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Punic black-glazed pottery from Sardinia: an imitation class between Punic and Roman periods


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Abstract: Punic black-glazed pottery is widely distributed in Sardinia during the 3rd century BC and in the early 2nd century BC; this production may be regarded as part of a wider phenomenon within the Punic Mediterranean culture which involved other areas of Punic influence as North Africa, West Sicily, the Iberian Peninsula and Ibiza. This pottery is characterized by a body of partially refined clay of variable colour; the glaze, applied by immersion, is not uniform and varies from black to grey, from brown to reddish. The most common forms are derived from Attic black-glazed pottery; in the later stages of production, forms that imitate the Campanian classes appear.

Keywords: black-glazed pottery, Punic, Sardinia, imitation.

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Punic black-glazed pottery is one of the most widely distributed imitation classes in Sardinia, documented mainly during the 3rd century BC in all urban and rural areas of Punic influence; early productions started perhaps at the end of the 4th century BC while the latest most likely continued up to the first decades of the 2nd century BC¹. This pottery is characterized by clay body, generally partially refined and rich in temper, of variable colour, more often grey, beige, brownish or orange. The glaze is not uniform and varies from black to grey, from brown to reddish; it is applied by immersion in the inside and on the upper part of the external surface. The coating is thin, easy to remove and often marked by micro-cracks (fig. 1).

Jean-Paul Morel had already identified black-glazed pottery in the Central-Western Mediterranean since the late seventies throughout the '*aire punicisante*' which, in his opinion, presented an '*indéniable air de famille*'². Among these materials, now we can rightly include several productions such as the '*ceramica chiazzata*' of Tharros³; the class 'Byrsa 401', identified by Morel in Carthage and attributed to Sicilian production⁴; the pottery called 'Kouass type' of Cadiz⁵ and numerous other materials, generally defined as 'imitation', reported in large quantities in North Africa, Sardinia, Western Sicily, the Balearic Islands and the Iberian Peninsula⁶.

¹ DEL VAIS 2007.

² MOREL 1979; MOREL 1982; MOREL 1984-85; MOREL 1986; MOREL 1992; MOREL 1998, pp. 17-18.

³ RIGHINI CANTELLI 1981.

⁴ MOREL 1982, p. 53; MOREL 1986, pp. 29-31; MOREL 1998, pp. 18, 22. Cf. BECHTOLD 2007, pp. 560-562, 572-575.

⁵ NIVEAU DE VILLEDARY Y MARIÑAS 2003.

⁶ Cf. e.g. DEL VAIS 1997, pp. 99-106; NIVEAU DE VILLEDARY Y MARIÑAS 2003; DEL VAIS 2006b, pp. 159-163; DEL VAIS 2007; DEL VAIS 2008; PÉREZ BALLESTER 2018.

The presence of pottery with very similar features widely distributed throughout the Punic area and in large areas of Punic influence suggests that the whole production is not to be ascribed to a spontaneous local “imitation” of allogenic forms, but rather to a unitary productive phenomenon characterized by a common morphological repertoire and by «*des tendances techniques (ou des imperfections technique, ou des goûts systématiques)*»⁷. Sardinian production may be regarded therefore as part of a wider phenomenon within the Punic Mediterranean culture which continued even in the Roman period until Punic productions were replaced by imports from Campania⁸.

The most common forms are derived from Attic black-glazed pottery; in the later stages of production, forms that imitate the Campanian and Punic classes appear. The analysis of forms from Attic tradition of the late 4th and 3rd centuries BC showed a precise correspondence between Punic and contemporary Greek forms, hinting at a direct knowledge by Punic artisans of the repertoire of the Attic pottery whose products, however, did not reach Punic markets or, at least, only in very small quantities⁹. Therefore, the manufacturing process was not based on imitating Attic ceramics of the 4th century BC, massively imported throughout the Punic world until the end of the same century, but the evidence suggests the existence of contacts with Greek productions during the 3rd century BC.

Although there is substantial technological and morphological homogeneity, some differences were noted in terms of formal choices between the central Mediterranean area and the far Western area. Western

⁷ MOREL 1986, p. 37.

⁸ DEL VAIS 2007.

⁹ Cf. e.g. MOREL 1982, p. 44; MOREL 1990a, pp. 22-23; MOREL 1990b, pp. 82-85.

Sicily¹⁰ and especially Sardinia show a remarkable adherence to the repertoire of Carthage, which could be considered a propulsive center in the central Mediterranean. In the West, instead, Cadiz played an important role in the production and diffusion of different forms, even some earlier shapes¹¹. Ibiza shows remarkable early imitations of Attic forms¹², but in later phases its evidence is aligned with the central Mediterranean choices¹³.

In Sardinia, Punic black-glazed pottery is widely distributed in all contexts, domestic, funerary and sacred ones. Unfortunately, at present very few contexts can be precisely dated¹⁴ and this represents a major problem to the reconstruction of the morphological evolution of the different forms. Only an approach based on morphological analysis in comparison with Greek prototypes can contribute to our understanding of the chronology of this class. This can be a useful but not always reliable methodological approach, due to the occurrence of conservatism in the evidence. However, analyzing Punic forms in comparison with the Greek ones may provide some information on the matter.

One of the most represented forms is the so-called Lamboglia 22, the bowl with outturned rim of the Athenian Agora¹⁵. This bowl is produced in

¹⁰ This class has so far been attested only in Lilibeo, Solunto and Pantelleria: cf. MOREL 1979, pp. 1580-1581; DI STEFANO 1993, p. 35, pl. XXXIX, 4; BECHTOLD 1999, p. 96, v.n. imp. 14, tavv. I, 3-4, 7; II, 17-18; III, 33; VII, 64; XII, 114; DEL VAIS 2006b, pp. 159-163.

¹¹ E.g. thickened edge plate, rolled rim plate of an older type, bolsal, bowl with incurving rim-shallow, some closed forms and lamps: NIVEAU DE VILLEDARY Y MARIÑAS 2003, forms I, III-A/B, VII, IX-B1, XV, XVII.

¹² E.g. thickened edge plate, bowl with shallow wall and convex-concave profile, one-handler: FERNÁNDEZ, GRANADOS 1979.

¹³ Cf. FERNÁNDEZ, GRANADOS 1979; RAMON TORRES 1990-91; RAMON 1997; RAMON TORRES 2011.

¹⁴ Cf. e.g. TARAMELLI 1912; LEVI 1950; TRONCHETTI 1981-85; BARTOLONI 1987; MUREDDU, PORCELLA 1995; TRONCHETTI 1996; MANCA DI MORES 1997; TRONCHETTI 2001, pp. 280-284; SALVI 2005, pp. 41-48; POMPIANU 2020, pp. 1161, 1164, figg. 3, 5.

¹⁵ SPARKES, TALCOTT 1970, pp. 128-130.

Punic black-glazed pottery, rarely in the variant with an almost vertical and curved wall¹⁶, most frequently with a flaring wall with a more or less marked angle¹⁷ (fig. 2). These variants faithfully reflect the evolution of Athenian pottery from the 4th century BC to the first half of the 2nd century BC¹⁸. Contexts of the late 3rd century BC and of the early 2nd century BC have provided a variant with a very flared wall with a corner placed in the lower part¹⁹, very different from the later evolution of the Attic outturned rim bowl, generally characterized by a double curve in the flared wall and an everted edge, as documented in Cadiz²⁰. In this case, it is possible to assume that the reference form is the Lamboglia 28 bowl produced in the Campanian A class²¹ (fig. 2).

The bowl with an incurving and inturned rim, often referred to the Lamboglia 21 form, is quite frequent in Punic black-glazed pottery, although documented in different variants (fig. 3). The variant with shallow

¹⁶ Cf. e.g. BARTOLONI, TRONCHETTI 1981, n. 133.18.8; RIGHINI CANTELLI 1981, p. 86, tav. XVIII, 2-3, 5; DEL VAIS 1997, pp. 103, 113, 115, figg. 2, c; 4, d; SANCIU 1998, pp. 68, 70, fig. 19; CAMPANELLA 1999, nn. 155-157; TRONCHETTI 2001, p. 285, n. 2; DEL VAIS 2008, SEN 2-7, 13, OTH 1-4, RIM 1, OLB 15-20 (cf. fig. 2); DEL VAIS 2014, tav. 11, nn. 1-5.

¹⁷ Cf. e.g. BARTOLONI, TRONCHETTI 1981, nn. 89.15.7, 104.16.1; TRONCHETTI 1992, nn. 339-259, 340-81, 344-256, 345-96, 346-247, 353-152, 354-154, 355-185; TRONCHETTI 1996, pp. 994-996, n. 4; DEL VAIS 1997, pp. 103, 113-114, figg. 2, b; 3, e; TRONCHETTI 2001, pp. 285-286, nn. 1, 3, 4-7; AMADORI *et alii* 2004, nn. 4-6; SALVI 2005, pp. 44, 47; DEL VAIS 2008, SEN 18, TH 62-63, RIM 2-3, OLB 29-31, 33-36 (cf. fig. 2); AMADORI *et alii* 2009, OLB 4; DEL VAIS 2014, tav. 11, nn. 5-9.

¹⁸ ROTROFF 1997, p. 157, ns. 869-879.

¹⁹ Cf. e.g. TRONCHETTI 1985, pp. 79-80, n. 3; MUREDDU, PORCELLA 1995, n. 4; CAMPANELLA 1999, n. 236; TRONCHETTI 2001, p. 283, n. 17; DEL VAIS 2008, SEN 19, 32-34 (cf. fig. 2). For Carthage cf. e.g. LANCEL 1982, A.173.21; MOREL 1982, figs. 12, f; 13, e; CHELBI 1992, ns. 184-185, 190; BECHTOLD 2007, ns. 4589-4590.

²⁰ Cf. e.g. NIVEAU DE VILLEDARY Y MARIÑAS 2003, form VIII, fig. 59. In Sardinia this variant is very rare and perhaps unintentional: MOLINA FAJARDO 1984, p. 86, fig. 12, h; CAMPANELLA 1999, n. 200.

²¹ MOREL 1981, F 2646, F 2644, F 2648.

wall, uncommon throughout the Punic world²², probably derives from the incurving rim or echinus bowl in the shallow version of the Athenian Agora²³. For the deeper bowls the discussion is more complex. The Attic form, in the deep variant with a continuous curved wall was produced until the early 3rd century BC; in the first half of the same century, the form shows its maximum width just below the rim, which is inturned²⁴, as it happens in many Punic bowls²⁵. However, a derivation from bowls of the '*atelier des petites estampilles*' (F 2784), or even from those of the Campanian A class (F 2788) cannot be excluded²⁶. The generic nature of the form calls for caution and does not recommend a too rigid identification of the reference models, especially in the absence of a well-established chronological series.

Another common form in Punic Sardinia is the Lamboglia 21/25 bowl (fig. 3). The Punic specimens, small in size and with a more or less inturned

²² CHALBI 1972, figs. 2-3; RAKOB 1990, Abb. 11, 51; 13, 121; RAMON TORRES 1990-91, fig. 16A; BECHTOLD 1999, tav. 1, 3; NIVEAU DE VILLEDARY Y MARIÑAS 2003, form IX-B-1; DEL VAIS 2006b, n. 37; RAMON TORRES 2011, fig. 20, AR-33/V-13. For Sardinia cf. fig. 3, TH 13; BARNETT, MENDLESON 1987, n. 23/4. In Sardinia a few shallow bowls with a non inturned rim (or slightly inturned or vertical rim) are documented (e.g. fig. 3, OTH 12; TRONCHETTI 2001, p. 283, n. 16; AMADORI *et alii* 2004, nn. 1, 3; DEL VAIS 2007, fig. 1, 5); it is not clear whether the form derives from the Attic or Italic prototype, also as the foot generally appears narrower than the Attic bowl.

²³ SPARKES, TALCOTT 1970, ns. 828, 830-837; ROTROFF 1997, ns. 966-982.

²⁴ ROTROFF 1997, ns. 996-1002.

²⁵ Deep variant with a continuous curved wall: cf. e.g. fig. 3, OTH 21; BARNETT, MENDLESON 1987, n. 20/2; CAMPANELLA 1999, n. 179. Deep variant with maximum expansion just below the inturned rim: cf. e.g. AMADASI 1967, p. 66, n. 16; RIGHINI CANTELLI 1981, p. 86, tav. XVIII, 7, 9-12; TRONCHETTI 1981-85, n. 1.2.1.; LILLIU 1985, nn. 873-874; BARTOLONI 1987, p. 65, fig. 8, a-c; DEL VAIS 1997, pp. 104-105, 113, 115, figg. 2, e-f; 4, e-f; CAMPANELLA 1999, nn. 178, 201; TRONCHETTI 2001, p. 287, n. 11; GRASSO 2003, tav. 21, 1-2; DEL VAIS 2006a, nn. 37-38; DEL VAIS 2008, SEN 10, OTH 5, 13-14, CCM 1-3, RIM 39-45, 47, 112-124, OLB 37-38, 40 (cf. fig. 3); DEL VAIS 2014, tav. 11, nn. 10-15.

²⁶ Punic potters produce even deep cups with a slightly inturned rim or with an internal side tending to vertical, as happens in the classes mentioned: e.g. DEL VAIS 1997, pp. 104, 113-115, figg. 2, g; 3, g; CAMPANELLA 1999, n. 202; GRASSO 2003, tavv. 20, 10; 21, 3; AMADORI *et alii* 2004, n. 2; DEL VAIS 2006a, n. 39; DEL VAIS 2008, CCM 4-5, RIM 48-52, OLB 39, 41-43 (cf. fig. 3); DEL VAIS 2014, tav. 11, nn. 16-18.

rim²⁷, take the typical broad resting surface slightly inclined from the Attic small bowl with broad base, produced from the mid-4th to the mid-3rd century BC²⁸. However, there are also bowls that differ from the previous ones for a ring foot (fig. 3, TH 14)²⁹ or, more rarely, for a disc foot³⁰; some deeper little bowls³¹ could instead derive from another Attic form, in particular the footed saltcellar³², or from a Campanian one (F 2787, F 2788).

A type of cup widespread in Sardinia³³ as well as in North Africa and Ibiza³⁴, has a deep wall, curved or angled, and a simple rim, flared, vertical or inturned (fig. 4). This form, which does not seem to derive from Greek prototypes, could be a product of central-Mediterranean Punic origin.

²⁷ E.g. BARTOLONI, TRONCHETTI 1981, nn. 13.2.5, 46.7.6, 256.38.10; ANGIOLILLO *et alii* 1981-85, p. 154, fig. 12; TRONCHETTI 1981-85, n. 2.2.1.; TRONCHETTI 1987, pp. 2, 17, n. 1; MONGIU 1994, figg. 11, a-b; TRONCHETTI 2001, p. 287, nn. 13-15; GRASSO 2003, n. 2625/VNII/3; AMADORI *et alii* 2004, nn. 9, 11; DEL VAIS 2008, SEN 12, 22, 29, 31, 44-47, OTH 15, OLB 60-62 (cf. fig. 3); DEL VAIS 2013, p. 35, SA 208; DEL VAIS 2014, tav. 11, nn. 19-22.

²⁸ SPARKES, TALCOTT 1970, p. 135, n. 887; ROTROFF 1997, p. 165, ns. 1050-1063.

²⁹ E.g. CAMPANELLA 1999, n. 161; DEL VAIS 2006b, pp. 209-210, 223, n. 42; DEL VAIS 2013, p. 35, SA 209.

³⁰ E.g. CHELBI 1992, n. 170.

³¹ E.g. TRONCHETTI 2001, p. 283, nn. 13-14; DEL VAIS 2013, p. 35, SA 209; MARITAN *et alii* 2019, fig. 2, sample 4474. Cf. in North Africa and Ibiza: CHALBI 1972, pl. XXVII, 2; FERNÁNDEZ, GRANADOS 1979, type 2.6.e; LANCEL 1982, p. 90, A.152.20; CHELBI 1992, ns. 122-123, 125.

³² SPARKES, TALCOTT 1970, pp. 137-138, n. 949; ROTROFF 1997, p. 165, ns. 1075-1089.

³³ Cf. e.g. AMADASI 1967, pp. 65-66, 74, nn. 11, 16, 25; RIGHINI CANTELLI 1981, p. 86, tav. XVIII, 8, 13-16; ANGIOLILLO *et alii* 1981-85, pp. 182-183, 187, 190, figg. 18-20; BARTOLONI 1987, fig. 8, d-f; TRONCHETTI 1992, n. 345-96; DEL VAIS 1997, pp. 106, 116, fig. 4, i-l; SANCIU 1998, p. 71, fig. 23; CAMPANELLA 1999, nn. 175, 190; TRONCHETTI 2001, p. 287, n. 10; GRASSO 2003, n. 2647/VNII/1M; DEL VAIS 2008, SEN 42-43, CCM 6, RIM 53-63, 126-131, OLB 44-58 (cf. fig. 4); PÉREZ BALLESTER 2018, fig. 5, 2.

³⁴ For North Africa cf. e.g. CHALBI 1972, pls. XXV, 9; XXX, 2; MOREL 1981, F 2732a1; LANCEL 1982, p. 52, A 157.41; CHELBI 1992, ns. 204-205, 288; DEL VAIS 2006b, pp. 161, 177-179, nn. 42-49 (found in Pantelleria); BEN TAHAR 2010, p. 48, fig. 5, ns. 2, 5. For Ibiza cf. e.g. RAMON TORRES 1990-91, AE-20/SC-9, fig. 14; FERNÁNDEZ 1992, figs. 60, 84, 157, 172, 189; RAMON 1994, ns. 53-54, fig. 10; GUERRERO AYUSO 1997, figs. 20, 10-12; 32, 8; 73, 6; 80, 4; 100, 3; 134, 1-2, 10-11; 139, 3-4; 163, 3; 168, 1; RAMON TORRES 2011, figs. 20, AR-33/V-10-11; 22, AE-34/II-142.

Among the plates, one of the most recurrent forms in Punic black-glazed productions is the plate with straight wall, an internally thickened edge and a ring-shaped foot; the prototype is the late variant of the Attic plate with rolled rim attested from the middle of the 3rd century BC and, with significant changes, in the 2nd century BC³⁵; Attic import specimens of this variant have not yet been documented in Sardinia, while those of the 4th century BC are quite widespread³⁶. In the Punic black-glaze class, both small and larger plates are produced in large numbers³⁷ (fig. 5). The Punic artefacts show a substantial uniformity in the form of the rim, while the foot is sometimes quite wide³⁸, closer to the more ancient Attic prototype, but generally narrower.

A form only episodically imported from Greece in the Punic areas³⁹, but quite common in Sardinian Punic productions, is the rilled rim plate, characterized by concentric grooves on the rim. Compared to other forms that have a fairly precise correspondence with the Athenian prototypes, this

³⁵ ROTROFF 1997, ns. 655-666. In the 3rd century BC similar plates are produced in a larger area of the Hellenistic *koiné*, from East to West: cf. e.g. MOREL 1981, F 2233; BERNARDINI 1986, pp. 134-135, F 2233c; ÉLAIGNE 2007, figs. 6, ns. 800-37, 797-87; 12, n. 874-19.

³⁶ Cf. e.g. DEL VAIS 2006a, p. 207, nn. 26-27. This 4th century BC variant is not imitated in Sardinia, unlike what happens in Western Mediterranean (e.g. NIVEAU DE VILLEDARY Y MARIÑAS 2003, form III-A/B); only a few examples show some resemblance to the older form: CAMPANELLA 1999, n. 187.

³⁷ Cf. e.g. AMADASI 1967, pp. 66-67, n. 20; BARTOLONI, TRONCHETTI 1981, nn. 102.16.4, 215.32.4; ANGIOLILLO *et alii* 1981-85, p. 187, fig. 19; BARNETT, MENDLESON 1987, ns. 4/8, 30/4; TRONCHETTI 1996, pp. 993, 996, n. 2; CAMPANELLA 1999, nn. 151-152, 184-185, 188; TRONCHETTI 2001, p. 288, n. 18; AMADORI *et alii* 2004, nn. 13-15; SALVI 2005, pp. 44, 47; DEL VAIS 2006a, pp. 210, 223, nn. 44-45; DEL VAIS 2008, SEN 20, 23, OTH 8, 17, TH 15, 89-90, CCM 7, 10-11, RIM 73-88, OLB 65-66, 85, 87 (cf. fig. 5); AMADORI *et alii* 2009, OLB 18; DEL VAIS 2014, tav. 11, nn. 25-27.

³⁸ Cf. e.g. BARTOLONI, TRONCHETTI 1981, n. 215.32.4; BARNETT, MENDLESON 1987, n. 30/4; BARTOLONI 2000, form 7 (plain pottery); DEL VAIS 2008, SEN 16, 20 (with disc foot), OLB 65 (cf. fig. 5); DEL VAIS 2014, tav. 11, n. 25.

³⁹ Cf. e.g. CHELBI 1992, n. 30. For Athens cf. SPARKES, TALCOTT 1970, pp. 146-147; ROTROFF 1997, pp. 151-152.

one shows a greater variety of solutions in the rim and in the foot⁴⁰. Sardinian Punic factories produce small plates whose rim continues the line of the wall on the outside and has a horizontal upper face⁴¹; and larger plates, with horizontal or turning inward or outward rim, generally separated from the wall⁴²; in the smallest specimens the foot can be wide, as in the older Attic variant, while the larger ones always have a narrow foot (fig. 5).

A similar type of plate to the previous one, but with a rim marked by a single wider groove, is similar to the 'concave rim plate' of the Athenian Agora, an infrequent form dated between the middle of the 4th century BC and the first quarter of the 3rd century BC⁴³; it finds only limited diffusion in Sardinia (fig. 6) and in general in the Punic world⁴⁴.

Another very common form in the Punic black-glazed pottery is the fish-plate (Lamboglia 23 form), with an overhanging rim, a central depression, usually with a curved profile, and a ring-shaped foot (fig. 6); it is almost always characterized by the presence of grooves around the rim and the

⁴⁰ A plate from the necropolis of Monte Luna (Senorbì) seems to be an exception (fig. 5, SEN 1), as it is close to the Attic variant of the end of the 4th century BC (ROTROFF 1997, n. 780).

⁴¹ E.g. TRONCHETTI 1996, pp. 993, 996, n. 1; DEL VAIS 2008, SEN 1, 24, 27, 36 (cf. fig. 5). Cf. e.g. RAMON TORRES 1990-91, fig. 16, D.

⁴² E.g. AMADASI 1967, pp. 62, 66, 67, nn. 6, 20; ANGIOLILLO *et alii* 1981-85, p. 127, fig. 6; TRONCHETTI 1996, p. 998, n. 17; DEL VAIS 1997, pp. 104, 114, fig. 3, b; AMADORI *et alii* 2004, nn. 15-16; DEL VAIS 2008, OTH 25, TH 92, CCR 4, RIM 89, OLB 68 (cf. fig. 5); AMADORI *et alii* 2009, OLB 11; DEL VAIS 2014, tav. 11, nn. 28-31. Cf. e.g. CHALBI 1972, fig. 6, ns. 4-5; LANCEL 1982, p. 57, A.158.28; RAKOB 1990, Abb. 36, 15; 44, 64; CHELBI 1992, ns. 69-71; GUERRERO AYUSO 1997, fig. 66, 7; RAKOB 1999, p. 128, Abb. 20, 6; DEL VAIS 2006b, p. 162, nn. 56-57; KHELIFI 2011, pp. 229-234, ns. 4-11.

⁴³ ROTROFF 1997, p. 152, ns. 816-819. Unlike the Punic plates, the Attic examples have an unglazed rim; the same situation is found in the rilled rim plates.

⁴⁴ For Sardinia cf. DEL VAIS 2008, OLB 70-71 (cf. fig. 6); AMADORI *et alii* 2009, OLB 9 (plates almost surely imported from North Africa); PÉREZ BALLESTER 2018, fig. 5, 6. For Carthage cf. CHELBI 1992, ns. 51-52, 54-55. For Mallorca cf. GUERRERO AYUSO 1997, fig. 139, 6.

central depression, as well as in the Attic prototype⁴⁵. Some plates have a vertical rim and shallow basin⁴⁶, as in the 4th century BC Attic fish-plate, but most of them have an oblique rim and a deeper basin⁴⁷, as in the later Attic specimens. In this regard J.-P. Morel observed that if in the 4th century BC the main Attic variant imported in the Punic world had a thickened edge without overhang, in the Punic productions this variant is rarely produced⁴⁸.

A form of plate with a convex rim can probably be attributed to the last phases of Sardinian Punic productions⁴⁹ (fig. 7). Plates with similar rim are widely attested in the Italic context from the late 4th century BC and especially during the 3rd century BC⁵⁰; in Athens the “saucer projecting rim” was produced from the early 2nd century BC onward⁵¹; however, Sardinian Punic black-glazed form was more likely derived from the Campana A class⁵² which invaded the island market from the late 3rd century BC and progressively replaced the Punic glazed productions.

⁴⁵ SPARKES, TALCOTT 1970, pp. 147-148; ROTROFF 1997, pp. 146-149. In Sardinia only a few Punic fish-plates don't have the typical grooves, probably due to the influence of the form produced in the Campana A class: cf. fig. 6, SEN 17; BARNETT, MENDLESON 1987, n. 18/8.

⁴⁶ Cf. e.g. TRONCHETTI 1996, pp. 994, 996, 998, n. 6, 16; SANCIU 1998, p. 70, figg. 20-21; AMADORI *et alii* 2004, n. 10; DEL VAIS 2008, SEN 17, 49, NPL 9, OTH 22, TH 102, OLB 73-75 (cf. fig. 6).

⁴⁷ Cf. e.g. BARTOLONI, TRONCHETTI 1981, n. 11.2.3; MOLINA FAJARDO 1984, p. 86, fig. 12, j; ANGIOLILLO *et alii* 1981-85, p. 135, fig. 8; TRONCHETTI 1992, n. 342-258; DEL VAIS 1997, pp. 104, 113-114, figg. 2, a; 3, d; SALVI 2005, pp. 45, 47; DEL VAIS 2007, fig. 1, 13; DEL VAIS 2008, SEN 8, OTH 9, TH 16, RIM 91-92, OLB 76-78 (cf. fig. 6); DEL VAIS 2014, tav. 11, nn. 33-34.

⁴⁸ MOREL 1995, p. 274; MOREL 2002-03, p. 334. Cf. in Sardinia fig. 6, OLB 72.

⁴⁹ Cf. e.g. AMADASI 1967, p. 65, n. 10; ANGIOLILLO *et alii* 1981-85, pp. 135, 157, figg. 8, 12; LILLIU 1985, p. 198, nn. 862-863; MANCA DI MORES 1997, pp. 148, 150, 321, n. 434; TRONCHETTI 2001, p. 282, nn. 9-12; DEL VAIS 2008, SEN 9, 14-15, 30, NPL 10, CCM 8, 12-16, RIM 96-102, 134-135 (cf. fig. 7); DEL VAIS 2014, tav. 11, n. 36.

⁵⁰ E.g. MOREL 1981, F 1310, F 1320.

⁵¹ ROTROFF 1997, ns. 747-749, 756-757.

⁵² In particular form F 1312 (MOREL 1981). However, some small shallow plates with a wide and slightly rounded rim (TRONCHETTI 1996, pp. 997-998, n. 14; TRONCHETTI 2001, pp. 287-

The overall analysis of Sardinian pottery shows an occasional presence of a stamped decoration raised above the background surface, consisting mainly of palmettes and rosettes. Palmettes, of Attic tradition even if often reworked in the bottom, are usually four (fig. 8, ns. 1-2)⁵³, more rarely three (fig. 8, n. 12)⁵⁴, and radial; in at least two cases the palmettes surround a central rosette (fig. 8, ns. 7-8)⁵⁵; in a fragment of Monte Sirai two globes appear next to the central sepal of the palmette (fig. 8, n. 6), as documented in the *'atelier des petites estampilles'*⁵⁶; in a bowl from Nora the radial palmette is associated with rouletting, as also happens in the Campana A class (fig. 8, n. 10)⁵⁷.

One of the motifs recognized by Morel as typical of the *'aire punicisante'*, namely the quadruple cruciform palmette obtained with a single shot of stamp⁵⁸, is also attested in Sardinia (fig. 8, ns. 17-31)⁵⁹; some specimens from

288, n. 16; DEL VAIS 2008, OTH 19, 23, cf. fig. 6) can be compared with similar plates produced by the *"atelier des petites estampilles"* (MOREL 1981, F 1324; BERNARDINI 1986, n. 68).

⁵³ E.g. AMADASI 1967, p. 65, n. 13; CAMPANELLA 1999, nn. 212, 219, 225, 231. Cf. e.g. NIVEAU DE VILLEDARY Y MARIÑAS 2003, p. 128, type V. An exception is a fragment from Karales which presents the two residual palmettes impressed in the same direction, according to the typical scheme of the *"atelier des petites estampilles"*: TRONCHETTI 2001, p. 288, n. 18 (fig. 8, n. 11).

⁵⁴ Cf. DEL VAIS 2014, tav. 11, n. 37. Cf. e.g. NIVEAU DE VILLEDARY Y MARIÑAS 2003, p. 130, type IX.

⁵⁵ AMADASI 1967, pp. 65-66, n. 14; PÉREZ BALLESTER 2018, fig. 5, 1. Cf. DEL AMO DE LA HERA 1970, figs. 4, 6; NIVEAU DE VILLEDARY Y MARIÑAS 2003, pp. 129-130, type VII; BECHTOLD 2007, p. 585, n. 4612.

⁵⁶ CAMPANELLA 1999, n. 234. Cf. e.g. BERNARDINI 1986, tav. LVIII, n. 116.

⁵⁷ TRONCHETTI 1985, pp. 79-80, n. 3. Cf. e.g. MOREL 1969, fig. 4, b.

⁵⁸ MOREL 1979, pp. 1580-1581; MOREL 1982, p. 54; MOREL 1986, pp. 47-49. Cf. also RAKOB 1990, Abb. 12, 68; 44, 73; NIVEAU DE VILLEDARY Y MARIÑAS 2003, pp. 124-126.

⁵⁹ ANGIOLILLO *et alii* 1981-85, p. 127, fig. 6; RIGHINI CANTELLI 1983, p. 84, n. 41; SANCIU 1998, p. 75, fig. 28, tav. II, 7; TRONCHETTI 2001, pp. 286-290, nn. 7, 15-16, 21-22, 31-33; DEL VAIS 2008, TH 104, OLB 84 (cf. fig. 8, ns. 27, 29); DE LUCA 2017, pp. 79-80, fig. 2, 1, tav. I, 1.

Tharros and Olbia (fig. 8, ns. 27-30) have similar characters and find close comparison in Carthaginian pottery⁶⁰.

The rosette pattern attested in Sardinian pottery, rarely associated with other elements, may have been borrowed from the '*atelier des petites estampilles*' or even from other Italic productions. Rosettes can be enclosed in a petal-shaped frame (fig. 8, n. 7)⁶¹, or, more frequently, in a circular one⁶²; this motif usually has six to eight petals, with a central button and sometimes also stamens or globes between the petals. Depending on the case, reference models are to be found in the '*atelier des petites estampilles*' and in the Campana A class. A unique item is a fragment found in the rural area near Tharros, featuring a rosette with eight petals and a central button, surrounded by four radial lotus flowers alternating with as many buds (fig. 9, n. 9)⁶³.

Punic black-glazed pottery shows macroscopic features that may vary within a same production and this variability is at the same time a characteristic common to different areas of diffusion. Archaeological

⁶⁰ Cf. MOREL 1982, fig. 12, c; MOREL 1986, fig. 30 (top center).

⁶¹ RIGHINI CANTELLI 1983, p. 84, nn. 44-46, 49; DEL VAIS 1997, pp. 103, 113-114, figg. 2, e; 3, e; SANCIU 1998, p. 75, fig. 29; TRONCHETTI 2001, p. 290, n. 30. Cf. e.g. FERNÁNDEZ, GRANADOS 1979, fig. 9, 3; GUERRERO AYUSO 1997, fig. 101, 2; NIVEAU DE VILLEDARY Y MARIÑAS 2003, p. 126, fig. 44, 1-10; BECHTOLD 2007, p. 585, n. 4610.

⁶² RIGHINI CANTELLI 1983, p. 84, nn. 48, 51-53; DEL VAIS 1997, pp. 106, 116, fig. 4, h; MANCA DI MORES 1997, pp. 148-149, 151, 322, n. 438; SANCIU 1998, p. 76, fig. 30; CAMPANELLA 1999, nn. 208-209, 213, 215, 233-234, TRONCHETTI 2001, pp. 283, 285, 287-290, nn. 2-3, 11, 16, 19-20, 28-29; DEL VAIS 2008, RIM 71-72, 132-133 (cf. fig. 9, ns. 30, 16-17); DE LUCA 2017, pp. 79-80, fig. 2, 2, tav. II, 2; PÉREZ BALLESTER 2018, fig. 5, 7. Cf. e.g. NIVEAU DE VILLEDARY Y MARIÑAS 2003, pp. 126, 128, subtipo IV-B, fig. 44, 15-21.

⁶³ DEL VAIS 2014, tav. 11, 38 (Sa Pedrera). The Italic motif of the rosette is here associated with an element of oriental tradition which is however also attested in Attic pottery (SPARKES, TALCOTT 1970, p. 26); in Sardinia lotus is also episodically documented in Punic basins in plain pottery which present impressed patterns of different origins: e.g. MANFREDI 1991, p. 194; TODDE 2007-12, p. 88, tav. XII, nn. 40, 76, 84-85.

investigations suggest that they are mostly local and regional productions, connected to plain pottery factories, as confirmed by the identification of different factories in North Africa, in Ibiza et in Sardinia⁶⁴ with kiln waste referable to artifacts of this class. In Sardinia, in particular, we know *ateliers* for the production of Punic black-glazed pottery in San Sperate, in Olbia and in the territory of Tharros, but it is clear that the production had to be generalized and not limited to these few sites.

However, it is evident that macroscopic analysis alone cannot be enough to identify the different productions, evidently due to the diffusion of production technologies rather than of artifacts⁶⁵. Identification of fabrics by microscopic analysis and laboratory analysis, therefore, currently represents the only possibility to reconstruct the areas of production and the diffusion of the class.

In conclusion, it must be stressed that to make progresses in the study of Sardinian imitations of black-glazed pottery this production must be recognized as a specific 'class', in the meaning given to the term by J.-P. Morel⁶⁶, that was developed and diffused throughout the Punic world. This class, which we can define 'Punic black-glazed pottery', must be studied on the grounds of parallels found with the contemporary Greek and Italic ceramics that likely influenced its forms, but also considering this production in a wider Mediterranean cultural perspective; in particular, a deep influence of the productive and commercial policy of Carthage must

⁶⁴ DEL VAIS 2007, pp. 172-173.

⁶⁵ Even if the analysis carried out on samples from Tharros, Olbia and Pantelleria showed the presence of North African imports: AMADORI *et alii* 2004; AMADORI *et alii* 2006; AMADORI *et alii* 2009; these specimens show remarkable macroscopic similarities with KHELIFI 2011, p. 234, ns. 12-13 from Mateur (close to Utica).

⁶⁶ MOREL 1981, p. 22.

be recognized on Sardinian pottery, to place this class in a correct historical and archaeological framework.

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Fig. 1. 1-3. Bowl with outturned rim, Lamboglia 28 bowl and plate with convex rim from Monte Luna (Senorbì) (DEL VAIS 2008, SEN 4, 34, 9); 4-6. Fish-plate, deep bowl with vertical rim, plate with concave rim from Olbia (AMADORI *et alii* 2009, OLB 12; DEL VAIS 2008, OLB 45, 70; African production); 7-10. Bowl with outturned rim, Lamboglia 21/25 bowl, bowl with incurving rim and fish-plate from Tharros (DEL VAIS 2008, TH 63; AMADORI *et alii* 2004, n. 8, African production; DEL VAIS 2007, fig. 1, nn. 5, 13); 11-12. Palmettes from Olbia (DEL VAIS 2008, OLB 83, 82); 13-14. Quadruple palmettes from Olbia and Tharros (DEL VAIS 2008, OLB 84, TH 104); 15. Rosette from Nuracraba (OR) (DEL VAIS 2008, RIM 132; African production?); 16. Rosette with lotus flowers and buds from Sa Pedrera (Cabras) (DEL VAIS 2014, tav. 11, 38) (photos C. Del Vais).

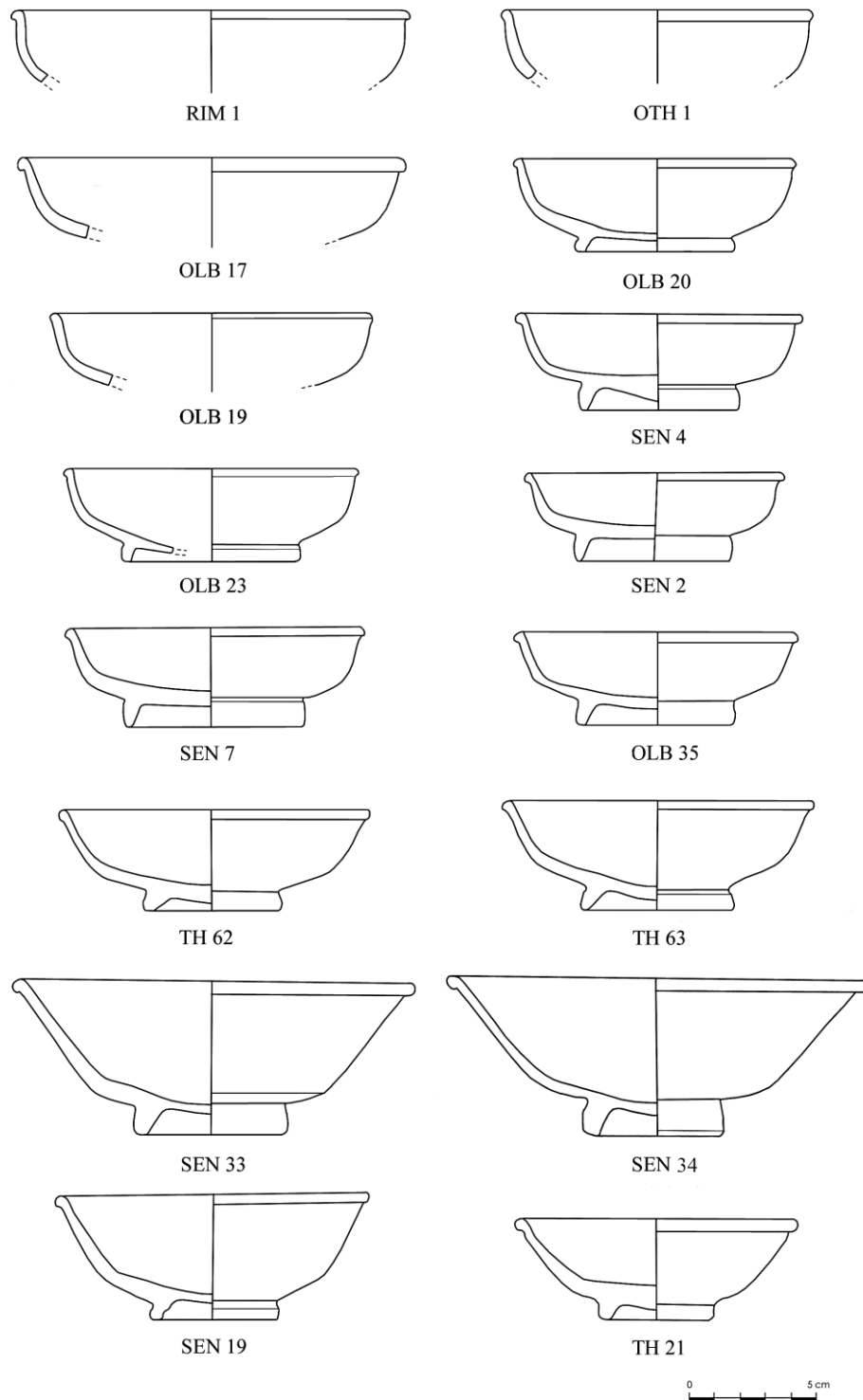


Fig. 2. Bowls with outturned rim and Lamboglia 28 bowls from Nuracraha (Madonna del Rimedio-OR) (RIM), Othoca (OTH), Olbia - Ex Mercato (OLB), Monte Luna (Senorbi) (SEN), Tharros (TH) (DEL VAIS 2008).

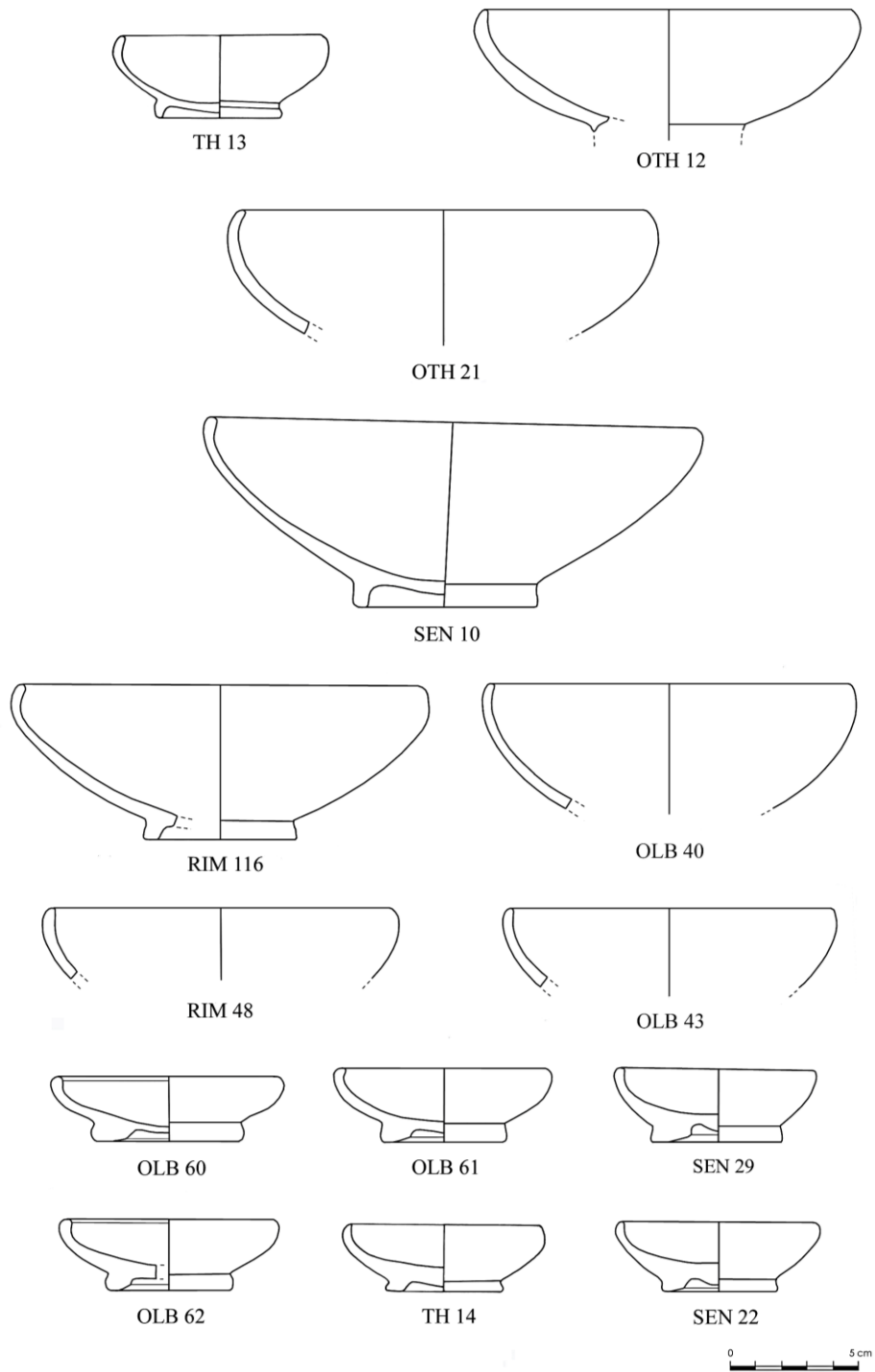


Fig. 3. Bowls with incurving rim and Lamboglia 21/25 bowls from Tharros (TH), Othoca (OTH), Monte Luna (Senorbi) (SEN), Nuracraba (Madonna del Rimedio-OR) (RIM), Olbia - Ex Mercato (OLB) (DEL VAIS 2008).

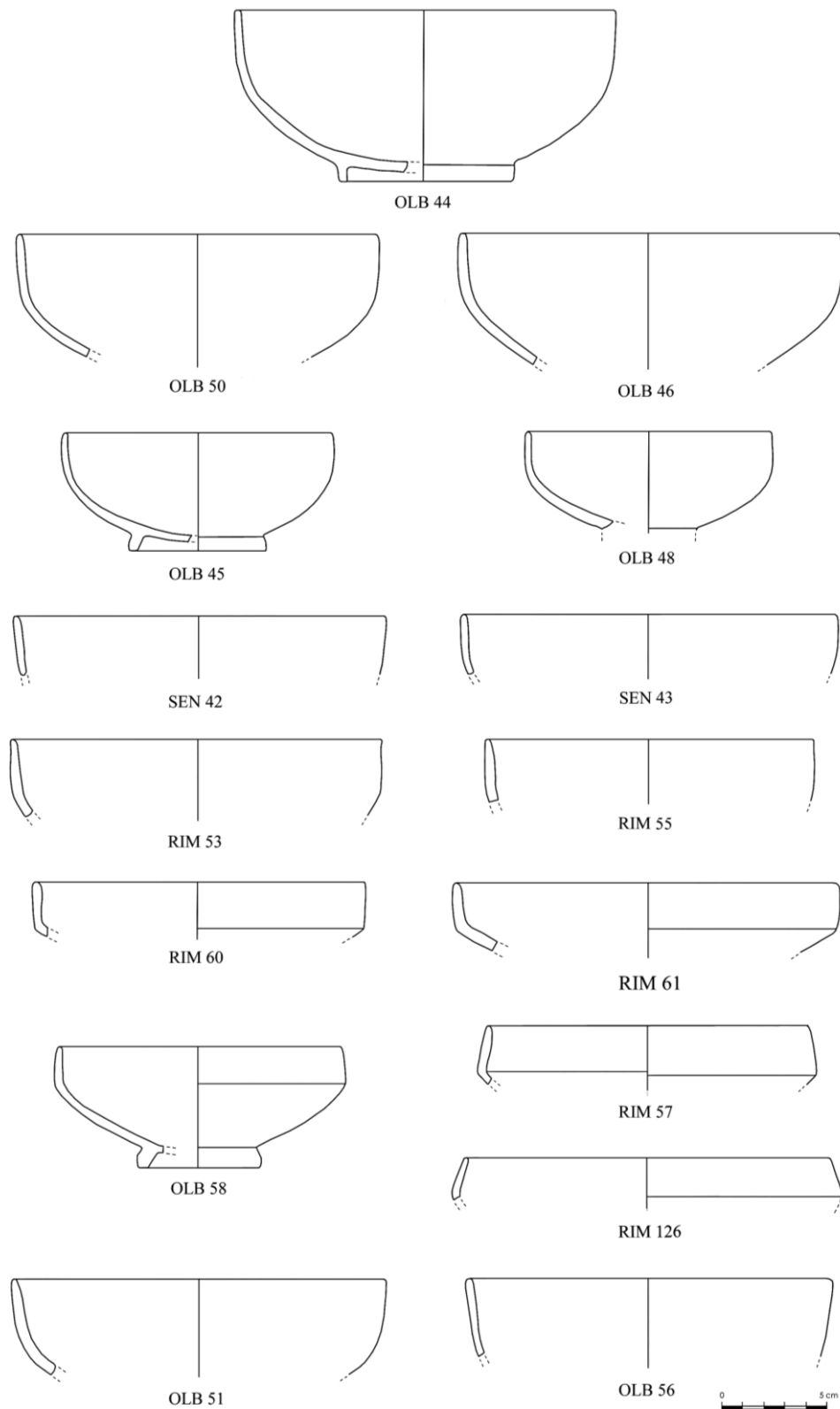


Fig. 4. Bowls with curved or angled wall from Olbia - Ex Mercato (OLB), Monte Luna (Senorbì) (SEN), Nuracraba (Madonna del Rimedio-OR) (RIM) (DEL VAIS 2008).

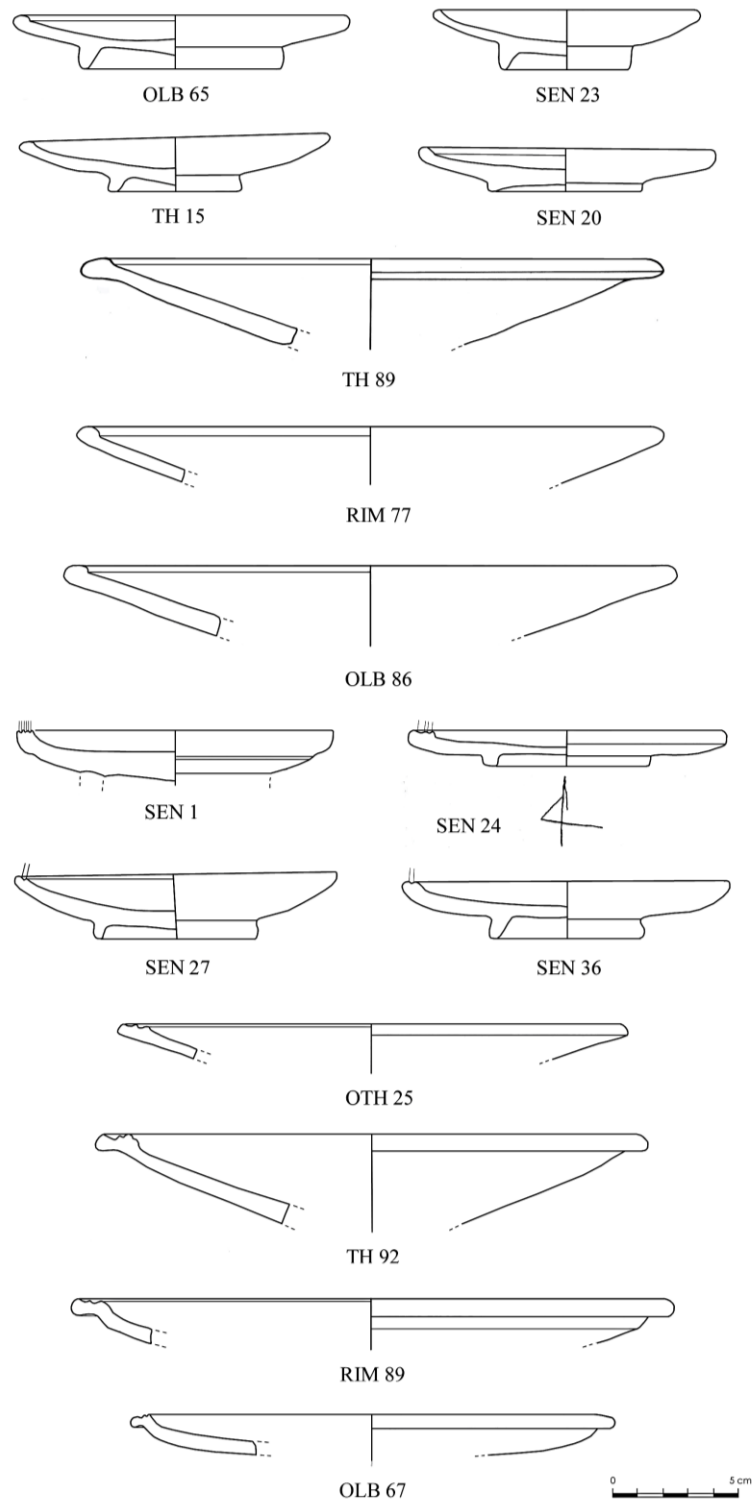


Fig. 5. Plates with rolled rim and plates with rilled rim from Olbia – Ex Mercato (OLB), Monte Luna (Senorbi) (SEN), Tharros (TH), Nuracraba (Madonna del Rimedio-OR) (RIM), Othoca (OTH) (DEL VAIS 2008).

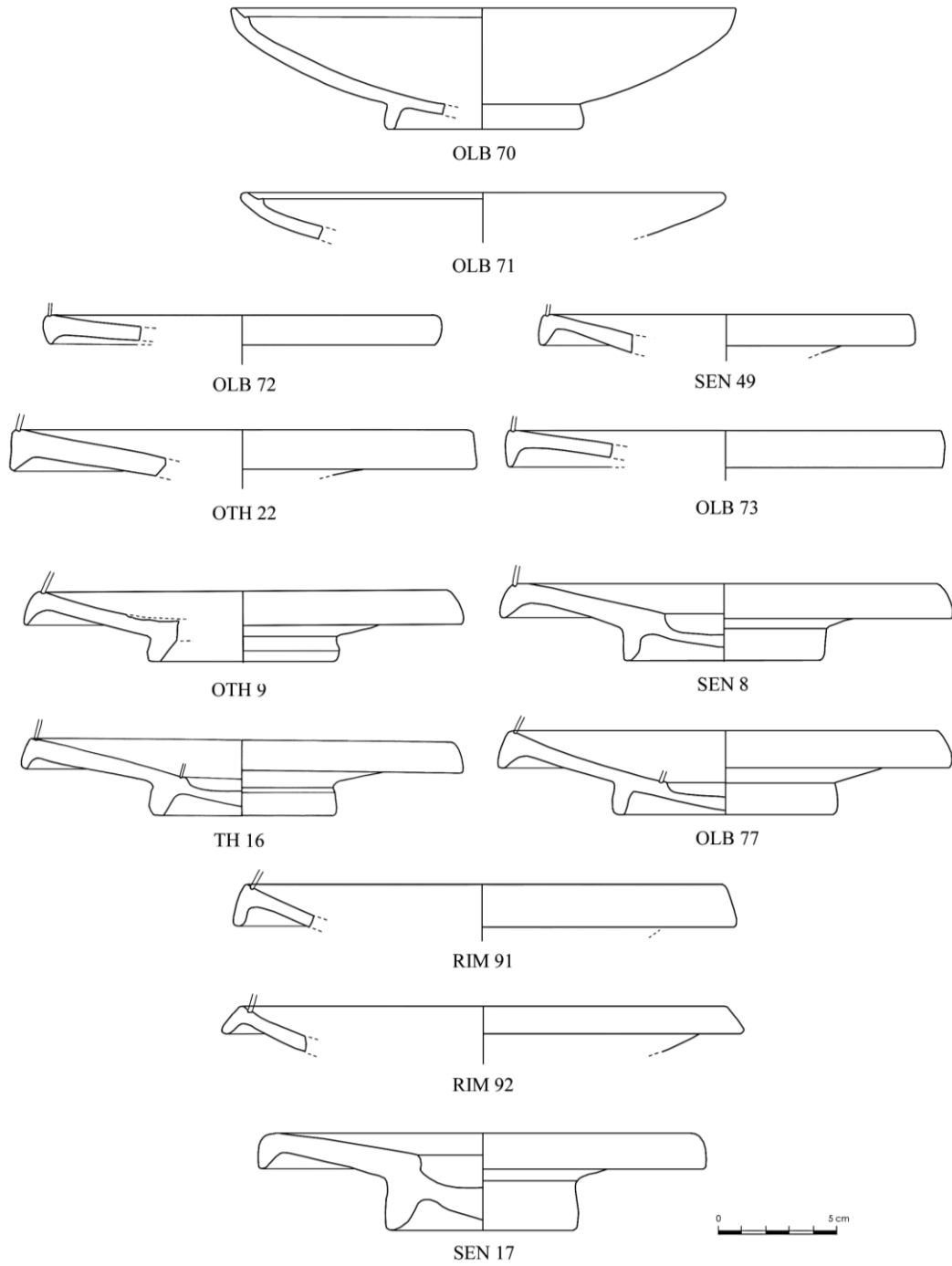


Fig. 6. Plates with concave rim and fish-plates from Olbia – Ex Mercato (OLB), Monte Luna (Senorbì) (SEN), Othoca (OTH), Tharros (TH), Nuracraba (Madonna del Rimedio-OR) (RIM) (DEL VAIS 2008).

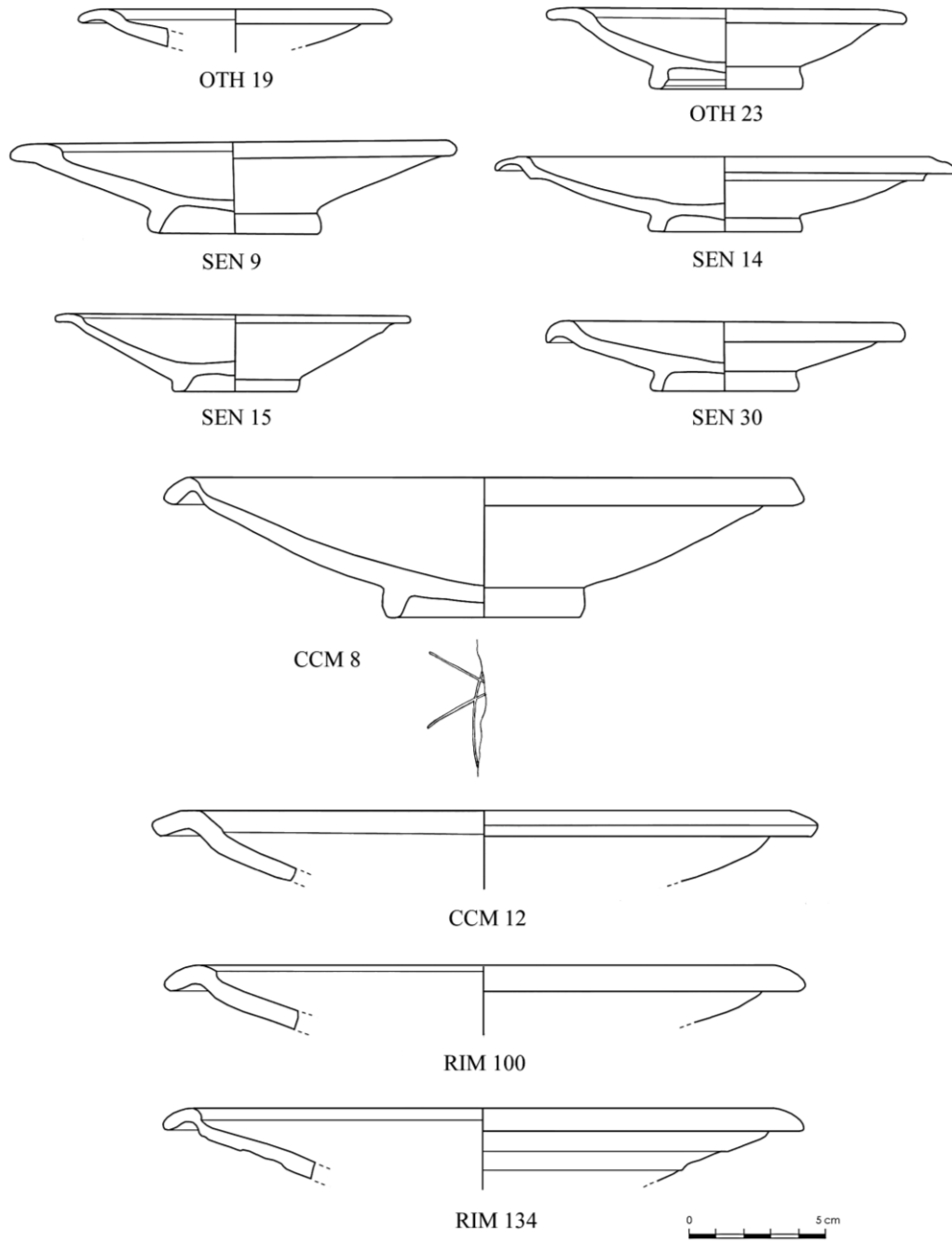


Fig. 7. – Plates with convex rim from Othoca (OTH), Monte Luna (Senorbi) (SEN), Cuccuru 'e Mattoni (Cabras-OR) (CCM), Nuracraba (Madonna del Rimedio-OR) (RIM) (DEL VAIS 2008).

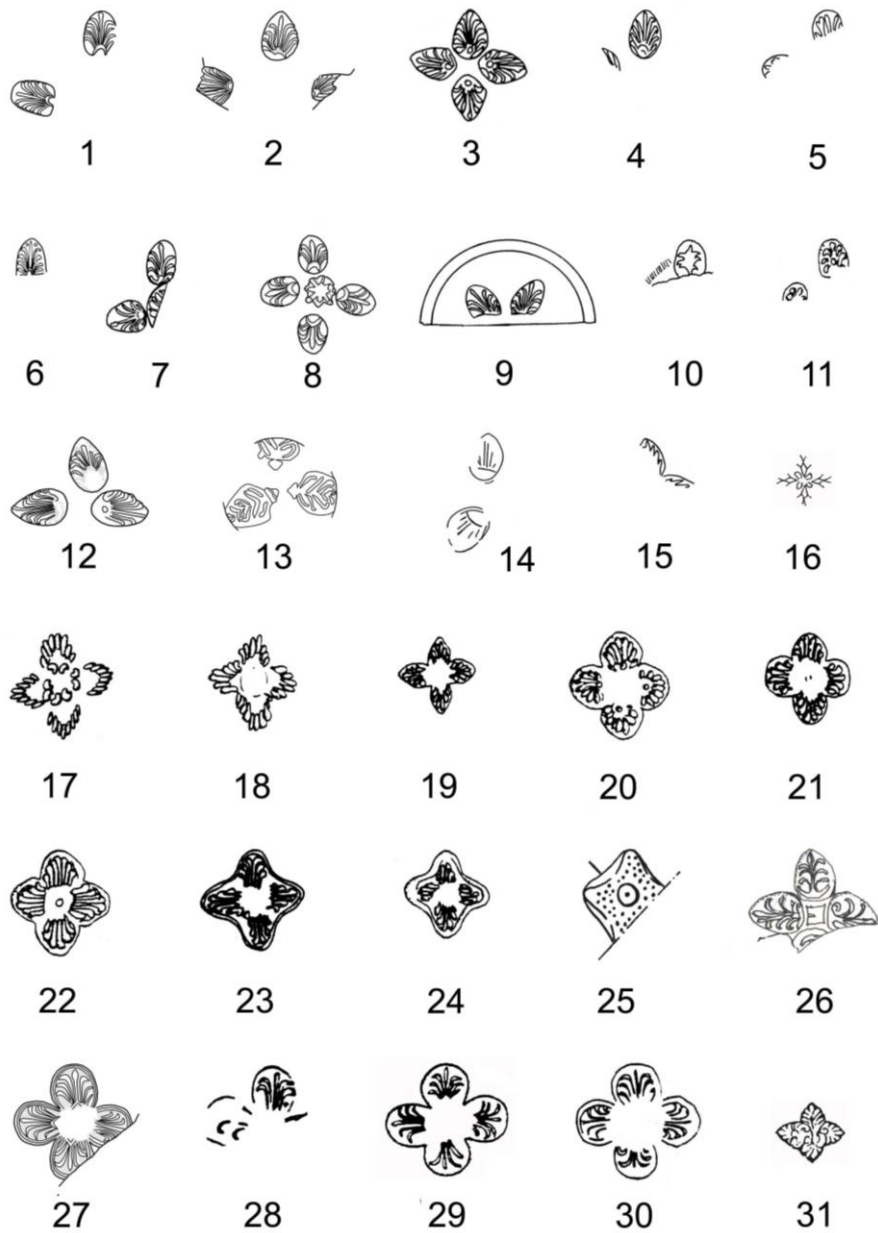


Fig. 8. Impressed decoration: palmettes: 1-2. Olbia (DEL VAIS 2008, OLB 59, 83); 3-7. Monte Sirai (CAMPANELLA 1999, nn. 225, 219, 212, 210; AMADASI 1967, pp. 65-66, n. 14); 8. Neapolis (PÉREZ BALLESTER 2018, fig. 5, 1); 9. Monte Sirai (AMADASI 1967, p. 65, n. 13); 10. Nora (TRONCHETTI 1985, pp. 79-80, n. 3); 11. Karales (TRONCHETTI 2001, p. 288, n. 18); 12. Olbia (DEL VAIS 2008, OLB 82); 13. Cuccuru de Giovanni Spanu, Cabras-OR (DEL VAIS 2014, tav. 11, 37); 14-15. Monte Sirai (CAMPANELLA 1999, nn. 231, 220); 16. Olbia (MONGIU 1994, pp. 101-103, fig. 11b); 17-25. Karales (TRONCHETTI 2001, p. 286, n. 7; pp. 288-89, n. 21; p. 290, n. 32; pp. 287-288, n. 16; p. 287, n. 15; p. 290, n. 31; p. 289, n. 22; p. 290, n. 33; ANGIOLILLO *et alii* 1981-85, p. 127, fig. 6); 26. Su Landiri Durci, Carbonia (DE LUCA 2017, tav. I, 2); 27-28. Tharros (DEL VAIS 2008, TH 104; RIGHINI CANTELLI 1983, p. 84, n. 41); 29-31. Olbia (DEL VAIS 2008, OLB 84; SANCIU 1998, p. 75, fig. 28; MONGIU 1994, pp. 101-103, fig. 11a) (out of scale drawings).

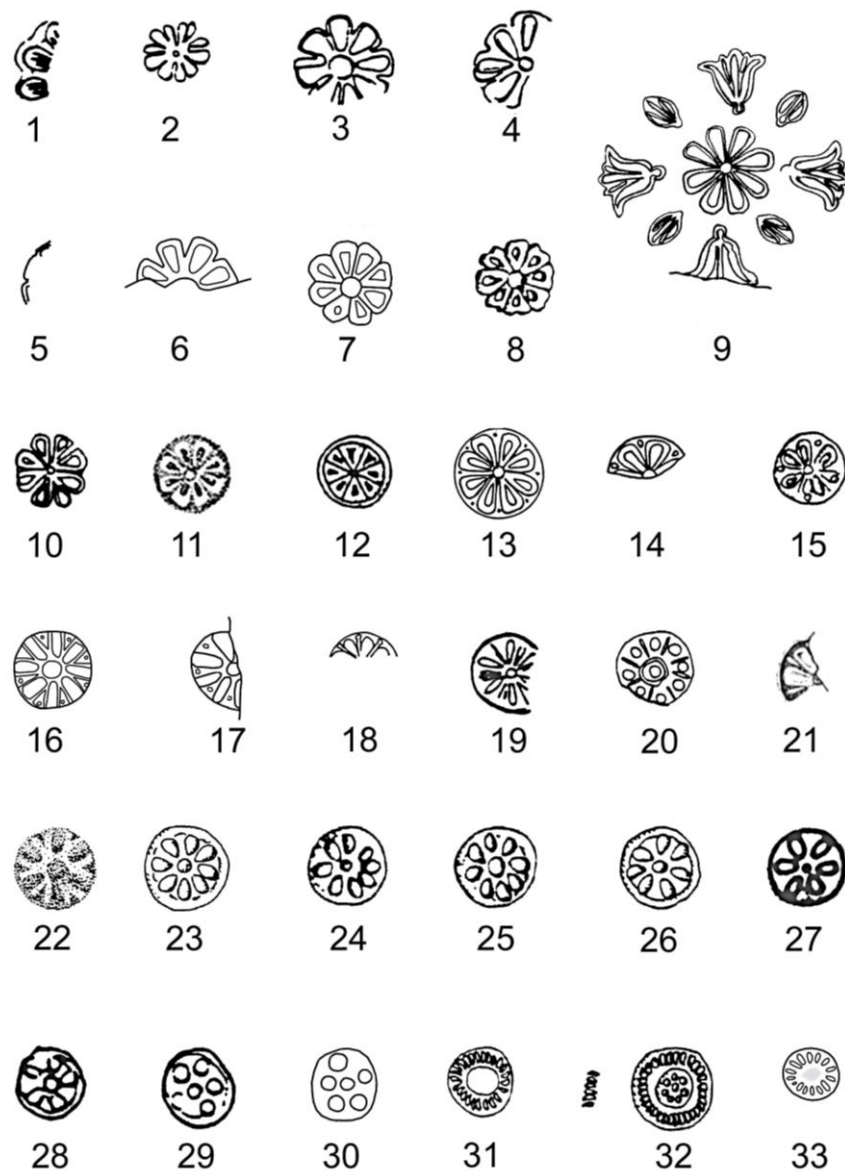


Fig. 9. Impressed decoration: rosettes: 1-7. Tharros (RIGHINI CANTELLI 1983, p. 84, nn. 50, 45, 44, 49, 46; DEL VAIS 1997, pp. 103, 114, fig. 3, e; DEL VAIS 2008, TH 105); 8. Karales (TRONCHETTI 2001, p. 290, n. 30); 9. Sa Pedrera, Cabras-OR (DEL VAIS 2014, tav. 11, 38); 10. Olbia (SANCIU 1998, p. 75, fig. 29); 11. Monte Sirai (CAMPANELLA 1999, n. 233); 12. Karales (TRONCHETTI 2001, p. 283, n. 16); 13-14. Monte Sirai (CAMPANELLA 1999, nn. 209, 208); 15. Karales (TRONCHETTI 2001, p. 285, n. 2); 16-17. Nuracraba, Rimedio-OR (DEL VAIS 2008, RIM 132-133); 18. Monte Sirai (CAMPANELLA 1999, n. 215); 19. Tharros (RIGHINI CANTELLI 1993, p. 84, n. 48); 20. Olbia (SANCIU 1998, p. 76, fig. 30); 21. Su Landiri Durci, Carbonia (DE LUCA 2017, tav. I, 2); 22. Monte Sirai (CAMPANELLA 1999, n. 234); 23-26. Karales (TRONCHETTI 2001, p. 287, n. 11; p. 288 n. 20; p. 290, n. 29; pp. 289-290, n. 28); 27. Cossoine (MANCA DI MORES 1997, pp. 148-149, 151, 322, n. 438); 28-29. Tharros (RIGHINI CANTELLI 1993, p. 84, nn. 53, 52); 30. Nuracraba, Rimedio-OR (DEL VAIS 2008, RIM 71); 31-32. Karales (TRONCHETTI 2001, pp. 285-286, n. 3; p. 288, n. 19); 33. Tharros (DEL VAIS 1997, pp. 106, 116, fig. 4, h) (out of scale drawings).