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CERTAIN AMPHORA GROUPS FROM THE ROMAN BATHS AND THE OLIVE MARKET OF TARSUS: SINOPE, SHELOV TYPE D, AND ZEEST 80

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Keywords: Tarsus, Amphora, Sinope Type C Snp III-2, Shelov Type D, Zeest 80, trade relations

Abstract: Archaeological excavations in Tarsus, a historically significant port city in the Cilicia region, yielded numerous fragments of amphorae produced in the Mediterranean, Aegean, and Black Sea regions. These finds, spanning various centuries, attest to the city's extensive commercial activities. Excavations conducted at the Roman Baths and the olive market provided valuable insights into the maritime trade of Tarsus. Among the amphorae recovered from these two excavation sites, certain amphorae groups were identified that were likely produced around the Black Sea and its surrounding areas. These include examples classified as Sinope, Shelov Type D and Zeest 80 amphorae, all unearthed from mixed ceramic fill layers at both excavation sites. Therefore, the amphorae discussed in this paper are dated by analogy. Among the amphorae, those of Shelov Type D and Zeest 80 are dated to the first half of the 3rd century AD, while the Sinopean specimens are attributed to the 5th and 6th centuries AD. This is the first publication on amphorae from Tarsus that feature the amphora groups of Shelov Type D and Zeest 80. It is noteworthy that these forms have not been previously documented in any publications concerning Cilician amphorae. The presence of these two amphora groups in this part of the Eastern Mediterranean region sheds new light onto the geographical distribution of these forms.

Cuvinte-cheie: Tarsus, amforă, Sinope Type C Snp III-2, Shelov tip D, Zeest 80, relații comerciale

Rezumat: Săpăturile arheologice de la Tarsus, un oraș-port semnificativ din punct de vedere istoric din regiunea Cilicia, au scos la iveală numeroase fragmente de amfore produse în regiunile Mediteranei, Egee și Mării Negre. Aceste descoperiri, care acoperă diverse secole, atestă activitățile comerciale extinse ale orașului. Săpăturile efectuate la Băile Romane și la piața de măsline au oferit informații valoroase despre comerțul maritim din Tarsus. Printre amforele recuperate din aceste două situri au fost identificate anumite grupuri de amfore care probabil au fost produse în zona Mării Negre și teritoriile înconjurătoare. Acestea includ amfore de tip Sinope, Shelov Type D și Zeest 80, toate descoperite din straturi amestecate de umplutură. Prin urmare, amforele discutate în această lucrare sunt datate prin analogie. Dintre acestea, cele de tip Shelov D și Zeest 80 sunt datate în prima jumătate a secolului al III-lea d.Hr., în timp ce exemplarele sinopeane sunt atribuite secolelor al V-lea și al VI-lea d.Hr. Aceasta este prima publicație despre amforele din Tarsus care prezintă grupurile de amfore de tip Shelov D și Zeest 80. Este de remarcat faptul că aceste forme nu au fost documentate anterior în nicio publicație referitoare la amforele ciliciene. Prezența acestor două grupuri de amfore în această parte a regiunii Mediteranei de est aruncă o lumină nouă asupra distribuției geografice a acestor forme.

The Cilicia region, which encompassed a substantial portion of Turkey's contemporary Mediterranean coastline, was bounded by Korakesion (Coracesium) in the west and Alexandria Kat'Isson in the east¹. Situated within Plain Cilicia, Tarsus was one of the important port cities in the Eastern Mediterranean region during antiquity. Retaining its importance over the centuries, the city persisted in roughly the same location throughout its history. This, however, resulted in the destruction or reuse of earlier structural remnants by subsequent settlers, or even the construction of new settlements on top of the older ones. As a result, the archaeological works in Tarsus have not been conducted within the framework of a single plan and project, but instead have been carried out at different times and in different areas of the city. This paper focuses on the finds recovered from two of these areas that have gained prominence in recent years.

The first site is the Roman Baths, located in the city centre of Tarsus. Although largely destroyed, it still is one of the few remains of antiquity that have survived to the present day in the city. Excavations were conducted in this area between 2004 and 2006, which revealed the changes that the structure and the city underwent over time².

The other site is represented by the remains of a reservoir, which was discovered during the construction of the olive market of Tarsus. Rescue excavations were carried out at the site between 2012 and 2014, and exposed a reservoir structure consisting of a dam complex, regulator, and three chambers, as well as the remains of a mosaic floor³.

Both sites yielded a substantial quantity of potsherds from fill layers that possessed dense artifact assemblages, including numerous fragments of amphorae produced

¹ Strabon XIV, III, 1.

² Adak Adibelli 2007.

³ Dunbabin *et alii* 2019, p. 329–330.

across different centuries in the Mediterranean, Aegean, and Black Sea regions⁴. Besides the ones from the Black Sea, there were also some that were suggested to be from Propontis and its vicinity. The purpose of this paper is to categorize these amphorae, and to identify and date their sub-variants/groups. A number of the amphorae examined here are of particular significance both for their associated form groups and for Tarsus. This is the first time that amphorae classified in the literature as Shelov Type D and Zeest 80 have been discovered in Tarsus. Therefore, the two groups discussed here provide new insights about the city as well as the region.

Shelov Type D Amphora

A group of amphorae produced in the Heraclea Pontica region was classified by Shelov as Type D, E, and F based on variations in body proportions and base forms⁵. These were used in the exportation of Pontic wine⁶. In the scientific literature, especially the Russian one, Shelov Type D is also referred to as the Tanais-type. Amphorae of this type were chiefly discovered in Kiev and its immediate vicinity. It was established that Shelov Type D amphorae emerged around the mid-3rd century AD, or slightly earlier⁷. Amphorae of this type were also commonly found in Olbia and dated from the 3rd century to the beginning of the 4th century AD⁸.

A fragment of an amphora discovered during one of the excavations at the olive market was identified as a Shelov Type D (Fig. 1). It features an out-curved rounded rim, a narrow cylindrical neck, and a handle attached just below the rim. The handle exhibits an oval cross-section. The fabric of the fragment is light in colour. A comparable amphora in terms of form was unearthed in Besedovka and dated to the 3rd century AD⁹. Considering the historical development of Tarsus, the one in Fig. 1 must date to the first half of the 3rd century AD.

Zeest 80 Amphora¹⁰

In his book “Keramicheskaya Tara Bospora”, I. B. Zeest identified amphora No. 80 as “Zeest 80” and divided the amphorae of this group into two variants¹¹. Scorpan examined the same amphora group from chronological and morphological perspectives¹². Opaît also analysed this

group in terms of chronology and form development and divided it into four types¹³.

Zeest 80 amphorae have everted triangular rims. They usually feature two deep grooves along the rim. The neck is cylindrical, and the oval-sectioned handles are attached from the upper portion of the neck to the shoulder. The ovoid body is covered with horizontal grooving from its upper section almost to the toe, excluding the plain middle section. The toe is solid and conical in shape¹⁴.

The production centre of the Zeest 80 amphorae has yet to be identified. Although the examples of this amphora group were abundant in the western Black Sea region, the characteristics of the clay of the amphorae known to have been produced in this area do not correspond to those of Zeest 80. Due to the clay structure of the Zeest 80 amphorae, it has been suggested that the production centre for this group was located in Propontis or Thessaly¹⁵. Another potential centre, based on the seals and inscriptions on the amphorae of this group, was proposed to be the Monastery of St. Agapios, which is known to be located between Lake Apolyont/Apolloniatis (Uluabat Lake) and the Sea of Propontis¹⁶.

It was determined that the form development of Zeest 80 amphorae began in the 2nd century AD and continued until the 6th century AD¹⁷. It has been suggested that the commodities carried in Zeest 80 amphorae were likely fish-sauce, wine, olive oil, and grain or grain products¹⁸. While most of the examples were concentrated around the Black Sea and its vicinity, they were also found in the Aegean and the Mediterranean regions¹⁹. However, from the mid-4th century AD onwards, the distribution of this form was confined to the areas of Constantinople, the Black Sea, and the Lower Danube²⁰.

The amphora fragment (Fig. 2) discovered at the Roman Baths exhibits part of the rim and neck. The rim is everted and triangular in shape. There is a deep groove at the rim-to-neck transition. In terms of its form characteristics, this fragment is close to Type 2 in Opaît's classification. According to Opaît, Type 2 had 6 variants²¹. The Zeest 80 amphora from the Roman Baths of Tarsus resembles, in terms of form, the examples of the 6th variant of Type 2 that were dated to the middle and second half of the 3rd century AD. The distinctive feature of the 6th variant, the deep groove, is situated at the top edge of the triangular rim. On the fragment from Tarsus, this feature is located at the transition between the rim and neck. Similar examples from Alexandria exhibit a different number of grooves and were assigned to the 3rd century AD²².

⁴ Alkaç, Adak Adibelli 2024, p. 86; Adak Adibelli, Alkaç 2024, p. 369–385.

⁵ Shelov 1978, p. 16–21.

⁶ Opaît 2017, p. 593.

⁷ Opaît, Grigoraş 2022, p. 53.

⁸ Krapivina 2010, p. 71, Pl. 37, cat. no. 20–23; Pl. 39, cat. no. 4.

⁹ Magomedov 2010, p. 75, cat. no. 1, Pl. 40.

¹⁰ This type of amphora has also been referred to as Knossos 38, Mid Roman Amphora 5, and Type 60. Bezeczky 2013, p. 173.

¹¹ Zeest 1960, p. 114–115.

¹² Scorpan 1975, p. 275–276; Scorpan 1976, Pl. X.3; Scorpan 1977, p. 278, Fig. 13, 15.

¹³ Opaît 1987, p. 246–250.

¹⁴ Şenol 2000, p. 190.

¹⁵ Swan 2010, p. 114.

¹⁶ Kara 2023, p. 274.

¹⁷ Opaît, Grigoraş 2022, p. 53; Opaît 2023, p. 160.

¹⁸ Swan 2010, p. 112; Opaît 2017, p. 596; Şenol 2000, p. 191.

¹⁹ Akkaş 2020, p. 325–326.

²⁰ Swan 2010, p. 112.

²¹ Opaît 1987, p. 248, cat. no. 2a–b, Fig. 4; p. 257.

²² Şenol 2000, p. 310–311, cat. no. 50–52.

A specimen from the Athenian Agora was dated to the mid-3rd century AD²³. Considering the historical development of Tarsus, the amphora in Fig. 2 must be dated to the first half of the 3rd century AD.

Sinoean Amphorae

Sinope, a prominent wine-producing city in the Black Sea region, began producing amphorae around the mid-4th century BC²⁴, and continued to produce them into the Roman Imperial period in order to market its agricultural products. The production of Sinoean amphorae reached its peak between the 4th and the first half of the 6th centuries AD²⁵. They have been found across the Black Sea region, Greece, Anatolia, the Eastern Mediterranean, and Egypt²⁶.

The discovery of the amphora production workshop in Demirci has yielded important data on the form, fabric, and inclusions of Sinoean amphorae, thus enabling the establishment of their typological development²⁷. Typologically, the amphorae are classified into four main types: Groups A, B, C, and D²⁸. Among them, the amphorae classified as Type C Snp III are further divided into two subtypes in terms of form and size: C Snp III-1 and C Snp III-2²⁹. The amphorae of Type C Snp III have a double-stepped triangular out-curved rim, a tall cylindrical neck that widens towards the shoulder, two grooved and oval-sectioned handles attached from the lower neck to the shoulder, a conical shoulder, and a triangular body tapering to a pointed base³⁰. The amphorae of this form, with their elongated necks and bodies, and their pointed bases are also known in the literature as “carrot-shaped” amphorae³¹. The production of Type C amphorae is said to have occurred within a general timeframe spanning from the early 4th century AD to the late 5th or early 6th century AD³².

Approximately 50 Sinoean amphorae in total were recovered from the excavations at the Roman Baths, and about four from the excavations at the olive market. These are fragments of rim and neck, body and base. All the examples fall into subtype C Snp III-2 in Kassab Tezgör’s classification of the Sinoean amphorae³³. The rim and neck fragments from Tarsus’s both excavation sites feature out-curved double-stepped triangular rims, and cylindrical necks (Figs. 3–5). There was only one body and base fragment among the finds (Fig. 6). In addition to the examples from the Roman Baths and the olive market,

a complete specimen of this subtype was found during an excavation at Gözlükule Mound³⁴. Of the examples similar in form to the Tarsus specimens, those from Elaiussa Sebaste were dated between the 5th and 6th centuries AD³⁵, those from Kelenderis to the 5th century AD³⁶, and those housed in the İzmir Archaeological Museum to the 5th century AD³⁷.

Since there was a high demand for Sinoean wine, Sinoean amphorae were also produced in various other centres across the Black Sea region. This necessitates an analysis of the clay composition of the relevant amphorae before discussing their origins³⁸. Specimens from the Roman Baths and the olive market in Tarsus contained inclusions such as pyroxene, quartz, lime, and red minerals, which are consistent with those identified in amphorae produced in Sinope.

CONCLUSION

During the excavations at the Roman Baths and the olive market in Tarsus, a number of amphorae were found, which belonged to amphora groups suggested to have been produced in the Black Sea, Propontis, and Thessaly regions (see Graphic 1). These amphora groups are Sinope, Shelov Type D and Zeest 80. The amphorae discussed in this paper were recovered from fill layers and were not found in a context or layer tied to a specific period. Therefore, the proposed dates for these amphorae are based on analogous examples and the historical trajectory of Tarsus.

A Shelov Type D amphora was discovered during the excavations at the olive market (Fig. 1). It is a fragmentary example, exhibiting rim, neck, and one handle. Analogues of this amphora were dated to the 3rd century AD. Considering the historical trajectory of Tarsus, the image in Fig. 1 should likely be dated to the first half of the 3rd century AD.

A Zeest 80 amphora was found during an excavation at the Roman Baths (Fig. 2). This example is also fragmentary, consisting of rim and neck. Analogues of this form were dated to the 3rd century AD. Given the city’s historical development, it is also likely that the amphora in Fig. 2 should belong to the first half of the 3rd century AD.

Within the amphora groups, the Sinoean amphora is represented by the largest number of examples (54 pieces). The Sinope amphorae recovered from the abovementioned two excavation sites of Tarsus were identified as variants of Type C Snp III-2 (Figs. 3–6). The examples consist of rim, neck and base fragments. The inclusions of pyroxene, quartz, lime and red minerals in these amphorae indicate that they were produced in Sinope. The analogues of Type C Snp III-2 specimens analysed here generally belonged to the 5th and 6th centuries AD.

²³ Robinson 1959, Pl. 40, cat. no. 21330, K 115.

²⁴ Cankardeş Şenol 2006, p. 44.

²⁵ Sezgin *et alii* 2022, p. 169.

²⁶ Bezecky 2013, p. 176.

²⁷ Kassab Tezgör 2011, p. 200–264.

²⁸ Kassab Tezgör 2010, p. 124–136.

²⁹ Kassab Tezgör 2011, p. 198–200, Pl. II.

³⁰ Şenol 2018, p. 524, cat. no. 380, Fig. 445.

³¹ Kassab Tezgör, Tatlıcan 1996, p. 354.

³² Kızırlarslanoğlu 2022, p. 160.

³³ For amphorae of this type, see Kassab Tezgör 2020, p. 26.

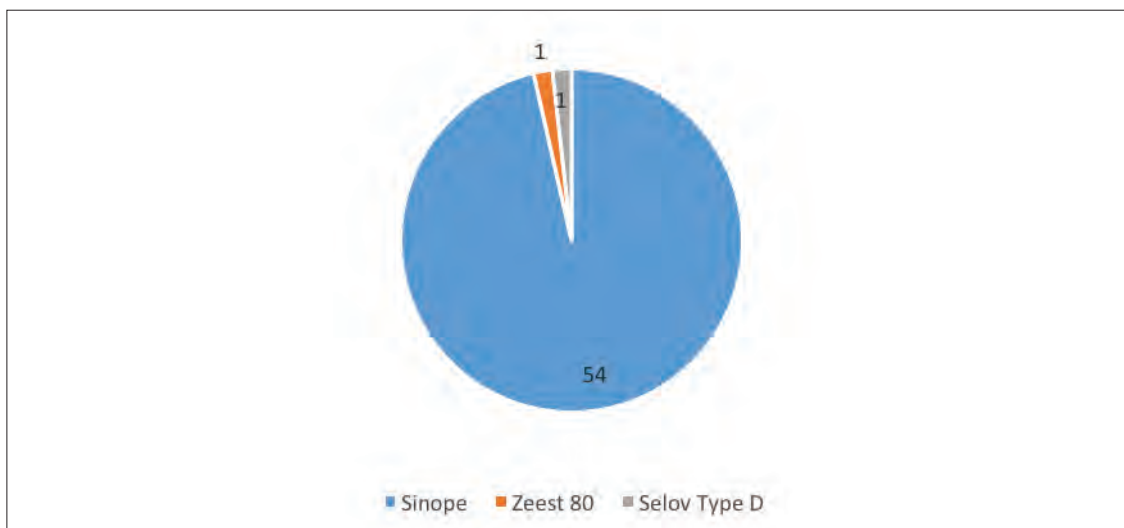
³⁴ Jones 1950, p. 278, cat. no. 831, Fig. 166.

³⁵ Kızırlarslanoğlu 2022, p. 163–164, cat. no. 8–9, Fig. 4.

³⁶ Tekocak, Zoroğlu 2013, p. 116, Fig. 8–9.

³⁷ Sezgin *et alii* 2022, p. 170, cat. no. 120–121.

³⁸ Opař 2010, p. 398–399.



Graphic 1. Production of amphorae groups in the Black Sea, Propontis, and Thessaly.

The Zeest 80 amphora from the Roman Baths and the Shelov Type D amphora from the olive market represent the first examples of their respective groups to be published from the Cilicia region. The presence of these two groups in this part of the Eastern Mediterranean provides new insights into the geographical distribution of these forms.

The Zeest 80 and Shelov Type D amphorae of Tarsus, given the historical trajectory of the city, date probably to the first half of the 3rd century AD. This is because the military campaign of Sassanid King Shapur I in AD 260 into the interior of Anatolia via the Mediterranean coast and Isauria created widespread chaos across the region³⁹. This campaign, described as a pillaging expedition, resulted in widespread devastation across the Cilician cities, including Tarsus⁴⁰.

Subsequent Isaurian revolts, which continued through much of the second half of the 4th century AD, particularly created big problems in the southern coast of Anatolia and Cyprus. These revolts spread westward to Lycia and southward to Palestina, blocking the maritime route between the southern Anatolia and Cyprus. Throughout this period, the cities of Cilicia, in particular, along with those of Pamphylia and Lycia, were adversely affected. The repercussions of this unfavourable situation can be tracked through data such as the reduced frequency of ceramic finds associated with overseas trade⁴¹. Archaeological finds indicate a revitalisation of trade across the southern coastal cities of Anatolia following the end of the Isaurian revolts in the late 4th and early 5th centuries AD. The Sinopean amphorae analysed in this paper are likely dated to the period following the end of this turbulent era.

Shaped by the dynamics of the Late Antique period, the effects of the new economic arrangements emerging

across the Mediterranean in the 5th century AD are also evident in Tarsus. The city's increasing trade activity from the mid-5th century AD onwards is reflected in the rising numbers of imported goods⁴². During the 5th and 6th centuries AD, Cilicia sent olive oil to Constantinople to meet the capital's *annona* requirements. Although the resurgence of the Isaurian revolts at the end of the 5th century AD threatened this supply, it was recorded that, following the suppression of the revolts, Eastern Roman Emperor Anastasius reduced the taxes paid by Cilician sailors to cross the Hellespont⁴³, thus likely stimulating trade activity in the region. It is possible to observe that the increasing number of imported red slip ware in the late 5th and early 6th centuries AD⁴⁴ parallels the increase in the quantity of Sinopean amphorae. In Late Antiquity, Constantinople, as the administrative and economic capital of the Eastern Roman Empire, also became a hub for commercial activities and interactions. Building on the view that goods from the Eastern Roman Empire's Mediterranean territories were stored in the capital and transported from there to the Black Sea⁴⁵, the large number of Cilician amphorae recovered from Black Sea settlements, particularly Sinope⁴⁶, demonstrates that the exchange of goods between the two regions was reciprocal. This also highlights the role of Constantinople in the supply and distribution of goods from the coasts of northern, southern and western Anatolia. It is therefore possible, especially in the 5th and 6th centuries AD, that Sinopean amphorae carried goods from the major production centres in the Black Sea to the Cilician ports, and thus to Tarsus, or that they were part of the cargo loaded from the warehouses in

³⁹ Dignas, Winter 2007, p. 23; Kurt 2018, p. 804.

⁴⁰ Şahin 2007, p. 135.

⁴¹ Alkaç 2024, p. 156–158.

⁴² Adak Adibelli 2017, p. 2–7, 18.

⁴³ Mitchell 2007, p. 120, 338.

⁴⁴ Adak Adibelli 2017, p. 2–7, 18.

⁴⁵ Opaiç *et alii* 2019, p. 83.

⁴⁶ Csiky 2017, p. 17–21; Tekkök *et alii* 2024, p. 60–65.

Constantinople on the return journey. Whatever the case, it is clear that in the 5th and 6th centuries AD, Sinopean products were sought-after goods in the Tarsus market.

Tarsus, with its almost uninterrupted history from the Neolithic period to the present day, is a unique blend of the ancient and the modern. Therefore, every piece of ceramic published from Tarsus will bring valuable insights into the archaeology of both the city and Cilicia.

CATALOGUE

Amphora: Shelov Type D (Pl. I/1)

Findspot: Olive Market

Rim Diameter: 6 cm

Height: 15 cm

Colour of the Surface: 7.5 YR 7/4 Pale Brown

Colour of the Clay: 7.5 YR 7/4 Pale Brown

Inclusions: lime, sand, and pyroxene

Date: First half of the 3rd century AD

Amphora: Zeest 80 – Tip 2–6. Variant (Pl. I/2)

Findspot: Roman Baths

Rim Diameter: 14 cm

Height: 12.5 cm

Colour of the Surface: 2.5 YR 6/8 light red

Colour of the Clay: 5 YR 5/8 reddish yellow

Inclusions: mica, limestone

Date: First half of the 3rd century AD

Amphora: C Snp III-2 (Pl. I/3)

Findspot: Roman Baths

Rim Diameter: 9 cm

Height: 6 cm

Colour of the Surface: 2.5 YR 6/6 light red

Colour of the Clay: 2.5 YR 6/4 light reddish brown

Inclusions: coarse-grained black pyroxene, limestone, grit, chamotte

Date: 5th–6th century AD

Amphora: C Snp III-2 (Pl. I/4)

Findspot: Roman Baths

Rim Diameter: 10 cm

Height: 7,5 cm

Colour of the Surface: 2.5 YR 6/6 light red

Colour of the Clay: 2.5 YR 6/4 light reddish brown

Inclusions: abundant coarse-grained black pyroxene, limestone, grit, chamotte

Date: 5th–6th century AD

Amphora: C Snp III-2 (Pl. I/5)

Findspot: Olive Market

Rim Diameter: 13 cm

Height: 8 cm

Colour of the Surface: 2.5 YR 6/6 light red

Colour of the Clay: 2.5 YR 6/4 light reddish brown

Inclusions: abundant coarse-grained black pyroxene, limestone, grit, chamotte

Date: 5th–6th century AD

Amphora: C Snp III-2 (Pl. I/6)

Findspot: Olive Market

Rim Diameter: 1 cm

Height: 11,2 cm

Colour of the Surface: 2.5 YR 6/6 light red

Colour of the Clay: 2.5 YR 6/4 light reddish brown

Inclusions: abundant coarse-grained black pyroxene, limestone, grit, chamotte

Date: 5th–6th century AD

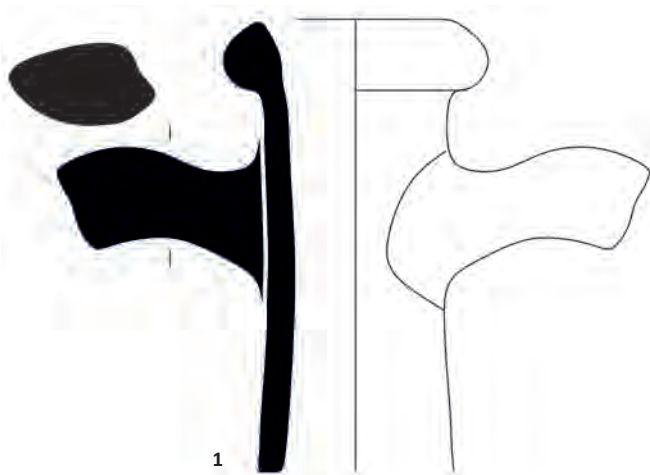
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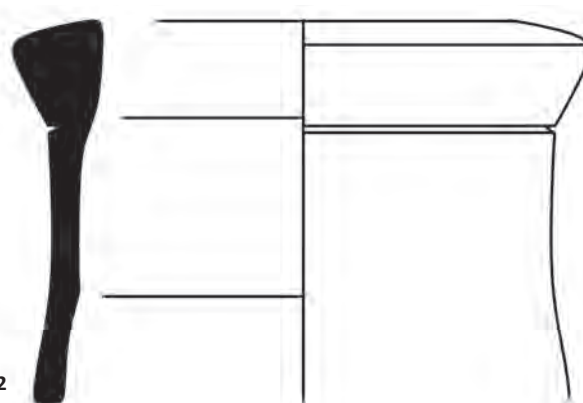
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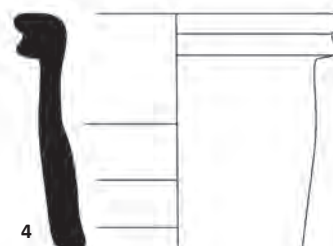
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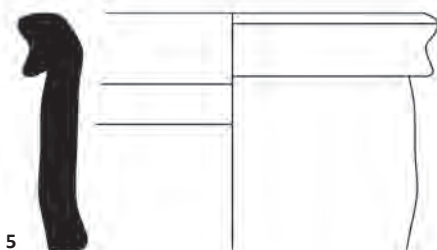
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Plate 1. Amphora types mentioned in the catalogue.

ABREVIERI / ABRÉVIATIONS / ABBREVIATIONS

AAC – Acta Archaeologica Carpatica, Kraków
ACMI – Anuarul Comisiunii Monumentelor Istorice, București
ACMIT – Anuarul Comisiunii Monumentelor Istorice, Secțiunea pentru Transilvania, Cluj
ActaArchHung – Acta Archaeologica Academiae Scientiarum Hungaricae, Budapest
ActaMM – Acta Moldaviae Meridionalis, Vaslui
ActaMN – Acta Musei Napocensis, Cluj
ActaMP – Acta Musei Porolissensis, Zalău
ActaMT – Acta Musei Tutovensis, Bârlad
AIGR – Anuarul Institutului Geologic al României, București
AJPA – American Journal of Physical Anthropology
Alt-Thüringen – Alt-Thüringen : Jahresschrift des Museums für Ur- und Frühgeschichte Thüringens
Aluta – Aluta. Revista Muzeului Național Secuiesc Sfântu Gheorghe
Anatolia Antiqua – Anatolia Antiqua. Revue internationale d'archéologie anatolienne. Institut Français d'Etudes anatoliennes d'Istanbul
Anatolica – Anatolica. The Netherlands Institute for the Near East in Leiden
AnB – Analele Banatului, Muzeul Banatului, Timișoara
AncNearEastSt – Ancient Near Eastern Studies, Leuven, Belgia
Angustia – Angustia. Arheologie, Etnografie, Sfântu Gheorghe
Anmed – Anmed. Anadolu Akdenizi Arkeoloji Haberleri, Antalya, Turcia
Antiquity – Antiquity. A Quarterly Review of Archaeology, University of York
AnUCraiova – Analele Universității din Craiova, Craiova (seria Istorie)
AO – Arhivele Olteniei
Apulum – Acta Musei Apulensis. Muzeul Național al Unirii, Alba Iulia
Archaeol Anthropol Sci – Archaeological and Anthropological Sciences
ArchBulg – Archaeologia Bulgarica, Sofia
ArchÉrt – Archaeológiai Értesítő, Budapest
ArchHung – Archaeologia Hungarica, Acta Archaeologica Musei Nationalis Hungarici, Budapest
Area – Area. Royal Geographical Society, London
Argesis – Argesis. Muzeul Județean Argeș. Pitești
ArhDIUkrajn – Arheologija i Danija Istorija Ukraini, Institut Arheologij NAN Ukrainj, Kijv
ArheologijaKiiv – Arheologija. Nacional'na akademija nauk Ukraini. Institut arheologii, Kiev
ArheologijaSSSR – Arheologija SSSR. Svod Archeologičeskih Istočnikov, Moscova
ArhMold – Arheologia Moldovei, Iași
ArhPrevMoldova – Arheologia Preventivă în Republica Moldova
BA – Biblioteca de Arheologie, București
BARIntSer – British Archaeological Reports. International Series, Oxford
BCH – Bulletin de Correspondance Hellénique, Athènes-Paris
BCMI – Buletinul Comisiunii Monumentelor Istorice
BerRGK – Bericht der Römisch-Germanischen Kommission des Deutschen Archäologischen Instituts, Frankfurt am Main
BibIstroPontica-A – Biblioteca Istro-Pontica. Seria Arheologie, Tulcea
BibIMemAnt – Bibliotheca Memoriae Antiquitatis, Piatra-Neamț
BibIThrac – Bibliotheca Thracologica, București
BMC – *Coins of the Roman Empire in the British Museum*, Londra; II, *Vespasian to Domitian*, 1930; IV, *Antoninus Pius to Commodus*, 1968; V, *Pertinax to Elagabalus*, 1950 (H. Mattingly)
BMI – Buletinul Monumentelor Istorice
BMJT – Buletinul Muzeului Județean Teleorman, Alexandria
BOR – Biserica Ortodoxă Română
BSA – British School at Athens, Athens
BSNR – Buletinul Societății Numismatice Române, București
BSPF – Bulletin de la Société Préhistorique Française, Paris
BSSC – Buletinul Societății de Științe din Cluj
CA – Cercetări Arheologice. Muzeul Național de Istorie a României, București
Carpica – Carpica. Complexul Muzeal „Iulian Antonescu” Bacău, Bacău

- CCA – Cronica Cercetărilor Arheologice din România, București
- CCDJ – Cultură și Civilizație la Dunărea de Jos, Călărași
- Cerclst – Cercetări Istorice, Muzeul de Istorie a Moldovei, Iași
- Cumidava – Cumidava. Culegere de studii și cercetări. Muzeul de Istorie Brașov
- Current Anthropology – Current Anthropology. University of California, Merced
- Dacia – Dacia (Nouvelle Série). Revue d'archéologie et d'histoire ancienne. Académie Roumaine. Institut d'archéologie « V. Pârvan », Bucarest
- Danubius – Danubius, Revista Muzeului de Istorie Galați
- DHA – Dialogues d'histoire ancienne, Institut des Sciences et Techniques de l'Antiquité
- DissArch – Dissertationes Archaeologicae. Eötvös Loránd University, Budapest
- Documenta Praehistorica – Documenta Praehistorica, University of Ljubljana, Faculty of Arts, Department of Archaeology, Ljubljana
- EphemNap – Ephemeris Napocensis. Academia Română, Institutul de Arheologie și Istoria Artei, Cluj-Napoca
- FolArchPoznan – Folia Praehistorica Posnaniensia, Instytut Archeologii, Poznań
- Germania – Germania. Anzeiger der Römisch-Germanischen Kommission des Deutschen Archäologischen Instituts, Frankfurt
- Hill¹ – P.V. Hill, *The dating and the arrangement of the undated coins of Rome, A.D. 98–148*, Londra, 1970
- Hill² – P.V. Hill, *The coinage of Septimius Severus and his family of the mint of Rome, A.D. 193–217*, Londra, 1964
- HOMO – HOMO. Journal of Comparative Human Biology, Stuttgart
- Howgego – C. J. Howgego, *Greek Imperial Countermarks. Studies in the provincial coinage of the Roman empire*, Londra, 1985
- Human Evolution – Human Evolution, International Institute for Humankind Studies and University of Florence
- IJO – International Journal of Osteoarchaeology
- Istros – Istros, Muzeul Brăilei, Brăila
- JAMÉ – A nyíregyházi Józsa András Múzeum Évkönyve
- JAnat – Journal of Anatomy
- JAS – Journal of Archaeological Science
- JDAI – Jahrbuch des Deutschen Archäologischen Instituts, Deutsches Archäologisches Institut, Berlin
- JFS – Journal of Forensic Sciences
- JHE – Journal of Human Evolution
- JRA – Journal of Roman Archaeology
- JRGZM – Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz, Mainz
- JRS – The Journal of Roman Studies
- Klio – Klio. Beiträge zur Alten Geschichte, Berlin
- KST – T. C. Kültür Bakanlığı, Eski Eserler ve Müzeler Genel Müdürlüğü, I. Kazı Sonuçları Toplantısı, Ankara, Mayıs 1979 [Republic of Turkey, General Directorate of Ancient Monuments and Museums, first Turkish annual meeting for the results of excavations, Ankara, May 1979] (1979–2020).
- LRBC, I – *Late Roman Bronze Coinage A.D. 394–498*, Londra, 1965; I, *The Bronze Coinage of the House of Constantine A.D. 324–346* (P.V. Hill, J.P.C. Kent)
- LRCW – Late Roman Coarse Wares, Cooking Wares and Amphorae in the Mediterranean. Archaeology and Archaeometry
- MAIASP – Materialy po Arheologii i Istorii Antičnogo i Srednevekovogo Pričernomor'ja (Материалы по Археологии и Истории Античного и Средневекового Причерноморья), Nižnevarovsk.
- Marisia – Marisia. Studii și materiale. Arheologie – Istorie – Etnografie, Târgu Mureș
- MCA – Materiale și Cercetări Arheologice, București
- MemAnt – Memoria Antiquitatis, Piatra Neamț
- MHÁS – Magyarország honfoglalás kori és kora Árpád-kori sírleletei, Miskolc–Budapest–Szeged–Szombathely
- Mousaios – Mousaios. Buletinul Științific al Muzeului Județean Buzău
- MPR – I. Barnea, Les monuments paléochrétiens de Roumanie, Sussidi allo studio delle antichità cristiane pubblicati per cura del Pontificio Istituto di archeologia Cristiana 6, Città del Vaticano, 1977
- Musaica – Musaica Archaeologica, Univerzita Komenského v Bratislave, Bratislava
- Olba – Mersin University Publications of the Research Center of Cilician Archaeology, Mersin, Turkey
- Oltenia – Oltenia. Studii și Comunicări, Craiova
- Pallas – Pallas. Revue d'Etudes Antiques, Toulouse
- PATABS – *Production and Trade of Amphorae in the Black Sea*
- PBF – Prähistorische Bronzefunde, Münster
- Peuce – Peuce. Studii și cercetări de istorie și arheologie, Institutul de Cercetări Eco-Muzeale, Tulcea
- Pontica – Pontica. Studii și materiale de istorie, arheologie și muzeografie, Muzeul de Istorie Națională și Arheologie Constanța

- PZ – Prähistorische Zeitschrift, Berlin-Mainz
- Quaternary International – Quaternary International. The Journal of the International Union for Quaternary Research
- RAASI – Revista de Arheologie, Antropologie și Studii Interdisciplinare, Institutul de Cercetări Bioarheologice și Etnoculturale, Republica Moldova
- Radiocarbon – An International Journal of Cosmogenic Isotope Research, Cambridge
- RAN – Revue archéologique de Narbonnaise, Montpellier
- RCRF – Rei Cretariae Romanae Fautorum
- Recueil – W.H. Waddington, E. Babelon, Th. Reinach, *Recueil général des monnaies grecques d'Asie Mineure*, I-IV, Paris, 1904–1912
- RevArh – Revista Arheologică, Academia de Științe a Moldovei, Chișinău
- RevMuz – Revista Muzeelor, București
- RGZM – Römisch-Germanisches Zentralmuseums Mainz, Mainz
- RIC – *The Roman Imperial Coinage*, Londra. II, *Vespasian to Hadrian*, 1926; III, *Antoninus Pius to Commodus*, 1930; IV.1, *Pertinax to Geta*, 1968 (H. Mattingly, E.A. Sydenham); IV.2, *Macrinus to Pupienus*, 1938; IV.3, *Gordian III – Uranius Antoninus*, 1949 (H. Mattingly, E.A. Sydenham, C.H.V. Sutherland); VII, *Constantine and Licinius A.D. 313–337*, 1966 (P.M. Bruun)
- RIC, II².1 – I.A. Carradice, T.V. Buttrey, *The Roman Imperial Coinage*, II.1, *Vespasian to Domitian*, Londra, 2007 (ediția a II-a, revizuită)
- RossArch – Rossijskaya Arheologiya. Institut arheologii Rossijskoj akademii nauk, Moskva
- RPC III – M. Amandry, A. Burnett, J. Mairat, *Roman Provincial Coinage*, III, *From Nerva to Hadrian (AD 96–138)*, Londra / Paris, 2015; versiune online https://rpc.ashmus.ox.ac.uk/search/browse?volume_id=3
- RPC IV.1 – V. Heuchert, *Roman Provincial Coinage*, IV.1, *From Antoninus Pius to Commodus (AD 138–192): Cyrenaica to Bithynia-Pontus*, online (2005); https://rpc.ashmus.ox.ac.uk/search/browse?volume_id=4
- RPC V.3 – A. Burnett et alii, *Roman Provincial Coinage*, V.3, *From Pertinax to Macrinus (AD 193–218): Lycia-Pamphylia to Egypt*, online (2024); https://rpc.ashmus.ox.ac.uk/search/browse?volume_id=10
- RPC VI – D. Calomino, A. Burnett, *Roman Provincial Coinage*, VI, *From Elagabalus to Maximinus Thrax (AD 218–238)*, online (2017, 2022); https://rpc.ashmus.ox.ac.uk/search/browse?volume_id=11
- RPC VII.2 – J. Mairat, M.S. Butcher et alii, *Roman Provincial Coinage*, VII.2, *From Gordian I to Gordian III (AD 238–244): all provinces except Asia*, Londra / Paris, 2022; versiune online https://rpc.ashmus.ox.ac.uk/search/browse?volume_id=14
- RPC VIII – J. Mairat et alii, *Roman Provincial Coinage*, VIII, *Philip I (AD 244–249)*, online (2020); https://rpc.ashmus.ox.ac.uk/search/browse?volume_id=15
- SA – Sovetskaja Arheologija, Akademija Nauk SSSR, Institut Arheologii, Moskva
- SAA – Studia Antiqua et Archaeologica, Iași
- SCIV(A) – Studii și Cercetări de Istorie Veche (și Arheologie), București
- SCN – Studii și Cercetări de Numismatică, București
- SEAT – Studien zur Eisenzeitlichen Archäologie Thrakiens, Rahden/Westphalia
- Simpozion Chișinău 2004 – *Simpozion de numismatică organizat cu ocazia comemorării Sfântului Ștefan cel Mare, Domn al Moldovei (1504–2004)*, Chișinău, 29 septembrie – 2 octombrie 2004. *Comunicări, studii și note*, București, 2007.
- ŚląskieSprawArch – Śląskie Sprawozdania Archeologiczne, Wrocław, Polonia
- SMMIM – Studii și Materiale de Muzeografie și Istorie Militară, București
- SNG-ANS, *Macedonia I – Sylloge Nummorum Graecorum. The Collection of the American Numismatic Society, Part 7, Macedonia I: Cities, Thracio-Macedonian tribes, Paeonian kings*, New York, 1987
- SNGCop 5 – *Sylloge Nummorum Graecorum. The Royal Collection of Coins and Medals, Danish Royal National Museum*, Copenhaga, 1942–1969 (serie reeditată); V, *Ionia, Caria and Lydia*, West Milford, 1982
- SP – Studii de Preistorie, București
- SprawArch – Sprawozdania Archeologiczne, Warsaw
- StArchBrno – Studia Archaeologica Brunensia, Masaryk University, Brno
- Starinar – Starinar. Arheološki institut Beograd
- StComPitești – Studii și Comunicări, Seria Istorie, Muzeul Județean Argeș, Pitești
- StMatTârguMureș – Studii și Materiale, Târgu Mureș
- StratumPlus – Stratum Plus, Școala Superioară de Antropologie, Chișinău, St Petersburg, București
- Studia Hercynia – Studia Hercynia. Journal of the Institut of Classical Archaeology, Univerzita Karlova, Cehia
- Studia Praehistorica – National Archaeological Institute with Museum of the Bulgarian Academy of Sciences
- Syria – Syria. Archéologie, art et histoire. Institut Français du Proche-Orient
- Terra Sebus – Terra Sebus. Acta Musei Sabesiensis, Anuarul Muzeului Municipal „Ioan Raica”, Sebeș
- Th-D – Thraco-Dacica, București

Transylvanian Review – Transylvanian Review. Centrul de Studii Transilvane, Cluj-Napoca

Tyrageia – Tyrageia. Anuarul Muzeului Național de Istorie a Moldovei, Chișinău

UPA – Universitätsforschungen zur Prähistorischen Archäologie, Bonn

VAH – Varia Archaeologica Hungarica V. Redigit Csanád Bálint. Publicationes Instituti Archaeologici Academiae Scientiarum Hungaricae, Budapest

Valachica – Valachica. Studii și cercetări de istorie și istoria culturii, Complexul Muzeal Național Curtea Domnească Târgoviște

Varia Anatolica – Varia Anatolica. L'Institut Français d'Études Anatoliennes, Istanbul

Vărbănov I – I. Vărbănov, *Greek imperial coins and their values (the local coinage of the Roman Empire)*, I, Dacia, Moesia Superior, Moesia Inferior, Burgas, 2005

Vărbănov II – I. Vărbănov, *Greek imperial coins*, II, Thrace (from Abdera to Pautalia), Burgas, 2005

WorldA – World Archaeology

ZAM – Zeitschrift für Archäologie des Mittelalters, Bonn

Ziridava – Ziridava. Studia Archaeologica, Arad