

ENGRAVED AMPHORA DIES FROM TOULOUSE »CASERNE NIEL« (DÉP. HAUTE-GARONNE): NEW EVIDENCE CONCERNING THEIR FUNCTION

Republican amphora handles engraved with geometric shapes and sometimes more complex designs have been found on a small number of late Iron Age sites in France (fig. 1; Maguer/Lemaître/Duval 2012; Maguer 2007; Loughton/Alberghi 2012). A recent review of 14 dies from south-western and western France suggested that they served as dies or stamps¹ which were used to impress and decorate loaves of bread and cakes (Maguer/Lemaître/Duval 2012). This article will describe and discuss a further 17 amphora dies recently uncovered from Toulouse »caserne Niel« (dép. Haute-Garonne/F) and two possible examples from late Iron Age sites in Auvergne (central France). An examination of the contexts from which these objects were recovered on the »caserne Niel« and the activities taking place on the location will allow for a better understanding of the chronology and function(s) of these items. It will be suggested here that the amphora dies from Toulouse were used in various artisanal and commercial activities.

ENGRAVED CLAY AND STONE STAMPS

Dies² made out of baked clay and stone have been recovered from many Neolithic and Copper Age sites in western Asia and Southeastern Europe (Çilingiroğlu 2009; Lichter 2011; Skeates 2007; etc.). These objects

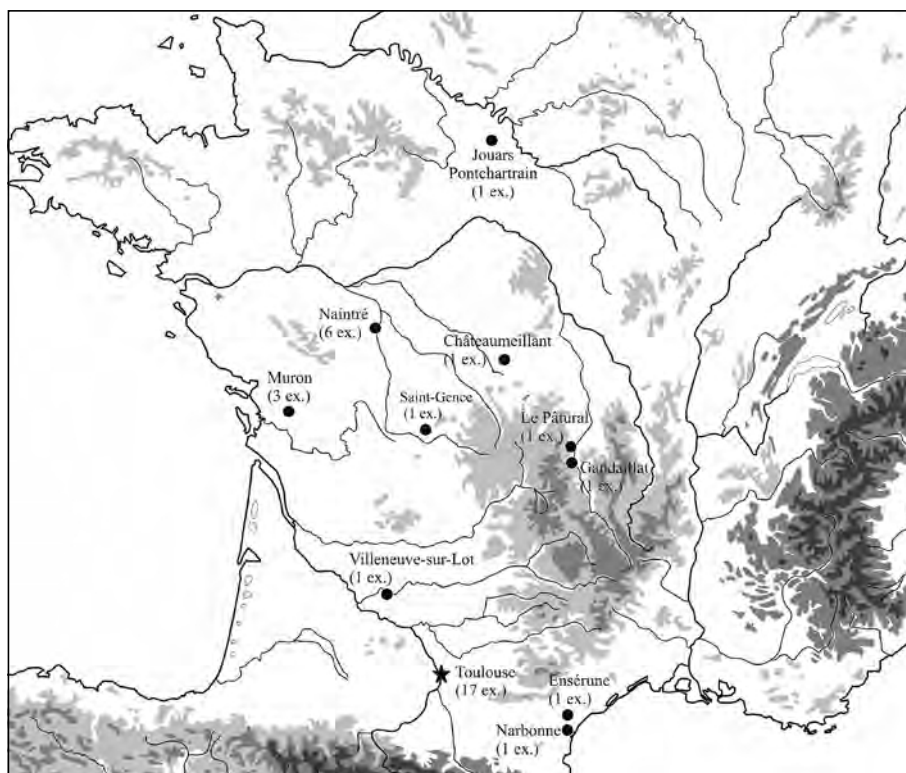


Fig. 1 Late Iron Age sites with amphora dies. – (After Maguer/Lemaître/Duval 2012, 431 fig. 1 with additions).

typically have a small oval, circular, or rectangular face onto which designs were impressed or engraved. The designs make use of various geometrical motifs notably squares, rhombs, concentric circles, dots, zigzags, as well as labyrinth, vegetal and floral like patterns (Becker 2011; Çilingiroğlu 2009; Skeates 2007). Sometimes animal and zoomorphic imagery were employed, as for example on some of the stamps from Çatalhöyük (İl Konya/TR; Türkcan 2007), while undecorated dies with a blank face are also known (Becker 2011, 290-295 fig. 8, 10). Dies with identical or similar motifs can be found over many parts of Europe (Lichter 2011, 39f. fig. 2). Many of the dies have a »handle« shaped end which allowed them to be held, while some handles were pierced so they could be suspended or hung around the neck (Becker 2011, 280-286 fig. 1, 3 no. 5; Skeates 2008, 180). The earliest examples, from western Anatolia, appeared during the late 8th/early 7th millennium BC while the latest examples date to the 3rd millennium BC (Lichter 2011, 35-37; Çilingiroğlu 2009, 4-6).

Ceramic and stone dies have also come to light in late Hallstatt/early Iron Age sites in Hungary and Slovakia (Schwellnus 2010). Most of these items have been recovered from cemeteries and tombs with a small number from settlements. In the burials the dies are often found next to the head, the right hand, or the feet. F. Schwellnus suggests that the dies discovered around the head were threaded and worn around the neck (Schwellnus 2010, 217).

Ç. Çilingiroğlu (2009, 7) has summarised the main uses for these items during the Neolithic and Copper Age most of which are connected with the impressing or marking of organic or inorganic materials. As many of the clay stamps are relatively fragile and have concave stamping faces they would have been suited to the stamping of softer materials, such as dough, butter, wax, the marking of animals, and the decorating of pottery, textiles, leather and human skin (Becker 2011, 296; Skeates 2008, 181). Experimental work has shown that if the dies were heated they could be used to mark animal skins (Gheorghiu 2008, 99). Other possible uses include as amulets for the pierced examples (Skeates 2007), personal objects (Skeates 2008, 183), and tokens to count and record goods (Budja 1998). However, their use to decorate skin, leather, or cloth has found favour with many scholars and has some archaeological support. Traces of paint has been observed on the faces of some stamps (Çilingiroğlu 2009, 9f.; Lichter 2011, 38; Naumov 2008, 191; Skeates 2007, 185) while several of the dies from the Neolithic site of Ulucak Höyük (İl Izmir/TR) were recovered from contexts with evidence for textile production (Çilingiroğlu 2009, 14-18). In addition, many of the Neolithic clay stamps resemble modern wooden dies used to decorate cloth in parts of Turkey and Greece (Çilingiroğlu 2009, 9-11. 20f. fig. 3, 8). Some of the Hallstatt ceramic dies from Central Europe contained traces of paint and it is possible that they served to decorate the human body (Schwellnus 2010). This function might also explain the recovery of Neolithic and Copper Age stamps from mortuary contexts in Italy (Skeates 2008, 188. 193).

TOULOUSE »CASERNE NIEL«

The Saint-Roch quarter of Toulouse, south of the modern city centre, provides evidence for a major late Iron Age trading and industrial agglomeration covering an area of at least 40 ha (Arramond/Requi/Vidal 2007; Benquet et al. 2013). The redevelopment of the Niel military barracks (»caserne Niel«) has for the first time allowed archaeologists to investigate a large portion of this site. The excavation of 2.6 ha (director Peter Jud) uncovered evidence for the working of bronze, gold, iron, and lead, and domestic occupation limited to the western part of the location (Jud et al. 2012; 2013). The rich assemblage of small finds (La Tène C and Nauheim brooches) and pottery (Italian Campanian A, and rare Campanian B) allows the site to be dated to the 2nd century BC (Jud et al. 2012). The quantity of amphorae uncovered during the excavation is impressive

Fig. 2 Toulouse »caserne Niel« (dép. Haute-Garonne/F). Amphora die from US1241. – (Photo L. Alberghi, Archéodunum).



with approx. 880,000 sherds with a weight of nearly 98 metric tons mostly from western Italian Greco-Italic and Dressel 1A amphorae (Loughton/Alberghi 2012). There are small numbers of amphorae from Tripolitania, Tunisia, Brindisi, Adriatic Italy, Rhodes, and Spain (Loughton/Alberghi 2012; in print a). The rarity of Dressel 1A/Bs and the absence of the Dressel 1B³ show that the site was abandoned by c. 100 BC (Loughton/Alberghi 2012).

CATALOGUE OF THE ENGRAVED AMPHORA DIES FROM THE »CASERNE NIEL«

1. US1241: Republican amphora handle engraved with the image of an ear of grain or a palm branch (fig. 2). The section has been polished smooth before being engraved. – Datation: unstratified.
2. Dump/deposit in zone 2 (US2009): Greco-Italic base engraved with a rectangular double-letter stamp of R.H (H.Я when employed) on the upper section (fig. 3). The section has been polished smooth before being engraved. – Datation: see below.
3. Dump/deposit in zone 2 (US2009): Rhodian amphora handle engraved with a figure and a staff with a curved end perhaps representing a sickle, billhook or a vine pruning hook (fig. 4). The other face has been engraved with an inscription (NIR, NITC, or NKC?). Both sections have been polished smooth before being engraved. – Datation: see below.
4. Dump/deposit in zone 2 (US2167): Republican amphora handle engraved with a triangle and two circles (fig. 5, 1). The section has been polished smooth. The opposing section has also been polished and engraved with a small circle and a rectangle. – Datation US2009 and US2167: this large dump of Greco-Italic vessels and rare Rhodian and Ancient Tripolitanian amphorae dates to La Tène C2 (c. 200/180-160 BC). It is worth noting that part of this deposit was made up of a large number of Republican amphora handles (fig. 6).
5. Well PT2196 (US2374): Republican amphora handle engraved with several lines/grooves and three circles (fig. 5, 2). – Datation: this structure contains an assemblage of late Greco-Italics and Dressel 1As as well as a small number of Ancient Tripolitanian, Brindisi, and rare Spanish Punic amphorae. A date during La Tène D1a (c. 140-130 BC) is likely.
6. Basin BSN2288 (US2216): Republican amphora handle engraved with a double-letter stamp of AV (VA when employed) (fig. 8, 1). The section has also been polished smooth before being engraved. – Datation: see below.
7. Basin BSN2288 (US2216): Republican amphora handle engraved with a cross, a central circle (?) and two or three small triangles towards the outer edge (fig. 8, 2). – Datation: this shallow basin (BSN2288) is assigned to the same phase (La Tène D1a, c. 140-130 BC) as the well PT2196.
8. Well PT4064 (US4390): Dressel 1A handle engraved with several lines/grooves and six circles (fig. 5, 3). This image is similar to the die from the well PT2196 (cat. no. 5). – Datation: see below.

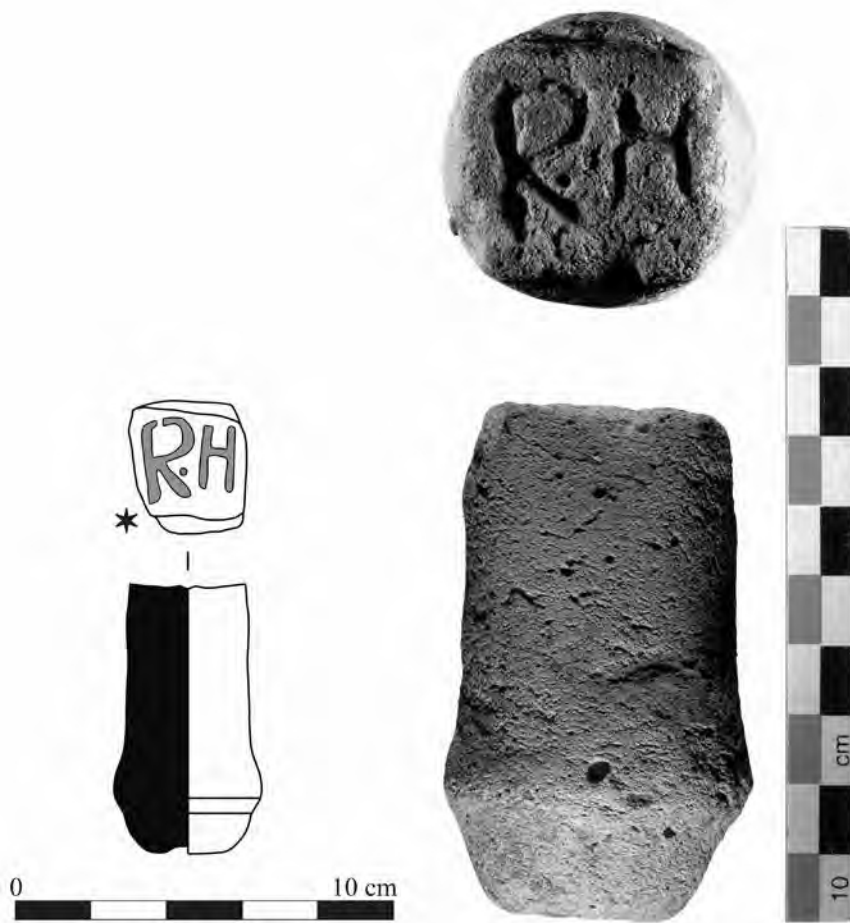


Fig. 3 Toulouse «caserne Niel» (départ. Haute-Garonne/F). Greco-Italic base engraved with double-letter stamp from the dump/deposit in zone 2 (US2009). – * polished section. – (Photos Archeodunum; drawing E. Meunier, Archeodunum).



Fig. 4 Toulouse «caserne Niel» (départ. Haute-Garonne/F). Rhodian amphora handle engraved with the image of a figure from the dump/deposit in zone 2 (US2009). – * polished section. – (Photos Archeodunum; drawing E. Meunier, Archeodunum).

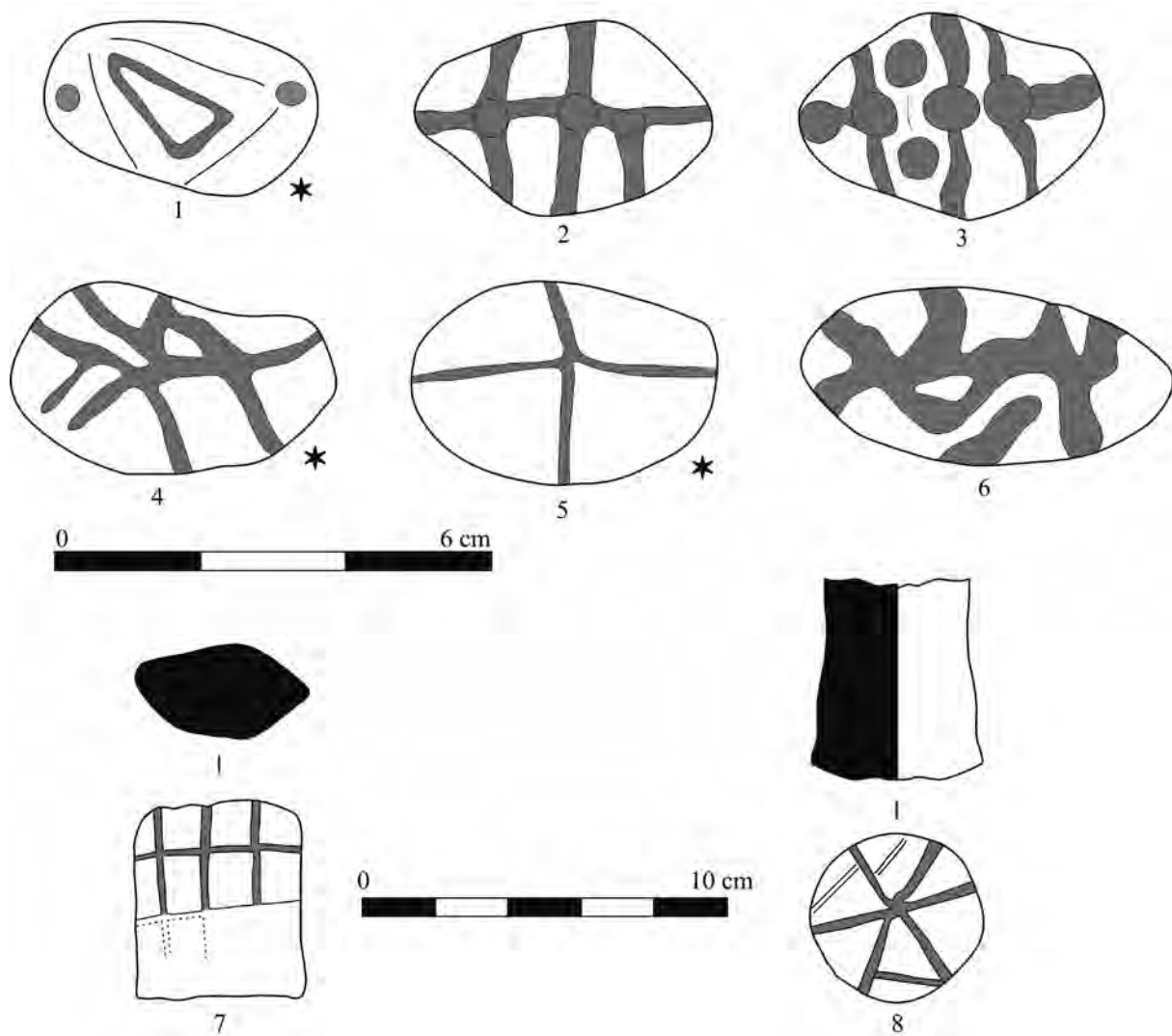


Fig. 5 Toulouse »caserne Niel« (départ. Haute-Garonne/F). Engraved amphora (* polished section): **1** dump/deposit zone 2 (US2167). – **2** well PT2196 (US2374). – **3** well PT4064 (US4390). – **4** US8001. – **5** pit FS8041 (US8172). – **6** pit FS8152 (US8169). – **7** well PT6008 (US6074). – **8** layer/amphora pavement zone 7 (US7169). – (Drawings E. Meunier, Archeodunum).

9. Well PT4064 (US4590): Dressel 1A handle engraved with a grid/chequer board design (fig. 8, 3). The section has also been polished smooth before being engraved. – Datation: this well contains a large assemblage of Dressel 1As and some transitional Dressel 1A/Bs and rare Dressel 1Cs, that can be assigned to the end of the 2nd century BC (La Tène D1b, c. 120/110-100 BC).

10. Surface/pavement zone 4 (US4528): Broken Republican amphora disc engraved with three circular depressions (fig. 7). – Datation: a large deposit of Dressel 1A amphorae dating to the end of the 2nd century BC (La Tène D1b, c. 120/110-100 BC).

11. Well PT6008 (US6074): Dressel 1A handle with grid/chequer board design engraved on outer surface

(fig. 5, 7). – Datation: this structure contains an assemblage of Dressel 1As dating to the later 2nd century BC (La Tène D1b, c. 130-100 BC).

12. Layer/amphora pavement zone 7 (US7169): Greco-Italic base with several radial spokes engraved on its underside (fig. 5, 8). – Datation: with a small assemblage of Greco-Italic amphorae this layer/pavement dates to La Tène C2 (c. 200/180-160 BC).

13. US8001: Republican amphora handle engraved with several curves and lines (fig. 5, 4). The section has also been polished smooth before being engraved. – Datation: unstratified.



Fig. 6 Toulouse »caserne Niel« (dép. Haute-Garonne/F). Part of the deposit/dump of Republican amphorae from zone 2. – (Photo Archeodunum).

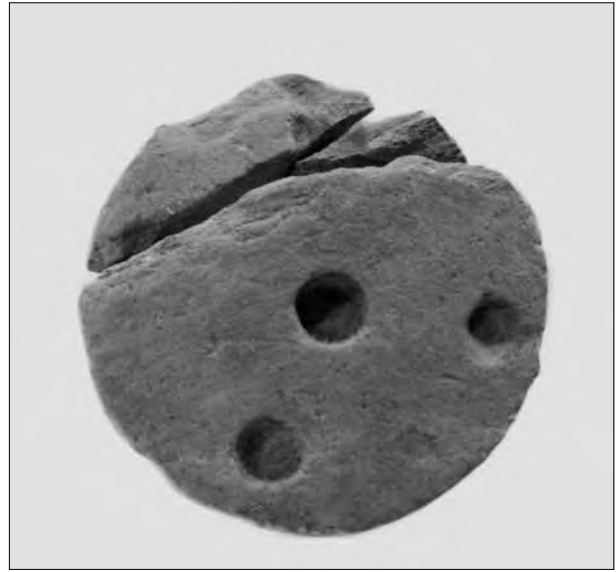


Fig. 7 Toulouse »caserne Niel« (dép. Haute-Garonne/F). Amphora disc (diameter 7-7.5 cm) with pitted face from surface SL4528. – (Photo L. Alberghi, Archeodunum).

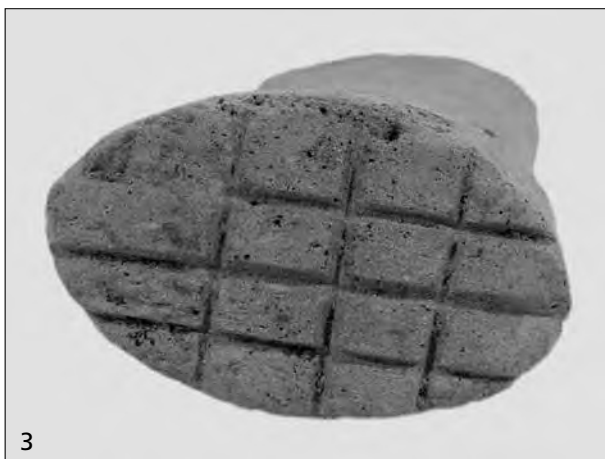


Fig. 8 Toulouse »caserne Niel« (dép. Haute-Garonne/F). Engraved amphora sherds: **1-2** basin BSN2288 (US2216). – **3** well PT4064 (US4590). – **4** posthole PO8271 (US8072). – (Photos L. Alberghi, Archeodunum).

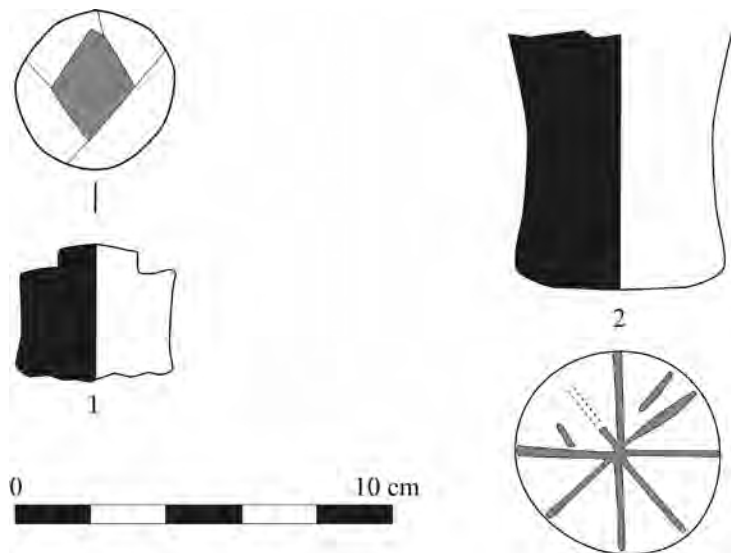


Fig. 9 Engraved Republican amphora bases:
1 Clermont-Ferrand »Le Pâtural« PA3231 (dép. Puy-de-Dôme/F). – **2** Clermont-Ferrand »Gandaillat« F822 (dép. Puy-de-Dôme/F). – (Drawings M. E. Loughton).

14. Posthole PO8271 (US8072): Rhodian amphora handle engraved with a complex design consisting of a series of small geometric shapes/curves and/or letters (**fig. 8, 4**). The section has been polished smooth before being engraved. – Datation: unstratified.

15. Pit FS8041 (US8172): Dressel 1A handle engraved with a thin cross (**fig. 5, 5**). The section has been polished smooth before being engraved. – Datation: this structure contains an assemblage of Dressel 1As dating to the later 2nd century BC (La Tène D1b, c. 130-100 BC).

16. Pit FS8152 (US8169): Dressel 1A handle engraved with several curves and lines, and circles on both sections (**fig. 5, 6**). This design is similar to the die from US8001 (cat. no. 13). – Datation: this structure contains an assemblage of Dressel 1As dating to the later 2nd century BC (La Tène D1b, c. 130-100 BC).

17. US8293: Republican amphora handle with a badly worn design of an ear of grain or a palm branch which is identical to the example from US1241 (cat. no. 1). The section has also been polished smooth before being engraved. – Datation: unstratified.

Other sites

There are two possible amphora dies from Auvergne. A Greco-Italic base from Clermont-Ferrand »Le Pâtural« (dép. Puy-de-Dôme/F) has a polished section on which a rhombus has been cut in relief (Loughton 2007; **fig. 9, 1**). From the 2nd century BC agglomeration of Clermont-Ferrand »Gandaillat« (cf. Deberge/Vermeulen/Collis 2007) there is a Dressel 1A base engraved with a radial design on its underside (**fig. 9, 2**). This example is similar to the engraved Greco-Italic base from Toulouse »caserne Niel« (cat. no. 12). Dressel 1 bases with geometrical designs engraved on their undersides have also been recovered from Mont-Beuvray »Bibracte« (dép. Nièvre/Saône-et-Loire/F; Lambert/Luginbühl 2005, 214 no. 115) and Moullets-et-Villemartin »Lacoste« (dép. Gironde/F; Benquet/Piot 2000, 161 pl. 2).

DISCUSSION

The engraving of sherds to serve as hand-held dies is not a common practice on the »caserne Niel« as out of a total of 879,209 fragments only 17 have been modified in this way⁴ (**fig. 10**). This works out as one example for every 51,718 sherds. The majority of dies from the »caserne Niel« are made out of Republican

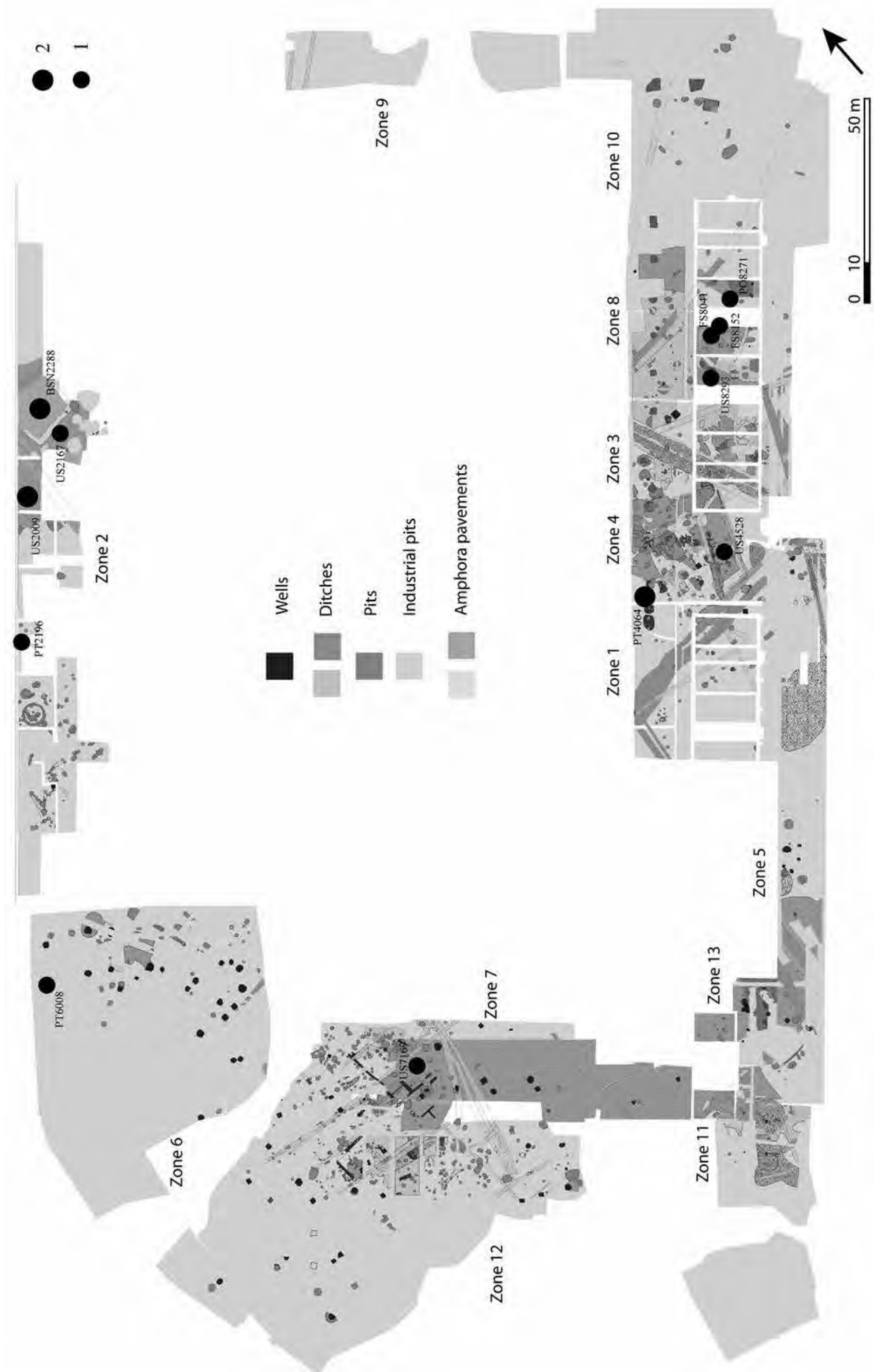


Fig. 10 Plan of the «caserne Niel» in Toulouse (départ. Haute-Garonne/F) and the distribution of the stratified amphora dies. – (Illustration V. Jolie, Archeodunum).

amphorae while dies engraved on two Rhodian handles complete the corpus. Most of the designs are engraved on the handle section (**tab. 1**). The remaining designs are engraved on the outer handle face, on the base section/underside (two examples) and on the face of an amphora disc. For the engraved handles, this works out as one die for about every 4000 handle fragments. Handles from Greco-Italic and Dressel 1As were used and this is the case for the examples discussed in Maguer/Lemaître/Duval (2012, 433f.). Ten of the handle sections were polished and smoothed before the designs were engraved. For two examples, both sections were polished and engraved with motifs (cat. nos 3-4). Finally, one handle had designs engraved on both sections although they were not polished (cat. no. 16). For many of the dies discussed by Maguer/Lemaître/Duval (2012, 432) the motifs were also engraved onto polished surfaces, while one amphora handle from Narbonne (départ. Aude/F) had designs cut on both sections (**fig. 12**; Sanchez 2009, 102 fig. 68).

Distribution

Although dies are found throughout the excavation (**tab. 1**; **fig. 10**) it is notable that they are rare or absent from the domestic area of the site (zones 7 and 11-12). Instead, most came from the zones 2, 4, 6, and 8. Zones 2, 4, and 6, which were used for industrial activities including the working of iron, lead, and bronze (Jud et al. 2012). Although it must be noted that none of the dies were actually recovered from any of the artisanal pits in zones 2 and 4. Finally, five were recovered from zone 8 which was used for animal butchery (Jud et al. 2012).

Chronology

Most of the dies discussed by Maguer/Lemaître/Duval (2012, 431f.) are poorly dated: many are surface finds, residual from Gallo-Roman structures, or old finds with no contextual information. Only the examples from Saint-Gence »La Gagnerie« well PT187 (départ. Haute-Vienne/F; Maguer/Lemaître/Duval 2012, 432) and from Narbonne »Gendarmerie« (Sanchez 2009, 102, 104) are well dated to the late 2nd century BC. In contrast, many of the dies from the »caserne Niel« were stratified and help firm up their chronology (**tab. 2**; cf. catalogue). Examples were recovered from structures dating to throughout the late Iron Age occupation

	handle		base	disc	total
	section	outer surface			
zone 1	1				1
zone 2	5		1		6
zone 3					0
zone 4	2			1	3
zone 5					0
zone 6		1			1
zone 7			1		1
zone 8	5				5
zone 9					0
zone 10					0
zone 11					0
zone 12					0
zone 13					0
total	13	1	2	1	17

Tab. 1 Toulouse »caserne Niel« (départ. Haute-Garonne/F). Distribution of amphora dies and placement of the engraved images.

feature	no.
deposit/dump zone 2	3
basin BSN2288	2
well PT2196	1
well PT4064	2
surface SL4528	1
well PT6009	1
layer/amphora pavement US7169	1
pit FS8041	1
pit FS8152	1
posthole PO8271	1
unstratified	3
total	17

Tab. 2 Toulouse »caserne Niel« (départ. Haute-Garonne/F). Structures and contexts with engraved amphora dies.

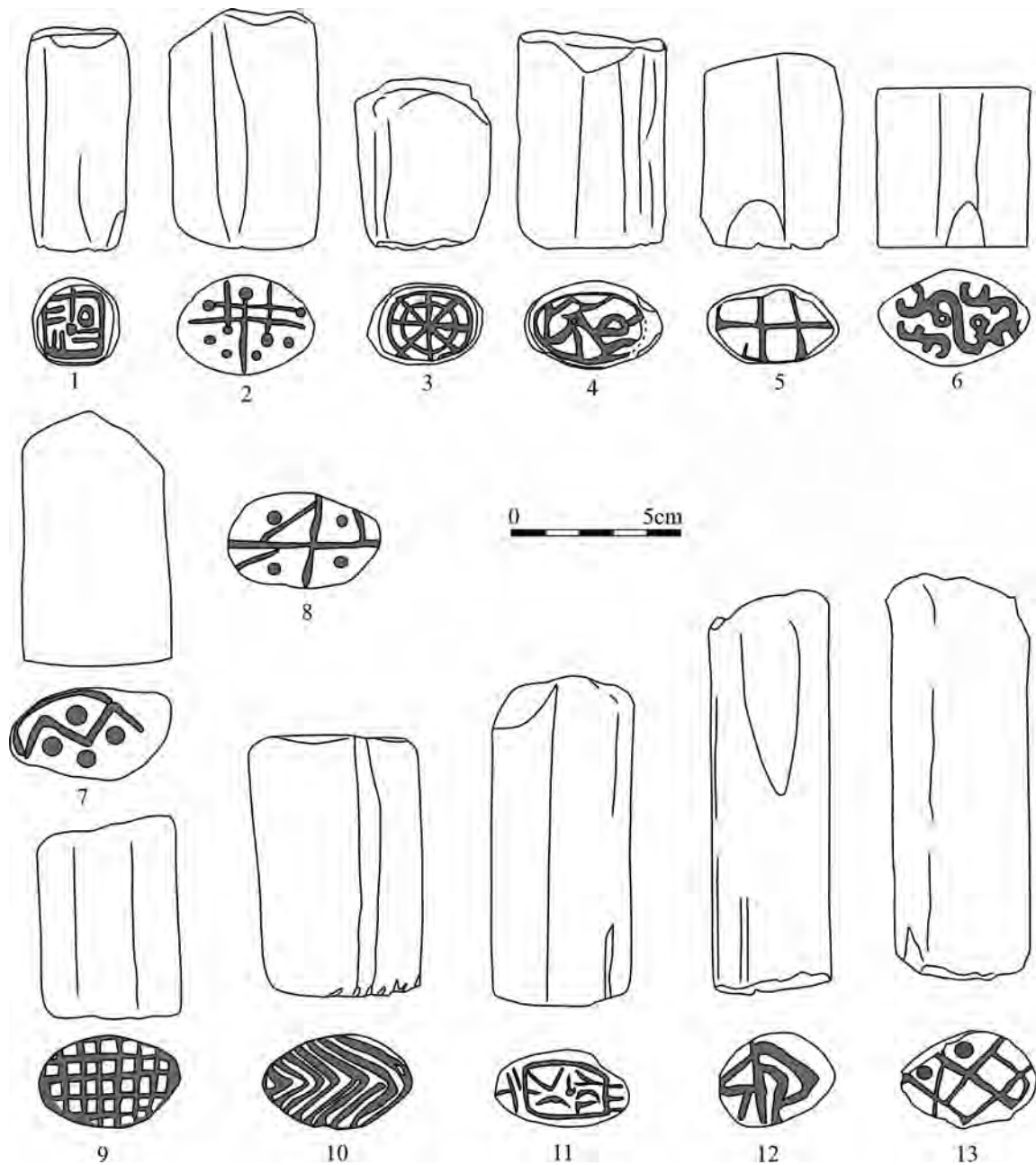


Fig. 11 Examples of amphora dies from: **1-5. 8** Naintré «Vieux-Poitiers» (départ. Vienne/F). – **6. 9. 12** Muron «La Couture» (départ. Charente-Maritime/F). – **7** Jouars-Pontchartrain «La ferme d'Ithe» (départ. Yvelines/F). – **10** Châteaumeillant «Saint-Martin» (départ. Cher/F). – **11** Saint-Gençe «La Gagnerie» (départ. Haute-Vienne/F). – **13** Villeneuve-sur-Lot «rue de l'Abbaye» (départ. Lot-et-Garonne/F). – (After Maguer/Lemaître/Duval 2012, 433 fig. 5; Barat/Laubenheimer 2013, 290 fig. 3).

of the site, which broadly covers the 2nd century BC (Jud et al. 2012; Loughton/Alberghi 2012). Examples are found in structures with Greco-Italic amphorae, notably the large dump/deposit from zone 2 (cat. nos 2-4) dating to La Tène C2 (c. 200/180-160 BC). Dies were also recovered from the well PT2196 and the basin BSN2288 (cat. nos 5-7) which contain Greco-Italic and Dressel 1A amphorae and date to La Tène D1a (c. 140-130 BC). Finally, two dies were recovered from the well PT4064 (cat. nos 8-9), which dates to the end of the 2nd century BC. The engraved base from Clermont-Ferrand «Le Pâtural» (fig. 9, 1) came from a

La Tène D1a (c. 140-130 BC) deposit (Loughton 2007). This extends the chronology of these objects and they should not be considered as a phenomenon confined to the late 2nd century BC.

Imagery

It is remarkable, given the small number of amphora dies from the »caserne Niel«, that there are several with identical or similar designs. This includes the ear of grain motif (cat. nos 1. 17), the vegetal and floral like motifs (cat. nos 13. 16), and the lines/grooves with circles (cat. nos 5. 8). The grid/chequer board die (cat. no. 9) from the well PT4064 (**fig. 8, 3**) is similar to a design from Muron »La Couture« (dép. Charente-Maritime/F; Maguer/Lemaître/Duval 2012, 433; **fig. 11, 9**). The dies with vegetal motifs (cat. nos 13. 16; **fig. 5, 4. 6**) are similar to examples from Muron »La Couture« (**fig. 11, 12**) and Naintré »Vieux-Poitiers« (dép. Vienne/F; Maguer/Lemaître/Duval 2012, 433; **fig. 11, 4**). The dies engraved with lines and circles from Vieux-Poitiers, Jouars-Pontchartrain »La ferme d'Ithe« (dép. Yvelines/F) and Villeneuve-sur-Lot »rue de l'Abbaye« (dép. Lot-et-Garonne/F; Maguer/Lemaître/Duval 2012, 433; Barat/Laubenheimer 2013, 290; **fig. 11, 2. 7-8. 13**) resemble three of the designs from the »caserne Niel« (cat. nos 5. 7-8; **figs 5, 2-3; 8, 2**). The design on the Rhodian amphora handle (cat. no. 14; **fig. 8, 4**) shows a passing resemblance to the engraved image on the Dressel 1 handle from Saint-Gence »La Gagnerie« (Maguer/Lemaître/Duval 2012, 433; **fig. 11, 11**).

F. Schweltnus (2010) has stated that many of the motifs engraved on the late Hallstatt dies from Central Europe are also found on Neolithic and Copper Age stamps. It therefore comes of less of a surprise to note that some of the imagery and designs observed on the amphora dies can also be paralleled in the Neolithic and Copper Age corpus. For instance, the grid/chequer board pattern (cat. no. 9; **fig. 8, 3**) is similar to stamps from the Caverna delle Arene Candide (prov. Savona/I; Skeates 2007, 187f. fig. 1) and from Sopron-Krautacker (Kom. Győr-Moson-Sopron/H; Schweltnus 2010, 208 fig. 1 no. 2). The amphora die from Narbonne »Gendarmerie« engraved with a concentric circle motif (Sanchez 2009, 102. 104) is a common motif during the Neolithic and Copper Age with examples from Bulgaria (Becker 2011, 286. 288 fig. 3), Greece, and western and central Anatolia (Lichter 2011, 39 fig. 2; Çilingiroğlu 2009, 13 fig. 4 no. 1). The amphora disc with three circular depressions (cat. no. 10; **fig. 7**) resembles the Neolithic-Copper Age stamps with a small number of circular holes on their face from Bulgaria, the Republic of Macedonia and Greece (Becker 2011, 290. 292 fig. 7; Naumov 2008, 189 fig. 4 no. 5; fig. 5 nos 3-4). Similar dies but with many shallow holes and a pitted face are known from the Balkans (Budja 1998, 127 map 2; Naumov 2008, 189 fig. 5 nos 3-5) and Italy (Skeates 2008, 187 fig. 1). The cross motif (cat. no. 15; **fig. 5, 5**) is also found at Çatalhöyük (Budja 1998, 117 fig. 2) while the design of a cross with several small triangles (cat. no. 7; **fig. 8, 2**) resembles a Neolithic die from the Caverna delle Arene Candide (Skeates 2008, 187 fig. 1).

The dies from Toulouse »caserne Niel« provide some differences with those reported in Maguer/Lemaître/Duval (2012). Notably, the engraving of designs on Greco-Italic and Dressel 1 bases and Rhodian handles, and dies engraved with double-letter stamps (cat. nos 2. 6). The use of Rhodian handles makes practical sense, as their softer and finer fabric would make polishing and engraving easier and quicker. In contrast, the handles of Republican amphorae are harder and often contain coarser inclusions, which could impede the engraving process. The softer Rhodian fabric would also favour the engraving of finer and more complex motifs, such as the design found on the Rhodian handle from the posthole PO8271 (cat. no. 14; **fig. 8, 4**). The softer Rhodian fabric would also allow for the creation of a flatter and smoother stamping surface and the production of better quality stamps. Rhodian amphora handles are circular in section which would allow for the cutting of slightly larger and more circular designs. The absence of dies made from

Rhodian amphorae from the sites discussed in Maguer/Lemaître/Duval (2012) simply reflects their general rarity outside of Mediterranean France. It is worth noting that although only 56 Rhodian handles were recovered from the »caserne Niel« two were used as dies. This compares with 55,838 Republican amphora handles of which only twelve were engraved.

FUNCTION(S)

There is no reason why the amphora dies from the »caserne Niel« could not have been used like their Neolithic counterparts to imprint their designs on soft materials, such as clay, resin, wax, and daub. Some of the designs from the »caserne Niel« were deeply engraved and, as such, would have been suitable for the imprinting of softer materials with some give. If they were dipped in paint or a dye, they could also have been used to print motifs on leather, cloth, and the human body. They could also have been used to create cut out or negative patterns if dipped in wax or resin and then pressed onto cloth before it was dyed. The condition of some of the dies from the »caserne Niel« also supports the proposition that they functioned as stamps. Several are worn presumably from their repeated use to stamp materials over a long period of time (cat. nos 1. 7. 17) while the stamping surface of one example is slightly damaged (cat. no. 9). Damage and wear has also been noted on some of the Neolithic ceramic stamps from Italy (Skeates 2008, 180) while a stamp from the late Hallstatt site of Sopron-Krautacker had a damaged face (Schwellnus 2010, 218). On several of the dies from the »caserne Niel« (cat. nos 3. 9) the motifs were engraved on the ends of relatively long (c. 10-15 cm) handle segments, which allowed them to be held comfortably in the hand. This is also the case for the engraved Greco-Italic base (cat. no. 2; **fig. 3**) and the majority of the examples in Maguer/Lemaître/Duval (2012; **fig. 11**). Sadly, no residues, paints, or dyes were observed on any of the dies from the »caserne Niel« although it is unlikely that such traces would have survived. For a small number of dies the engraved images are shallow and less suited for the impressing and decorating of items (cat. no. 15).

Bread stamps

Maguer/Lemaître/Duval (2012) argued that the amphora dies were used to impress and decorate bread. Dies made out of wood, fired clay, bronze and sometimes stone were used to mark and decorate bread and cakes in many parts of the Roman world including Gaul (Vernou 2010). Bread stamps are also known from the later Byzantine world and were often used to mark Eucharistic bread (Kakish 2014). Some of the Neolithic dies may also have functioned as bread stamps, perhaps for the marking of bread for special occasions and ceremonies (Naumov 2008, 198-201; Çilingiroğlu 2009, 8). Their use to stamp bread on the »caserne Niel« seems unlikely given their absence from the domestic areas of the site where bread would have been produced and baked. However, the two unusual dies (cat. nos 11-12; **fig. 5, 7-8**) with curved stamping faces would have been better suited towards the stamping of dough. Interestingly, the engraved base (cat. no. 12) is the only example recovered from the domestic area of the site. Many of the designs engraved on the amphora dies from the »caserne Niel«, notably the two engraved with double-letters (cat. nos 2. 6), do not seem appropriate for the decorating of bread. Some of the Roman bread stamps have fine and ornate designs (Vernou 2010) and larger stamping faces. Finally, bread was often marked during the Neolithic and Roman period for reasons which are unlikely to have been applicable for the late Iron Age. Ç. Çilingiroğlu suggests that during the Neolithic period the pooling of a community's grain and centralised bread produc-

tion may have favoured the stamping of bread to facilitate later redistribution (Çilingiroğlu 2009, 7f.). During the Roman period bread was often stamped to prevent fraud and to show that the loaves came from an approved source. Bread dies made out of baked clay and metal have been recovered from several Roman military installations and bread produced for the Roman military was often marked with the names of the baker and the military unit for which it was intended (Stiebel 2011).

Potters' stamps

Another explanation, which can be discounted, is their use as stamps to decorate pottery⁵. The designs on the amphora dies are not found on late Iron Age ceramics and their use in this manner seems impractical. These objects were perhaps better suited to the stamping of bricks and roof tiles, and perhaps served as makers' marks. However, there is no evidence for the manufacture of bricks and tiles on the site during the late Iron Age⁶. While the amphora dies show a passing resemblance to the stamped clay cylindrical kiln-props⁷ which are found on African red slip production centres in Tunisia (Mackensen 2009, 21-28. 36 f. fig. 11) this function also seems unlikely, given the absence of pottery production on the »caserne Niel«. Furthermore, none of the amphora dies from the »caserne Niel« show any traces of intense heat which precludes their use as kiln-props and supports. Although many of the dies have polished sections it is unlikely they were used to polish pottery (Handberg 2011) given that detached amphora bases were used as hand-held polishers on the site (Loughton/Alberghi 2012).

Astral and magical symbols?

Could some of the designs on the amphora dies represent astral or magical symbols? In this light, the dies would have served as personal items⁸ and talismans to provide good luck and good health and to ward off evil spirits. The shallow cross (cat. no. 15; fig. 5, 5), the astral symbol for the earth, provides the most convincing example. Other possible astral symbols include the dots and spots found on some of the dies from Toulouse »caserne Niel« (cat. nos 4-5. 7-8. 10. 16), Naintré »Vieux-Poitiers« (fig. 11, 2. 8), Jouars-Pontchartrain »La ferme d'Ithe« (fig. 11, 7), and Villeneuve-sur-Lot »rue de l'Abbaye« (fig. 11, 13) which could represent the sun, sunbeams or the full moon. The crescent like design observed on the die from Jouars-Pontchartrain »La ferme d'Ithe« (fig. 11, 7) could be a representation of the new moon. The circle with a possible triskele engraved on the Dressel 1 handle from Narbonne »Gendarmerie« (fig. 12, 1) could stand for the sun or the moon (Fitzpatrick 1996, 382 f.). Lunar symbols representing the full and new moons have been found stamped on a small number of late Iron Age anthropomorphic short swords from France and Central Europe (Fitzpatrick 1996). The figure engraved on the Rhodian amphora handle (cat. no. 3; fig. 4) could stand for a religious specialist, even a druid, with a sickle.

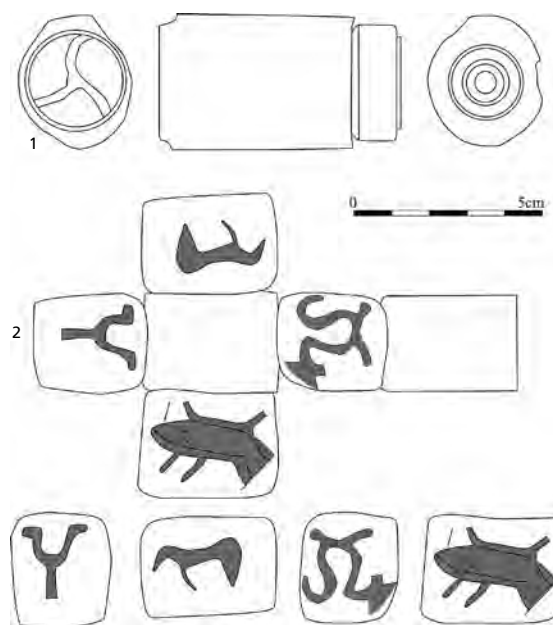


Fig. 12 Narbonne »Gendarmerie« (dép. Aude/F). Amphora die (1) and engraved stone cube (2). – (After Sanchez 2009, 102 fig. 68, 104).

Industry and trade

The recovery of many of the amphora dies from parts of the »caserne Niel« with evidence for animal butchery, artisanal and trading activities suggests that we should look for uses within these fields. The dies, if impressed into clay moulds, could have been used to stamp lead which was produced and cast in zone 4. A similar function has been suggested for the Gallo-Roman bronze *tria nomina* stamps found in southern France (Feugère/Mauné 2005-2006). The presence of five examples from zone 8, which contains evidence for animal butchery, might suggest a link with the marking of live animals or joints of meat. They could also have been used in related industries that were undertaken here, such as the working of leather and textile production. If these objects were dipped in a dye or an organic paint, they could have printed designs on cloth or marked sacks, wineskins, and wooden barrels. The two sherds engraved with an ear of grain (cat. nos 1. 17) could have been used to mark sacks of grain. Zone 6 provides evidence for the rapid emptying of large numbers of Greco-Italic amphorae and the transfer of their wine into other containers for redistribution (Loughton/Alberghi 2012). Perhaps the Rhodian amphora handle (cat. no. 3) with a design incorporating a vine-pruning tool (?), served to mark barrels and skins which contained wine. It must be noted that none of the dies, except for the atypical example (cat. no. 11), were recovered from zone 6 although some are found in contemporary structures (dump/deposits US2009/2167: cat. nos 2-4) from the adjacent zone 2. Similarly, the possible vegetal/plant like designs (cat. nos 13. 16) could have been used to mark containers with vegetal products such as oil. Another possible use, although unlikely, was the marking and branding of slaves, which were exchanged for Mediterranean goods such as wine and fine ceramics.

Some of the dies could have been the property of merchants and their assistants. For example, the engraved Rhodian amphora handle (cat. no. 3) could have served as a personal mark, like an *intaglio*, which was used to stamp wax or lead document seals and authenticate them. The »caserne Niel« contains various finds (writing tablet, writing equipment, *intaglios*, toilet instruments, coarseware ceramics from Marseille) (Jud et al. 2012; 2013) and a relative high proportion of olive oil amphorae (Loughton/Alberghi in print a), which are unusual for a late Iron Age site and these could indicate the presence of Greek and Roman traders.

Reconditioning and refilling of amphorae

While wooden or metal dies were typically used to mark *pozzolana* (mortar) seals, which were placed over the wooden cork in the amphora mouth (Hesnard/Gianfrotta 1989, 427 f.; Djaoui 2011; Nachtergaele 2000), it has been suggested that the die and the engraved stone cube from Narbonne »Gendarmerie« (fig. 12) were also used in this way (Sanchez 2009, 104). This function would also explain the two dies engraved with double-letters (cat. nos 2. 6) from the »caserne Niel« as well as the engraved ceramic cube⁹. For example, the amphora mortar seals from the Chrétienne C wreck were marked TE, RE, N, C., MK or MR (Joncheray 1975, 80 f. fig. 34). Similar double-letter mortar stamps were also recovered from the »caserne Niel« excavation. The mortar seals of the Greco-Italic amphorae from the Capo Graziano A wreck (prov. Messina/I) were impressed with several ovals (Parker 1992, 117) and so too a Dressel 1A mortar seal from Clermont-Ferrand »Le Brézet« (Deberge 2000). Several other finds from the »caserne Niel« suggest that some Dressel 1s were being (re)sealed and refilled on the site during the later 2nd century BC. A Dressel 1A from the pit FS4208 was filled with *pozzolana* (Loughton/Alberghi 2012) and several other amphorae with white mineral deposits lining their interiors could indicate additional vessels that were used to store *pozzolana*. There is also evidence for the production of pitch by distillation in zone 4 (Loughton/Alberghi in print b) which was used to line the interiors of amphorae to make them watertight. Wooden stoppers were manu-

factured in zone 4 while some of the amphora discs from the site (Loughton/Alberghi 2012) could also have been used to stopper amphorae. Amphora discs have been recovered in the mouths of amphorae from several Mediterranean wrecks (Peña 1999, 98-100; 2007, 152 f.; Parker 1992, 454). For example, in the 3rd century AD Arles-Rhône 14 wreck stoppers made out of amphora, tile and ceramic were recovered (Long/Duperron 2013, 141 fig. 26). Many of the ceramic and amphora discs from Berenike and Mons Claudianus in Egypt were apparently used to seal amphorae (Thomas/Tomber 2006).

Some amphorae may have needed resealing on the site because their stoppers and mortar seals had been damaged during transit while vessels that were opened so that prospective buyers could sample and taste (*degustatio*) the wine (Peña 2007, 65) would need to be resealed. It is possible that some vessels needed to be opened and topped up because of leakage and evaporation¹⁰, and resealed. Some merchants may have been increasing their profits by opening amphorae and bulking out the wine (by adding inferior wine, pitch, etc.) into additional vessels. Another possibility is that old vessels were refilled with local wine or Italian wine arriving on the site in dolia and barrels. Increasing evidence is emerging for the production of wine in parts of Languedoc and Roussillon from the 3rd/2nd century BC onwards (Mauné 2013) and a kiln firing Greco-Italic and/or Dressel 1As dating to the second half of the 2nd century BC has been uncovered at Agde »Saint-Michel« (départ. Hérault/F) in Languedoc (Gomez 2013). Amphorae could have been reused on the site to package and transport other commodities, such as salted meat, grain, and pitch (Loughton/Alberghi in print b). Finally, the dies could have been used to stamp blocks of pitch produced on the site.

CONCLUSION

Various functions have been suggested for the amphora dies from Toulouse »caserne Niel«; however, as the dies were recovered from secondary contexts it is hard to come to any firm conclusions as to their uses. Moreover, given these items were used over a period of 80-100 years at the »caserne Niel« their function may have changed with time and it is perhaps wrong to look for one specific function. Given their sturdy nature they could easily have been adapted for other purposes. However, some functions, notably as bread stamps and potters' stamps, are unlikely. The distribution of the amphora dies in France suggests they were related to practices specific to the Narbonne-Carcassonne-Toulouse-Bordeaux trade route during the 2nd century BC. It is worth noting that dies have been recovered from sites which contain large numbers of intact Republican amphorae. At Châteaumeillant (départ. Cher/F) 300 complete vessels were found stacked in cellars and pits on the site (Laubenheimer/Barthélemy-Sylvand 2010) while large numbers of intact Republican amphorae were dumped in pits and wells on the *oppidum* of Saint-Gence (Lintz 2012). At the »caserne Niel« several hundred complete Dressel 1As were laid out side-by-side in zone 4 while many complete vessels were also found dumped in pits and wells throughout the excavation (Loughton/Alberghi 2012). At Châteaumeillant (Laubenheimer/Barthélemy-Sylvand 2010) and Toulouse »caserne Niel« (Loughton/Alberghi 2012) large numbers of Dressel 1s were modified¹¹ so that they could be reused on site as storage vessels. These sites, as well as the port of Narbonne, clearly served as major trading and economic hubs used for the storage and redistribution of agricultural and artisanal goods, and the amphora dies could have served to mark and record goods repackaged into other containers for redistribution or functioned as owners' marks, or used to show taxed goods. The seven dies engraved with lines and circles from Vieux-Poitiers, Jouars-Pontchartrain »La ferme d'Ithe«, Villeneuve-sur-Lot »rue de l'Abbaye« (fig. 11, 2. 7-8. 13) and Toulouse »caserne Niel« (figs 5, 2-3; 8, 2; cat. nos 5. 7-8) could represent a numbering system used to record the quantities of goods and commodities (cf. Budja 1998) perhaps by impressing the dies on clay or wax writing tablets. It is worth noting a circular bone gaming counter from Baldock (North Hertford-

shire/GB), which was engraved with a similar type of design incorporating a quadrangular shape, a crossed diagonal and three circles (Stead 1986, 164 fig. 70 no. 615). Some goods and their containers may have been marked with astral and magical symbols to provide protection and to ensure that the items safely reached their final destination (cf. Caseau 2012). Some dies could have been used to reseal amphorae on board ship during their transportation from Italy to Gaul and may have been accidentally lost on the «caserne Niel» by visiting merchants or traders, or thrown away because the dies were damaged and were no longer useable. Whilst this interpretation is perfectly feasible, it fails to take into account the evidence for the reconditioning and refilling of Republican amphorae on the «caserne Niel». The possibility that Republican amphorae were reused and refilled at Toulouse provides a remarkable development in our understanding of the Republican wine trade.

Notes

- 1) Because Republican amphorae and amphora mortar seals were often stamped the engraved amphora sherds will be referred to as «amphora dies» rather than «stamps» to avoid any confusion.
- 2) These items are also sometimes referred to as «*pintaderas*» or «stamp-seals» in the literature (Becker 2011, 284).
- 3) The first Dressel 1Bs were arriving in the region during the early 1st century BC and there are rare examples on the nearby *op-pidum* of Vieille-Toulouse (départ. Haute-Garonne/F) from structures dating to c. 110-80 BC (Loughton work in progress).
- 4) For three examples (cat. nos 10-12) the attribution as dies is less clear and they could instead represent graffiti. This is also possible for the engraved amphora base from Clermont-Ferrand «Gandaillat». It is worth noting here a small ceramic cube engraved with various designs (letters and/or symbols) on its six faces from zone 2 on the «caserne Niel».
- 5) In contrast, some of the designs on the Neolithic and Copper Age clay stamps from the Republic of Macedonia are also found on ceramic vessels and figurines (Naumov 2008, 191 f.).
- 6) Some roof tiles of Italian origin are found on the site.
- 7) These were often stamped with palm branches and concentric circles on both ends.
- 8) Perhaps they were carried in a small bag as none of the dies were pierced and so could not be suspended on a cord and worn as amulets.
- 9) See note 4.
- 10) This was a common occurrence for wine transported in barrels during the Medieval period (Rose 2011, 52 f.) although whether some amphorae, even if properly sealed and stoppered, needed to be topped up is debatable.
- 11) This involved the removal of the upper amphora portion (from the top of the body or from the base of the neck), to leave the lower portion which served as a storage vessel. The break on the lower portion was then polished and smoothed.

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Zusammenfassung / Summary / Résumé

Gravierte Amphorenstempel aus Toulouse »Caserne Niel« (départ. Haute-Garonne): neue Belege für ihre Verwendung

Dieser Artikel beschreibt und diskutiert 17 Amphorenstempel mit eingravierten Darstellungen, die in der späteisenzeitlichen Handels- und Gewerbesiedlung von Toulouse in Südwestfrankreich gefunden worden waren. Diese Gegenstände bestehen normalerweise aus einem Amphorenhenkel oder -fuß, bei dem ein oder beide Enden glatt poliert und dann graviert wurden. Derartige Objekte stammen hauptsächlich aus Kontexten, die mit dem Schlachten von Tieren, aber auch mit anderen Gewerbeaktivitäten in Zusammenhang gebracht werden und die von ca. 200/180 v. Chr. bis zum Ende des 2. Jahrhunderts v. Chr. datieren. Es wird dargelegt, dass die Stempel zur Verzierung von Stoffen dienten, aber auch zum Kennzeichnen und Registrieren von Waren, die produziert oder umgepackt wurden, zum Siegeln und Stempeln von Dokumenten oder um Stempel auf Amphorenverschlüsse anzubringen, die am Fundort in Stand gesetzt oder umgefüllt wurden.

Engraved Amphora Dies from Toulouse »Caserne Niel« (départ. Haute-Garonne):

New Evidence Concerning their Function

This article describes and discusses 17 amphora dies with engraved images found on the late Iron Age industrial and trading settlement of Toulouse in south-western France. These items typically consist of a length of handle or base, which one or both ends were polished smooth and then engraved. These objects are found in contexts dating from c. 200/180 BC until the end of the 2nd century BC and are primarily recovered from parts of the site used for animal butchery, and various industrial and commercial activities. It is argued that the dies were used to decorate textiles, to mark and record commodities that were produced or repackaged, to seal and stamp documents, and to impress mortar seals on amphorae that were reconditioned and refilled on the site.

Nouvelle documentation sur les timbres d'amphores en provenance de la Caserne Niel à Toulouse (départ. Haute-Garonne)

Cet article décrit et discute 17 timbres amphoriques à figuration incisée mis au jour à Toulouse, dans le Sud-Ouest de la France, dans un habitat artisanal de la fin de l'âge du Fer. Ce type d'objets se présente normalement sous la forme d'une partie de l'anse ou du pied de l'amphore qui a été aplati et poli avant d'être incisé. De tels objets proviennent essentiellement de contextes en relation avec la boucherie ou d'autres activités artisanales et sont datés entre 200/180 av. J.-C. environ et la fin du 2^e siècle av. J.-C. L'article expose ensuite le fait que les timbres étaient utilisés pour décorer des tissus, mais aussi pour identifier et enregistrer des marchandises, lors de la production ou du reconditionnement, afin de sceller et signer des documents ou d'apposer un congé sur une amphore qui aurait été réutilisée ou dont le contenu aurait été transvasé.

Traduction: L. Bernard

Schlüsselwörter / Keywords / Mots clés

Frankreich / Spätlatènezeit / republikanische Amphoren / Dressel 1 / Handwerk / Handstempel

France / late La Tène / Republican amphorae / Dressel 1 / craft / hand-held stamps

France / fin de l'âge du Fer / amphores républicaines / Dressel 1 / artisanat / timbres portatifs

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