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28

Economy and the Maritime Cultural Landscape of Greece

Panel 5.3

Michael J. Curtis (Ed.)

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PREFACE

On behalf of the 'Associazione Internazionale di Archeologia Classica (AIAC)' the 19th International Congress for Classical Archaeology took place in Cologne and Bonn from 22 to 26 May 2018. It was jointly organized by the two Archaeological Institutes of the Universities of Cologne and Bonn, and the primary theme of the congress was 'Archaeology and Economy in the Ancient World'. In fact, economic aspects permeate all areas of public and private life in ancient societies, whether in urban development, religion, art, housing, or in death.

Research on ancient economies has long played a significant role in ancient history. Increasingly in the last decades, awareness has grown in archaeology that the material culture of ancient societies offers excellent opportunities for studying the structure, performance, and dynamics of ancient economic systems and economic processes. Therefore, the main objective of this congress was to understand economy as a central element of classical societies and to analyze its interaction with ecological, political, social, religious, and cultural factors. The theme of the congress was addressed to all disciplines that deal with the Greco-Roman civilization and their neighbouring cultures from the Aegean Bronze Age to the end of Late Antiquity.

The participation of more than 1.200 scholars from more than 40 countries demonstrates the great response to the topic of the congress. Altogether, more than 900 papers in 128 panels were presented, as were more than 110 posters. The publication of the congress is in two stages: larger panels are initially presented as independent volumes, such as this publication. Finally, at the end of the editing process, all contributions will be published in a joint conference volume.

We would like to take this opportunity to thank all participants and helpers of the congress who made it such a great success. Its realization would not have been possible without the generous support of many institutions, whom we would like to thank once again: the Universities of Bonn and Cologne, the Archaeological Society of Cologne, the Archaeology Foundation of Cologne, the Gerda Henkel Foundation, the Fritz Thyssen Foundation, the Sal. Oppenheim Foundation, the German Research Foundation (DFG), the German Academic Exchange Service (DAAD), the Romano-Germanic Museum Cologne and the LVR-LandesMuseum Bonn. Finally, our thanks go to all colleagues and panel organizers who were involved in the editing and printing process.

Bonn/Cologne, in August 2019

Martin Bentz & Michael Heinzelmann

Economy and the Maritime Cultural Landscape of Greece: An Introduction

Michael J. Curtis

The idea for this panel session was to get people thinking about the many ancient settlements along the coastlines of mainland Greece, the Peloponnese, and the Greek islands, to look at their roles in local, regional and national economies and their various relationships with the sea. Many of these settlements became important transition points, serving as centres for trading and distribution. From a social perspective they were often the first point of contact for seafarers, travellers and migrants, playing an important part in the diffusion of cultural, political and religious ideologies.

In spite of their importance throughout Greece, coastal sites remain understudied, and due to their location are often at risk of destruction from human and natural interventions. The ancient landscapes that greeted 18th and 19th century travellers as they wandered through Greece are now gone, making our attempts at evaluating life beside the sea even more challenging.

The Call for Papers for this panel invited interested parties to explore the cultural, economic, political, religious, social, technical, industrial and environmental aspects of these ancient coastal landscapes and, where applicable, to move away from the traditional approach that treats terrestrial and underwater evidence as separate disciplines. The response enabled us to hold two panel sessions with an interesting selection of topics covering the Bronze Age, Archaic, Classical, Hellenistic and Roman periods, all of which led to some interesting debate and discussion. The aim of this panel was to generate interest and discussion and I would like to thank the presenters, Marco Schugk, Michael Loy, Chiara Maria Mauro, Jane E. Francis, and George W. M. Harrison, for helping us achieve this.

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Between Locality and Regionalism: Aspects of Inner Cycladic Networking: a View of the Early Bronze Age Settlement of Koukounaries on Paros

Marco Schugk

Since the end of the last Ice Age and the resulting rise in the sea level, the closely packed islands of the Cyclades within the southern Aegean incorporate a habitat unique in the entire Mediterranean. Its maritime fragmentation not only offered its inhabitants promising opportunities for cultural exchange, but also presented them with logistical challenges.

Although several thousand years passed from the first daring explorations into this archipelago to the establishment of stable settlements, the Cycladic culture achieved its climax in the early Bronze Age II. Their prosperity is often emphasized by the establishment of overseas contacts ranging from the Helladic mainland in the east, to Crete in the south, and to Anatolia in the west.

Apart from the few proto-urban centers of this period, the majority of the Cycladic people organized themselves in countless smaller settlements spreading over the entire seascape. On the basis of the early Cycladic artifacts in the settlement areas of the Koukounaries on Paros, it can be shown exemplarily that active participation in maritime networks, including possible seafaring activities, was only of secondary importance beyond substantial factors.

The Settlement Hill of Koukounaries

Paros is one of the major islands in the center of the Cycladic archipelago. It is dominated by a high central mountain massif sloping down to a maritime plain that often ends in rocky coasts and smaller bays on all sides.[1] As part of a widely desolated ridge, the homonymous settlement hill of Koukounaries is located in the north of the island near the southwestern end of the extensive bay of Naousa (fig. 1). The heavily eroded granite rock is about 75 m high, has steep slopes and is only accessible by two paths running up some narrow gorges. In the upper part, the hillside forms three natural plateaus at different levels as well as several smaller terraces that offer sufficient space for habitation. From the hilltop, the entire bay, including the northern and northeastern sea, as well as the surrounding hinterland are fully visible.[2]

Koukounaries lies in immediate proximity to the potential food-yielding areas of the sea as well as the pastures and farmland on the surrounding hills and in the adjacent valley. Fresh water sources are also nearby: a small river runs through the valley of Kamares into the bay and forms a rich delta wetland. With its prominent location at the

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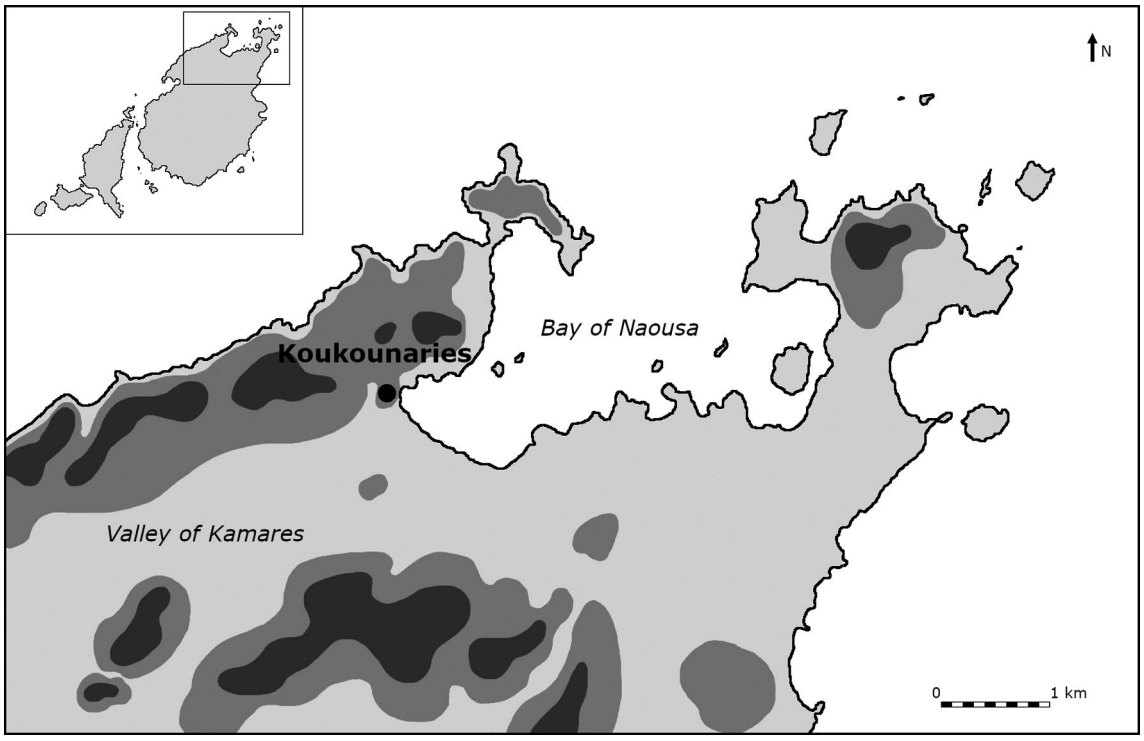

Fig. 1: The location of Koukounaries on Paros.

coast and a nearby fertile hinterland, the naturally fortified highland of Koukounaries represents a typical settlement spot for the EBA in the Aegean.

The Acropolis of Koukounaries

Excavations funded by the Archaeological Society of Athens from 1974 to 1992 uncovered the dense remains of complex structures on the acropolis, illustrating the intensive use of the area as a prosperous domestic, administrative and ritual center between the 12th and 7th century BC. The first evidence of pre-Mycenaean occupation phases comes from sporadic EC artifacts, which were found between the stone structures on the Upper Plateau and in disturbed contexts on the southeastern hillside. Crucial for the understanding of the local EC period was the discovery of corresponding artifact assemblages in stratified contexts within the so-called Northeast-Building on the hilltop, and in the soil of the Lower Plateau.[3]

The Northeast-Building is located on the northeastern edge of the hilltop, set apart from the late Helladic structures. It consists of several rectangular rooms and long narrow spaces arranged around a central open yard. Its foundation walls are made of small schist and granite slabs available in the geographical surrounding. This building

constitutes the only EC architectural construction on the hill, although its reuse in later centuries ensured its preservation.[4]

The Lower Plateau is a broad flat area of 2500 m², about 20 to 25 m below the southeastern end of the hilltop. At its northern, eastern, and southeastern openings to the seaside, it is well protected by solid rock accumulations that make it nearly invisible from the foothills or the coastline. The deposits of the EC stratum are mostly dark colored, rich in rubble, with sporadic traces of burning and numerous small finds, which indicate a domestic character. The absence of proper stone architecture suggests that the Lower Plateau's potential buildings were constructed of perishable materials such as wood, straw, and clay. Since subsequent exploitation of this area in later periods did not include any intensive building activities, the EC levels are quite well preserved.[5]

Accordingly, the majority of the EC finds originate from these two areas. However, their extensive dispersion on the Koukounaries implies that the corresponding inhabitants might have used all available plateaus and terraces for habitation or other services. Nevertheless, the settlement still seems to be rather small or average sized by Cycladic standards.

Pottery

The EC contexts of the Northeast-Building contained utilitarian pottery, including some large basins, open bowls with lugs near the rim, deep bowls with plastic and incised decorations, incised horizontal handles, and a fragment of an incised pyxis. The Lower Plateau also yielded a variety of ceramics in forms identical to those previously mentioned. Most characteristic are incurving-rim saucers, biconical pyxides, triangular or T-rims, incised cylindrical handles, and vertically perforated lugs on open or deep bowls. There was also a large concentration of fragments from flat pithoi and a considerable amount of fragments belonging to three- or four-footed vessels. The incised plastic zones, grooved patterns (such as fishbone-motifs) and schematic roped motifs are diagnostic features for an early period of the Keros-Syros-phase within EC II, namely to about 2800–2600 BC.[6]

Functionally, the repertoire comprises vessels of everyday usage such as for the preparation and consumption of food (three- or four-footed vessels, bowls, saucers), for storage (pyxides, pithoi), as well as for transportation purposes (pyxides, vessels with horizontal handles such as collared jars). Finer tableware is not reported yet.

In general, its fabric is coarse with continuous uniform light brown coloring from the surface to the core. Since it is quite hard and echoes with a metallic sound, it was probably fired at high temperatures. Macroscopically, the ceramics from both the Northeast-Building and Lower Plateau look identical, which may justify their attribution to the same workshop. Furthermore, both of them share obvious macroscopic characteristics with the handmade cooking vessels and pithoi of the local Mycenaean period. This reflects the usage of the same raw materials, possibly collected in the geographical zone

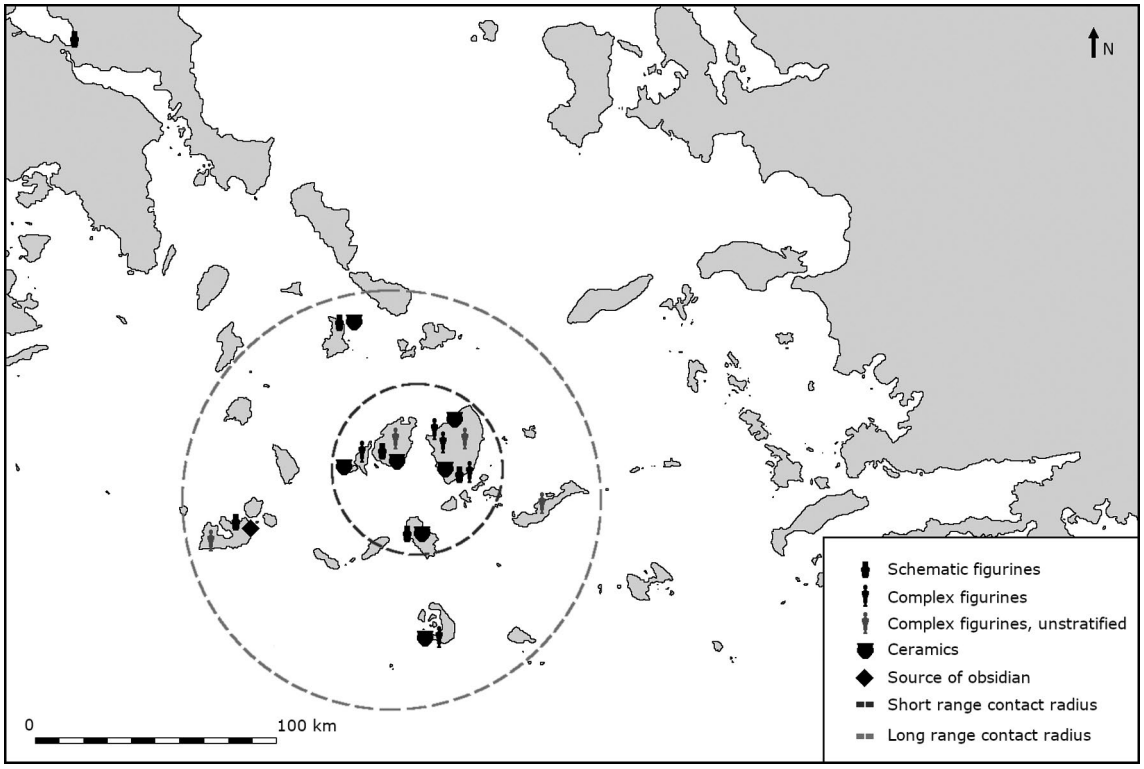

Fig. 2: Mapping similarities of the Koukounarian assemblage in the southern Aegean.

nearby. The grain-sized inclusions of muscovite, quartz, schist and granite also match with the local geology.[7]

In general, the Koukounarian pottery shows relatively strong affinities in form and decoration to the ceramics from other sites on Paros and the islands nearby, especially Naxos and Ios.[8] It also has parallels with some contemporaneous vessels from Akrotiri[9] on Thera, and Chalandriani[10] on Syros.

All in all, the production of the Koukounarian coarse ware seemed to be based on the settlement's local environment. It was manufactured primarily for local needs in order to meet the demands of everyday life. The typological similarities with non-Parian vessels may reflect cross-island contacts, even though the site significantly lacks imported pottery.

Figurines

The acropolis also yielded at least four marble figurines, respectively figural fragments, which can be placed in EC I-II; these are contemporary to the occupation phase indicated by the ceramic findings. The first three mentioned below were found within the late Helladic structures on the Upper Plateau. The last one came out of a disturbed context on the southern ascent.

The first one is a complete figurine, 155 mm in size (fig 3.1). It has a symmetrical oblong shape, two opposing stumps for arms in the upper part, a pair of convex profile lines indicating the neck, a trapezoid head with a rounded top, and a centered knob as nose. Its outline fits well in the quite inhomogeneous Apereianthos sub-category of schematic figurines.[11] Comparable figurines are very rare. In fact, there is only one identical example in a private collection half the size, but without any further context (fig. 3.2).[12] Apart from that, there are a significant number of relatively similar figurines (fig 3.4–3.7) found in the big coastal settlement of Skarkos[13] on Ios. Figurines reported from other sites, such as Kamari (fig. 3.3)[14] on Paros, Chalandriani (fig. 3.8)[15] on Syros, Spedos[16] on Naxos, Phylakopi on Melos (fig.3.10),[17] and even Manika (fig 3.9)[18] on Euboea are less similar. However, they share at least some of its main characteristics, although the range of variety is broader. The Koukounarian figurine is made of soft whitish, coarse-grained marble, presumably Parian.[19]

The second one is a fragmented head, about 38 mm. The slightly fan shaped head has an elaborate nose, a scratched mouth and two small cavities for eyes. It can be placed among the rather limited group of pre-canonical figurines. A few stratified examples came from coastal sites of western Naxos (Spedos, Aplomata and Tsikniades), as well as from Akrotiri[20] on Thera. They are also known from Paros,[21] Melos and Amorgos, mostly unstratified. The Koukounarian figurine is made of fine gray-white marble, presumably Parian.[22]

The third fragment is an almond-shaped head, tilting backwards in profile, with a highly visible nose and a strong neck. It compares well with the early canonical folded arm type (Kapsala), being well known from Naxos and the eastern Cyclades, Paros, Antiparos, and Akrotiri[23] on Thera. The particular figurine is also made of white fine-grained marble, presumably Parian.[24]

The last fragment is about 60 mm long and preserves the thighs of a female body. The sex is denoted by the slightly incised pubic triangle. The thighs have a regular outline and are rather flat in profile. The relatively unspecific figurine fragment belongs to the canonical group of folded-arm figures, which is quite common within the Cyclades, in particular on Paros.[25]

Overall, the Koukounarian figurine and figurine fragments listed here were all recovered in contexts that are not identical with their production date. Therefore, the actual figural equipment of the EC settlers on the Koukounaries has to remain controversial. Nevertheless, their macroscopic characteristics match the island's geology, which points to a Parian or even local workshop.[26] Interestingly, the Apeiranthos figurine and its counterpart of unknown provenance seem to reflect a relatively unique shape within the Cycladic repertoire, although they show strong affinities to the ones found in Skarkos on Ios. The other Koukounarian examples refer to rather common shapes known from lots of Cycladic islands. Like the pottery, the production of the figurines might be based on the local environment, while its shaping features similarities with artifacts produced elsewhere.

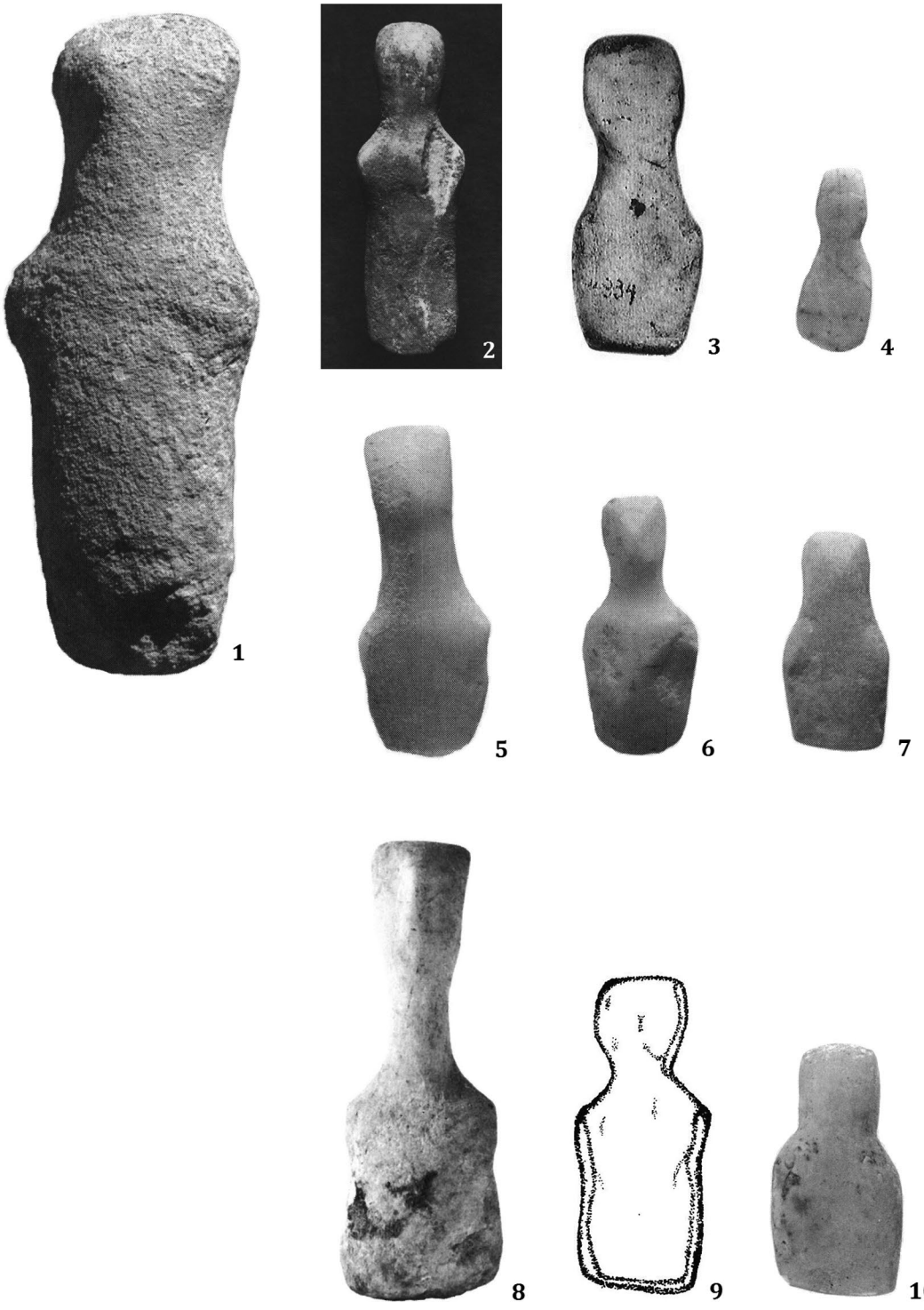

Fig. 3: Schematic figurines of the Apeiranthos type from different sites (not to scale): 1 Koukounaries on Paros; 2 unknown; 3 Kamari on Paros; 4–7 Skarkos on Ios; 8 Chalandriani on Syros; 9 Manika on Eubea; 10 Phylakopi on Melos.

Stone Tools

Stone tools were found in the Northeast-Building and on the Lower Plateau. In the former, a small selection of chipped obsidian, marble stone grinders and food remains suggest a domestic use. On the latter, the intense processing of chipped stone tools became visible due to the presence of finished cores and myriad debitage. It is based predominantly on obsidian from Melos and marginally on local flint.[27]

Apparently, the obsidian sources of Antiparos nearby were not used at all. Therefore, the favored raw material was possibly imported to Koukounaries in the form of roughly decorticated pieces.

Dietary Remains

Along with ceramics and lithic artifacts, the site also yielded significant quantities of dietary remains consisting mainly of sheep and goat bones as well as some sea shells.[28] The bone findings appear to have belonged to small mammals, which cope with the sparse Mediterranean vegetation. Referring to livestock, they were kept for meat, leather, and wool. The seashells were collected in the adjacent coastal regions. They could have been eaten and/or processed for jewelry.

Surprisingly, no fish bones were found within the EC strata, although the Parian coast is nearby. Apart from the fact that the soil was not sieved, corresponding fishing tools like hooks or net weights were also not found. It appears as though the Koukounarian people were not significantly interested in fishing in the EBA.

Characterizing the Early Cycladic Inhabitants of Koukounaries

By the data accumulated so far, the settlement of Koukounaries consisted of only one stone structure on the hilltop and several provisional huts on the Lower Plateau. It remains unclear what function the different building types had, and to what extent the differences in construction were the result of economic or social variety, or to what extent administrative reasons played a role.

Apart from that, the repertoire of small finds infers that the settlers produced the needed equipment exclusively on their own by exploiting the resources of their directly adjacent environment as far as possible. In socio-economic terms they can be characterized as an agro-pastoral population relying mainly on farming and herding, with less dependence on the surrounding sea.[29] The simply decorated pottery and the potential existence of complex figurines indicate a rudimental specialization in craftsmanship, which was benefited by a sufficient dietary surplus.

Since no extraordinary imports such as elaborate fine ware or metal objects are recorded, their common wealth seems not to be based on trade. Nevertheless, the intense usage of Melian obsidian as an essential raw material for cutting tools, as well as common styles in pottery decoration and figurine shaping imply the participation in exchange networks connecting islanders with each other separated by greater maritime distances.

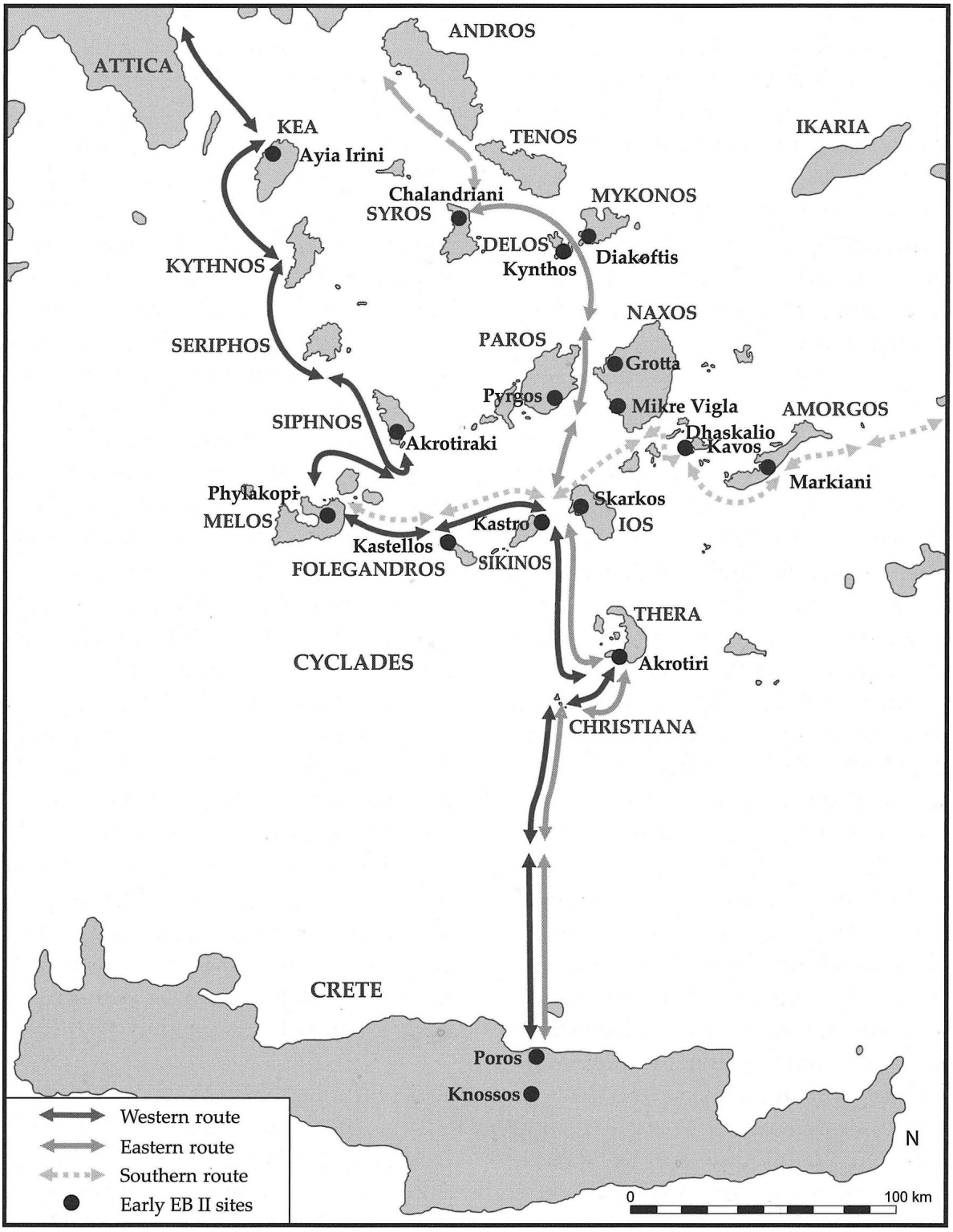

Fig. 4: Potential exchange routes in the southern Aegean during EBA II.

Capability of Seafaring

The distribution of corresponding features similar to the Parian finds within the southern Aegean may reflect the potential interaction radius of the Koukounarian people with other island communities (fig. 2). These maintained interactions can be divided into short range contacts clustering around the neighboring islands of Paros and singular long-distant spots within the Cycladic archipelago.

Based on the maritime distance of these islands from Paros, the reason might be found in the available EC seafaring technologies. Since no EBA shipwreck is currently known in the Aegean, boats can only be reconstructed by stone depictions, pottery decoration and miniatures.

From these sources two archetypes of rowing boats can be derived. The first one, based on the rock art from Strofilas[30] on Andros and Korfi t'Aroniou[31] on Naxos, is a vessel with a low hull and a relatively high stern, the latter possibly acting as an aerodynamic feature to keep the boat steady in the wind. It may represent a small simple dugout or dugout-derived vessel, which requires only a small crew. Having in mind that such a small canoe-like sea craft is very limited in terms of navigation and speed, it seems to be suitable for short distance transfers of bulky cargo such as animals or big containers. The second archetype, often seen on so-called frying pans[32] (and as tiny boat models made of clay or metal)[33], is the so-called longboat. It consists of an angled hull, combined with a slightly raised prow and a tall stern. The overall lack of a mast and a tiller or steering board indicates a narrow ship body much like a modern canoe. The large number of short lines next to the hull within these decorations is interpreted commonly as paddles. The sheer length of the narrow hull, combined with 20 to 40 paddlers, results in a high-speed vehicle with less space for cargo, and is suitable for long distances.[34]

Considering the demands of the agricultural calendar as well as the construction and manning of longboats, especially the day-long rowing on long-distance tours, which requires a physical fitness possibly accomplished only by a moderate amount of young and mid-aged adults, the deployment of such boats would have been significantly beyond the manpower resources of small or medium sized settlements like Koukounaries.[35] Collaboration efforts with neighboring settlements might be a logical consequence, but such contemporaneous settlements are not sufficiently attested in the archaeological record of northern Paros so far. Consequently, the Koukounarian people may have used small boats for keeping in touch with their insular surrounding, but they did not seem capable of long-range seafaring on their own. The latter must be a privilege of bigger communities.

Maritime Networking

In fact, the artifact assemblages at farther maritime distance from Koukounaries, which have decent features in common, were often found in large settlement sites or

their corresponding cemeteries. Keeping in mind that the rocky nature of most of the Cycladic islands does not provide enough arable land to feed populous communities like Chalandriani on Syros, there must have been an ongoing demand for imported agricultural products. In return, the material findings of Koukounaries – in relation to its fertile hinterland – suggest the capability of its settlers to create such a surplus as needed. The latter could be traded for desirable raw materials not existing in their local environment, such as Melian obsidian.

On the basis of the outstanding artifact assemblage of Skarkos on Ios (including imported raw materials, highly decorated fine wares and semi-fine wares of known provenience), Martha Marthari was able to visualize the trading network maintained by Skarkos[36] within the Southern Aegean. She linked its harbor with Chalandriani on Syros in the north, Thera on Akrotiri in the south, and Phylakopi on Melos in the west (fig. 4). Accordingly, the Koukounarian people could have had access to this network through the eastern central route between Chalandriani and Skarkos. In fact, the eastern route is expected to be the main food supply route since it passes by Naxos and Paros, the two most fertile islands of the Cyclades.

Nevertheless, it remains unclear whether they participated in an active way by deploying their own boats or they participated in a passive way by being visited regularly by seafarers from elsewhere.

Conclusion

All in all, the case study of Koukounaries shows that the active participation of small and medium sized settlements situated within the Cycladic archipelago were rather limited to small scale seafaring, if it took place at all. The production of goods in demand, such as agricultural products, enabled them to participate in more extensive exchange networks maintained predominantly by a handful of significantly larger island communities.

Lastly, it should be mentioned that this case study is a preliminary report based on macroscopic observations of a scare material basis. Additional microscopic analyses of the ceramics and the figurines may shed further light on this topic.

Notes

[1] Since the Cyclades are the former peaks of bigger islands sunken into the sea, their overall outlines have altered little in the last seven millennia, save for localized shoreline shifts, vegetation changes, and the denudation of hillslopes and the consequent deepening soil on the valley floors. The only two significant exceptions were the land bridge between Paros, Antiparos and Despotikon, as well as the appearance of the Theran volcano before its heavy eruption in the mid-second millennium BC (Broodbank 2000, 70 f.).

[2] Katsarou – Schilardi 2004, 25 f.; Katsarou-Tzeveleki – Schilardi 2008, 61 f.
[3] Katsarou – Schilardi 2004, 26 f.
[4] Schilardi 1991, 233; Katsarou – Schilardi 2004, 30–33; Katsarou-Tzeveleki – Schilardi 2008, 63 f.
[5] Katsarou – Schilardi 2004, 33 f.; Katsarou-Tzeveleki – Schilardi 2008, 65 f.
[6] Katsarou – Schilardi 2004, 35; Katsarou-Tzeveleki – Schilardi 2008, 64–67.
[7] Katsarou – Schilardi 2004, 35 f., 44.
[8] Panagia on Paros: Rambach 2000, pl. 105 no 5; Soumbaria on Despotiko: ibid. pl. 102, no. 6; Akrotiri on Naxos: ibid. pl. 111 no. 4; Lakoudes on Naxos: ibid. pl. 115 no 4. 5.
[9] Sotirakopoulou 1999, 500 f., A-A 1α (drawing 5 no. Ξ39), A-A 2α (drawing 10b no. A3/12), A-A 4 (drawing 16β no. B56 and no. Ξ180); see also Katsarou-Tzeveleki – Schilardi 2008, 64. 67 for further references.
[10] Rambach 2000, pl. 135 no. 4. 5; pl. 137 no. 4 and 9; pl. 138 no. 6–11; pl. 139, 1–6.
[11] See also: Renfrew 1969, 6; Sotirakopoulou 2005, 54.
[12] Thimme 1976, 434, no. 60.
[13] Marthari 2017, 138–160, especially nos. 3945. 1064. 3860.
[14] Rambach 2000, pl. 166 no. 9.
[15] Rambach 2000, pl. 65 no. 14; Papazoglou-Manioudaki 2017, 313. 317 no. 11, fig. 21.15.
[16] Marangou 1990, 88 no. 87; Renfrew 1969, 14 VI.9.
[17] Renfrew – Boyd 2017, 441 fig. 30.9.
[18] Sampson 1988, ill. 87 no. 168.5803
[19] Katsarou – Schilardi 2017, 411.
[20] Sotirakopoulou 1998, 134–138.
[21] Thimme 1976, 449 no. 116.
[22] Katsarou – Schilardi 2017, 413; see also Sotirakopoulou 2005, 55 f. with references.
[23] Sotirakopoulou 1998, 138–140.
[24] Katsarou – Schilardi 2017, 413; see also Renfrew 1969, 15; Sotirakopoulou 2005, 56 f.
[25] Katsarou – Schilardi 2017, 414.
[26] Well-rounded marble pebbles, suitable for schematic figurines, are available in the coastal areas nearby. Larger marble deposits of greater variety outcrop naturally in the center of Paros; see also Tambakopoulos – Maniatis 2017, 473 f.; Higgins – Higgins 1996, 180–182.
[27] Katsarou-Tzeveleki – Schilardi 2008, 64–67; Katsarou – Schilardi 2004, 40 f.
[28] Katsarou – Schilardi 2004, 41 f.
[29] Katsarou – Schilardi 2004, 44.
[30] Televantou 2008, 43–47.
[31] Doumas 1965, 49 fig. 4; 54 fig 7.
[32] Coleman 1985, 199, ill. 5, pls. 33–35; Rambach 2000, pls. 133–135.
[33] Sherratt 2000, 101–109 (cat. no. III 5.2, 5.3, 5.4); the authenticity of the lead miniatures is in question.
[34] Broodbank 2000, 99–101.
[35] Broodbank 1989, 330 f.
[36] Marthari 2008; for potential sea routes and navigation see also: Agouridis 1997.

Image Credits

Fig. 1–3: by the author. – Fig. 4: by M. Marthari.

References

Agouridis 1997
Ch. Agouridis, Sea Routes and Navigation in the Third Millennium Aegean, OxfJA 16, 1997, 1–24.

Broodbank 1989
C. Broodbank, The Longboat and Society in the Cyclades in the Keros-Syos Culture, AJA 93, 1989, 319–337.

Broodbank 2000
C. Broodbank, An Island Archeology of the Early Cyclades (Cambridge 2000).

Coleman 1985
J. E. Coleman, „Frying Pans" of the Early Bronze Age Aegean, AJA 89, 1985, 191–219.

Doumas 1965
Ch. Doumas, Korfi t'Aroniou, ADelt 20, 1965, 41–64.

Higgins – Higgins 1996
M. D. Higgins – R. Higgins, A Geological Companion to Greece and the Aegean (London 1996).

Katsarou – Schilardi 2004
S. Katsarou – D. U. Schilardi, Emerging Neolithic and Early Cycladic Settlements in Paros: Koukounaries and Sklavouna, BSA 99, 2004, 23–48.

Katsarou – Schilardi 2017
S. Katsarou – D. U. Schilardi, Recontextualised Neolithic and Early Cycladic Figurines at the Acropolis of Koukounaries, Paros, in: M. Marthari – C. Renfrew – M.J. Boyd (Ed.), Early Cycladic Sculpture in Context (Oxford 2017) 409–420.

Katsarou-Tzeveleki – Schilardi 2008
S. Katsarou-Tzeveleki – D. U. Schilardi, Some Reflections on EC Domestic Space Arising from Observations at Koukounaries, Paros, in: N. Brodie – J. Doole – G. Cavalas – C. Renfrew (Ed.), Horizon. A Colloquium on the Prehistory of the Cyclades (Cambridge 2008) 61–70.

Marangou 1990
L. Marangou (Ed.), Cycladic Culture. Naxos in the 3rd millennium BC (Athens 1990).

Marthari 2008
M.E. Marthari, Aspects of Pottery Circulation in the Cyclades during the Early EB II Period. Fine and Semi-fine Imported Ceramic Wares at Skarkos, Ios, in: N. Brodie – J. Doole – G. Cavalas – C. Renfrew (Ed.), Horizon. A Colloquium on the Prehistory of the Cyclades (Cambridge 2008) 71–84.

Marthari 2017
M. Marthari, Cycladic Figurines in Settlements: the Case of the Major EC II Settlement at Skarkos on Ios, in: M. Marthari – C. Renfrew – M. J. Boyd (Ed.), Early Cycladic Sculpture in Context (Oxford 2017) 119–164.

Papazoglou-Manioudaki 2017
L. Papazoglou-Manioudaki, The Early Cycladic Figurines from the Excavations of Clon Stephanos on Syros and a Note on his Work on Naxos: towards Context, in: M. Marthari – C. Renfrew – M. J. Boyd (Ed.), Early Cycladic Sculpture in Context (Oxford 2017) 310–334.

Rambach 2000
J. Rambach, Kykladen I. Die frühe Bronzezeit. Grab- und Siedlungsbefunde, BAM 33 (Bonn 2000).

Renfrew 1969
C. Renfrew, The Development and Chronology of the Early Cycladic Figurines, AJA 73, 1969, 1–32.

Renfrew – Boyd 2017
C. Renfrew – M. J. Boyd, The Marble Sculptures from Phylakopi on Melos, in: M. Marthari – C. Renfrew – M.J. Boyd (Ed.), Early Cycladic Sculpture in Context (Oxford 2017) 436–445.

Sampson 1988
A. Sampson, Μάνικα. Μια πρωτοελλαδική πόλη στη Χαλκίδα (Athens 1988).

Schilardi 1991
D. U. Schilardi, Ἀνασκαφὴ Κουκουναριῶν Πάρου PAE 146, 1991, 220–255.

Sherratt 2000
S. Sherratt, Catalogue of Cycladic Antiquities in the Ashmolean Museum. The Captive Spirit (Oxford 2000).

Sotirakopoulou 1998
P. Sotirakopoulou, The Early Bronze Age Stone Figurines from Akrotiri on Thera and their Significance for the Early Cycladic Settlement, BSA 93, 1998, 107–166.

Sotirakopoulou 1999
P. Sotirakopoulou, Ἀκρωτήρι Θήρας: Ἡ Νεολιθικὴ καὶ Πρώιμη ἡ Ἐποχὴ τοῦ Χαλκοῦ ἐπὶ τῃ βάσει τῆς κεραμεικῆς (Athens 1999).

Sotirakopoulou 2005
P. Sotirakopoulou, The „Keros Hoard“, Myth or Reality? Searching for the Lost Pieces of a Puzzle (Athens 2005).

Tambakopoulos – Maniatis 2017
D. Tambakopoulos – Y. Maniatis, The Marble of the Cyclades and Its Use in the Early Bronze Age, in: M. Marthari – C. Renfrew – M.J. Boyd (Ed.), Early Cycladic Sculpture in Context (Oxford 2017) 467–482.

Televantou 2008
Ch. Televantou, Strofilas: a Neolithic Settlement on Andros, in: N. Brodie – J. Doole – G. Cavalas – C. Renfrew (Ed.), Horizon. A Colloquium on the Prehistory of the Cyclades (Cambridge 2008) 43–53.

Thimme 1976
J. Thimme (Ed.), Kunst und Kultur der Kykladeninseln im 3. Jahrtausend v. Chr. Ausstellungskatalog Karlsruhe (Karlsruhe 1976).

Closed Harbours: an Open Question. Preliminary Thoughts Based on Archaic and Classical Evidence

Chiara Maria Mauro

Introduction

In archaeological publications on harbours, the phrase "λιμήν κλειστός" is often mentioned, especially when referring to the Graeco-Roman world. The expression must have a specific meaning, since it appears 14 times in the *Periplus of Pseudo-Skylax,* the only "Classical" nautical text that has survived to the present. Therefore, it should derive from technical, nautical terminology or, at least, should refer to a specific trait that harbours would have had in that era.[1] Additionally, this phrase is not limited to a precise historical moment, since it also appears in other literary sources: indeed, it can be found in the geographical poem by Dionysus, son of Kalliphon, entitled *Ἀναγραφή της Ἑλλάδος* and in the *Γεωγραφικά* by Strabo.[2]

This paper is centred on the use of this phrase by Skylax for the following reasons:[3] firstly, the *Periplus of Pseudo-Skylax*, despite being a controversial document, is the only text probably derived from written or oral nautical sources, and therefore it may cast light on earlier nautical jargon; secondly, it is possible that this same phrase changed over time, or that it was used with different meanings in different genres. In other words, it is not certain that the expression "λιμήν κλειστός" was used in the 6th–4th century BC with the same meaning that Strabo attributed to it in the Augustan Age; indeed, language is a complex system, which varies according to the sender, the receiver, and the circumstances.

Previous Theories

The debate on this topic began in the early 20th century, when the phrase "λιμήν κλειστός" became a subject of research for several scholars.

In 1898, Ardaillon – in his "*Quomodo Graeci collocaverint portus atque aedificaverint*" – maintained that Greeks used to distinguish between natural and artificial harbours. He did not explicitly mention the phrase "λιμήν κλειστός", but he stated that artificial harbours were built by men and then *closed* by means of the construction of breakwaters.[4] However, in the last centuries, various theories have been provided in response to that claim.

According to Lehmann-Hartleben, a "λιμήν κλειστός" could have referred to two different cases, sometimes gathered together: it could be a harbour located inside the city-walls, as well as a closed harbour with a narrow entrance.[5] The German archaeologist also added that these defences were a clear sign of what he called the

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Fig. 1: Location of the "closed harbours" mentioned in the Periplus of Pseudo-Skylax, in the Aegean Sea.

"Monopolcharakter" of harbour cities located in the Mediterranean area. Following this theory, Lehmann-Hartleben identified 42 closed harbours among the 303 that he had previously classified.

A year later, Von Gerkan was the first to associate explicitly the phrase "λιμήν κλειστός" with military harbours that, in his opinion, used to be *closed* with barriers.[6] In addition, during the 1960s, Rougé defined "ports fermés" (closed harbours) as those harbours which had a narrow entrance and that could have been closed with chains.[7] His theory was considered similar to Von Gerkan' stance, since even according to Rougé, the main feature of a "λιμήν κλειστός" was basically the military nature.[8]

In a paper published in 1997 and focused exclusively on the "closed harbours" of the Greek world, Moreschini wrote that they were "harbours provided with moles,

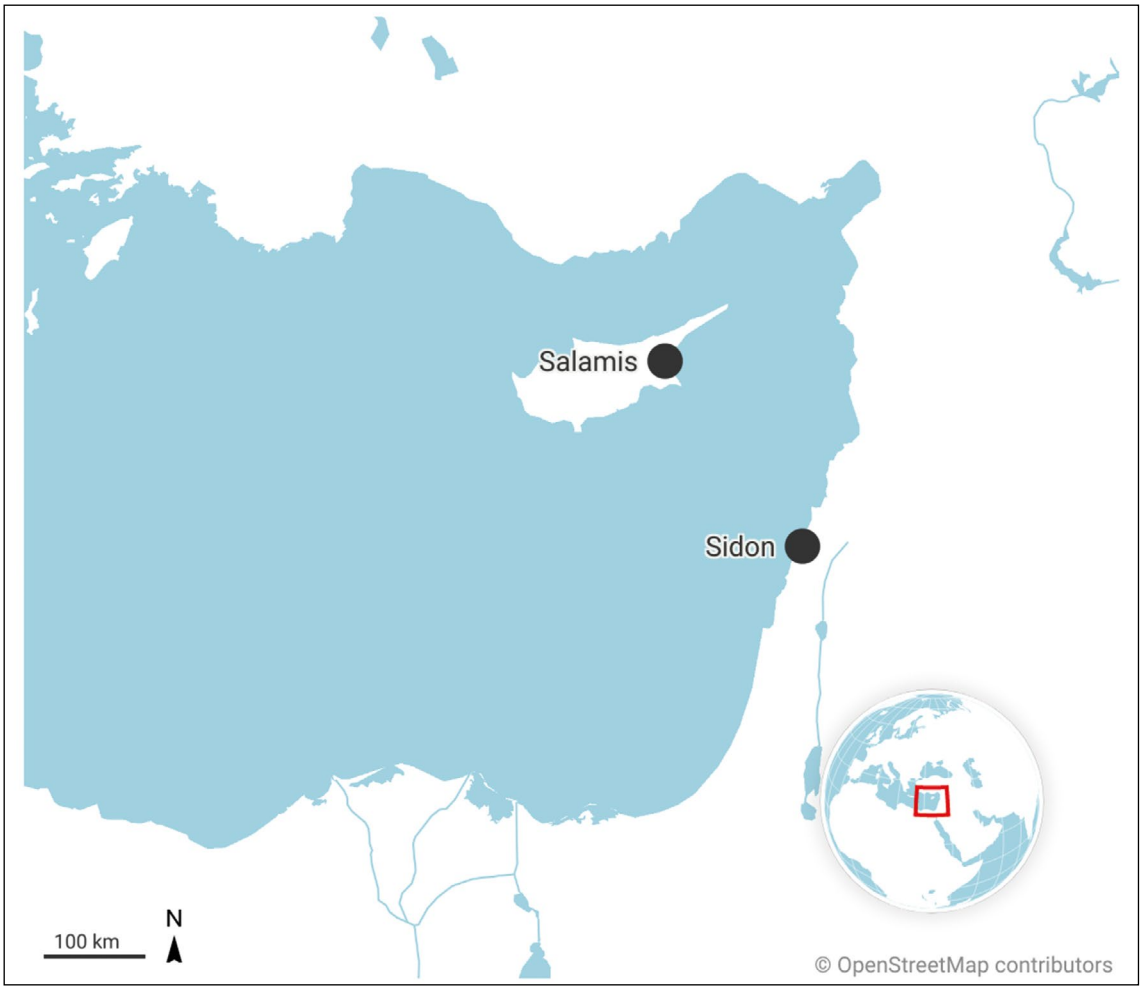

Fig. 2: Location of the "closed harbours" mentioned in the Periplus of Pseudo-Skylax, in the Levant.

that clearly represented an artificial closure, but to which, if necessary, another defensive structure could be added in order to completely close the entrance".[9] Moreover, she added: "It should be borne in mind that these kinds of harbours were probably located inside the city-walls".[10] In this way, Moreschini combined the previous theories, supported by Von Gerkan and Rougé, with Lehmann-Hartleben's hypothesis.

In recent times, scholars have espoused Von Gerkan's and Lehmann-Hartleben's theories: in particular, Blackman maintained that a harbour was considered "closed" when "the city-walls were extended along the harbour moles, to end in towers as at any normal city gate".[11] Baika, following Lehmann-Hartleben's path, stated that a harbour was considered "closed" only if moles were a continuation of the city-walls; during the Hellenistic epoch, she added, the expression was used to define military harbours in general.[12]

Fig. 3: Location of the "closed harbours" mentioned in the Periplus of Pseudo-Skylax, in the Black Sea.

Comparison with Archaeological Data

There are 14 harbours identified as "λιμήν κλειστός" by the *Periplus of Pseudo-Skylax*: Korkyra,[13] Ambracia,[14] Thasos,[15] Samos,[16] Paros,[17] Priene,[18] Halicarnassus,[19] Kaunos,[20] Kos,[21] Phalasarna,[22] Kydonia,[23] Salamis,[24] Sidon[25] and Genetes[26] (figs. 1–3). Not all of the harbours have been studied extensively, either because of problems connected with the natural changes in the configuration of the coasts (i.e., Paros, Priene, Kaunos), or for the fact that archaeological excavations are currently in progress (i.e. Samos). However, it is still possible to notice that there is not a precise correlation between archaeological data and the common agreement on the interpretation of the phrase "λιμήν κλειστός", so far as the Archaic and Classical eras are concerned. Particularly, there are two cases which denote this discordance and which deserve to be analysed in detail.

The first case corresponds to the very first mention of the expression "λιμήν κλειστός" in Skylax and it refers to Korkyra (fig. 4). According to Skylax, the city would have been equipped with three harbours, one of them "closed": "λιμένας ἔχουσα τρεῖς κατὰ τὴν

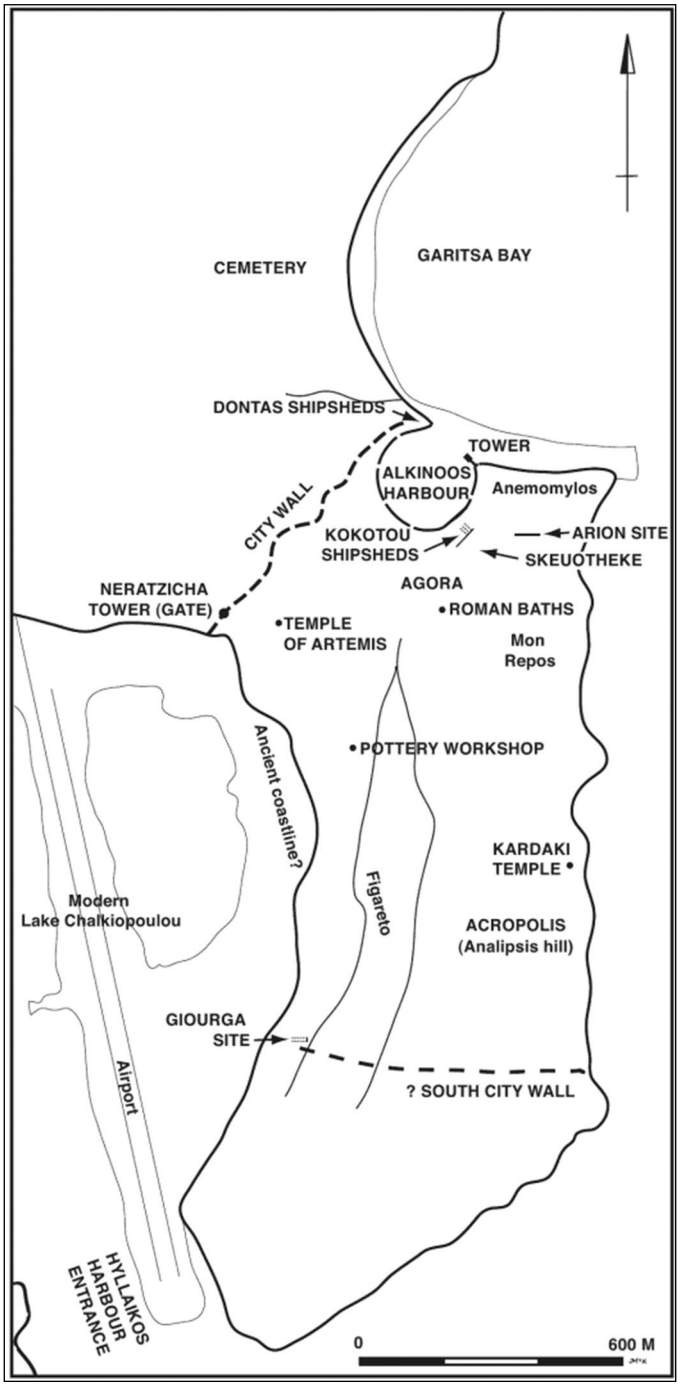

Fig. 4: Korkyra's city plan with the location of the three harbours.

πόλιν· τούτων δ' εἷς κλειστός".[27] Scholars are still uncertain about which of the three Korkyrean harbours would have corresponded to this definition. However, very often the basin of Alkinoos, located in the northern part of the Kononi headland, has been

Fig. 5: Satellite photo of the supposed location of Kydonia's harbour, landlocked by a natural sandstone formation.

identified as the "closed harbour" mentioned by Skylax; this hypothesis is mainly based on Von Gerkan's idea, that a closed harbour was used for military purposes.[28] Moreover, this assumption is supported by the location of this same harbour basin within the city-walls, which probably ended in towers.[29]

According to other scholars, the "λιμήν κλειστός" of Korkyra would have corresponded to the basin of Hyllaikos, also included within the city-walls.[30] Therefore, both Alkinoos and Hyllaikos were included within Korkyra's fortifications: this is why Lehmann-Hartleben defined both of them as "closed" ports, considering a "closed harbour" as a harbour basin within the urban fortification.[31]

Lastly, with the scarce amount of information available today, it is hard to identify the "closed harbour" with the third harbour basin of Korkyra, since the only known thing is its probable location at the site called Arion. However, if the Arion site truly corresponds to the location of Korkyra's third harbour, then this basin was also included within the walls.

Despite the difficulties associated with identifying the "closed harbour", Korkyra is a crucial element for examining the meaning of this phrase, since Skylax mentioned three different harbours, saying that only one of them was "κλειστός". This likely means that one of the three harbour basins must have had something different than the other two. Particularly, the case of Korkyra appears to contrast with Lehmann-Hartleben's theory:[32] indeed, if a closed harbour was simply an harbour inside the city-walls, then Skylax would have mentioned the presence of at least *two* closed harbours in Korkyra – or even *three* (if the Arion site truly corresponds to the location of the third harbour).

The other meaningful case is that of the harbour of Kydonia, on the northern side of the island of Crete. According to Skylax, in Kydonia there was only one harbour, that

he defined as a "λιμὴν κλειστός πρὸς βορέαν·", which literally means a "harbour closed towards the North".[33] In the Archaic and Classical periods, the harbour of Kydonia was probably accessible through a natural narrow entrance, formed by the presence of a reef barrier located on its northern side, which acted as a natural mole (fig. 5).[34] However, no archaeological study suggests that this same harbour could have been inserted within the urban fortifications of the city.

An Alternative Perspective

Looking at the 14 harbours identified as "λιμήν κλειστός" by the Periplus, it is possible to note that the archaeological data dos not exactly correspond with the extant theories. This is the case even if the hypotheses by Lehmann-Hartleben (a closed harbour as a harbour within the city-walls) and by Rougé (a closed harbour as one with a narrow entrance, or a narrow one closed with chains: a typical trait of military harbours) are certainly numerically relevant (tab. 1). The traditional identification of the "λιμήν κλειστός" with a military harbour should be rejected, at least as Archaic and Classical periods are concerned, since Skylax often mentions cities with only one harbour, saying that this same harbour was "κλειστός" (closed). If a "λιμήν κλειστός" would really indicate a "military harbour", how should the presence of only one harbour in a city be interpreted? Two hypotheses could be suggested, but both of them appear to be impracticable: the first is that in some cities there was only one harbour and that it was used uniquely for military purposes; the second would be that Skylax purposefully neglected to mention the presence of a second basin. Concerning the first hypothesis, it seems impossible that some cities were equipped with only one harbour basin and that they decided to use it uniquely for military purposes, without allowing – for example– merchant ships to enter. The second hypothesis may be also rejected, as there are no reasons why Skylax could have forgotten to mention the presence of other harbours in a city; on other occasions he explicitly refers to the presence of many harbour basins extant in the same city (e.g. Halicarnassus and Paros).

The Lehmann-Hartleben hypothesis, that a "λιμήν κλειστός" was a harbour within the city-wall, seems to be contradicted by the case of Korkyra. Indeed, here Skylax mentions three harbours, saying that only one was "κλειστός"; as has been previously stated, this means that one of the harbours had to have something different from the other two. If we assign to "κλειστός" the meaning of "included within the city wall", then the attribute referred by Skylax to only one harbour would be meaningless, since at least *two* of the Korkyrean harbours (if not *three*) were located inside the city walls.

Then, the only plausible theory seems Rougé's stance,[35] even if it needs to be partially revised. Indeed, Rougé defined "ports fermés" (closed harbours) as those harbours which had a narrow entrance and that could have been closed with chains and that this was a

Λιμὴν κλειστός	Harbour within the city-walls (Lehmann-Hartleben 1923)	Harbour closed with barriers (Von Gerkan 1924)	Military harbour (Rougé 1966)
Alkinoos, Korkyra	X	?	X
Hyllaikos, Korkyra	X		
Arion, Korkyra	?	?	?
Ambracia			
Thasos	X	X	X
Samos	?	?	
Paros	?	?	?
Priene			?
Halicarnassus	X		?
Kaunos	?	?	?
Kos	X	?	
Phalasarna	X	X	X
Kydonia	?	?	
Salamis, Cyprus	X?	?	?
Sidon	?	?	?
Genetes			

Tab. 1: Comparison between the previous theories: presence and absence of particular features in the harbours identified as "closed harbours" by Skylax. The question marks (?) indicate the cases that are not certain, whilst the X followed by a question mark (X?) indicates cases that are likely.

characteristic of a military harbour. We have already seen why the first part of his stance, the one which refers to the military nature, should be rejected, at least for the Archaic and Classical periods. Furthermore, the closure by means of chains could not be applied to every single case; indeed, to the best of our knowledge, no sign of the installation of chains has been found for any of these 14 harbours, as far as the Archaic and Classical periods are concerned. However, the first part of his definition, the one which refers to the "narrow entrance" and which was also shared by Lehmann-Hartleben, appears to be reasonable (tab. 2). If this meaning is assigned to the phrase "λιμήν κλειστός", the case of Kydonia immediately appears to be clearer. As noted earlier, in the Periplus, the harbour of Kydonia is defined "κλειστός", but this adjective is followed by the addendum "towards the North" ("pros Boréan"). Assigning this alternative meaning to the expression, this passage could be interpreted in the following way: the harbour of Kydonia, having a narrow entrance on its northern part, was considered "protected" (that is to say "closed") to the North ("πρὸς βορέαν"). This specification would be less

Λιμὴν κλειστός	Harbour within the city-walls (Lehmann-Hartleben 1923)	Harbour closed with barriers (Von Gerkan 1924)	Military harbour (Rougé 1966)	Harbour with a narrow entrance
Alkinoos, Korkyra	X	?	X	X
Hyllaikos, Korkyra	X			
Arion, Korkyra	?	?	?	?
Ambracia				X
Thasos	X	X	X	X
Samos		?		X
Paros	?	?	?	?
Priene			?	?
Halicarnassus	X		?	X
Kaunos	?	?	?	?
Kos	X	?		X
Phalasarna	X	X	X	X
Kydonia	?	?		X
Salamis, Cyprus	X?	?	?	X
Sidon	?	?	?	X
Genetes				?

Tab. 2: Comparison between the previous theories and the cases in which the concordance between the new interpretation of the phrase proposed in this contribution is certain (X), uncertain (?) or likely (X?).

clear if we give to the expression "λιμήν κλειστός" any of the meanings suggested by previous theories.

Concerning the case of Korkyra, this interpretation would make sense too, because just one of the three harbours was surrounded by a fortification which made the entrance narrower (Alkinoos). As such, even if Korkyra had three harbour basins, only one of them would have had something different from the other two.

Conclusion

Despite being a common expression in studies referred to the Graeco-Roman world, significant doubts still exist about the correct interpretation of the phrase "λιμήν κλειστός". Currently, the most credible theories claim that this term could have been used to identify the harbours included within the city-walls,[36] or harbours closable by means of chains. However, none of these hypotheses could be applied to these 14

harbours in their Archaic and Classical stages. Furthermore, these theories date back to the beginning of the previous century, so the archaeological records discovered in the meantime have contributed to raise doubts on these assumptions. Indeed, as far as the 14 cases of "λιμήν κλειστός" recorded by the Pseudo-Skylax are concerned, there is not a precise correlation between archaeological data and traditional theories. For this reason, it is possible to consider that the expression "λιμήν κλειστός" could have been employed by Skylax to identify harbours with a naturally narrow or an artificially narrowed entrance. A naturally narrow entrance could be found at Kydonia and Sidon, where the narrow entrances were due to reinforced natural reefs; examples of artificially narrowed entrances can be found at Samos and Thasos. Thus, as it has been shown, such an interpretation is completely aligned with archaeological records and would allow us to better interpret some controversial passages included in Skylax's text.

Notes

[1] The work is conserved in the cod. Parisinus 443 (p), dated to the 13th century AD, and is titled *Περίπλους τῆς θαλάττης τῆς οἰκουμένης Εὐρώπης καὶ Ἀσίας καὶ Λιβύης*, rendered in Latin as *Periplus maris interni*. Unfortunately, the nature of this periplus is controversial, since the technical information it contained could have been lost with its absorption into the literary tradition. On the periplus, see Cordano 1992; Marcotte 1986; Prontera 1990; Shipley 2011.

[2] Dionysus defines as "κλειστός" two harbours mentioned also by Skylax: Ambracia (Dion. Calliphon. 28-30), and Phalasarna (Dion. Calliphon. 118–122). On the contrary, the harbours defined as "closed" by Strabo do not correspond to Skylax' s mentions, except for Kaunos in Karia (see Strab. 14.2.3).

[3] Strab. 14.2.20.

[4] Ardaillon 1898, 33.

[5] Lehmann-Hartleben 1923, 65–74.

[6] Von Gerkan 1924, 110–114.

[7] Rougé 1966, 116 f.

[8] Ibid.

[9] Moreschini 1997, 344 (translation by the author).

[10] Ibid.

[11] Blackman 2008, 654.

[12] Baika 2009, 435.

[13] Scyl. 29.

[14] Scyl. 33.

[15] Scyl. 67.

[16] Scyl. 98.

[17] Scyl. 58.

[18] Scyl. 98.

[19] Scyl. 99.

[20] Ibid.
[21] Ibid.
[22] Scyl. 47.
[23] Ibid.
[24] Scyl. 103.
[25] Scyl. 104.
[26] Scyl. 88.
[27] Scyl. 29: "Korkyra, with a city and three harbours; of these one is closed" (Translation by the author).
[28] Von Gerkan 1924, 110–114.
[29] According to Baika (in Blackman and Rankow 2013, 323), the fortification enclosing this harbour dates back to the 5th century BC, or to the beginnings of the 4th century BC.
[30] Moreschini 1997, 236.
[31] Lehmann-Hartleben 1923, s.v. Korkyra.
[32] Lehmann-Hartleben 1923.
[33] Scyl., 47: "Κυδωνία καὶ λιμὴν κλειστός πρὸς βορέαν·".
[34] Lehmann-Hartleben 1923, 57 f. According to Herodotus (3.44), Kydonia was founded by the Samians around 520 BC, while other sources attribute it to the Aeginetans (Strab. 8.6.16), Kydon (Paus. 8.53.4 and Stephanus, s.v. Κυδωνία). Even if the evidence for the early phases of the settlement is rather limited, the identification proposed by Pashley (1837, 11–17) and Spratt (1865, 137–142) with the current Chania is traditionally accepted.
[35] Rougé 1966, 116 f.
[36] Lehmann-Hartleben 1923.

Image Credits

Fig. 1–3: by the author. – Fig. 4: Blackman – Rankov 2013, 320. – Fig. 5: Google Earth. – Tab. 1. 2: by the author.

References

Ardaillon 1898
E. Ardaillon,1898. Quomodo Graeci collocaverint portus atque aedificaverint (Paris 1898).

Baika 2009
K. Baika, Greek Harbours of the Aegean, in: X. Nieto – M.A. Cau (eds.), Arqueología náutica mediterránea (Girona 2009) 429–441.

Blackman 2008
D. J. Blackman, Sea Transport – Part 2: Harbours, in: P.J. Oleson (ed.), The Oxford Handbook of Engineering and Technology in the Classical World (Oxford 2009) 638–670.

Blackman – Rankov 2013
D. J. Blackman – B. Rankov (eds.), Shipsheds of the Ancient Mediterranean (Cambridge 2013).

Brückner 1997
H. Brückner, Coastal Changes in Western Turkey; Rapid Delta Progradation in Historical Time, Bulletin de l'Institut océanographique 18, 63–74.

Cordano 1992
F. Cordano, Antichi viaggi per mare. Peripli greci e fenici (Pordenone 1992).

Frost 1973
H. Frost, The Offshore Island Harbour at Sidon and Other Phoenician Sites in the Light of New Dating Evidence, IJNA 2.1, 1973, 75–94.

Lehmann-Hartleben 1923
K. Lehmann-Hartleben, Die antiken Hafenanlagen des Mittelmeeres (Leipzig 1923).

Marcotte 1986
D. Marcotte, Le Périple dit de Scylax. Esquisse d'un commentaire épigraphique et archéologique, Bollettino dei Classici 7, 1986, 166–182.

Moreschini 1997
D. Moreschini, The Closed Greek Harbours in the Mediterranean, Acme 1, 1997, 235–244.

Pashley 1837
R. Pashley, Travels in Crete 1 (London 1837).

Peretti 1990
A. Peretti, I Peripli arcaici e Scilace di Carianda, in: F. Prontera (ed.), Geografia e geografi nel mondo antico. Guida storica e critica (Roma 1990).

Rougé 1966
J. Rougé, Recherches sur l'organisation du commerce maritime en Méditerranée sous l'Empire romain (Paris 1966).

Shipley 2011
G. Shipley, Pseudo-Skylax's Periplous: The Circumnavigation of the Inhabited World. Text, Translation and Commentary (Exeter 2011).

Spratt 1865
T.A.B. Spratt, Travels and Researches in Crete 1 (London 1865).

Von Gerkan 1924
A. Von Gerkan, Griechische Städteanlagen: Untersuchungen zur Entwicklung des Städtebaues im Altertum (Berlin 1924).

Maritime Crete: Change and Transition amongst the Coastal Settlements from the 2nd Century BC to the 2nd Century AD – An Early View

Michael J. Curtis

The Cretan coastline extends for approximately 1,046 kilometres, offering long stretches of sandy beaches that are broken by rocky shores, promontories and sheer cliffs in some places. The coves and inlets of the island and lee sides of the islets were places where ships could safely anchor, be beached for repair and stored when not in use. This shoreline and the fertile plain beyond have been visited and settled since early prehistory. However, rising sea-levels, tectonic movement, as well as urban and tourist development along the shoreline pose an ongoing threat to the survival of many of these ancient habitation areas. Like other places in Greece, the post-Bronze Age shorelines of Crete are understudied. Many authors talk about ancient Crete as if the shores of the island have always been the same as they are today, but that in reality is far from the case.

This article considers some of the changes that took place along the coastline in a period extending from the 2nd century BC to the 2nd century AD (Hellenistic to Roman Imperial periods). It is an early view based on ongoing research.

The traditional view of Crete in the periods before the conquest of the island in 69–67 BC is overshadowed by an impression of warring city-states and piracy. For the Greek and Roman historians and commentators this often served as useful propaganda against the Cretans and has tainted our impression of Crete during these times. Down on the coast we know little of settlement and activity in the immediate aftermath of the Bronze Age. The traditional model is that the coastlines were abandoned in favour of settlements on defendable hilltops inland. It seems incredible to think that the maritime culture and associated dominance of the Minoan fleets over the surrounding seas was all lost. It is possible that this model is not correct as there are gaps in our knowledge concerning occupation along the shoreline and in the coastal plain for these periods. This situation is not helped by the submergence of the ancient shoreline in some places and the fact that this now lies buried with an overburden of sand beneath the sea. What is evident though is that fortified harbours and associated urban towns begin to emerge around the coast from 5th–4th century BC onwards. In the context of this paper some of these early foundations continue to dominate the coastal landscape into the 2nd century AD and beyond.

The coastal landscape at the beginning of the 2nd century BC comprised the Archaic – Classical harbour towns of Phalasarna, Kydonia, Itanos, and Hierapytna, along with a mixture of newly founded smaller coastal *poleis*, vassal harbour towns, and small villages that served as convenient landing points along the coast. The worries and concerns of

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past generations had been put to one side and access to the sea was now politically and economically important. The scale of this new shoreline settlement has been usefully set out by M. Cross in his volume on the Cretan city-states,[1] where in addition to the 4 Archaic – Classical foundations, he identifies 33 other coastal settlements of notable importance, of which 16 were probably small *poleis*.[2] Currently we know little about many of these settlements as the shoreline has changed, and for some we only have the remains of the more inland structures as the areas that would have been closer to sea are now either underwater or have been swept away by the centuries of winter storms. However, from what is known, it is possible to argue that there is less evidence of large-scale harbour projects as seen in the Classical period. However, some communities certainly invested in improved berthing and mooring facilities, as seen in the construction of stone waterfrontages and boulder moles.[3]

In terms of layout and functionality, some of the small coastal settlements may have been nothing more than fishing villages which served as a convenient landing place, whilst others clearly sought to take advantage of the opportunities and benefits offered by the increase in passing sea traffic. Our knowledge of the urban areas is better than that of the waterfrontage and harbour installations, though many still await a detailed study. Like some of the harbours, many of the urban areas took advantage of the natural landscape, utilising hill slopes that commanded a view over their harbours/beaching areas, the sea beyond, and the surrounding fields and hillside terraces. As might be expected, the limit of the urban development is often defined by boundary walls, some of which are clearly designed to be defensive in nature. This expansion of settlement along the coast during the 2nd and 1st centuries BC is clearly related the increase in inter-regional and long-distance shipping, for which Crete was ideally located to benefit. Whether you were sailing east – west or north – south the island offered a place to shelter from storms and strong winds, to restock with fresh food, and to rest or take on new crew. Whether the islanders were ready to fully exploit the new opportunities offered by the passing trade at this time is a matter of debate. The Cretan economies of the 2nd and 1st centuries BC seemed to have been based around subsistence agriculture and whilst the opportunities to trade their produce and goods may have seemed attractive it would have required a degree of planning to reach a state of overproduction. In the initial stages, this may not have been reliable enough to secure interest from visiting merchants or their agents looking for regular supplies. However, to the entrepreneurial merchant the Cretan harbours offered a routeway to a new marketplace for their goods, materials and people.

This external contact seems to have been primarily focused on the coastal *poleis* where there were harbour or waterfrontage installations to aid the berthing and mooring of vessels, and which offered some space for quayside storage of goods. This was important as the marketplace areas tended to be some distance from the waterfronts. The larger harbours, like Hierapytna in eastern Crete, developed into

what today we might term as 'trade and distribution hubs'. In a similar manner to modern ports, they serviced not only the immediate territorial hinterland but also other parts of the island and acted as a base for vessels that formed part of the intra-island fleet.

The Cretan coastline was also constantly changing, and it would be wrong to assume that this was a time of stability along the coast. In times of inter-state fighting even coastal settlements could be destroyed or abandoned as the conquering city-states attempted to centralise trade and direct external contact through their own main harbours. As the city-state economies developed it is possible to see this action as being revenue related for the purposes of collecting harbour dues and taxes. Human interventions were not the only problem for coastal settlers as the location of Crete on the Hellenic arc meant that the island has been prone to episodes of seismic activity throughout its history. Some of this has been so intense it has destroyed settlements, sunk and raised parts of the coastline, and brought devastating tsunamis that have washed away beaches and settlements and buried others. To date there has been limited study of the effects of such events during the 5th to 1st centuries BC, but the pattern of these events reflected in the historical record means that there is a strong probability of similar activity throughout these periods.

For the islanders there is no suggestion that life on Crete was easy either, and the subsistence-based economy meant that if you were seeking to improve your status or to raise additional funds then alternatives needed to be sought. One solution was to become a mercenary and fight for a foreign army. Mercenaries were one of Crete's main exports from the 4th century BC through to Roman times. The scale of this was not in single figures but in hundreds and thousands, making it a profitable service industry that brought in revenue and gifts from foreign kings and generals.[4] The harbours towns of Phalasarna, Kydonia, Itanos, and Hierapytna, which had military associations, may well have been the embarkation points for the contingents of mercenaries; for some harbours, this activity may have led to their later association as being 'pirate ports'. It is easy to see how the growth in the mercenary service sector influenced the development and establishment of monetary-based economies on the island. As many of the mercenaries would have been citizen farmers this activity also created a demand for slaves to work the land whilst their owners were overseas. It is possible to speculate that the gradual reduction in the number of foreign wars throughout the 1st century BC, brought about as the power and influence of Rome increased, meant that piracy became a seasonal occupation for those citizens returning from wars and feeling, or being, displaced on their return.

Mercenaries were not the only export and in addition wine and oil, timber, herbs, stone and metals were also exported via the Cretan harbours.[5] Currently, for the 2nd to 1st centuries BC there is no suggestion that the exports were of sufficient amounts to merit quayside or nearby storage. The lack of investigations in these areas does not help but

transport containers such as amphorae and jars could have easily been stacked on the quaysides or seafronts where there was no waterfrontage. From here they would wait to be loaded into either sea-going vessels or lighters if the larger ships were anchored offshore.

In terms of the landscape, the Roman invasion of 69–67 BC seems to have made little difference. The military campaign left the Cretan harbours untouched, which is a little strange since piracy seems to have been one of the factors in the argument for military intervention, along with the desire for revenge for the attack on Marcus Antonius's fleet off the coast of western Crete in 72–71 BC. Even with the formation of the joint senatorial province of Crete and Cyrenaica circa 27 BC there is little evidence of immediate change. It is possible however, that damage amongst the coastal settlements resulting from a cluster of earthquakes and a tsunami between 44–66 AD provided a good opportunity to rebuild and reorganise.[6] Gradually new planned towns emerge beside the ruins of the old settlement areas, with paved streets, drainage, and piped fresh water brought across country by aqueducts. The larger harbour towns see the emergence of a new array of public buildings, including theatres, amphitheatres, and bathhouses reflecting the start of a new era and bringing an air of prosperity along the coast. It is interesting to note that most of the theatres on the island were built in the coastal towns.

The evidence that we have to date suggests that linked to this period of new construction was a reorganisation of the harbour towns. The coastal landscape now comprised eleven main harbour towns: Kasteli Kisamos, Kydonia, Hersonissos, Olous, Lato, Siteia, Itanos, Hierapytna, Inatos, Phoinix (Loutro) and Lisos.[7] Of these, Kasteli Kisamos, Kydonia and Hierapytna can be looked upon as equivalents to modern ports. In selecting these locations, full use was made of not only the natural landscape but also the seabed. There was more shallow water on the northern side of the island, facilitating projects like the construction of concrete moles at the harbour at Hersonissos.[8] On this coast, use was made of the islet of Dhia, which was larger in land mass than today, and which sat on the edge of deep water, which the larger vessels needed. The southern coastline was much closer to the deep water, and it is along this coast that we see the emergence of warehouses and storage facilities close to the waterfrontage. The largest harbour along this coast was Hierapytna at the eastern end of the island. In this part of the island the islet of Koufonisi was ideally located to service larger vessels. Like the islet of Dhia, in Roman times the land mass of this islet would have been much larger than today, separating it from the main island only by a small, narrow channel. It is possible that goods offloaded here were taken by lighters across the bay to the harbour at Hierapytna.

Putting all of this into context, throughout the 1st century BC there was a gradual reduction in the number of coastal settlements. Trading points become more centralised and easier to manage from an administrative and financial point of view. Throughout

the Roman period, the island continued to offer good and improved trading prospects for ships on their return journeys from Italy and for those merchants whose business was based on regional island hopping. Naturally, we should expect that some of the residents of places like Hierapytna and Kasteli Kisamos were merchants and ship owners involved in the export and import of goods, as well as the organisation of fleets engaged in coastal tramping. Throughout the 1st and 2nd centuries AD there is archaeological evidence of the new cargoes reaching the island, which range from fine table wares to marble architectural pieces. The latter of these was sourced from a variety of countries including Africa, Egypt, Greece, Italy and Asia Minor as part of a well organised industry that included stone finishers working on Crete.[9]

In closing, coastal archaeology on Crete is in its infancy. The challenge of overcoming boundaries between terrestrial and underwater archaeology still needs to be faced and whilst things are beginning to change there is still a long way to go. Along the coast many of the more popular tourist resorts sit on top of the ancient settlements and many of the archaeological investigations that were conducted in advance of modern development remain unpublished: the finds and information gained during the process of excavation remain locked away. In truth, the corpus of this unpublished material is so large that it could change our current perspective of Hellenistic and Roman Crete. Finally, the surviving sites and monuments of these periods remain at risk from human and natural interventions. In many cases they have little or no heritage status and no funding to support their preservation. None of these challenges are easy to overcome but more academic profiling of Hellenistic and Roman Crete and in particular of the lesser-known sites, such as those along the coast, will be a positive way forward.

Notes

[1] Cross 2011.

[2] Cross 2011, 53–56 Map 3.

[3] For instance, at Hersonissos. Leatham – Hood 1959, 266 fig. 2.

[4] The size of one of these contingents can be seen in Livy's account of Perseus's army in 171 BCE and which included 3000 Cretans, led by the Generals Sosos of Phalasarna and Syllos of Knossos (Liv. 42.51).

[5] Chaniotis 1999, 211.

[6] Werner et al. 2018.

[7] On the basis of epigraphical and numismatic evidence, I.F. Sanders identified 26 possible Roman cities on Crete (Sanders 1982, 12). This number is close to the 24 mentioned in the 4th century AD writings of Servius and includes both inland and coastal locations (Serv. Ad. Aen. 3.106).

[8] Hohlfelder – Brandon 2014.

[9] Paton – Schneider 1999, 293.

References

Chaniotis 1999

A. Chaniotis, Milking the Mountains. Economic Activities on the Cretan Uplands in the Classical and Hellenistic Period, in: A. Chaniotis (ed.), From Minoan Farmers to Roman Traders (Stuttgart 1999) 181–220.

Cross 2011

M. Cross, The Creativity of Crete: City States and the Foundations of the Modern World (Oxford 2011).

Hohlfelder – Brandon 2014

R. L. Hohlfelder – C. J. Brandon, Narrative of the ROMACONS Fieldwork, in: C. J. Brandon – R. L. Hohlfelder – M. D. Jackson – J. P. Oleson, Building for Eternity (Oxford 2014) 55–101.

Leatham – Hood 1959

J. Leatham – S. Hood, Sub-Marine Exploration in Crete, 1955, Annual of the British School at Athens 54, 1959, 263–280.

Paton – Schneider 1999

S. Paton – R. M. Schneider, Imperial Splendour in the Province: Imported Marble on Roman Crete, in: A. Chaniotis (ed.), From Minoan Farmers to Roman Traders (Stuttgart 1999) 279–304.

Sanders 1982

I. F. Sanders, Roman Crete: An Archaeological Survey and Gazetteer of Late Hellenistic, Roman and Byzantine Crete (Warminster 1982).

Werner et al. 2018

V. Werner – K. Baika – P. Fischer – H. Hadler – L. Obrocki – T. Willershäuser – A. Tzigounaki – A. Tsigkou – K. Reicherter – I. Papanikolaou – K. Emde – A. Vött, The Sedimentary and Geomorphological Imprint of the AD 365 Tsunami on the Coasts of Southwestern Crete (Greece) – Examples from Sougia and Palaiochora', Quaternary International 473, 2018, 66–90.

Things You Need to Know about Roman Crete (For Your Own Research)

George W. M. Harrison

Abstract

This contribution examines ten issues for Crete during the Roman Empire, many of which have been misunderstood or perhaps, more generously, have been attempts to force a coherent solution to pieces which do not all necessarily belong to the same puzzle. The ten have been chosen with an eye to applicability to other provinces of the Empire. As the discussion here must be brief, the reader wishing more detail is directed to the bibliography, in which the author attempts to privilege the best of what is most recent on the subject both in evidence specific to Crete and in discussions looking more broadly at how that evidence fits into or runs counter to empire-wide trends.[1]

Carpenter[2] has correctly questioned whether one can say there is such a thing as "Greek Art" and "Greek Religion" concluding that these terms hinder examination and discourse more than they are helpful. The same must be said of (1) Romanization and this paper begins by considering whether "Roman Crete" are two words that do not belong together. Similarly, this is the time, a historical moment of "alternative facts" masquerading as truth, (2) to revisit the too great confidence in historical sources and claims of generals and grandees about their accomplishments. The conquest of Crete has more to do with the self-importance of Metellus and Pompey's aggrandizing for a triumph than with the facts on the ground.

The paper then turns from large issues to smaller ones, but ones of enormous importance to the former. The third section (3) sets out precisely what an usufruct was and how it operated legally, administratively and economically. This in turn raises the question of two other issues, both of which are given a prominence in Crete that is not sustainable: latifundia (4) are possible only with large fields and with a concentration of wealth. The first is not possible in the Cretan topography and the second is not demonstrable. (5) What makes a non-resident, that is, a 'metic' community, is problematic for Crete even before the coming of Rome.[3] During the Roman Empire, with its increasingly embracing definition of citizenship, the situation is even less clear; certainly, the debate for the centuries AD seem to be more grounded in the centuries BC. The evidence depends largely on sigillata stamps (6) and inscriptions (7) both of which, on reflection, say less than has been suggested. A closer reading of the evidence, particularly in light of modern comparanda of merchant commerce (admitting its limitations), might raise more questions for further research than evidence. The same is true of material culture (8). The remains of sculpture on Crete look less official than private and when correlated to known find spots, the pattern that emerges is 'intriguing': 'explicable' is a different matter entirely.

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Two final points, then, look at precisely what can be said with any degree of confidence about Cretan farmers. The modern syllogism is that farmers are 'cash poor, land rich'; (9) this rewards examination of how, especially, the Roman law code did what it could to preserve the financial viability of small farmers and the integrity of the land-holdings. The evidence from Crete, if slender, is suggestive, and fits well with Constantinian, Theodosian, and Justinianic laws tying farmers to their land. If the application of a modern viewpoint should, and must, be viewed as contentious, (10) what cannot be denied, if harder to demonstrate, is that the low tech and low cost (comparatively) farming of antiquity was lower in its impact and thus better positioned to ride out the vagaries of cycles of boom-and-bust. In essence, having less to lose and the resources at hand to make good their losses, it was easier to recover.

Because Crete was an island, archaeologists of all periods on the island have benefited from a 'closed system' that has made results more secure because there needs to be less filtering of circumstances arising from more porous borders. Crete is thus positioned – as suggested in the title of the oral version of this paper 'Crete the Important' – to pose questions and supply data of application to understanding provincial administration throughout the Empire.

Carpenter, writing on "Art in Greek Religion" has questioned whether one can say there is such a thing as "Greek Art" or "Greek Religion", concluding that these terms hinder examination and discourse more than they are helpful. I am now convinced that 'Roman' and 'Crete' are words that do not deserve to be used together; 'Crete during the Roman Empire' is adequate and more accurate. The argument one is prepared to make, and can prove, is that Crete's importance to studies of the Roman Empire is in how much it retained systems and institutions that pre-dated its envelopment within Rome's *mare nostrum*. Its culture was not overwhelmed as in some provinces, nor did it aggressively and visibly aim to be a cultural *patois*.

Romanisation presumes the consent and participation of the population on the ground. Even when there is evidence, it is wise not to trust data that on examination is illusory and misleading. A more recent parallel in Crete is illuminating: census figures from 1821 would seem to indicate an 'Ottomanisation' of Crete, in which more than 90% of the population of Turkoman-colonized Crete adopted the religion of the Sultanate. Yet, by the 1911 census, the last before formal union with Greece in 1913,[4] the percentage of the population on Crete declaring the Muslim faith was 8%. The difference in the percentages cannot be accounted for by Turkish flight but rather in Cretans who paid lip service to Mohammadism for business reasons. The incentive was the tax code: everyone paid the *haraç* but those who declared allegiance to Muhammadism avoided the *jizya*.[5] Conversion was basically a tax dodge; one would not be wrong to view 'Romanisation' in a similar light.

Commerce, especially in wine, between Crete and Puteoli, from which Cretan products fanned out to Capua and Pompeii and Rome and elsewhere, has been central to assigning Crete a leading role in the wine trade. The epigraphic evidence yields names, in both Latin and Greek inscriptions, in Crete and in Italy, of businessmen associated with the movement of wine from Crete to Italy. The Granius family, for example, is known in inscriptions from Italy, from a grave stele from Gortyn now in Herakleion, inscriptions in Knossos, and even in a stele of a military tribune in the III Cyrenaica legion.[6]

Other families have similar histories: the Larcius family from Anzio can be traced through four generations on the island of Crete.[7] L. Larcius Laches was proconsul to Crete; his son, A. Larcius Gallus and Sulpicia Telero had a son born in Crete, A. Larcius Quirinus Lepidus Sulpicianus. He was quaestor on Crete in AD 67–AD 68 and a legate of the Legio X Fretensis that saw service in Judea under Vespasian and Titus. His son, A. Larcius Quirinus Priscus, also born in Crete, was later proconsul in Crete and eventually consul at Rome.[8]

It should not need stating – but apparently it does – that this does not count as Romanisation. All of these traders are already Romans, and Romans who came to Crete to capitalize on what could be made from the tatters that the Roman civil war left much of the Mediterranean in, especially places which allied itself, or was deemed to have allied itself, with the losing faction of Antony. Crete was doubly suspicious to the Julii: it was the province assigned to Brutus after the assassination of Caesar and it had once been assigned as the land dowry to the daughter of Antony and Cleopatra. A Roman merchant presence can be traced at Gortyn at least as early as the second century BC (*IC IV.400*), and an inscription (*IC IV.290*) of the *cives romani qui Gortynae negotiantur* could belong to any part of the first century BC.[9] This group itself morphed during the Roman empire into a *conventus civium romanorum* with its own treasury and *curatores*. They are significant because they are the only attested imperial guild on Crete,[10] in stark opposition with Ostia.[11]

Wine was shipped by one member of the family in Crete to others of his family in Italy.[12] The Granii became significant land-holders in Crete and so wine was moved from Italian-owned farms in Crete to Italian merchants in Italy. This looks like exploitation, not Romanisation.[13] This makes sense of Italian sigillata stamps in Crete: the most compelling evidence comes from Knossos, which has more than half the known and published Italian sigillata stamps. With few exceptions (the exceptions are greater outside Knossos), the stamps are from cities where epigraphic evidence places Italians with connections with those cities.[14]

The Roman law code would have made import and export far more advantageous to a Roman citizen and it would have been preferable for Cretans, that is, *peregrini* in Roman law, to partner with a Roman citizen. Ships owned by Cretans, sailed by Cretans, and with Cretan goods would have been at a legal disadvantage should there have been any

need. Bringing an action in *ius civile* would have been restricted to citizens. Although *peregrini* could have brought an action in *ius gentium*, a citizen still had substantial advantages and limited liability.

The foundation of the Roman colony at Knossos is often adduced in Romanisation. A key passage on the date and circumstances comes from Velleius Paterculus, which explains the dramatic rise of imports from Crete as well as later the almost total disappearance of Italic wares and inscriptions in Latin from Knossos:[15]

[Mutiny of soldiers of Augustus, who fought against Antony at Mutina (43 BC), in 36 BC (after defeat of Sextus Pompey at Naulochus), for retirement land and bonus]

> Subita deinde exercitus seditio…partim severitate, partim liberalitate discussa principis. [2] speciosumque per idem tempus adiectum supplementum Campanae coloniae <…>* eius relicti erant publici. Pro his longe uberiores reditus duodecies sestertium in Creta insula redditi et aqua promissa, quae hodieque singulare et salubritatis instar et amoenitatis ornamentum.
>
> There was a sudden mutiny among the soldiers…it was diffused by the commander partly by severity, partly by generosity. [2] At the same time a remarkable addition was made to the Campanian [veteran] colony <*lacuna*>* from what public lands remained. More lucrative by much than this was the 1,200,000 HS return [*redditus*] assigned from the island of Crete and the promised aqueduct,** which even today remarkably is a testament of health and ornament of admiration
>
> -- Velleius Paterculus LXXXI.1–2
>
> *perhaps reasonably veteranorum Capuensi
> **aqua Julia in Campania
> *usufructum* restricted to jurists, Cicero, and Seneca; *reditus* more often used

In 42 BC, during the consulate of Munatius and Aemilius, Antony, Octavian and Lepidus passed a law that allowed each of them to grant citizenship and tax exemption to individuals and communities. A series of four letters from Octavian, the first of which dates to 36 BC, confirms the grant of citizenship and tax exempt status to those in Rhosus (now SE Turkey on the bay of Issus, north of Antioch) who fought for him.[16] The date is the same as the charter of Colonia Julia Nobilis Gnosus and so one expects that the provisions are the same. Both Rhosus and Knossus were in territories ceded to Antony in the division of provinces, yet Octavian was interfering in setting up cities loyal to him. The charters of Rhosus and Knossus pre-date Actium and so were not veteran colonies settled by Augustus after the completion of his victory.

Soldiers who saw service in 43 BC, and so presumably were under arms before then, were petitioning to be demobbed seven years later. Augustus made a decision to retire restive soldiers so that unrest would not spread. The text is clear that the veterans were to receive derelict land at Capua (*relicti publici*) and that in addition (*pro his*) they were to be given a stipend (*reditus*) from the agricultural revenues of Crete. What is clear is that no soldiers were sent to Crete as colonists. The main 'sweetener' was an aqueduct at Capua. Such a grant makes no sense if the retired soldiers were anywhere than at Capua.

If Knossos is not mentioned specifically by Velleius Paterculus, it is by Dio Cassius, a provincial governor under both Commodus and Septimius Severus:

> Καὶ τὸ μὲν ἀργύριον αὐτοῖς στρατιώταις αὐτίκα, τὴν δὲ χώραν οὐ πολλῶι ὕστερον. ἔδοκεν. [5] ἐπειδὴ γὰρ οὐκ ἐξήρκεσεν ἡ ἐν τῶι δημοσίωι ἔτι τότε οὖσα, προσεξεπρίατο ἄλλην τε καὶ παρὰ Καμπανῶν τῶν ἐν τῆι Καπύαι οἰκούντων συχνήν (καὶ γὰρ ἐποίκων ἡ πόλις πολλῶν ἐδεῖτο), καὶ αὐτοῖς τό τε ὕδωρ τὸ Ἰούλιον ὠνομασμένον, ἐφ'ὠι καὶ τὰ μάλιστα διὰ πάντων ἀγάλλονται, τήν τε χώραν τὴν Κνωσίαν, ἣν καὶ νῦν ἔτι καρποῦνται, ἀντέδωκε.
>
> And the money he gave right away to the soldiers, and the land not much later. [5] Since the public land at that time was not enough, he [Octavian] bought a large amount of other [land] from those living in Campania at Capua (as the city needed many settlers), and to them he gave the aqueduct called 'Julia', in which they have always been extremely proud, and also the vicinity of Knossos, which even now is extremely productive.
>
> -- Dio Cassius XLIX.14.4-5

The two accounts confirm one another, Dio Cassius adding that in addition to derelict land, Octavian purchased land in Capua, not Knossus. The significant detail is that the soldiers were given an usufruct (καρποῦνται) over Knossus that continued to remain in effect (ἣν καὶ ωῦν ἔτι) into Dio Cassius' day.[17] The amount of an usufruct varied from place to place and from time to time but was generally between 10% and 15%: more or less the same percentages for land let as share-cropping. 1,200,000 HS is the only hard data on the size of the economy in Crete at the beginning of the empire. It would mean that the gross agricultural product of the Knossos catchment can be estimated at somewhere around 15,000,000 HS *per annum* and that the level above subsistence must be at least 20% to 25%. Any figure lower than 20% might have caused farmers to abandon the land and the usufruct would have dissolved.

The imposition of a 10%–15% surcharge would not have encouraged Cretans in the vicinity of Knossos to embrace Romanisation. Stamps on Tuscan and Po Valley sigillata do show some Italian presence but a mercantile one, not military. It would make sense, if unprovable on current evidence, that among their duties was the collection of the agricultural produce.[18]

Usufructs were widespread and common enough that the entire seventh book of *Justinian's Digest*, one of the longest, preserves opinions of the jurists on usufruct. While most of the opinions preserved are on inheritance and transfer, there are situations in which usufructs could cease. Cassius Dio was probably wrong that it was Octavian's usufruct that was still in force.[19] Knossos was almost unique in having been slapped twice with an usufruct: Vespasian re-founded Colonia Julia Nobilis Gnossus as Colonia Flavia Gnossus in AD 71, granting an usufruct to some of his troops who served in the just concluded Jewish War.[20] Perhaps some of them belonged to the III Cyrenaica legion in which Granius served.

More ex-military Cretans are known outside of Crete than Roman veterans can be placed on the island, such as in the stele of Hyperanor and the brick stamp of Theander:

HYPERANOR HYPERANO
RIS F CRET[ICUS] LAPPA MIL[ES]
C[O]HOR I SAG[ITTARIORUM]
ANN LX STIP[ENDIUM] XVIII
H[IC] S[ITUS] E[ST]
CIL 13. 7516

THEANDER ARISTOME
NI F CRETENSIS MIL[ES]
COH[OR] I NORICO OPTIO
AN XLV STIP XXVI
H S E H E C

Military diplomata of Cretans are known from the Dacian Wars (*CIL XIII. 163* and *RMD IV. 226*) as well as the stele of a soldier from Hierapytna who settled in what is now Bulgaria when his unit moved on (*IMS IV. 34*). That unit was almost certainly the *Cohors I Cretum*, organized by Flavian and used by Trajan in the Dacian Wars. Nine brick stamps have been found in the walls of a bath built by the unit in their quarters at Timacum Maius (mod. Nisevac).[21] Cretans were also in the Roman army in Germany:[22] not surprisingly Hyperanor was an archer, a specialty associated with Crete from at least the Hellenistic period. What are missing from the Roman period but known in the Hellenistic period are objects found in this garrison to suggest the comforts from Crete, and, conversely, that Cretans in service at the margins of the Empire sent objects back home that they had acquired.

Trade routes and grain routes raise the question of globalization *versus* insularity. The material, that is, the consumer approach to globalization on Crete has been admirably covered by Sweetman[23] and by Karanastasi.[24] Similarly, Kouremenos notes that the default instinct of the Cretans was isolationist.[25] What trade it could offer were items (olive oil, honey, wine, purple dye,[26] and medicinal herbs),[27] for which there

was substantial competition from other regions. One finds that one returns to Francis' conclusion that 'Roman Crete was neither entirely globalized not insular'.[28]

The joint province of Crete and Cyrenaica was a marriage of convenience, and like their human analogy, they seem to have slept in separate bedrooms and gone their own way. Large, sustained interaction, in essence becoming each other's major trading partner, in today's economic jargon, would be a compelling argument for globalization. Chevrollier concludes that any relationship between the two halves of the province was little and largely accidental.[29] Economically, Vespasian's campaign in Judea was an economic watershed: the Roman economy never again afterwards had such substantial influxes of capital from outside the empire through conquest.[30] The Roman economy became a 'zero sum game' in which the costs and benefits had to balance with internal production. Roman 'Globalization' *was* 'insularity' in that it took place within the limits of Empire.

This would seem to be implicit in the two tiers of sea routes that Bowsky and Gallimore, separately, have been mapping out through which Cretan goods found their way to markets off-island. In neither of these tiers was Crete the main port of call or terminus.[31] The *annona* was the system of imperial distribution of grain and oil for Rome, whose terminus was Puteoli on the north end of the bay of Naples until Ostia became dependable. By AD 311, grain ceased to be shipped to Rome[32] but was diverted to Constantinople after its foundation and increasingly the *annona* supplied military and not civilian needs. Crete was not a grain exporter and so there would be no reason for ships from Alexandria to Rome to stop at Crete except to send their lighters (or tenders) on shore for provisions. There is no evidence that Cretan olive oil was transported on imperial ships, and no imperial incentive from Rome. Wine and olive oil seem to have been the two most important commodities for paying taxation in kind (*stipendia*), yet there is no indication that Rome made the process more attractive by waiving port duties (*vectagalia*) for Cretan vessels at Puteoli or Ostia.[33]

Most of the harbors on Crete, additionally, were and are small and shallow and not terribly well protected and are largely seasonal. The size and displacement of cargo is thus of crucial importance. The fundamental work on Cretan amphorae was done by Maragou-Lerat, who defined four (now five) types of Cretan amphorae.[34] It is Gallimore, however, who has proposed that the reason for the standardization of amphora shapes was for ease of shipping rather than identifying point of origin.[35] The inference that one draws from this is that there must have been Cretan ships of more or less the same size,[36] so they could use the same shallow harbors, and angle of slope of the sides: amphorae of the same shape and size would maximize cargo and simplify the lashing of the amphorae to the ribs of the ships. These ships would have been suitable for trade with other coastal cities on Crete but also for plying the sea lanes of small-scale private commerce, rather than imperial *annona* (and its later manifestation as the *annona militaris*).[37]

Bowsky has done the hard work of correlating sigillata stamps on Crete with the occurrence of those same stamps elsewhere. 46 potters are known through 94 Italian sigillata stamps;[38] half of the potters are clustered in Etruria and the Po Valley and more than half of the stamps come from Knossos. One natural conclusion is that boats filled with wine, shipped from Crete to Rome as tax (*stipendia*) or to Capua as part of the usufruct,[39] on the return trip was filled with Italian sigillata and other goods that have not left a trace in the record. The number of potters known from Crete who turn up also in Achaea and in Corinth would seem to indicate that ships heading from northern Italy to central Greece stopped over at Crete as well.

With the diversion of grain from Rome to the east, Cretan tax-in-kind commodities were diverted to Constantinople and from there to where the Roman army was on active service. Cretan amphorae litter the progress (and retreat) of the Roman army around the perimeter of the Black Sea.[40] Cretan amphorae cease only when the region falls to advancing Muslim armies.[41] The destination, tonnage of ships, and consumer preference all play a role in amphora shape and size: while the TRC4 is the preferred Cretan amphora type for the *annona militaris*, vessels operating in the FME are more likely to have TRC1 and TRC2 shapes and are found in Black Sea region non-military sites and also in Alexandria and Berenice, and elsewhere.[42] Production sites might be possible to identify: the TRC2 for small-scale trade routes is common at Ierapytna, positioned for shipping to Alexandria and Berenice, while TRC4 of the *annona militaris* is common at Gortyn and Itanos, and a kiln with wasters has been found at Eleutherna, all suitable for shipping to the north.[43]

Trade, whether internal or off-island, requires warehouses. The only surviving warehouse on the island is at Lasaia. It has not been systematically investigated and so even its date remains unclear.[44] There is, thus, little that can be said about a subject that should form a significant amount of discussion in any panel or publication on Crete off-island and intra-island trade.[45] As the Empire became cash strapped, the central government established more monopolies: clay beds (*figlinae*) had been private (equestrian) enterprises that passed into the possession of the senatorial elite, and eventually became an imperial monopoly.[46] So, too, warehouses came under imperial control: the Augustan history reports that under Caracalla, his permission was required to torture a slave who was a guard at a warehouse that was robbed.[47] The implication is that the slave was imperial property and thus, so too, was the warehouse.[48] What it means more broadly is that the cost of warehousing must be factored into any economic calculations of internal and external trade.[49]

Warehouses would have been at the terminus of roads. Trade requires the movement of goods from point of manufacture, or harvesting, to the coast for shipping and so the quality of the roads is a factor in the indirect costs of how long it takes to move goods (longer on less good roads and so more spoilage) and how often transport breaks down (more often on less good roads and so more breakage). The military grade road, *via munita*, does not exist on Crete in part, no doubt, because the Roman army never

garrisoned Crete. What Crete does have are earthen tracks, *via terrena*, and *via glareata*, comprised of gravel and sometimes with flagstones. These roads are how commerce moved from the countryside to the *municipia* and from the *municipia* to other places. Roads also played a part in the great urban expansion that took place during the Roman Empire. This would have benefitted local trade as there would have been fewer but bigger markets.[50]

Milestones, such as at Aptera, are evidence of a well-travelled road and a road meant for business. It was important for a merchant to know exactly how far he was from the terminus of a road, for Crete, practicably at a port with a warehouse. Where one finds milestones, one reasonably is along a major route. Roads also indicate date: the proliferation of *stelai* along the Herakleion – Knossos corridor in the first and second centuries AD are evidence of when Herakleion supplanted Amnisos as the main harbor for Knossos.[51] A road is further confirmed by the kiln sites near the museum at Herakleion, and a house in the museum excavations that has been labeled a 'transit facility' for wine from Lyttos destined for Pompeii.[52] The road between Eleutherna and Chania belongs to the Roman Empire and established a new trade corridor on the island.[53]

The position Crete occupied in the Empire should not be underestimated. The Peutinger Table is a map produced sometime between AD 335 and AD 366. On it, Crete is far and away the largest island of the Mediterranean and is shown nearly as large as Corsica, Sardinia, Sicily, and Cyprus combined. The map includes distances and so the relative size of Crete to the other islands was not unknown.[54] The ancient perception that Crete was important helps explain the presence of so many imported goods on Crete. The marble for the mosaics, and mosaicists, had to come from elsewhere, and so cost money;[55] the statues, if largely versions of well-known Classical types, came from the major sculpture centers in the eastern half of the Mediterranean and are far more numerous than in the Hellenistic period.[56] Baths mean during the Roman Empire what they meant before: they were centers of culture and learning,[57] and so, more a point of local pride and prestige and continuity than a sign of Romanization.

The Peutinger Table lists 18 cities in Crete and it is a fairly easy matter to draw lines from known amphora production sites, vineyards, and harbors or major collection sites like Lappa, Gortyn and Knossos.[58] The assumption has always been that a road ends at a harbor where a ship awaits; under-appreciated is the amount of internal trade that happened along these corridors. The production of the amphorae, according to Gallimore,[59] for local and regional (i.e. imperially unmoderated) trade increases on Crete when trade in the Empire as a whole was declining and imports on Crete rise in tandem. What is equally apparent and no less true is that even at the point when the percentage of non-Cretan amphorae is highest, local production still represents the majority of finds.

One has to consider distortion of the evidence: a Cretan amphora to Kos can be traced and a Koan amphora to Crete will also leave traces. But the goat skins and wooden barrels that traveled from village to village on that same cart are lost forever, but it does

not mean the trade did not exist. If one were to consider that the Cretan economy was export oriented, one would expect to find Cretan coins well represented at other sites, and non-Cretan coins in substantial numbers on the island. Sidiropoulos notes that the geographical range of coins at Eleutherna, and on Crete in general, is fairly small and that the chronological range, such as at Knossos, is also often restricted.[60] At 14% to 17% purity of silver, they could have circulated as 'specie', that is, the token value at which they were struck, and not as bullion (i.e. the value of the silver content). Specie of all places and periods is not, and cannot, be widely circulated and so indicates an economy that is largely internal.[61]

Sustainability is very much a current concern and one might with profit ask the same question of antiquity: how much trade was persistent leading to long-term prosperity as opposed to economic bubbles, and how much of that trade was in durable items that did not need to be replaced frequently? One wonders, too, how many and who precisely in Crete benefitted from the economic structures of the Roman Empire. Bowsky[62] has characterized the presence of Italian sigillata at Knossos as a 'brief boom' and a 'blip': these are her words, restricted from 20 BC to AD 15 (an 'Augustan bubble'), and so it would be irresponsible to structure a model of the over-all Cretan economy on them.[63]

The pattern on the whole in Crete is an uneven one. Many of the families that have survived in the epigraphic record seem often to have lasted a generation, rarely more. St. Paul's ship came to Crete once, and by the accident of a storm. That ports could have accommodated ships of all tonnages smaller than the big grain ships – the super tankers of their day – does not mean that they did. For that we would need other evidence and the evidence is lacking.

The odeion at Gortyn is important for many reasons but one is that, like almost all major construction during the Roman Empire, it was made with local quarried stone.[64] From the end of the first century AD, its repairs extensively utilized locally made bricks. An instinct for self-reliance is a major factor of the economy – buying local is not just more practical, it is cheaper. One nonetheless takes advantage of what tradition and the law code allows. Local officials in the *municipia* at the end of their term of office received 'decurion status' which gave them citizenship and so access to the more favorable *ius civilis* and tax-exempt status. The *Inscriptiones creticae* preserve several stelai in which decurion status was a matter of pride. Lappa as a free city did not pay taxes; Italians living abroad did not pay taxes; veterans in veteran colonies did not pay taxes.

Most intriguing is what happened to the usufruct. Because Roman law could only deal with persons, veteran A would have an usufruct on farm X. If the farmer of farm X became a decurion, his change in status cancelled the usufruct. A veteran dying intestate cancelled the usufruct. Shortly there would have been the pattern where many farms in Knossos managed to shed their encumbrance. With the virtual end of the usufruct, Cretan amphorae largely disappear from Campania,[65] coins from Knossos cease with the end of the Julio-Claudians,[66] and Italian sigillata stamps disappear.[67] In essence, as

a veteran colony, Knossos would have been able to enjoy the tax-free advantages of a veteran's colony without the veterans.

If the figures on amphoras from Gallimore tell us anything, it is that when importation of amphoras fell off, for whatever reason, local production stepped in to fill the void.[68] It could reflect also Cretan exportation of wine made from varietals of grapes that came from Kos and from Rhodes. The amphorae that look like Koan and Rhodian amphorae may have the shape to suggest that the wine tastes similar to Koan and Rhodian wines.[69] Cretan dessert wine, *passum*, had a wide appeal and in this instance enough is known that it had a particular appeal among soldiers and gladiators. The Cretan export products were staples (with the exception of purple dye). Honey, wine, olive oil and medicinal herbs would have resisted a collapse when the prestige market moved to the next new thing or ran out of money.[70]

In a real measure the sum of the Cretan economy is the weather. What this means is that there were several economies each tied to climatic cycles. Changes in preference in crops and animal husbandry run in tandem with these cycles. The climate in Crete for the High Roman Empire was optimal in terms of temperature and rainfall. This in turn correlates to and helps explain a culture that could afford material comforts, social well-being, as well as increased population without any indication of droughts, famine, starvation, rising literacy and civic participation in shared rituals. The sustained good climate of the early Empire allowed for the crop yields that in turn could afford the massive construction programs and private displays of wealth.

Kelly[71] has stated that Cretans became archers because that is one of the few opportunities the landscape allowed them. The terrain of Crete was not going to encourage cavalry. When type of service is specified in military inscriptions in the Empire, it is as archers. There are few new temple foundations or shrines during the Empire, and so the one to Artemis Skopelitis in Herakleion stands out.[72] In addition to the Artemis and Niobid group in Inatos, there is a small statue of Artemis Toxotes from Lappa, now in Rethymnon.[73] The syncretized cult of Dictynna/Artemis was visited by Hadrian in AD 122 and games to Artemis/Dictynna occurred in the same year as the Pythian Games on the Olympic cycle.[74]

Cretans could not do what was not possible given their tools and limitations. The increased population during the Roman Empire had to be supported by crops. There is no evidence, because they did not have the ability, of increased germination rates or increased yield rates. What the Cretans did was terrace and irrigate. The evidence for exploiting marginal land is extensive, if not always readily visible.[75] When one sees the terraces, one sees what supported its population and made it possible to afford its civic structures, government, and festivals.

Amanda Kelly[76] has recently looked at baths and it is worthwhile to see exactly how many were built during the Empire. Their placement and distribution might suggest that coastal sites were more likely to have baths, and thus that coastal sites were wealthier.

This may be true, but it is not the entire reason: the Roman recipe for concrete preferred salt water and so the distance to the interior in which there are concrete constructions is a factor of how far salt water could be transported inland efficiently. Given ancient transport and cooperage, the map of baths does not mean Cretans in the hills preferred to be smelly; rather, it shows the limits of what technology allowed them to do.

Crete presents important evidence for any serious study at all periods. The title of the oral version of this paper, "Crete the Important" was by way of apology for a paper given many years ago, "Crete the Ordinary". Having the reflection of these two, I find there is a significant and tenable middle ground. The ordinary men and women of Crete by their enormous energy and indomitable spirit managed to grow and make and move incredible things to markets. The remains of these products and what we can infer reasonably from them offers comparative data of enormous utility to studies of other parts of the Empire.

Notes

[1] Not available at the time of submission of this contribution, J. Francis and M. Curtis are co-editing a volume, Change and Transition on Crete from late Hellenistic through the early Byzantine Period for Archeopress which should be out more or less at the same time as this volume of conference proceedings. J. Francis – A. Kouremenos (eds.) 2016 remains the place to start an investigation of Roman Crete.

[2] Carpenter 2007, 398.

[3] Muñoz Sogas 2019.

[4] The Treaty of Bucharest (1911) legally recognized Crete as part of Greece; it had been unofficially under Greek law and elected representatives to Parliament since 1908.

[5] The precise percentage of jizya varied considerably from place to place and over time so it is impossible to estimate precise figures. In addition to being a supplementary tax for non-Muslims, similar to Roman special taxes for problematic populations, included provisions against carrying arms and riding horses, building new houses of worship or repairing old ones; against public processions and open air worship and proselytism; the requirement to wear distinctive clothing; prohibition against building homes higher than Muslim ones. As the last Greek-speaking area incorporated into Ottoman Empire, Cretans were taxed at a lower rate than other Greeks, and mixed marriages were legal; Adiyeke 2005, 208–215.

[6] Bowsky 2011a, 432 anticipates my view in seeing the Cretan imperial economy as "dominated by Romans and acculturated Hellenes."

[7] See, esp., Lippolis 2016, 158, on the Larcii but also the Roscii of Crete and Campania.

[8] Bowksy 2011a, 439.

[9] Businessmen with Cretan connections turn up as Italian businessmen at Delos, elsewhere in the Greek east, in Campania, and elsewhere in Italy; Bowsky 2011a, 436. Bowsky (2011a, 440) is inclined to see three waves of Roman merchants coming to Crete: after Sulla's destruction of Delos in 88 BC; after 67 BC when Pompey cleared the eastern Mediterranean of pirates; after Actium, 31 BC.

[10] On the conventus, see Lippolis 201, 160. An exchange of letters between Trajan and Pliny (10.33 and 10.34) shows that Trajan tried to suppress collegia because he was suspicious of their political motives; Perry 2016.

[11] One member of a merchant family at their home base and another living where they imported is a pattern at least as old as the Babylonian neighborhood of merchants (metics), not oicists, at Hittite Kültepe, 1970 BC.

[12] Bowsky 2011a, esp. 439 f.

[13] Bowsky 2011a, 438.

[14] Bowsky 2011b, 117–134.

[15] All translations are those of the author.

[16] On Rhosus, see Ehrenberg-Jones 1976, 133–135 #301 and Levick 2000, 169–73 #158.

[17] Related to the word for fruit, καρπόω in this sense is found as far back as Demosthenes 23.126 and 27.5.

[18] See, for example, the 103 Italian businessmen on Crete identified in inscriptions by Bowsky 1999, 305–347.

[19] An usufruct was unlikely to last more than 100 years through intestate succession; usufructs would have been held between an individual owner of the usufruct and the property that was entailed; see Crook 1967, 154.

[20] Harrison 1994, 61 f. and 85–88 for Octavian's usufruct; for Flavian usufruct 216 and 263. Karanastasi 2016, 101–118, and Tzifopolis 2009, 159–173 have both noted that there are not any surviving official Flavian statues on Crete or inscriptions celebrating the Flavian dynasty.

[21] Petrovic – Filipovic 2015, 33–39.

[22] On the two stelai, see Bechert, Kreta in römischer Zeit (Mainz 2011) 24.

[23] Rebecca Sweetman 2011, 441–450. It is significant that Sweetman (444) views globalization as a phenomenon restricted to areas linked to administration (Gortyn) and economy (Knossos, port towns) and that the pace of centers adopting Roman social institutions varied widely across the island (443).

[24] Karanastasi 2016, 101–118, sees a large presence of settlers and immigrant merchants in Crete "who had high standards of living [and insisted on] good quality housing and imported household objects (101)." Like Sweetman, she considers the phenomenon as restricted largely to coastal towns (103); cp. Bowksy 2011a 436, who asserts that "Italian immigration on the island seems to start at Gortyn and fans out to Knossos and Lyttos."

[25] Kouremenos 2018, 59.

[26] Purple dye production during the Roman Empire seems to have been centered mainly on the small islands off the coast of Crete, like Kouphonisi and Chryssi; Konstantinos Chalikias 2013, 36–9. The transport amphorae on the island (36) and fish tanks (36, 58), especially given their shallow depth (60 cm) would argue for the propagation and harvesting of the murex, and shipment of the processed dye.

[27] All but purple dye are known in Cretan amphorae with dipinti largely in Italy but elsewhere on the European and African Mediterranean; S. Gallimore 2016, 138–150.

[28] J. Francis forthcoming in J.M. Gordon – A. Kouremenos.

[29] See F. Chevrollier 2016, 11–26. At no time does Crete and the Pentapolis have a unified coinage (14, 17 f.). Each part of the island had its own koinon and its own administration of the imperial cult (16).

The ceramic record, other than lamps, is largely non-existent (16). Of all the inscriptions of Cyrenaicans outside of Cyrenaica, only 2.2% have been found in Crete (20). What little that links Crete and the Pentapolis are significant Jewish communities on each (14). Geographically, Crete is closer, about 300 km by sea as opposed to 800 km overland to Alexandria and 900 km overland to Leptis Magna (15). Two places only on the island receive votives from resident of Cyrenaica: the healing sanctuary at Lebena and the cave of Zeus at Ida (20). On Cretan caves in the Roman Empire; see also N. Litinas 2014, and Bowsky 2016, 32, who notes that only one Italian sigillata stamp links Knossos with Cyrenaica.

[30] Even with Iudaea capta most of the benefits of the sale of booty (ex manubiis) stayed in Rome, such as the Flavian amphitheater, and were not empire wide.

[31] Bowsky in Francis – Kouremenos 2016, 31.

[32] Constantine caused a famine in Rome by diverting grain to his army from AD 311; Gallimore in Francis – Kouremenos 2016, 176.

[33] It is unlikely, pace Gallimore 2016, 176, that Cretan goods were shipped as extra cargo on grain ships from Alexandria. Aside from the logistics of lighters/tenders, which are not insuperable hurdles, imperial privileges were jealously guarded: Pliny, for example, when posted as governor of Bithynia on the Black Sea had to write a letter to Trajan asking special permission to add a letter to his own wife in Rome in the imperial post dispatch.

[34] A. Marangou-Lerat 1995, and 1999, 269–278. Not one of the eight wrecks found so far with Cretan amphorae are on the annona route from Alexandria to Rome; Gallimore 2016, 178.

[35] S. Gallimore 2016, 157. 182.

[36] Boats and ships of more or less the same size and draught have been shown when enough boats have been recovered, such as on the Rhine (naval museum in Mainz), or ships, as in the Istanbul Metro tunnel excavations.

[37] One should add, too, that considerable grain was shipped privately and sold outside of imperial jurisdiction; Gallimore 2016, 178, on the Murecine Archive from Pompeii.

[38] Bowsky 2016, 27 and, 29, lists sites with stamps: Chania, Aptera, Lappa, Hamalevri, Eleutherna, Kommos, Gortyn, Knossos, Viannos, Hierapytna, Lato pros Kamara (Ayios Nikolaos).

[39] The physical record is as impressive as the monetary value of the usufruct: 435 complete Cretan amphorae are now recorded at Pompeii, 50 at Herculaneum and another 20 at Stabiae. This accounts for 20% of wine amphorae in assemblages in the first century AD; Gallimore 2016, 157.

[40] Gallimore 2016, 180 f. has traced movement of Cretan wine through the distinctive Cretan late-amphora shapes: form 99 = TRC4; LR14/Saraçane 22; LRA2; TRC10 = Cr LRA2. Cretan amphorae found on the Amber route probably originated from Vienna, one terminus of a route to St. Petersburg and guarded by the nearby garrison town of Carnuntum.

[41] Although Gallimore (2016, 183), does not make the connection, it is the reasonable inference from his observation that in the seventh century AD, Cretan amphorae cease to be made in a limited number of forms and that production centers for amphorae moved inland. A reason for the first is that TRC4 was not needed because the army was no longer in the Balkans and central authority in Constantinople had collapsed. The moving of kiln sites to the interior seems a reasonable response to the appearance of Saracen corsairs.

[42] 43% of the amphorae at Buthrotum in AD iii are Cretan (Zemer shape 57); 20% of amphorae in Apulia in AD iii are Cretan; 11% of amphorae in Lyon in AD iii are Cretan.
[43] Gallimore 2016, 184.
[44] Chaniotis 2000, 55–60, seems to claim it for the Hellenistic period; even if true, it could have continued to be used in the Roman period.
[45] Aubert 2016, 624, notes that the capacity of warehouses is a key indicator of volumes of trade. The Muziris papyrus from a port of call on the Indian ocean shows a merchant at Alexandria insureing his spices warehoused there valued at 9,000,000 HS.
[46] Aubert 2016, 626.
[47] SHA Alex 39.3, also cited by Aubert 2016, 626, states that Alexander Severus allowed the building of warehouses only in the imperial name, which would indicate that the monopoly had become absolute.
[48] An opinion of Ulpian on usufruct in the Digest of Justinian 7.1.15 indicates that slaves were often put in charge of horrea and as guards in an attempt to mask the identity of the owner.
[49] On warehousing in the Roman Empire, see, esp., Aubert 2016, 621–34. The three main sources of Roman law on warehouses are surviving leges horreum, the Puteoli archive of the Sulpicii and papyri, to which should be added four late Julio-Claudian inscriptions from Corinth on warehousing of grain (Corinth VIII.2 83, 86, 88, 90). The epigraphic evidence has mainly been recovered in Rome: FIRA III2 145a–c; an inscription in the Chiesa S. Martino Esquiline; CIL VI. 33747 from the Porta Salaria; Chiesa S. Saba Aventina (granary owned by niece of Marcus Aurelius), to which can be added CIL IV. 138 = ILS 6035 (Pompeii).
[50] The observation is Raab's 2001, 16. Karanastasi 2016, 115, adds: "the role of coastal cities and harbours during the imperial period, such as Hierapytna, Chersonesos, and Kissamos, appears to have been strengthened and they become notably important. They served and ensured communications between the local aristocracy and the major economic, artistic, and cultural centres all over the Empire." Lippolis 2016, 163–165. 169. 171, makes similar remarks on the expansion of Gortyn, particularly the imposition of a grid plan in new precincts of the city.
[51] Ioannidou-Karetsou 2008, 70–73.
[52] Ioannidou-Karetsou 2008: 94. Raab 2001, 14, reports transport amphora kiln sites at Knossos, Chania, Herakleion, Keratokambos, and Makryiallos.
[53] See M. Bowsky 2009, 163. 165.
[54] Chevrollier 2016, 16, has also observed that all roads on Crete converge on Gortyn.
[55] Sweetman 2011, 445, has noted that there are not any mosaics in Hellenistic houses on Crete. In her view (446–8), the black-white tradition of Cretan mosaics and house types look to artists and inspiration in the Latin West. Markoulaki 2008, 107–147, reaches similar conclusions on the six black-white mosaics in the Herakleion museum excavations.
[56] Karanastasi 2016: amount of sculpture (102); Classical/Hellenistic originals represented (103–106); preference for Greek sculpture over imperial portraits (106 f.); Greek studios represented (113); she concludes (112 f.) that sculpture on Crete tends to be smaller than the originals and of "medium quality" showing "sloppiness in rendering body proportions and finishing surface of the sculpture."
[57] Bowsky 2009, 157, notices the clustering of stamps in baths.

[58] See Bowsky 2011a, 432.
[59] Gallimore 2016, 185.
[60] K. Sidiropoulos 2009, 97–101. Other than Eleutherna, coins are known only from Knossos, Chania, Alexandria and Rome (97). Corinthian coins dominate in the first through third centuries AD, after which non-Cretan issues are almost entirely Athenian (98); see also Stefanaki, V.E. 2001, 129–142.
[61] Raab 2001, 17, has noted that, compared to other provinces, a higher percentage of Cretan coinage is bronze and that silver issues are restricted to places where one expects a community engaged in trade.
[62] Bowsky 2016, 30 and 32. On Italian sigillata in Knossos, see also G. Forster 2009, 15–31. Similarly, it would be over-enthusiastic to base frameworks on what Francis has orally called 'accidental tourists'.
[63] Gallimore 2016, 178, has noted a Cretan 4 amphora found along the amber route and Kouremenos 2018, 51, has noted a Cretan 4 amphora in Wales
[64] Lippolis 2016, 165 f. on opus quadrata from quarries on slope of Mt. Ida; Lippolis 2016, 171, on bricks from the first half of the second century, AD.
[65] But only for a bit; in the second century AD their number in deposits in Campania again represents about 20%; Gallimore 2016, 176.
[66] Sidiropoulos 2009, 97.
[67] Bowsky 2009, 164.
[68] Bowsky 2016, 32 notes how Cretan potters of the first and second centuries AD, especially, stepped in to supplement declining numbers of imports.
[69] A comparison of fizzy wines in bottles similar to champagne suggests itself.
[70] The evidence, however, is not as clear as one might wish. Pliny's Natural history is concerned largely with staples and basic items but Martial's xenia and apophoreta are gift items for the Matronalia and Saturnalia and so one assumes specialty, or at least a special occasion, which would mean low volume sales and so it would be risky for a Cretan farmer to plan an economy or for us to reconstruct one on it.
[71] A. Kelly, The Cretan Slinger at War: a Weighty Exchange, BSA 107, 2012, 273–311.
[72] Ioannidou-Karetsou 2008, 67–69, dated to the first or second century AD.
[73] Karanastasi 2016, fig 8.6.
[74] Lippolis 2016, 159 f. adds the detail that the center for the administration of the games was at the Pythion in Gortyn.
[75] Price – Nixon 2005, 1–30.
[76] Amanda Kelly 2013, 131–167.

References

Adiyeke 2005

A.N. Adiyeke, Crete in Ottoman Administration before the Population Exchange: Cretan History under Ottoman Rule, in: A.N. Adiyeke – N.A. Osmanli (eds.), Common Cultural Heritage: The Foundation of the Lausanne Treaty Emigrants (Lausanne 2005) 208–215.

Aubert 2016
J.J. Aubert, Law, Business Ventures and Trade, in: de Plessis – C. Ando – K. Tuori (eds.), The Oxford Handbook of Roman Law and Society (Oxford 2016) 621–634.

Bechert 2011
T. Bechert, Kreta in römischer Zeit (Mainz 2011).

Bowsky 1999
M. Bowsky, The Business of Being Roma: The Prosopographical Evidence, in: A. Chaniotis (ed.), From Minoan Farmers to Roman Traders (Stuttgart 1999) 305–347.

Bowsky 2009
M. Bowsky, Setting the Table at Roman Eleutherna: Italian Sigillata Stamps from Sector I, in: P. Themelis (ed.), Ancient Eleutherna (Athens 2009) 157–196.

Bowsky 2011a
M. Bowsky, All in the Family: Forming Social and Economic Networks in Roman Crete, in: K. Glowacki – N. Vogeikoff-Brogan (eds.), STEGA: The Archaeology of Houses and Households in Ancient Crete (Princeton 2011) 431–440.

Bowsky 2011b
M. Bowsky, Colonia Iulia Nobilis Cnosus, the First 100 Years: the Evidence of Italian Sigillata Stamps, in: R. Sweetman (ed.), Roman Colonies in the First Century of their Foundation (Oxford 2011) 117–134.

Bowsky 2016
M. Bowsky, A Context for Knossos: Italian Sigillata Stamps and Cultural Identity Across Crete, in: J. Francis – A. Kouremenos (eds.), Roman Crete: New Perspectives (Oxford 2016) 27–42.

Carpenter 2007
T.H. Carpenter, Greek Religion and Art, in: D. Ogden (ed.), A Companion to Greek Religion (Oxford 2007) 398–420.

Chalikias 2013
K. Chalikias, Living on the Margin: Chryssi and the Settlement Patterns of the Ierapetra Area (Crete 2013).

Chaniotis 2000
A. Chaniotis, Hellenistic Lasaia (Crete): A Dependent Polis of Gortyn. New Epigraphic Evidence from the Aesculapium near Lasaia, Eulimene 1, 2000, 55–60.

Chevrollier 2016
F. Chevrollier, From Cyrene to Gortyn. Notes on the Relationship between Crete and Cyrenaica under Roman Dominion, in: J. Francis – A. Kouremenos (eds.), Roman Crete: New Perspectives (Oxford 2016) 11–26.

Crook 1967
J.A. Crook, Law and Life of Rome (Ithaca 1967).

Curtis – Francis 2022
J. Francis – M. Curtis (eds.), Change and Transition on Crete from Late Hellenistic through early Byzantine Period (Oxford 2022).

Ehrenberg – Jones 1976
V. Ehrenberg – A. H. M. Jones, Documents Illustrating the Reigns of Augustus and Tiberius (Oxford 1976).

Forster 2009
G. Forster, Roman Knossos: The Pottery in Context: A Presentation of Ceramic Evidence Provided for the Knossos 2000 Project (Birmingham 2009).

Francis 2020
J. Francis, Globalization and Insularity in (Dis)Connected Crete, in: J. M. Gorden – A. Kouremenos (eds.), Mediterranean Archaeologies of Insularity in an Age of Globalization (Oxford 2020) 209–236.

Francis – Kouremenos 2016
J. Francis – A. Kouremenos (eds.), Roman Crete: New Perspectives (Oxford 2016).

Gallimore 2016
S. Gallimore, Crete's Economic Transformation in the Late Roman Empire, in: J. Francis – A. Kouremenos (eds.), Roman Crete: New Perspectives, 175–188.

Gallimore 2017
S. Gallimore, Food Surplus and Archaeological Proxies: a Case Study from Roman Crete, World Archaeology 44, 2017, 138–150.

Harrison 1994
G. W. M. Harrison, The Romans and Crete (Amsterdam 1994).

Ioannidou-Karetsou 2008
A. Ioannidou-Karetsou, Herakleio Aganoste istoria tes arkhaias polis (Herakleion 2008).

Karanastasi 2016
P. Karanastasi, Roman Imperial Sculpture on Crete: a Re-appraisal, in: J. Francis – A. Kouremenos (eds.), Roman Crete: New Perspectives (Oxford 2016) 101–118.

Kelly 2012
A. Kelly, The Cretan Slinger at War: a Weighty Exchange, BSA 107, 2012, 273–311.

Kelly 2013
A. Kelly, Roman Bathhouses on Crete as Indicator of Cultural Transition: The Dynamics of Roman Influence, in: A. Gardner – E. Herring – K. Lomas (eds.), Creating Ethnicities and Identities in the Roman World (London 2013) 131–167.

Kouremenos 2018
A. Kouremenos, In the Heart of the Wine-Dark Sea: Cretan Insularity and Identity in the Roman Period, in: A. Kouremenos (ed.), Insularity and Identity in the Roman Period in Crete (Oxford 2018) 41–59.

Levick 2000
Levick, The Government of the Roman Empire: A Sourcebook (London 2000).

Lippolis 2016
E. Lippolis, Roman Gortyn: from Greek Polis to Provincial Capital, in: J. Francis – A. Kouremenos, Roman Crete: New Perspectives (Oxford 2016) 155–174.

Litinas 2014
N. Litinas, Inscriptions of the Cave 'Latsida ston Keramo (Vienna 2014).

Marangou-Lerat 1995
A. Marangou-Lerat, Le vin et les amphores de Crète de l'époque Classique à l'èpoque imperial (Paris 1995).

Marangou-Lerat 1999
A. Marangou-Lerat, Wine in the Cretan Economy, in: A. Chaniotis (ed.), From Minoan Farmers to Roman Traders (Stuttgart 1999) 269–278.

Markoulaki 2008
S. Markoulaki, The Mosaics, in: A. Ioannidou-Karetsou (ed.), Herakleio Aganoste istoria tes arkhaias polis (Herakleion 2008) 107–147.

Muñoz Sogas 2019
J. Muñoz Sogas, Was Knossos a Home for Phoenician Traders?, in: R. Morais – D. Leão – D. Rodríguez Pérez (eds.), Greek Art in Motion: Studies in Honour of Sir John Boardman on the Occasion of his 90th Birthday (Oxford 2019) 408–416.

Perry 2016
J. S. Perry, Collegia and the Impact on the Constitutional Structure of the Roman State, in: P.J. du Plessis – C. Ando – K. Tuori (eds.), The Oxford Handbook of Roman Law and Society (Oxford 2016).

Petrovic – Filipovic 2015
V. P. Petrovic – V. Filipovic, The First Cohory of Cretans, a Roman Military Unit at Timacum Maius, Balcanica 44, 2015, 33–39.

Price – Nixon 2005
S. Price – L. Nixon, Ancient Greek Terraces: Evidence from Texts and Archaeological Survey, AJA 109, 2005, 1–30.

Raab 2001
H. Raab, Rural Settlement in Hellenistic and Roman Crete: The Akrotiri Peninsula (Oxford 2001).

Sidiropoulos 2009
K. Sidiropoulos, Commentary on the Coins from Sector I, in: P. Themelis (ed.), Ancient Eleutherna: Sector I (Athens 2009) 97–101.

Stefanaki 2001
V. E. Stefanaki, Sur deux monnaies de bronze inedites d'Hierapytna: monnayage Hieraptnien et timbre amphoriques a l'epoque Hellenistique, Eulimene 2, 2001, 129–142.

Sweetman 2011
R. Sweetman, Domus, Villa, and Farmstead: The Globalization of Crete, in: K. Glowacki – N. Vogeikoff-Brogan (eds.), STEGA: The Archaeology of Houses and Householders in Ancient Crete (Princeton 2011) 441–450.

Tzifopoulos 2009
Y. Tzifopoulos, The Inscriptions, in: P. Themelis (ed.), Ancient Eleutherna: Sector I (Athens 2009) 159–173.

In recent years new research and investigation along the coastlines has added to our understanding of the maritime cultures and traditions of ancient Greece. Even so, the maritime cultures, traditions and social aspects remain understudied and the traditional boundaries between terrestrial and underwater archaeology are still problematic and a challenge to researchers. Throughout time the settlements that stood beside the sea became increasingly important to local and regional economies as they often benefitted from local, inter-island and cross-Mediterranean trade and the commercial and networking opportunities that this offered. Many of these settlements were the first point of contact for seafarers, travellers, and migrants, playing an important role in the diffusion of cultural, political, and religious ideologies.

The papers in this volume take us on a journey in time from an Early Bronze Age settlement on Paros to the Closed Harbours of Archaic and Classical Greece, and on to life in Hellenistic and Roman Crete. Whilst being preliminary perspectives, the contributions in this volume demonstrate the broad variance in subject material and offer an interesting insight into the world of maritime Greece.

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