Pottery in the Landscape: Ceramic Analysis at the City-Kingdom of Idalion, Cyprus

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*The ancient site of Idalion, Cyprus has a landscape dominated by two acropoleis containing sacred sites. The plain below is the location of domestic occupation. I have petrologically analyzed 45 ceramics from the domestic area and one sacred area and found that while the sacred spaces dominate the landscape, ceramics were not produced/chosen differently for the sacred area over the domestic area. The visual proximity of the sacred and the everyday seems to indicate cohesion in the social and natural landscape. The preliminary petrological analysis of pottery from Idalion has shown, thus far, that the sacred and profane are intertwined.**

Pottery, as a part of the material repertoire of society, is subject to variability in societal tradition based on the landscape and the environment. As a theoretical basis, the landscape provides an interesting framework for studying material culture, especially in the ancient city of Idalion, Cyprus, where space and geography were important for urban and cultural development. Using a sample of 45 Iron Age (1050 B.C.E. – 300 B.C.E.) pot sherds from Idalion, Cyprus, I have microscopically analyzed the fabric of these sherds and two local clay samples to determine production/ selection practice for two areas within the landscape of Idalion. Through petrographic analysis, I hoped to better understand the production and trade of pottery at Iron Age Idalion. I chose pottery used in the domestic area in the Lower City and the sacred area on the East Terrace to determine if there is a difference in the production of pottery used for sacred purposes, however the results indicated there is no marked difference and so I have initially concluded that at ancient Idalion the sacred and profane were intertwined in daily life.

Idalion, Its Landscape, and Its Cypriot Context

The island of Cyprus has a history beginning in the Neolithic and continuing, mostly uninterrupted, until modern times. Copper was mined on the island in the Bronze Age and representatives of many cultures came to the island as traders, settlers, and rulers, often drawn by the economic and political implications of the copper trade.[1] Ancient Idalion, Cyprus is located on the Mesaoria Plain in the foothills of the Troodos Mountains bordering modern Dhali (Figure 1). The ancient city-kingdom is dominated by two acropoleis (East- Mouti tou Arvili and West- Ambelleri) on which

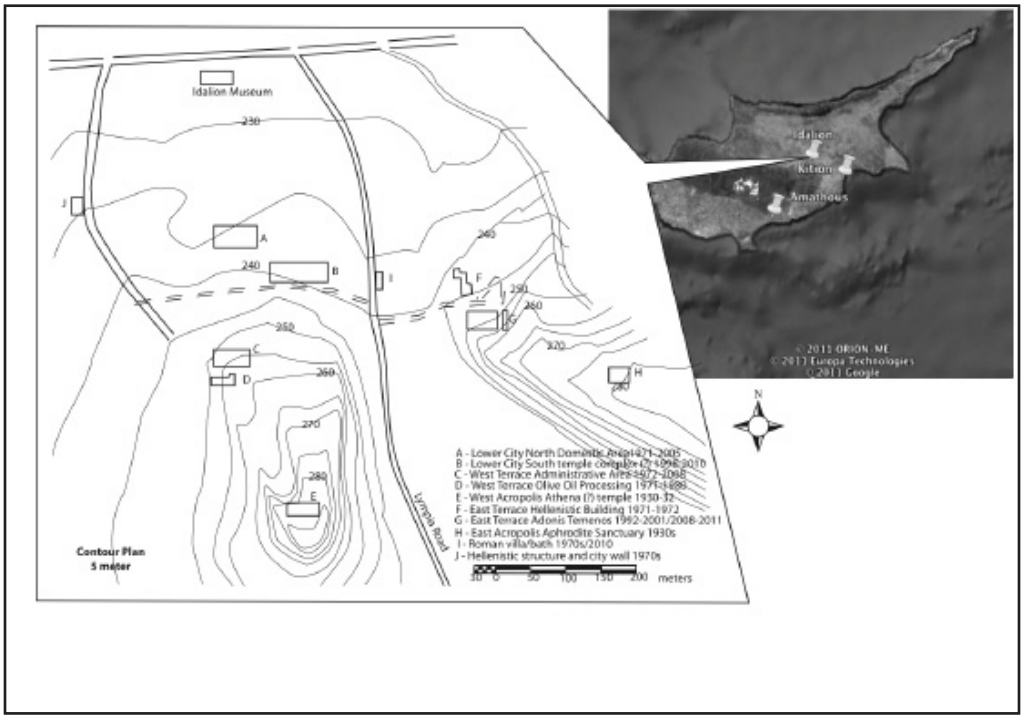

Figure 1: Google Earth Cyprus map with a contour map of Idalion, showing areas of work. Adapted from Figure 1 in Stager, Walker and Wright, eds. 1974. (Permission granted by ASOR and Dr. Lawrence Stager, May 2009)

sanctuaries, temples, and administrative centers have been built and represent several cultural groups.[2] The sanctuary of Adonis on the East Terrace[3] lies in the midst of a bowl-shaped depression in the acropolis and the plain below also looks up to the Phoenician-Hellenistic period administrative center[4] and the (Archaic-Hellenistic Period) temples.[5] The sacred areas of Idalion are geographically higher and visually take priority in the landscape.

The pottery studied in this project does not show a difference between the sacred space on the acropolis and the domestic space on the plain below. At Idalion, the physical separation of the sacred and the profane areas may have been mentally less separate than the current evidence suggests. There is a large amount of the site that is presently unexcavated and it is not clear how the ancient population would have interpreted the physical landscape and the perceivable separation between the sacred and profane spaces. However, what has been published and uncovered archaeologically shows that there is the possibility for more domestic areas, for example south of the Adonis Temenos on the same terrace is evidence of Hellenistic structures that have not been re-investigated since the 1970s.[6] The possibility for domestic spaces very near the sacred and the evidence of pottery production being similar in both areas may allow for free movement between the sacred and the everyday. Accordingly, landscape in archaeological terms is a synthetic, or intangible entity affected by daily routines and interactions between people and the land.[7] Ultimately, landscape is a useful term, because it can be used to interpret the effect of physical geography on material culture and people. There is an interaction between people and their land in the way they carry out their daily lives which can be seen in the products they create and where their life activities occur. Water was not a far resource for the ancient people of Idalion (less than 100 m) and while they may not have realized it and so their transport jars did not need to be as hearty as those required for travel across longer distances.

History of Pottery Analysis and Geology of Idalion

Pottery Analysis

An American team of archaeologists has excavated the site of Idalion almost continuously since 1972 and a significant amount of pottery has been uncovered. General studies of the pottery from Idalion include typological investigations[8], type specific context analysis[9], ceramic ecology[10] and ethnographic study.[11] Neutron activation analysis (NAA) was also performed on Idalion, and other areas' potsherds, once in a small sample of 59 and again on a sample of 500 potsherds. Those results indicated that Cypriot pottery shares a high concentration of certain minerals no matter where on the island the clays were obtained, and also showed that few sherds were identified as demonstrating local clay sources from Idalion.[12] Mercuri conducted a study of the clay from the Yialias River in Dhali as another way of analyzing the production practice of Idalionites. Clay was extracted from near the Neolithic Dhali-Agridhi (Figure 2) site to the northeast of modern Dhali, on the south bank of the Yialias, and analyzed for plasticity and production feasibility through experimentation. Mercuri concludes that the clay in the Yialias River needs the addition of plastic temper for it to be useful for firing and production.[13] Keeping these studies in mind, local unfired clay from both the Yialias River (red) and the Idalion hills (green) was used for comparison for this present study.

Geology

The geology of Cyprus has been studied and published extensively in multiple locations.[14] The Troodos Mountains are the major basic and ultrabasic igneous rock source for the island and the region of ancient Idalion lies in the foothills. Ophiolite is dominant in the Troodos, while the foothills are made of basalts and serpentine.[15] Surrounding the igneous geology of the Troodos and running through ancient Idalion is a sedimentary

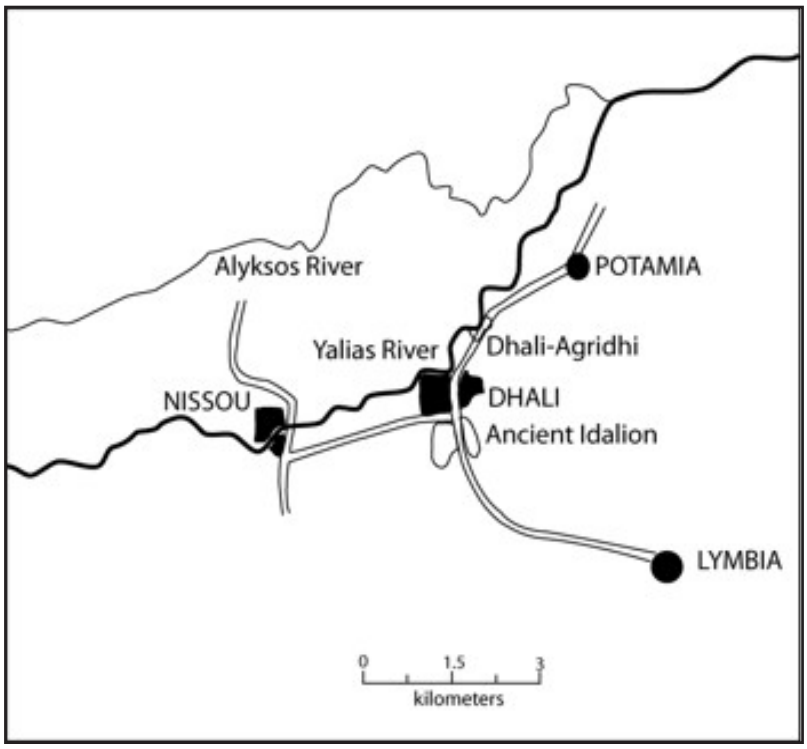

Figure 2: Map of area around ancient Idalion. Modern towns are indicated by all capital letters. Adapted from Figure 1 in Stager and Walker, eds. 1989. (Permission granted by ASOR and Dr. Lawrence Stager, May 2009)

geology dominated by the Pakhna Formation that consists of marl clay below layers of gypsum, shales, chalks and limestone. Shells are also evident in the sedimentary geology. In the Kyrenia Range to the north of the island, limestone, sandstone, dolomite, and cherts with bryozoas make up the geology.[16]

Methodology and Analysis

Petrology is a field that studies the mineral makeup of lithics and ceramics through the analysis of thin section slides under a polarizing microscope. Williams describes petrology as a "means of establishing: origin; comparability of similar material with known origin; and the technology involved."[17] Petrology can provide a wealth of information about raw material sources and patterns of movement and exchange. The present study subjected 45 plain ware (including coarse ware and cooking ware) pot sherds and 2 unfired clay samples to analysis, in accordance with accepted standards of macroscopic and microscopic analysis as used by Whitbread.[18]

Local unfired clay samples were used as a comparison to determine whether or not the samples selected for study were locally produced, since no kilns or production facilities uncovered in the archaeology of Idalion indicate production at the site. The local clay in Dhali is dominated by foraminifera and limestone and can be found in the Yialias River bed[19] and in the Pakhna geological formation running under the ancient city. I analyzed two samples of these clays petrologically in an unfired state consolidated with aradite hardener HY997 and acetone. I had no access to a kiln and could

Sample Number	Area	Description	Relative Date	Fabric Group	Sample Number	Area	Description	Relative Date	Fabric Group
1	LCN	CP bs	Hellenistic		24	ET	PW bs	CA	III
2	LCN	PW bs	Hellenistic	X	25	ET	PW bs	Hellenistic	VI
3	LCN	CP bs	Hellenistic	I	26	ET	PW bs	Late CC	VI
4	LCN	Hell W/G or Col W bs	Hellenistic		27	ET	WP bs	CA II/CC I	IV
5	LCN	PW bs	CA II	I	28	ET	PW bs	Hellenistic	V
6	LCN	PW bs	late CA/CC	III	29	ET	WP bs	CA II/CC I	IV
7	LCN	CW/CP bs	CA		30	ET	PW base	Hellenistic	X
8	LCN	CP bs	CC II	I	31	ET	PW bs	CC/Hell	I
9	LCN	PW bs	late CC	IV	32	ET	WP bs	CA II	VIIa
10	LCN	CW bs	CC		33	ET	PW bs	Late CC	V
11	LCN	PW bs	Late CC	VIII	34	ET	PW bs	CC	X
12	LCN	CP bs	CC/Hell	II	35	ET	PW bs	CA II/CC I	VI
13	LCN	PW bs	CC	VIIb	36	ET	PW bs	Late CC	VIII
14	LCN	B on R bs	CA II	V	37	ET	WP bs	CA I	V
15	LCN	CP bs	CC	I	38	ET	P hndl stu	CC/Hell	I
16	LCN	PW bs	Hellenistic	V	39	ET	CW bs	CC	IV
17	LCN	CW bs	CC	IX	40	ET	PW bs	Hellenistic	VIIa
18	LCN	PW bs	CC/Hell	VIIb	41	ET	CP bs	CA II	I
19	LCN	WP bs	CC/Hell	IV	42	ET	PW bs	Late CA/CC	III
20	LCN	PW bs	CC	VIIb	43	ET	CP bs	CC	II
21	LCN	WP bs	CA II	IV	44	ET	CP bs	Hellenistic	I
22	ET	PW bs	CC/Hell	VI	45	ET	CW bs	Hellenistic	VIIa
23	ET	Hell W/G bs	Hellenistic						

B on R- Black on Red, Hell W/G- Hellenistic Wash/Glaze, Col W- Color Ware, CP- cook pot, CW- coarseware, PW- plain white, WP- White Painted, bs- body sherd, hndl-handle, ET- East Terrace, LCN- Lower City North

Figure 3: Table of pottery sherds analyzed. {Abbreviations: B on R- Black on Red, Hell W/G- Hellenistic Wash/Glaze, Col W- Color Ware, CP- cook pot, CW- coarseware, PW- plain white, WP- White Painted, bs- body sherd, hndl-handle, ET- East Terrace, LCN- Lower City North

not fire the clays to see the affect of heat on the clay fabric. This means that I could not see the effect of heat on the local clay, however, under a petrologic microscope, the minerals are still identifiable without the effects of heat. The clay samples came from an archaeological context and were not formed or worked by my own hand. They were discovered in rain wash layers of the re-opening of the East Terrace excavations in 2008.

My analysis of the archaeological material indicates two main fabric groups among the samples from Idalion: Group A, a highly igneous matrix with little to no sedimentary geology present suggesting an origin in the Troodos mountains, and Group B, a lime-rich matrix with limestones, foraminifera, and some igneous inclusions that can be attributed to the local area, if not at Idalion, then somewhere nearby in the Troodos foothills. Ten groups of clay types were identified among the 45 potsherds (Figure 3).

Group I: This fabric is very rich in volcanic material (Group A) with very scarce to no limestone inclusions. There is sparse subangular quartz in the coarse igneous matrix. The igneous inclusions consist of hornblend (common to sparse), pyroxenes (sparse to none), serpentine (common to sparse), and common feldspars. This group encompasses a range of variations with the same general inclusions, however sorting and percentage of minerals varies. The nature of the volcanic inclusions also suggests various locations

within the Troodos geological complex (Akamas Peninsula and the summit20). Some rounded igneous rock fragments can be 2 mm across, but also as small as 0.8 mm across. This fabric group is intentionally non-specific to fabric color and appearance; the abundant igneous inclusions are the binding factor in this group designation.

Group II: This group is characterized by the same inclusions as Group I; however, limestone and foraminifera inclusions are now common in the matrix. The clay is moderately sorted and contains about 30% inclusions.

Group III: A lime-rich clay (Group B) with abundant rounded/oval-shaped limestone fragments, but no shell or foraminifera. Igneous inclusions are evident and are d 1 mm in size when there are rock fragments. Feldspars, clay pellets, and pyroxenes are all common in the matrix that is made up of about 25% inclusions, moderately sorted. Subrounded quartz and micas are sparse in the matrix.

Group IV: A Group B clay rich in foraminifera and shell with sparse to no limestone fragments. Sparse lava fragments of various sizes, some up to 4 mm, with other igneous inclusions including feldspars, pyroxenes, and serpentines also sparse. This group is also broad and includes fabrics of various sorting and mineral composition.

Group V: This clay is not unlike Group IV, however the inclusions are now finer and much smaller, most d 0.5 mm across. Sparse igneous rock fragments, rounded limestones, and subangular quartz make the majority of the well sorted matrix. There are 20% minerals, however when looking only at the shell/ foraminifera and not the natural clay matrix, the percentage falls to 5%.

Group VI: A fine volcanic matrix (Group A). All the inclusions are igneous including common feldspars, sparse pyroxenes, common/sparse serpentine, and lava fragments (other igneous inclusions such as mica are much less frequent, but not excluded from the possibilities). Common subangular/subrounded quartz and clay pellets with feldspars are also in the very well sorted matrix of 20% inclusions.

Group VII: Another fine volcanic matrix (Group A) now including shell/foraminifera and limestone fragments. The well sorted clay contains 50% minerals all of which are d I mm across. Pyroxenes and feldspars are common, as well as clay pellets (some with feldspars) and subrounded quartz grains. Shell/limestone and lava fragments are sparse. There are two types of clay matrix for this group, while they exhibit the same inclusions, one is thicker and more compact (VIIa) and the other is finer and more processed (VIIb).

Group VIII: This group is very different in appearance from the rest of the samples. It contains very well sorted abundant quartz and limestone in almost identical rounded tabular shapes. There is common shell, sparse clay pellets, and sparse small (d 0.3 mm) volcanic inclusions. The inclusions make up 40% of the clay. The clay is thick walled (c. 8 mm) and is fired to a light gray color (2.5Y 6/1) with a light red core (2.5YR 6/8).

Group IX: A fabric group that resembles the other igneous fabrics (Group A), however, serpentine is abundant in the matrix. Small, rounded limestone (d 0.5 mm) is sparse with a few larger examples (2 mm across). Weathered igneous rocks are common and are d 2 mm in size although some examples are much smaller (d 0.4 mm). The inclusions make up about 45% of the clay that is moderately/poorly sorted. The serpentine is generally small (d 0.3 mm) and well mixed with in the clay.

Group X: A group with compact igneous matrix (Group A) composed of mostly small (c. 0.5 mm) mineral inclusions. Serpentine and clay pellets (some with feldspars) are sparse, while weathered igneous rocks and ophiolite are common. Larger (c. 1 mm) limestone fragments are sparse, while feldspars are common. Subangular quartz is also common

in the matrix with less than 15% mineral inclusions. This clay group is likely to be from the upper regions of the Troodos Mountains.

The results of analysis demonstrate overall that there is no marked difference in paste recipe for pottery used in the Adonis sanctuary and the pottery used in the domestic occupation. Some of the samples are from the Idalion area; others come from regions in the Troodos. The igneous rocks of the Troodos Mountains appear in almost all of the samples analyzed from Idalion, however many are subrounded to subangular and are naturally occurring or part of another larger group of inclusions that could be explained through a mixing of clays. The larger, more angular inclusions appear to have been purposely added to the clays as temper to improve workability (samples 7, 17, 29, 41).

The Mesaoria Plain has a sedimentary geology consistent with 14 of the grouped samples studied and the remaining volcanic (igneous) matrix clay groups make up 26 samples. The igneous petrology of Groups I, II, VI, VII, IX, and X appear consistent with a source in the Troodos. Five samples were not grouped and may have been imported to the island, but further analysis is necessary before this can be stated as fact. Bieber found that only two of the groups identified through NAA were locally made at Idalion;[21] he processed 164 potsherds (the majority of which were painted fine wares) from Idalion and 63 had unidentifiable sources. Among the Idalion sherds in this study, there is a greater concentration of Troodos and Mesaoria clays present indicating either regional exchange/purchase or clay acquisition.

Implications

After analyzing the fabrics under the petrological microscope it was clear that there was no distinct difference in the inclusions between the domestic/industrial precinct in the Lower City South and the sacred temenos (East Terrace) at Idalion. While the domestic precinct of the Lower City of Idalion may have had its own workshops, pottery may not have been one of the crafts carried out at the sanctuary;[22] there was no evidence of a kiln on the East Terrace, or in the Lower City in the archaeological record thus far. The following discussion contextualizes the findings from Idalion within research on landscape, societal structure, and production practices.

Christopher Tilley discusses the ways in which individuals impact and create their society through daily activities and that their lived experience can be inferred by archaeologists by investigating their material remains.[23] The inhabitants of Idalion exploited their land and resources in order to create a marketable product, copper, which was then commemorated through the production of ceramics which reinforce an ideology derived from the importance of particular places within the landscape. The people of Cyprus, and consequently Idalion, depended on copper and other resources from the Troodos and so their culture depended on appreciating this physical landscape. At Idalion, island wide traditions, other than copper mining, are followed when approaching the landscape and working within it. For example, as shown by Al-Radi,[24] sanctuaries in Cyprus during the Iron Age all share the characteristics of peribolos wall, an altar, platform or cella, and remains of offerings. At Idalion these characteristics are fulfilled by the East Terrace sanctuary, the Lady Sanctuary on the East Acropolis, and the West Acropolis sanctuaries. As stated above, Bieber also found that there are island wide traditions exemplified by the pottery he investigated with NAA that demonstrated similarities in plastic inclusions.[25]

Society changes and evolves based upon the individual's objectification of his/her personal space and therefore, material culture is a projection of the people.[26] Pottery is created by and for social groups and as a result both similarities and differences occur between groups. Shanks and Tilley also indicate that reality is produced by material culture, not reflected by it and therefore the pottery is, in

a sense, speaking for itself.[27] At a Neolithic site in France, Burri shows that household production of pottery can be individualized by choosing a different temper in each home, but the shape and use of the pots are universal.[28] In this way we recognize the agency of the potter in his/her choice of inclusions and clay fabric and can explain production in the context if social reality. Burri's research can be projected beyond the household into a discussion of the production characteristics of Idalion pottery.

At Idalion, igneous temper may have been a way to identify with the landscape that provided resources like copper. The sanctuaries of Idalion were in the foothills of the Troodos and were clearly part of the everyday life of the inhabitants. While the Troodos Mountains are not a mere walk away their physical distance seems not to matter as much as their visual proximity. This can be seen in the igneous temper used in ceramics found at Idalion. Similarly, if visual proximity can explain the relationship between the Troodos and Idalion, it also explains the sanctuaries and the domestic spaces of Idalion. Archaeologists are aware that the sacred is very important to ancient cultures, yet it is not clear how integrated it is into daily activity. I argue that it is not unlikely that the same type of ceramics can be used in both contexts because pottery is a social object that is not restricted to either sacred or domestic usage.

Summary

The production characteristics for the sanctuary on the East Terrace and the domestic area in the Lower City were not distinct to either site. Temper used in the production of pottery can show how people connect with their landscape and at Idalion, pottery tempered with the igneous rock of the Troodos Mountains shows how Cypriots connected with the hills that granted them a livelihood through mining copper. While this connection can be seen in pottery all over the island, it is significant that the temper did not change between wares of domestic and sacred uses at Idalion. In this way, the sanctuary was not a place to be feared and only approached at special times of year, but a place of daily reverence and appreciation, if not necessarily a place of daily physical contact. The proximity of the sacred and the everyday seems to indicate cohesion in the social and natural landscape. While more work is necessary, the preliminary petrological analysis of pottery from Idalion has shown, thus far, that the sacred and profane are in fact intertwined.

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Endnotes:

1 Iacovou 2008; Voskos and Knapp 2008.
2 Hadjicosti 1995 and 1997; Gaber 1992, Forthcoming; Gaber and Dever 1996; Gjerstadt 1946, 2-7.
3 Gaber and Dever 1996.
4 Hadjicosti 1995, 1997.
5 Gjerstadt 1946, 2-7.
6 Doerrman 1974.
7 Anschuetz, Wilshusen, and Scheik 2001, 160.
8 Gaber 2000, Morris 1992, Alin 1989.
9 Broedel Forthcoming.
10 Mercuri Forthcoming.
11 Johnston 1974.
12 Bieber 1974;1989.
13 Mercuri Forthcoming
14 Bellamy 1905; Bellamy and Jukes-Brown 1905; Gass 1960; Gass and Masson-Smith 1963; Koucky and Bullard 1974; Robertson and Woodcock 1986.
15 Gass and Masson-Smith 1963, 418; Gass 1960.
16 Bellamy 1905; Bellamy and Jukes-Brown 1905, 26; Gass 1960; Robertson and Woodcock 1986, 142 and 152.
17 Williams 1983, 301.
18 Whitbread 1989;1995.
19 Both in ancient and modern times
20 Gass and Masson-Smith 1963, 439.
21 Bieber 1977, 131-2 and Table 3.
22 Gaber and Dever 1996.
23 Tilley 1982.
24 Al-Radi 1983, 97.
25 Bieber 1974;1989.
26 Tilley 1982, 27.
27 Shanks and Tilley 1987.
28 Burri 2007.

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