STONE MORTARS AND TRIPOD MORTARS IN EASTERN MEDITERRANEAN BETWEEN 2ND AND 1ST MILLENNIUM BC

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The main purpose of this contribution is to outline a general framework on the origins and functions of stone tripods, a particular and multifunctional class of material, attested for the first time in Syria in the 3rd millennium BC. The tripod bowl, or tripod-mortar, appears in the sites of the Southern Levant in the Middle Bronze Age and spread during the Iron Age. These specimens will know a wide diffusion throughout the Eastern and Western Mediterranean basin; in fact, mortars/bowls on three feet in stone - and in ceramic - are also attested in the Phoenician colonies of the West.

Keywords: stone mortars; tripod mortars; grinding stones; stone tools; Levant

1. STONE MORTARS: AN INTRODUCTION

All over the Mediterranean, stone tools, such as pestles, millstones, grinding slabs and mortars, are found in large quantities from 2nd and 1st millennium BC and attest the processing of food and raw materials in both rural and urban contexts. Stone vessels are documented in numerous archaeological contexts including tombs, houses, public buildings, and temples, and suggest that their functions ranged from domestic to cult activities.[1] The term mortar has been used to indicate objects characterized by a rather essential shape but by a particular attention to the creation of a work surface. Generally, the simpler shapes have no worked external surfaces, and the internal cavity is shallow. Mortars can be obtained from boulders of adequate size or made *in situ* using a rock block.

Katherine Wright[2] proposed a classification of mortars into six types: pebble, bowl, boulder, hollowed (sunken), pillar, bedrock (immovable rock block). However, the most used subdivision is based on size: the smallest block is called simple mortar, while the large, vertical one is identified as a pedestal mortar.

Block mortars are a more common version of pedestal bowls and mortar bowls. The latter are made in a fairly similar way to obtain a raised work surface.[3] Depending on the size, these containers would have allowed the craftsman to work sitting or standing. The weight of the mortars indicates that some of them were meant to be permanent installations and not portable tools. Their functions varied and ranged from grinding wheat and preparing food in domestic contexts to being used as altars and shallow basins in cultic contexts.[4]

Tripod mortars are the more complex type and are characterized by the presence of three feet. A division can be made whether the feet are freestanding or interconnected by a cross-bar. Some tripod bowls also display elaborated forms and simple decorations on the

1 Ebeling 2001; 2002; 2007; 2012; Ebeling - Rowan 2004; Rosenberg 2008; 2013; Ebeling - Rosenberg 2015.
2 Wright 1992, 65-67.
3 Sparks 2007, 137.
4 Sparks 2007, 137.

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exterior face of the leg, consisting in grooves or ledges. The three legs feature confers more stability to these objects, although in the case of the more elaborated variants an aesthetic value conferred to these objects. In this summary typologies of stone tripod mortars are illustrated according to their macroscopic features to display their evolutions and connections both in a synchronic and diachronic way.

2. Free standing tripod mortars

The tripod bowl, or tripod-mortar, appears in the Southern Levant at the beginning of the 2nd millennium BC, although they are known as early as the 3rd millennium BC from sites in Syria.[5] Rachel Sparks[6] proposed a distinction between tripod mortars and tripod bowls. The former is characterized by thicker and more irregular walls, the feet can be well defined or separated from the body. The latter, on the other hand, are recognized by well-defined edges, bases, continuous external surfaces, uniform wall thickness and external finish.[7] The terminal part of the leg can have a semicircular, sub-triangular, oval, or square section.[8] Further change is also determined by the greater depth of the bowl. This change may be due to the fact that the shallow versions were used to process smaller quantities of substances. Many tripod mortars, both in the Levantine and Syrian areas, are made of basalt.[9] The vesicular basalt is in fact the ideal material for grinding wheat and other organic and inorganic substances, as the vacuoles keep the surface rough and hard, reducing friction and, consequently, the amount of grit in the final food product. Basalt is also a very resistant material and, therefore, difficult to work with. It is also more austere and, for this reason, more suitable for the manufacture of valuable objects. In fact, many tripods have been interpreted as cultic or luxury items precisely because they are made using more accurate techniques than those used for the creation of objects intended for domestic use.[10]

Examples have been reported from sites such as Tell el-Qedah/Hazor (fig. 1), Tell Qiri, Jerusalem, Ras Shamra/Ugarit.[11] Almost all of them come from Iron Age contexts, but two tripods found in Tell Beit Mirsim and one found in Tell el-Qedah/Hazor come from contexts dated to the Middle and Late Bronze Age. In Hama, Syria, a three-footed cup was found in the H layer of the Middle Bronze Age; through geochemical analyses carried out on a tripod cup from a Late Bronze Age burial at Kition, its importation from the Levant was noted,[12] thus demonstrating the widespread use of this class of objects. Artifacts that have been defined as tripods, three-foot bowls, or mortars, based on formal and technological characteristics, have been found also in Beirut,[13] Tell Barri/Kahat, Tell Hariri/Mari, Tell Brak/Nagar, up to the Anatolian coast.

5 Rutter 2003.
6 Sparks 2007.
7 Wright 1992, 75-77.
8 Elliott 1991, 29.
9 Squitieri 2015.
10 Sparks 2001.
11 For a detailed analysis of Ras Shamra's stone tools see: Elliott 1991, 1-99; Caubert 1991.
12 Karageorghis 1970; Karageorghis - Demas 1985.
13 Badre 1997, 43.

3. CENTRAL PILLAR TRIPODS

This is a type of tool mainly carved in basalt, which with some variations has experienced a wide diffusion in the Levant and South-Anatolian areas in the 1st millennium BC, even if the first examples date back to the Middle and Late Bronze Age. Hans-Günter Buchholz first[14] and Anna Maria Bisi[15] then proposed a classification for this class of materials. While Buchholz considers this type only as a later evolution of tripods with flared feet, Anna Maria Bisi,[16] on the other hand, in her classification of three-footed cups, identifies two different types: one with horizontal bars (Type VII) and the other with transverse bars (Type IX), also highlighting variations related to the shape of the feet and decorative elements.

In Emanuela Merluzzi's study[17] instead, the tripods are distinguished by the number and presence of bars that join the feet to the central support. Subtypes and variants were also highlighted, determined by the height of the central support and the number of oblique axes, the position and shape of the feet and the presence of plastic elements such as dowels or engraved and/or engraved decorations or relief.[18] According to Zvi Gal, Sparks' central pillar tripods are of Phoenician style and characteristic of the 10th century BC Southern Levant.[19]

3.1. *Central pillar tripods: Type I*

The first type includes tripods characterized by horizontal bars that join the feet to the central support. As already pointed out by Bisi, the oldest example of this type is a basalt tripod found in Tell ed-Der/ Sippar-Amnanum, in Mesopotamia, and dated to the period of Isin-Larsa.[20] The shape of the horseshoe feet that characterizes this vessel can only be found on another early Late Bronze specimen from Tell Munbaqa/Ekalte, on the upper Euphrates.[21] This specimen is also characterized by an engraved decoration in parallel lines on the upper part of the feet. In both cases the bars that join the feet to the central pillar are positioned at the same level as the zoomorphic base. This kind of stone tripods was found in Yorghan Tepe/Nuzi, dating to the Late Bronze Age II, Tell Mishrife/Qatna and Tell el-'Ajjul.[22] Although this type continues to be in use at the beginning of the 1st millennium BC, as documented by some tripods from the Anatolian, Syrian and Palestinian areas, in the Iron Age the shapes of the vessels with central support tend to become more and more elaborate and, in some cases, are enriched with a relief or engraved decoration. This is the case of a tripod from Tell Halaf/Guzana dated to the Iron Age II, that reproduces a hunting

14 Buchholz 1963.
15 Bisi 1966.
16 Bisi 1966, 57.
17 Merluzzi 2002.
18 Merluzzi 2002, 235, fig. 2.
19 Gal 1994, 23.
20 Bisi 1966, 34.
21 Merluzzi 2002, 240, fig. 3:3.
22 Merluzzi 2002, 240.

scene (fig. 2)[23] and two basalt tripods found in Tell Beit Mirsim dated to the Iron Age IIB-C.[24]

3.2 *Central pillar tripods: Type II*

A second type includes more morphologically articulated tripods, characterized by feet joined to the central support by horizontal and transverse bars. The tripods with transversal bars can have simple and straight feet, with elaborate and articulated decorations engraved and/or in relief on the upper or lower part.

Tripods with elaborate feet spread during the Iron Age II in an area between the Jordan Valley and Northern Syria, as for example in Tell el-Mutesellim/Megiddo and Tell Afis (fig. 3). They have been linked to the Phoenician tradition due to their presence in Horvat Rosh Zayit, a site believed to belong to the Phoenician cultural enclave based on the pottery finds.[25] However, such articulated stone tripods are not attested in any site or in any Phoenician colony until now. Therefore, the affiliation to the Phoenician tradition, suggested for these tripods, does not seem to be supported by their distribution.[26] In fact, tripod mortars belonging to this typology have been found even further South at Kadesh Barnea[27] and Tell Jemmeh in the Negev,[28] and these elements can be used as evidence to support the existence of an exchange of basalt vessels between the Northern and the Southern ones in the Negev and in the Shephelah.

4. Diffusion and distribution

Tripods mortars were widespread in the Eastern Mediterranean for a very long period. Tripods with long and short feet have been found in various centers of the Levant, such as Hama, Tell el-Mutesellim/Megiddo, Tell el-Qedah/Hazor, Kamid el-Loz, Byblos, Tell Nebi Mend/Qadesh, Tell el-Husn/Beth Shean, Tell Beit Mirsim and Tell Abu Hawam.[29] This typology is also found in Southern Palestine, for example in Tell ed-Duweir/Lachish, Gaza and Tell el-Farah Sud, and continues into the Iron Age, as evidenced by the finds found in Tell el-Farah North. Stone tripods very similar to those of the Syrian-Palestinian area come from Cyprus. They have low feet, an accentuated hull and many of them have been found with pestles.[30] This data underlines, once again, the function of the tripod as a tool for processing of organic and inorganic substances and above all the interconnections between the two areas in exam. To make these vessels, Cypriot artisans used local rocks rich in chlorite and, from the end of the Bronze Age to the beginning of the Iron Age, this material became more common than gypsum, the main material from which stone vessels were produced. The most numerous specimens belonging to the latter type come from the Late Cypriot tombs of Enkomi (fig. 4). Carolyn Elliott claims that the olivine basalt tripod

[23] Hrouda 1962, pl. 6.
[24] Albright 1941, 83, pls. 29:16a, 30:7.
[25] Gal 1992; 1994; 1995.
[26] Squitieri 2017, 62.
[27] Cohen - Bernick-Greenberg 2007; Gera 2007.
[28] Rosenberg - Garfinkel 2014; Rowan 2014.
[29] Elliott 1991.
[30] Gjerstad 1948, 562-564; Schaeffer 1948, tav. V:B.

mortars identified in Cyprus are imported from the Levant, where these specimens were widely distributed.[31] In support of her thesis, the scholar states that the shape of the basalt mortar-tripod is different from that of the chlorite specimens, because it is much more massive and generally made up of shorter feet, with much thicker walls and base and without decorations.

The geographical distribution of these specimens indicates that several production centers were in operation in the Eastern Mediterranean. Probable production centers rose in areas close to basalt sources, such as Hama and Tell Mishrife/Qatna in Syria, Tell el-Qedah/Hazor in Eastern Galilee, Tell el-Mutesellim/Megiddo, and Tell el-Husn/Beth Shean in the Jezreel Valley.[32] The abundance of tripods in the Levant, in addition to their sporadic presence in Crete, Cyprus, Greece and Anatolia, prompted Buchholz to support the hypothesis that this typology originated in the Levant and from here was then exported to other centers.

5. Purpose and uses

Establishing the function of mortars and tripods is very problematic since the documentation available does not provide precise indications on traces of use or any processing residues. The presence of decorations, often even very complex ones, and the attention to the aesthetics of the artefact seems to have no specific link to the function but, if related to the archaeological context in which the vessels were found, they can provide interesting information. In sacred places, the tripods could be used both in the processes of transformation and preparation of the meal in honour of the divinity and as containers for libations, while it is very likely that they were used as simple mortars in ceremonial banquets in public or private contexts. This hypothesis is also supported by the fact that many tripods, in the Levant and in Cyprus, were found together with artifacts of common use and, in the case of the "treasury deposit" of Byblos, of the Building 338 of Tell el-Mutesellim/Megiddo,[33] and of the Tomb 19 of Enkomi,[34] also in association with a pestle. This element is undoubtedly very illuminating as it demonstrates quite clearly the mortar function of the tripod. Furthermore, the preference towards a specific type of stone used to carve mortars - particularly evident in the case of the Cypriot and Levantine specimens - could be linked to the diet and local food tradition, and therefore to the need to grind and process different foods. At the present state of the documentation, what can be excluded is their use as incense burner since they don't have burning traces inside. According to Merluzzi,[35] the close morphological relationship with the offering tables used in the ritual banquets from which they would have drawn inspiration contributes to connote the Type II tripods as objects of ceremonial and cultic use.

31 Elliott 1988, 83.
32 Sass 2000; Sass - Cinamon 2006; Ebeling - Rosenberg 2015.
33 Ussishkin 1989.
34 Gjerstad 1948, 562-564.
35 Merluzzi 2002, 258.

6. Conclusions

The tripods, from the simplest to the most elaborate types, experienced a homogeneous diffusion throughout the Eastern Mediterranean basin, starting from the Middle Bronze Age, and will have a wide diffusion in the Iron Age.

The evolutionary process of this class of materials begins in the first half of the 3rd millennium BC in Northern Syria and Upper Mesopotamia. The island of Cyprus, on the other hand, will constitute the terminal part of this process, as it will only know the stone tripod in the 2nd millennium BC, when it will be introduced there from Syria.[36] However, the possibility that ceramic tripods were already widespread in indigenous cultures cannot be ruled out. It must be taking in account the position that tripods assume in the analysis of oriental legacies as they are transmitted during the 8th and 7th centuries BC to Greece and Etruria.[37]

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[36] Xenophontos - Elliott - Malpas 1988.
[37] Botto 2000.

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Fig. 1 - Freestanding tripods from Tell el-Qedah/Hazor (a: Yadin *et al*. eds. 1958, tav. LXXXVII:22; b: Yadin *et al*. eds. 1958, tav. LIX:2).

Fig. 2. - Central pillar tripod from Tell Halaf (© The Trustees of the British Museum, inv. 1920, 1211.477).

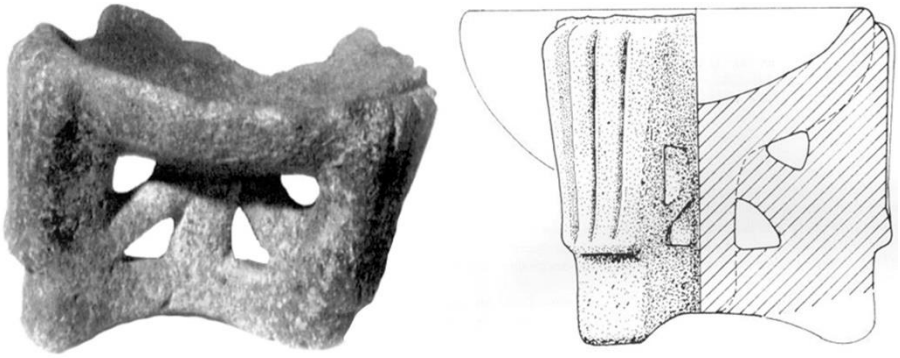

Fig. 3 - Central pillar tripod from Tell Afis (Merluzzi 2002, 232, fig. 1).

Fig. 4 - Tripods from Enkomi (Schaeffer 1948, pl. V:B).