pca

EDITORS

Gian Pietro Brogiolo (chief editor) Alexandra Chavarría (executive editor) ADVISORY BOARD Martin Carver (University of York) Giuliano Volpe (Università degli Studi di Foggia) Marco Valenti (Università degli Studi di Siena)

ASSISTANT EDITOR

Francesca Benetti

EDITORIAL BOARD

Gilberto Artioli (Università degli Studi di Padova) Andrea Breda (Soprintendenza BB.AA. della Lombardia) Alessandro Canci (Università degli Studi di Padova) Jose M. Martin Civantos (Universida de Granada) Girolamo Fiorentino (Università del Salento) Caterina Giostra (Università Cattolica del Sacro Cuore di Milano) Susanne Hakenbeck (Cambridge University) Vasco La Salvia (Università degli Studi G. D'Annunzio di Chieti e Pescara) Bastien Lefebvre (Università de Toulouse II Le Mirail) Alberto León (Universidad de Córdoba) Tamara Lewit (Trinity College - University of Melbourne) Federico Marazzi (Università degli Studi Suor Orsola Benincasa di Napoli) Dieter Quast (Römisch-Germanisches Zentralmuseum Mainz) Andrew Reynolds (University College London)

Post-Classical Archaeologies (PCA) is an independent, international, peer-reviewed journal devoted to the communication of post-classical research. PCA publishes a variety of manuscript types, including original research, discussions and review articles. Topics of interest include all subjects that relate to the science and practice of archaeology, particularly multidisciplinary research which use specialist methodologies, such as zooarchaeology, paleobotanics, archeometallurgy, archeometry, spatial analysis, as well as other experimental methodologies applied to the archaeology of post-classical Europe. Submission of a manuscript implies that the work has not been published before, that it is not under consideration for publication elsewhere and that it has been approved by all co-authors. Each author must clear reproduction rights for any photos or illustration, credited to a third party that he wishes to use (including content found on the Internet). Post-Classical Archaeologies is published once a year in May, starting in 2011. Manuscripts should be submitted to **editor@postclassical.it** accordance to the guidelines for contributors in the webpage http://www.postclassical.it

Post-Classical Archaeologies's manuscript review process is rigorous and is intended to identify the strengths and weaknesses in each submitted manuscript, determine which manuscripts are suitable for publication, and to work with the authors to improve their manuscript prior to publication.

For subscription and all other information visit the web site http://www.postclassical.it

DESIGN Paolo Vedovetto

PUBLISHER

SAP Società Archeologica s.r.l. Viale Risorgimento 14 - 46100 Mantova www.archeologica.it

PRINTED BY

Tecnografica Rossi, Via I maggio, Sandrigo (VI)



volume 3/2013

	CONTENTS	PAGES
EDITORIAL		5
RESEARCH		
M. Vohberger	Past, present and future perspectives in stable isoto- pe analysis: capabilities and constraints	7
G. Grupe	Stable isotope sourcing in physical anthropology: application of mixing models	25
K. Killgrove	Biohistory of the Roman Republic: the potential of iso- tope analysis of human skeletal remains	41
S. Inskip	Islam in Iberia or Iberian Islam: bioarchaeology and the analysis of emerging Islamic identity in Early Medieval Iberia	63
S. Hakenbeck	Potentials and limitations of isotopes analysis in Early Medieval archaeology	95
M. Marinato	Gli studi di bioarcheologia dei cimiteri medievali in Italia	113
BEYOND THE	THEME	
E. Castiglioni,	M Rottoli Broomcorn millet, foxtail millet and sorghum in North Italian Early Medieval sites	131
C. Nicosia, Y.	Devos, Q. Borderie The contribution of geosciences to the study of European Dark Earths: a review	145
S. Bertoldi	Spatial calculations and archaeology. Roads and set- tlements in the cases of Valdorcia and Valdarbia (Siena, Italy)	171
G. De Venuto	Uomini e animali nel Medioevo: recenti acquisizioni dal- l'indagine archeozoologica nelle regioni italiane del medio e basso versante adriatico	199
A. Rotolo, J.M	. Martín Civantos Rural settlement patterns in the territory of Baida (Trapani Mountains) during the Islamic period	221
M. Migliavacca	a, F. Carraro, A. Ferrarese Nelle viscere della montagna. Paesaggi pre-industriali sulla dorsale Agno-Leogra	247

DOSSIER - EMERGENZA, TUTELA E CONCESSIONI DI SCAVO IN ITALIA			
G.P. Brogiolo	Università e gestione del patrimonio archeologico in un Paese a 'tutela regolamentata'	281	
L. Malnati	Libertà di ricerca e tutela del patrimonio archeologico: una breve nota	285	
A.M. Ardovino	Qualche considerazione sulle concessioni di scavo	291	
G. Volpe	A proposito delle 'concessioni di scavo' e dei rapporti tra Università e Soprintendenze	301	
R. Zucca	ll rapporto tra Università e Soprintendenze per i Beni Archeologici nella ricerca archeologica ex art. 88 D. Lgs. 42/2004	311	
RETROSPECT			
B. Scholkmanı	n The discovery of the hidden Middle Ages: the research history of medieval archaeology in Germany	323	
PROJECT			
L. Ten Harkel	Landscapes and Identities: the case of the English landscape c. 1500 BC - AD 1086 $$	349	
REVIEWS		357	
	ing Archaeology happen. Design versus dogma - by G.P. Brogiolo	357	
M. Carver, Maki	d), APSAT 3. Paesaggi storici del Sommolago - by A. Chavar-	357	
M. Carver, <i>Maki</i> G.P. Brogiolo (e ría Arna S. Rippon, <i>Mak</i>	d), APSAT 3. Paesaggi storici del Sommolago - by A. Chavar- u ing sense of an historic landscape - by P. Marcato	357	
M. Carver, <i>Maki</i> G.P. Brogiolo (e ría Arna S. Rippon, <i>Mak</i> D.C. Cowley, R.	d), APSAT 3. Paesaggi storici del Sommolago - by A. Chavar- u	357	
M. Carver, <i>Maki</i> G.P. Brogiolo (e ría Arna S. Rippon, <i>Mak</i> D.C. Cowley, R. <i>Aerial p.</i> S. Turner, B. Si	d), <i>APSAT 3. Paesaggi storici del Sommolago</i> - by A. Chavar- u <i>ing sense of an historic landscape</i> - by P. Marcato .A. Standring, M.J. Abicht (eds), <i>Landscape through the lens.</i>	357	
M. Carver, <i>Maki</i> G.P. Brogiolo (e ría Arna S. Rippon, <i>Mak</i> D.C. Cowley, R. <i>Aerial p</i> S. Turner, B. Si <i>middle a</i> R. Skeates, C.	d), APSAT 3. Paesaggi storici del Sommolago - by A. Chavar- u ing sense of an historic landscape - by P. Marcato A. Standring, M.J. Abicht (eds), Landscape through the lens. hotographs and historic environment - by A. Porcheddu Ivester, Life in medieval landscapes: People and places in the	357	
M. Carver, <i>Maki</i> G.P. Brogiolo (e ría Arna S. Rippon, <i>Mak</i> D.C. Cowley, R. <i>Aerial p</i> S. Turner, B. Si <i>middle a</i> R. Skeates, C. <i>chaeolo</i> N. Christie, A.	d), APSAT 3. Paesaggi storici del Sommolago - by A. Chavar- u ing sense of an historic landscape - by P. Marcato A. Standring, M.J. Abicht (eds), Landscape through the lens. hotographs and historic environment - by A. Porcheddu lvester, Life in medieval landscapes: People and places in the loges - by M. Camerin McDavid, J. Carman (eds), The Oxford handbook of public ar-	357	
M. Carver, <i>Maki</i> G.P. Brogiolo (e ría Arna S. Rippon, <i>Mak</i> D.C. Cowley, R. <i>Aerial p</i> S. Turner, B. Si <i>middle a</i> R. Skeates, C. <i>chaeolo</i> N. Christie, A. <i>classica</i> N. Christie, <i>The</i>	d), APSAT 3. Paesaggi storici del Sommolago - by A. Chavar- u ing sense of an historic landscape - by P. Marcato A. Standring, M.J. Abicht (eds), Landscape through the lens. hotographs and historic environment - by A. Porcheddu Ivester, Life in medieval landscapes: People and places in the iges - by M. Camerin McDavid, J. Carman (eds), The Oxford handbook of public ar- gy - by F. Benetti Augenti (eds), Vrbes Extinctae. Archaeologies of abandoned	357	
M. Carver, <i>Maki</i> G.P. Brogiolo (e ría Arna S. Rippon, <i>Mak</i> D.C. Cowley, R. <i>Aerial p</i> S. Turner, B. Si <i>middle a</i> R. Skeates, C. <i>chaeolog</i> N. Christie, A. <i>classica</i> N. Christie, <i>The</i> <i>rical per</i> C. Citter, <i>Archa</i>	d), APSAT 3. Paesaggi storici del Sommolago - by A. Chavar- u ing sense of an historic landscape - by P. Marcato A. Standring, M.J. Abicht (eds), Landscape through the lens. hotographs and historic environment - by A. Porcheddu lvester, Life in medieval landscapes: People and places in the loges - by M. Camerin McDavid, J. Carman (eds), The Oxford handbook of public ar- gy - by F. Benetti Augenti (eds), Vrbes Extinctae. Archaeologies of abandoned I towns - by A. Chavarría Arnau fall of the western Roman Empire. An archaeological and histo-	357	
 M. Carver, Maki G.P. Brogiolo (e ría Arna S. Rippon, Mak D.C. Cowley, R. Aerial p S. Turner, B. Si middle a R. Skeates, C. chaeolog N. Christie, A. classica N. Christie, The rical per C. Citter, Archa grammi S. Ciglenečki, Z 	d), APSAT 3. Paesaggi storici del Sommolago - by A. Chavar- u ing sense of an historic landscape - by P. Marcato A. Standring, M.J. Abicht (eds), Landscape through the lens. hotographs and historic environment - by A. Porcheddu lvester, Life in medieval landscapes: People and places in the ages - by M. Camerin McDavid, J. Carman (eds), The Oxford handbook of public ar- gy - by F. Benetti Augenti (eds), Vrbes Extinctae. Archaeologies of abandoned I towns - by A. Chavarría Arnau fall of the western Roman Empire. An archaeological and histo- spective - by V. La Salvia eologia delle città toscane nel Medioevo (V-XV secolo). Foto- di una complessità - by F. Giacomello 2. Modrijan, T. Milavec, Late Antique fortified settlement To- grad near Kobarid. Settlement remains and interpretation - by	357	
 M. Carver, Maki G.P. Brogiolo (e ría Arna S. Rippon, Mak D.C. Cowley, R. Aerial p S. Turner, B. Si middle a R. Skeates, C. chaeolog N. Christie, A. classica N. Christie, The rical per C. Citter, Archu grammi S. Ciglenečki, Z novcov g J. Saral S. Lusuardi Sier sepolcre 	d), APSAT 3. Paesaggi storici del Sommolago - by A. Chavar- u ing sense of an historic landscape - by P. Marcato A. Standring, M.J. Abicht (eds), Landscape through the lens. hotographs and historic environment - by A. Porcheddu lvester, Life in medieval landscapes: People and places in the ages - by M. Camerin McDavid, J. Carman (eds), The Oxford handbook of public ar- gy - by F. Benetti Augenti (eds), Vrbes Extinctae. Archaeologies of abandoned I towns - by A. Chavarría Arnau fall of the western Roman Empire. An archaeological and histo- spective - by V. La Salvia eologia delle città toscane nel Medioevo (V-XV secolo). Foto- di una complessità - by F. Giacomello 2. Modrijan, T. Milavec, Late Antique fortified settlement To- grad near Kobarid. Settlement remains and interpretation - by	357	

Rural settlement patterns in the territory of Baida (Trapani mountains) during the Islamic period

ANTONIO ROTOLO JOSÉ M. MARTÍN CIVANTOS Profesor Clavera, 18071 Granadá. antorotolo@gmail.com, civantos@ugr.es

Dept. of Medieval History and Historiographical Sciences and Tecniques, University of Granada, Calle

The purpose of this article is to discuss the settlement patterns concerning the territory of Baida (Trapani Mountains) between the 7th and the 12th c., with a particular focus on the Islamic period. The field activities of the Idrisi Project-ARPATRA (2009-12) permitted the documentation, starting from the Islamic period, of a high density of settlements (villages, farms and scattered single houses) that coexisted in a reduced geographical space (10 km²). The settlement choices seem to match certain characteristics peculiar to the Islamic social formation and to indicate an intensive exploitation of the hydro, agricultural and pastoral resources. Keywords: Islamic Sicily, rural settlement patterns, collective fortified granary, casale/rahl

Scopo di questo articolo è discutere gli schemi insediativi nel territorio di Baida (Trapani) tra VII e XII secolo, specialmente nel periodo islamico. Le attività del progetto ARPATRA (2009-12), hanno permesso la documentazione di una alta densità di insediamenti nel periodo islamico (villaggi, fattorie e case sparse) in uno spazio geografico ridotto (10 kmq). Le scelte insediative sembrano rispondere a certe caratteristiche peculiari alla formazione sociale islamica e ad una volontà di sfruttamento intensivo delle risorse idriche, agricole e pastorali. Parole chiave: Sicilia islamica, schemi insediativi rurali, granaio fortificato, casale/rahl

1. Introduction

The Idrisi Project-ARPATRA¹ studies landscape and rural settlements in the Trapani Mountains area during the Middle Ages, with a particular focus on the Islamic period². Our research originates from the assumption that present-day landscape is the product of a cumulative stratigraphic process, within which is possible to identify and interpret the

¹ The ARPATRA Project, acronym that stands for "Archeologia del Paesaggio nei Monti di Trapani", is part of the broader Idrisi Project, which studies western Sicily between the Byzantine and the Suebian periods. ² IGM: f. 248, II, SE; f. 248, II, SO; f. 248, III, SE; f. 257, I, NE; f. 257, I, NO; f. 257, IV, NE and fig. 1.

beyond

the theme

traces left by past landscapes, and therefore also by the societies that created and managed them³. Such mind-set is based on a complex take on material registry, which is the topic of our study. It comprises workrelated spaces and processes, as well as the relationship between society and nature, the latter being the set in which the extraction and the exploitation of environmental resources take place. Landscapes are built and layered starting from such relations, via a cycle of transformation and acquisition of ecosystems that bears socio-economic, territorial and symbolical implications. In consideration of all this, every society physically expresses itself in its own way, according to its strategies and choices, i.e. depending on the diverse forms of social organisation and interaction (García de Cortázar 2004). In fact, if, on the one hand, the environment does influence the development of social communities, on the other hand the latter are able to mould nature and even make it undergo drastic changes that can be read and interpreted archaeologically. The decision to work in a region such as Sicily, where apparently the original Arab-Islamic landscape has completely disappeared, embodies a challenging task. However, although the transformations which occurred during the Suebian-Norman times had a profound impact on the Sicilian scenery, a few feeble traces left by the previous period are still distinquishable.

J.M.

2. The territory

The area which is the subject of our investigation roughly corresponds to the boundaries outlined in a *privilegium* supposedly issued by Frederick II in 1241 (both the authenticity and the dating of the deed have been questioned)⁴.

Within this perimeter, between 2009 and 2012 we carried out three archaeological prospection campaigns, following both a systematic and a non-systematic method⁵. The principal aims of the survey were: the identification on the ground of the *casalia* mentioned in archive documents; the understanding of the physical, social, economical and juridical features characterising the *casale/raḥl*; a chronological assessment (origin, transformation and desertion) of the settlement network and the study

³ Martín Civantos 2006, 2008, 2011; Brogiolo 2007.

 $^{^4}$ State Archive – Palermo, Notary G. Comito, I stanza, vol. 846, 1445 ott. 1, cc. 33r-34v. Critical edition in MAURICI 1997 and BRESC, BRESC 1977, pp. 349-350. See also Rotolo *et alii* (in press) and Rotolo 2012-2013.

⁵ ROTOLO 2012-2013, ROTOLO, MARTÍN 2012 e MARTÍN *et alii* 2011.

of relations between villages and territory, taking into account the modifications which affected the landscape during the transition from the late Roman-Byzantine to the Suebian Age. The area in question measures 168 km² in total, of which we have so far covered 9.8 km², identifying 69 sites dating from Palaeolithic up to modern times.

The sub-region of Baida has been chosen as the subject of this paper due to its high concentration of recorded settlements, and has been delimited according to its morphological characteristics (fig. 1). It repre-



Fig. 1. The district of Baida in the Trapani Mountains.

sents the first territory to be examined through an intensive systematic survey, coupled with a detailed landscape study based on potential land evaluation, spatial analyses and ethnographic investigation. Two of the sites recorded in April 2012 served also as pilot excavations⁶.

The district stretches across a surface of approximately 10 km², right at the foot of Monte Sparagio, in a position falling outside the main network of ancient settlements. It is also quite distant from the coast, but can count on the presence of numerous water sources. It was densely inhabited throughout the Islamic and Norman periods, in accordance with a population scheme that will be further clarified in the course of this paper. The aforementioned mountain, whose calcareous and calcareous-dolomitic nature, typical of a porous karst formation, provides a massive water supply, represents the main landscape feature⁷. The encounter between the acclivous slopes characterising this calcareous morphology and the impermeable terrigenous layers of Miocene origin produces relevant natural springs. In addition to the extremely rich spring of Baida-Testa dell'Acqua, other minor perennial (Baida-Castello, Ciacca di Baida and Case Lentini) and seasonal water-sources can be found within the territory.

Just below Monte Sparagio (1110 mamsl) a succession of brown soils start showing more or less distinctive vertic traits that go as far as the calcareous elevation of Monte Ramalloro. In the northern part of the Baida district, these brown and brown-vertic soils subside to the red earths first and further on – at Terre Nove, located in the vicinity of the Sarcona torrent – to the alluvial sandy soil called *terra rinusa* or *zabbuluni grassu* by the locals, who greatly appreciate its agricultural potential⁸. The area displays two principal productive developments: one pastoral, revolving around bovine and ovine livestock, and the other agricultural, mainly consisting of cereal, viticulture and olive-growing produce, depending on the soil characteristics.

A.R.

3. The sites

In the proximity of the Baida spring, we identified a massive spread (about 18 ha) of pottery fragments, interpreted as an open Islamic settlement (Site 05) (figs. 1-5). The presence inside the perimeter of small-

⁸ Our main contacts on the territory have been: Sebastiano Stabile, Vincenzo Caleca, Salvatore Puma and Camillo Finazzo. We referred to Sebastiano Stabile for the information regarding the "*terra rinusa*" or "*zabbulune grasso*".



 $^{^{\}rm 6}$ The records from both sites are currently being completed.

⁷ GINI, MISURACA, 2009, pp. 103-106 and INGV 2007.



Fig 2. Site 05 and Site 10 from Pizzo Monaco.



Fig. 3. Pizzo Monaco from west (Site 04 e Site 05).

er areas with scarcer materials led us to think that the place was discontinuously populated, at least in terms of density. It probably featured specialised artisanal corners (as the recovery of iron slag from Site O5 – UT O1 seems to suggest). F. D'Angelo (1981) had instead signalled the occurrence of ceramic materials exclusively in a vineyard forming part of the site. Immediately downhill from there, we have been able to locate the remains of a structure consisting of a couple of walls built using calcareous rocks laid with lime and wedged with bricks. The detection of a curve, in the form of an apsidal basin, together with the eloquent toponym '*la chiesolazza*'⁹, by which the elder locals indicate the spot, cautiously hints to its possible function as a church.

The finds from Site 05 (fig. 4), which has also been the subject of one of the two exploratory digs carried out *in loco*, allow dating of the settlement from the mid-10th century, or perhaps slightly earlier, based on the presence of sherds belonging to pots with sub-vertical rims and to glazed high-carenated basins (Rotolo 2011, 2012-2013), in addition to an unglazed fragment of lamp *a coupelle*, together with a *follis* issued by Theophilos (829-842). Moreover, a small group of materials reveals an earlier phase of occupation, probably dating back to the Byzantines (6th-7th century). The final spell of occupation, as shown by the ceramics, most likely corresponds to the second half of the 12th Century, the same dating reserved for "*la chiesolazza*", judging from the building technique used¹⁰.

Within the same site, through the occasional sections excavated on the flank of a hill during the planting of olive trees about ten years ago (according to local oral sources), we were also able to record as many as 51 burials covered with roof-tiles and, less frequently, with stone slabs. In a few cases it was even possible to observe the position of the bodies, laid on one side with the head facing Mecca, thus indicating an Islamic origin for the ritual (Bagnera, Pezzini 2004, pp. 271-282, 300-301) (fig. 5).

In the Azzalora Valley, at a distance of barely 200 metres from Site 05, there are four more minuscule agglomerates of pottery fragments (Sites 53, 54, 55 and 56), interpreted as scattered single houses. The proposed dating is a generic 'Islamic or Norman' attribution, due to the scarcity of recovered evidence. Their closeness to Site 05 nonetheless could be seen as further proof of the then high density of population, conforming to a pattern of capillary distribution across the area in both villages and single units.

⁹ Used in the local dialect as a pejorative form of 'little church'.

 $^{^{10}}$ The techniques employed, although yet to be analytically studied, appear directly linked to the building methods observed at the seigniorial fortress on Site 10, which is clearly Norman, see *infra*.



Fig. 4. Selection of sherds from Site 05: 1) Imitation of Hayes type 91C; 2) Glazed carenated basin with plain rim and vertical walls; 3) Extremely externally-thickened plain rim of a semi-spherical glazed basin, slightly carenated on the outside; 4) Rounded sub-vertical rim of a globular pot with calcite inclusions; 5) Rim with wrought external band of *amphora*; 6) Combed roof-tile; 7) Elliptical handle with deep middle linear dent; 8) Lamp *a coupelle*: grey in section and oxidised surface, unglazed with calcite inclusions.



Fig. 5. A burial from Site 05. Grave covered with slabs, the femur is visible.

In the western part of the valley and near the Case Lentini and the Azzalora Spring, another pottery assemblage (measuring 1.78 ha), situated between 405 and 380 mamsl, has been labelled as Site 42, which probably comprised a large farm or a tiny hamlet.

Advancing from Site 05 towards Balata di Baida, after 900 m, we encounter the Castle of Baida, which is a typical example of a late-medieval fortified *baglio*¹¹. A further 200 metres to the North, on the top of a rock, stands the very inaccessible Site 10, a small Norman stronghold locally known as '*Castiddu Vecchio*'¹² (Site 10 – UT 08). Right below it, the recovery of sparse material led to the conclusion that an Islamic and Norman village was once erected there (figs. 1-2, 6). The lower limit to this site, which was also reported by D'Angelo (1981, 67-68), is constituted by a perennial spring at 320 mamsl on the contour line. Along the lower border of an olive tree grove, we were able to detect stone debris – probably the consequence of collapsing houses – and very few traces of wall alignments. They were associated with diagnostic materials roughly dating from the early 10th to the late12th century (perhaps even

¹² Meaning "Old Castle" in Sicilian.



¹¹ A *baglio* is the basic cell around which the *latifundium*-based feudal administration of Sicilian countryside was organised from the late Middle Ages up until the mid 1900's. It served as collecting point for the agricultural and pastoral produce. It usually consists of an enclosed and protected structure running along the four sides of a large internal court, which provides access to all the different living and productive areas situated inside the building.



Fig. 6. Ciacca di Baida (Site 12 and Site 52) and Baida (Site 10) from southeast.

crossing over into the 13th century) and with some combed roof-tiles likely indicating a previous Byzantine phase (fig. 7).

On the upper level — where the stronghold is located¹³ — a little plain (less than 700 m²) is seemingly enclosed by a fence and contains a cistern, a defensive structure and a cave. According to our interpretation, Site 10 was an open settlement probably dating from the beginning of the 10th century, although with a scarcely discernible Byzantine or early medieval phase, and the addition of a seigniorial castle in Norman times.

Going eastwards for 500 metres along the path traced by the *Regia Trazzera*, which followed the southern slope of Monte Sparagio from the Castle of Baida and connected the area to the Custonaci - Trapani - San Vito neighbourhood, at between 310 and 290 mamsl, an occurrence of pottery fragments (Site 12) extending over 2.5 ha has been recorded (figs. 1, 6). D'Angelo had once again preceded us in the identification of *"frammenti di ceramica dalla seconda metà dell'XI secolo fino alla seconda metà del XII secolo"* (D'Angelo 1981, p. 68) in the area. Based on the materials, we could now anticipate the dating to at least the second half of the 10th century (fig. 8). In fact, on the same site a few sherds of late African Red Slip wares and a single combed roof-tile were also collected. They all suggest an occupation prior to the mature Islamic period.

¹³ The rock can be reached only by flanking it from the East and then climbing it on the North side.



Fig. 7. Selection of sherds from Site 10. 1) Vertical rim of carenated, low-walls basin, glazed; 2) Vertical rim of carenated basin with low walls, glazed; 3) Inclined and slightly everted and thickened rim of carenated basin, glazed; 4) Plain rim, externally thickened, of carenated basin, glazed; 5) Everted rim with a wrought external band of *amphora*; 6) Handle of *amphora*, elliptical in section with middle longitudinal dent, traces of brownish decoration; 7) Combed roof-tile; 8) Everted rim of globular pot with calcite inclusions; 9) Pot or saucepan, glazed, with slightly everted and carenated rim.

230



Fig. 8. Selection of sherds from Site 12. 1) Carenated rim of *amphora* with traces of linear decoration in red; 2) Rounded rim of *amphora* with vertical neck; 3) Handle with *apicatura*; 4) Slightly carenated rim of *amphora*.

About 800 metres down the valley from Site 10, heading towards Balata di Baida on the *Regia Trazzera* between San Vito and Segesta, a new group of fragments constitute Site 52. This settlement, which was quite large (almost 5 ha), is limited by the beds of two streams, but does not display any water source at present¹⁴. Once more we are inclined to consider it a village showing a chronology going from the early 10th to the mid 12th century (figs. 6, 9).

Lastly, on top of Pizzo Monaco (Site O4), the relentless D'Angelo had recorded at the end of the 1970's a 12th century "refuge site"¹⁵. Returning to the site during our surveys, we noticed how the materials were spread not only as reported by the aforementioned reference around the peak (UT O1), but also on the narrow and practically inaccessible gulch below it (UT O2) and on a minuscule spur of rock at SW (UT O3) (figs. 1, 3, 10).

The UT 01 is situated at an altitude of between 450 and 490 mamsl and is surrounded by a wall 1.5 metres in width – built using calcareous stones facing front and dry-lay with rubble filling – of which only few traces are still visible. Inside the fortification, which encloses a sub-triangular space, and partially even outside the wall, there are limestone and roof-tiles debris, a typical occurrence in structural collapses (fig.

¹⁴ Some among the local farmers remember the existence of an old spring, now vanished. Others, in contrast, are certain there was never any in the vicinity of the site.

 $^{^{15}}$ D'ANGELO 1979, 1980 and 1981, p. 67. We understand that the scholar had then explored only the summit of the elevation, UT 01.



Fig. 9. Selection of sherds from Site 52. 1) Plain base of glazed glass/cup; 2) Slightly everted and externally thickened rim of pot with calcite inclusions; 3) Extremely everted rim of pot with calcite inclusions; 4) Triangular-in-section rim of *amphora* with neck *a tulipe*; 5) Cylindrical-in-shape lid handle; probably belonging to a pot, based on its firing degree and calcite-rich fabric.



Fig. 10. 3D graphic elaboration of Pizzo Monaco from south (Site 04, UT 01, UT 02 and UT 03).

11). The alignments of these walls are difficult to determine, due to their resemblance to the ruins. In spite of such obstacles to our interpretations, we were nevertheless able to formulate a plan of the settlement and to identify at least 40 interior and 9 exterior structures (fig. 12). Number 25 was partially excavated in the spring of 2012. They appear to be cells, with a roughly square shape and a surface that in most cases varies between 10 and 20 m². They do not appear to follow a precise scheme but rather to adapt to the morphology of the site, taking advantage of the elevations created by the emergence of the calcareous bank running underneath.

A.R., J.M.

4. Discussion

The sites described above all present similar materials and chronology. Their occupation began at some stage during the 10^{th} century – a more precise dating is made difficult by the scarce knowledge of early medieval finds for western Sicily – and lasted until the second half of the 12^{th} century, when, according to the archaeological data, a general desertion of the region appears to have occurred. In some cases the presence of late African Red Slip ware and its imitations suggests an occu-



Fig. 11. Pizzo Monaco (Site 04 UT 01), internal wall of a cell and collapsed material.

pation dated to the $6^{th}-7^{th}$ centuries, which, at least in the case of Site 05, may have continued during the $8^{th}-9^{th}$ centuries.

The landscape organisation shows some features that are keys to comprehending the "social formation" characterising these lands during the Middle Ages. First of all, it is worth noting the astonishing density of population occurring in Islamic times starting from the beginning of the 10^{th} century. Four open villages (Site 05, 10, 12, and 52), a couple of which are of a notable size (Site 05, 10 and 52), a refuge-site (Site 04) and four scattered single houses (Site 53, 54, 55 and 56) plus a farm (Site 42) were all detected within a barely 180 ha portion of land. In contrast, in ancient times the territory seems to have been quite deserted,



Fig. 12. Sketch-planimetry showing the structures identified on the top of Pizzo Monaco (Site 04, UT 01).

with the exceptions of Site 52 (originally a small Roman farm), Site 10 (where a sherd of black-glazed Hellenistic *skyphos* and few flint fragments were found) and Site 44 further down in the valley, where some debris and burnt clay suggested the possible existence of an imperial period Roman furnace.

The villages (Site 05, 10, 12 and 52) and the farm (Site 42) share the same elements of geographical placement: they are all hillside sites, closely connected to the presence of water sources. The systematic association of Islamic settlement with natural springs is an occurrence frequently emerging in other case-studies in the Idrisi Project-ARPATRA zone of interest.

We also observed how larger pottery assemblages are usually linked to springs with a higher capacity. In particular, the evidence – tentatively attributed to the activity of an Islamic settlement (Site 05) – recorded around the spring of Baida¹⁶ (surely the principal among those examined, and probably one of the richest within the Province of Trapani), reaches 18 ha in extent and is clearly the most extensive site within the territory.

We are referring to a group of sites of which the choice of location appears to be mainly dictated by the prospect of exploiting water sources, which were to be used for the practice of an irrigational agriculture – a conclusion totally in line with the results obtained from our soil surveys and land evaluation analyses¹⁷. We are yet to determine which plants were cultivated and in which cases irrigation was used as the preferred technological solution¹⁸; however, the presence of some millstone fragments seems to point at the pivotal role played by grain production – whether rain-fed or eventually irrigated – throughout the Islamic and Norman periods.

It was not possible to detect any internal hierarchy among the sites. Their settlement pattern rather emerges as the expression of a community bearing a high degree of inner cohesion with no particular social stratification, and whose production was autonomously organised on the bases of an integrated use of agricultural, pastoral and hydro-resources in order to accomplish an intensive and organic exploitation of all assets.

It is within this scheme that we believe the refuge-site of Pizzo Monaco (Site O4) has to be interpreted. As previously explained, it consists of a fortified perimeter enclosing small one-celled units in order to protect

 ¹⁶ This spring, according to oral contributions provided by Vincenzo Stabile and Camillo Finazzo based on a recollection of their fathers' tales, held an even greater capacity up until the early 1900's.
 ¹⁷ ROTOLO 2012-2013, pp. 130-226, 688-742, 763-769.

¹⁸ We hope the archaeobotanic analyses in 2013 will prove useful at this respect.

them. Both the rampart and the buildings were erected using the same construction technique (dry-lay calcareous stones with rubble filling). Each structure was covered by a roof of tiles, and was similar to the adjacent ones in size and shape. Despite the fortification, there are no traces alluding to the existence of a lord or to any kind of social hierarchy at least originally, although it is possible that one family ended up owning various cells. The finds are constituted mostly by storage ware sherds, in addition to few fragments of table and cooking ware¹⁹ (fig. 13). The material record (fig. 13), suggests that this site should be dated to towards the end of the Islamic period, in between the early 11th century and the Norman Conquest. All the evidence on the site appears to have been systematically destroyed, as if it was subjected to a carefully planned dismantling rather than being the natural consequence of prolonged abandonment.

The people in charge of the works were probably the ones living in the nearest site of the fountain of Baida (Site 05), but it is also likely that the other settlements participated in some capacity. The huge amount of work entailed seems to have been organised collectively by a peasant community, rather than being directed by a single landlord or a central administration.

How is a settlement of this kind to be interpreted? Reviewing the available data, the site is fortified and located on top of a peak; it has a short chronology, concentrated across the 11th century; it does not seem to be a permanent living place, as cooking and table ware sherds are scarcely attested and as it has different settlement patterns compared to the other Islamic period villages; it seems to be the product of a barely stratified social group, as all the single cells are similar in structure, building technique and shape (the technique is the same used for the enclosure wall). There are no indicators pointing to the presence of a landlord or of the state, so it may be seen as the result of the concentration of a notable workload carried out by a peasant community living nearby. If a community needs to build such a defensive structure, it may reasonably be assumed to be due to the existence of a threat. In addition, in order to erect it, this community must have sufficient autonomy. internal cohesion and strength to succeed in completing the construction. The short period of occupation, the sudden disappearance and the systematic destruction seem to suggest that the community was, in some way, defeated by a new social order.

¹⁹ In addition to qualitative observations based on survey materials, we are waiting for the study of finds from the excavation to be completed in order to provide clearer quantitative data.



Fig. 13. Selection of sherds from Site 04. 1) Glazed basin with slightly everted rim, semi-spherical in shape with curved walls; 2) Basin with slightly everted rim, flat and dented on top, whitened surface; 3) Ring-shaped, concave base of glazed basin;
4) Rim of *amphora*, triangular in section with externally wrought band; 5) Rim of *amphora*, rounded with externally wrought low band; 6) Vacuolata roof-tile.

This settlement displays peculiarities that may not be simply explained by the definition of "refuge site". Given the lack of direct archaeological comparisons in Sicily, we can find particularly significant similarities in medieval written sources on North African collective fortified granaries; other references come from some archaeological findings in *Al-Andalus* and from the toponyms listed in the recently published *Book of Curiosities*.

The topic of collective fortified granaries is an interesting one, which is currently absent from the archaeological debate in Italy, and therefore deserves discussion. The study of the subject started — with a distinctive ethnographic approach — in North Africa at the beginning of the

1950's. Several scholars, mainly French, were able to examine and classify a good number of granaries mostly in Tunisia and Morocco, where similar structures had been built up until the colonial occupation by the French in 1912²⁰. The typologies known vary depending on their location and on the degree of sedentary lifestyle reached by the populations that made them²¹. The instances currently uncovered as regards Africa, however, do not date before the 16th century²². As recorded in documentation and also in examples of modern *igoudar* (plural of *agadir*), constituent elements can be: one or more cisterns, a forge, a stable, a meeting room and sometimes even a small mosque (De Meulemeester, Matthys 1998, p.164). A collective fortified granary holds two main functions of protection of the community. On one hand it permanently allows "de garder en sécurité les éléments de subsistance du groupe communautaire", on the other hand, "en temps de guerre, l'établissement sert de lieu de refuge temporaire aux habitants" (Benhima 2003, p. 108).

Even though these fortified buildings and their supply storage function are attested in the Maghreb since the Middle Ages (Benhima 2000), archaeologists have yet to identify a medieval collective fortified granary in North Africa. The only ones known at present are those in the Iberian Peninsula. Concerning *Al-Andalus*, the existence of this kind of structure had already been suspected by A. Bazzaná in the 1980's (Bazzaná 1980), and was then confirmed by the identification of the *granero fortificado* at Cabezo de la Cobertera (Murcia) dating to the 13th century (De Meulemeester, Matthys 1995 and 1998), the most ancient known at the time. The Cabezo de la Cobertera finds a precise parallel in the Castell d'Almizra. The latter has been documented by J. Torró and J. Segura (Torró, Segura 2000), who also suggested that the cell-units found at Castell de Bairen and at Castell d'Onda belonged to collective fortified granaries (Torró, Segura 2000, pp. 158-159, figs. 7-8).

Despite the ichnographic differences and similarities with the aforementioned samples and with those from North Africa, the presence of granaries in Sicily during the Islamic period is directly displayed in a map recently discovered and still undergoing study: the map of Sicily attached to the *Kitāb Gharā'ib al-funūn wa-mulaḥ al-'uyūn*²³. According to J. Johns' distinguished opinion, the manuscript was redacted in Egypt between the 12th

 $^{^{20}}$ The principal works from this first phase of study are: Montagne 1929; Jacques-Meunié 1951 and Despois 1953.

²¹ DE MEULEMEESTER, MATTHYS 1998 and BENHIMA 2003, pp. 110-113.

²² CRESSIER 1995 p. 187 and 1998 p. 135.

²³ Ms. Arab. c. 90, f. 32r-33v, Bodleian Library, Oxford. It can be found published in its entirety on *http://cosmos.bodley.ox.ac.uk/hms/home.php.*

and the 13th centuries as a recompilation of an original text datable not later than 1050 (Johns 2004, pp. 410-411). It represents a priceless source, which has already provided about 50 new toponyms for Islamic Sicily (Johns 2004, p. 415). Their identification process has been slowed down by the fact that «è una copia, probabilmente solo la più recente, di una serie di copie che risale a un prototipo perduto che [...] era composto da una lista di toponimi, a sua volta copiata una o più volte» (Johns 2004, p. 415). In addition, the map does not always correctly reproduce the geographical position of the toponyms, and exhibits several misprints, perhaps caused by its first version being drawn from a written text integrated from several different itineraries (Johns 2004, pp. 415-416). This could also help explain why on the map some places are signalled following a straight line inside the perimeter of the island, as if retracing a written route; in the same way, along the coastline, maritime distances are reported together with the toponyms. It is no surprise then to find so many errors occurring, such as the repetition of certain names (as if they were actually mentioned in an itinerary) and the misplacing of other localities, e.g. Mount Etna, which is positioned on the western shore.

Among the never-before-referenced localities, the map cites as part of a supposed itinerary *Gabal Abī l'Ahrā'*, which translates as «the mountain of the father of [i.e. 'of the many/several'] granaries» (Johns 2004, pp. 419, 442 [n. 71] and fig. 6, n. 71). The direct mention of a settlement model of this type in Sicily before 1050 could itself be proof to the existence of a fortified granary, regardless of its exact location. Looking at the map and following the same route, the toponym immediately above is 'Aqabat al-Bādyā', i.e. «pass of al-Bādyā» (Johns 2004, p. 442 [n. 70] and fig. 6, n. 70). Other place names are: 'Ra's T.b.rīs', «the cape of T.b.rīs» (Johns 2004, p. 442 [n. 69] and fig. 6, n. 69), preceding the «pass of al-Bādyā»; 'Qal'at al-L.b.lūț', «the stronghold of al-L.b.lūț» (Johns 2004, p. 443 [n. 72] and fig. 6, n. 72) and 'Ayn al-Makāwiriya' (?), «the spring of al-Makāwiriya (?)» (Johns 2004, p. 443 [n. 73] and fig. 6, n. 73), all situated right below 'Gabal Abī l'Ahrā'. This trail heads towards the coast, nearing the toponyms of S. Vito, Trapani and Mazara²⁴.

In proximity to the aforementioned 'Ayn al-Makāwiriya' (?) but further inland, we find ' $\hat{G}abal$ 'Ayn al-Bay $d\bar{a}$ ' «the mountain of the spring of Baida»²⁵ then, quite close to the former and probably due to a misprint, 'al-Bay $d\bar{a}$ ' huttharphi lbn al-Ma $d\bar{g}ula$ ' «Baida - the district of Ibn Ma $d\bar{g}ula$ » (Johns 2004, p.

²⁴ JOHNS 2004, p. 439, [nn. 7, 9 e 10] and fig. 6, nn. 7, 9 and 10.

 $^{^{25}}$ Based on the numbers assigned to the place, we are inclined to think Jeremy Johns considered it as part of a different itinerary, regardless of its closeness to the other toponyms displayed by the map. JOHNS 2004, p. 446 [n. 132] and fig. 6, n. 132.

446 [n. 130] and fig. 6, n. 130) and '*Gabal'Ayn al-Baydā' wa-smuhu mundamig'* (?) «the mountain of the spring of Baida spring and its name sounds familiar (?)» (Johns 2004, p. 446 [n. 131] and fig. 6, n. 131).

This may not simply represent an intriguing coincidence, although we must note that the toponym "Baida" is quite common in Sicily (e.g. near Palermo there is neighbourhood called Baida, which may be a valid candidate). There are hints that could justify the correspondence of our hypothesised fortified granary at Pizzo Monaco to the name 'Gabal Abī l'Ahrā'. First of all, the documented site shows a particular structure that can clearly refer to this kind of complex (as also seems to be confirmed by preliminary data from excavations). Secondly, the presence of a toponym such as 'Ra's T.b.rīs', «the cape of T.b.rīs», makes a coastal or sub-coastal placement plausible. Thirdly, the closeness of said itinerary to the sea, if not casual, puts its reference-area East of S. Vito and Trapani, which is exactly the region of our study. Fourthly, 'Gabal 'Ayn al-Baydā' «the mountain of the spring of Baida», 'Gabal'Ayn al-Baydā' wasmuhu mundamiá' (?) «the mountain of the spring of Baida and its name sounds familiar (?)»²⁶, and perhaps even 'Agabat al-Bādyā', «pass of al-Bādyā»²⁷, could all properly fit within the territory, if identified with Baida. It is worth remembering at this point that a 'Baida Spring' and a pass of Baida ('portella di Baida' – giving access to a royal way that leads to S. Vito) already exist, and that the term 'Baida' serves to indicate the entire district, the early medieval *baglio* and other micro-toponyms too. We are at a loss for hypotheses regarding either '*Ra's T.b.rīs*', «the cape of T.b.rīs» and 'Qal'at al-L.b.lūt', «the stronghold of al-L.b.lūt», while 'Avn al-Makāwiriya' (?), «the spring of al-Makāwiriya (?)» could show a feeble assonance with the area of Macari, which refers to the town of S. Vito lo Capo. Finally, it is interesting to mention the toponym 'al-Bayda' hutt Ibn al-Maģūla' «Baida - the district of Ibn Maģūla», which may suggest some kind of land concession.

Leaving aside the issue of identifications, which although seductive can also be extremely misleading, we remain with the direct documentary attestation of an Islamic granary in Sicily and our preliminary hypothesis interpreting the site at Pizzo Monaco as a collective fortified granary.

The completion of such structure, unique in Sicily so far, makes sense only if we accept the theory of a close-knit Islamic peasant community.

 $^{^{26}}$ Preliminarily linked by Johns to the Baida spring at the foothill of Monte Cuccio, near Palermo. Johns 2004, p. 446 [n. 131].

²⁷ *Al-Bādyā* not *al-Baydā*'; even though at times we heard local farmers switching the pronunciation of 'Baida' with 'Badia'. This is also quite frequent in Spanish toponymy and its transformations.

Its dating can be to some extent determined by following the logic behind it: an existing seigniorial power would not allow peasants to freely manage the hoarding and storing of food provisions, let alone have a fortified space at hand. A collective fortified granary where each family/cluster corresponds to a cell, proves the existence of a fairly strong and autonomous peasant community, whatever the nature of their internal bond. In addition to this it may indicate a hazard which existed for the community, from which they were protected by a collective refuge for the people and for their means of subsistence.

Slightly different techniques of storage, but attributed to grain, have left traces in the late medieval documentation collected by H. Bresc. In 1182 in the surroundings of the village of Belluino, in the Archdiocese of Monreale, a *monticulum fovearum* (*kuddiāh al-maţāmir* in Arabic) is mentioned, probably derived from the former Islamic period tradition. Storage pits appear pretty common in late medieval Sicilian written documentation, and appear tightly bound to grain monoculture and trade (Bresc 1979).

The individual stockrooms of Pizzo Monaco may not only have been used for storing cereals. On one hand the lithologic composition of Pizzo Monaco, characterised by calcilutite and calcarenite, would have made the excavation of pits (which are attested in different areas of Sicily at least from the 12th century: Bresc 1979; Arcifa 2008) extremely difficult. On the other hand, the high incidence of storage ware suggests that the means of subsistence of the peasant groups might have been, at least partially, stored in vessels. Moreover, the site of Pizzo Monaco, as with every structure of this type, would have offered refuge to the population and their herds in case of need.

The territory of Baida experienced a change in organisation during the Norman period. The most tangible sign of this transformation was, together with the disappearance of the site at Pizzo Monaco (Site O4), the appearance of a fort on the rock overlooking the village of the Castle of Baida (Site 10). This is a type of fortification complying with different requirements than the ones previously illustrated, in order to meet the needs of a new hegemonic social formation such as the Norman one. It is important to stress that we are not only speaking about continuity or discontinuity between the Islamic and the Norman period, since the village patterns lasted without noticeable changes for several decades. We are also trying to identify the patterns of transformation and contrast between the two societies. The stronghold originated with the purpose of controlling both the activity of local communities and the commercial routes of the *trazzere* (dirt tracks). The Islamic communities, that were once able to express their autonomy by building a structure such as the one at Pizzo Monaco, were

now most likely under the domain of a lord, who physically expresses his power in the monumental shape of a castle. He now supervised the flow of people and goods along the *trazzere*, as well as production (both agricultural and pastoral), and his surplus was managed according to different criteria. Following a period of unequal coexistence, the never-resolved friction between the two social formations reveals itself through the collapse not only of the whole production system, but also of the network of open settlements (as attested by the ceramic assemblages); this happens in the second half of the 12th century, perhaps in conjunction with the recovery of Monte San Giuliano during the reign of William I, when Erice extended its influence as far as this area²⁸. It is reasonable to imagine that at first the seignior simply exerted an activity of control and land-management. Based on the data gathered from surface finds, it appears that these territories were in fact characterised by an unchanged social order for most of the 12th century. More information can be obtained by cross-referencing documentary sources and archaeological evidence.

The notary Comito²⁹, living in the 15th century, redacted an *imbreviatura* briefly summarising the content of a *privilegium* donating thirteen *casalia* to the community of Monte San Giuliano around 1241. The region we are treating in this paper is comprised by the land in question (it lies across three *casalia*: Scupelli, Curcii and Farginisi) but, according to the data in our possession, none of the toponyms mentioned by the document can actually be paired to the sites identified in Baida. The *casalia* seem to cover a loose grid (over a total of more than 150 km²), which greatly diverges from the high incidence of villages (5 within an area of 1.8 km²) at Baida. Even taking into account the poor reliability of written sources – especially a later replica of a text – when it comes to exactly defining population patterns, this discrepancy is so notable that requires further discussion.

It is necessary to understand the real correspondence of the term *casale* to the archaeological record, as well as better defining the components of an Islamic open village, called *raḥl* or *qarya* by Arabic sources and *casale* by Latin ones. We suspect that, as seems to happen in Baida (and similarly around Monte Inici), the latter could correspond to a multi-nucleate settlement, originally founded on existing community relations (of clan, tribe, neighbourhood or simply fiscal nature) and somehow

²⁹ State Archive – Palermo, Notary G. Comito, I stanza, vol. 846, 1445 ott. 1, cc. 33r-34v. Edited in MAURICI 1997 and INTERNICOLA 2010, pp. 145-156. See also ROTOLO *et alii* (in printing).



²⁸ With regard to the nearby site of Calathamet, also, the 12th century seems to represent an important rupture, as opposed to Segesta, where – probably due to the desertion of the peasants – the 12th century sees the start of an upswing for the settlement. MOLINARI 1997, 2010, p. 237.

transformed during the Norman period³⁰. Site O5 measures 18 ha but displays smaller concentrations of materials; Sites 53, 54 and 55 are interpreted as scattered single houses: each site, rather than gathering toward a centre, is positioned in order to better access water supplies. A structure of this kind must therefore be multiform and flexible, able to adapt to different environments and to constantly guarantee a systematic exploitation of all available resources.

If we therefore assume that the whole group of settlement agglomerations (Sites 05, 10, 12, 42, 52, 53, 53, 55) formed a single rahl(which we believe possible), are we to picture a moment of synchronous occupation of the site or rather a gradual process of creating new units intended to satisfy the increasing number of community members? When comparing ceramic data (some of the sites probably experienced an early medieval phase) to the capacity held by the various springs, the second hypothesis definitely seems the more feasible. What appears clear at present is the existence, behind the emergence of these sites, of a social organisation solid enough to oversee the proper use of agro-pastoral and water resources among the settlements. All considered, it is not certain that a theoretical continuity of life throughout the Byzantine and the Islamic phases (as seems to have been the case of Site 05 and, less probably, in Site 10 and 12) entailed an unchanged relation with the environmental resources as well.

Through observation of the nature of the sites and of the settlement patterns, together with the territorial and functional choice, it is possible to deduce the presence of Islamic – or Islamised – populations. They were characterised, up until the Norman Conquest and the introduction of a feudal-seigniorial system, by a highly autonomous and cohesive social organisation, equipped to produce such an important structure as that at Pizzo Monaco. Regarding the villages, we are still debating whether they should be labelled simply as "open settlements". The existence of a nearby defensive structure – providing clues that suggested to us a preliminary interpretation as a collective fortified granary – to which they are undoubtedly linked, would also imply that they belong to the class of "fortified villages", although, strictly speaking, the residential areas were not protected³¹.

 $^{^{30}}$ In relation to the Norman-period documentation NEF 2011, p. 423 states that "le terme rall ne renvoie pas à une localité compacte, mais plutôt à un espace de mise en valeur agricole dense" and stresses the importance of fiscal bonds.

³¹ On this topic, see BENHIMA 2000 and TORRÓ, SEGURA 2002, p. 164, note 13, according to whom a settlement is not to be looked at «only and exclusively as a place of residence, but rather as a combination of all the areas where the inhabitants carry out all those activities designed for group subsistence and production» (translated from Spanish).

A notable hiatus in settlement is evident from the construction of the stronghold on top of Site 10. Although this occurs within an existing site, it nevertheless represents significant transformations in its social dynamics. The presence of a lord's castle indicates that a now subject population no longer had the autonomy to build a collective fortification for produce-storage (as in the case of Site 04) and refuge, and probably neither could they independently manage their agricultural production, this production now being subjected to different forms of surplus extraction.

The abandonment of this village, or rather of this group of villages, is therefore dated sometime during the 12th century: the desertion was caused by the inevitable clash between two separate and opposing "social formations", the Islamic and the feudal.

A.R., J.M.

Acknowledgements

The ARPATRA Project was funded by the Spanish Ministry of Culture. We thank the Trapani Heritage Office and its staff for their helpfulness and expertise; in particular Sebastiano Tusa, Chief of Service; Rossella Giglio, Director to the Archaeological Unit, and Giuseppina Mammina, Archaeological Archive Specialist. We are particularly grateful to Roberto Mauro Malato and Giuseppe Filippo Buccellato for having generously allowed our study within their estate.

References

- L. ARCIFA 2008, Facere fossa et victualia reponere: la conservazione del grano nella Sicilia medievale, "Mélanges de l'École française de Rome, Moyen Âge", 120(1), pp. 39-54.
- L. ARCIFA 2010, Indicatori archeologici per l'alto Medioevo nella Sicilia orientale, in P. PENSABENE (ed), Piazza Armerina. Villa del Casale e la Sicilia tra tardoantico e medioevo, Roma, pp. 105-128.
- A. BAGNERA, E. PEZZINI 2004, I cimiteri di rito musulmano, in La Sicile à l'époque islamique. Questions de méthode et renouvellement récent des problématiques, "Mélanges de l'École française de Rome, Moyen Âge", 116(1), pp. 231-302.
- Y. BENHIMA 2000, L'habitat fortifié au Maroc médiéval. Éléments d'un bilan et perspectives de recherche, "Archéologie islamique", 10, pp. 79-102.
- Y. BENHIMA 2003, Espace et société rurale au Maroc médiéval. Stratégies territoriales et structures de l'habitat : l'exemple de la région de Safi, PhD Dissertation, Lyon. Online in: http://theses.univ-lyon2.fr/documents/lyon2/2003/benhima_y (accessed 21 February 2013).
- H. BRESC 1979, Fosses à grains en Sicile (XIVe-XVe siècle), in M. GAST, F. SIGAUT (eds), Les techniques de conservation des grains à long terme, leur róle dans la dynamique des systèmes de cultures et de société, vol. I, Paris, pp. 113-121.
- H. BRESC, G. BRESC 1977, Ségéstes médiévales: Calathamet, Calatafimi, Calatabarbaro, "Mélanges de l'École française de Rome, Moyen Âge", LXXXIX, pp. 341-370.
- G.P. BROGIOLO 2007, Dall'archeologia dell'architettura all'archeologia della complessità, "Pyrenae", 38(1), pp. 7-38.
- K.W. BUTZER 1989, Arqueología, una ecología del hombre. Método y teoría para un enfoque contextual, Barcelona.
- P. CRESSIER 1995, La fortification islamique au Maroc: éléments de bibliographie, "Archéologie Islamique", 5, pp. 163-196.
- P. CRESSIER 1998, Apuntes sobre fortificación islámica en Marruecos, in I Congreso Internacional Fortificaciones en al-Andalus, Algeciras, pp. 129-145.

- F. D'ANGELO 1979, Le ceramica decorata della Sicilia araba. (X secolo? - prima metà XI secolo), in Atti del XII Convegno Internazionale della Ceramica, Albisola, pp. 83-88.
- F. D'ANGELO 1980, Ceramiche smaltate della Sicilia araba (prima metà XI secolo). Nota II, in Atti del XIII Convegno Internazionale della Ceramica, Albisola, pp. 245-251.
- F. D'ANGELO 1981, Insediamenti medievali in Sicilia: Scopello e Baida, "Sicilia Archeologica", XIII, 44(1), pp. 65-70.
- J. DE MEULEMEESTER, A. MATTHYS 1995, Un grenier collectif fortifié hispano-musulman? Le Cabezo de la Cobertera (Vallée du Rio Segura / Murcie). Bilan provisoire d'une approche ethnoarchéologique, in A. BAZZANA, M.C. DELAIGUE (ed), Ethnoarchéologie mediterranéenne, Madrid, pp. 181-196.
- J. DE MEULEMEESTER, A. MATTHYS 1998, The conservation of grain and the fortified granaries from the Maghreb to central Europe, in Ruralia II (Spa 1997), Památky Archeologické - supplementum 11, Prague, pp. 161-171.
- J. DESPOIS 1953, *Les greniers fortifiés de l'Afrique du Nord*, "Les Cahiers de Tunisie", 1, pp. 38-58.
- J.A. GARCÍA DE CORTÁZAR 2004, Sociedad y organización del espacio en la España Medieval, Granada.
- G. GINI, P. MISURACA (ed) 2009, Piano territoriale paesaggistico dell'Ambito 1 : Area dei rilievi del trapanese, Palermo.
- INGV 2007, Piano di Tutela delle Acque della Sicilia. Bacino idrogeologico Monti di Trapani (R19TP), SOGESID, Documento D.02.14, Palermo. Online: http://www. regione.sicilia.it/presidenza/ucomrifiuti/Ac que/DOCUMENTI/DOCUMENTI_E/E3/TR APANI/inquadramento.pdf (accessed 20 February 2013)
- G. V. INTERNICOLA 2010, Arcudaci. Casale Baronia e Bosco, Buseto Palizzolo.
- Dj. JACQUES-MEUNIÉ 1951, Greniers citadelles du Maroc, Paris.

- J. JOHNS 2004, Una nuova fonte per la geografia e la storia della Sicilia nell'XI secolo: il kitâb garâ'ib al-funûn wa-mulah aluyûn, in La Sicile à l'époque islamique. Questions de méthode et renouvellement récent des problématiques, "Mélanges de l'École française de Rome, Moyen-Âge", 116, pp. 409-449.
- J.M. MARTÍN CIVANTOS 2006, Il territorio stratificato: proposte dall'Archeologia del Paesaggio, in R. FRANCOVICH, M. VALENTI (ed), IV Congresso Nazionale di Archeologia Medievale. Scriptorium dell'Abbazia. Abbazia di San Galgano (Chiusdino, Siena, 26-30 settembre 2006), Firenze, pp. 3-8.
- J.M. MARTÍN CIVANTOS 2007, Poblamiento y territorio medieval en el Zenete (Granada), Granada.
- J.M. MARTÍN CIVANTOS 2008, Arqueología y recursos naturales: notas para una Arqueología del Paisaje, in J.M. MARTÍN CIVAN-TOS (ed), Medio Ambiente y Arqueología medieval, Granada, pp. 17-40.
- J.M. MARTÍN CIVANTOS 2011, Working in landscape archaeology: the social and territorial significance of the agricultural revolution in al-Andalus, "Early Medieval Europe", 19(4), pp. 385-410.
- J.M. MARTÍN CIVANTOS, A. ROTOLO, T. M. BONET GARCÍA 2011, Arqueología del paisaje medieval en Trapani (Sicilia). Resultados de la primera campaña en los municipios de Castellamare del Golfo y Buseto Palizzolo (2010-2011), "Informes y trabajos", 7, Excavaciones en el exterior 2010, Ministerio de Educación, Cultura y Deporte, Madrid, pp. 202-215.
- F. MAURICI 1997, Insediamenti medievali nel territorio di Erice, in Atti delle Seconde Giornate Internazionali di Studi sull'Area Elima (Gibellina 22-26 ottobre 1994), Pisa-Gibellina, pp. 1121-1138 e tavv. CCXX, CCXXI.

- A. MOLINARI 1997, Segesta II. Il castello e la moschea, Palermo.
- A. MOLINARI 2010, Paesaggi rurali e formazioni sociali nella Sicilia islamica, normanna e sveva (secoli X-XIII), "Archeologia Medievale", 37, pp. 229-245.
- R. MONTAGNE 1929, Un magasin collectif de l'Anti Atlas: l'Agadir des Ikounka, Paris.
- A. NEF 2011, Conquérir et gouverner la Sicile islamique aux XI^e et XII^e siècles, Roma.
- A. ROTOLO 2011, Alcune riflessioni sullo stato delle conoscenze sulla ceramica d'età islamica in Sicilia occidentale. (m. IX - s.m. XI secolo), "Mélanges de l'Ecole française de Rome Moyen Âge", 123(2), pp. 445-460.
- A. ROTOLO 2012-2013, La formazione sociale islamica in Sicilia. Popolamento e paesaggio medievale nell'area dei Monti di Trapani attraverso l'archeologia, PhD Dissertation in History (rel. prof. J.M. Martín Civantos; controrel. prof. E. de Minicis), University of Granada, AA. 2012-2013.
- A. ROTOLO, J.M. MARTÍN CIVANTOS 2012, Il territorio dei Monti di Trapani in epoca islamica. Primi risultati dall''Idrisi Project''. ARPATRA, in F. REDI, A. FORGIONE (eds), VI Congresso Nazionale di Archeologia Medievale, Atti del Congresso della Società degli Archeologia Medievisti Italiani (L'Aquila, 12-15 settembre 2012), Firenze, pp. 412-418.
- A. ROTOLO, J.M. MARTÍN CIVANTOS, T.M. BONET GARCÍA in press, Idrisi Project-ARPATRA: Risultati preliminari del progetto "Archeologia del paesaggio medievale a Castellammare del Golfo e Buseto Palizzolo (TP)".
- J. TORRÓ, J.M. SEGURA 2000, El Castell d'Almizra y la cuestión de los graneros fortificados, "Recerques del Museu d'Alcoi", 9, pp. 145-164.