

NARROW BASE DIPPER JUGLETS (NBDJ) IMPORTED FROM THE SYRO-LEBANESE LITTORAL TO THE SHEPHELAH AND THE COASTAL PLAIN OF ISRAEL

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Abstract: Narrow Base Dipper Juglets (Nbdj) Imported from the Syro-Lebanese Littoral to the Shephelah and the Coastal Plain of Israel

Narrow Flat Base Dipper Juglets (NBDJ) were found in many excavations in Israel, as well as in the Syrian-Lebanese Littoral and Cyprus, mainly as offerings deposited in tombs. They are similar to the well-known dipper juglets, which were locally-produced juglets with sharply pointed bases. Petrographic analysis conducted on the NBDJ showed that these vessels were produced in workshops located in the Syro-Lebanese littoral, and were exported to Cyprus and the southern Levant through dynamic trade routes. The widespread distribution of NBDJ along Israel's coastal plain indicates that these vessels were exchanged primarily in a maritime-based commerce. The NBDJ's distribution patterns in the southern Levant are consistent with their origin of production along the Syro-Lebanese coast.

Keywords: Dipper Juglets – Syro-Lebanese Littoral – Import – Maritime trade – Petrographic analysis – Narrow base

Resumen: Jarras de base plana y estrecha importadas del litoral sirio-libanés a la Sefelá y la planicie costera de Israel

Se encontraron jarras con pico de base plana y estrecha en muchas excavaciones en Israel, como también en el litoral sirio-libanés y en Chipre, principalmente como

Article received: November 8th 2015; approved: March 1st 2016.

ofrendas depositadas en las tumbas. Estas son similares a las conocidas jarras con pico, que eran jarras producidas localmente con bases puntiagudas afiladas. El análisis petrográfico realizado en ellas mostró que esas vasijas eran producidas en talleres ubicados en el litoral sirio-libanés y eran exportadas a Chipre y al sur del Levante a través de rutas dinámicas de intercambio. La extensa distribución de estas vasijas a lo largo de la planicie costera de Israel indica que eran intercambiadas primariamente en un comercio de base marítima. Sus patrones de distribución en el sur del Levante son consistentes con el origen de su producción a lo largo de la costa Sirio-Libanesa.

Palabras clave: Jarras con pico – Litoral sirio-libanés – Importación – Intercambio marítimo – Análisis petrográfico – Base angosta

INTRODUCTION

The end of the Middle Bronze Age and the Late Bronze Age in the southern Levant are characterized by notable cultural and social phenomena, including repetitive events of massive migrations, foreign interventions and military campaigns that led to different extents of influence or domination and periods of relative independence, in which city-states flourished. The southern Levant witnessed the development of vibrant urban cultures typified by fortified cities displaying architectural characteristics such as the *glacis* and earthen rampart, as well as distinctive features in other fields, like material culture, cult and burial practices. In this framework, a dynamic network of both terrestrial and maritime trade flourished. Far-ranging trade networks were established, conveying a variety of commodities between different destinations in the eastern Mediterranean basin. These supplies included distinctive ceramic assemblages. In several excavations conducted at sites in Israel (**Fig. 1**), numerous narrow-base dipper juglets (henceforth NBDJ) were found, that were found to have been imported from the Syro-Lebanese littoral.

ARCHAEOLOGICAL CONTEXTS

The earliest samples of these juglets from tombs on the Syrian coast, dated to the MB II a-b period were found in the region between Sidon and Beirut: In Tomb 74 in the eastern cemetery at Sidon,¹ Tomb 4 at Beirut² and mortuary contexts at Kharji.³ Similar vessels were retrieved from Late Bronze assem-

¹ Guigues 1938: Fig. 93, a, c.

² Badre 1997: Fig 14:1.

³ Saïdah 1993–1994: Pl. 12:1.

blages at Sidon⁴ and in Cemetery K at Byblos.⁵ More occurrences are known from Tell Kazel, on the lower floor of the Level VI Courtyard and on the upper floor of the Temple *Cella*,⁶ and in Stratum Va at Alalakh (**Fig. 1**).⁷ Similar vessels were found in various sites dating to the LB I-II periods, most of which are located in the coastal plain and the northern valleys of Israel (**Fig. 1**). Examples include Jatt, Tombs 7 and 13 (**Figs. 2:1, 6**),⁸ Palmahim (in tombs of the 14th century B.C.E.),⁹ 'Ara (in Tomb I and fragments in Tomb II, labeled as type JTD4)¹⁰ (**Figs. 2:2–5; 7–9; 3**), Tomb 1504 at Lachish (**Fig. 2:10**),¹¹ Stratum XV at Tel Michal (**Fig. 2:12**),¹² Meggido (Tombs 2127 and 3028; Strata IX–VIII),¹³ Hazor (Area A),¹⁴ Horbat Zelef (on the northeastern slope of Mount Tabor)¹⁵ and Tel Abu Hawâm, Stratum V (**Fig. 2:11**).¹⁶ This type of juglet was also found at Enkomi in Cyprus¹⁷ and was most likely exported from the Syro-Lebanese coast. Since the overwhelming majority of vessels found in Israel were retrieved in sites distributed along the Coastal Plain, a scenario of maritime commerce emerges as the most plausible explanation for the distribution of these vessels.

DESCRIPTION OF THE SYRIAN IMPORTED JUGLETS

These juglets (**Figs. 2; 3**) have a flat or slightly rounded base, an ovoid or slightly piriform body, a cylindrical neck and a trefoil rim. The body and the neck are delicately pared and treated with a dense, vertical burnish. Neither the clay from which the juglets are made nor the process of firing is uniform. Most are made of yellowish clay mixed with black inclusions, while a few are made of light pink clay containing red and white inclusions.

⁴ Saïdah 2004: Figs. 24:55; 28:64; 38:89; 40:106.

⁵ Salles 1980: Pl. 22:7.

⁶ Badre and Gubel 2000: Figs. 24:j-o; 11:g-j.

⁷ Wooley 1955: Pl. 113: 50.

⁸ Yannai 2000: Figs. 5: 54–55; 2005: Figs. 10:29–30.

⁹ Yannai *et al.* 2013: Figs. 13:3; 24:3; 35:4; 38:4.

¹⁰ Yannai 2014: 136–137; Figs. 6.3:9–15.

¹¹ Tufnell 1958: Pl. 86: 995.

¹² Negbi 1989: Figs. 5.7: 7–8.

¹³ Loud 1948: Pls. 50:8; 58:16.

¹⁴ Ben-Tor *et al.* 1997: Fig. II.15:14.

¹⁵ Covello-Paran 2011: 27; Fig. 23:3.

¹⁶ Hamilton 1934: No^o. 260.

¹⁷ Lagarce and Lagarce 1985: Figs. 35:182–184.

PETROGRAPHIC DATA

The vessels that underwent petrographic analysis were sampled and examined following standard laboratory procedures¹⁸ and related by means of comparison to geological environments in Israel and the Levant.¹⁹ The typical geological and lithological attributes provided the basis for the assessment of their provenance. The results of the analysis were compared with existing data retrieved from the petrographic database of the Laboratory of Comparative Microarchaeology (Institute of Archaeology of the Tel Aviv University).²⁰

Despite the fact that the juglets were first found in Cyprus, where they were labeled Plain White Wheel Made Ware (PWwmw) and considered local,²¹ a Cypriot origin was dismissed, as the geological environs of the island do not match the results derived from the analysis.

The petrography of Cypriot ceramics has been intensively studied in recent years. From the early classification of macroscopic fabric categories²² up to the most recent research,²³ the petrographic signature of Cypriot pottery has been shown to be substantially different from the samples examined in the present study.

Cyprus presents different geological environments: in the northern area (Kyrenia) an uplift of deep water sediments (from lower to upper Miocene) created hills along the seashore showing sedimentary clays.²⁴ On the other hand, the Late Cretaceous Troodos Complex, in the central and southern range of the island, consists of a series of mafic—ultramafic igneous rocks (ophiolites), which is a distinctive igneous formation. According to the plate tectonics model of the earth's crust, the ophiolites are the result of a process in which oceanic plates were pushed, pressed and thrust against a continental plate.²⁵ The southwestern edge of the island is characterized by formations of

¹⁸ E.g. Whitebread 1995: 365–396; Goren 1995; 1996.

¹⁹ E.g. Porat 1986–87; 1989; Goren 1992; 1995; 1996; Greenberg and Porat 1996.

²⁰ The authors are indebted to Yuval Goren (Ben Gurion University of the Negev, then Tel Aviv University) for his kind assistance and advice during all stages of the present study.

²¹ Åström 1972: 245; Fig. LXVII:1.

²² Sjöqvist 1940: 34–38.

²³ E.g. Courtois 1981; Vaughan 1977.

²⁴ For Cypriot clays see Vaughan 1997: 342–345.

²⁵ At the end of this long process the ophiolite formations can eventually include oceanic sediments such as radiolarian chert, gabbros, dolerite complexes, basalts, pyroxenites and peridotites. In some cases ophiolites metamorphize into amphibolite facies and green schist. Such formations are known in Cilicia, Northwest Syria and Cyprus. They are also common further west,

sedimentary rock.²⁶ The point should be stressed that none of the above-described lithological features were observed in our petrographic analysis, precluding the Cypriot provenance of the raw material used in the manufacturing of the sampled vessels.

The examined samples showed a matrix characterized by foraminiferous calcareous clay (marl). The color of the matrix, in which some silty-sized quartz (up to 1–2%) is noted, is light orange to brown under Plane Polarized Light (PPL herein). Rounded concentrations of iron oxides (limonite) can be seen sparsely distributed as well.

Temper includes sub-angular to rounded quartz grains and limestone fragments (40 μ up to 80 μ) and occasional angular calcite and chert (60 μ up to 80 μ), as well as fossils of the *Amphiroa sp. algae*.

The raw material in the matrix was identified as marl, which was broadly used in the ceramic industry, particularly in the Negev region.²⁷ Outcrops of this raw material are broadly distributed in the Levant. They are exposed in the Judean Desert, the Northern Negev, along the western part of Samaria and the Judean Anticlinorium. Due to its wide distribution, it is difficult to determine provenance according to its presence.

However, the particular combination of marl and the non-plastic (temper) assemblage described above enables the further definition of the locale of the marl outcrop under discussion here. The alga *Amphiroa sp. algae* is a very indicative directing fossil, typical of the coastal beach rock dated to the Pleistocene. It occurs in Israel in recent bioclastic formations, e.g. Hefer, Kurdane and Peleshet formations.²⁸ Further north, similar components were observed in contemporary beach rocks and sands on the Lebanese littoral.²⁹ Therefore the presence of this fossil in the samples of this group strongly suggest a coastal origin.

Further pinpointing of a precise location along the Eastern Mediterranean seashore is made possible by the relatively small amount of coarse quartz

in the Aegean area (see Whitechurch, Juteay and Montigny 1984. For ophiolitic raw material used in imported vessels found in Israel see e.g. Gorzalczy 1999: 189; 2005: 213; 2006a: 193; 2006b: 42*; 2006c: 60; 2012: 53–54 and see there discussion and more parallels). The Cypriot provenance of vessels made of similar raw material (namely, Persian period mortaria) was corroborated by NAA analysis in Tel Hesi (Bennett and Blakely 1989: 199–203).

²⁶ Millar Master 2001: 29–30; Bear 1963; Constantinou 1995.

²⁷ Goren 1995: 302.

²⁸ Sivan 1996: 48–53; Buchbinder 1975; Almagor and Hall 1980.

²⁹ Sanlaville 1977: 161–167; Almagor and Hall 1980; Walley 1997.

grains (coastal sand), which is very common all along the Israeli seashore but sharply decreases in quantity from Haifa-Akko (Acre) northwards, hinting towards a coastal source further north. In the Israeli southern coastal plain, the coastal sediments are characterized by abundant quartz derived from Nilotic sand and transported northwards along the coast by the marine currents, with its presence gradually decreasing further north. Microscopic examination of thin-sections made from Holocene coastal sand from different sites located along the Israeli coast indicate that at the Haifa Bay the sand is still mostly composed of quartz, the alga fossil fragments being very rare. However, from Akko (Acre) northward, the beach sand displays a predominant carbonate component. The sand becomes increasingly calcareous to the north where the carbonates form more than 70% of the sand components.³⁰ The above description fits the situation at Rosh HaNiqra on the Israeli-Lebanese border as well as further north in Lebanon, where sand dunes near Tyre are essentially made of bioclastic carbonates, with quartz being a minor component.³¹

The Senonian or Eocene chert observed in the samples completes the scenario. The specific combination described above points to the only geographical environment that presents in close proximity outcrops of marl, widespread sub recent to recent calcareous marine sediments (beach rocks) and more inland-originated Senonian and Eocene limestone, chert and chalk.

This area, usually defined as the Phoenician Coast, is the Lebanese and Syrian littoral region, mainly the section between Beirut and Lattaqiyeh, which suits the particular description above.³²

Other samples show a ferruginous matrix pale to dark brown under PPLight with microfossil content, and the non plastic components include poorly sorted micritic limestone (rounded to sub rounded), rare angular to sub angular chert and sometimes quartz (coastal sand).

Similar samples retrieved at the Tel Aviv University database were made of raw material originating in Neogene formations in Lebanon.³³ The presence of some coastal sand on one hand, and the lack of more northern components (as radiolarian chert) on the other, seem to point towards a coastal provenance, south of Tyre and Sidon. In the cases in which the quartz was not observed, the suggested provenance is the more inland Miocene or Neogene

³⁰ Nir 1989: 12–15.

³¹ Sanlaville 1977: 162–164.

³² Sanlaville 1977: 15–17, 165–167.

³³ Bourriau, Smith and Serpico 2001: 134–35, Pls. 7. 39–40.

formations. Similar formations are known from different areas in the Southern Levant. However, on the grounds of the typological similarity with the coastal group of flat base juglets, and the abundance of this type of vessels in coastal contexts, the choice of the Lebanese littoral area and its hinterland as provenance of this ware should be favored.

DISCUSSION

Based on the petrographic examination, we can securely determine that none of the juglets were manufactured in Israel. Most of the juglets were made on the Syrian coast, while the provenance of a few of the Juglets was not unequivocally established. Both their outer shape and the proportions of the body and the neck are very similar to juglets from Ugarit. However, the Ugarit juglets are made of black and gray ware and despite the external morphological similarity, the petrographic examination indicates that the juglets discussed here were clearly not produced in Ugarit.

Based on parallels of other imported vessels from the Syro-Lebanese coast analyzed by the authors,³⁴ we can propose that the juglets were made at one or more workshops situated on the Syro-Palestine coast, between Ugarit in the north and Akko (Acre) in the south.

The Juglets fit into the ongoing developing picture of the importation of pottery vessels from the Syro-Lebanese coast to Israel. Some of the families of vessels were made as imitations of (or inspired by) the imported vessels from Cyprus and were part of the dynamic trade network which had developed between Cyprus, Syria and Canaan. The flat-base juglets were not made as imitations of the Cypriot or Canaanite Juglets simply because similar juglets do not appear in the ceramic repertoire of either region.

Based on their origins, the NBDJ are the true “Syrian juglets,” whereas the definition of “Syrian juglet” as gray juglets belonging to Black Lustrous Wheel Made Ware, generally referred to in Canaanite ceramic research, is in actuality a misnomer.³⁵ In light of the petrographic analysis, the origin of the latter juglets lies in Cyprus and their accepted definition as “Syrian juglets” is incorrect.³⁶ Even if we were to accept the supposition that not all of the gray juglets were made in Cyprus (further analysis of such juglets is currently

³⁴ Yannai, Gorzalczy and Peilstöcker 2003.

³⁵ Amiran 1969: 167–170.

³⁶ Yannai 2000: 55; 2007; 2009; Yannai and Gorzalczy 2007.

being undertaken in order to determine whether any of these juglets were actually produced in Cyprus), the use of the term “Syrian juglets” has become ambiguous and therefore should not be used in the discussion of the NBDJ. In our opinion, the juglets should not be defined according to their supposed origin since such term may change as result of research developments. It may be correct in light of today’s research, but as the study of ceramics progresses with the implementation of new research methods, there will likely be “fine-tuning” in the attribution of the vessels’ origin. Therefore we propose a definition that we have chosen based on the shape of the juglets rather than on their production origin. The rim, neck, body and even the handle of the juglets mentioned here are quite similar to the contour of the juglets referred to in Israel and Syria as “dipper juglets,” which were widely used from the beginning of the MB IIA until the end of the Late Bronze Age in the southern Levant. Their definition as “dipper juglets” (namely for the purpose of extracting liquids from large jars and pithoi) is based on having been found inside jars and pithoi and their shape which is sharply pointed and lacking a base. The juglets discussed here have a small base and not a pointed one (although we should not negate the possibility that juglets with pointed bases were also made on the Syro-Lebanese coast). Based on the shape of the base and its diameter, one can assume that the juglet was not free-standing, as its base is quite narrow and would render the vessel unstable. Therefore, the definition of these juglets as “dipper juglets” is plausible in light of their shape, which strongly resembles the standard “dipper juglets” from Israel. The definition of the juglet according to functional terminology is not customary in the prevailing research nomenclature, which is based primarily on morphology rather than on function. “Dipper juglets” were defined based on their shape but according to the archaeological finds, mainly from tombs, their definition appears to be functionally accurate.³⁷ Based on the typological definition, the main difference between the juglets mentioned here and the “dipper juglets” from Israel and Syria is the unique shape of the base; hence, we saw it fit to define the vessels as “Narrow Flat Base Dipper Juglets” (NBDJ).

The widespread distribution of the juglets along the coastal plain and the few found in the Shephelah and in northern Israel attest to the fact that the exchange of these juglets was primarily maritime-based and their distribution patterns are consistent with their production origins along the Syro-Lebanese coast.

³⁷ Kenyon 1960: Pls. 24:1, 25:2.

ACKNOWLEDGMENTS

The authors are grateful to Ram Shoeff for his help preparing the graphics in this article, and also to Joe Uziel and an anonymous reader for their useful comments.

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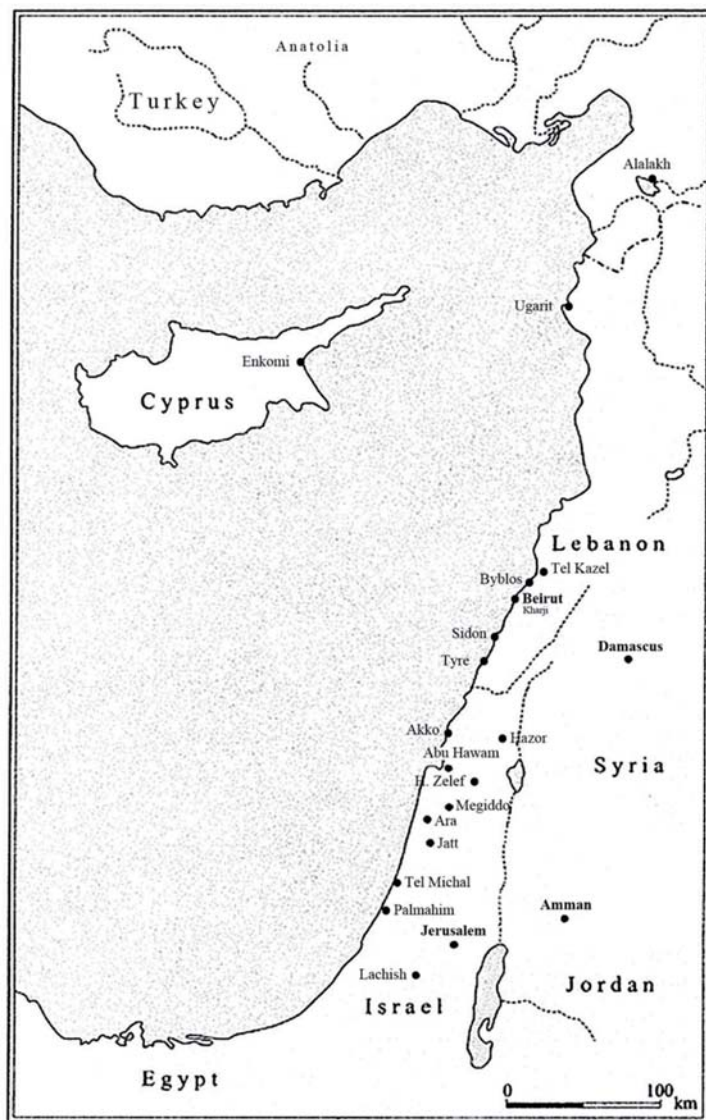
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FIGURES

**Fig. 1.**

Location of the sites in Israel, Cyprus and the Lebanese Litoral where the NBDJ were found

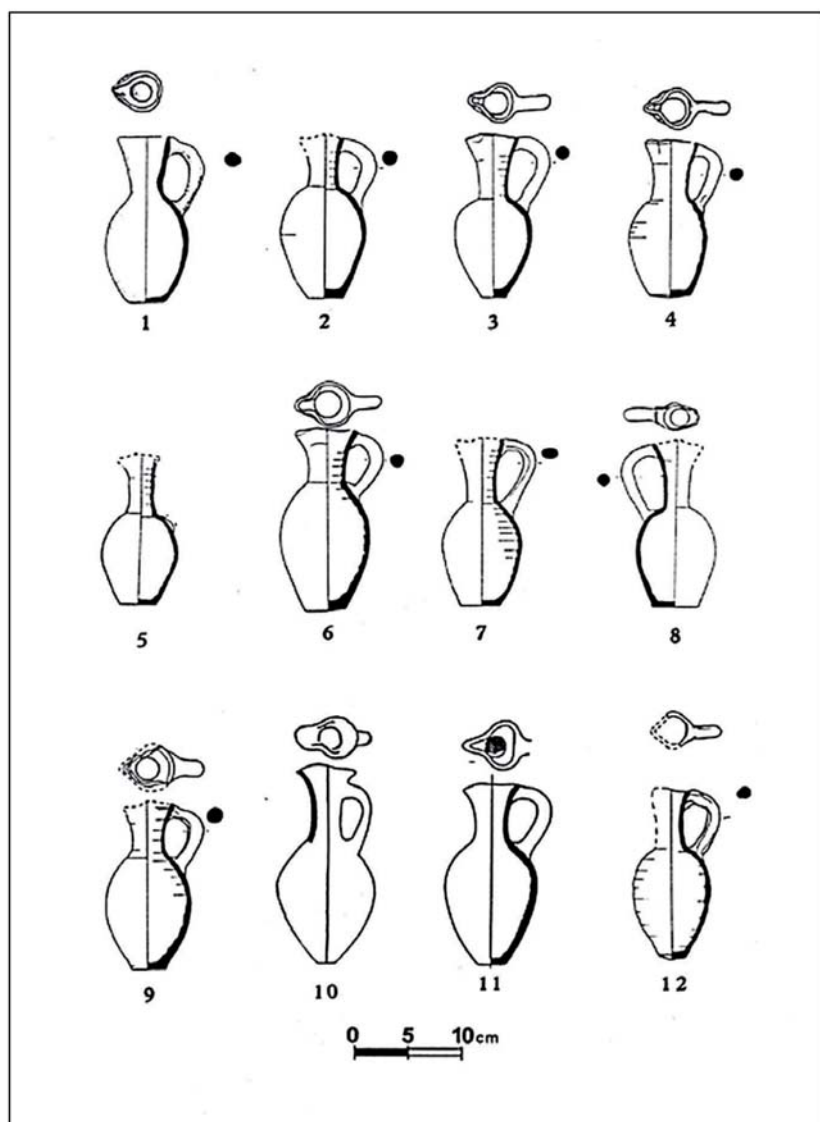


Fig. 2.
Narrow Base Dipper Juglets in Israel Coastal Plain



Fig. 3.

Narrow Base Dipper Juglets found in Israel
(from left to right, Figs. 2:4; 2:2; 2:3 and 2:7)