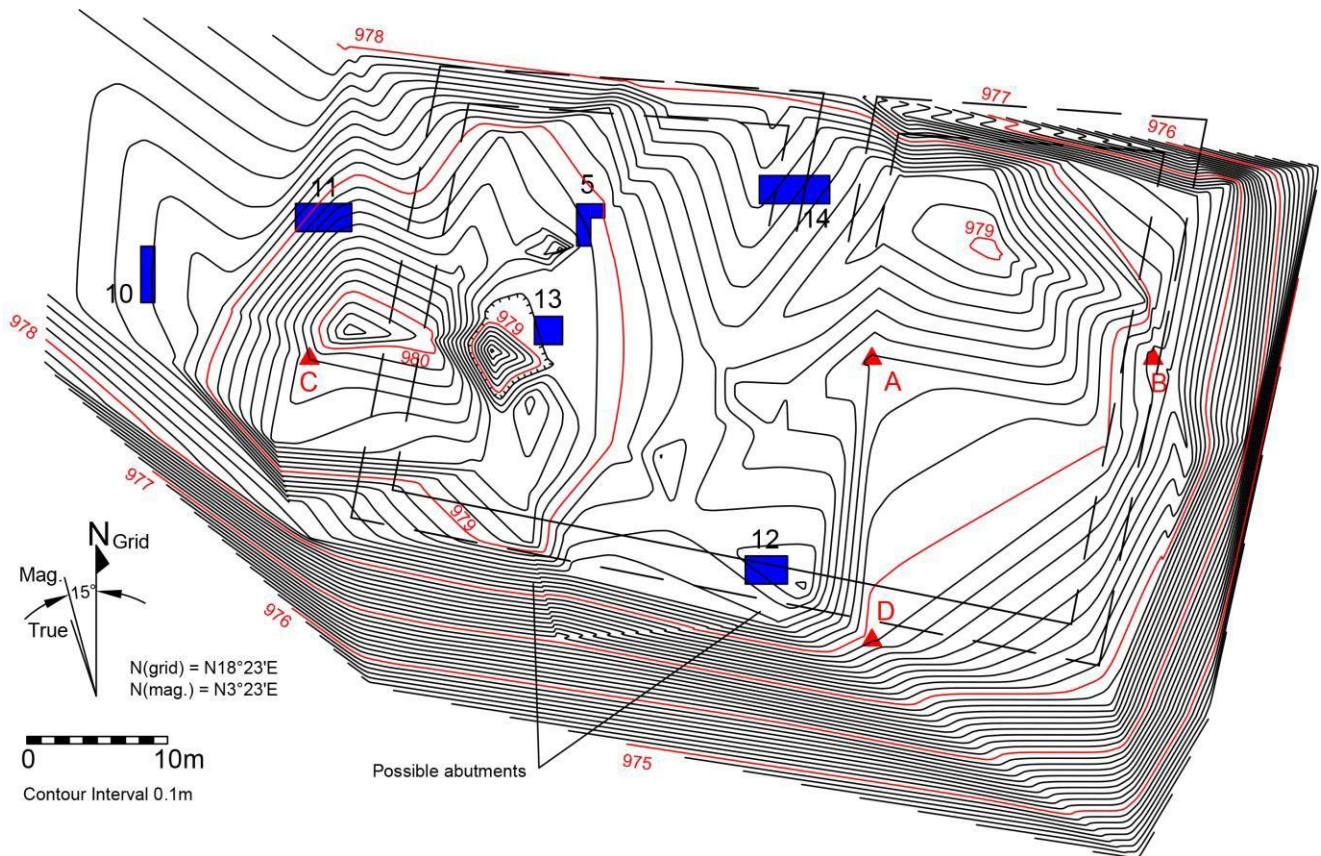


Fig. 22. Topographic map of contrada Bregatorto (scale 1: 200) showing all the test units excavated in 2017-2018 and the overall dimensions of the fortification. Mapping and visualization by G.M. Crothers.

the outer edge of the wall could also be abutments to buttress the wall against the steep southern slope of the terrace. A test unit aimed at investigating this wall yielded a massive rock tumble from the collapse of the wall matrix but relatively small quantity of roof tile (2.16 kg), suggesting that the magnetic anomaly is a signature of the stone wall rather than the result of a concentration of roof file.

The northern wall is more conjectural; it was drawn to capture the alternating dipolar images (fig. 20) and follows the contour of the northern edge of the terrace (fig. 22), which suggests that it was built at an oblique angle to the other walls. Although the eastern wall was not investigated, it is marked by a line of rock partially exposed on the surface at the eastern end of the terrace. It appears in the gradiometer as a slightly higher magnetic linear feature and is also partly evident in the GPR image (fig. 21).

A 2 x 4 m Test Unit, TU11, was originally placed to intersect the western wall of the fortification in an area where there was a slightly higher magnetic linear anomaly, comparable to that of the eastern wall. However, the results of this excavation were negative, since the unit contained mainly rock tumble. A reassessment of the geophysical data indicates that this test unit is outside of the fortification; the western wall is probably located further to the east, as the GPR image has revealed.

The most significant data for defining the outline of the fort came from TU14, a 2 x 5 m trench. This unit was aimed to test a gap in the high reflectance energy along the edge of the northern wall which was suspected to be the location for a gateway (fig. 21). Like TU12, TU14 contained massive rock tumble, but preserved underneath it the remnant of a wall face oriented north-south and parallel to a hard-packed surface on the eastern side (see figs. 27-28). Even though the ends of this wall could not be fully exposed, it appears to be nearly perpendicular to the northern wall of the fortification, thus forming a recessed entryway. Although the eastern wall of this entryway remains conjectural, the entryway is presumed to be at least 3.75 m wide, corresponding to the gap in the high reflectance values of the GPR image (fig. 21). This feature bears a strong re-



Fig. 23. Serro di Tavola (Sant' Eufemia d'Aspromonte). Building phases of the fortification. From BRIZZI and COSTAMAGNA 2010: 584, Fig. 416.

semblance to the recessed entryway of the fortified site of Serro di Tavola (Sant'Eufemia di Aspromonte) in its second architectural phase, which has been dated to the second half of the 6th century BCE (fig. 23)²⁸. Some of the rock fall to the east of the exposed portion of the entryway may have come from the collapse of a large tower or bastion located in the northeastern corner of the fortification, on one of the highest points of the terrace.

A tentative reconstruction of the fortification at contrada Bregatorto, whose remains occupy the end of a steeply sided terrace facing toward the Jonian coast, suggests an exterior footprint of 1928 m² with 2.5 to 3 m thick walls providing an interior space of slightly more than 1500 m². Walls of similar width are characteristic of Greek late Archaic fortifications across the Mediterranean²⁹. Based on the intense amount of rock reflected in the GPR, interior structures such as barracks, or storerooms may have been built along the western and possi-

²⁸ BRIZZI, COSTAMAGNA 2010: 584.

²⁹ VISONÀ 2016a: 222, n. 16.

bly the southern walls. A recessed gateway located on the northern wall appears to be paired with a potential bastion or tower in the northeastern corner, which was one of the site's highest points. An open courtyard may have occupied the central area in the eastern two-thirds of the fort, where no interior structures have been detected. The 800 MHz GPR survey conducted in 2018 was intended to provide higher resolution of possible interior structural foundations and the possible exterior structure at the eastern end of the fortification but has not yet been fully processed.

George M. Crothers

The excavations at contrada Bregatorto

Located on an elongated terrace connected to the Dorsale Tabulare by an intervening slope, at an elevation of c. 980 m above sea level³⁰, contrada Bregatorto is naturally protected by steep escarpments on three sides and close to a permanent source of water (fig. 24). Its position dominates the final ascent to the Dorsale by the most direct overland route linking ancient Locri to the Tyrrhenian coast. Dr. Domenico Raso of Cittanova (1938-2013), who first reported the presence of ruins at this site in 2001³¹, had hypothesized that they belonged to a Locrian fortification. Remains of massive walls especially visible along the southern side of the terrace, including large cut blocks of stone (fig. 25), and finds of fragmented bronze projectile points³², attest to the site's use for defensive purposes in antiquity.



Fig. 24. The Greek site at Contrada Bregatorto, seen from the west in June, 2015.

The test excavations conducted in 2017 and 2018 were based upon the geophysical data, which showed the presence of a large enclosure occupying nearly the entire surface of the terrace (see figs. 20-22). Even though only a small, 1 x 4 m trench (TU5), could be opened in 2017, it revealed a depositional sequence dating from the early 5th century to the 3rd century BCE. The earliest cultural layer covered a sterile soil similar to the

³⁰ This datum supersedes the elevation mentioned in VISONÀ 2019: 124.

³¹ RASO 2001: 51-52, 100-101, 105; cf. VISONÀ 2016a: 6, 10-11; VISONÀ 2020: 276, n. 11.

³² Six arrow points find comparanda in BAITINGER 2001: 13-16, 25-27 and Pl. 4, no. 65, Pl. 6, nos. 154 and 160, Pl. 11, no. 403. For two examples see VISONÀ 2019: 126, Fig. 4. Similar projectile points are known from San Salvatore and Monte Palazzi: cf. FOXHALL, YOON 2016: 13, Fig. 5; VISONÀ 2013: 12, Fig. 33; VISONÀ 2016b: 223, Fig. 6-7 and 232, Fig. 19.



Fig. 25. Località Bregatorto 2017. Cut block near the southwestern corner of the fortification.

Pliocenic gravels of località Cocolédì; the most recent pottery came from a roof fall and a debris layer possibly related to the destruction of the fortification. A radiometric analysis (with 2σ error) of two samples of charcoal from the earliest and the latest contexts in this test unit yielded calibrated calendar dates (rounded to the nearest 10 years) ranging between 800 and 550 BCE and 370-200 BCE (Table B).

Five additional Test Units were excavated in different areas of the site in 2018. TU10, a 1 x 4 m trench, was placed near the western approach to the terrace to discern the nature of an anomaly detected by the gradiometric and GPR surveys, which had initially been interpreted as an access road or a paved ramp. Yet, the anomaly appears to have been caused by the use of the modern trail leading to the terrace, since the excavation of TU10 to a depth a c. 70 cm did not expose an ancient surface or pavement. A larger Test Unit, TU11, was positioned to locate the western perimeter wall of the fort, which was initially believed to have stood close to the western end of the terrace. But this 2 x 4 m trench was mostly occupied by incoherent rock tumble and yielded a few ceramic fragments datable to the early 5th century BCE. This evidence, and a reassessment of the geophysical data, suggest that the area investigated by TU11 was outside the fortification.

A 2 x 3 m trench, TU12, targeted the southern perimeter wall. The excavation of this unit exposed debris from the collapse of this wall in a soil matrix that contained some heavily encrusted potsherds, including the rim of a banded skyphoid cup (550-480 BCE). Since many of the ceramic fragments from TU12 were within the rock tumble and soil from the collapse of the wall, and are datable to the early 5th century, they provide a tentative *terminus post quem* of c. 500 BCE or the construction of this rampart. A stone-lined post-hole found beneath the rock tumble (fig. 26) may be indicative of the presence of interior structures (such as barracks or storerooms) adjacent to the wall (cf. fig. 21)³³.

TU13, a 2 x 2 m trench, was placed to investigate a low-lying area in the western half of the terrace. In this unit a destruction and abandonment stratum overlay the remnants of a roof fall, which covered a habitation

³³ A radiocarbon analysis (with 1σ error) of an organic sample from the posthole (TU12.17) inexplicably yielded a calibrated date ranging between 430 CE and 610 CE, which suggests that the sample was contaminated. The paleobotanical data from the post-hole analyzed by Sila Motella (ARCO, Cooperativa di Ricerche Archeobiologiche, Como) show the presence of various species of trees and plants including *Fagus sylvatica*, *Ostrya / Carpinus*, *Quercus* sp., *Cornus* sp., *Erica* sp., and *Viburnum* sp., none of which can be identified as the wood used for the post.

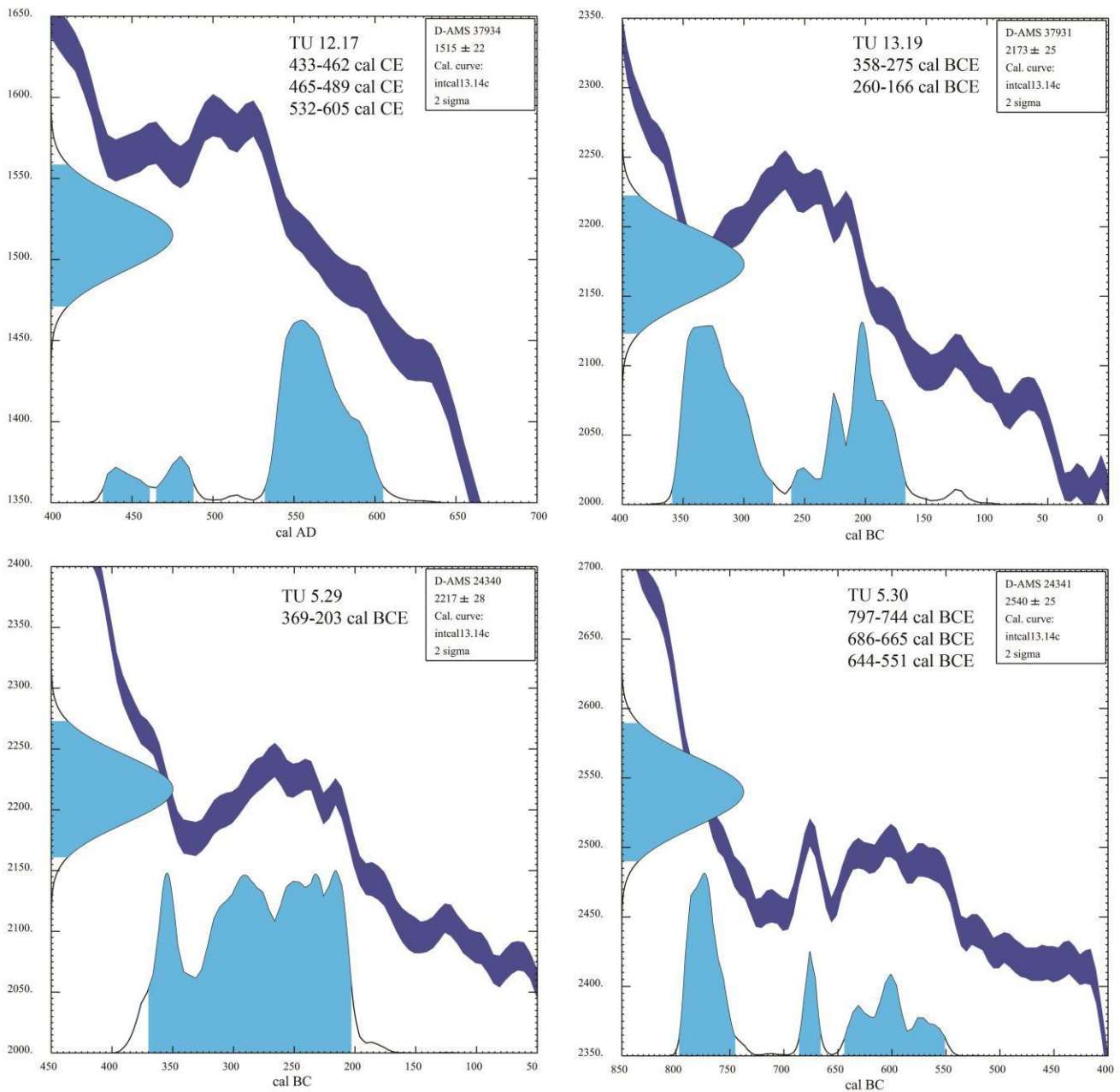


Table B. Calibrated radiocarbon dates of charcoal samples from contrada Bregatorto. Data processing and visualization by G.M. Crothers.

layer. Pliocenic gravels were exposed beneath the habitation layer, as at località Cocolédi. The excavation of TU13 also revealed the presence of a modern pit that extended from the southwestern corner to the southeastern edges of the trench. Most of the pottery from this unit ranges in date from the 5th to the early 3rd centuries BCE – except for two rims of *ceramica a ingobbio rosso interno*, which were found in the destruction and abandonment horizon and in the habitation layer that were cut into by the pit. These finds raise the possibility that the site was frequented as late as the 1st century BCE. The pit may be related to an episode of stone robbing, since TU13 is adjacent to an elevated point of the terrace that could be a recent accumulation of debris (see fig. 22). It is the first example of a recent disturbance inside the fortification that has been identified thus far. A radiometric analysis (with 2σ error) of a charcoal sample from the habitation layer in TU13 yielded calibrated dates (rounded to the nearest 10 years) between 360-160 BCE (Table B), while two charcoal samples from the



Fig. 26. Contrada Bregatorto 2018. Stone-lined posthole (c. 18 x 18 cm) in trench TU12, after excavation.

pit gave calibrated dates ranging between 1670-1950 CE and 1660-1950 CE. The latter set of dates has not been included in Table B; it is presented in Table C which includes all the raw data (with 1 σ error) from both località Cocolédi and contrada Bregatorto.

Sample Code	Cat. No.	Measured Radiocarbon Age		Calibrated Calendar Date Range	
		rcy BP	1 σ error	(rounded to nearest 10 years)	
Località Cocolédi					
D-AMS 24337	TU 1.27	2535	25	800 BCE	550 BCE
D-AMS 24338	TU 2.8	2387	25	540 BCE	400 BCE
D-AMS 24339	TU 2.29	2461	27	760 BCE	430 BCE
D-AMS 37929	TU 6.21	2439	24	750 BCE	410 BCE
D-AMS 37930	TU 9.15	2457	25	750 BCE	420 BCE
Contrada Bregatorto					
D-AMS 24340	TU 5.29	2217	28	370 BCE	200 BCE
D-AMS 24341	TU 5.30	2540	25	800 BCE	550 BCE
D-AMS 37934	TU 12.17	1515	22	430 CE	610 CE
D-AMS 37931	TU 13.19	2173	25	360 BCE	160 BCE
D-AMS 37932	TU 13.21	157	22	1670 CE	1950 CE*
D-AMS 37933	TU 13.25	184	21	1660 CE	1950 CE*

* Ranges are suspect due to impingement on the end of the calibration data set.

Table C. Radiocarbon Ages and Calibrated Calendar Age Ranges at Two Standard Deviations (95% confidence interval). Data processing by G. M. Crothers³⁴.

The largest and most productive Test Unit opened in 2018 was placed in the north-central area of the terrace, where an analysis of the GPR data pointed to a gap in the northern perimeter wall that suggested an entrance. The excavation of this 2 x 5 m trench uncovered the remnants of a retaining wall oriented north-south that can be interpreted as one of the wings of a recessed gateway (fig. 27; cf. fig. 21). A close comparandum for this type of entrance is provided by the fortification at Serro di Tavola, which has been attributed to Rhegion (fig. 23)³⁵. A beaten earth surface occupied the passageway on the eastern side of the wall (fig. 28, context

³⁴ Calibrations made with CALIB Radiocarbon Calibration Program, REIMER *et al.* 2013.

³⁵ BRIZZI, COSTAMAGNA 2010: 581-582, 593.



Fig. 27. Contrada Bregatorto 2018. The western wall of the gateway and the beaten earth surface in trench TU14.

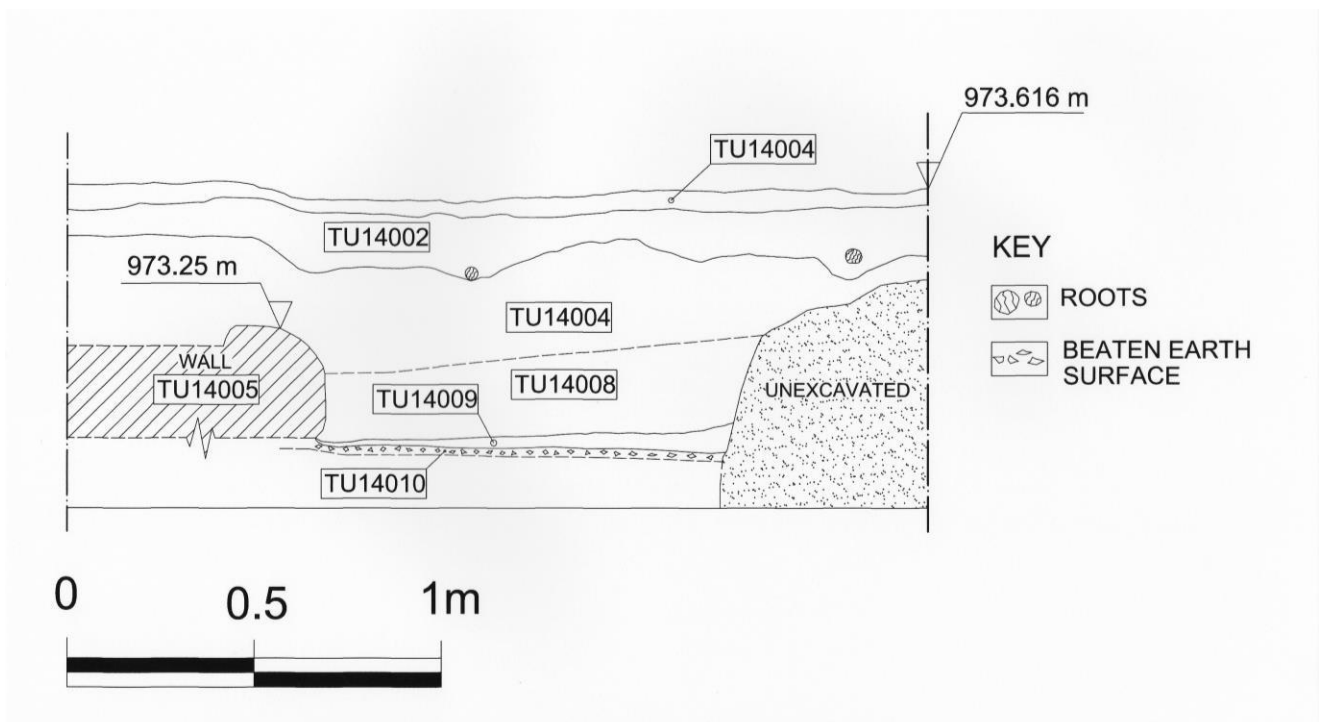


Fig. 28. Contrada Bregatorto 2018. Partial northern profile of trench TU14. Drawing by P. Mazzaglia.

TU14010), whose estimated width exceeds 3.5 m. This seems to eliminate the possibility that this entrance is a postern gate³⁶. The beaten earth surface was under a massive tumble of rocks and boulders that is presumed to have come from the destruction of the opposite wing of the gateway and the collapse of a bastion or a tower that rose to the east of the gateway. Both the large quantity of rock on the ground and the high amplitude reflection shown by the GPR in the northeastern area of the fortification are consistent with the possible presence of a tower. An observation tower in this corner would have had several important functions: in addition to protecting the entrance to the fort, it would have kept under surveillance the surrounding landscape and could have been used to send fire and smoke signals to the Locrian *chora*. Two parallel features protruding from the eastern perimeter wall, which were detected by the GPR, are unlikely to belong to a tower, as has been suggested earlier³⁷; they may belong to an exterior structure attached to the fort, such as a small corral.

It is uncertain at present whether there was a cause and effect relationship between the destruction and abandonment of the building at località Cocolédi and the construction of a fortification at contrada Bregatorto. Although the pottery found in the matrix of the wall to the west of the entryway can be dated to the late 6th and early 5th centuries BCE – which would confirm that the wall circuit of the fort was built after 500 BCE – the ceramic fragments found within the rock tumble and in the destruction layers above the beaten earth surface (contexts **TU14008-TU14009**) range in date from the late 4th to the late 3rd, and possibly the early 2nd centuries BCE. This evidence suggests that the gateway was destroyed towards 200 BCE. If so, the fort probably ceased to function as a Locrian outpost and control point at this time. There are no clues that it was reoccupied in the medieval or modern eras. However, this conclusion is highly preliminary and warrants further investigation, since less than 2% of the site has been explored. Currently used as a pasture and traversed by a trail of the Aspromonte National Park, contrada Bregatorto has been visited occasionally over the last century, as telltale finds of a metal button, a 50-Lire Italian coin minted in 1978, non-descript iron, and contemporary glass indicate.

Paolo Visonà

The view from contrada Bregatorto

The strategic importance of the fortification at contrada Bregatorto is derived not only by its position on the eastern edge of the Dorsale Tabulare, as a key node on the most direct overland route from ancient Locri Epizephyrii to the western coast of Italy, but also by its viewshed (fig. 29). This is the area that was visible within the standard 10-kilometer viewshed radius provided by Google Earth Pro to a viewer standing on an 8-

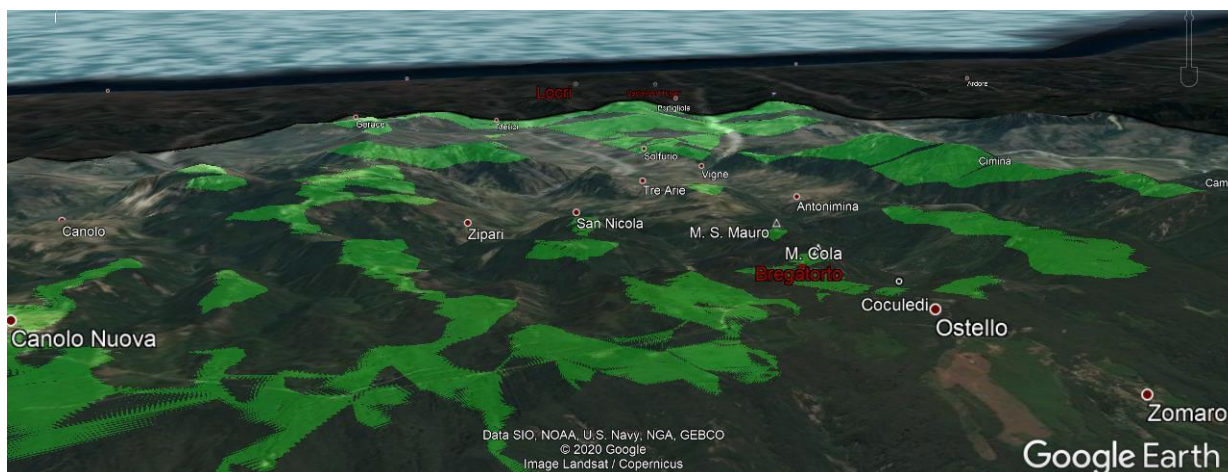


Fig. 29. Viewshed (shown in light green) from the northeastern edge of the terrace at contrada Bregatorto. Visualization by J.R. Jansson based upon Google Earth Pro 2020.

³⁶ The entrance to the fort of Monte Palazzi was 5.46 m wide according to the results of the geophysical survey summarized by VISONÀ 2016b: 243.

³⁷ VISONÀ 2019: 125.

metertall platform in the northeastern corner of the fort, which looks northeast towards ancient Locri and the Jonian coast. From this vantage point, corresponding to the height of presumed a bastion or tower, as many as four of the likely overland routes that connected the Locrian *chora* with the Tyrrhenian coast could have been kept under surveillance³⁸. These routes include, from south to north: 1) a ridge route from the Fiumara Condojanni near Ciminà to the Piano Vaccarizzo (1023 m) on the Dorsale, 2) a ridge route on the western side of the Fiumara di Antonimina, leading to the Piano dei Corvi (950 m) on the Dorsale, 3) the ridge route leading to contrada Bregatorto via Monte S. Mauro and Monte Cola; and 4) a ridge route ascending via the Fiumara Gerace and the Fiumara di S. Paolo towards Piano Liso (917 m) beyond contrada Bregatorto.

Lookouts standing on this position would also have had a commanding view of both località Cocolédi and of a ridgetop route to the west following the length of the Dorsale Tabulare, known until the 19th century as *strada consolare* or *Via Grande* according to historical and ethnographic records³⁹. Today's SP 35 highway follows approximately this ancient route.

The viewshed from contrada Bregatorto suggests that one of the fortification's purposes was to monitor any movement along these routes. It also implies an equally or possibly even more important role for the fort. Since it was built not on the western edge of the Dorsale, where it might observe enemies approaching from the Tyrrhenian coast, but rather on its eastern edge – thus looking back into the Locrian *chora* – the fort may also have served as a signaling station to communicate with the *chora's* inhabitants and to warn the *asty* of potential threats. As the Dorsale could not be seen from the city because of intervening plateaus at Ianchina and Petti di Portigliola, which block a view of the western horizon, at least one relay station was needed to ensure that this communication chain worked properly. Viewshed analysis has shown that even signals sent from the eastern peak of Monte S. Mauro, where a Greek lookout has been found (see below), would not have reached the city. Unless a relay station was located in the Ianchina area, which was frequented by the Locrians from the Archaic period⁴⁰, it could have been located on a height between the Fiumara Portigliola and the Fiumara di Condojanni that would have been visible from both contrada Bregatorto and from a high point within Locri itself, such as the Castellace Tower⁴¹.

James R. Jansson

The ceramic finds from contrada Bregatorto

The pottery from the fortification at contrada Bregatorto covers a longer span of time than the ceramic finds from località Cocolédi, since the earliest fragments are datable to the late 6th or early 5th centuries BCE while the most recent ones can be dated to the late 3rd or the early 2nd centuries BCE. Common- and cookingwares are the predominant vessel types, with body fragments representing the majority of the sherds. Nevertheless, fineware accounts for an increased proportion of the total count in 2018 when compared to 2017 (38 % in 2018 vs. 15 % in 2017) and weight (24 % in 2018 vs. 12 % in 2017) (fig. 30).

TU5, the only trench excavated in 2017 in the northwestern area of the fort, yielded pottery that could be assigned to two discrete contexts. The earliest context, from a cultural layer that was deposited on sterile soil, contained mostly cookingware, but also included fragments of skyphoid cups datable to the late 6th or early 5th centuries BCE. The latest context, which consisted of a destruction layer and a roof collapse that were not easily separable, yielded fragments of vessels ranging in date from the early 5th century to the 3rd century BCE; most can be dated to the late 4th or 3rd centuries BCE. Fineware forms include an early Attic *skyphos* (Morel 4300 series; fig. 31, a)⁴², a patera (Morel 1600 series)⁴³, several bowls, including an *echinus* bowl⁴⁴ and a Morel

³⁸ WONDER, JANSSON 2018: 55.

³⁹ See RASO 2001: 46 and 51; VISONÀ 2016a: 4.

⁴⁰ CARDOSA 2019: 91-92.

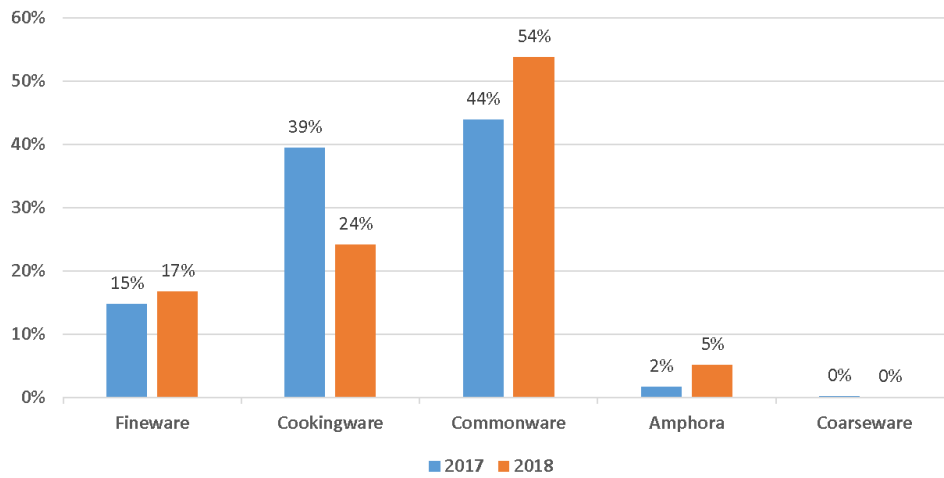
⁴¹ FACHARD 2016: 228-230; VISONÀ 2019: 126.

⁴² KNAPP 2020: 303-304, no. 28.

⁴³ KNAPP 2020: 302, no. 23.

⁴⁴ KNAPP 2020: 303, no. 25.

SHERD COUNT



SHERD WEIGHT

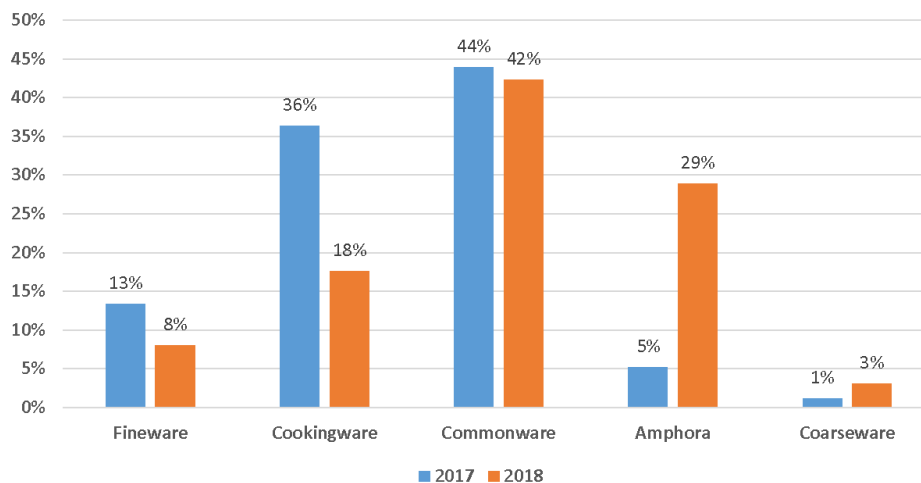


Fig. 30. Sherd count and weight from the 2017 and 2018 excavations at contrada Bregartorto.

series 6200 bowl (fig. 31, b)⁴⁵, a *skyphos* (Locri 4300 E1)⁴⁶, two kantharoid cups⁴⁷, and various bases (fig. 31, c)⁴⁸.

The ceramic finds from the four Test Units excavated in 2018 confirmed the 2017 conclusions about dating. Very little pottery was found in TU11, a trench that is now believed to have been outside the fort. While the dominant type of pottery was commonware, small quantities of fineware, cookingware, and amphora were also recorded. Datable fragments were few and could be dated consistently to the early 5th century BCE. The

⁴⁵ KNAPP 2020: 304, no. 30.

⁴⁶ PREACCO ANCONA 1992: 132, no. 90; KNAPP 2020: 304, no. 29.

⁴⁷ KNAPP 2020: 303, nos. 26-27.

⁴⁸ KNAPP 2020: 304, no. 31.

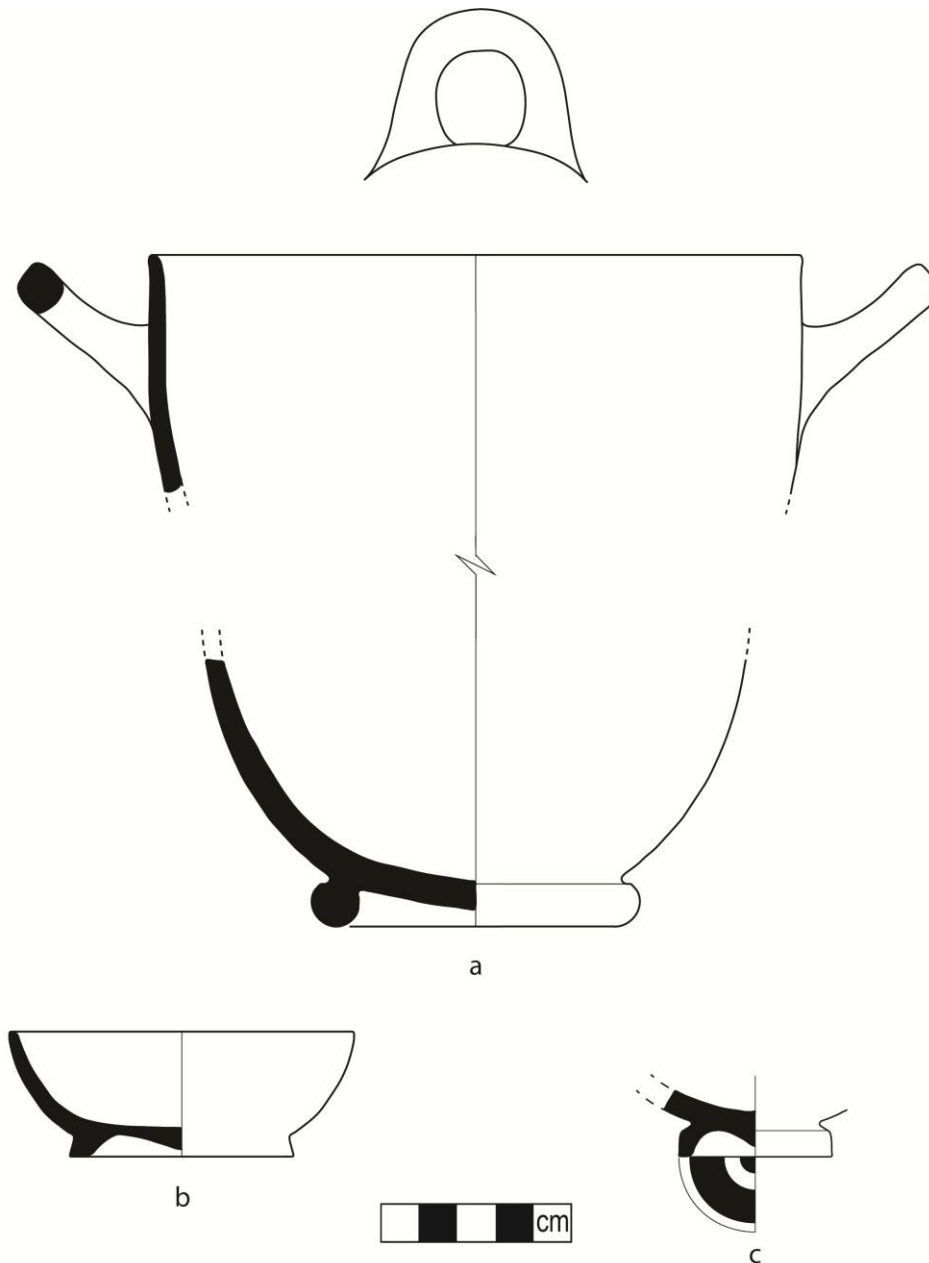


Fig. 31. Fineware vessels found at contrada Bregatorto in 2017. a. Attic skyphos A3, 500-450 BCE; b. bowl (Morel 6200 series), late 5th to mid-4th centuries BCE; c. base (cf. Morel 241a1), late 4th to early 3rd centuries BCE.

excavation of TU12, which investigated the southern perimeter wall of the fort, also produced relatively little pottery, although it yielded a higher proportion of fineware than any other trench. Much of the pottery from TU12, including the rim of a banded skyphoid cup datable from 550 to 480 BCE (fig. 19, e)⁴⁹, came from a rock tumble which resulted from the collapse of the southern wall and was heavily encrusted. The encrustations suggest that this pottery was in the fill of the wall and has been relatively undisturbed since it was deposited. Since the ceramic fragments from this context date to the first decades of the 5th century BCE, the southern rampart of the fortification was probably constructed at this time.

⁴⁹ This type of vessel is a common form in the last quarter of the 6th century and early 5th century BCE. Cf. DENARO 2003: 293-294, 'skyphoi a bande', no. N67 – N69, Fig. 249), DI STEFANO 2009: 86, skyphos no. NI 29937; LYONS 1996: 60-61 and type B Sikeliote skyphoi, p. 143, no. 4-64, pl. 18 and p. 187, nos. 17-50, pl. 82; TIGANO 2002: 74 ('coppa di tipo Ionico a bande', inv. 13986).

The pottery found in TU13 – the smallest trench excavated in the western area of the fort – was also primarily commonware. Most of it ranges in date between the early 5th and the early 3rd centuries BCE, but can be assigned especially to the 5th and 4th centuries BCE. A modern pit that extended from the southwestern to the southeastern corners of the trench contained very little pottery. Cookingware and later ceramic fragments were also concentrated in the southern half of the trench, although some sherds datable to the 5th century BCE also were found. Two small rims of different pan forms a *ingobbio rosso interno* (Pompeiiian red slip ware), one dating to the 2nd or 1st century BCE and the other to the early 1st century BCE, came from the destruction layer and a habitation layer that were disturbed by the pit. They are particularly noteworthy, because they suggest that the site was frequented in the late Republican period⁵⁰.

Possibly the most significant ceramic finds came from TU14, a 2 x 5 m trench which investigated a possible entryway in the northern wall of the fort. They belong to two distinct periods: the late 6th to early 5th centuries BCE, and the late 4th through the 3rd centuries BCE, with some ceramic fragments dating as late as the late 3rd or early 2nd century BCE. The earlier pottery consists of commonware body sherds that were found in a much larger proportion in the western area of the trench and appear to be part of the matrix of the wall of the gateway. The later pottery is predominantly associated with the destruction of this structure and of an adjacent bastion or tower, and was found especially in and under a massive rock tumble that covered the entryway area. This includes a complete salt cellar (fig. 32) and a frying pan handle (fig. 18, b), both likely dating to the 3rd century BCE, which were found under large stones.

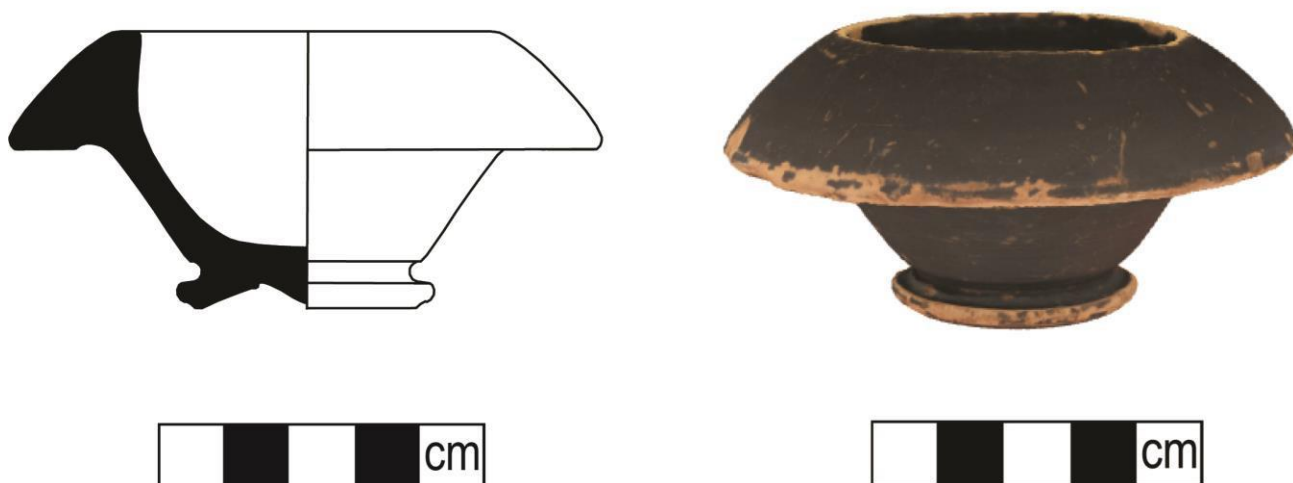


Fig. 32. Contrada Bregatorto 2018. Hellenistic salt cellar from context **TU14008**, late 3rd to early 2nd centuries BCE.

Ceramics

The two seasons of fieldwork conducted at località Cocolédi and contrada Bregatorto produced comparable ceramic material at each site; the 2018 data confirmed the initial impressions of the 2017 finds.

The fabrics for all wares are local in nature and similar to those found at sites in southern Calabria such as Monte Palazzi, Locri Epizephyrii, and Kaulonia, although the closest comparanda are Locrian. All amphorae rims found could be identified as Locrian forms, specifically the *anfora con orlo a cuscinetto rigonfio*⁵¹ and the *anfora con orlo a mandorla*⁵². Common and cookingwares also have significant parallels at Locri.

⁵⁰ Mid 2nd to 1st centuries BCE: Cf. GOUDINEAU 1970: 172, Couche 5.5, Pl. IV, and p. 176 Couche 3 B.1, Pl. VII; DYSON 1976: 53, Class 9 pan, no. 16 IV 10, Fig. 12; BRIZZI 1999: , no. 703, Fig. 321. Early 1st century BCE: cf. GOUDINEAU 1970: 155, no. 5, Pl. 1.

⁵¹ BARRA BAGNASCO 1992a: 208-211.

⁵² BARRA BAGNASCO 1992a: 211-214.

Finewares

At both sites, finewares comprise just under 15% of the total wares, and the cup is the most common basic form. At località Cocolédi, early forms related to the *skyphos* dominate, including Ionic cups, skyphoid cups, and *kylikes*. Skyphoid cups and *skyphoi* are also the dominant forms at contrada Bregatorto, but there are several more diverse shapes, including *kantharoi*, a *krater*, different bowls, various *paterae*, and an unusual salt cellar.

Fineware forms in general are those common to Southern Italy⁵³ and comparanda are found predominantly from Locri and Kaulonia; a few examples are similar to forms found at Poseidonia and Metaponto. The earlier fineware examples typically have a very black, friable slip on the exterior, while later examples have thicker slips. Fabrics are very fine with few inclusions, and often micaceous, which is common of Locrian fineware fabrics⁵⁴. They are generally either Munsell 10YR 6/4 or 7.5YR 7/6, with a few examples of 5YR 6/8. Of particular note is the salt cellar found in layer **TU14008** (fig. 31)⁵⁵. This form appears to be unique, although it is clearly related to a somewhat common form of salt cellar found in the Hellenistic period and appears to be related to the Morel 2525, 2526, 2527, and 2528 series⁵⁶. The example from contrada Bregatorto has a very large, solid, triangular collar that extends out from the body and a small, restricted foot. Comparable examples at Cosa have much thinner collars, but are otherwise closely akin to it⁵⁷. Despite the lack of exact comparanda, its form suggests a date in the late 3rd or early 2nd century BCE.

Cooking and Commonwares

Cookingware vessels at località Cocolédi and contrada Bregatorto differ somewhat in form, in part as a reflection of their different dates, but also possibly reflecting different cooking activities. The casserole, or *lopas*, is a common form at Bregatorto, where three different dominant types have been identified⁵⁸; no examples have been found at Cocolédi. Almost all examples of cooking lids and knobs came from contrada Bregatorto. The *chytra* is present in four types across both sites⁵⁹. However, there are fewer examples of this type of vessel from the fortification. Although the deep, closed *chytra* is more common in earlier levels at contrada Bregatorto, the shallow and more open, but lidded, casserole was the more popular cooking vessel of later periods. It is possible that the differences in forms between the two sites are simply a function of when they were occupied. Nevertheless, they may also reflect different cooking techniques as dictated by the functions of each site.

A handle found at Bregatorto has been identified as belonging to a frying pan (fig. 18, b). The frying pan, a shallow pan, with a long single handle, is a relatively unique form and does not appear to have begun until the late 4th or early 3rd centuries BCE, possibly in Southern Italy⁶⁰. The form of this handle is unusual, as most examples from the Greek world have a shorter handle that terminates in a much wider, flat disk; however, a similar example is found at Locri⁶¹. The frying pan is a more common form in the Roman world, but later ceramic handles are usually quite short and hollow at the end, possibly for the insertion of a metal or wooden extension. Given that the frying pan as a form was not introduced until the early Hellenistic period and the context in which this handle was found, it probably dates to the later period of occupation of the fort, the 4th or 3rd centuries BCE.

Commonware vessel types at both sites are primarily jars, jugs, table amphorae, large bowls and basins, that were used for a variety of everyday storage and food preparation purposes. They include a juglet rim

⁵³ Examples of these common forms include the One Handler (KNAPP 2020: 298-299, no. 7, Fig. 26f; CARTER 1998: 702; see also SPARKES *et al.* 1970: 126-127) and the Kantharoid cup (KNAPP 2020: 303, no. 26, Fig. 30f).

⁵⁴ RUBINICH (1992: 87-88) also notes the generally poor quality of locally-produced vessels, especially drinking cups, at Locri.

⁵⁵ The photo of the salt cellar is a still of a photogrammetry model created using Agisoft Photoscan Pro (now Metashape Pro). Thanks are owed to Kevin D. Fisher, Assistant Professor of Eastern Mediterranean Archaeology at UBC, S. Pak, and the KAMBE project for their guidance and for providing a copy of their handbook for using photogrammetry.

⁵⁶ MOREL 1981.

⁵⁷ SCOTT 2008: 29-30, Taylor Small bowl with ribbon band rim (Morel 2525?), no. A28; see also pp. 66-68, nos. F48-F58, Pl. 14; p. 147, no. H15, Pl. 44; p. 187, nos. TJ17-TJ19, Pl. 58. Similar forms are also present at contrada Mella; see PREACCO ANCONA 1999: 277-279 (Morel 2525, nos. 454-455, Fig. 293 and no. 457 (Morel 2538), Fig. 293).

⁵⁸ KNAPP 2020: 305-306, nos. 34-36, Figs. 32b-d.

⁵⁹ KNAPP 2020: 299, nos. 8-10, Figs. 27a-c; 304-305, nos. 32-33, Fig. 32a.

⁶⁰ ROTROFF 2006: 194, lists an example found at Metaponto in a late 4th / early 3rd century BCE context.

⁶¹ CONTI 1989: 282-283, Padelle E 1, no. 323, tav XXXVII.

fig. 18, c)⁶² from località Cocolédi – also commonly found at Locri and Monte Palazzi – and an unusual table amphora rim (fig. 18, d)⁶³, which is a larger version of the juglet but with a stepped neck.

In addition, fragments of mortaria have been found in 2017 and 2018 at contrada Bregatorto as well as at località Cocolédi. Their rims are related in form and simple, almond or oval in shape; the interior of the vessels was roughened with inclusions on the interior surfaces. These forms are similar to examples identified at Kaulonia as dating to the mid-6th through the 5th centuries BCE⁶⁴. A basin rim fragment with an everted rim and a sharp, high point of carination was also found at contrada Bregatorto in 2018 (fig. 18, e); it is datable to the 3rd century BCE. This form is almost identical to a basin from Locri⁶⁵.

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Archaeological investigations in the hinterland of Antonimina, 2018-2019



Fig. 33. View of the eastern summit of Monte S. Mauro, seen from the northeast in July, 2019.



Fig. 34. Fragmented iron javelin point found on Monte S. Mauro in June, 2019.

After finds of fragmented Greek pantiles on three separate occasions since the year 2000 pointed to the presence of an ancient site in the environs of Monte S. Mauro, less than 2 km to the southeast of contrada Bregatorto, an inspection of the eastern summit of this mountain was carried out in early January, 2019. Earlier fieldwalking of the western summit and of the saddle between these peaks had been unproductive. Archaeological materials were located on a rocky ledge below the eastern peak of the mountain, at an elevation of 777 m above sea level (fig. 33; see fig. 2). Sockets cut in the cliff face and fragments of Greek pantiles *in situ* suggest that a permanent lean-to structure sheltered a 5 x 5 m area that probably was used as an observation point. A low parapet was also carved out

of the live rock. Standing behind this parapet, a lookout could have kept under surveillance the ridge route ascending towards the Dorsale Tabulare as far as the village of Tre Arie, at 130° north. Rim fragments of two large commonware bowls were also found in the flat area near the parapet. Remnants of a beaten earth floor c. 1 m² wide, paved with 15 x 15 cm tile fragments, were still preserved on this spot c. 2000, according to a local resident⁶⁶. During another inspection of this site in June, 2019, an iron javelin point, broken in two fragments, was found in an alcove below the summit (fig. 34)⁶⁷.

Two other Greek sites were identified at contrada Rampino near Monte S. Mauro during the reconnaissance in January, 2019 (figs. 35 and 2). The larger site

⁶² KNAPP 2020: 301, no. 15, Fig. 28d.

⁶³ KNAPP 2020: 300, no. 12, Fig. 28b.

⁶⁴ See above, footnote 18.

⁶⁵ CONTI 1989: 244, 251, no. 238, tav. LXXVI.

⁶⁶ Information by Antonio Romano, current vice-mayor of Antonimina.

⁶⁷ Length: 12.1 cm; max. width: 3.3 cm; width at base 1.57 cm; max. thickness at center, 1.74 cm. Weight: 60 g.

is located in an active field sloping down from north to south within parcels 102 and 191 of Antonimina's cadastral register, at an elevation of 654 m above sea level; its dimensions are 108.3 m north-south by 41.8 m east-west (fig. 35, no. 1). A survey conducted in May, 2019, yielded at least 30 separate tile finds and 2 pottery finds scattered over the entire area, which may have been occupied by a Greek farmstead. This site is clearly visible from the lookout atop Monte S. Mauro. The smaller site lies on a thickly wooded knoll c. 300 m to the southeast, in cadastral parcel 104, at a similar elevation; its dimensions are c. 40 m north-south x 50 m east-west (fig. 35, no. 2). Fieldwalking yielded several Greek roof tile fragments and a fragment of a larger pink and white mottled quartzite flake with probable dorsal flake scars, which may have been used for whittling soft material⁶⁸. Since the eastern end of this site commands a view of the eastuary of the Fiumara di Gerace, the lanchina ridge, and the lower course of the Fiumara di Portigliola at 120° south-southeast, the knoll might have been used primarily as an observation point with a permanent building such as a watchtower. Both sites would also have been clearly visible by a lookout on Monte S. Mauro.

The presence of these three Greek sites on the ridge route to contrada Bregatorto and in close proximity to one another attests to the importance of this particular route and suggests that they had interrelated functions within a system of territorial organization and a communications network put in place by the Locrians in the Archaic period. They were the last stops on a major overland trail before the fortification at contrada Bregatorto, which served as the main Locrian outpost and control point in the central area of the Dorsale Tabulare. If the larger site was indeed a farmstead, it could have provided foodstuffs and other essential items to the occupants of the fort (e.g., roof tiles).

A prehistoric site also was located in June 2019 below the summit of Pietra della Morte, a peak rising above a narrow canyon (known locally as *la Stretta di S. Paolo*) and dominating the Fiumara di S. Paolo, the middle course of the Fiumara Gerace, and the approach to the Antonimina Valley, at a linear distance of c. 8 km from ancient Locri (fig. 36). The site, which occupies a flat area below the summit on the southern side of this mountain extending at least 15 m north-south by 30 m east-west, at an elevation of 423 m above sea level, looks south towards present-day Locri and commands a view of the estuary of the Fiumara Gerace and the



Fig. 35. Orthophoto showing Greek sites in the environs of Monte S. Mauro: 1. contrada Rampino, rural site? 2. contrada Rampino, observation point; 3. Monte S. Mauro, lookout. Visualization by Pietro Galluzzo.



Fig. 36. The peak of Pietra della Morte, seen from the southeast in June, 2019.

⁶⁸ Information by S.R. Ahler. For recent maps of this area see *Plati* 1992 and *NANIA* 2007: 282.



Fig. 37. Pietra della Morte, June 2019. Obsidian (including small blade, 17.8 x 10 mm; thickness: 2.7 mm) and chert surface finds.

Jonian Sea. Surface finds from slope wash include a small obsidian blade fragment⁶⁹, an obsidian flake, two chert flakes (fig. 37), and fragments of *impasto* pottery. Neither obsidian nor a similar concentration of prehistoric materials has previously been recorded in this locale⁷⁰.

In contrast, fieldwalking on the Monte Tronato ridge, which separates the Fiumara Portigliola from the Fiumara Gerace and is directly opposite Pietra della Morte, yielded only two isolated, non-diagnostic ceramic fragments and a piece of bronze with a finished edge⁷¹. A trail from the Fiumara Portigliola to the Monte Tronato ridge, which drops into the Antonimina Valley near località Solfurio, could have been used in antiquity⁷². A number of undatable but possibly ancient ceramic fragments (including a handle), was also found during fieldwalking near Casa Romano at Piano dei Corvi⁷³, a plateau on the Dorsale Tabulare that was reached by a trail from Antonimina. Antonimina's residents used this trail to bring their produce to market at Cittanova until the 1950s⁷⁴. Even though no archaeological ma-

terials were found at Rocca Giliberto (608 m), an isolated peak to the west of Antonimina overlooking the Fiumara Cortaglia, other sites may yet be located along the ridge route on the western flank of the Fiumara di Antonimina, and in the bottomlands of the Antonimina Valley⁷⁵.

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Conclusions and perspectives

The multi-methodological investigations conducted at località Cocolédi, contrada Bregatorto, and in the hinterland of Antonimina in 2017-2019 have cast light on two previously unknown Greek sites on the eastern edges of the Dorsale Tabulare, a high ridge which formed a natural boundary of the territory of Locri Epizephyrii. Topographic considerations support attributing them to Locri, the closest polity, because these sites are located on the most direct overland route connecting Locri to Métauros and to the Locrian sub-colony of Medma on the western coast of Italy. The ceramic evidence from each site also finds closest parallels at Locri. Built close together in the late Archaic period near one of the narrowest points of the Dorsale, towards which multiple routes converged from the Jonian coast, and within walking distance from three other Greek sites near Monte S. Mauro, the structures uncovered at località Cocolédi and contrada Bregatorto may have performed important functions in Locri's territorial organization and communications network. The building at

⁶⁹ Length: 17.8 mm; width: 10 mm; thickness at center: 2.7 mm. Cf. ROBB, BERG 2010: 263. For the location of Pietra della Morte see *Locri* 1993 and NANIA 2007: 54.

⁷⁰ Cf. CARDOSA 2017: 86; CARDOSA 2019: 88-91; QUONDAM 2018: 749-750, 755; SICA 2019: 95-97. For other prehistoric sites at a distance of more than 7 km from the Jonian coast see FOXHALL *et al.* 2007: 22; CIPOLLONI SAMPÒ 2020: 130-131.

⁷¹ This piece of bronze was found on the trail on the southeastern side of the ridge, at an elevation of 268 m. GPS: 38° 15.47 N / 016° 10.67 E (09.06.2019, at 12:27 PM).

⁷² See *Locri* 1993 and NANIA 2007: 54.

⁷³ GPS: 38° 17.26 N / 016° 06.95 E (26.06.2019, at 5.56 PM; elevation: 950 m). For the location of Piano dei Corvi see *Plati* 1992.

⁷⁴ ESPOSITO 2012: 50-52.

⁷⁵ A fragment of *impasto* pottery was found at località Solfurio (Comune di Antonimina) in a field survey conducted by a team from Pisa's Scuola Normale Superiore: see ADORNATO *et al.* 2018: 20.

località Cocolédi was abandoned in the early 5th century BCE and its *raison d'être* is still enigmatic. In contrast, the rural fortification at contrada Bregatorto was occupied from the 5th to the 3rd centuries BCE and may have been the nexus between Locri and its sphere of influence on the Tyrrhenian seaboard and a strategically important control point that could have kept several routes under surveillance. It also guarded access to the Locrian *chora* on potential invasion alleys from the west and from the north, and its occupants would have patrolled nearby passes and trail junctions. They probably comprised a relatively small detachment of lightly armed *perípoloi*⁷⁶. In addition, the location and size of this fort suggest that it may have played a role the exploitation of the area's natural resources. Therefore it could have been a valuable asset for the *polis*, particularly during Locri's war against its Tyrrhenian sub-colonies in the late 420s (Thucyd. 5.5.3), and during Locri's conflict with the Brettians after the mid-4th century. It is worth noting that both this fortification and a smaller Locrian fort on Monte Palazzi continued to be used until the first half of the 3rd century BCE, which witnessed intermittent warfare in the Calabria region⁷⁷. More significantly, the ceramic finds do not preclude the possibility that contrada Bregatorto (which is closer to Locri) may have been garrisoned even during the Second Punic War.

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⁷⁶ Cf. VISONÀ 2013: 11. At the end of the 13th century the *castra* of S. Niceto and Gerace had garrisons of 10 and 15 men respectively: see MARTORANO 2002: 233.

⁷⁷ VISONÀ 2019: 131.

BIBLIOGRAPHY

- ADORNATO G., CORRETTI A., FACELLA A., MICHELINI C., VAGGIOLI M.A., 2018, "Locri Survey. La prima campagna (2017)", in *Notizie degli scavi di antichità comunicate dalla Scuola Normale Superiore di Pisa. Annali della Scuola Normale Superiore di Pisa, Classe di Lettere e Filosofia*, serie 5, 10/2 suppl.: 3-39.
- ADORNATO G., FACELLA A. (eds.), 2019, *Oltre le mura, fuori dalla città. Locri e suo territorio*, Atti della Giornata di Studi, Pisa 29 maggio 2018, Pisa.
- BAITINGER H., 2001, *Die Angriffswaffen aus Olympia*, Berlin – New York.
- BARRA BAGNASCO M. (ed.), 1992, *Locri Epizefiri IV. Lo scavo di Marasà Sud. Il sacello tardo arcaico e la "casa dei leoni"*, Firenze.
- BARRA BAGNASCO M., 1992a, "Le anfore", in BARRA BAGNASCO 1992: 205-240.
- BRIZZI M., 1999, "La ceramica a ingobbio rosso interno", in COSTAMAGNA, VISONÀ 1999: 332-336.
- BRIZZI M., COSTAMAGNA L., 2010, "Il sito fortificato di Serro di Tavola (Aspromonte)", in H. TRÉZINY (a cura di), *Greco et indigènes de la Catalogne à la mer Noire, Actes des rencontres du programme européen Ramesses² (2006-2008)*, Bibliothèque d'Archéologie Méditerranéenne et Africaine 3, Paris: 581-594.
- CAPOZZOLI L., DE MARTINO G., CAPOZZOLI V., DUPLOUY A., HENNING A., RIZZO E., 2020, "The Pre-Roman Hilltop Settlement of Monte Torretta di Pietragalla: Preliminary Results of the Geophysical Survey", in *Archaeological Prospection*, 2020-08-31 online special issue available at <https://doi.org/10.1002/arp.1793>: 1-14.
- Carta Geologica d'Italia, Foglio 590 = ISPRA, Carta Geologica d'Italia Scala 1: 50000, Taurianova Foglio 590*, accessible at: www.isprambiente.gov.it/Media.carg/590_TAURIANOVA/Foglio.html.
- CARDOSA M., 2017, "I grandi insediamenti su pianoro della Locride", in L. CICALA, M. PACCIARELLI (eds.), *Centri fortificati indigeni della Calabria dalla protostoria all'età ellenistica*, Atti del convegno internazionale Napoli, 16-17 gennaio 2014, Napoli: 81-89.
- CARDOSA M., 2019, "Tra le fiumare di Gerace e Portigliola: pianoro di Ianchina e dintorni. Ricognizioni per conto della ex Soprintendenza Archeologica della Calabria (1994-1997)", in ADORNATO, FACELLA 2019: 87-92.
- CARTER J.C., 1998, *The Chora of Metaponto: the Necropoleis*, Austin.
- CIPOLLONI SAMPÒ M., 2020, "Finis terrae: la valle dell'Amendolea. Siti preistorici nell'Aspromonte meridionale, contatti e sfere d'influenza", in R. SPADEA, F. LO SCHIAVO, M.L. LAZZARINI (eds.), *Tra Ionio e Tirreno: orizzonti d'archeologia. Omaggio a Elena Lattanzi*, Roma: 127-140.
- CONTI M.C., 1989, "La ceramica comune," in M. BARRA BAGNASCO (ed.), *Locri Epizefiri II. Gli isolati I^a e I^b dell'area di Centocamere*, Firenze: 257-326.
- CONYERS L.B., 2017, "Integration of Ground-penetrating Radar and Magnetic to Better Understand Complex Buried Archaeology", in B. JENNINGS, C. GAFFNEY, T. SPARROW, S. GAFFNEY (eds.), *12th International Conference of Archaeological Prospection*, 12th-16th September 2017, The University of Bradford, Oxford: 38-40.
- COSTAMAGNA L., VISONÀ P. (eds.), 1999, *Oppido Mamertina. Ricerche archeologiche nel territorio e in contrada Mella*, Roma.
- CROTHERS G.M., 2020, "Le prospezioni geofisiche", in VISONÀ P., CROTHERS G.M., KNAPP J.E., CRESTANI P.A.L., 2020, "III. – Antonimina (Reggio Calabria). – Locresi sul Dossone della Melia: prime prospezioni geofisiche e saggi di scavo in località Cocolúdi e al sito fortificato in contrada Bregatorto", in *Notizie degli Scavi di Antichità*, serie IX – vol. XXX-XXXI: 280-283.
- DENARO M., 2003, "Ceramica greco-orientale e classi di produzione coloniale," in F. SPATAFORA *et al.*, *Monte Maranfusa: un insediamento nella media valle del Belice: l'abitato indigeno*, Beni culturali Palermo 7, Palermo: 281-300.
- DE SENSI SESTITO G., 2020, "La montagna calabrese in età antica: insediamenti, popolazioni, economia", in G. DE SENSI SESTITO, T. CERAVOLO (eds), *La montagna calabrese*, Soveria Mannelli: 100-123: 350-355.
- DYSON S.L., 1976, *Cosa: The Utilitarian Pottery*, Memoirs of the American Academy in Rome XXXIII, Rome.
- ESPOSITO D., 2012, *Antonimina. Luoghi, vicende, volti 1806 – 2006*, Marina di Gioiosa Jonica (RC).
- FACHARD S., 2016, "Studying Rural Fortifications: A Landscape Approach", in S. MÜTH, P.I. SCHNEIDER, M. SCHNELLE, P.D. DE STAEBLER (eds.), *Ancient Fortifications. A Compendium of Theory and Practice*, Fokus Fortifikation Studies 1, Oxford: 207-230.

- FOXHALL L., LAZRUS P., MICHELAKI K., ROBB J., VAN HOVE D., YOON D., 2007, "The Changing Landscapes of Bova Marina, Calabria", in M. FITZJOHN (ed.), *Uplands of Ancient Sicily and Calabria. The Archaeology of Landscape Revisited*, Accordia Specialist Studies on Italy 13, London: 19-34.
- FOXHALL L., YOON D., 2016, "Carving out a Territory: Rhegion, Locri and the Households and Communities of the Classical Countryside", in *World Archaeology*, DOI:10.1080/00438243.2016.1221.1363: 1-18.
- GOUDINEAU C., 1970, "Note sur la céramique à engobe interne rouge-pompéien («Pompejanisch-Roten Platten»)", in *Mélanges de l'École française de Rome. Antiquité* 82.1: 159-186.
- ISSERLIN B.S.J., DU PLAT-TAYLOR J., 1974, *Motya: A Phoenician and Carthaginian City in Sicily*, Leiden.
- KNAPP J.E., 2020, "2017 Ceramic Catalogue", in VISONÀ P., CROTHERS G.M., KNAPP J.E., CRESTANI P.A.L., 2020, "III. – Antonimina (Reggio Calabria). – Locresi sul Dossone della Melia: prime prospezioni geofisiche e saggi di scavo in località Cocolédi e al sito fortificato in contrada Bregatorto", in *Notizie degli Scavi di Antichità*, serie IX – vol. XXX-XXXI: 297-306.
- KNAPP J.E., P.A.L. CRESTANI, 2020, "La ceramica rinvenuta negli scavi della campagna 2017", in VISONÀ P., CROTHERS G.M., KNAPP J.E., CRESTANI P.A.L., 2020, "III. – Antonimina (Reggio Calabria). – Locresi sul Dossone della Melia: prime prospezioni geofisiche e saggi di scavo in località Cocolédi e al sito fortificato in contrada Bregatorto", in *Notizie degli Scavi di Antichità*, serie IX – vol. XXX-XXXI: 291-296.
- Locri 1993: *Carta Topografica d'Italia Scala 1: 25000 F. 590 Sezione II Locri*. Ed. 1. IGMI, Firenze. LYONS C.L., 1996, *The Archaic Cemeteries*, Morgantina Studies V, Princeton.
- MARTORANO F. (ed.), 2002, *Santo Niceto nella Calabria medievale. Storia architettura tecniche edilizie*, Roma.
- MOREL J.P., 1981, *Céramique Campanienne: les Formes*, Bibliothèque des Écoles françaises d'Athènes et de Rome 244, Rome.
- NANIA P. (ed.), 2007, *Ente Parco Nazionale dell'Aspromonte. Piano per il Parco - Relazione gennaio 2007*.
- PENSABENE G., 1987, *Cognomi e toponimi in Calabria*, Villa S. Giovanni.
- Plati 1992: *Carta Topografica d'Italia Scala 1: 25000 F. 590 Sezione III Plati*. Ed. 1. IGMI, Firenze. PREACCO ANCONA M.C., 1992, "La ceramica fine della "casa dei leoni", in BARRA BAGNASCO 1992: 113-171. PREACCO ANCONA M.C., 1999, "La ceramica a vernice nera", in COSTAMAGNA, VISONÀ 1999: 270-289.
- QUONDAM F., 2017, "Il mondo indigeno della Locride tra primo ferro ed età arcaica", in A. PONTRANDOLFO, M. SCAFURO (eds.), *Dialoghi sull'Archeologia della Magna Grecia e del Mediterraneo*, Atti del I Convegno Internazionale di Studi, Paestum, 7-9 settembre 2016, Paestum: 749-759.
- RASO D., 2001, *Zomaro. La montagna dei sette popoli. Tra i misteri della montagna calabrese*, Villa San Giovanni.
- REIMER P.J., BARD E., BAYLISS A., BECK J.W., BLACKWELL P.G., BRONK RAMSEY C., BUCK C.E., CHENG H., EDWARDS R.L., FRIEDRICH M., GROOTES P.M., GUILDERSON T.P., HAJDAS I., HATTÉ C., HEATON T.J., HOFFMANN D.I., HOGG A.G., HUGHEN K.A., KAISER K.F., KROMER B., MANNING S.W., NIU M., REIMER R.W., RICHARDS D.A., SCOTT E.M., SOUTHON J.R., STAFF R.A., TURNEY C.S.M., VAN DER PLICHT J., 2013, "INTCAL13 and MARINE 13 Radiocarbon Age Calibration Curves 0-50,000 Years Cal BP", in *Radiocarbon* 55 (4): 1869-1887.
- ROBB B.J., BERG D., 2010, "Catalog of Ceramic, Lithic, and Other Finds", in J. MORTER, *The Chora of Croton 1. The Neolithic Settlement at Capo Alfiere* (ed. J. Robb), Austin: 209-272.
- ROHLFS G., 1982, *Nuovo dizionario dialettale della Calabria (con repertorio italo-calabro)*, Nuova edizione interamente rielaborata ampliata ed aggiornata, S.G. Persiceto (BO).
- ROTROFF S., 2006, *Hellenistic Pottery: The Plain Wares*, Athenian Agora 33, Princeton.
- RUBINICH M., 1992, "I. La ceramica fine della frequentazione arcaica e del sacello", in BARRA BAGNASCO 1992: 85-111.
- SCOTT A.R., 2008, *Cosa: The Black-Glaze Pottery 2*, MAAR Supplement 5, Ann Arbor.
- SICA M.M., 2019, "Villaggi, fattorie, aree sacre... Per un'archeologia della 'campagna' locrese (le indagini ANAS 2007-2013)", in ADORNATO, FACELLA 2019: 93-118.
- SPARKES B.A., TALLCOTT L., RICHTER, G.M.A., 1970, *Black and Plain Pottery of the 6th, 5th, and 4th Centuries BC*, Athenian Agora XII, Princeton.
- SUDANO F., 2018, "I Locresi d'Occidente tra lo Ionio e il Tirreno", in *Viaggi in Magna Grecia e dintorni in età antica*, Lagonegro: 121-152.

- SUDANO F., 2019, "Grotteria, Cittanova e Antonimina", in F. DI GENNARO, F. SUDANO, "Attività della Soprintendenza Archeologica della Calabria", in *Atti Taranto* 55: 843.
- Taurianova 1998: *Carta Topografica d'Italia Scala 1: 25000 F. 590 Sezione IV Taurianova*. Ed. 1/A. IGMI, Firenze.
- TIGANO G. (ed), 2002, *Le necropoli di Mylai: VIII-I sec. a.C.: catalogo*, Milazzo. VALENTE G., 1973, *Dizionario dei luoghi di Calabria*, Chiaravalle Centrale.
- Villaggio Zòmaro 1958: *Foglio 255 della Carta d'Italia, IV N.E. Sez. D, Villaggio Zòmaro, Scala 1: 10.000*, a cura della Cassa per il Mezzogiorno, Parma.
- VISONÀ P., 2013, "University of Kentucky Archaeological Investigations at Monte Palazzi (Passo Croceferrata, Grotteria, Calabria) and in the Locrian *chora* in 2010-2012", in <http://www.fastionline.org/docs/FOLDER-it-2013-281.pdf>: 1-23.
- VISONÀ P., 2016a, "Controlling the *Chora*. Topographical Investigations in the Territory of Locri Epizephyrii (Southeastern Calabria, Italy) in 2013-2015", in <http://www.fastionline.org/docs/FOLDER-it-2016-351.pdf>: 1-17.
- VISONÀ P., 2016b, "IV. – Monte Palazzi (Reggio Calabria). – Monte Palazzi (Passo Croceferrata, Comune di Grotteria) 2007-2014: ultimi saggi stratigrafici, prospezioni geofisiche e indagini nel territorio", in *Notizie degli Scavi di Antichità*, serie IX – vol. XXIII-XXIV (2012-2013): 217-262.
- VISONÀ P., 2019, "Le fortificazioni rurali nella Locride dall'età tardo-arcaica agli inizi dell'età ellenistica: nuovi dati dalle prospezioni geofisiche e dagli scavi stratigrafici condotti dall'Università del Kentucky in contrada Bregatoro (Comune di Antonimina), sulla Dorsale Tabulare", in ADORNATO, FACELLA 2019: 121-134.
- VISONÀ P., 2020, "1. Introduzione", "3. I saggi di scavo in località Cocolédi", "4. Il saggio di scavo in contrada Bregatoro", "6. Conclusioni preliminari", in VISONÀ P., CROTHERS G.M., KNAPP J.E., CRESTANI P.A.L., 2020, "III. – Antonimina (Reggio Calabria). – Locresi sul Dossone della Melia: prime prospezioni geofisiche e saggi di scavo in località Cocolédi e al sito fortificato in contrada Bregatoro", in *Notizie degli Scavi di Antichità*, serie IX – vol. XXX-XXXI: 275-279, 284-289, 289-291, 296-297.
- VISONÀ P., CROTHERS G.M., KNAPP J.E., CRESTANI P.A.L., 2020, "III. – Antonimina (Reggio Calabria). – Locresi sul Dossone della Melia: prime prospezioni geofisiche e saggi di scavo in località Cocolédi e al sito fortificato in contrada Bregatoro", in *Notizie degli Scavi di Antichità*, serie IX – vol. XXX-XXXI: 275-310.
- WONDER J.W., JANSSON J.R., 2018, "Routes across Calabria in Antiquity. Locri Epizephiri's Communications across the Peninsula and its Control of the Tyrrhenian Littoral", in *Journal of Ancient History* 6 (1): 44-62.