

Networking in the Neolithic: Wadi Ziqlab in its Regional Context

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Abstract: *Abstract: Fieldwork in Wadi Ziqlab, Jordan, has investigated Late Neolithic settlement patterns and their implications for social and economic relationships in the sixth millennium cal. BC. While survey has detected only one village site occupied during the Yarmoukian Pottery Neolithic, the subsequent centuries are characterized by a dispersed settlement pattern of hamlets and farmsteads. Some aspects of material culture show that these small settlements shared concepts of architecture, pottery and lithics with sites over a broad region in the central Levant, including characteristics of the “Wadi Rabah culture.” Yet significant differences among sites, even within the small territory of Wadi Ziqlab suggest differences in the scale of work groups and learning networks as neighbours interacted in regional social networks.*

In a previous paper (Banning 2001), one of us hypothesized that PPNB aggregated settlement gave way, in the Yarmoukian or later, to a dendritic settlement pattern in Wadi Ziqlab, a valley that drains part of the northern Ajlun mountains into the Jordan Valley. Our subsequent research to test this hypothesis has uncovered more evidence for small Late Neolithic sites in that region, permitting us to begin to explore some of the implications of such a change (Banning et al. 2005, n.d).

These are profound. We might expect that the smaller social units occupying farmsteads, rather than large villages, would need to maintain social and economic relationships with other units. There would be impacts on the exchange of goods and information, and on the environment in which agents learned technology and styles. This paper outlines some of our preliminary results and programme for continuing research into the social, economic, and technological interactions among small Late Neolithic sites in Wadi Ziqlab and its neighbourhood.

Wadi Ziqlab in the Neolithic

At present, we are aware of a number of

Neolithic and Early Chalcolithic sites that would have been accessible downstream, in the Jordan Valley, and across the Esdraelon Plain, as well as one in neighbouring Wadi Taiyyiba and several in Wadi Ziqlab itself (FIG. 1).

The principal Neolithic site in Wadi Ziqlab is Tell Rakan (WZ 120), whose thick deposits demonstrate occupation at least in the Late PPNB, Yarmoukian, Chalcolithic, and Early Bronze Age (Banning and Najjar 2001). It appears to have been a small village through most of this time, but reached its maximum extent (perhaps as much as 3 ha) in the PPNB (Maher and Banning 2001).

There is sporadic evidence for PPNB elsewhere in Wadi Ziqlab, so far without clear indication of major settlement, and to date our only evidence for the Yarmoukian outside Tell Rakan consists of Yarmoukian-era cist graves at Tabaqat al-Bûma (WZ 200; Banning 2007; Banning et al. 1989, 1996, n.d.). There, one of the substantial, stone-lined and slab-covered graves contained several whole and restorable vessels, including two jars of typical Yarmoukian form (FIG. 2.1+2; compare FIG. 3.1), one featuring a “tubular” handle similar to a class of handle

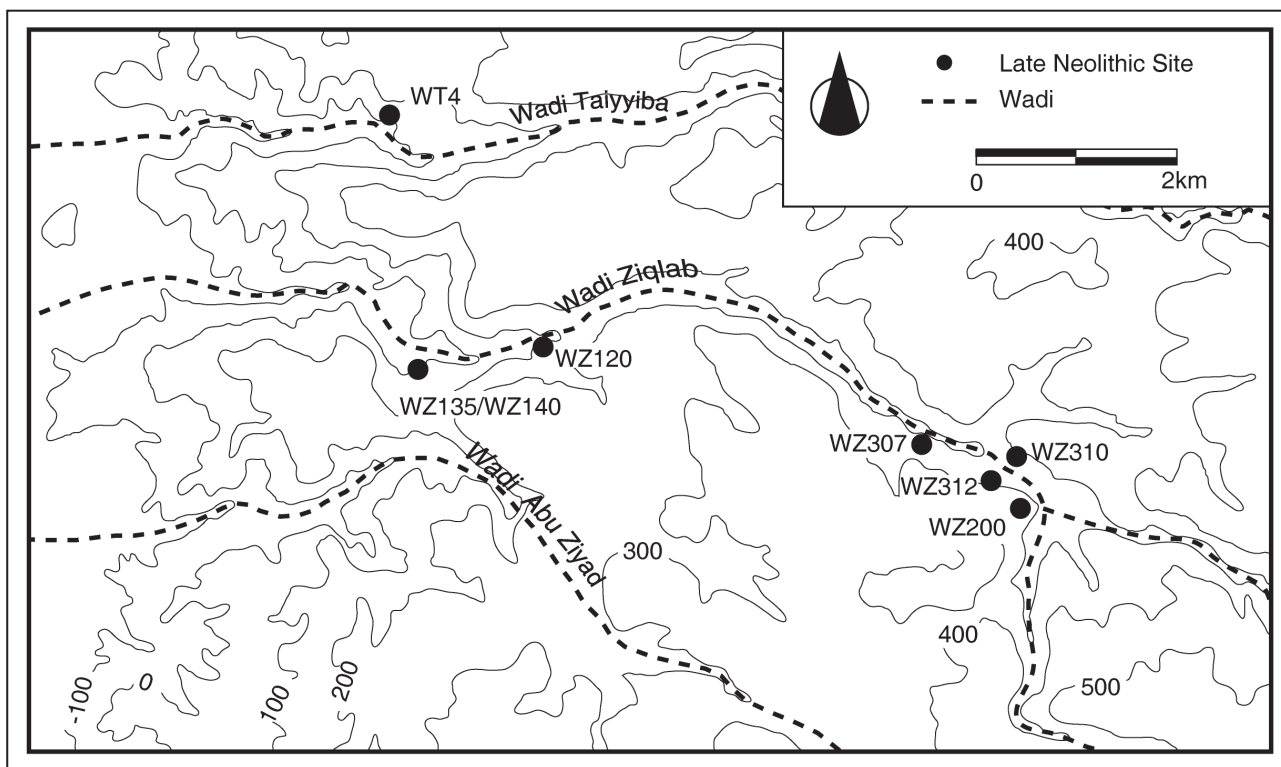


Fig. 1: Map of Wadi Ziqlab showing Late Neolithic sites mentioned in the text.

found, for example, at Munhata (Garfinkel 1992:fig. 83:18-20). One of the bowls also featured such a handle (Banning et al. 1989:fig. 4.6). Recent cleaning of these vessels revealed that one of the jars was decorated. Interestingly, it did not have typical Yarmoukian herringbone decoration. Rather, each side of the upper part of the vessel body was covered with a field of rounded impressions, bounded on three sides with straight, incised lines. This type of decoration is more commonly associated with the later Wadi Rabah tradition, although it does apparently occur in Yarmoukian contexts at Jebel Abu Thawwab (Obeidat 1995:fig. 48:23). In a disturbed context near this grave, we did find a single sherd displaying a typical Yarmoukian band of incised chevrons (FIG. 2.3).

The deposits at Tabaqat al-Bûma that stratigraphically supercede the cist graves, although exhibiting three major and one minor architectural-stratigraphic phases (LN2 to LN5),

all belong to a post-Yarmoukian fascies of the Late Neolithic, radiometrically dated about 5900-5000 cal BC and with some “type fossils” of Wadi Rabah sites. These layers appear to represent the residues of several superimposed farmsteads, with small, stone-built houses, storage silos, and outdoor surfaces, and with an artifact assemblage whose principal “formal” tools were sickle elements and grinding equipment (Banning et al. 1996, n.d.; Banning and Siggers 1998; Blackham 1998; Kadowaki 2007).

An assemblage very similar to that of the post-Yarmoukian phases at Tabaqat al-Bûma occurs some 500 m away at al-‘Aqaba (WZ 310). It probably also pertains to a small farmstead site, but one that appears to have been obliterated by later erosion and road construction, leaving Late Neolithic artifacts only as residuals in deposits that overlie some Early Bronze Age pits (Banning 1995; Field and Banning 1998).

Most recently, we have found evidence for at least one Late Neolithic settlement farther downstream at al-Basafin (Banning et al. 2005). On the upper terrace there (WZ 135), the evidence includes stone wall foundations, cobbled floors, and platforms. Late Neolithic artifacts found on the lower terrace (WZ 140) occur in colluvium and have likely been redeposited from WZ 135, although they could derive from a different Late Neolithic settlement.

The nearest known Late Neolithic sites outside Wadi Ziqlab include Umm Sadra (WT4), possibly a village site, in Wadi Taiyyiba, basal levels at Pella to the southwest and Tell Beisan to the west, and Neve Ur and Munhata to the northwest. Sha'ar ha-Golan, Tel Dover, and Tell 'Ali are a little farther north, while 'En Jarba, Hazorea, Tel Qiri and Late Neolithic sites on the Mediterranean coast are accessible by the Esdraelon Plain.

Evidence for Economic, Technological, and Stylistic Interaction

Various lines of evidence provide clues to the nature and extent of interaction among Late Neolithic sites both within and without Wadi Ziqlab. These include the technology and decoration of pottery, the technology and style of lithics, and the distribution of exotic goods, such as shell.

Pottery at Tabaqat al-Bûma is hand-made, poorly fired, and often grit-tempered, almost all of it likely made locally. Its fabrics are mainly light-coloured (pink, orange, and yellow), with some dark grey and brown, and finer, burnished pottery is very rare. A small number of sherds with a marly fabric may well be imports from the Jordan Valley, while some sherds with basalt temper (basalt does not outcrop in Wadi Ziqlab) may be related to Goren's petrographic group VL6 and VL1 at Munhata (Goren 1992).

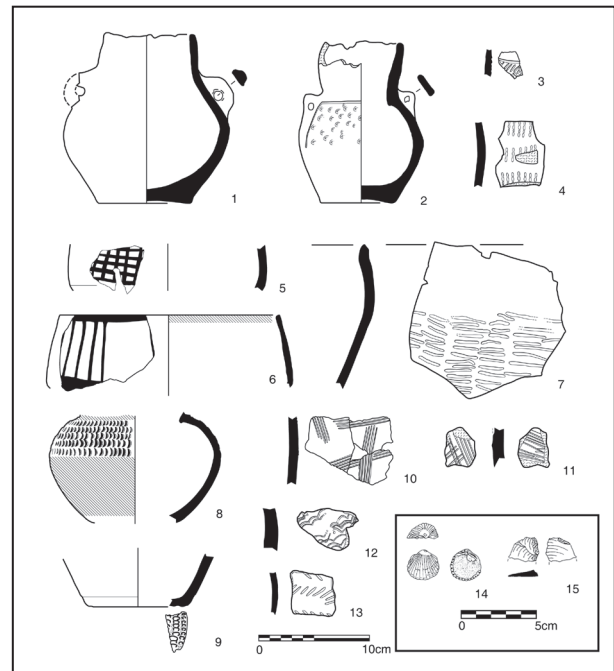


Fig. 2: Pottery and other artifacts from Tabaqat al-Bûma (1-3, 5-6, 8-10), al-Basafin (4, 7, 11-12, 14-15), and al-'Aqaba (13). Jars of Yarmoukian form (1-2, 2 has impressed and incised decoration) and decoration (3); comb-impressed (4); painted (5-6); incised (7); fingernail impressed (8); combed (10-12); herringbone incised (13); matt-impressed base (9); bivalve shell (14); and obsidian flake (15).

Decorated pottery from Tabaqat al-Bûma shows strong links to Wadi Rabah and other Late Neolithic sites. Although the pottery is mainly crude, and decoration is rare, a few sherds have painted decoration, of which groups of diagonal or vertical red-brown lines, extending downward from a band along the rim (FIG. 2.6), have parallels with Ghрубba (FIG. 3.3) and elsewhere. Painted net-pattern decoration found at Tabaqat al-Bûma (FIG. 2.5) recalls decorated sherds from 'En Jarba (FIG. 3.2). Combed, incised, and punctate decoration from Tabaqat al-Bûma (FIG. 2.2, 10), meanwhile, has obvious parallels in sherds from Wadi Rabah, 'En Jarba, Munhata, and other sites usually attributed to the Wadi Rabah industry (FIG. 3.4, 8, 12). A "fingernail-impressed" vessel from Tabaqat al-Bûma (FIG. 2.8) is similarly comparable to

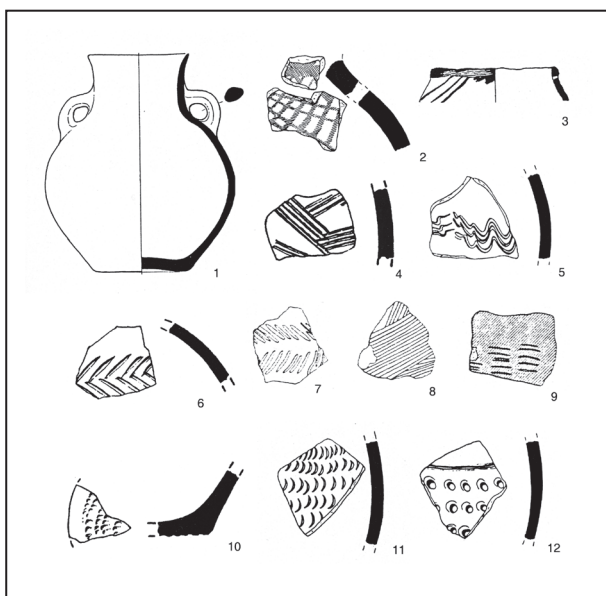


Fig. 3: Examples of pottery from Late Neolithic sites mentioned in the text (not to scale). Munhata (1, 4, 6, 10; Garfinkel 1992:figs. 71.1, 134.17, 137.12, 132.7); Ghрубba (3; Mellaart 1956:fig. 6.116); 'En Jarba (2, 5, 11, 12; Kaplan 1969:figs. 9.4, 8.12, 8.13, 8.11); Wadi Rabah (7-9; Kaplan 1958b:figs. 6.6, 6.10, 6.15).

examples from 'En Jarba (FIG. 3.11) and other Wadi Rabah sites.

Matt-impressed bases from Tabaqat al-Bûma (FIG. 2.9), meanwhile, are closely similar to examples from Munhata, for example (FIG. 3.10).

The lithic assemblage from Late Neolithic Tabaqat al-Bûma is predominantly expedient, with only a few formal tool types (Siggers 1997). Of these, the dominant forms are sickle elements, and 60% of these conform to Gopher's type D (Kadowaki 2005), while published Wadi Rabah assemblages in Israel appear to have less than 20% of this type (Gopher 1989). They show thick, steep backing, and substantial denticulation, somewhat like that on Yarmoukian sickles. Furthermore, the sickle elements from Tabaqat al-Bûma are predominantly made on flakes, not blades, although the proportion made on blades increases over time (Banning et al. n.d.; Kadowaki 2007).

Our relatively small assemblage from al-'Aqaba (WZ 310) appears closely similar to that from Tabaqat al-Bûma, which is not surprising, given the sites' close proximity (Field and Banning 1998). Sherds with slip and burnish seem to be more common at al-'Aqaba, however. Wadi Rabah-style herringbone decoration (FIG. 2.13) is similar to examples found at Munhata (FIG. 3.6) and Wadi Rabah (FIG. 3.7).

Our necessarily limited excavations at Tell Rakan (WZ 120), meanwhile, have not unambiguously identified material contemporary with Tabaqat al-Bûma, even though it exhibits both earlier and later material.

Currently, al-Basatîn (WZ 135 & 140) thus provides our best contemporary or near-contemporary assemblage. Indeed, radiocarbon evidence indicates that al-Basatîn's assemblage is probably contemporary with LN3 or LN4 at Tabaqat al-Bûma (Banning 2007). Cobbled floors and platforms at al-Basatîn are very similar to ones found at Tabaqat al-Bûma and accompany pottery and lithic assemblages that also show major similarities, as well as some interesting differences (Banning et al. 2004). Evidence for more substantial structures, like the well-preserved domestic architecture found at Tabaqat al-Bûma, has not yet been found at al-Basatîn, apart from a couple of short segments of stone wall foundations. This suggests a different kind of occupation, perhaps a seasonal camp with tents covering the cobbled floors, although there is substantial evidence for the same kinds of domestic activities as found at Tabaqat al-Bûma.

Al-Basatîn's pottery assemblage appears to share most forms with Tabaqat al-Bûma as well as some instances of combed, incised, and punctate decoration. However, there are also differences. Combing generally appears to be

both more common and often sloppier at al-Basatîn than at Tabaqat al-Bûma and, in a few instances, covered both the interior and exterior surfaces of vessels (FIG. 2.11). Fields of crude incisions that seem to mimic the effects of combing occur on some vessels (FIG. 2.7). Pebble-impressed bases occur at al-Basatîn, none of which were found at Tabaqat al-Bûma.

Sickle elements from al-Basatîn are particularly revealing. As at WZ 200, the sickle elements at al-Basatîn include many type D, as well as type C /E. They are also thick and commonly made on flakes, usually with obvious denticulations. Interestingly, however, it is much more common at al-Basatîn for blades, rather than flakes, to have served as blanks for sickle elements, while the reduction sequence also differed at the two sites. This suggests that inhabitants at the two sites shared a common conception of what sickle elements were supposed to look like, yet did not share a tradition for the means of achieving that result (Kadowaki 2005).

Al-Basatîn also provides evidence for long-distance exchange. A bivalve-shell pendant (FIG. 2.14) from one of the Late Neolithic outdoor surfaces indicates access to materials from as far away as the Mediterranean, which is accessible by way of the Esdraelon Plain. Obsidian flakes from Neolithic contexts, meanwhile, indicate exchange over much longer distances (FIG. 2.15). Decorated pottery from al-Basatîn has parallels with Wadi Rabah sites west of the Jordan, including examples of combed, black-burnished, incised, and impressed decoration (FIG. 2.4, 12; compare FIG. 3.5, 9).

Preliminary results of Instrumental Neutron Activation Analysis indicate some chemical similarities between the Late Neolithic sites in Wadi Ziqlab, suggesting the sharing of pots, clay sources, or paste recipes, and there are

some similarities with more distant sites such as Ghassul. There are also differences between the Wadi Ziqlab sites, however, suggesting, in some cases, potters at particular sites had their own potting traditions or had exclusive access to certain sources of raw materials.

Social Agency

One way to interpret the similarities and differences among our assemblages is as the result of agency (Dobres and Robb 2000). Agents acquire technological knowledge and skill and make decisions in particular social and economic contexts (Dobres and Hoffman 1994). According to an agency perspective, artifacts preserve traces of these decisions, but are not simply passive reflections of human activity. Everyday engagements with objects produce an individual's view of the world (Thomas 1999), and objects are, therefore, involved in producing dispositions to act in certain ways in certain social situations (Bourdieu 1977).

Decorated Pottery in its Social Context

Although Late Neolithic pottery is crude, and decoration is rare, its distinctiveness would make it valuable in social contexts (Goren et al. 1993). That relatively high proportions of the pottery are bowls and small jars, and that some of it is decorated, is consistent with its use in social display, such as entertaining.

Visiting and entertaining would fulfill a number of important social and economic functions, while also providing opportunities for emulation, learning artifact forms or technological processes, and, perhaps, gaining prestige or advantage over others (c.f. Helwing 2003). The very small group sizes at farmsteads would require exogamy, with visiting and, perhaps, regional social or religious festivals at a few larger settlements providing opportunities to meet potential mates. Social alliances

founded and maintained through visiting would also help buffer risks associated with harvest failures or loss of stored food. Furthermore, in some of these social contexts, visitors and hosts would see and sometimes exchange objects of their own manufacture, or might jointly engage in productive or exploitive activities. Thus, visiting and social events would provide the environment for learning and information exchange.

We are beginning to explore these interactions in terms of inter-site networks of stylistic and technological exchange. One way to attempt to do this is to measure degrees of similarity in technological and stylistic traits between pairs of nearby contemporary sites, and then represent these similarities on network graphs. Ordinarily, we might expect some relationship between spatial propinquity in the network and degree of similarity, so anomalies in the network might signal better opportunities for the inhabitants of some sites to control access to goods, information, or both, from other nodes in the network. Although our research is only at an early stage, we hope that, in future, it will help us understand the nature of social relationships at the regional level during the Late Neolithic.

Conclusions

Some behaviours, such as those involving sickle element technology, are highly shared among Ziqlab sites but somewhat distinct from Late Neolithic/Early Chalcolithic sites to West. Even then, there are subtle differences between some of the Ziqlab sites that indicate that learning of at least some practices and

techniques was highly localized, and not shared across sites.

Other behaviours and styles found at al-Basatîn are shared with sites to the West but not with Tabaqat al-Bûma, such as pebble-impressed bases on pots and certain types of incised and impressed decoration.

Tentatively, we conclude that the interaction pools for learning different kinds of behaviours and techniques, such as aspects of lithic and ceramic technology, took place at different scales and in different contexts, some local, some more regional. Pottery form and decoration, for example, may have acted in a larger pool of social display, while lithic technology was learned within families or households. The selection of raw materials and choice of tempering recipes for pottery also show variation, with some of these choices shared rather broadly among sites, and others more restricted in their distribution.

As this research continues, we hope it will shed some light on the hitherto elusive character of Late Neolithic social systems.

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ملخص: درس العمل الحقل في وادي زقلاب أنماط الاستقرار وإيحاءات ارتباطاتها الاجتماعية والاقتصادية في الألفية السادسة (معيارية) قبل الميلاد. وفي حين كشف المسح عن موقع قرية واحدة كانت أهلة خلال فترة الخزف اليرموكي للعصر الحجري الحديث، إلا أن القرون التالية امتازت بأنماط متناثرة لقرى صغيرة وعزب زراعية. وأظهرت بعض الخصائص الثقافية المادية أن مواقع الاستقرار الصغيرة هذه اشتركت في مفاهيم معمارية وخزفية وحجرية تنتشر على رقعة واسعة من بلاد الشام، بما في ذلك خصائص «ثقافة وادي رباح». غير أن ثمة اختلافات مهمة برزت بين المواقع، حتى ضمن منطقة وادي زقلاب الصغيرة، توحى باختلافات نطاق الجماعات العاملة وشبكة التعلم من خلال تواصل الجوار ضمن شبكات التواصل الاجتماعي الأقليمي.

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