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**AMPHORAS FROM AN EARLY IMPERIAL SHIPWRECK AT FIG TREE BAY, CYPRUS****International imports and local imitations**

Shallow-water survey off the southeast coast of Cyprus has brought to light considerable evidence for exchange of agricultural materials in transport ceramics, with particularly high levels of maritime activity during the Roman and Late Roman centuries. The present discussion focuses on a late 1<sup>st</sup>- or early 2<sup>nd</sup>-century cargo that probably represents a typical small merchant vessel carrying a mixed cargo in several amphora types: “Pseudo-Cos en cloche” jars of possible Cilician origin, Gauloise 4 amphoras and (Cilician?) imitations, and another bifid-handle amphora of unknown origin. The Fig Tree Bay wreck provides a useful closed assemblage for dating these better and lesser-known types, and a valuable window into the dynamics of a small scale trade that brought both local and international goods to a quiet Roman province. Moreover, when understood within a broader socioeconomic context, the imitation and adaptation of the Gauloise 4 form documented here may hint at a potential internationalism in marketing of Gaulish-style agricultural products in the Eastern Mediterranean.

**The Site**

In the course of the 2007 field season of the Eastern Cyprus Maritime Survey, underwater investigations off the island’s southeast coast brought to light the scattered ceramic remains of a Roman shipwreck dating probably around the end of the 1<sup>st</sup> or early 2<sup>nd</sup> c. AD (**fig. 1**).<sup>1</sup> Since then, the site has been the subject of a second, more intensive field season in August–September 2008, when perhaps half the visible remains were mapped, surface counts were taken, and samples were raised for additional study. The wreck’s cargo is divided unevenly into two major areas separated by at least 10 m and covering a total of 50 × 30 m at present, though additional remains may extend some distance further, and will be the focus of another survey season. The information presented here is necessarily preliminary and subject to revision, particularly in light of future work aimed at finishing the mapping and documentation of the site.

The site is located in shallow water – just 4–9 m deep – off a low promontory marking the south edge of Fig Tree Bay, north of Cape Greco near the modern resort town of Protaras. The wreck’s proximity to shore raises the possibility that the vessel may have been nearing an intended port-of-call while engaged in short-haul coasting commerce,

frequenting the many smaller Roman sites attested along this stretch of coast. The swift onshore winds and strong currents pushing the opposite direction out to sea almost certainly played a key role in both the sinking of the ship and the subsequent dispersal and deposition of its cargo. If indeed a sailor ventured too close to the headland and struck either it or the shallows – by navigational mistake or in distress – then the surprisingly strong currents would have pulled his ship quickly out to sea as it sank the few meters, leaving the cargo strewn and smashed against the underwater topography to the east. Not surprisingly, most of the ceramics appear to have come to rest in the far side of crevices and against the edges of the reef (**fig. 2**).

**The Cargo**

The cargo consists of an extensive, if scattered and disturbed, assemblage of primarily transport amphoras of three broad types. In the course of mapping approximately half the site in 2008, surface counts of diagnostic elements (RBH) revealed at least 51 amphoras, all broken, with more likely buried in the sand or reef. While a total surface count is not yet available, it seems likely that the current area holds at least twice this many jars, including any intact vessels. Additionally, the shallow and accessible nature of the site suggests that visible fragments or complete amphoras may have been removed in modern times.

<sup>1</sup> The Eastern Cyprus Maritime Survey is undertaken by kind permission of the Department of Antiquities, Cyprus, where sincere thanks are owed to its director, Dr. Pavlos Flourentzos. Logistical and financial support for the work of the 2007–2008 field seasons described here was provided by the Institute of Nautical Archaeology, the Thetis Foundation, the University of Pennsylvania, and RPM Nautical Foundation. The project could not have been accomplished without the efforts of Nicole Cassano, Stalo Eleftheriou, Jeff England, Capt. Mustafa Fahl, Sarah Kampbell, Emma Ljung, and Luciano deMarsillac. Additional assistance for the author’s study was provided by the University of Pennsylvania’s Niarchos Program for the Promotion of Hellenic Culture and the Kolb Foundation at the University of Pennsylvania Museum of Archaeology and Anthropology. Finally, the ideas presented here are indebted to helpful discussions with and careful observations by Sebastian Heath, Mark Lawall, Archer Martin, Patrick Monsieur, Andrei Opait, and various participants of the RCRF Congress in Cadiz.

### Type I Amphoras

By far the largest group of amphoras, comprising 33 of the 51 amphoras (64.7% by number) counted in the cargo, is of a well-known form, “Pseudo-Cos en cloche” (Agora M54), a late derivative of the Koan (or Dressel 2/4) bifid-handle amphora tradition (fig. 3).<sup>2</sup> The form is characterized by a strongly convex upper body and shoulder offset by a carination, no neck and a simple out-turned, rolled rim. Long double-rolled handles rise quickly to a peak before falling out and following the shoulder profile to attach low on the body – just above the mid-section – at a sharp angle. A second carination here visually distinguishes the widest part of the body into two approximately equal halves. Although no examples from the wreck were found intact, the fabrics clearly indicate that this top belongs with the simple tapering peg toe and widely curved lower body observed in some quantities at the site.

The fabrics of Type I amphoras are reasonably consistent: hard, somewhat rough and gritty, and generally brown (7.5YR 5/3–5/4), often with grey discoloration from the underwater environment. At least one of the five clay samples examined, though, is a more reddish brown (5YR 4/4–5/4). Inclusions are prominent and numerous across all the samples: small and medium black, red-brown, light grey and white, which can be less well-sorted in some examples. Two samples taken from handle sections also exhibit some larger chunks of red-orange or light brown at their cores.

Though bifid-handle amphoras were manufactured throughout the Mediterranean in the early Imperial period, Empereur and Picon have linked this particular variation to production centers in Cilicia, including Yumurtalık on the Bay of Iskenderun.<sup>3</sup> Reynolds has likewise noted the similarity of fabrics among examples at Beirut to the known fabrics of LR1 amphoras from the area of eastern Cilicia.<sup>4</sup>

Panella has proposed a date from the latter half of the 1<sup>st</sup> century AD to the mid-2<sup>nd</sup> century for finds at Ostia, and although Reynolds has published variants that extend into the early 3<sup>rd</sup> century, the Type I jars from the wreck at Fig Tree Bay are clearly of the earlier form.<sup>5</sup> The type is particularly common from the Aegean to the eastern Mediterranean, including on Cyprus where a number of examples have been found in contexts of the late 1<sup>st</sup> or first half of the 2<sup>nd</sup> century at the provincial capital of Paphos.<sup>6</sup>

### Type II Amphoras (Types IIa and IIb)

The second largest group, numbering 14 of the 51 amphoras (27.5% by number) thus far counted in the assemblage, is morphologically similar to the Gauloise 4 type, well-known in western Mediterranean contexts from the latter 1<sup>st</sup> century into the 3<sup>rd</sup>, but less common on Cyprus, and in the east in general.<sup>7</sup>

Though difficult to differentiate underwater, the amphoras collectively recorded on the seabed as Type II actually exhibit considerable diversity, leading to the suggestion that this formally similar group actually contains amphoras of at least two specific subtypes (Types IIa and IIb). The form and

fabric of Type IIa are consistent with Gauloise 4 jars manufactured in the Mediterranean region of France (fig. 4).<sup>8</sup> The form exhibits a conical neck, thickened and rounded rim, and generally flat strap handles that rise from the middle of the neck before curving down to nearly vertical, preserving marks of the juncture with the neck. The bases vary from generally thin, with a more articulated ring and deeper hollow underneath, and often prominent wheel marks on the interior, to notably thicker, with a less elaborated, flatter ring, and generally less, if any, hollow underneath. Several of these intact bases revealed traces of pitch, presumably indicative of a wine content (fig. 5). The fabrics of Type IIa fall generally around light brown (7.5YR 5/3–6/3), though some are more reddish (2.5YR 6/4–5/6). The clay is hard but fine and generally compact, with occasional cracks or voids that are more regular and obvious in the redder examples. Most prominent are white and clear (quartz?) inclusions that are normally very small to medium, and occasionally larger. Certain examples contain mica, and occasional red-brown and black inclusions can be noted in the group.

Type IIb, however, exhibits a certain overall morphological similarity to Type IIa, but with certain key differences and a drastically different fabric. The single Type IIb top thus far raised and identified within the assemblage is distinguished by its more cylindrical neck and thick protruding rim with a nearly triangular profile (fig. 6). The handles, which have a smoother join to the neck, do not rise significantly before falling outward to meet the shoulders in a wide stance; their section is also more ovoid and elaborately grooved than the flatter strap handles of Type IIa, a feature reminiscent of the later LR1 class. Most notably, however, their fabric is visibly different even to the naked eye: far rougher, less fine, and with more and a different range of small and medium inclusions again vaguely similar to that of LR1 amphoras of a later date. At least some of the Type II group, then, cannot simply represent outliers within this Gauloise 4 range. Rather, an entirely different production center appears to have made a morphologically similar jar.

Gauloise 4 amphoras were widely imitated more and less loosely in the western Mediterranean, with Mauretanian and perhaps other North African Dressel 30 jars traveling

<sup>2</sup> H. S. ROBINSON, *The Athenian Agora*, Vol. V. Pottery of the Roman Period (Princeton 1959) 89 pl. 19; EMPEREUR/PICON 1989, 231–232.

<sup>3</sup> EMPEREUR/PICON 1989, 231.

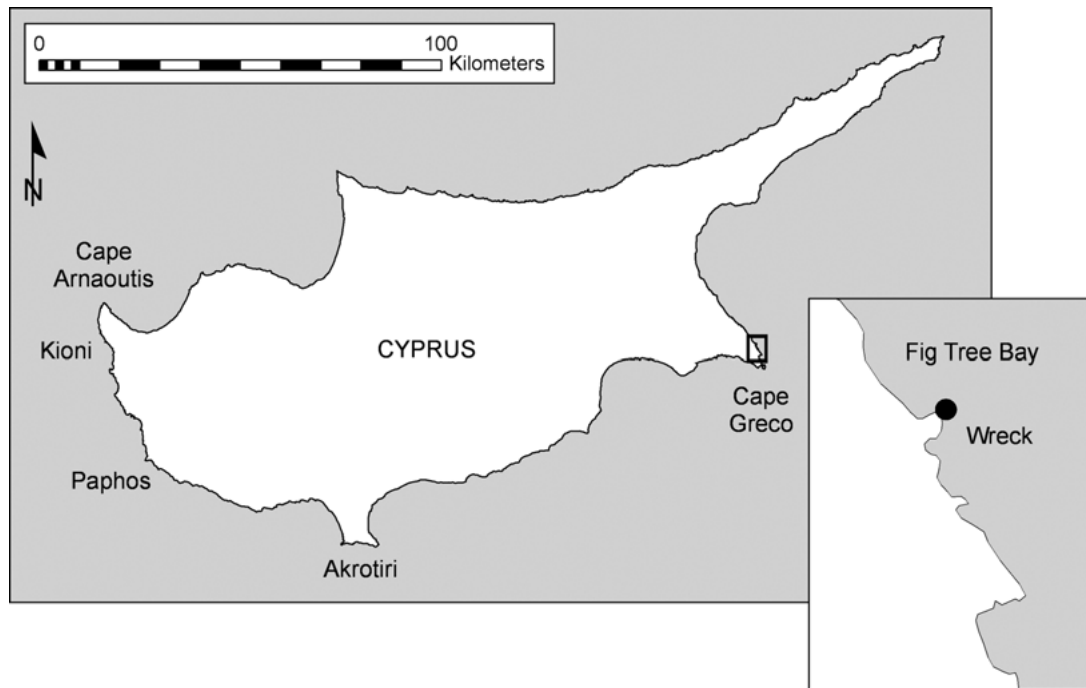
<sup>4</sup> REYNOLDS 2005, 564.

<sup>5</sup> C. PANELLA, *Oriente ed Occidente: considerazioni su alcune anfore ‘egee’ di età imperiale a Ostia*. In: J.-Y. Empereur/Y. Garlan (eds.), *Recherches sur les amphores grecques*. Bull. Corr. Hellenique Suppl. 13 (Athens 1986) 609–636 at 618; REYNOLDS 2005, 588 fig. 11.

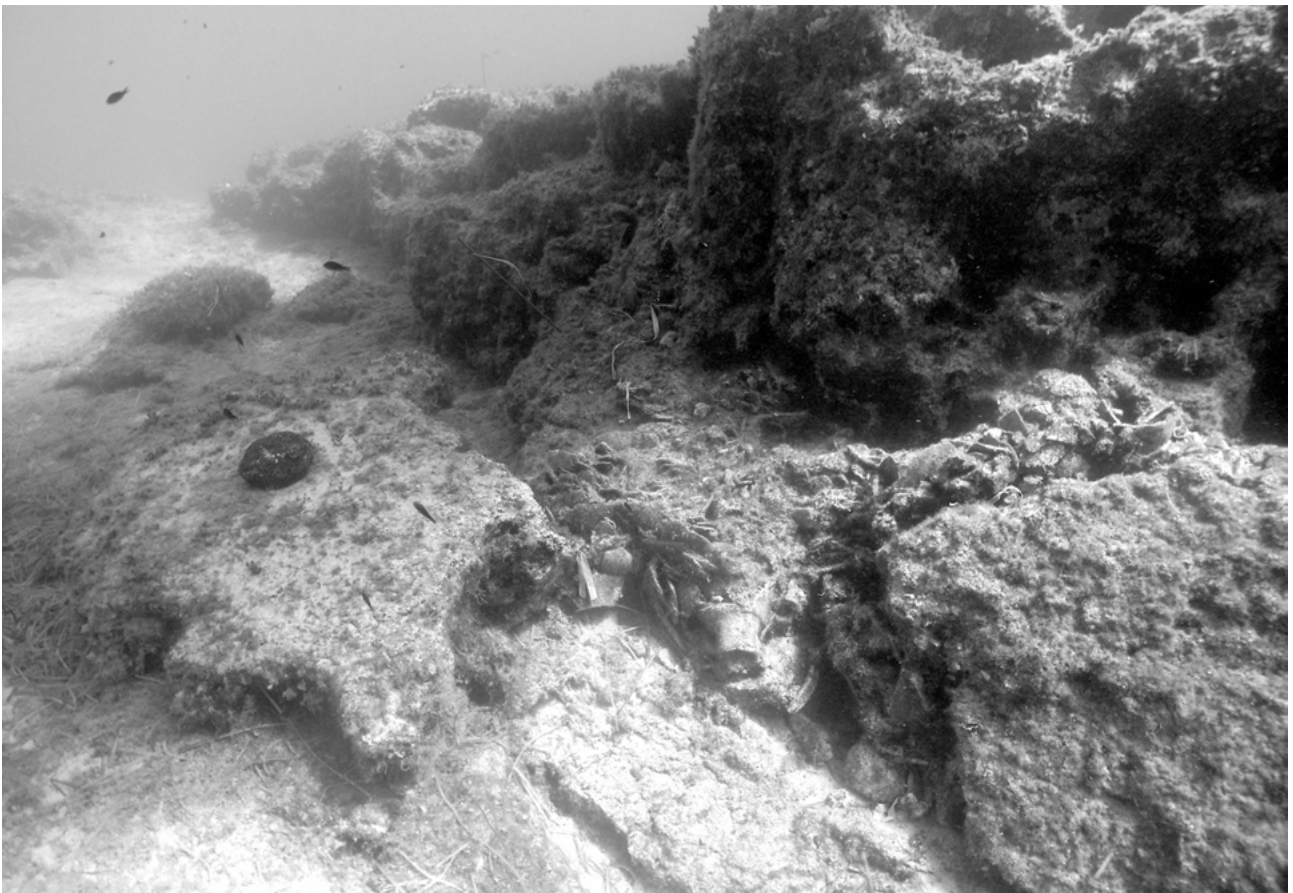
<sup>6</sup> M. SCIALLANO/P. SIBELLA, *Amphores: comment les identifier?* (Aix-en-Provence 1994) 96; J. W. HAYES, *Paphos 3. The Hellenistic and Roman Pottery* (Nicosia 1991) 93–94.

<sup>7</sup> F. LAUBENHEIMER, *Le vin Gauloise de Narbonnaise exporté dans le monde romain sous le Haut-Empire*. In: F. Laubenheimer (ed.), *20 Ans de recherches à Sallèles d’Aude* (Besançon 2001) 51–65.

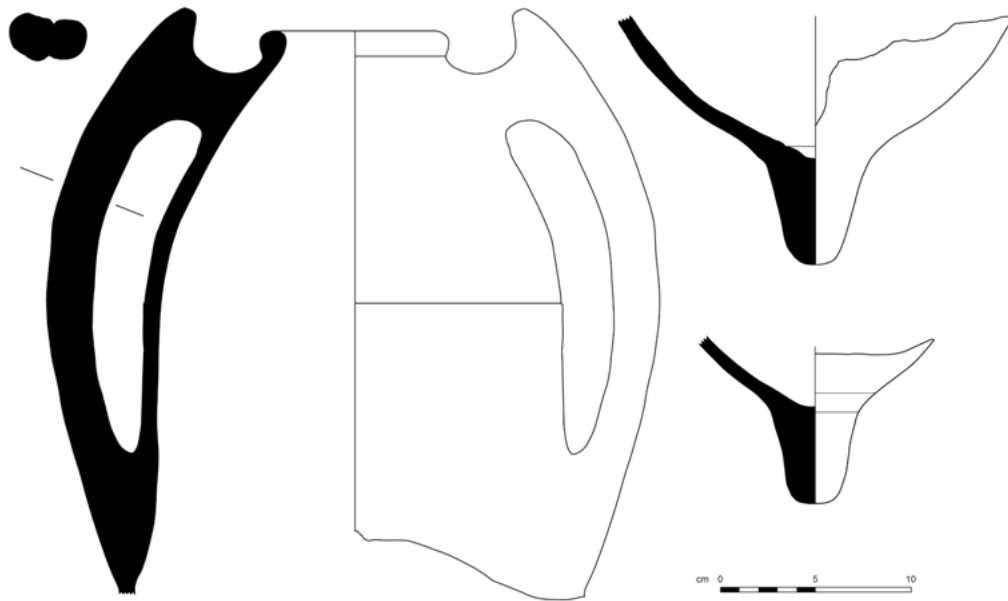
<sup>8</sup> F. LAUBENHEIMER, *La production des amphores en Gaule Narbonnaise*. Centre Recherches Hist. Ancienne 66 (Paris 1985) 261–293; also in Spain: F. LAUBENHEIMER/J. A. GISBERT SANTONJA, *La standardization des amphores Gauloise 4, les ateliers de Narbonnaise à la production de Denia (Espagne)*. In: F. Laubenheimer (ed.), *20 Ans de recherches à Sallèles d’Aude* (Besançon 2001) 51–65.



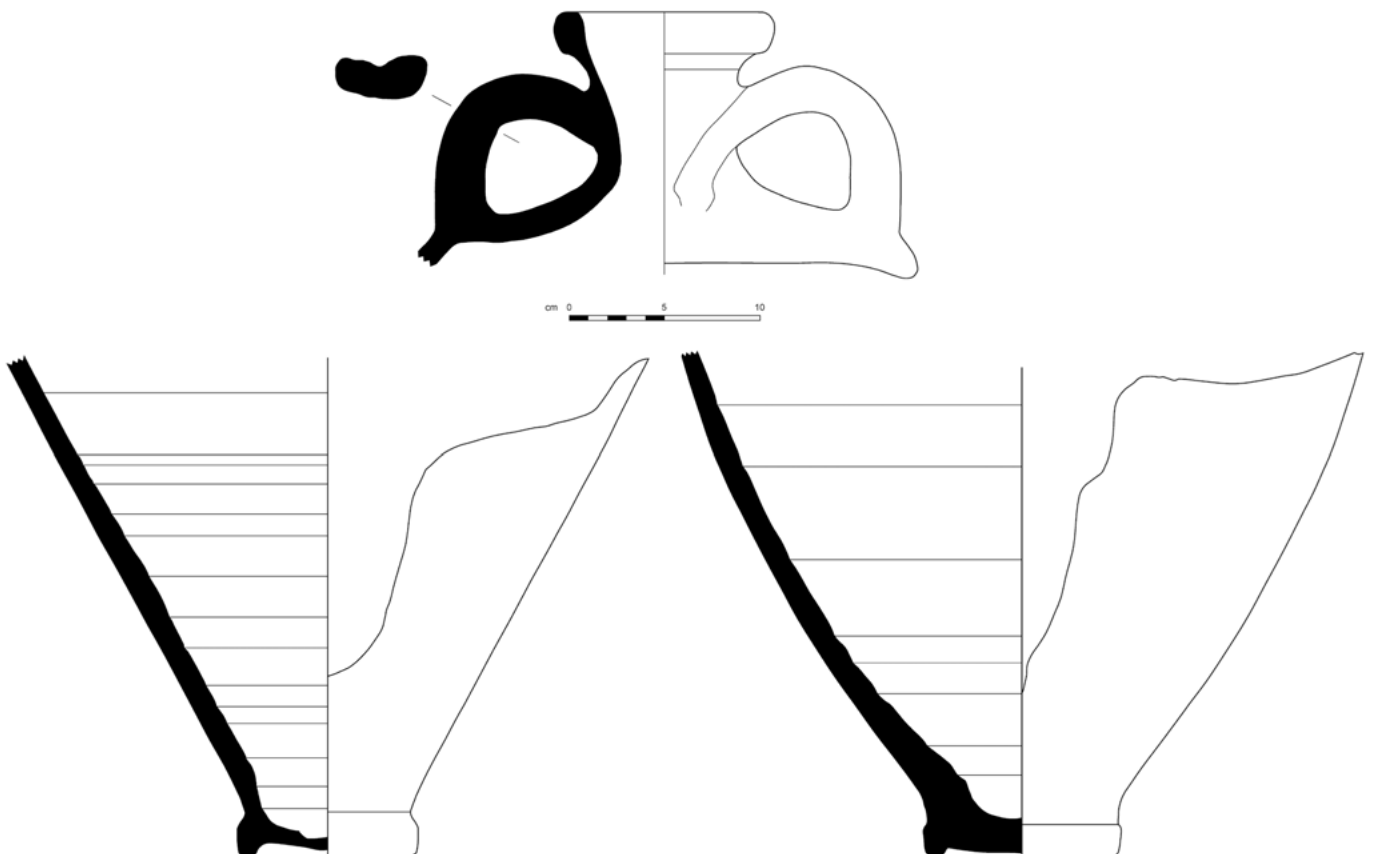
**Fig. 1.** Map of Cyprus showing areas mentioned in the text, with inset showing location of the wreck at Fig Tree Bay. (Map: J. Leidwanger).



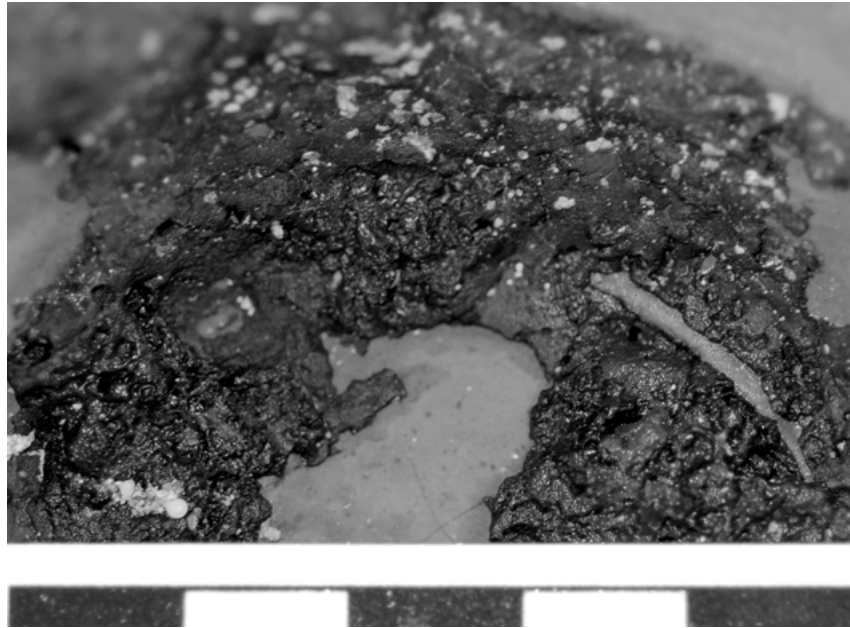
**Fig. 2.** Pottery against the reef in Area A. (Photo: J. Leidwanger).



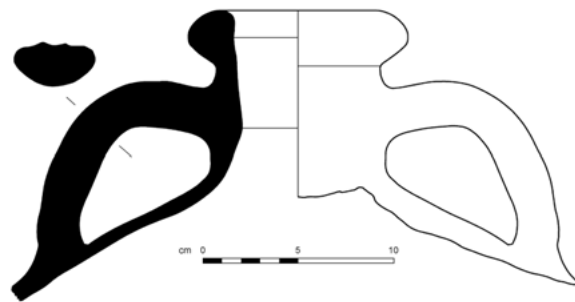
**Fig. 3.** Type I amphoras: (clockwise from left) ECMS-08-002, ECMS-08-005, ECMS-08-010. (Drawings: N. Cassano).



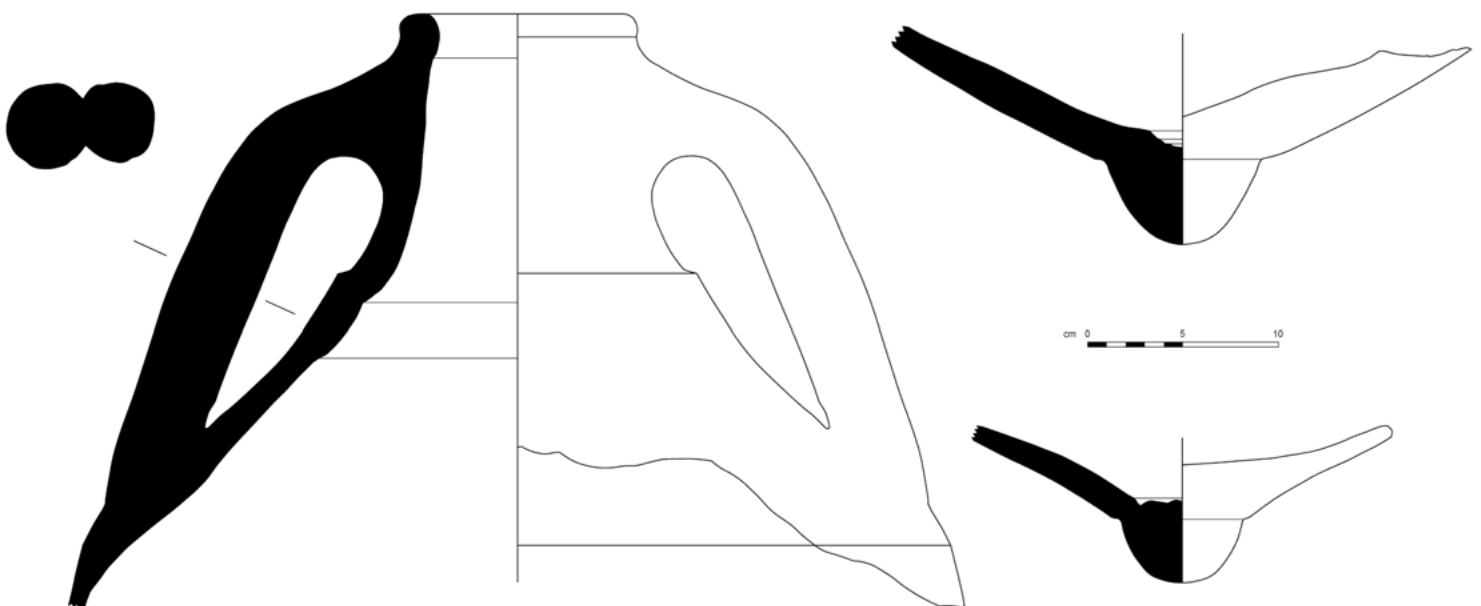
**Fig. 4.** Type IIa amphoras: (clockwise from top) ECMS-08-006, ECMS-08-007, ECMS-08-004. (Drawings: N. Cassano).



**Fig. 5.** Pitch lining from Type II base ECMS-08-008, likely indication of a wine cargo. (Photo: J. Leidwanger).



**Fig. 6.** Type IIb amphora top: ECMS-07-025. (Drawing: S. Kampbell).



**Fig. 7.** Type III amphoras: (clockwise from left) ECMS-08-003, ECMS-08-013, ECMS-08-014. (Drawings: N. Cassano)

to the east as well.<sup>9</sup> It may not be surprising, therefore, to find a similar form manufactured in the Roman east and circulating over some distance. In fact, Reynolds' provisional identification of a Gauloise 4-style jar in an eastern Cilician fabric fits well the diverse and derivative culture Rauh has suggested for Cilician amphora production during the Roman era in general.<sup>10</sup> On the basis of petrography, Williams has identified amphoras in a probable Cilician (LR1-related) fabric that are morphologically similar to Gauloise 4 and Dressel 30 from among the cargo of the Punta Mazza wreck near Sicily (which also contained a second, better known Cilician form, the pinched-handle amphora).<sup>11</sup> Recent work by Opaît has better elucidated this possible relationship and long development between the LR1 amphora and a Gauloise 4 prototype, including a complete mid-3<sup>rd</sup>-century Gauloise 4-style jar in a Cilician fabric from the Athenian Agora.<sup>12</sup> These new discoveries add an eastern Mediterranean imitation to the Gauloise 4 tradition, and push back the date for this Cilician Gauloise 4-style amphora series into at least the early 2<sup>nd</sup> century. At the same time, they raise the possibility that some of the amphoras reported in this corner of the Mediterranean as Gaulish may actually be local products.

To date, however, the majority of Type II jars raised and identified by fabric appear to be of Type IIa, presumably originating in southern Gaul. While it is more difficult to date potential imitations, the Gaulish-fabric Type IIa jars from the wreck provide a sound date toward the end of the 1<sup>st</sup> or early 2<sup>nd</sup> century AD, in agreement with that proposed for Type I.

### *Type III Amphoras*

The last and smallest group of amphoras, comprising only 4 of the 51 examples (7.8% by number) recorded among the cargo, is a rather unusual type with few known or dated comparanda (fig. 7). The type has a thick and generally cylindrical neck with a simple, low, rounded and slightly thickened, vertical rim with only minor delineation at the bottom. The neck attaches to a sloping shoulder at an offset ridge, with an additional carination below the handle. The wide, thick, rough bifid handles – easily distinguished from those of Type I by their massive dimensions – attach just below the rim, and follow the slope of the shoulder to attach at a low angle. The handles are pinched and pushed onto both the neck and shoulder. Again, although no example was found intact, an examination of the fabrics allowed this top to be matched with a wide base terminating in a separately made, well-rounded stump toe that also projects upward into the base. The height of this amphora is not yet clear, but the overall proportions suggested for similar jars at Hof Hacarmel, Israel (see below) seem reasonable.<sup>13</sup>

The fabrics of the four Type III amphora samples thus far examined seem similar: hard and rough, ranging from reddish brown to red (2.5YR 4/4–4/6), occasionally a bit darker from the underwater environment. Small and some larger voids are notable, and the most prominent inclusions are medium and large rounded and irregular white or light

grey, along with numerous well-sorted and generally small dark bits.

Type III amphoras, unlike the other two types, are rather rare, with comparanda known only – to the author, at least – on Cyprus and the eastern Mediterranean littoral. Single examples have been recorded at Kioni and Cape Arnaoutis, both off the island's west coast, as well as off the south coast at Akrotiri.<sup>14</sup> Several such amphoras are known from the coast of Israel at Dor and Ma'agan Mikhael.<sup>15</sup> Many fragments were recorded among a likely shipwreck at Hof Hacarmel, for which Raban has suggested a date in the 3<sup>rd</sup> or 4<sup>th</sup> century.<sup>16</sup> Similar examples from Ostrakine and three other sites in the north Sinai have been attributed by Arthur and Oren to north Syrian manufacture based on their affinity to well-known mortaria of the region.<sup>17</sup> Such an origin seems likely based simply on the area of circulation, for it seems certain from these few concentrated finds that Type III amphoras are the product of one or more smaller workshops with only limited regional distribution.

With good comparanda generally lacking for Type III amphoras, and with the examples that have been recorded generally from non-datable survey contexts, the finds from the wreck at Fig Tree Bay have some importance for chronology. It is now clear that the type begins by the late 1<sup>st</sup> or early 2<sup>nd</sup> century, a date that seems appropriate for several

<sup>9</sup> J. W. HAYES, *The Villa Dionysos Excavations, Knossos: The Pottery*. *Annu. British School Athens* 78, 1983, 97–169 at 152 fig. 24, 153, alongside Gaulish jars: 144 fig. 21, 155. Amphoras identified as of both Gaulish and North African production also underwater at Kioni, a natural anchorage off the west coast of Cyprus: LEONARD 1995, 142–143. For the North African series, see J. P. LAPORTE, *Les amphores de Tubusuctu et l'huile de Maurétanie Césarienne*. *Bull. Arch. Com. Trav. Hist. n. s.* 12–14, 1976–1978, 131–57; A. NACIRI/F. WIDEMANN/A. SABIR, *Distinction par analyse par activation neutronique des amphores Gauloise 4 et de leurs imitations tardives en Mauritanie césarienne: les Dressel 30*. *Antiqu. Africaines* 22, 1986, 129–40.

<sup>10</sup> REYNOLDS 2005, 565; 590 fig. 23; RAUH 2004.

<sup>11</sup> D. F. WILLIAMS, *A Note on the Fabrics of the Amphorae Recovered from the Imperial Roman Wreck near Milazzo, Sicily*. In: G. Tigano (ed.), *Rinvenimenti Subacquei a Milazzo e il Relitto di Punta Mazza* (Messina 1997) 99–103 at 101; see also A. OLLÀ, *Osservazioni preliminari sul carico del relitto romano-imperiale nelle acque di Punta Mazza*. In: *Ibid.* 65–98 at 67–68.

<sup>12</sup> Opaît pers. comm 2008. My thanks to Andrei Opaît for sharing his forthcoming study, and for insightful comments on the form and fabric of these jars.

<sup>13</sup> RABAN 1969–1971, 68 fig. 4.

<sup>14</sup> Kioni and Cape Arnaoutis: LEONARD 1995, 146; 170 n. 89; Akrotiri: J. LEIDWANGER, *Episkopi Bay Survey, Cyprus, 2003*. *INA Quarterly* 2004, 17–27 at 23.

<sup>15</sup> Dor: S. KINGSLEY/K. RAVEH, *The Ancient Harbour and Anchorage at Dor, Israel: Results of the Underwater Surveys 1976–1991*. *BAR Internat. Ser.* 626 (Oxford 1996) 45; 48 fig. 34; Ma'agan Mikhael: S. KINGSLEY/K. RAVEH, *Stamped Lead Ingots from the Coast of Israel*. *Internat. Journal Nautical Arch.* 23/2, 1994, 119–128 at 126 n. 2.

<sup>16</sup> RABAN 1969–1971, 68 fig. 4; republished with “Syrian or Cypriot” identification in S. Kingsley, *A Sixth-Century AD Shipwreck off the Carmel Coast, Israel: Dor D and the Holy Land Wine Trade*. *BAR Internat. Ser.* 1065 (Oxford 2002) 3 fig. 5 bottom.

<sup>17</sup> ARTHUR/OREN 1998, 203.

key morphological characteristics, particularly the carinations and their locations, as well as the close-set bifid handles. Such features compare well with contemporary forms from the region, including Type I “Pseudo-Cos en cloche” (Agora M54). Arthur and Oren date their Sinai examples to the Late Empire, but the more conical neck they illustrate may also represent a later stage in the form’s development.<sup>18</sup>

## Preliminary Discussion

Little else remains of the vessel that sank in the waters south of Fig Tree Bay. Fragments of roof tiles may indicate a ship’s cabin at one end of the scatter, but few other ceramics have come to light to help narrow the date or origin of the vessel. What is clear, however, is the cargo’s generally regional character, interspersed with a few long-distance imports that were likely picked up locally at some port in the northeast Mediterranean. Such a profile fits well with the wreck’s location in shallow near-shore waters, and its possible involvement in short-haul coasting commerce. Though scattered, the remains may provide insight into the long-distance and regional commercial dynamics of the quiet island province during the height of the *pax Romana*.

Perhaps as much as half of the wreck remains to be explored, which may shed light on this mix of international and regional products, particularly the diversity in the Type II assemblage and the identity of the problematic Type III jars. While it seems reasonably clear from the pitch linings that the Type II jars (at some point) carried wine, could others have contained fish products, as Opaît suggests for

Type I amphoras?<sup>19</sup> And what does the appearance of true Gauloise 4 jars, presumably with authentic wine from Gaul, alongside imitations (perhaps containing Gaulish-style wine?), suggest about the content, availability and marketing of agricultural products in the Roman east? Rauh has recently suggested that the now well-attested phenomenon of various Cilician imitation amphoras was primarily intended for those unable or unwilling to purchase the “real” product for a higher price.<sup>20</sup> Such a possibility is intriguing, but we must also consider why the producers chose to imitate these particular forms. What was so appealing in the flavor (or just the recognizability?) of agricultural produce from Gaul that potters in various areas of both the west and east Mediterranean were commissioned to make packaging in this style? Such questions are fundamental to understanding the marketing, trade mechanisms, and taste in ancient wine, and surely Rauh is correct to draw attention to the phenomenon as “an indicator of economic well-being” in this corner of the Roman world.<sup>21</sup>

<sup>18</sup> Ibid. 198 fig. 4.6, 203. The similar jars (RABAN 1969–1971 68 fig. 4) that Raban reports from Hof Hacarmel are perhaps better associated with the Gauloise 4-style jars (RABAN 1969–1971 68 fig. 3) found at the same site. In neither case is the form preserved intact, and the base assigned to the Gauloise 4-style top may be mismatched. A group of coins, some originating in northern Syria, might in this case provide a terminus post quem of 140/141 for both forms at the site.

<sup>19</sup> A. OPAÎT, A Weighty Matter: Pontic Fish Amphorae. In: V. Gabriel-sen/J. Lund (eds.), *The Black Sea in Antiquity. Regional and Inter-regional Economic Exchanges* (Aarhus 2007) 101–121 at 104.

<sup>20</sup> RAUH 2004.

<sup>21</sup> Ibid. 335.

## Bibliography

- ARTHUR/OREN 1998 P. ARTHUR/E. OREN, The North Sinai Survey and the Evidence of Transport Amphorae for Roman and Byzantine Trading Patterns. *Journal Roman Arch.* 11, 1998, 193–212.
- EMPEREUR/PICON 1989 J.-Y. EMPEREUR/M. PICON, Les régions de production d’amphores impériales en Méditerranée orientale. In: *Amphores romaines et histoire économique*. Coll. École Française Rome 114 (Rome 1989) 223–248.
- LEONARD 1995 J. R. LEONARD, The Anchorage at Kioni. In: J. Fejfer (ed.), *Ancient Akamas I. Settlement and environment* (Aarhus 1995) 133–170.
- RABAN 1969–1971 A. RABAN, The Finds from the Undersea Site of Hof Hacarmel. *Sefunim* 3, 1969–1971, 62–69.
- RAUH 2004 N. K. RAUH, Pirated Knock-offs: Cilician Imitations of Internationally Traded Amphorae. In: J. Eiring and J. Lund (eds.), *Transport amphorae and trade in the Eastern Mediterranean*. Acts of the international colloquium at the Danish Institute at Athens, September 26–29, 2002. *Monogr. Danish Inst. Athens* 5 (Athens 2004) 329–336.
- REYNOLDS 2005 P. REYNOLDS, Levantine amphorae from Cilicia to Gaza: A typology and analysis of regional production trends from the 1<sup>st</sup> to 7<sup>th</sup> centuries. In: J. Ma. Gurt i Esparraguera/J. Buxeda i Garrigós/M.A. Cau Ontiveros (eds.), *LRCW I. Late Roman coarse wares, cooking wares and amphorae in the Mediterranean, archaeology and archaeometry*. BAR Internat. Ser. 1340 (Oxford 2005) 563–611.

