

BABETTE BECHTOLD\*

## Western Greek amphorae produced at Panormos and/or Solus

### Introduction

Intensive economic, cultural and social interactions, at various levels, between the two Phoenician-Punic foundations of Panormos and Solus and their Greek and indigenous neighbors have already been discussed on several occasions.<sup>1</sup> One of the most intriguing issues in this respect represents the imitation, adaptation or reception<sup>2</sup> of Greek pottery types among the local ceramic repertoires of both cities from the Archaic down to the Hellenistic period.<sup>3</sup> Specifically, Soluntinian workshops produced several closed (domestic amphorae, olpai and hydriai) and open shapes (cups, bowls and skyphoi), all clearly imitating or re-elaborating Greek prototypes.<sup>4</sup> A similar phenomenon is likely to exist also in nearby Palermo,<sup>5</sup> even if regrettably an in-depth study of its pottery repertoire,<sup>6</sup> as well as archaeometric analyses<sup>7</sup> of presumably local table- and coarse wares are still missing.

### 1. Archaeometric research on amphorae produced at Panormos and/or Solus

Archaeometric research on Phoenician-Punic transport amphorae produced at Solunto goes back to the late 1990s<sup>8</sup> and has been extended, in the following, to the analyses of coarse- and table wares and the characterization of the local raw materials of 'Argille di Ficarazzi'.<sup>9</sup> Within the frame of the most recent study of Phoenician-Punic transport containers manufactured at Solunto<sup>10</sup> and Palermo,<sup>11</sup> a small selection of six western Greek amphorae has also been submitted for petrographic and chemical analyses.<sup>12</sup> All of these previously analyzed samples (tab. 1: columns 6-7) match the archaeometric 'fingerprint' of the 'Argille di Ficarazzi' clays and have been attributed to workshops located in one or both of the two Punic towns. Specifically, one sample (tab. 1: M

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1 For the latest on this topic, see Spatafora 2018 with earlier references.

2 For the definition of several kinds of Greek or Hellenized pottery shapes introduced in Phoenician-Punic ceramic repertoires, see Briese and Docter 1992, 26-7.

3 For a recent overview, see Bechtold 2014, 115 with earlier references.

4 Tardo 2005, 684-87; for the archaeometric research, see Montana et al. 2009a; Montana et al. 2009b, 90-4, 103-4.

5 Most recent, see Vassallo 2019, 219, note 21; Spatafora 2012a, 67; Di Stefano 2009, 28-30, for several domestic amphorae of hypothetic local fabric, see specifically p. 208.

6 Spatafora 2010a, 42.

7 Exception of a small selection of medieval amphorae from the Zisa palace, see Alaimo et al. 1999.

8 Montana and Randazzo 2018, 69-74 with full references.

9 Montana et al. 2011, 85-7, 105, 135-6, 163 with full references.

10 Bechtold 2015, 26-43; Bechtold and Schmidt 2015b, 6, 13, fig. 8, 22.; for the presumed production of western Greek amphorae at Solunto, see earlier Polizzi 1997, 96-7, 104: cat. 7-11, fig. 5, very similar to several fragments studied within the frame of the present research: M 189/36, M 193/12, M 106/95 (see tab. 1).

11 Bechtold 2015, 43-58; Bechtold and Schmidt 2015a, 9, 12, fig. 5, 16; earlier Di Stefano 2009, 31, 157 (from tomb 57). For first observations in this direction, see also Sourisseau 2011, 214.

12 Montana and Randazzo 2015, 124, tab. 9.

179/39) has been referred to as sub-group SP-Ia of the archaic, coarser fabric SP-I,<sup>13</sup> while the remaining ones (tab. 1: M 119/178, M 119/179, M 149/53, M 149/66, M 154/31) have been included in the Classical and Hellenistic-period fabric SP-II.<sup>14</sup> It has to be stressed, however, that from an archaeometric standpoint and because of the common source of raw materials, at present it is almost impossible to distinguish between pottery produced at Solunto and Palermo.<sup>15</sup> Ongoing research investigating five more samples chipped from western Greek amphorae of presumed Soluntinian and/or Palermitanian production found at Palermo, Himera, Pizzo Cannita and Monte Porcara (tab. 1: M 106/59, M 106/129, M 179/165, M 189/36, M 193/12) confirms their compatibility with the raw materials of 'Argille di Ficarazzi'.<sup>16</sup>

## 2. Evidences for pottery kilns at Panormos and/or Solus

The kerameikos of Archaic-Hellenistic Solunto, located on the peninsula of Sòlanto, has been identified already in the 1990s.<sup>17</sup> Specifically, local fabrication of Punic-Phoenician transport amphorae, coarse- and fine wares has been ascertained for the 6th-5th century B.C.E.<sup>18</sup> By contrast, at present no structural remains of ceramic workshops or kilns have been identified in Punic Palermo<sup>19</sup> and hypotheses on local pottery production so far relies on archaeological and archaeometric research alone.<sup>20</sup>

Site of discovery	FACEM inv.	Site inv.	Type	Fabric FACEM	Archaeometry	Published	Fig.
Himera, necropolis	<b>179/39</b>	W1751	<i>Randform 2</i>	PAN-SOL-A-1	Petrography, chemistry	Bechtold and Vassallo 2018, 153-155; Montana and Randazzo 2018, 70-72; Bechtold 2020c, fig. 4,1.	1,1
Palermo, necropolis	106/318	Cantiere Pecora, tomba a camera 5	<i>Randform 2</i>	PAN-SOL-A-1			
Palermo, necropolis	106/319	Vadelà e Montalto tomba a camera 3	<i>Randform 2</i>	PAN-SOL-A-1			
Palermo, necropolis	106/320	Vivai Gitto T. 83/1	<i>Randform 2</i>	PAN-SOL-A-1			
Palermo, necropolis	<b>106/129</b>	PORL 32, T. 10, US 19	<i>Randform 2</i>	PAN-SOL-A-1		Bechtold and Schmidt 2015a, 12, fig. 5,2	
Palermo, necropolis	<b>106/95</b>	CAL 1 SAS A US 7	<i>Randform 2</i>	PAN-SOL-A-1			1,2

13 Montana and Randazzo 2018, 70, tab. 4.

14 See note 10. For a description of this fabric, see also Montana and Randazzo 2018, 72-4.

15 Montana and Randazzo 2015, 126-30.

16 Thin-section petrography at the polarizing microscope and chemical analysis (ICP-MS and ICP/OES) conducted by G. Montana (DiStem, University of Palermo) and L. Randazzo (DiBEST, Università della Calabria) to whom I am very grateful for the permission to anticipate some of their forthcoming results.

17 For the most recent synthesis, see Bechtold and Schmidt 2015b, 5 with full references.

18 Greco 2005, 673-74; Tardo 2005, 685-87; Termini 2005.

19 Most recent, see Bechtold 2015, 43 with earlier references.

20 Most recent, see Bechtold 2015, 43-56; for a first insight in 'ceramica di produzione locale', see Ruvituso 1998.

Site of discovery	FACEM inv.	Site inv.	Type	Fabric FACEM	Archaeometry	Published	Fig.
Ghizène, urban area	<b>149/60</b>	GH.180010.1	<i>Randform 3</i>	PAN-SOL-A-1		Bechtold and Schmidt 2015b, 13, fig. 8,2; Bechtold 2016-2017, 122-123	1,5
Himera, necropolis	<b>179/165</b>	W1452	<i>Randform 3</i>	PAN-SOL-A-1	Petrography, chemistry	Bechtold 2020c, fig. 4,3.	1,6
Palermo, necropolis	106/321	Crs. Pisani T. 208/1954	<i>Randform 3</i>	PAN-SOL-A-1			
Palermo, necropolis	106/322	Vivai Gitto T. 63 N.I. 33758/23	<i>Randform 3</i>	PAN-SOL-A-1		<i>Palermo Punica</i> , 205: VG 29	
Palermo, necropolis	106/130	PORL 33, T. 10, US 19	Western Greek	PAN-SOL-A-1			1,8
Selinunte, acropolian sanctuary	<b>154/31</b>	TB saggio H US 3B P09.100	Western Greek	PAN-SOL-A-1	Petrography	Bechtold and Schmidt 2015b, 13, fig. 8,6; Bechtold 2020c, fig. 4,4; Montana and Randazzo 2015, 124, tab. 9; <a href="http://facem.at/m-154-31">http://facem.at/m-154-31</a>	1,7
Ghizène, urban area	<b>149/53</b>	GH.110235.2	Western Greek	PAN-SOL-A-1	Petrography, chemistry	Bechtold and Schmidt 2015a, 12, fig. 5,3; Bechtold 2016-2017, 121; <a href="http://facem.at/m-149-53">http://facem.at/m-149-53</a> ; Montana and Randazzo 2015, 123, tab. 9	
Ghizène, urban area	<b>149/66</b>	GH.110241.157	Western Greek	PAN-SOL-A-1	Petrography, chemistry	Bechtold and Schmidt 2015b, 13, fig. 8,5; Bechtold 2016-2017, 121-24; Montana and Randazzo 2015, 124, tab. 9; <a href="http://facem.at/m-149-66">http://facem.at/m-149-66</a>	2,4
Palermo, necropolis	<b>106/59</b>	PORL 11 T. 10 US 19	<i>Randform 7</i>	PAN-SOL-A-1	Petrography	Bechtold 2020c, fig. 4,5; <a href="http://facem.at/m-106-59">http://facem.at/m-106-59</a>	2,1
Pantelleria, acropolian sanctuary	<b>119/178</b>	PN 06 ACR I 2079-2	<i>Randform 7</i>	PAN-SOL-A-1	Petrography, chemistry	Bechtold 2013, 497, cat. 130; Bechtold 2020c, fig. 4,6; Montana and Randazzo 2015, 124, tab. 9; <a href="http://facem.at/m-119-178">http://facem.at/m-119-178</a>	2,2
Pantelleria, acropolian sanctuary	<b>119/179</b>	PN 06 ACR I 2098-6	<i>Randform 7</i>	PAN-SOL-A-1	Petrography, chemistry	Bechtold and Schmidt 2015b, 13, fig. 8,4; Montana and Randazzo 2015, 124, tab. 9; <a href="http://facem.at/m-119-179">http://facem.at/m-119-179</a>	2,3
Pantelleria, acropolian sanctuary	119/184	PN 00 ACR I 180-12	<i>Randform 7</i>	PAN-SOL-A-1			
Monte Porcara, survey	<b>193/12</b>	EL3-03A	<i>Randform 2</i>	PAN-SOL-A-2	Petrography	Bechtold 2020c, fig. 4,2	1,3
Monte Porcara, survey	193/13	EL3-06C	<i>Randform 2</i>	PAN-SOL-A-2	Petrography		

Site of discovery	FACEM inv.	Site inv.	Type	Fabric FACEM	Archaeometry	Published	Fig.
Pizzo Cannita, survey	<b>189/36</b>	EL-14F2	<i>Randform 2</i>	PAN-SOL-A-2	Petrography		1,4
Pantelleria, survey	<b>119/131</b>	PN 04 ACR RIC 83.1-19	<i>Randform 7</i>	VEL-A-3		Bechtold 2018, 29, fig. 2,4	3,1

**Tab. 1. Synopsis of data related to illustrated, western Greek amphorae produced at Palermo and/or Solunto. Items indicated in bold are published in the database of FACEM.**

### 3. Western Greek amphorae produced at Panormos and/or Solus

On-going provenance studies (see note \*) have allowed for an increase of the selection of western Greek amphorae presumably produced at Palermo and/or Solunto. Macroscopically, this group (tab. 1) strongly resembles the western Greek amphorae already attributed to the 'Argille di Ficarazzi' by earlier archaeometric research (see ch. 1). A re-examination of all of the 22 samples<sup>21</sup> has led to the definition of two new fabrics: a larger selection denominated PAN-SOL-A-1 and a small assemblage of four carbonate-rich samples labeled PAN-SOL-A-2.<sup>22</sup> By contrast to Phoenician-Punic amphorae fabrics attributed on the bases of archaeological criteria to Palermo *or* Solunto,<sup>23</sup> no reliable ascription of the selection of western Greek amphorae to one of the two towns can be proposed at present. In consideration of this difficulty, the code 'PAN-SOL' has been adopted to indicate western Greek amphorae produced *either* at Panormos *or* at Solus.

All samples of fabric PAN-SOL-A-2 and the majority of items attributed to fabric PAN-SOL-A-1 show semi-ovoid rims with a diameter of 10.5-13 cm (some characterized by an air chamber) of Gassner's *Randform 2* (fig. 1,1-4). A smaller selection of fragments is provided with a ridge at the lower edge of the rim like in *Randform 3* (fig. 1,5,-6).<sup>24</sup> The almost-complete amphora unearthed in the western necropolis of Himera (fig. 1,1) illustrates the remaining morphological features of this group, characterized by a quite short (> 10 cm), cylindrical neck distinguished from a sub-globular body of Sourisseau's form 2.<sup>25</sup>

Among our assemblage, two knob-shaped, internally caved pegs with maximal diameters of about 5 cm (fig. 1,7-8) might be attributed to this type,<sup>26</sup> which very often, however, is furnished with simple, cylindrical bases. Several comparisons from the necropoleis of Palermo<sup>27</sup> and Solunto<sup>28</sup> allow for a reliable dating of this earliest group to the late Archaic period (520-480 B.C.E.).<sup>29</sup>

The majority of the analyzed *Randformen 2* and 3 fragments attributed to fabric PAN-SOL-A-1 (tab. 1) has been yielded in funerary contexts excavated in Palermo itself, which seem to strengthen the hypothesis of their local production. Extremely significant, however, is the documentation of sporadic, late archaic amphorae of this group at Himera, Selinunte and Ghizène (Jerba). By contrast, three of the four samples attributed to fabric PAN-SOL-A-2 have been found at two native sites located near the mouth of the river Eleuterio, close to Solunto, which might hint at

21 The six western Greek amphorae already analyzed and published (see ch. 1 and tab. 1) and previously attributed to fabrics composed by Punic amphorae (PAN-A-1, SOL-A-3 and SOL-A-4) have been included in this new assemblage.

22 In detail, see Ferlito 2020.

23 For this problem and based on the in-depth study of about 270 fragments, see in detail Bechtold 2015, 44-7.

24 Gassner 2003, 180-82, fig. 91.

25 Sourisseau 2011, 176, 189-90, fig. 6.

26 For a comparison from a second half of the 6th-century B.C.E. context from Palermo, see Sarà 1998, 329, cat. 102.

27 Sarà 1998, 330: R 4, cat. 183; Di Stefano 2009, 56-7, nn. 3-4; 113, n. 8; 176, nn. 2-3; Spatafora 2010b, 48, nn. 1-2.

28 Polizzi 1997, 99, 101, fig. 5,7 of presumed local fabric.

29 Previously, see Bechtold 2020c, ch. 2.3; Bechtold and Vassallo 208, 153 with earlier references.

an attribution of this assemblage to this latter town. Furthermore, the macroscopic characteristics of fabric PAN-SOL-A-2 strongly resemble the Punic amphorae-fabric SOL-A-4, but sampling of presumably local western Greek amphorae found at Solunto is needed to further corroborate this hypothesis.

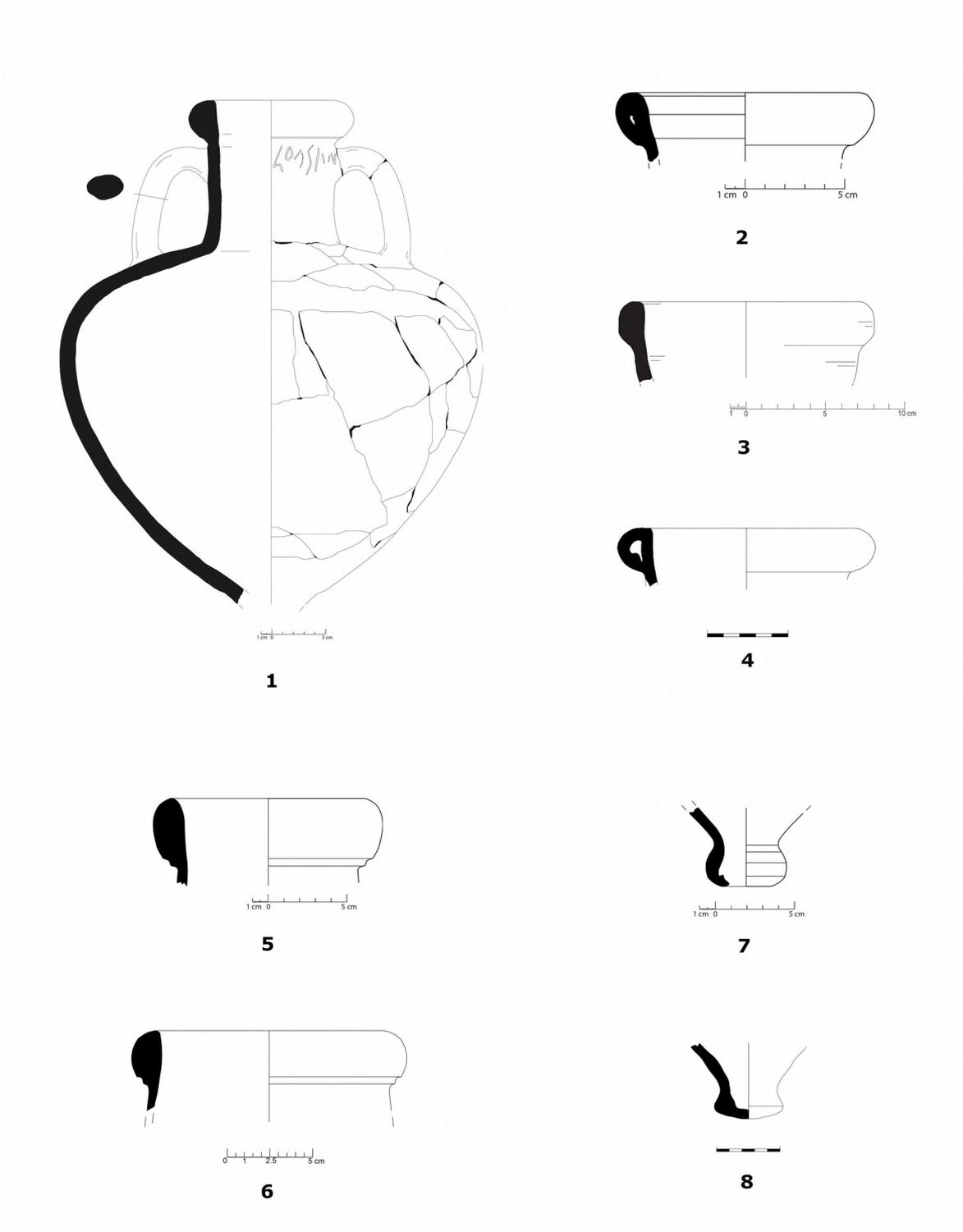


Fig. 1. Late archaic western Greek amphorae produced at Panormos and/or Solus. *Randform 2*: 1. M 179/39 2. M 106/95 3. M 193/12 4. M 189/36 *Randform 3*: 5. M 149/60 6. M 179/165 Unspecified type: 7. M 154/31 8. M 106/130.

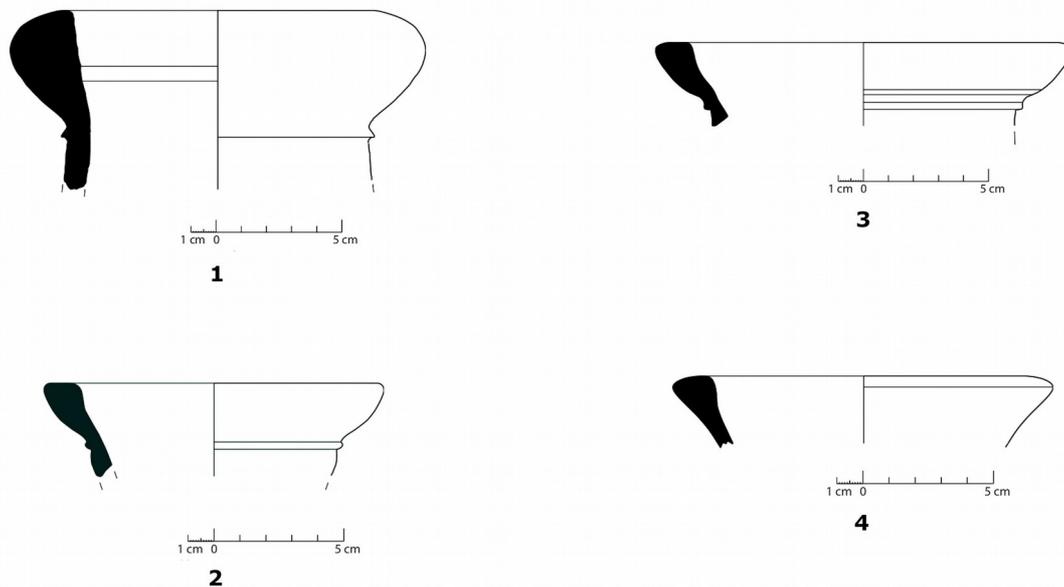


Fig. 2. Late 5th-4th century B.C.E. western Greek amphorae produced at Panormos and/or Solus. *Randform* 7: 1. M 106/59 2. M 119/178 3. M 119/179. Unidentified type: 4. M 149/66.

Without any doubt, the late archaic shape above is emblematic of the peak in the western Greek amphorae production in the northwestern Punic-Sicilian towns. At present, no clear evidences for local Greek-styled amphorae are available for the second and third quarter of the 5th century B.C.E.<sup>30</sup> One almost vertical, massive, semi-ovoid rim underlined by a ridge like *Randform 7*<sup>31</sup> (fig. 2,1) from a funerary context excavated in Palermo should be dated by comparisons from several regional contexts<sup>32</sup> to the latter 5th-earlier 4th century B.C.E. It seems quite plausible, though, that at Palermo and/or Solunto, just like in nearby Himera and Entella,<sup>33</sup> amphorae production reconvenes towards the late Classical period.

The last two selections of analyzed samples refer to five out-flaring rims underlined (fig. 2,2-3) or probably also not underlined by a ridge (fig. 2,4) as in *Randform 7*. The first group, yielded by the main urban sanctuary of Cossyra, shows internally concave, quarter-circle-shaped rims. It finds close parallels in several local (?) amphorae from a tomb excavated in the Caserma Tuköry necropolis at Palermo with a time-range for its funerary use starting from the second quarter up until the late 4th century B.C.E.<sup>34</sup> More comparisons come from the territory of Entella where the 4th-early 3rd century B.C.E. group 'a un quarto di cerchio internamente concavo' has been attributed, on the basis also of petrographic analyses, to a local or regional production.<sup>35</sup> Finally, similarities appear in the profile of an amphora rim from the large votive dump of the Tas-Silġ

30 Previously, see Bechtold 2020c, ch. 2.3, 3.

31 Gassner 2003, 181-82, fig. 91.

32 Polizzi 1997, 101-2, fig. 9, cat. 16; Di Stefano 2009, 78, n. 4, 116-17, n. 28; 141-42, n. 12; 143-44, n. 22.

33 Bechtold et al. 2019, 9, 14.

34 Di Stefano 2009, 155-57, T. 57, nn. 2-4, of presumed local production (p. 31).

35 Corretti et al. 2014, 522-24, petrographic group MO 02, figg. 5,6-8, 7. For more items from Entella itself, see Corretti and Capelli 2003, pl. LVIII,52-58. Apparently, the group from Entella does *not* present a ridge below the rim.

sanctuary at Malta.<sup>36</sup> Highly interestingly, this small northwestern Sicilian 4th-century B.C.E. selection shows significant morphological correspondence with late classical Tyrrhenian amphorae, namely with the series from Elea (fig. 3),<sup>37</sup> whilst clearly differing from the more elongated, ovoid-shaped rims which characterize the contemporaneous, southern Sicilian productions.<sup>38</sup>



Fig. 3. 4th-century B.C.E. western Greek amphorae produced at Elea. *Randform 7*. 1. M 119/131 2. P17/183.

Finally, as well as the first group above, the two simply out-flaring rims with enlarged edge from Jerba (fig. 2,4) also find close parallels among the local, 4th-century B.C.E. production of Entella<sup>39</sup> and at Tas-Silġ.<sup>40</sup>

#### 4. Preliminary observations on western Greek amphorae production at Panormos and/or Solus

Combined, archaeometric and archaeological research offer clear evidences supporting the existence of a probably vigorous, late archaic production of western Greek amphorae manufactured with 'Argille di Ficarazzi' raw materials, to be related to the Punic cities of Palermo and/or Solunto. As a working hypothesis and on the basis of archaeological arguments (see ch. 3), fabric studies have distinguished two different fabrics which might be attributed to Panormos (PAN-SOL-A-1) and Solus (PAN-SOL-A-2).<sup>41</sup>

For a correct assessment of the phenomenon, we have to highlight the very recent identification of a production of western Greek amphorae in the Dorian-Chalcidian colony of Himera, the direct neighbor to the East of Solus and Panormos at only about 30-50 km in distance. Probably already during the third quarter of the 6th century B.C.E., Himera's potters commence production of vessels of Sourisseau's earliest form 1 $\alpha$ , probably as an imitation of Calabrian prototypes abundantly imported<sup>42</sup> from the area of Sybaris and Rhegion since the first half of the century.<sup>43</sup> It appears not without significance that, so far, form 1 $\alpha$  is conspicuously missing among the western Greek amphorae series of Panormos and/or Solus, even if single items of this type of still-unidentified provenance are known from funerary contexts of the former one.<sup>44</sup> As an

36 *Missione Malta* 1970, 59-62, fig. 17,3.

37 Gassner and Trapichler 2010, 164, fig. 109: local western Greek amphorae from the stratigraphical phases C1-C2 which correspond to the first and second third of the 4th century B.C.E.

38 Bechtold 2020b, ch. 3, fig. 2.

39 Corretti et al. 2017, 80-2, 213, fig. 61.

40 *Missione Malta* 1970, 59-62, fig. 18,7.

41 Ferlito 2020.

42 On the basis of our on-going research (see note \*), we can already state the documentation of at least 85 western Greek amphorae of form 1 $\alpha$  pre-dating the last quarter of the 6th century B.C.E. - the largest corpus of the earliest shape of this class currently known from the Mediterranean.

43 Bechtold et al. 2019, 5-6, fig. 3, 10-1.

44 *Palermo Punica*, 141, cat. 102-103, 180, 329 from tomb 157 of Corso Calatafimi-Corso Pisani (excavations 1953) dated to the third quarter of the 6th century B.C.E.; the attribution to form 1 $\alpha$  is dubious for the item illustrated in Di Stefano 2008, 100, n. 1 from tomb 53 of Caserma Tuköry.

hypothesis, towards the later 6th-century B.C.E. and after a first, 'experimental' phase, Himera might have acted as a propulsive center for the spreading of a sort of regional amphora koine, characterized by form 2 vessels most probably designed for the trade of wine (fig. 4,1-2).<sup>45</sup>

Sub-globular or heart-shaped form 2 amphorae of 45-50 cm in height and a volume of about 19-21 liters<sup>46</sup> have been produced most probably in all of the three northwestern Sicilian towns.<sup>47</sup> From a morphological point of view, this late archaic group represents a quite faithful copy of colonial Greek prototypes.<sup>48</sup> Excellent morphological and metric<sup>49</sup> comparisons are provided by the western Greek amphorae transported by the late archaic (ca. 520-510/500 B.C.E.) ship sunk at Cala Sant Vicenç at Mallorca, by archaeometric analyses attributed to the area of Sibari/Crotone.<sup>50</sup> More parallels for our Sicilian group can be found among the often very well preserved, ca. 230 late 6th-early 5th century B.C.E. western Greek amphorae yielded by the necropoleis of Himera (see note \*, tab. 2). Specifically, and also on the basis of archaeometric research,<sup>51</sup> possible prototypes belonging to southern Calabrian productions are most likely to be attributed to the region of Rhegion<sup>52</sup> (fig. 4,3-5) and Lokroi<sup>53</sup> (fig. 4,6) which total more than 40% of the western Greek amphorae dated between 520-480 B.C.E. Two of the three entirely preserved amphorae of the former series present a capacity of 20-21 liters;<sup>54</sup> the volume of W917 (fig. 4,3) has been calculated with ca. 25 liters. In our opinion, these metric coincidences provide an especially strong support for the argument that the Calabrian vessels were the model for the northwestern Sicilian, late archaic amphorae series.

Highly interestingly and confirming the widespread use and presumably also the production of form 2 amphorae particularly in Punic Palermo, almost identical shapes (yet characterized by ring bases) make part of the local 'domestic amphorae' repertoire.<sup>55</sup> Again, close parallels for this group can be found among the Cala Sant Vicenç materials which include small-sized amphorae with a quarter or an eighth of capacity (2.5 or 5 liters) in respect to the transport amphorae series.<sup>56</sup> The regular occurrence of small amphorae with upper profiles very close to forms 1 $\alpha$ , 1 $\beta$  and 2, especially in the necropolis of Palermo, but also at other Sicilian sites and among the Cala Sant Vicenç cargo, has been already high-lightened by J.-Ch. Sourisseau who suggests a commercial purpose for at least for part of this group.<sup>57</sup>

45 In detail, see Bechtold et al. 2019, 6-7, fig. 4, 10-1.

46 Values calculated for five entirely preserved amphorae unearthed in the necropoleis of Himera (see note \* by the application of the following open source method: <http://automeris.io/WebPlotDigitizer/>) and integrated with the measurements of presumably local amphorae from Palermo and Solunto (see note 21).

47 For this topic, see also Bechtold 2020a, tab.2.

48 For the development of the class of western Greek amphorae, see specifically Sourisseau 2011, 176, fig. 6, 189-91, 225, fig. 17; Sacchetti 2012, 43-7.

49 Santos 2008, 133-40.

50 Gassner and Sauer 2008. For the ceramic fabric CAL-A-8, see also Gassner 2011a.

51 Within the frame of the project mentioned in note \*, about 30 samples of presumed southern Calabrian provenance have been submitted for thin-section petrography at the polarizing microscope by G. Montana (DiSTem, University of Palermo) and L. Randazzo (DiBEST, Università della Calabria) to whom I am very grateful for the permission to anticipate some of their forthcoming results.

52 For this production, denominated CAL-A-1 to CAL-A-3, see Gassner 2011a.

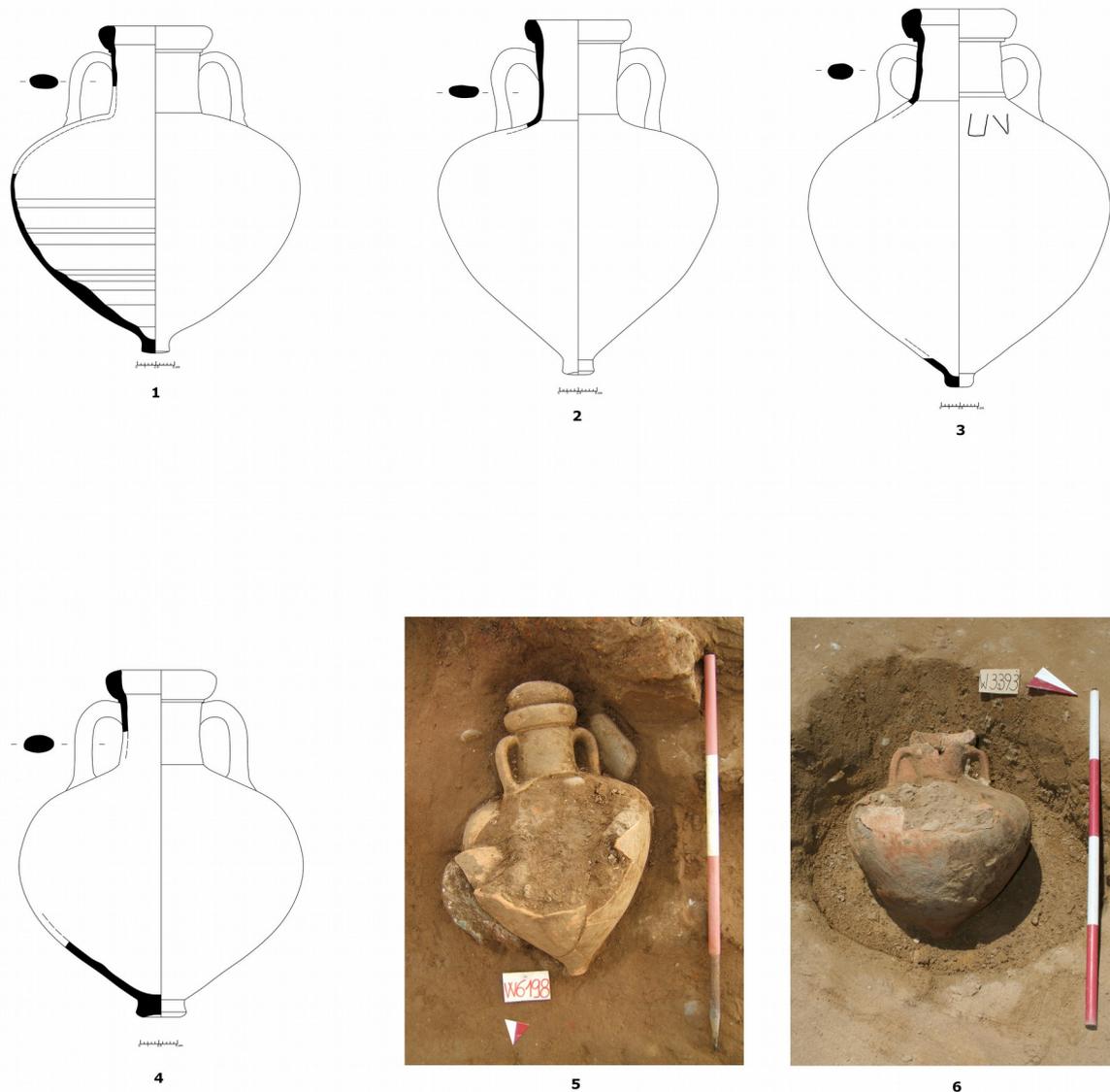
53 For this production, denominated LOC-A-1, see Gassner 2011b.

54 Bechtold 2020a, fig. 3,2-3: W7627, RO145.

55 Di Stefano 2009, 29, fig. 20, 'anforetta tipo D3' late 6th-early 5th century B.C.E.; Ruvituso 1998, 322, cat. 262 (as *Randform* 3) and cat. 142 (as *Randform* 2).

56 Santos 2008, 141-42, fig. 130,2.4.

57 Sourisseau 2011, 194-97, fig. 15.



**Fig. 4. Western Greek form 2 amphorae from the necropoleis of Himera. Local production: 1. W984 2. W962. Productions of southern Calabria: 3. W917 4. W7627 5. W6198 6. W3393.**

Coming back to the presumed leading role of Himera in regard to the transmission of Greek-styled pottery types and specifically of western Greek amphorae towards the neighboring Punic communities, we do not have any information about the ethnic identity of the potters, with both scenarios being conceivable: Greeks from Himera might have taken residence in Palermo and/or Solunto<sup>58</sup> or Punic might have imitated colonial models quite faithfully.<sup>59</sup>

58 For the hypothesis of a physical presence of Greek individuals at Solunto, see Spatafora 2017a, 552; Spatafora 2012, 65 (on the basis of the discovery of two apparently non-Punic tombs in the necropolis of Solunto); more generic remains Tardo 2005, 687. For Palermo, see Spanò Giammellaro 2000, 309; Spatafora 2010a, 42 and, more, cautious, Spatafora 2017a, 552.

59 For this hypothesis, see Vassallo 2019, 219.

Site of discovery	FACEM inv.	Site inv.	Type	Fabric FACEM	Volume liters	Archaeometry	Published	Fig.
Pantelleria, survey	<b>119/131</b>	PN 04 ACR RIC 83.1-19	<i>Randform 7</i>	VEL-A-3			Bechtold 2018, 29, fig. 2,4	3,1
Selinunte, acropolis sanctuary		TR sag. Q US 210 P17.183	<i>Randform 7</i>	VEL-A-2				3,2
Himera, necropolis	179/396	W984	<i>Randform 3</i>	HIM-A-1	20.7		Bechtold et al. 2019, 6-7, fig. 4,2	4,1
Himera, necropolis	<b>179/327</b>	W962	<i>Randform 3</i>	HIM-A-2	19.3	Petrography, chemistry	Bechtold 2020a, fig. 3,4	4,2
Himera, necropolis	179/443	W917	<i>Randform 3</i>	CAL-A-1	25.5			4,3
Himera, necropolis	179/437	W7627	<i>Randform 3</i>	CAL-A-1	20			4,4
Himera, necropolis	179/425	W6198	<i>Randform 3</i>	CAL-A-1				4,5
Himera, necropolis	179/196	W3393	<i>Randform 3</i>	LOC-A-1		Petrography		4,6

**Tab. 2. Synopsis of data related to illustrated, western Greek amphorae used for comparison. Items indicated in bold are published in the database of FACEM.**

More essential, however, is to insist on the intensive, economic interaction<sup>60</sup> and also on the cultural mixture,<sup>61</sup> in this northwestern Sicilian border-region, between Greek, Punic and native communities, a phenomenon which led to manifold forms of multiculturalism in the whole region<sup>62</sup> and the genesis of a sort of regional ‘ceramic facies’.<sup>63</sup> Hence, the production of Greek-styled wine (?) amphorae in the Punic colonies, as well as at the indigenous sites of Entella and perhaps Monte Iato<sup>64</sup> falls within the period of major wealth of western Sicilian settlements<sup>65</sup> and should be inscribed within the wider frame of the ample diffusion, among the chiefs of the non-Hellenic communities, of a “banqueting culture...strongly influenced by Greek customs.”<sup>66</sup>

With particular regard to the production of western Greek amphorae in the Punic towns, we might be right in asking whether that its introduction into local repertoires stands for its use *graeco more* as a wine container, which seems rather plausible.<sup>67</sup> Due to the lack of systematic

60 Spatafora 2017a, 551-52; Spatafora 2017b, 77-8; Spatafora 2012a, 66-8; Bechtold and Vassallo 2018, 49-50.

61 Most recent, see Vassallo 2019. In detail: Spatafora 2012b, 105.

62 For this phenomenon and with particular respect to the native communities, see Kistler 2017, 124-25; Kistler and Mohr 2016; Spatafora 2010, 42 with special regard to Palermo.

63 Spatafora 2017a, 552; Spatafora 2010a, 43.

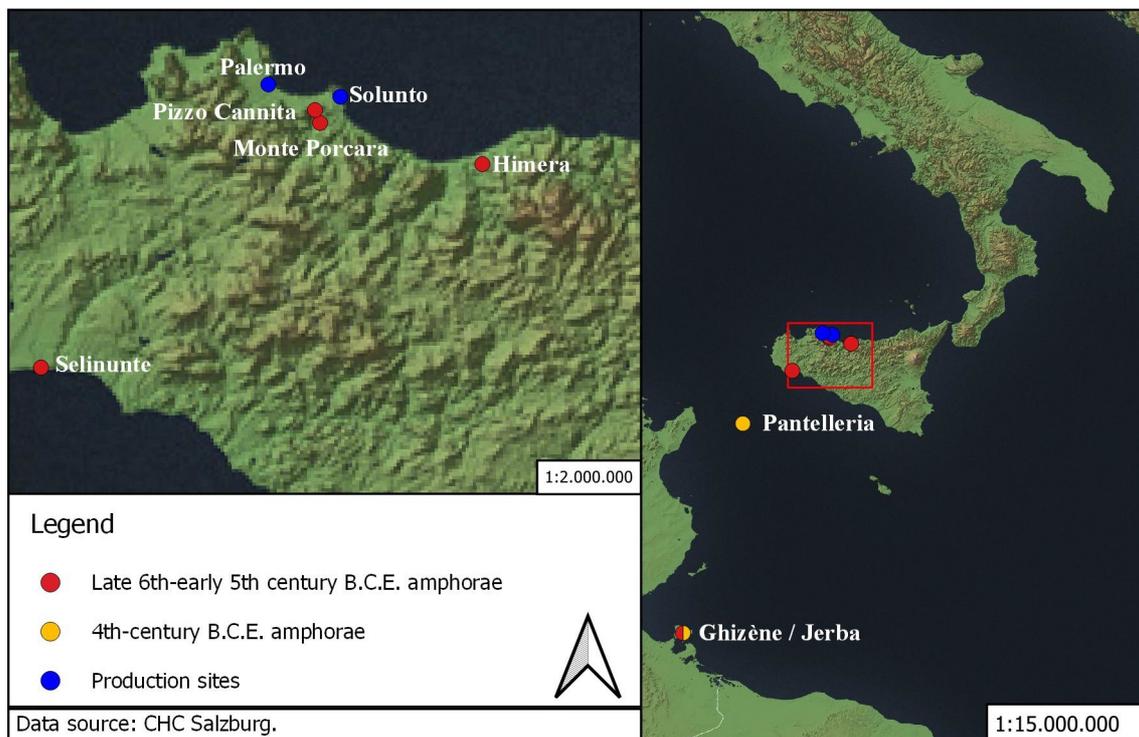
64 Corretti and Michelini 2020, cat. 1.3 (probable production of Entella), cat. 2 (probable production of Monte Iato).

65 Vassallo 2000, 994.

66 Kistler et al. 2017, 170.

67 Due to the almost complete lack of ceramic data yielded by 6th-5th century B.C.E. domestic or ritual contexts, the only reliable information available derives from the necropoleis of the Punic towns. Specifically, at Palermo during the late Archaic period, Greek amphorae are almost exclusively represented by western Greek types, in part of possible local production (see above, note 20). According to C.A. Di Stefano, Greek-styled vessels have been introduced in the funeral chambers only because of their content, and not as funeral containers: Di Stefano 2009, 31, 36-7. However, G. Sarà (1998, 326) reminds its sporadic use also in enchytrismois. Their frequent association with black glaze drinking vessels as skyphoi and kylikes seems to strengthen the hypothesis of wine-carrying containers. For the preeminence of late archaic, western Greek amphorae at Solunto (from chamber tombs only),

fieldwork in the rural hinterland of Palermo<sup>68</sup> and Solunto, we cannot rule out, however, the praxis, in this area, of viticulture *before* the late Archaic period. In fact, no archaeological evidences help to clarify the hypothetical content of the 6th-century B.C.E. Phoenician-Punic amphorae series of Solunto and Palermo<sup>69</sup>, but its multi-purpose use, e. g. for the transport of olive oil, wine or fishery products, appears possible, if not likely.<sup>70</sup> This question remains open, even if we might suspect that the parallel productions, from the late Archaic period onwards, of Punic *and* Greek vessels in Palermo and Solunto implicate a clear distinction of the amphorae's contents.



**Fig. 5. The distribution of western Greek amphorae produced at Panormos and/or Solus outside the production area.**

A final point concerns first indications of the distribution of the late 6th-early 5th century B.C.E. western Greek series manufactured in the Punic towns (tab. 1 and fig. 5): in nearby Himera, among the ca. 230 western Greek amphorae dated to the period under focus, only two items have been attributed to fabric PAN-SOL-A-1. One of them is provided by a scrapped Punic inscription<sup>71</sup> testifying rather to "...relazioni che trascendono i semplici rapporti commerciali nell'ambito di un contesto interculturale..."<sup>72</sup> and not to the commercial interest of this object in the eyes of the Greek community who clearly preferred wine imported from southern Italy and Greece. Also the Punic western Greek amphora found in the main urban sanctuary of Selinunte might be

see Polizzi 1997, 96.

68 Essentially hindered by the intensive, urban transformation of the entire area during the second half of the last century.

69 Most recent, see Bechtold 2015, 42-3, 58. The 5th-3rd centuries B.C.E. series have been tentatively interpreted as fishery product-carrying containers.

70 For a hypothesis of the multi-purpose use of the earliest Carthaginian amphorae series, see Bechtold and Docter 2010, 103.

71 Bechtold and Vassallo 2018, 153-55.

72 Spatafora 2017b, 78.

interpreted as an indicator of cross-cultural encounters,<sup>73</sup> along with an already published, western Greek amphora with scrapped Punic inscription of as yet fabric unearthed in the shrine of indigenous Colle Madore.<sup>74</sup>

Different is the case of three amphorae in fabric PAN-SOL-A-2 collected as surface finds at Pizzo Cannita and Monte Porcara which currently constitute the only late archaic Greek amphorae yielded by these native sites located in the lower Eleuterio valley.<sup>75</sup> It appears very likely that this evidence has to be interpreted as a result of commercial exchange between the Punic emporion of Solus and the indigenous communities of its agricultural hinterland.<sup>76</sup>

One Punic western Greek amphora has been found in a domestic context excavated at Ghizène on Jerba's northern coast, a port-site under Carthage's control since the 5th century B.C.E. The documentation of this Sicilian vessel, as well as of other items from Calabria and Eastern Greece has been related to the North African metropolis' direct involvement in the long-distance trade in the Lesser Syrte.<sup>77</sup>

In conclusion, at present it seems very likely that the western Greek transport series produced at Solunto and Palermo were mainly destined to the local markets, a hypothesis also underlined, at least in the case of Palermo, by the wide-spread distribution of fractional domestic amphorae of the same shape. The phenomenon can be inscribed within the scope of increasing wine consumption among Sicily's non-Greek communities from the late Archaic period onwards.<sup>78</sup> We might suspect that local wine represented the cheaper alternative to more expensive, supra-regional imports.<sup>79</sup> Amphorae of the Palermo-Solunto group found in Greek colonies should be rather attributed to social or religious interaction of Punic individuals or groups of individuals. Finally, we have to keep in mind the possibility that (a smaller?) part of the western Greek wine (?) amphorae-issue from Solunto and Palermo could have been designated to consumption sites located in the area of Carthage's political influence.

By contrast to the morphologically and chronologically homogeneous, late-archaic group above, no clear archaeological evidences are currently available for the production, in the Punic Sicilian emporia, of western Greek amphorae during to the second-third quarter of the 5th century B.C.E. In our opinion, none of the hitherto published, presumably local vessels has to be dated *necessarily* later than 480/70 B.C.E., but a systematic survey of the entire corpus of the class, abundantly attested to in the cemeteries, is needed to corroborate this working hypothesis. A possible reduction or even interruption of the Punic series would be consistent, however, with the broader, historical and archaeological panorama outlined for the whole regional context: a period of deep crisis, sometimes also of destruction and abandonment, has been stated for the indigenous milieu in the decades following the battle of Himera in 480 B.C.E. As an effect of war and the subsequent domination by Terone, tyrant of Akragas, Greek Himera has also been seriously affected by this unstable situation. "Non è improbabile che il nuovo assetto politico, dopo il 480 a.C., abbia contribuito a soffocare in poco tempo il dinamismo e la prosperità che avevano caratterizzato e arricchito tutta l'area interna e costiera della Sicilia centro-occidentale nella fase

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73 For Selinunte's 'Phoenician-Punic connections', see Orsinger et al. (forthcoming).

74 De Simone 1999.

75 For a recent overview of the fieldwork undertaken in the lower Eleuterio valley, see Arena 2015; Muratore 2015.

We thank S. Muratore and T. Arena for the generous sampling permission.

76 For Solunto's relations with the native communities, see Spatafora 2010a; Spatafora 2012a with further references.

77 Bechtold 2016-2017, 97-8.

78 For the western Sicilian indigenous milieu and particularly for Segesta, see de Cesare et al. 2020, 370-73 with further references; previously Albanese Procelli 1996, 105-7.

79 Clear differences appear in the behaviors of Greek and non-Greek, late archaic communities of western Sicily in relation to the purchase of high-quality black-figure table wares, almost completely imported from abroad. See de Cesare 2010, 124.

arcaica ...".<sup>80</sup> Finally, preliminary studies of grave inventories of Palermo's necropolis seem to indicate some sort of economic decrease also for the Punic colony.<sup>81</sup>

At present, just one fragment from a disturbed funerary context recently discovered beneath Palazzo Orlando at Palermo (fig. 2,1) testifies to the existence of a local production towards the late 5th-earlier 4th century B.C.E. Highly interestingly, both, a possible, interruption after the first third of the 5th century B.C.E. and a re-launch of productivity towards the last two decades of the century seem to be in line with a regional trend already observed for the amphorae series of Himera<sup>82</sup> and Entella.<sup>83</sup>

Finally, the last, small selection of western Greek amphorae dated by comparisons to the (advanced?) 4th century B.C.E. has been found in extra-regional contexts excavated at Pantelleria and Jerba (tab. 1) and perhaps also in the Tas-Silġ sanctuary on Malta (see notes 36, 40). This very particular distribution pattern is not easily interpreted, since the contemporaneous northwestern Punic amphorae series appear to be almost absent from consumption sites of Carthage's sphere of influence.<sup>84</sup> Should we suspect — by analogy with the late Archaic period (see above) — a special role of Palermo's 4th-century B.C.E. wine-carrying containers? The issue still remains unresolved.

More generally, the production of late classical western Greek amphorae at Palermo and/or Solunto can probably be related to an increase of economic wealth and power of the two Punic towns which benefited from Himera's destruction in 409 B.C.E., taking over the Greek colony's role as commercial hub between the Tyrrhenian area and North Africa.<sup>85</sup> In particular, it is very likely that from the 4th century B.C.E. onwards the port of Palermo represented the "testa di ponte siciliana" for the flux of goods and individuals and groups of individuals between southern Campania and the central-southern Mediterranean under Carthage's control.<sup>86</sup> In perfect harmony with this Tyrrhenian connection of the two Punic Sicilian colonies, their local, late 5th-4th centuries B.C.E. Greek-styled amphorae show more morphological affinities with the contemporaneous productions of Velia and Poseidonia<sup>87</sup> than with that of the southern Sicilian koiné (namely Gela, Agrigento and Selinunte).<sup>88</sup> As a working hypothesis, southern Campanian imports might be regarded as the prototypes of the late Classical western Greek amphorae produced in the non-Greek milieu of northwestern Sicily.

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80 For this topic, most recent, see Vassallo 2020, 13; previously Vassallo 2000, 998.

81 Vassallo 2000, 998 and note 73 with previous references.

82 Bechtold et al. 2019, 13-14; Bechtold 2020a.

83 Corretti and Michelini 2020.

84 Bechtold 2015, 98-9.

85 Bechtold and Vassallo 2018, 50.

86 For an in-depth analysis of this phenomenon, see Bechtold 2015, 95-9. The amphorae key-types of this period are the forms Sol/Pan 4.4 and 4.5 (see p. 13).

87 For the 4th-century B.C.E. circulation of southern Campanian amphorae in western Sicily, see Bechtold 2018, 29-30, 50, fig. 2-3.

88 Bechtold 2020b, ch. 4.

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