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## Sicily in transition

### *Interim report of investigations at Castronovo di Sicilia 2016<sup>1</sup>*

*Martin O. H. Carver - Alessandra Molinari - Veronica Aniceti - Francesca Colangeli - Nicoletta Giannini - Fabio Giovannini - Madeleine Hummler - Claudio F. Mangiaracina - Antonino Meo - Paola Orecchioni*

*La città di **Castronovo di Sicilia** (PA) e i suoi dintorni sono attualmente oggetto di ricerche archeologiche condotte dalle università di York, Roma e Lecce in collaborazione con la Soprintendenza per i Beni culturali e ambientali di Palermo e con il sostegno del Comune di Castronovo. Quattro diversi insediamenti sono stati indagati per mezzo di prospezioni e scavi. Sul Monte Kassar, interpretabile, allo stato attuale delle ricerche, come una fortezza bizantina dell' VIII–IX secolo, nel 2015 sono state individuate strutture con funzione abitativa all'interno e in appoggio alle fortificazioni, mentre nel 2016 sono stati scavati i resti di una "casaforte" (la cosiddetta "casermetta"). Sul Colle San Vitale, i ruderi delle strutture medievali ancora in piedi sono stati oggetto di una prospezione di alta precisione, come anche la città vecchia di Castronovo, dove anche sono stati individuate e cartografate le acque sotterranee e un sistema di irrigazione. Infine, a Casale San Pietro, nella pianura vicino a Castronovo e sulle rive del fiume Platani, un insediamento esteso di epoca tardoromana e bizantina (orientativamente dei secoli V–VII secolo) è stato parzialmente identificato attraverso prospezioni geofisiche, raccolte di superficie e sondaggi. Nel 2015 e 2016 è stato possibile dimostrare in un'area di scavo (Int 5) che l'insediamento di epoca bizantina (la cosiddetta agro-town) è stato rioccupato da uno di epoca islamica e normanna (IX–XII secolo).*

*L'attuale campagna di ricerche sul Medioevo nel Comune di Castronovo di Sicilia (PA) è stata avviata nel 2014 e proseguita nel 2015. Nel corso del 2016, queste indagini hanno assunto un ruolo centrale nel progetto più ampio finanziato dall'European Research Council (SICTRANSIT). L'obiettivo centrale di questo progetto è di comprendere il carattere delle trasformazioni economiche, ambientali e sociali dell'intera Sicilia tra il VI e il XIII secolo .*

*La relazione che segue presenta i risultati ottenuti nel 2016 a Castronovo nei quattro insediamenti principali e una breve descrizione delle ricerche in corso sulla ceramica, la fauna, e i reperti particolari effettuata dai responsabili delle loro analisi. Infine, si conclude con una valutazione del significato della campagna del 2016 e uno sguardo alle prossime tappe del progetto.*

#### Overview

*Martin Carver and Alessandra Molinari*

The town of **Castronovo di Sicilia** (PA) and its environs are the subject of current archaeological investigations carried out by the Universities of York, Rome and Lecce in partnership with the Soprintendenza per i Beni culturali e ambientali di Palermo and with the support of the Commune of Castronovo. The research cam-

<sup>1</sup> This report is an English paraphrase of our contribution to the 2017 *Notiziario* for the Soprintendenza at Palermo: <http://sicilia.academia.edu/NotiziarioArcheologicoSoprintendenzaPalermo/no.23/2017>. The authors of each section are noted in the text.



Fig. 1. The Castronovo region with an indication of the areas investigated to 2016.

paign was initiated in 2014 and continued in 2015<sup>2</sup> and 2016. During 2016, these investigations became a pivotal part of a wider project funded by the European Research Council, SICTRANSIT, which seeks to understand the character of economic, environmental, and domestic change during the 6<sup>th</sup> to 13<sup>th</sup> centuries CE over the Sicilian island as a whole<sup>3</sup>.



Fig. 2. The profile of Monte Kassar viewed from Casale San Pietro.

the Byzantine 'agro-town' was superseded by rural settlements of the Islamic and then Norman periods (9<sup>th</sup> - 12<sup>th</sup> centuries).

<sup>2</sup> CARVER, MOLINARI 2016.

<sup>3</sup> ERC Advanced Grant 693600 Aug 2016-Aug 2021. See <http://sicilyintransition.org>.

The report that follows presents the results of the 2016 season at Castronovo, comprising the findings at the four main sites, plus brief summaries of research in progress in ceramics, faunal remains and special finds by those responsible. Finally we assess the significance of the 2016 investigations and look to the next stage.



Fig. 3. Monte Kassar showing the location of investigations to 2017.

#### Monte Kassar (Int 7)

Paola Orecchioni and Fabio Giovannini

Investigations on Monte Kassar in 2016 targeted an area featuring the remains of a stone building located on a promontory at 930 asl inside the fortress (fig. 3, Int 7). This ruin has been known for some time as potentially one of great historical and architectural interest. In the 19<sup>th</sup> century it was identified by Cavallari as a ‘temple’<sup>4</sup>, and was the object of investigation in the late 1980s, when research directed by Dr. Agata Villa led to the characterisation of the structural remains as a *casermetta*<sup>5</sup>. The analysis of the stratigraphic sequence and the study of the structure in 2016 have allowed three components of the buildings to be identified (fig. 4).



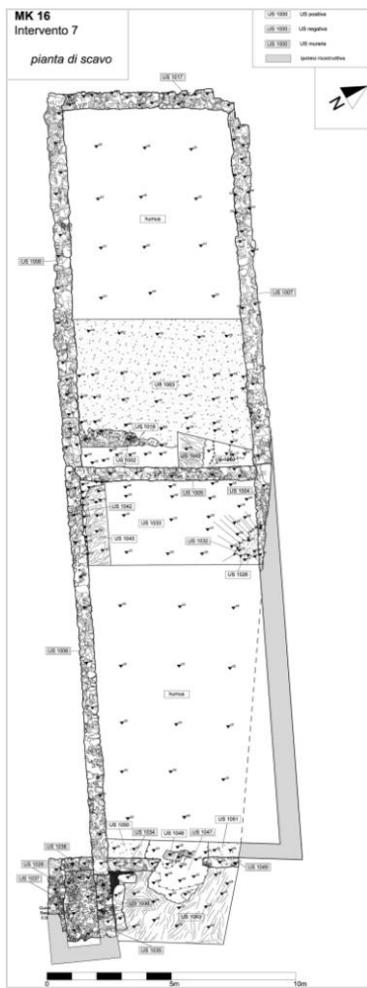
Fig. 4. Monte Kassar 2016, Int 7: overhead photograph taken by a drone, showing the three components of the casermetta: Building A (Ambiente A), Building B (Ambiente B) and the tower (lower right). The deep holes in Building A and at the entrance to Building B, represent late intrusions emptied during the present campaign.

<sup>4</sup> CAVALLARI, 1873: 46.

<sup>5</sup> i.e. a small military post. A more appropriate general term might be ‘casaforte’.



Fig. 5. Surviving elements and reconstruction of the tower standing at the corner of Building B.



According to the form and stratigraphic relationships of the foundations, Building B was the first to be constructed, using limestone blocks bonded with clay. The building was rectangular, measured 16.50 x 8.30m, and was aligned south-east/north-west. The floor was originally covered with a thin layer of plaster, as were the insides of the walls. The main entrance was apparently via an opening in the centre of the short SE wall. At the south corner of the building stood a square stone foundation, composed of rough-cut blocks of limestone bonded with clay, a technique closely resembling that of the walls of Building B. The foundation had a surviving short wall 1.80m long, but had been cut away on the SE side, so its extent in this direction remains uncertain but a ground plan measuring c.1.8 x 4.00 may be inferred (fig. 5). The mode of construction recalls that of the towers with square plans encountered along the main defensive wall of the fortress<sup>6</sup>. It can therefore be identified with some confidence as the foundation of a small tower.

At a given moment, a second building (Building A) measuring 15 x 8m was constructed in open ground to the northwest of Building B, and continuous with it (figs. 4, 6). The new building made use of the pre-existing NW wall of Building B and extended NW on the same alignment. The walls were likewise plastered internally, but the floor was rendered in *cocciopesto*<sup>7</sup>. The properties of this material imply the use of the new building as a place where perishables and consumable produce (such as grain) could be stored. The

Fig. 6. Master plan of the excavated structures and their interrelationship.

<sup>6</sup> For example, towers A, F, G, H, I, and M (VASSALLO 2009: 682-685).

<sup>7</sup> a mixture of crushed tiles and mortar resulting in a hard smooth surface, extensively used in antiquity especially for its water-resistance properties.

eventual abandonment resulted in debris from the collapsed roof that had included flat and curved tiles of various types, perhaps at the time gathered for reuse. The excavation provided no indication of the preceding use of the land beneath either building, apart from a 'background noise' of sherds belonging to an indigenous occupation of the Archaic period (7<sup>th</sup>-5<sup>th</sup> century BCE).

In the current state of research, the structures that have been brought to light cannot be dated precisely. However, the few sherds associated with the abandonment of the buildings are attributed to the early middle ages<sup>8</sup>. The assemblage of roofing debris recovered from the final collapse layer included tiles decorated with a type of stamped striations, and tiles pitted with minute cavities (*vacuolata*). These two kinds of tiles, in use together on the same the roof, had also appeared in the 2014-15 excavations by the fortress wall, where they occurred in company with pottery and metal objects that implied a date-range between the end of the 7<sup>th</sup> and the 8<sup>th</sup> century. The presence of striated tiles together with pitted ones has also been encountered elsewhere in Sicily, in contexts assigned to the mid 8<sup>th</sup> century<sup>9</sup>.

It can be concluded that the material remains that we encountered belonged to a stronghold (*casaforte*) placed up on a hillock a few hundred metres from the surviving access gate to the defended circuit. Its position suggested that it was a key strategic structure, perhaps housing a garrison and protected by a small tower. While this tower provided an element of defence, it could also have acted as a means of observing and coordinating the defence of the fortress as a whole.

#### *Colle San Vitale and Castronovo Old Town* Nicoletta Giannini

During the 2016 season, the study of the extant buildings at San Vitale continued, but fresh attention was now focused on the management of water used to supply the early town, to irrigate terraces of cultivation and to drive the mills. This project of 'hydraulic archaeology' involved the exploration of underground canals and encompassed the oldest part of Castronovo town and Colle San Vitale, the monumental zone that stood on a ridge above it. This project was designed to make a contribution to understanding the origins of the present town, expected to be in the Islamic or Norman period (fig. 7).

The oldest parts of modern Castronovo were mapped through the identification of 334 structures, the majority datable to before 1925. These could be distinguished from the areas of development that arose between 1926 and 1966 and the few additions made since the 1960s<sup>10</sup>. Within the historic core it proved possible to identify built-up areas dating from the 16<sup>th</sup> century that had been modified between the 18<sup>th</sup> and 19<sup>th</sup> centuries, whether in the fabric of the buildings or in adaptations to the topography. A key role in the development of the town can be accorded to two ancient fountains with attached washing tanks that are located at the edge of the built-up area: Fonte Rabato and Fonte Regio (fig. 8). It was possible in each case to discern an associated if labyrinthine network of narrow streets that had imposed a long-term influence on the town plan. Another im-



Fig. 7. Castronovo, viewed from Colle San Vitale.

<sup>8</sup> See MANGIARACINA, below.

<sup>9</sup> ARCIFA 2010: 108.

<sup>10</sup> Zones were located from the study of written sources and planning documents held by the town council. The buildings were recorded with numerous photographs and a preliminary classification of the construction type. We are very grateful to Cosima Orlando for providing access to the town documents and elucidating their significance through her personal knowledge of recent events.

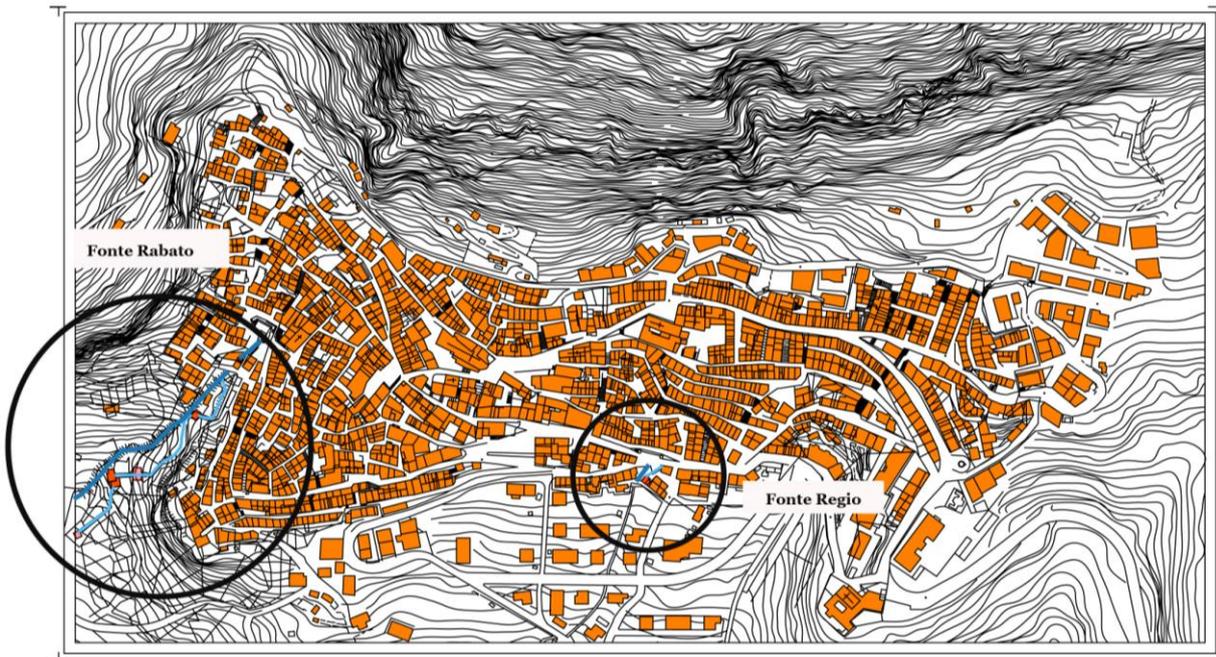


Fig. 8. Historic Castronovo showing the location of the two fountains, Fonte Rabato and Fonte Regio.



Fig. 9. Model of the hydraulic system in the valley below Fonte Rabato. In blue: river; in yellow, lines of natural drainage; in green the artificial water channel; In red: mill sites.

portant node of development has been the mother church dedicated to the Holy Trinity, constructed between 1381 and 1404.

Exploration of the watercourses, either directly by locating the channels, or indirectly by tracking their routes underground by listening for them, has led to a hydraulic model in which water coming off the high ground was canalised to supply the town, via its fountains, and to irrigate the agricultural land further down the hill. Reconnaissance in the valley below Fonte Rabato has located a series of terraces, an artificial water channel and a number of mill sites along its course (fig. 9).

From these observations it can be deduced that the original nucleus of the town was a narrow strip of settlement wedged between the Colle san Vitale and the agricultural land beneath, and that the key to its origins and development lies in its hydraulic system. The next stage in our investigation will be to amplify and map the Castronovo system using the methods of hydraulic archaeology that have been effective elsewhere<sup>11</sup>.

*Casale San Pietro*  
 Antonino Meo and Madeleine Hummler

Casale San Pietro today consists of a multiphase building standing in the angle between the main road connecting Palermo and Agrigento (SS189) and the old Palermo road leading to Castronovo. The building includes the nave of a church, now deconsecrated and recently restored, where an early burial of the Islamic rite was contacted<sup>12</sup>. Investigations in the area have included surface collection and geophysical survey in the field to the west (Int 4, 2014), and trenches both in this field and in one to the south (Int 6, 8, 2015) (fig. 10). In 2015 we also excavated a test trench to the north of the church (Int 5), which proved extremely productive and was enlarged in 2016 to an area excavation that forms the subject of this report.



Fig. 10. The area of Casale San Pietro showing the location of the four interventions to 2016.

The 2015 test trench, which measured 2 x 5m (Int 5, Saggio 1), made contact with a sequence of settlement strata provisionally assigned to the 10<sup>th</sup>-12<sup>th</sup> century<sup>13</sup>. On this basis it was decided to extend the excavation in 2016 with a contiguous area measuring 5 x 6m (Int 5, Saggio 2; fig. 11). Here we encountered a structural sequence, which, with some gaps, encompassed a period from the late Antique to recent times. At its base were deposits of natural fluvial sand and gravel, encountered at a depth of c. 1.5–1.8 m from the current ground level. Over this developed the first period of human occupation (Period I), consisting of several layers containing highly fragmented material datable to the 3<sup>rd</sup>-4<sup>th</sup> century. Defined at the top of these levels was a stub of wall CF1, which is provisionally regarded as contemporary with them.

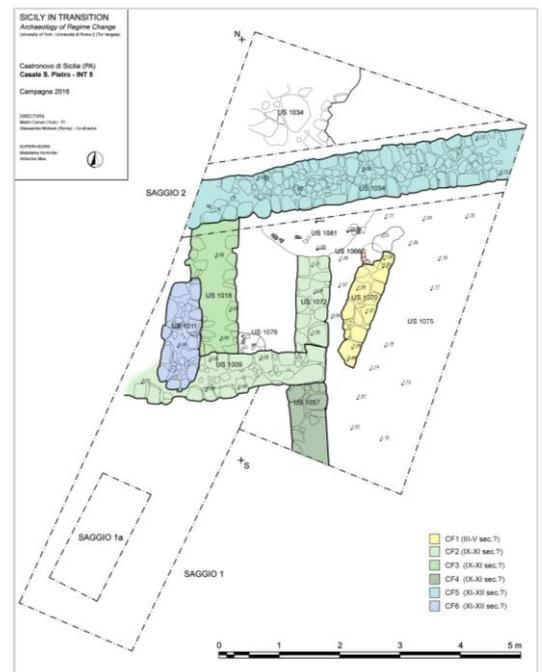


Fig. 11. Plan at the end of the 2016 season, showing the walls encountered and their preliminary dating.

<sup>11</sup> BARCELÓ 1989; KIRCHNER, NAVARRO 1993.

<sup>12</sup> Samples of the human remains are now under examination at the University of York's BioArCh laboratory.

<sup>13</sup> CARVER, MOLINARI 2016.



Fig 12. The courtyard of the Islamic period seen from the east. The stub of the levelled wall from the Late Antique settlement (centre, below) was reused as part of the paving.



Fig 13. The base of a possible tabouna defined in the courtyard.



Fig 14. Tiles scattered on the surface of the Islamic-period courtyard, probably resulting from the dismantling of the roof of the surrounding buildings.

From this levelled surface (currently 1.3m below the present ground level), new settlement took the form of a succession of structures, commencing perhaps in the mid 8<sup>th</sup> to early 9<sup>th</sup> century and continuing into the 10<sup>th</sup> (**Period II**)<sup>14</sup>. The walls were formed of irregular blocks of stone set in rows that were generally horizontal and continuous and bonded with clay soil (fig. 12). The excavation permitted the definition of a primary structure with a rectangular plan (CF2), which was modified, probably after a short interval, by an external wall running south (CF4) and an internal wall running north (CF3). These seem to belong to the life of the structure as a whole, but their functions are not easy to understand in the frame provided by the area so far opened. In particular it is unclear whether CF3 formed part of the original building or of a successor-building to the north<sup>15</sup>. In spite of the uncertainty surrounding the exact form presented by elements of the 9<sup>th</sup>-10<sup>th</sup> century complex, it can be suggested that they comprise an external courtyard, an interpretation endorsed by the definition of traces of a small oven for baking flat bread of a kind known in the Arab world (*tabouna*; fig. 13).

These buildings fell into disuse in or after the 10<sup>th</sup> and 11<sup>th</sup> century, leaving a scatter of tiles and wall-courses standing 40-50cm above the tread layer of the courtyard (fig. 14). After a certain interval, the area was redeveloped with new wall-lines associated with layers containing material of the late 11<sup>th</sup> and 12<sup>th</sup> century (**Period III**). The pre-existing structures to the north were in part removed or flattened, and a robust wall erected in their place (CF5). A revetment wall (US 1053, not on plan) was also constructed to the south of and parallel to CF5, the two serving to define an alleyway (fig. 15).

14 Dating mainly owed to ceramics, see MANGIARACINA below.  
15 The excavation was terminated at this point in 2016 in anticipation of opening a larger area in 2017, with the aim of determining the ground plans and confirming and refining the chronology.

Fig 15. The Norman-period wall (CF5) in the foreground with the repaired revetment wall (US1051) parallel to it and behind it. Between the two ran an alleyway.



After a partial repair of the revetment wall (US1051; fig. 15) the central part of the alley was occupied by a large installation of stones set on edge that was shortly obliterated (US1047). This installation was seemingly associated with a late wall founded to the west (CF6) (fig. 11). The Period III complex was demolished and partly robbed in association with a levelling operation, followed by the development of a layer of organic soil probably generated by agricultural activity (**Period IV**). There followed a hypothetical removal of soil, which could have taken away much later medieval and modern material. This was replaced by a layer of gravel, probably derived from the river flood-plain but of uncertain date, followed by a layer of dense clay probably linked with the construction of the adjacent main road (SS189), and finally a layer of humus belonging to the present agricultural regime.

The excavations yielded a rich assemblage of finds, including Byzantine, Islamic- and Norman-period pottery (with an assemblage of probable 8<sup>th</sup>/9<sup>th</sup>-century pottery in a sealed pit US1076, see Mangiaracina, below). There were also abundant tiles (many re-used Byzantine tiles and later, medieval, variants), copious amounts of animal bone (including sheep/goat, pig and cattle as well as horse, fallow deer, dog, chicken and fish; see Aniceti below). Among other materials encountered, there were fragments of glass, iron slag, iron objects (nails, a crowbar, a chisel), stone objects (a piece of column and a quern fragment), four copper alloy coins and two decorated finger-rings of Byzantine manufacture (see Colangeli, below). Bone objects also feature, including a tiny bone die, and a bone awl. These stratified assemblages show great potential, not only for establishing a fine chronology but also attest to the varied economic strategies employed over the centuries at Casale San Pietro.

*Pottery Studies 2016*  
Claudio Fillippo Mangiaracina

A study of the pottery assemblages recovered at Castronovo was undertaken by the author during the 2016 season with the assistance of students from the Universities of Rome Tor Vergata and York. Presented here are summaries of the sequences relating to the principal areas of excavation.

The earliest material at **Monte Kassar** (Int 7, the so-called *casermetta*) consisted of fragmentary and residual sherds of the Archaic period which were present notably in the backfill of the test pits cut by Agata Villa in the 1980s<sup>16</sup>. The subsequent medieval assemblage was notably sparse, apart from fragments of tile. Sherds deriving from pottery amounted to about 20, all recovered from the same structure (Building A). Amongst the 15 sherds that came from the abandonment phase, a handle with a central groove and 11 fragments of an amphora with a dark surface, rilled body and bossed base were recognised (fig. 16). An analogous type of handle applied to small pitchers and amphorae has been noted as produced between the 8<sup>th</sup> and 9<sup>th</sup> century<sup>17</sup>.

The tiles recovered included different styles and thicknesses. Among them could be distinguished, firstly 'classic' Byzantine types (the majority) characterised by the use of a fine smooth fabric embellished with incised lines longitudinal or perpendicular to the axis of the tile, or wavy lines overlying longitudinal lines; secondly, tiles in a coarse fabric tempered with straw and decorated with incised lines; and lastly tiles similarly tempered but without decoration. These types have been noted in Catanian contexts from the beginning of the 8<sup>th</sup> century

<sup>16</sup> VILLA 1997: 1390-1, Area B.

<sup>17</sup> ARCIFA 2010: 115, fig. 10.



Fig 16. Monte Kassar: fragments from Building A (US1021).

and become prevalent during the course of the same century<sup>18</sup>. The variety and character of tiles found in the demolition layer of Building A signals a roof composed of recycled material, possibly erected at the beginning of the 8<sup>th</sup> century. There was a total absence of finds from the preceding Building B and its tower.

By contrast, the excavations at **Casale San Pietro** yielded a rich ceramic sequence that can be provisionally assigned to the period between the 3<sup>rd</sup> and the end of the 12<sup>th</sup> century.

The earliest layers (US1024, 1025=1031, 1036, **Period I**) produced an assemblage of very fragmented material deriving from the 3<sup>rd</sup> to 5<sup>th</sup> century, including a group of pottery (*terra sigillata* and coarse ware cooking pot) imported from North Africa<sup>19</sup>. This group included material that could be later: two rim sherds from a cooking pot with a ledge for a lid, a piece of a carinated bowl in a fine fabric and a body sherd with a light coloured finish decorated with incised wavy lines (fig. 17). A broader date-range is implied by the pottery recovered from the surface of the field further to the west (Int 4, fig. 10), which included sherds of African *terra sigillata* and amphorae of the 5<sup>th</sup> to 7<sup>th</sup> century.

The period that followed at Casale San Pietro (**Period II**) saw the construction of three successive walls (CF2, 4 and 3). The 40 or so sherds recovered from the foundation trench of CF2 (US1021) were residual *terra sigillata* or coarse ware imported from Africa, but there was also a handful of sherds from generic types that could be ascribed to the early middle ages. A small pit (US1076) in the angle between CF3 and 4 contained fragments of an undecorated lugged casserole with inturned walls of a type comparable with Sicilian products of the mid 8<sup>th</sup> to 9<sup>th</sup> century (fig. 18)<sup>20</sup>.



Fig. 17. Casale San Pietro, Int 5: late Antique and early medieval sherds from US1024.

Fig. 18. Casale San Pietro, Int 5: Fragments of a casserole of the 8<sup>th</sup>/9<sup>th</sup> century (US1076).

<sup>18</sup> ARCIFA 2010: 108.

<sup>19</sup> BONIFAY 2004: 224-7.

<sup>20</sup> TULLIO 1985: 96, 204; ARCIFA 2010: 120-1.



Fig. 19. Casale San Pietro, Int 5: Pottery from the 10<sup>th</sup> century. a (top left): sherds from globular pots in calcitic fabric b (top right): jug. c (bottom left): painted and rilled amphorae. d (bottom right): fragment of a glazed bowl.

The destruction layers at the end of Period II (US 1015, 1016, 1055, 1062) produced many examples of pottery belonging to the Islamic period: globular pots with thick out-turned everted rim and rilled body in a calcitic fabric (fig. 19a); a jug with thick vertical rim with parallels in 10<sup>th</sup>-century Palermo (fig. 19b)<sup>21</sup>; fine-ware amphorae painted in red with rilling on the body and a thin rib in relief around the neck; two rims of painted amphorae of Angelo Type B1/B2<sup>22</sup> and Ardizzone Type A17<sup>23</sup> (fig. 19c), and a sherd belonging to a glazed bowl with decoration painted in green and brown (fig. 19d). In general, glazed pottery is rare in these levels. The tiles belonging to the destroyed buildings are large with smooth pitted surfaces, sometimes decorated with straight or curvilinear incised lines by using the fingertips. The mode of manufacture differs from those found in Monte Kassari: these tiles have a dark reduced core with a final red re-oxidation on the surface.

Layers formed above the destruction level (US1014 =1037, 1060, 1061) contained much pottery of the Islamic period, assigned to the 10<sup>th</sup> and the beginning of the 11<sup>th</sup> century. There was a group of fine wares including a carinated bowl, water filter jugs, and an important assemblage of painted amphorae mostly originating in Palermo. Among the glazed wares, there were four fragments of a globular vessel with a thin upright rim and body decorated with green and brown paint under a transparent glaze. These have parallels from 10<sup>th</sup>-century Palermo (fig. 20)<sup>24</sup>. A ring base belonging to a carinated bowl with painted decoration in green and brown re-



Fig. 20. Casale San Pietro, Int.5: Glazed sherds with green and brown 'medallion-type' decoration.

<sup>21</sup> Castello San Pietro; ARCIFA, BAGNERA 2014, tav. IV, 25, V. 2,6.

<sup>22</sup> ARDIZZONE *et al.* 2014: 217, fig. 3, 7.

<sup>23</sup> ARDIZZONE *et al.* 2014: 219, fig. 6, 4; ARDIZZONE 1997/8: 672-3.

<sup>24</sup> Castello San Pietro; ARCIFA, BAGNERA 2014, tav.III, 29.



Fig. 21. Casale San Pietro, Int. 5: pottery from US1032, dated to the Norman period (Period III).

calls the 'Peacock Ware' in circulation in the 10<sup>th</sup>-century. Associated with this assemblage was a circular baking tray ('testello') made of soft stone of a type known in Malta (*globigerina*)<sup>25</sup>.

Following a period of abandonment, the area excavated was redeveloped with

structures of which two walls (CF5 and 6) were defined (**Period III**, above). Strata contemporary with the use of CF6 (US1052, 1054) contained much pottery provisionally dated to the second half of the 11<sup>th</sup> century: a small glazed bowl with a short horizontal rim, hemispherical body and painted decoration under transparent glaze, two sherds belonging to hemispherical green-glazed bowls, a group of fine wares including carinated or hemispherical bowls, a lamp with a circular oil tank and an elongated nozzle for the wick, and a fragment belonging to a closed form with darkened surface and decoration overpainted in white<sup>26</sup>.

There is a notable reduction in the pottery assemblage that can be assigned to the 12<sup>th</sup> century, and an absence of some of the types that characterise the Norman period, for example hemispherical bowls with greatly thickened rims<sup>27</sup>, or hemispherical bowls with lightly thickened everted rims and incised decoration<sup>28</sup>.

The last phase of use of these Period III structures can be ascribed to the second half of the 12<sup>th</sup> century, as is attested by material recovered from the flat surface of the paving of CF5 (US1042). This included a fragment of partially glazed cooking pot produced in the area of Messina<sup>29</sup>, and six body sherds from amphorae of Palermo manufacture, painted with broad red bands. In this context there was also a half *foliis* of William I (see Colangeli, below). In the collapse layer of CF5 (US1032) were fragments of a trilobate rim belonging to a small green-glazed pitcher, and a yellow-glazed lamp with a trilobate rim and open oil tank<sup>30</sup> (fig. 21). The latter came from a cleaning layer on the upper surface of 1032 and can be dated to the end of the 12<sup>th</sup> century. This spelled the end of the occupational sequence, and the area was subsequently given over to agriculture.

In sum, the ceramic assemblages excavated at Casale San Pietro bear witness to the major impact of pottery arriving from Palermo during the 10<sup>th</sup>-12<sup>th</sup> century, notably in the Islamic period. In fact, the majority of the amphorae and polychrome painted bowls with transparent glaze were made there. But in addition, a carinated bowl with painted decoration under transparent glaze signals some imports from Africa at the same date.

#### *Faunal remains*

*Veronica Aniceti*

The study of the animal bones from Monte Kassar and Casale San Pietro have formed part of the author's PhD dissertation, the principal objective of which is to investigate the nature and development of animal husbandry in medieval Sicily and more precisely from the Byzantine to the Swabian period, 6<sup>th</sup> to 13<sup>th</sup> century<sup>31</sup>.

<sup>25</sup> CORRETTI ET AL. 2017.

<sup>26</sup> ARCIFA, LESNES 1997, fig. 2a, 11e; ARCIFA 1996: 470, 31-2.

<sup>27</sup> D'ANGELO 2005: 390, fig. 1; 391, fig. 1.

<sup>28</sup> MOLINARI 1997: 138, III.4.3.

<sup>29</sup> SANNINO 2001.

<sup>30</sup> cf MOLINARI 1997: 133, III.3.1; 139, III. 6.1.

<sup>31</sup> The research project draws on samples from ten archaeological sites in Sicily: Corso dei Mille (PA), Sant'Antonino (PA), Castello San Pietro (PA), Palazzo dei Normanni (PA), Contessa Entellina (PA), Colmitella (AG), Monte Kassar (PA), Casale San Pietro (PA), Mazara del Vallo (TR) and Rocchicella (CT). These were made available by the *SICTRANSIT* project through the good offic-

This research takes as its point of departure the premise that the Byzantine, Islamic and Norman communities, each having different social and cultural priorities, will have had different approaches to the exploitation of animals and thus a different impact on the animal resource. The fundamental task is to investigate the effects of the adaptation or imposition of new traditions and systems introduced by the succession of incoming regimes. The dietary preferences of the three communities studied may have been influenced by a series of factors whether of an economic nature or more thoroughly cultural. Among these factors, religion will surely also have played an important role. These matters are particularly apposite in the Islamic period when it is expected that religious prohibitions were applied against the consumption of specific animal products, for example those deriving from pork. To gain an idea of the level of specialisation in the husbandry of each community studied, it is necessary to measure the relative quantity of animals produced and/or consumed, as well as assessing the levels of standardisation applied to specific butchery practices. Another important area of investigation involves the characterisation of animal species by biometric analysis. This study will enable us to detect both the introduction of new breeds of domestic animal into the island, and the degree to which the communities invested in the improvement of their stock animals, with a consequent increase in their size. A successful example of this mode of study exists for the Islamic period in Portugal, where the size of sheep (*Ovis aries*) was shown to increase from the Roman to the Islamic periods<sup>32</sup>. The current project seeks to discover whether a similar scenario can be detected in Sicily. It should be emphasised that, in addition to the domesticated animals, every assemblage so far examined in Sicily contains a good number of fragments from wild species of mammal and from fish. It is already possible to hypothesise that both hunting and fishing made an important contribution to the diet in the Norman-Swabian periods. Even more interesting is the transport of sea fish to the centre of the island, as at Castronovo.

At this early stage in the study, statistical data are not ready for release, but some preliminary trends may be reported in general terms. At **Casale San Pietro** in the layers attributed to the Islamic period, the proportion of pigs (*Sus sp.*) is in fact high, followed by sheep/goats (*Ovis aries*, *Capra hircus*). Chicken (*Gallus domesticus*) is also present in good numbers. By contrast, cattle (*Bos taurus*) and horse or donkey (*Equus caballus/Equus asinus*) are sparsely represented. Tooth-wear analysis used to estimate the age of kill has been possible only for sheep/goat; here a wide range of kill-dates has been determined from juvenile to sub-adult and beyond. This implies a non-specialised type of production in which meat and secondary products such as milk, cheese and wool are produced and used in equal measure. Examination of the neonatal mandibles of the pigs led to the deduction that the pigs were being farmed in close proximity to the site itself. This throws an interesting light on the nature of the settlement at Casale San Pietro.

Revealing results have also been obtained from the study of the faunal remains retrieved from the excavations at **Monte Kassar**, although only a small sample has so far been analysed, the majority from one context dated to the 8<sup>th</sup> century (US1049). Here, by contrast to Casale San Pietro village, the assemblage is dominated by sheep (*Ovis aries*). Tooth-wear analysis suggests that the majority were slaughtered as sub-adults, and few specimens older than this were present. It could be deduced that these animals were raised for meat, although the farming of secondary products (for example milk and wool) is not excluded. The second-most plentiful species was cattle (*Bos taurus*). Analysis of the degree of fusion of the epiphyses suggests that both sub-adults and adults were slaughtered. It would appear that cattle were raised for both meat and used for traction. A third priority was given to the study of breeding patterns in pigs: adult pigs (mostly sows) and piglets were also present in the assemblage.

Future analysis of the Castronovo assemblages and integration with zooarchaeological data obtained from the other sites being sampled elsewhere in Sicily promises both to deepen understanding of local practice and provide the material for constructing a broader socio-economic model. The study of animal bones in Sicily, especially those from the medieval period, has lagged behind that of the Italian peninsula and of Europe more generally. The present project therefore aims at a first advance on a broad front. The wide variety of geography and climate presented by the Sicilian sites, moreover, provides a chance to give a particularly detailed and coherent account of the dynamics of animal husbandry.

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<sup>32</sup> DAVIS 2008.

*Metal, glass and other special finds*  
Francesca Colangeli

A number of *notable finds* of metal and glass was brought to light in the 2016 campaign of excavations at Casale San Pietro. These objects are 'special' in respect of being datable as well as individual in their form and style<sup>33</sup>. Here we illustrate a selected group of four objects that have been identified by preliminary study: two coins of the Norman period and two rings of the Byzantine period (fig. 22).

- a. The coin from US1042 had a concave flan carrying on one side (recto) an inscription between two circles in which the letters REX / W are legible, with an unidentified Kufic inscription at the margin<sup>34</sup>. On the other side (verso) is a bust of the Virgin and child. Identified as a half-*folles* (copper coin) of William I (1154-1166)<sup>35</sup>.
- b. The coin from US1030 showed the head of lion surrounded by two circles, the internal a plain line and the outer beaded. On the verso is a Kufic inscription also inscribed within a beaded circle. Identified as a *folles* of William II (1166-1189). Both coins are identified as products of the mint at Messina<sup>36</sup>.
- c. and d. From US1055 came two copper alloy rings, each with a hoop with rounded section and a flat oval signet decorated with a punched pattern. One carries the image of a bird with a hooked beak (c) and the other a quartet of ring-and-dot ornament (d). These are attributes of Byzantine jewellery and can be generally bracketed between the 4<sup>th</sup> and 7<sup>th</sup> century CE<sup>37</sup>.



Fig. 22. Special finds: the coins and the rings.

*Assessment and future plans*  
Martin Carver and Alessandra Molinari

*Assessment*

The 2016 season has considerably advanced knowledge of the historic sequence at Castronovo and raised the potential of SICTRANSIT's broader objectives. The fortress on the hill of **Monte Kassar** (at 1030m above sea level) is protected on three sides by precipitous slopes and on the fourth side by a wall 3m wide and 1.9 km long, punctuated with eleven towers, two gates and at least one postern<sup>38</sup>. This guards the easier approach from the north. Following an occupation in the Iron Age, beginning probably in the 7<sup>th</sup> century BCE, the mountain seems to have been mainly deserted until a moment between the late 7<sup>th</sup> and mid 8<sup>th</sup> century CE,

<sup>33</sup> Also known as 'small finds' these objects also often demand conservation and their location is deemed sufficiently significant to be individually recorded.

<sup>34</sup> Type of Arab lettering named for al Kufa in Iraq.

<sup>35</sup> Cf. SPAHR 1976: n.99; VARESI 2001, MIR n. 33; D'ANDREA *et al.* 2012: n. 136.

<sup>36</sup> Cf. SPAHR 1976: n.118; MIR 37; D'ANDREA *et al.* 2012: n. 160.

<sup>37</sup> ORSI 1942: 151-152, fig. 67, 68; BALDINI LIPPOLIS 1999: 208-210, tipo 2.VII.3.a.

<sup>38</sup> VASSALLO 2009; MOLINARI 2016.

when the fortress was seemingly constructed. The steep precipice in combination with the wall across the neck encloses some 90 hectares in which extensive signs of residence have so far been elusive. However discoveries in 2014 and 2015 demonstrated the presence of a military contingent in the form of houses against the defensive wall (above). Investigations in 2016 were focused on understanding the ruin known as the 'casermetta', which was redefined as a rectangular building of three phases over 30m long. Two different floor surfaces distinguished the two large spaces into which the eventual building was divided, implying a different type of usage in each. The slender tower (a smaller version of the towers around the perimeter wall), in combination with the location of the building with its broad field of view, fits perfectly with an overall interpretation of Monte Kassar as an integrated military establishment created by a major power. However, the sparse assemblage suggests an occupation of short duration. The remains of the fallen roof included recycled tiles and fragments of ceramic containers that could belong in the 8<sup>th</sup> to 9<sup>th</sup> century. There were no signs of occupation on the mountain during the full Arab period. These findings confirm that the Byzantine fortress was not in use after the Islamic conquest of the region around the middle of the 9<sup>th</sup> century.

Surface collection and magnetometry at **Casale San Pietro** has led to the expectation of a sequence of occupation from the 6<sup>th</sup> to the 13<sup>th</sup> century, thus potentially encompassing our whole period of interest<sup>39</sup>. Preliminary test-pitting indicated a poor survival of structures in the areas currently under cultivation, with walls erased to foundation level and the assemblages well dispersed<sup>40</sup>. However, the area currently being studied by excavation at Int 5 north of the church has revealed the most consistent stratigraphic sequence encountered so far. The excavations contacted a Byzantine destruction level, followed by developments of the Islamic and Norman periods (mid 9<sup>th</sup>-12<sup>th</sup> century). The results from the Islamic period were particularly promising: a sequence of constructions belonging to an established settlement, with a range of cooking pots and amphorae supplied from Palermo, a hearth and baking tray and a rich assemblage of animal bones showing an unexpected emphasis on pig farming. The Byzantine levels have yet to be examined in Int 5, but sherds from the 3<sup>rd</sup>-5<sup>th</sup> centuries and two signet rings of the 6<sup>th</sup>/7<sup>th</sup> century were recovered from its debris. The 8<sup>th</sup>/early 9<sup>th</sup> centuries at present constitute an elusive interlude. The 10<sup>th</sup>/11<sup>th</sup> century occupation is significantly active, and contemporary with the Arab domination of Sicily. It was a time when Castronovo was certainly in contact with the cultural and economic centre at Palermo, but not necessarily Muslim in allegiance. After the Arab and Norman occupation, the site offered only a few indications from the 13<sup>th</sup> century and later. As a whole these results suggest an important role for Casale San Pietro from at least late antiquity onwards, probably owed to its location midway along the route that has long connected Palermo to Agrigento.

The survey undertaken in the monumental zone of **Colle San Vitale** and in the historic core of **Castronovo town**, and in the fields beyond, has provided a glimpse of the history that connects and underlies the period between the Byzantine settlement and fortress and the Islamic and Norman town. Certainly in existence from the Norman period, the town should have embraced the fortified ridge of San Vitale as well as developing a suburb in the valley adjacent to the area of Rabado<sup>41</sup>, with its fountain supplying a complex system of terraces and mills. The presence of this type of agricultural irrigation strongly suggests that Castronovo town was already developing in the full Islamic period.

### *Future plans*

The overall objective of the SICTRANSIT project is to understand the transformation of territory, the dynamics of demographic change and the evolving emphasis of agricultural production and trade through the 6<sup>th</sup> to 13<sup>th</sup> century, an era coincident with major changes in regime: Byzantine, Arab, Norman and Swabian. This is being addressed using a battery of scientific techniques and analyses applied to assemblages of ceramics and to human, animal and plant remains. Thanks to the good offices of colleagues we have access to more than 20 previously excavated early medieval assemblages distributed in the west, centre and east of the island and ranging in date from the 5<sup>th</sup> to the 14<sup>th</sup> century<sup>42</sup>. Scientific analysis is based at the BioArCh laboratories in the

<sup>39</sup> The potential of this surface material and of the surrounding landscape was previously noted by CANZONIERI in VASSALLO 2007: 59-62 and CASTRORAO BARBA 2015.

<sup>40</sup> CARVER, MOLINARI 2016.

<sup>41</sup> MAURICI 2000.

<sup>42</sup> See acknowledgements.

University of York, which is applying stable isotope and aDNA analysis to human, animal and plant remains and organic residue analysis to ceramics, both domestic and commercial, with a view to establishing their contents. Important analytical programmes are also underway at the University of Rome (ceramics) and Lecce/Salento (identification of charred plant remains).

The work at Castronovo is essential to provide a fresh material definition of the entire sequence, taking advantage of the fortunate proximity of five adjacent and contiguous sites: an extensive Byzantine settlement of the 3<sup>rd</sup>-8<sup>th</sup> century (Casale San Pietro), a Byzantine fortress of the 8<sup>th</sup>/9<sup>th</sup> century (Monte Kassar), a citadel of the 10<sup>th</sup>-16<sup>th</sup> century (Colle San Vitale), an Arab and Norman settlement of the 10<sup>th</sup>-12<sup>th</sup> century (Casale San Pietro) and the early phases of the town of Castronovo, beginning perhaps in the 10<sup>th</sup> century.

First-hand research is planned to continue at all these sites, using excavation, survey and sampling techniques, over the next 4 years. In addition, we plan to extend the coverage of territorial survey using surface collection, magnetometry and environmental sampling in order to report the shifting settlement pattern and the economic significance of field systems, terracing and mills. Priorities include the testing by excavation of important foci on Monte Kassar, including the church and unidentified anomalies contacted by magnetometry. In addition, we plan to undertake a comprehensive survey of the whole 90 hectares with a view to finding further nodes of 8<sup>th</sup>/9<sup>th</sup> century activity and understanding the strategic design of the fortress as a whole. At San Vitale/Castronovo, the priorities are to bring further precision to the sequence and date of the upstanding monuments (expected to be late medieval and later) and to expand the project of 'hydraulic archaeology' through the town and into the valley. At Casale San Pietro, the excavations are to be extended and taken downwards with a view to studying both the Byzantine-Arab-Norman sequence at this point, and the form and economy of the settlement at each period. Meanwhile surveys in the area around the Casale are to be continued with the aim of finding the full extent of the Byzantine agro-town and the shifting settlement nodes that succeeded it.

It is also our hope that the study of Castronovo and its ancient material remains will result not only in the enrichment of Sicily's history, but in the enhancement of the historic assets of Castronovo to the advantage of its citizens and future visitors.

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#### *2016 Field team 28 August – 25 September*

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## REFERENCES

- ARCIFA L., 1996, Palermo: scarti di fornace dall'ex monastero dei Benedettini Bianchi. Primi dati su alcune produzioni ceramiche palermitane della prima età normanna, *Mélanges de l'École Française de Rome - Moyen Âge*, CVIII, 1996, 451-477.
- ARCIFA L., 2010, Indicatori archeologici per l'altomedioevo nella Sicilia orientale, in PENSABENE P. (a cura di), *Piazza Armerina. Villa del Casale e la Sicilia tra tardo antico e medioevo*, Roma, 105-129.
- ARCIFA L., BAGNERA A., 2014, Castello San Pietro (Palermo): una riconsiderazione dei primi contesti islamici. In NEF A., ARDIZZONE, F. (a cura di), *Les dynamiques de l'islamisation en Méditerranée centrale et en Sicile* (Collection de l'École Française de Rome 487), Bari, 165-190.
- ARCIFA, L., LESNES, E. 1997 Primi dati sulle produzioni ceramiche palermitane dal X al XV secolo *Congrès de l'Association internationale pour l'étude des céramiques médiévales en Méditerranée* (6e, 1995, Aix-en-Provence); *La céramique médiévale en Méditerranée : actes du VIe congrès de l'AIECM2 : Aix-en-Provence : 13-18 novembre 1995*(Aix-en-Provence)
- ARDIZZONE F., PEZZINI E., SACCO V., 2014, Lo scavo della chiesa di Santa Maria degli Angeli alla Gancia: indicatori archeologici della prima età islamica a Palermo. In NEF A., ARDIZZONE, F. (a cura di), *Les dynamiques de l'islamisation en Méditerranée centrale et en Sicile* (Collection de l'École Française de Rome 487), Bari, 197-223.
- BALDINI LIPPOLIS I., 1999, *L'oreficeria nell'impero di Costantinopoli: tra IV e VII secolo*, Bari.
- BARCELÓ M. 1989 , El diseno de espacios irrigados en al- Andalus: un enunciado de principios generale, in *El agua en las zonas aridas. Arqueologia e Historia, I colloquio de Historia y Medio Fisico. Vol I*, Almeria, pp. XV-XLI.
- BONIFAY M., 2004, *Études sur la céramique romaine tardive d'Afrique*. BAR International Series 1301. Oxford.
- CARVER M., MOLINARI A., 2016, Sicily in Transition Research Project. Investigations at Castronovo di Sicilia. Results and Prospects, 2015, *Journal of Fasti Online* ([www.fastionline.org](http://www.fastionline.org)).
- CASTRORAO BARBA A., 2015, Entroterra tra due mari: il territorio di Castronovo di Sicilia (Palermo) tra età romana e periodo bizantino, in F. CAMBI, G. DE VENUTO, R. GOFFREDO (eds), *Storia e archeologia globale 2. I pascoli, i campi, il mare. Paesaggi d'altura e di pianura in Italia dall'Età del Bronzo al Medioevo*, Bari, 253-267.
- CAVALLARI S., 1873, in TIRRITO L., *Sulla città e comarca di Castronuovo di Sicilia. Ricerche storiche, topografiche, statiche ed economiche*, Palermo.

- CORRETTI A., GASPARO MORTICELLI M., LUCEJKO J., MANGIARACINA C.F., MONTANA G., RIBECHINI E., COLOMBINI M.P., 2017, Manufatti in pietra della Sicilia Islamica: un'indagine multidisciplinare, *Annali della Scuola Normale di Pisa - Classe di Lettere*, 8/2, 58-78.
- D'ANDREA A., FARANDA G., VICHI E., 2012, *Le monete siciliane dai bizantini agli arabi*, Castellalto (TE).
- D'ANGELO F., 2005, Lo scarico di fornaci di ceramiche della fine dell'XI secolo-inizi del XII nel Palazzo Lungarini di Palermo, *Archeologia Medievale*, XXXII, 389-400.
- DAVIS S 2008 Zoological evidence for Moslem and Christian improvements if sheep and cattle in Portugal *J. Archaeological Science* 35:991-1010
- KIRCHNER H., NAVARRO C. 1993, Objetivos, métodos y práctica de la arqueología hidráulica, *Archeologia Medievale*, XX, 159-182.
- MAURICI F., 2000, Problemi di storia, archeologia e topografia medievale nel territorio di Castronuovo di Sicilia in provincia di Palermo-I, in *Atti II Giornate Internazionali di Studio sull'area Elima 1997*, Pisa- Gibellina, 755-776.
- MOLINARI A., 1997, *Segesta II. Il castello e la moschea*, Palermo.
- MOLINARI A., 2016, Fortified and Unfortified Settlements in Byzantine and Islamic Sicily: 6th to 11th Centuries, in CHRISTIE N., HEROLD H. (eds), *Fortified settlement in Early Medieval Europe: Defended Communities of the 8th-10th centuries*, Oxford, 320-332.
- ORSI P., 1942, *Sicilia bizantina*, Roma.
- SANNINO L., 2001, Le produzioni della fornace del tribunale, in M. BACCI, G. TIGANO (a cura di), *Da Zancle a Messina. Un percorso archeologico attraverso gli scavi*, Messina, II, 150-166.
- SPAHR R. 1976, *Le monete siciliane dai Bizantini a Carlo I d'Angiò*, Graz.
- TULLIO A., 1985, I saggi di scavo, in N. BONACASA, R. CALANDRA, C. FILANGERI (a cura di), *La basilica Cattedrale di Cefalù. Materiali per la conoscenza storica e il restauro. La ricerca archeologica. Preesistenze e materiali reimpiegati*, 13-114.
- VARESI A., 2001, *Monete Italiane Regionali, Sicilia*, Pavia.
- VASSALLO S. (a cura di), 2007, *Archeologia nelle vallate del Fiume Torto e del San Leonardo*, Palermo.
- VASSALLO S., 2009, Le fortificazioni bizantine del Kassar di Castronovo di Sicilia: indagini preliminari, in AMPOLO C. (a cura di), *Immagine e immagini della Sicilia e di altre isole del Mediterraneo antico*, vol. II, Pisa, 679-696.
- VILLA A., 1997, Indagini archeologiche e ricognizioni nel territorio di Castronovo di Sicilia, in *Atti delle seconde giornate internazionali di studi sull'area Elima*, (Gibellina, 22-26 ottobre 1994), III, Pisa, 1385-1397.