

LAMPS DISCOVERED IN PRE-ROMAN DACIA (2nd CENTURY BC – 1st CENTURY AD). NOTES ON THE ADOPTION OF AN INNOVATION*

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Abstract: The article presents Hellenistic and Roman lamps and those locally produced discovered in three of the largest Geto-Dacian settlements researched until now – Poiana, Răcătău (both in County Bacău) and Popești (County Giurgiu). In this context, I attempted to follow the reception of these products in the indigenous milieu, in the conditions in which under the impact of Hellenistic and Roman products, local workshops from these three settlements introduced numerous innovations and developed their own production of pottery influenced by Hellenistic and Roman models.

Rezumat: Articolul prezintă opățele elenistice și romane și produsele locale descoperite în trei dintre cele mai mari situri geto-dacice cercetate până acum - Poiana și Răcătău (jud. Bacău) și Popești (jud. Giurgiu). În acest context am încercat să urmăresc în ce fel aceste produse sunt receptate de mediul indigen în condițiile în care, sub impactul produselor ceramice elenistice și romane, atelierele locale din siturile menționate introduc numeroase inovații și dezvoltă o producție proprie de ceramică influențată de modelele elenistice și romane.

I. Preliminaries

Hellenistic and Roman pottery items (amphorae, tableware, lamps), of various functions, techniques and decoration, stand out among artefacts dated between the second century BC and the first century AD discovered on Geto-Dacian sites. One also notes the sensibility of indigenous to certain Hellenistic and Roman products, a sensibility expressed through the introduction of new techniques and the enrichment of local ceramic repertory with new shapes and types of decoration. The adoption of these innovations indicates a dynamic society, one prone to and capable of innovating according to rules and selection criteria that can be intuit if one tries to place particular cases in the general picture of the phenomenon. At the present state of research, a particular/specific analysis is unlikely due to the lack of relevant data that would allow one to analyze the adoption mechanism of each innovation. Data on the context of discovery of many imported items and their imitations is not available. Statistical data on the quantity of imported items and their imitations on particular sites are only available in few cases, and most of them are not up to date.¹

Studies in anthropology, economy, sociology, etc. on the spread and adoption of innovation as indicators of human behavioural change have pointed out same patterns that are used in explaining the spread and adoption of innovations in primitive/antique societies.²

One such model starts from the premise that innovation is the result of a complex process structured according to several distinct or overlapping phases – discovery, invention, development, investment, production and distribution, obsolesce - whose length in time varies according to the given circumstances.³

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¹ One can mention as exceptions the pottery discovered in the settlement Brad (County Bacău) (Ursachi 1995, pp. 148-225) and the pottery discovered on the site of Bordușani (County Ialomița) (Trohani 2005-2006; Trohani 2006).

² For example: S.I. Rotroff (Rotroff 2006) uses the model suggested by D.A. Sparrt (Sparrt 1989) in order to explain the introduction of moldmade bowls in the repertory of Athenian workshops. J. Kim explains the differences in the introduction of ironworking technology in Bronze Age societies in Denmark and Southern Korea defining innovation adoption as an investment which requires initial cost and risks (Kim 2001).

³ Sparrt 1989.

According to the other model, the adoption of certain innovations takes place after complex cost-benefit analyses performed on the basis of relevant data on the risks and profit and only when the benefits surpass the costs. Exceptional cases, when the investment surpasses the benefits, only take place when the adoption of the innovation is vital to those who adopt it.⁴

Finally, another model starts from the premise that individuals possess data and calculation possibilities that are not always relevant to the investment and profit, and individual experience and cost-benefit analyses are not determinant factors of human behavioural change.⁵

The innovation process has two components – individual trial-and-error learning and the biased cultural transmission of innovations, but individual trial-and-error learning based on extensive experience in itself does not generate dynamic cultural change. Dynamic cultural processes only take place when the innovations to be adopted are chosen as biased as possible⁶. The analysis of the data indicating the two components of the innovation process – trial-and-error learning and the biased transmission of cultural models – can lead to relevant observations on the process of innovation diffusion and adoption.⁷

The diffusion of innovations depends, first of all, on who are those who adopt them. Things are not imitated randomly and even trial-and-error learning largely depends on the subjectivity of the person who experiments. People imitate ideas, beliefs, practices and values that they come in contact with at certain points and that correspond to their own capacity and disposition to receive/learn; they copy ideas and practices from individuals with certain qualities or attributions that have nothing in common with the behaviour or ideas that are being copied, just because the individuals under discussion are prestigious; they will be always drawn to and will integrate ideas or attitudes that characterize the community they belong to even if their personal option will not be known to the other members of that community.⁸ And, according to Henrich, examples might continue.

I will attempt, over the subsequent pages, to follow the manner in which Hellenistic and Roman lamps identified in three of the largest researched Geto-Dacian sites – Poiana, Răcătău (County Bacău) and Popești (County Giurgiu) – were received by the indigenous milieu.

I selected the above mentioned examples for several reasons. First of all, the situation encountered on these sites is typical for the circulation of Hellenistic and Roman lamps in pre-Roman Dacia and for that of locally-produced lamps. Hellenistic and Roman terracotta lamps discovered over the years on researched Geto-Dacian sites are few in numbers⁹ and they come from different production centers; local lamps are not numerous either and, with the exception of a single item, they were modelled by hand. Then, I selected these three sites due to the quantity and quality of Hellenistic and Roman tableware discovered in them and because they are known as important production centers, as sensitive receptors of influences of Hellenistic and Roman pottery. The “local production” of lamps, illustrated by items discovered on these sites can be better understood if it is placed in this context. Last but not least, despite the fact that Hellenistic and Roman lamps discovered on these sites are not novel, the new observations that can be made on their typology, origin and dating, justify them being published again.

⁴ Kim 2001.

⁵ Henrich 2001.

⁶ Henrich 2001, p. 992.

⁷ *Ibidem*.

⁸ Henrich called these ways of transmission/adoption of innovations: “direct biases”, “prestige biases”, and “conformist transmission” respectively (Henrich 2001, p. 997).

⁹ One needs to note, besides the Hellenistic and Roman lamps included in the present presentation, the following discoveries: one Ephesian lamp found at Crăsani (Pârvan 1982, p. 130, fig. 175); a trilychnis (?) from Căndești (Bobi 1999, pp. 145, 276, pl. 81/6; 82/4); a bilychnis Loeschcke III from Buridava (Berciu 1981, pp. 28, 86-87, pl. 51/1a-b); one lamp Ivány type VII from Bucharest (Glodariu 1976, p. 165); two lamps Loeschcke IB from Buridava and Sprâncenata (Berciu 1981, p. 30, pl. 69 /1a-b; Preda 1986, p. 61, 96, pl. 47/3); one lamp Loeschcke VIII from Tilișca (Lupu 1989, p. 80, pl. 26/2); two lamps Loeschcke X from Ardeu (Ferencz 2006, pp. 373-374, fig. 3) and Grădiștea Muncelului (Glodariu 1976, p. 169, pl. 48/C25/c); and one lamp Loeschcke XII from Grădiștea Muncelului (Glodariu 1976, p. 169, pl. 26/C25/b).

II. Imported lamps and local products identified on the sites in Poiana, Popești and Răcățäu.

A. Heart-shaped Lamps

Item *no.1 (pl.1.)*, discovered in Popești, belongs to the group of Minor Asian lamps known as heart-shaped lamps (*herzblattlampen*)¹⁰ and is characterized by a double-convex profile, a bottom slightly concave on the outside, a narrow base-ring and a decoration less usual for this type of lamps. The upper part of the body is decorated with vegetal motifs on the shoulder, a mask on the nozzle, and an erotic scene on the central part. The monogram  was impressed on the base of the lamp, after it was removed from the mould, probably through a double impression, due to the fact that the letters overlap.

Heart-shaped lamps were produced in workshops in Asia Minor, the most researched being the production from Pergamon.¹¹ The earliest such items appeared in Pergamon in the end of the second century BC and they showed up, in a local, “Minor Asian” variant, until the first century BC¹² They have been discovered in Prienne,¹³ in Delos, where they have been dated to the final quarter of the second century BC – mid first century BC,¹⁴ and in the tumulus in Kordon Köyü/Salihli (Manisa), where they are mainly dated between 125 and 100 BC¹⁵ It is also possible that a lamp discovered in a Hellenistic tomb in Tomis, dated to the second century BC,¹⁶ belongs to the same group. The closest analogy for the lamp in Popești, according to shape, could be item Q31 identified in Pergamon.¹⁷ The monogram , which could be read as *MI*, seems unique, since it does not feature in the bibliography accessible for this article – neither in that dedicated to lamps, nor that focusing on moldmade bowls.¹⁸ Stamps and other graphical signs do not feature on heart-shaped lamps identified in Delos or on those discovered in Pergamon.¹⁹

The central decoration of the item – the *symplegma* – is unusual for heart-shaped lamps and it rarely appears on Hellenistic lamps. Still, it is far from unusual for the workshops in Pergamon known for their appliqué vessels produced between the middle of the second century BC and sometime in the beginning of the imperial period.²⁰ Many of the small plaques applied on these vessels were decorated with erotic scenes. Close analogies for the scene on lamp *no. 1* might be those on fragments E 44-E 46 discovered in Pergamon²¹ or on fragment no. 115 discovered in Delos.²² The type of mask depicted on the lamp in Popești is also specific to lamps discovered in Pergamon or to those considered as being produced there. A close analogy might be the mask depicted on item Q51 identified in Pergamon.²³

One cannot state with certainty if the lamp in Popești comes from Pergamian workshops or from ones in Asia Minor fallen under the influence of Pergamon. In any case, its connection to the Minor Asian area, proven by the typology of the item and its stylistic link to appliqué vessels, is obvious. Taking into consideration the above mentioned elements, and the fact that the edifice in Popești, among the ruins of which the item has been discovered, was dated to the period between the middle of the second century BC and the first century

¹⁰ Schäfer 1968, pp. 130-143, taf. 56-67.

¹¹ Schäfer 1968, pp. 130-131, 143; most probably, the workshops in Pergamon initiated the production of “Herzblattlampen” (Giuliani 2008, p. 93).

¹² Schäfer 1968, pp. 131, 135, 139, 140, 141, 142.

¹³ Schäfer 1968, p. 151.

¹⁴ Bruneau 1965, pp. 90-91.

¹⁵ Aydın 2007, no. 10, 40-41, 44-45, 48, 50, pp. 13-14, pl. 19-20, 22-23.

¹⁶ Bucovală 1968, 50/a, p. 83.

¹⁷ Schäfer 1968, Q31, taf. 30.

¹⁸ The following specialized studies and articles mention the moldmade bowls I consulted: Courby 1922; Crowfoot, Crowfoot, Kenyon 1957, pp. 272-280; Edwards 1975, pp. 151-188, pl. 65-83; Laumonier 1977; Siebert 1978; Rotroff 1982; Domăneanțu 2000; Guldager Bilde 2010, pp. 269-288, pl. 168-195; Aydın 2007, no. 21-27, 55-56, 60-61, 65-66, 81 pp. 12-13.

¹⁹ Bruneau 1965, p. 89-92; Schäfer 1968, p. 134-135, 138-139, 140-141, 142-143.

²⁰ Schäfer 1968, p. 93.

²¹ Schäfer 1968, E 44-46, taf. 30.

²² Bruneau 1991, no. 65(115), p. 636.

²³ Schäfer 1968, Q51, taf. 64.

BC,²⁴ it is possible that the item ended up in the Geto-Dacian settlement sometime after the middle of the second century BC. This possibility may be also supported by the fact that other items certainly produced in Pergamon - appliqué vessels, west slope pottery – discovered on Geto-Dacian sites contemporary to the one in Popești are dated to the second half of the same century and during the first century BC²⁵

1. *Popești*: 1957, W4, c. 17; MNIR, inv. no. 283747; D. of ring 4 cm; H. 4.5 cm; pl. 1/1a-1c. Entire body; handle and nozzle missing. Base slightly concave on the outside; fine narrow base-ring; double-convex body, angular between the two halves; filling-hole placed close to the handle; traces of a horizontal handle; two horizontal angular lugs decorated with vegetal motives are placed on each side of the discus. Fine porous yellow (10YR 7/8) fabric with voids and mica; dull adherent brownish-yellow slip (10YR 6/8). Decoration: *Symplegmata* (female and male) over the entire central area of the discus; a row of ovules divided by tassels on the upper part of shoulder, and vegetal decoration on the bottom; bearded mask at the junction between discus and nozzle. Monogram  on the base; Ref: Vulpe 1959b, p. 313; Glodariu 1974, p. 217, pl. XXV, cat. 35/34.

B. Ephesian lamps

Lamps *no. 2-7 (pl.1)* were discovered in the settlement in Poiana and belong to the well-known category of “Ephesian lamps” (Broneer type XIX, Howland type 49 A). In the middle of the second century BC, the workshops in Ephesus and around the city introduced a new type of moulded lamps which spread in the end of the second century BC and during the subsequent century over the entire eastern-Mediterranean area – Athens,²⁶ Argos,²⁷ Corinth,²⁸ Pergamon,²⁹ Delos,³⁰ Sardis,³¹ Kordon Köyü/Salihli (Manisa),³² Notion,³³ etc. – on sites in northern Greece³⁴ – Pella, Thessaloniki – and in the Greek cities on the shores of the Pontus Euxinus – Olbia,³⁵ Chersonesos,³⁶ Tomis,³⁷ Callatis³⁸ – Delos playing an important role in their distribution.³⁹ Shortly after they appeared, certain types of Ephesian lamps were copied, more or less exact, those produced by Pergamian and Corinthian workshops being notorious examples in numerous local workshops.⁴⁰

All the items discovered in Poiana belong to the “flaring collar”⁴¹ type of Ephesian lamps, with double-conical body, triangular (*no. 2, 3*) or half-circular nozzle (*no. 4, 5*), and vertical handle. Item *no. 2* draws the attention since it has an angular basin, a shape less common for Ephesian lamps and which might be seen as an influence of the heart-shaped lamps.

The fabric of these items is either rough, porous, with (*no. 5*) or without (*no. 3*) white particles in its composition, or fine, soap-like and containing white particles (*no. 4*). The colour of the fabric and slip also vary; item *no. 2* is made of a grey fabric and covered in black slip, while items *no. 3-5* are made of a reddish yellow fabric (10YR7/6; 7.5YR 7/6, 8/6) covered in reddish yellow (*no. 3, 5, 10YR 6/8, 7.5YR6/6*) or strong-brown slip (*no. 4, 7.5 YR5/8*).

²⁴ Initially, all the objects resulted from the research of the remains of the construction in sector W1-4 were dated to the second and first century BC (Vulpe 1959b, p. 316). Later on, the chronology of the settlement was revised. The founding moment of the oppida-type settlement, that includes the ruins of the construction identified in sections numbered W, was dated around the middle of the second century BC (Vulpe, Gheorghîță 1976, p. 169; Vulpe 1997, p. 167).

²⁵ Popescu 2010, pp. 37-52.

²⁶ Howland 1958, pp. 166-169.

²⁷ Koutoussaki 2008, pp. 117-121.

²⁸ Broneer 1930, XIX, pp. 66-70; Warner-Slane 1990, no. 11, p. 26, pl. 1.

²⁹ Schäfer 1968, pp. 145-151.

³⁰ Bruneau 1965, pp. 51-79.

³¹ Shear 1922, pp. 400-403, fig. 9-10.

³² Aydin 2007, p. 13, no. 7-9, 13-14, 39, 42-43, 46-47, 49, 62, 86, 88, 103, 105.

³³ Demangel, Laumonier 1925, p. 344, fig. 18.

³⁴ Giuliani 2008, p. 92.

³⁵ Højte 2010, pp. 435-436.

³⁶ Chrzanovschi, Zhuravlev 1998, no. 12, pp. 47-48.

³⁷ Iconomu 1967, no. 153, 156, 160, pp. 55-56, figs. 81-83; Bucovață 1968, no. 48f, p. 78; no. 49d, p. 81; no. 69, p. 112.

³⁸ Iconomu 1967, no. 147-148 p. 53, no. 164, p. 56.

³⁹ Giuliani 2008, pp. 91-92.

⁴⁰ Giuliani 2008, pp. 93-94.

⁴¹ Giuliani 2008, p. 92.

The decoration placed on the shoulder consists of geometric motifs: half-ovos and tassels (*no.* 2–6) or double rows of half-ovos and dots (*no.* 7), while the decoration on the nozzle consists of floral (*no.* 3, 4, 7) or geometric motifs (*no.* 2, 5).

A signature - *AMEA/AHOYC* - features on the base of a single lamp (*no.* 7), as described in its bibliographical description. I found no similar signature in the bibliography consulted for this article.

The “flaring collar” type is one of the most spread and adopted types of Ephesian lamps in the Eastern Mediterranean and it features in Ephesus in contexts dated to the end of the second century BC at the earliest. During the first century BC it was adopted, with small differences in shape and decoration, by many Hellenistic workshops.⁴²

Unfortunately, no conclusive data on the context of discovery of the items in Poiana are available. According to the aspect of their fabric and their typological characteristics, these items come from various workshops, most probably in Asia Minor, reaching Poiana sometime during the first century BC.

2. *Poiana*: P 1951, S. KF, without inv. no.; L. 12.2 cm; pl. 1/2a-2b. Entire “late Hellenistic lamp, made of fine grey fabric, covered with black slip and decorated with ovules of different shapes which surround (encompass) the filling-hole. The shape of this lamp is almost rectangular with long angular nozzle, oval wick-hole, and banded grooved handle” (Vulpe, Teodor 2003, p. 322, cat. 792); *Ref.* Vulpe 1952, p. 202, fig. 18; Glodariu 1974, cat. 34/64, p. 215, pl. XL; Vulpe, Teodor 2003, p. 322, cat. 792, fig. 232/3. *Note*: drawing after Vulpe, Teodor 2003, fig. 232/3; image after Glodariu 1974, pl. XL/ 34/64.

3. *Poiana*: P 85, N, c. 22, -0.40 m; MT. inv. no. 2317; D. of discus 3.2 cm, D. of body 5.5 cm, L. 9.1 cm, H. 2.9 cm; pl. 1/3a-3b. Entire. Base almost flat, slightly concave on the outside, fine narrow base-ring; double-convex body, rounded between the two halves, the lower half taller and slightly rounder than the upper half; concave discus separated from shoulder by one high rim and one groove; little filling hole placed in the middle of discus; short triangular nozzle; banded grooved vertical handle. Porous hard yellow fabric (*10YR 7/6*), fine dull brownish yellow slip (*10YR 6/8*) covered inside and on the outside of the upper half, trickled on the base. Decoration: a row of ovules on the shoulder; rosette with four petals at the junction between body and nozzle. *Ref.*: Teodor 1994, cat. 90, p. 97, fig. 10/1; Vulpe, Teodor 2003, p. 331, cat. 882, fig. 242/1. *Note*: drawing after Vulpe, Teodor 2003, fig. 242/1.

4. *Poiana*: P 30 R, - 0.90 m. MT. inv. no. 1723; D. of discus 4.3 cm, D. of body 6.4 cm, L. 9.8 cm, H. 3.4 cm; pl.1/4a-4b. Almost entire (handle missing). Restored. Base almost flat, slightly concave on the outside, fine narrow base-ring; double-convex body, rounded between the two halves, the bottom half taller and slightly rounder than the upper half. Concave discus separated from the shoulder by a high rim and two grooves; little filling hole placed in the middle of discus; short half-circular nozzle, large wick hole; vertical handle, probably banded. Fine micaceous fabric with white dots inside, reddish yellow 7.5YR 7/6; fine dull slip, poorly preserved, strong-brown, 7.5YR 5/8. Decoration: a row of ovules separated by tassels on the shoulder; floral motive at the junction between body and nozzle. *Ref.*: Teodor 1994, cat. 92, p. 97, fig. 10/4; Vulpe, Teodor 2003, p. 331, cat. 884, fig. 242/4. *Note*: drawing after Vulpe, Teodor 2003, fig. 242/4.

5. *Poiana*: P 87 N1, c. 4.00 m. 6.00 -1.00 m; MT. inv. no. 2319; H. 3 cm; D. of body 6.1 cm; pl.1/5a-5b. Almost entire (handle missing). Base almost flat, slightly concave on the outside, fine narrow base-ring; double-convex body rounded between the two halves, the lower half taller and slightly rounder than the upper half; concave discus separated from the shoulder by a high rim and a groove; little filling hole placed in the middle of discus; short half-circular nozzle, large wick hole; traces from vertical handle. Hard, porous fabric with white dots and voids inside, reddish yellow, 7.5YR 8/6; fine dull adherent slip, poorly preserved on the outside of base, reddish yellow 7.5YR 6/6. Decoration: S-shapes separated by tassels on the shoulder; at the junction between body and nozzle, ovo placed on each side of a tassel, on ovo in front of them. *Ref.*: Vulpe, Teodor 2003, p. 331, cat. 885, fig. 242/5. *Note*: drawing after Vulpe, Teodor, 2003, fig. 242/5.

6. *Poiana*: M.T. inv. no. 2321; D. of body 5.9 cm, H. 2.5 cm; pl.1/6; “fragmentary lamp, with two concentric circles on discus and ovos on the shoulder” (Vulpe, Teodor 2003, p. 331, cat.888). *Ref.*: Teodor 1994, cat. 96, p. 98, fig. 10/3; Vulpe, Teodor 2003, p. 331, cat.888, fig. 242/3. *Note*: drawing after Vulpe, Teodor 2003, fig. 242/3.

7. *Poiana*: MNA inv. no 6339. pl. 1/7a-7b. “fragment...; inscription on the base: *AMEA/AHOYC*; Hellenistic” (Glodariu 1974, p. 215, cat. 34/62). *Ref.*: Glodariu 1974, p. 215, cat. 34/62, pl. XXV, XL. *Note*: drawing after Glodariu 1974, p. XXV, XL/34/62.

C. Early Roman Lamps

Early Roman lamps identified in the settlements in Răcătău and Poiana are heterogeneous in type: one lamp (*no.* 8) with round basin and half-volutes on the nozzle, the discus decorated with the representation of a “bird on a branch” and the fragment of a discus (*no.* 9) with the same type of decoration belong to type

⁴² Giuliani 2008, pp. 92-94.

Loeschcke IV⁴³; one lamp (*no. 10*) with round discus and short nozzle, decorated with the depiction of a shell, belongs to type Loeschcke VIII;⁴⁴ a rectangular lamp (*no. 11*) with seven nozzles placed on three sides belongs to type Deneauve Vb;⁴⁵ and a lamp (*no. 12*) for which I was unable to find perfect analogies but which seems rather close to Sagalassos lamps that were produced starting from the first century BC.⁴⁶

These lamps are well-known from the end of the first century BC and were discovered on numerous Mediterranean and Pontic sites.⁴⁷ The items discovered in Poiana and Răcătău reached these settlements probably sometime during the first century AD.

8. *Poiana*: MNA inv. no. II 6334; pl. 2/8; “red, with semi-volutes on the nozzle; second half of the 1st century AD”. (Glodariu, 1974, cat. 34/65, p. 215-216). *Ref*: Glodariu 1974, cat. 34/65, p. 215-216, pl. XL/34/65. *Note*: image after Glodariu 1974, pl. XL/34/65.

9. *Poiana*: 1950, S. L. D. pl. 2/9. “moulded discus, fine red fabric. Relief decoration depicting a pigeon on a branch” (Vulpe, Teodor 2003, p. 331, 242/6). *Ref*: Teodor 1994, cat. 94, p. 98, fig. 10/6. Vulpe, Teodor 2003, cat. 886, p. 33, fig. 242/6. *Note*: drawing after Vulpe, Teodor 2003, fig. 242/6.

10. *Poiana*: MT inv. no. 2318, D. of base 6.4 cm, H. 2.7 cm; pl. 2/10. “lamp with rounded body and concave discus delimited by two grooves; shell on discus. Short nozzle, banded handle, rounded base with two concentric grooves; Δ engraved on base. Fine orange fabric, flaky slip” (Vulpe, Teodor 2003, p. 331, cat. 883). *Ref*: Teodor 1994, cat. 91, p. 97, fig. 10/2. Vulpe, Teodor 2003, cat. 883, p. 331, fig. 242/2. *Note*: drawing after Vulpe, Teodor 2003, fig. 242/2.

11. *Răcătău*: MB, inv. no. 31789; L. 19.5, w. 17.5 cm; pl. 2/11. Almost entire (one nozzle and 1/2 of the handle missing; restored. Rectangular body, seven rounded nozzles placed around the discus; rectangular discus; crescent vertical handle; filling hole placed on the middle of discus, air hole close to handle; porous fabric with white dots and voids inside, yellow 10YR 7/6; shiny flaky slip, brownish yellow, 10YR6/8. Decoration: “panneau” on the discus. *Ref*: Căpitanu 1992, p. 140, 189, figs. 41-42; I Daci, cat. 642.

12. *Poiana*: MT, inv. no. 2320; D. of discus 3.2 cm, D. of base 5.7, H. 2.4. pl. 2/12a-12b. Entire body. Handle and 1/2 of the nozzle missing; double-convex body, concave discus separated from the body by a groove; central filling hole; almost flat base, slightly concave on the outside, fine base-ring; traces of vertical handle; porous fabric with white dots and voids inside, yellow, 10YR 7/6; fine flaky slip, brownish yellow, 10YR6/8. *Ref*: Teodor 1994, cat. 95, p. 98, fig. 10/8; Vulpe, Teodor 2003, p. 331, cat. 887, fig. 242/8. *Note*: drawing after Vulpe, Teodor 2003, fig. 242/8.

D. Local products

Mouldmade Lamps

The only mouldmade lamp noted so far in pre-Roman Dacia was found in the settlement of Răcătău.⁴⁸ Its fabric, unique shape, and the two grooved thongs framing the nozzle, with analogies on handmade local pottery from the same settlement, suggest that this lamp was produced in a local workshop. The available data only allow for its dating to the first century BC – the beginning of the second century AD.

13. *Răcătău*; MB; D. of base 12 cm; L. 15.2 cm; H. 5.4 cm. pl. 2/13a-13b. Entire. Bi-truncated body rounded between the two halves; concave discus separated from the body by a groove; filling hole on the middle of discus; tubular short nozzle, with beveled horizontal wick hole; banded handle, heightened. Decoration: two grooved thongs placed on the body on each side of nozzle; concentric grooved circle on discus. Hard fabric with white drops and voids inside, dark greyish green 10Y4/1; fine lustrous slip, dark greyish green 10Y 3/1.

Handmade Lamps

Most local lamps identified in the settlements in Poiana and Popești are handmade⁴⁹ and can be divided in two groups: open lamps (*no. 14-15*) and closed lamps (*no. 16-23*). They show more or less obvious similarities to original contemporary lamps: item *no. 19* discovered in Poiana might be imitating “flaring collar” Ephesian lamps, lamp *no. 18* might be seen as an untalented attempt to create a ship-shaped lamp with several openings for wicks, while item *no. 23* is an almost successful attempt to replicate in clay a bronze chandelier with three arms.

⁴³ Loeschcke 1919, pp. 225-228, pl. III/531, XIV/526.

⁴⁴ Loeschcke 1919, pp. 237-254.

⁴⁵ Deneauve 1969, p. 147, pl. 57/553.

⁴⁶ Lafi 2003, p. 16, Taf. 226-227.

⁴⁷ Deneauve 1969, no. 553, p. 147, pl. 57; Bruneau 1965, p. 116, no. 4592 – 4608; Broneer 1930, pp. 78-79, no. 459, pl. X; Chrzanovschi, Zhuravlev 1998, no. 19-20, pp. 61-62; Iconomu 1967, no. 169-174, p. 12, figs. 21-23, 84-87.

⁴⁸ Information and image offered by Mr. Viorel Căpitanu, leader of the archaeological research site, whom I thank for his kindness.

⁴⁹ From the verbal communication with the leader of the research campaign, Mr. Viorel Căpitanu, I know that a few fragments of handmade lamps were also discovered in the settlement in Răcătău besides the mouldmade lamp included in the present catalogue.

All items are modelled in a coarse, porous, brown-black fabric, with the exception of item *no. 19* which is made of a slightly finer, reddish-yellow fabric, containing fewer impurities.

Despite the fact that data on the context of discovery of the items in Poiana are noted with the mention “passim”, they were dated to the second–first centuries BC⁵⁰ or the first century BC – first century AD.⁵¹ Taking into consideration the conditions of their discovery, one can only date them to vague chronological intervals, since they might have been made anytime during the interval between the middle of the second century BC and the beginning of the second century AD. The lamps in the settlement of Popești can also be dated to the interval between the middle of the second century BC. and the beginning of the first century AD.

Handmade lamps, though not very numerous, have been signalled on other Geto-Dacian sites as well, not always together with original lamps⁵² and in the North-Pontic Greek cities.⁵³

14. Poiana: 1950, S. K; M.T. inv. no. 6335; L. 11.5 cm, H. 4.1 cm; pl. 2/14. “oval handmade lamp, porous fabric. Straight and short walls, and handle shaped like a ribbon curved to the right” (Vulpe, Teodor 2003, cat. 454, p. 297). *Ref:* Vulpe, Teodor 2003, cat. 454, p. 297, fig. 192/5. *Note:* drawing by Vulpe, Teodor 2003, fig. 192/5.

15. Poiana: passim; M.T., inv. no. 6331; L. 15 cm; H. 3 cm; pl. 2/15a-15b. Entire. Open oval body; rounded straight rim; straight walls; flat base; massive banded handle, clasped on rim and base. Roughly sandy fabric, brown, 7.5YR 4/3. *Ref:* Vulpe, Teodor 2003, cat. 455, p. 298, fig. 192/6. *Note:* drawing after Vulpe, Teodor 2003, fig. 192/6.

16. Poiana: passim; M.T. inv. no. 654; L. 11 cm; H. 4.5 cm; pl. 3/16. “handmade lamp, porous fabric, imitation after a Greek lamp. Wick hole and filling hole connected by a large channel. Vertical handle, clasped on rim and base. Rough, dark grey surface.” (Vulpe, Teodor 2003, cat. 450, p. 297). *Ref:* Vulpe, Teodor 2003, cat. 450, p. 297, fig. 192/1. *Note:* drawing after Vulpe, Teodor 2003, fig. 192/1.

17. Poiana: passim; M.T. inv. no. 3973; L. 12.7 cm; H. 4.5 cm; pl. 3/17. “handmade oval lamp, made of rough fabric, with thick walls and handle as cone-shaped protuberance. The wick hole is suggested by a beak-shaped extension. The body, irregular in depth, is surrounded on top by a louver. The outer surface of the walls is decorated with incised lines suggesting a bird’s wings” (Vulpe, Teodor 2003, cat. 451, p. 297). *Ref:* Vulpe, Teodor 2003, cat. 451, p. 297, fig. 192/2. *Note:* drawing after Vulpe, Teodor 2003, fig. 192/2.

18. Poiana: M.T. 3974, passim; L. 17 cm; H. 3 cm; pl. 3/18. “fragmentary handmade lamp, made of friable black fabric, with vertical short walls. Inside, around the body, there is a perforated wall where a type of wick could be inserted” (Vulpe, Teodor 2003, cat. 452, p. 297). *Ref:* Vulpe, Teodor 2003, cat. 452, p. 297, fig. 192/3. *Note:* drawing after Vulpe, Teodor 2003, fig. 192/3; a similar item was discovered in 1927 (Vulpe, Vulpe 1933, p. 317, fig. 98/1).

19. Poiana: 1958 passim; M.T. inv. no. 5436 (3972?); L. 9 cm, H. 5 cm.; pl. 3/19a-19b. Entire. Bi-truncated body; rounded discus surrounded by a “flaring collar”; filling hole on the middle of discus; short nozzle with large wick hole; banded handle clasped on the “flaring collar” and on the body. Rough sandy fabric with white dots and voids inside, reddish yellow 7.5YR 7/6. *Ref:* Vulpe, Teodor 2003, cat. 453, p. 297, fig. 192/4. *Note:* drawing after Vulpe, Teodor 2003, fig. 192/4.

20. Popești, passim; MNIR, inv. no. 169746; L. 15.5 cm; w. 5 cm; H. 7 cm; pl. 3/20. Entire. Roughly moulded. Rounded body, flat base; beveled high base-ring; large filling hole placed at the junction between body and nozzle; long nozzle with large wick hole; vertical banded handle. Rough sandy fabric with pebbles inside, greenish black, 10 G 2.5/1. *Ref:* Vulpe 1960, p. 329 (?).

21. Popești: 1954; pl. 3/21. “lamp made of porous fabric, according to a primitive technique, belonging to the second Iron Age period” (Vulpe, 1955, p. 255, fig. 20). *Ref:* Vulpe 1955, p. 249, 255, fig. 20. *Note:* drawing after Vulpe 1955, p. 249, 255, fig. 20.

22. Popești: pl. 3/22. “Orange, hand made H. 4.8 cm, L. 11 cm” (Glodariu 1974, no. 41/5, p. 229). *Ref:* Glodariu 1974, no. 41/4, p. 229, pl. XLI/41/5; Turcu 1979, p. 230, pl. XXXVII/3. *Obs:* image after Glodariu 1974, pl. XLI/41/5.

23. Popești: 1955; pl. 3/23a-23b. Lamp with three nozzles; “a shard with graffito depicting a primitive motive which imitated a Greek-Italic chandelier; a similar item, made of bronze, was discovered at Crășani” (Vulpe 1957, p. 232-233). *Ref:* Vulpe 1957, p. 232-233, fig. 18/1. *Note:* drawing and image after Vulpe 1957, pp. 232-233, fig. 18/1.

III. Notes on the Hellenistic and Roman pottery and the local pottery production influenced by imported wares discovered on the three sites.

Examining the imported lamps and locally-produced ones in the context of Hellenistic and Roman pottery and in that of the production of local workshops in Poiana, Popești and Răcățău can lead to more or

⁵⁰ Vulpe, Teodor 2003, no. 450, p. 297.

⁵¹ Vulpe, Teodor 2003, no. 451-455, pp. 297-298.

⁵² For example in Bordușani (Trohani 2005-2006, p. 24, pl. 52, loc. no.10.5; I Daci, no. 471, 472); Radovanu (Turcu 1979, p. 212, pl. XXXVII/2)

⁵³ For example in Olbia (Højte 2010, p. 436).

less nuanced explanations of the reception of this innovation in the indigenous milieu.

From ca. the middle of the second century BC and until the beginning of the second century AD, imported Micro Asian or Pontic pottery items are current products in the settlement of **Poiana**.⁵⁴ They are stylistically varied, belonging to West Slope and Hadra pottery, Knidian Relief Ware, Appliqué Vessels, Moldmade Bowls, Grey Ware, Eastern Sigillata B, Pontic Sigillata, and Lead-glazed pottery.

West Slope decorated vessels (ca. 46 items) and Pontic Sigillata (ca. 132 items) are definitely predominant among these pottery classes. With the exception of the 13 Eastern Sigillata B plates and cups, the other classes do not contain more than five items each.

From a functional point of view, the imported pottery in the settlement of Poiana includes drinking vessels, most numerous being skyphoi Schäfer C21⁵⁵, with West Slope decoration (ca. 45 fragments) and Pontic Sigillata “globular cups” (ca. 81 entire or fragmentary pieces).⁵⁶ The other identified shapes are pouring vessels (lagynoi, lekythoi and Knidian Relief jugs) and vessels for food serving.

Among the shapes adopted,⁵⁷ best represented are imitations of kantharoi belonging to the first stage in the Pergamian production⁵⁸ and skyphoi Schäfer C 21, or kantharoi, local adaptations of original items. There are few imitations of Pontic Sigillata and Eastern Sigillata B drinking vessels, Moldmade Bowls, vessels with ram heads that imitate Knidian Relief, lagynoi, and spout jugs or lekanae.

One can also note a predilection for painted decoration, in dark colour against a light-coloured background – over a layer of slip or directly on the fabric of which the vessel was made of – a decoration seen both on taken over shapes – local variants of West Slope decoration skyphoi – and on autochthonous shapes – fruit bowls and terrines. Unlike the style of decoration that was taken over, the decorative motifs show, in most cases, the painted version of polished geometric motifs.

Barbotine decoration features in the settlement in Poiana together with Pontic Sigillata, many of the vessels of this type identified in the settlement being decorated in this manner. Several fragments of kantharoi and lagynoi decorated with combined decorations – painted or polished motifs and barbotine – indicate the fact that the local masters were receptive towards the new type of decoration, but took it over in combination with painted decoration.

Imported pottery items identified in the settlement in **Răcățâu** are dated to the period between the middle of the second century BC and the beginning of the second century AD and they correspond, from a functional perspective, to the types dedicated during the Hellenistic and Roman periods to domestic use: pouring vessels, drinking vessels and vessels for food serving.⁵⁹

From a stylistic point of view and regarding the proportion of ceramic classes, the situation is mostly similar to that in the settlement of Poiana. I have identified West Slope and Hadra pottery, Appliqué Vessels, Moldmade Bowls, Grey Ware vessels, Eastern Sigillata B and Pontic Sigillata. Among them, the most numerous are the vessels decorated in the West Slope style (46 items) and the Pontic Sigillata (93 items).

⁵⁴ Most of the material discovered in the settlement in Poiana is deposited in the Town Museum in Tecuci. There I have identified over 200 imported items (entire or fragmentary vessels), out of which I have published so far the Pontic sigillata (Popescu 2009, p. 11-44), Eastern sigillata B (Popescu 2008, no. 10-17, no. 20-21, 28-30) and the Pergamian wares from the Hellenistic period (Popescu 2010, no. 17, 22).

⁵⁵ Shape C 21 is included by Schäfer in the Firnikeramik group (Schäfer 1968, C21, taf. 5-6,) a ceramic category that I did not encounter while working with items so far. I use this name to indicate precisely the skyphoi shape, noting the decoration associated to it.

⁵⁶ Popescu 2009, p. 15.

⁵⁷ Data on local imitations of Hellenistic and Roman pottery are based on the observations made on the Geto-Dacian ceramic material discovered in the settlement of Poiana, located in the deposit of the Town Museum in Tecuci, and the material published in the monograph dedicated to the site (Vulpe, Teodor 2003, pp. 79-88, 300-321).

⁵⁸ Behr 1988, p. 118, Abb. 2/6.

⁵⁹ The imported pottery discovered in the settlement in Răcățâu is preserved in the deposits of the “Iulian Antonescu” Museum Complex in Bacău. There I have identified over 200 items, most of them in fragments. Among them, I have already published Eastern sigillata B (Popescu 2008, no. 7-9, 18, 22-27) and Pergamian vessels from the Hellenistic period (Popescu 2010, no. 3-4, 18-21).

Most of the identified items are drinking vessels. Skyphoi Schäfer C21 with West Slope decoration are the most numerous (43 items), but Pontic Sigillata “globular cups” were also found in great numbers (65 items). The other shapes and functional categories are poorly represented.

As for the imitations of imported Hellenistic and Roman vessels,⁶⁰ one notes the preponderance of kantharoi – imitations of imported shapes or hybrid forms. The items imitating the skyphoi Schäfer C 21 and those imitating shape Hayes X are the most numerous. One’s attention is always drawn in the case of the settlement in Răcătău by the imitations of “Knidian Relief Ware” with ram protomes and kantharoi belonging to Bosporan Sigillata,⁶¹ despite the fact that I have not identified imported items from this ceramic class. Other shapes that imitate Hellenistic and Roman products – moldmade bowls, lekanae, lekythoi, kraters and hydrae – come in few numbers.

The predominant decoration is that made with dark colours against a light-coloured background, both on vessels imitating imported shapes and on vessels belonging to the local tradition. Even when Schäfer C 21 skyphoi with West Slope decoration are imitated in their entirety – in their shape and decorative motifs – they are painted according to the Hadra manner. One must mention mouldmade vessels with relief decoration, other than the moldmade bowls, and the presence of vessels with decoration created through the combination of more decorative techniques – relief decoration created through moulding, applied decorative plaques and/or painting – such as the case of vessels with ram protomes.

Detailed data on the quantity of imported pottery discovered in the settlement in **Popești** are unavailable. As far as I was able to collect from the bibliographic data, the composition of the lot consisting of imported items discovered on the site is slightly different from those identified in the settlements in Poiana and Răcătău.⁶² The most numerous imported items seem to have been the vessels with Hadra decoration (lagynoi, cups); besides them, one can also mention some moldmade bowls, a few fragments belonging to plates with decorative stamps on the base and a few kantharoi fragments. As in the case of items discovered in the settlements in Poiana and Răcătău, those in Popești have also originated in Micro Asian or Pontic workshops.

On the other hand though, there are significant data on the local production of moldmade bowls; the settlement in Popești is known as the most important production centre in pre-Roman Dacia.⁶³ Out of the 350 items – bowl and mold fragments – discovered until 1977, only 153 have been discovered in clear contexts, distributed among the three habitation levels of the settlement as follows: 70 items in the level dated between 150 and 100/70 B., 77 items in the layer corresponding to Burebista’s years, and 6 items in the level dated to the second half of the first century BC and the beginning of the subsequent century.⁶⁴ One notes an intense activity in the centre in Popești for circa a century; in the final period of the settlement’s existence, production also diminished in importance.⁶⁵

As for other Hellenistic and Roman,⁶⁶ there is a preference for painted decoration, with dark-colour paints against light-colour backgrounds, on both taken over shapes (on kantharoi for example) and on autochthonous shapes, but quantitatively, the local vessels decorated with dark colours against light backgrounds are eclipsed by moldmade bowls in the production of which the settlement in Popești excelled.

⁶⁰ The information on local imitations of Hellenistic and Roman pottery is based on the observations made on the Geto-Dacian material discovered in the settlement in Răcătău preserved in the deposits of the “Iulian Antonescu” Museum Complex in Bacău and the published material (Căpitanu 1976, pp.55-61; Căpitanu 1992).

⁶¹ Zhuravlev 2002, p. 248, fig. 6/11.

⁶² Vulpe 1957, pp. 232-234, fig. 13/5-6, fig. 15; fig. 17; Vulpe 1959a, p. 345, fig. 9/4,5; Vulpe 1959b, p. 313; Vulpe 1960, p. 329; Glodariu 1974, pp. 216-217; Vulpe, Gheorghită 1976, no. 201-202; Trohani 1997, pl. XXXII/2, 4-5; Lungu, Trohani 2000, no. 5, 11, 14.

⁶³ Vulpe, Gheorghită 1976, p. 177-179, fig. 3.

⁶⁴ Vulpe, Gheorghită 1976, pp. 169, 175-176.

⁶⁵ One cannot speak of an end in the activity of the centre of Popești, since a mold fragment and a refuse vessel were discovered in the upper level (Vulpe, Gheorghită 1976, p. 177).

⁶⁶ Glodariu 1974, pp. 229-230; Trohani 1997, pp. 212-217.

IV. A few data on the wine and oil commerce in pre-Roman Dacia, from the second century BC until the first century AD.

The infrastructure that ensures the adoption of innovations is in itself an investment and, thus, it is taken into consideration in the complex calculation of costs and risks involved in the introduction of certain innovations.⁶⁷ In this case, besides the investments in workshops and the accumulation of necessary technical information needed in the production of lamps, investments in the creation of an olive oil supply network were also needed, since olive oil was the combustible needed in the functioning of lamps. Amphorae discovered in pre-Roman Dacia indicate that such a network did exist and that extra investments were not needed.

At the state of research of the 70s, 1100 amphorae were recorded in pre-Roman Dacia, most of them discovered along the Danube and its main affluents,⁶⁸ suggesting the working out of a transportation system that mainly employed the hydrographical network.

According to the identified stamps, the absolute majority were Rhodes amphorae, followed at a significant distance, by those from Pontic Heraclea, Sinope, Thassos, Cnidus, Chersonesos and Cos.⁶⁹ From a chronological point of view, they were dated in the interval between the fourth century BC and the first century AD. Few examples can be dated to the fourth and third centuries BC or the first century AD, thus most items belong to the second and first centuries BC. The settlements in Poiana and Popești made up 48% of all discoveries at the time this study was made.⁷⁰ An impressive number of amphorae were later discovered in other Geto-Dacian settlements, the one in Brad being notable among them. Over 500 items were recorded in this settlement located on the shores of River Siret, ca. 40 km upstream of the settlement in Răcățâu.⁷¹

V. Discussion

As shown above, few Hellenistic and Roman lamps were discovered on the three Geto-Dacian sites, and they did not influence local production. Similarly, local products were not numerous, and, with a single exception, they were handmade, of poor-quality fabrics, with clumsily rendered shapes and poorly finished. They are insufficient in supporting a discussion on a local lamp production.

Following the innovations introduced in the local workshops – shapes, decoration, techniques – as a consequence of the contact with Hellenistic and Roman vessels, it became apparent that their adoption was not always determined by the rarity of the original items. In the settlements in Poiana and Răcățâu, most Hellenistic and Roman items were drinking vessels, while the best represented imitations were also vessels used for drinking.

The association between certain shapes with certain types of decoration – for example shapes which in their original variant were decorated with motifs painted in the West Slope style, are associated to Hadra decorations, or mouldmade vessels with relief decoration are associated with applied and/or painted decoration – do not follow pre-existing models. Hellenistic and Roman vessels are not copied, as there is no intention to compensate supply deficiencies due to market lack of a certain product or high purchase prices, however they further information – functional, technical and aesthetical – adopted and selectively translated into local variants.

Moldmade bowls may be the most conclusive example in this direction. Apparently they copied a Hellenistic shape, but the shape and decoration of these Geto-Dacian items indicates that the information transmitted by the original items was taken over and then selectively rendered, local potters intervening with details that make the particulars of local production.

The production of moldmade bowls in the centre in Popești seems to have started suddenly. One cannot note, at least at the present state of research, any period when the new technologies were learnt and the consumers prepared, when people analyzed costs vs. benefits and investments vs. risks. As for the decrease

⁶⁷ Kim 2001, 443-445.

⁶⁸ Glodariu 1974, p. 28-19.

⁶⁹ Glodariu 1974, p. 33.

⁷⁰ Glodariu 1974, p. 31.

⁷¹ Ursachi 1995, p. 209-211.

in production, it is not connected to the events that took place in the beginning of the first century AD, but seems to be related to the abandonment of this shape by Hellenistic workshops during the second half of the first century BC. The same cannot be said about painted pottery or certain shapes taken over from Hellenistic shapes – kantharoi, skyphoi – that continued to be produced in the settlements in Poiana and Răcătău during the first century AD, or on the habit of painting vessels with dark colours against light backgrounds, which also continued during the first century AD.

It must be noted that in the case of each of the settlements under discussion, an inner filter applied, even if, in general, similar preference is shown for vessels fulfilling the same functions, and for the same decorative styles. The first clear difference is the “specialization” of the settlements in Poiana and Răcătău in the production of kantharoi, and of the one in Popești in the production of moldmade bowls. But, comparing the ceramic material discovered in the settlements in Poiana and Răcătău, one notes differences in the proportion of kantharoi inspired by certain Hellenistic or Roman shapes, in the associations of shapes and decoration, and also, in the introduction of different innovations of Hellenistic and Roman inspiration, typical to each of these two settlements.

The absence of a local lamp production cannot be explained by the lack of adequate knowledge related to their production or the costly investments needed for establishing workshops. Geto-Dacian potters were not foreign to moulding vessels; molded bowls, rectangular vessels with rim protomes or the mouldmade lamp included in the catalogue indicate that the technique was known and highly used. The making of lamps did not require specialized workshops, since they could have been molded in workshops producing other moulded vessels.⁷²

The lack of combustible adequate for lamps might be an explanation, but not the main one. Specialists have tried to explain the small quantity of lamps discovered on the eastern shores of the Black Sea by the fact that the area was not suitable for olive tree growing.⁷³ This argument is, nevertheless, not convincing. Olive trees were not cultivated in the areas north and north-west of the Black Sea, neither in Roman provinces such as Dacia, Pannonia and Britania, and still Hellenistic or Roman lamps discovered there are numerous and in certain cases local production flourished.⁷⁴ They benefited from olive oil supply networks, and the substance was used for both cooking and illumination.⁷⁵

I am not aware of any study published until now that shows how many of the amphorae discovered in pre-Roman Dacia were used for the transportation of olive oil and how many of them used for the transportation of wine. But, even if we presume that these amphorae were employed exclusively for the transportation of wine, their presence and pattern of distribution suggest that a transportation system of amphorae was used in pre-Roman Dacia and it mainly used the hydrographical network. The origin of these amphorae shows that there existed connections with the South-Pontic and Aegean areas where olive oil was produced. Major infrastructure investments were thus not necessary if the organizing of olive oil commerce was desired.

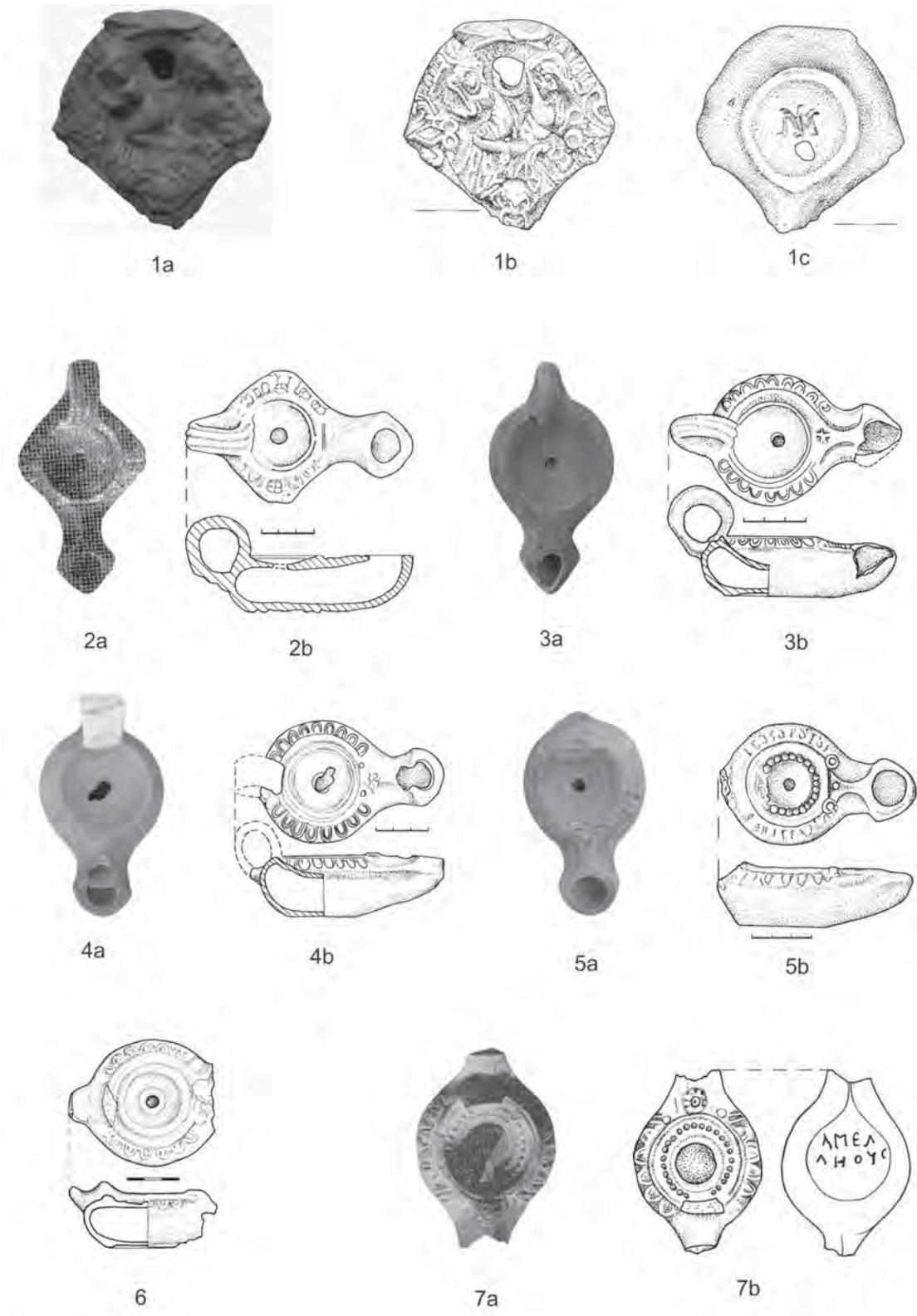
Hellenistic and Roman products and the innovations introduced in local workshops following their contact with such products suggest that Geto-Dacians living in the three settlements under discussion allowed themselves to become seduced by the Greek-Roman lifestyle, but not completely. They showed little interest for lamp illumination so specific to the Greek-Roman world. Hellenistic and Roman lamps identified in the three settlements suggest that a few individuals showed interest for this type of illumination, but the fact did not have an impact on the entire community. Locally produced lamps rather suggest the prestige that these persons enjoyed in their community than the stages in the adoption of an innovation.

⁷² In some known cases, the same signature featured both on moldmade bowls and on lamps, for example “Ariston” (with its variants) (Rotroff 1982, p. 40).

⁷³ Fossey 2003, pp. 91-95.

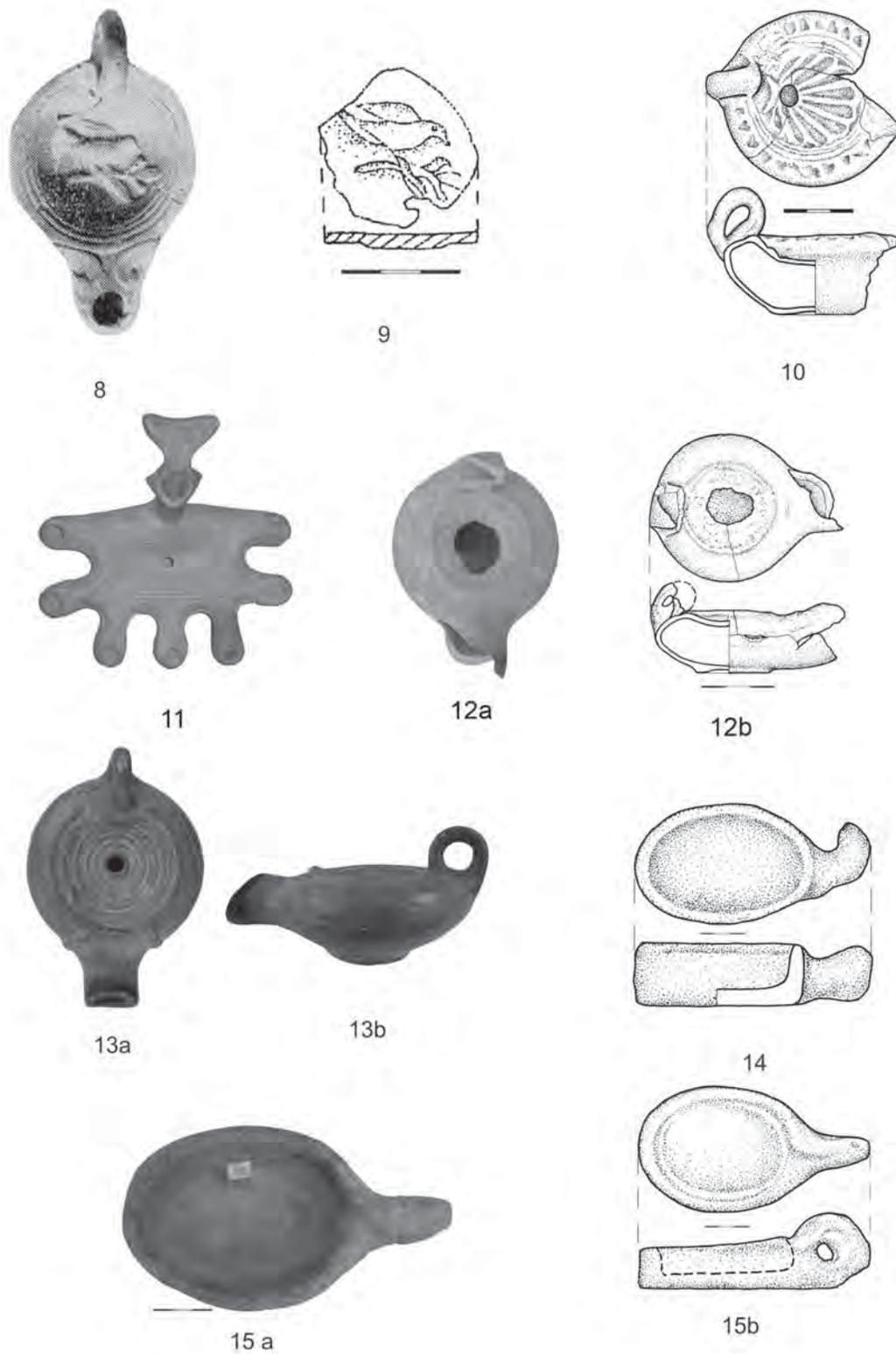
⁷⁴ For the area of the Black Sea, see: Iconomu 1967; Chrzanovschi, Zhuravlev 1998; Hannestad 2002, pp. 201-202; Højte 2010, pp. 423-437; for the provinces of Dacia, Pannonia and Britania see: Iványi 1935; Harris 1980; Pongrácz 1990, with the bibliography; Eckardt 2002, with the bibliography; Alicu 2006; Roman 2006 with the bibliography.

⁷⁵ Egri 2008, pp. 45-56, with the bibliography.



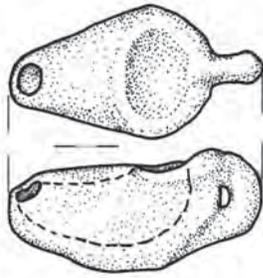
Pl. 1

Excerpt from ARA Reports 2, 2011.

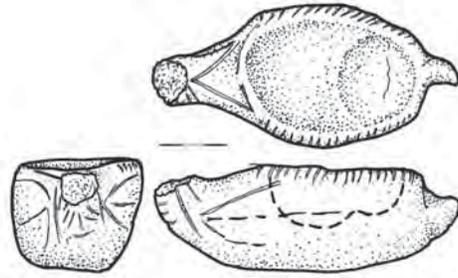


Pl. 2

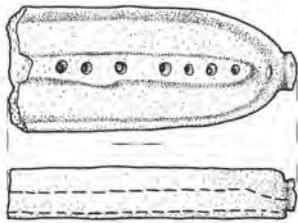
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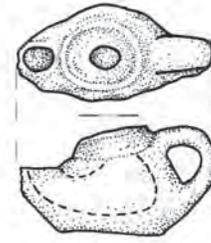
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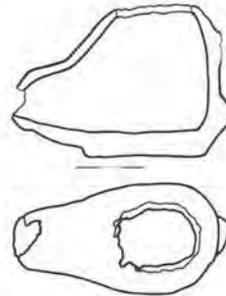
19a



19b



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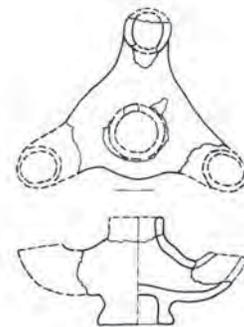
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22



23a



23b

Pl. 3

Bibliographical abbreviations:

- Alicu 2006 – D. Alicu, *Die Römischen Lampen von Sarmizegetus. I (Die funde der Jahre 1882-1976)*, Zalău, 2006.
- Aydin 2001 – B. Aydin, *The Hellenistic Pottery and Small Finds of Kordon Tumulus at Kordon Köyü/Saibli (Manisa) 2001*. JÖAI 76, 2007, pp. 7-63.
- Behr 1988 – D. Behr, *Neue Ergebnisse zur pergamenischen Westabhangkeramik*, IstMitt 38, 1988, pp. 97-178.
- Berciu 1981 – D. Berciu, *Buridava dacică*, București 1981.
- Bobi 1999 – V. Bobi, *Civilizația geto-dacilor de la curbura Carpaților (sec. VI î. Chr – II d. Chr.)*, București, 1999.
- Broneer 1930 – O. Broneer, *Terracotta Lamps*, Corinth, vol. IV, part II, 1930.
- Bruneau 1965 – Ph. Bruneau, *Les lampes*. Exploration archeologique de Delos 26, 1965.
- Bruneau 1991 – Ph. Bruneau, *La ceramique pergamienne a reliefs appliqués des Delos*, BCH 115/2, 1991, pp. 597-666.
- Bucovală 1968 – M. Bucovală, *Necropole elenistice la Tomis*, Constanța, 1968.
- Căpitanu 1976 – V. Căpitanu, *Principalele rezultate ale săpăturilor arheologice în așezarea geto-dacică de la Răcătău, jud. Bacău*, Carpica 8, 1976, pp. 49-120.
- Căpitanu 1992 – V. Căpitanu, *Noi contribuții la cunoașterea civilizației geto-dacice în bazinul Siretului mijlociu, cetatea dacică de la Răcătău (Antica Tamasiava)*, Carpica 13, 1992, 1, p. 131-192.
- Courby 1922 – F. Courby, *Les vases grecs à reliefs*, Paris, 1922.
- Crowfoot, Crowfoot, Kenyon 1957 – J.W. Crowfoot, G.M. Crowfoot, K.M. Kenyon, *The objects from Samaria*, Samaria-Sebaste III, 1957.
- Chrzanovschi, Zhuravlev 1998 – L. Chrzanovschi, D. Zhuravlev, *Lamps from Chersonesos in the State Historical Museum Moscow*, Roma, 1998.
- Demangel, Laumonier 1925 – R. Demangel, A. Laumonier, *Fouilles de Notion (1921)*. Deuxième partie, BCH 49, 1925, pp. 322-346.
- Deneauve 1969 – J. Deneauve, *Lampes de Carthage*, Paris, 1969.
- Domăneanțu 2000 – C. Domăneanțu, *Les bols hellénistiques à décor en relief*, Histria XI, București, 2000.
- Eckardt 2002 – H. Eckardt, *Lamp Production in West Stockwell Street*, Colchester, Britania 33, 2002, pp. 77-93.
- Edwards 1975 – G.R. Edwards, *Corinthian Hellenistic Pottery*, Corinth VII, nr. 3, 1975
- Egri 2008 – M. Egri, *Roman campaigns in the Danube region. The olive oil supply from Augustus to Trajan*, EphNap 18, 2008, pp. 45-56.
- Ferenczi 2006 – I.V. Ferenczi, *On a Roman lamp discovered in the dacian fortress from Ardeu, Hunedoara County, Romania*, in Fontes Historia. Studia in Honorem Demetrii Protase, Bistrița – Cluj-Napoca, 2006, p. 371-378.
- Fossey 2003 – J.M. Fossey, *Illuminativ Black Sea in Antiquity*, Nouveautes Lychnologiques 2003, pp. 91-95.
- Giuliani 2008 – A. Giuliani, *The Export of Hellenistic Ephesian Lamp-workshops and Their Influence on the Local Production in the East*, in Lychnological Acts 2. Trade and local production of lamps from the Prehistory until the Middle Age, Cluj-Napoca, 2008, pp. 91-96.
- Glodariu 1974 – I. Glodariu, *Relații comerciale ale Daciei cu lumea elenistică și romană*, Cluj, 1974.
- Glodariu 1976 – I. Glodariu, *Dacian Trade with the Hellenistic and Roman World*, BAR 8, 1976.
- Guldager Bilde 2010 – P. Guldager Bilde, *Moulmades Bowls, in The Lower City of Olbia (Sector NGS) in the 6th Century BC to the 4th Century AD*, BSS 13, 1-2, 2010, pp. 269-288, pl. 168-195.
- Hannestad 2002 – L. Hannestad, *Lamps*. Panskoye I. The Monumental Building U 6, Aarhus, 2002, pp. 201-202.
- Harris 1980 – W.V. Harris, *Roman Terracotta Lamps: The Organization of an Industry*, JRS 70, 1980, pp. 126-145.

- Henrich 2001 – J. Henrich, *Cultural Transmission and the Diffusion of Innovations: Adoption Dynamics Indicate That Biased Cultural Transmission Is the Predominant Force in Behavioral Change*, *American Anthropologist* 103, 4, 2001, pp. 992-1013.
- Howland 1958 – R. Howland, *Greek Lamps and Their Survivals*, *Athenian Agora* IV, 1958.
- Iconomu 1967 – C. Iconomu, *Opaite greco-romane*, Constanța, 1967.
- I Daci – I Daci (exhibition catalog), Milano, 1997.
- Iványi 1935 – D. Iványi, *Die pannonischen lampen. Eine Typologisch-chronologische übersicht*. Diss. Pann. 2, ser. II, Budapest, 1935.
- Højte 2010 – J.M. Højte, *Lamps. In The Lower City of Olbia (Sector NGS) in the 6th Century BC to the 4th Century AD*, *BSS* 13, 1-2, 2010, pp. 424-237, pp. 318-326.
- Kim 2001 – J. Kim, *Elite Strategies and the Spread of the Technological Innovation: The Spread of Iron in the Bronze Age Societies of Denmark and Southern Korea*, *Journal of Anthropological Archaeology* 20, pp. 442-478.
- Koutoussaki 2008 – L. Koutoussaki, *Les lampes d'Argos. Les lampes en terre cuite découvertes dans l'Agora et les Termes. Campagnes de fouilles 1972-1991*. These de Doctorat présentée devant la Faculté des Lettres de l'Université de Freiburg, en Suisse, 2008.
- Lafli 2003 – E. Lafli, *Studien zu Hellenistischen und Spätantik-Frühbizantinischen Tonunguentarien aus Kilikien und Pisiden (Süd-Türkei). Der Forschungsstand und eine Auswahl von Fundobjekten aus den örtlichen Museen*. Inauguraldissertation zur Erlangung der Doktorwürde vorgelegt der philosophischen Fakultät der Universität zu Köln, Köln, 2003.
- Laumonier 1977 – A. Laumonier, *La céramique hellénistique à reliefs. 1. Ateliers "ioniens"*. *Exploration Archéologique de Délos* 31, 1977.
- Loeschcke 1919 – S. Loeschcke, *Lampen aus Vindonissa. Ein Beitrag zur Geschichte von Vindonissa und des antiken Beleuchtungswesens*, Zurich, 1919.
- Lungu, Trohani 2000 – V. Lungu, G. Trohani, *Vases Hellénistiques à décor peint de la plaine roumaine, Istro-Pontica*, 2000, pp. 137-162.
- Lupu 1989 – N. Lupu, *Tilișca. Așezările arheologice de pe Cățânaș*, București, 1989.
- Palincaș 1997 – N. Palincaș, *Scurtă prezentare a săpăturilor din sectorul Σ al așezării de la Popești (jud. Giurgiu)*, București CAMNI 10 (Campaniile 1989-1993), 1997, pp. 173-193.
- Pârvan 1982 – V. Pârvan, *Getica. O protoistorie a Daciei* (Radu Florescu ed.), București, 1982.
- Pongrácz 1990 – Zs. Pongrácz, *Lampen aus Zalalövő (1973 -1987)*, *ActaAntHung* 42, 1990, pp. 111-145.
- Popescu 2008 – M. C. Popescu, *Pre-Roman Dacia within the Trade with Hellenistic and Roman World. Eastern Sigillata B*, *ActaMN* 43-44, 2006-2007, pp. 89-109.
- Popescu 2009 – M. C. Popescu, *Pontic Sigillata Discovered in the Geto-Dacian Settlement of Poiana, Nicorești Commune, Galați District*, in *Near and Beyond the Roman the Roman Frontier. Proceedings of a colloquium held at Târgoviște 16-17 octombrie 2008*, București, 2009, pp. 11-44.
- Popescu 2010 – M. C. Popescu, *Pergamian Pottery Discovered in geto-Dacian Sites (2nd-1st Centuries B.C.)*, *Caiete ARA* 1, 2010, pp. 37-51.
- Preda 1986 – C. Preda, *Geto-Dacii din bazinul Oltului inferior. Dava de la Sprâncenat*, București, 1986.
- Roman 2006 – C. A. Roman, *Lamps from Dacia Porolissensis I*, Zalău, 2006.
- Rotroff 1982 – I.S. Rotroff, *Hellenistic Pottery: Athenian and Imported Moldmade Bowls*, *Athenian Agora* 22, 1982.
- Rotroff 2006 – I.S. Rotroff, *The Introduction of the Mouldmade Bowl Revisited: Traking a Hellenistic Innovation*, *Hesperia* vol. 75, no. 3, pp. 357-378.
- Schäfer 1968 – J. Schäfer, *Hellenistische keramik aus Pergamon*, *PergForsch*. 2, 1968.
- Shear 1922 – T.L. Shear, *Sixth Reports on the American Excavations at Sardes in Asia Minor*, *AJA* 26, 1922, pp. 389-409.

- Siebert 1978 – G. Siebert, *Recherches sur les ateliers de bols à reliefs du Péloponnèse à l'époque hellénistique*, Paris, 1978.
- Spratt 1989 – D. A. Spratt, *Innovation Theory Made Plain*, in *What's New: A Closer Look at The Process of Innovation*, London, 1989, pp. 245-257.
- Teodor 1994 – S. Teodor, *Ceramica de import din așezarea geto-dacică de la Poiana jud. Galați (I)*, *Carpica* 25, 1994, pp. 73-122.
- Trohani 1997 – G. Trohani, *Așezarea de la Popești, jud. Giurgiu. Campaniile 1988-1991. Secțiunea II. Raport preliminar*, *CAMNI*, 10 1997, pp. 193-230.
- Trohani 2005-2006 – G. Trohani, *Locuirea getică din partea de nord a popinei Bordușani (com. Bordușani, jud. Ialomița) I*, Târgoviște, 2005-2006.
- Trohani 2006 – G. Trohani, *Locuirea getică din partea de nord a popinei Bordușani (com. Bordușani, jud. Ialomița) II*, Târgoviște, 2006.
- Turcu 1976 – M. Turcu, *Les bols à reliefs des collections du Musée d'Histoire du municipe de Bucarest, Dacia N.S. 20*, 1976, pp. 199-204.
- Turcu 1979 – M. Turcu, *Geto-dacii din Câmpia Munteniei*, București, 1979.
- Ursachi 1995 – V. Ursachi, *Zargidava. Cetatea dacică de la Brad*, *Bibliotheca Thracologica X*, 1995.
- Vulpe, Vulpe 1933 – R. Vulpe, E. Vulpe, *Le foullies de Poiana*, *Dacia* 3-4, 1927-1933 (1932), pp. 253-351.
- Vulpe et al. 1955 – R. Vulpe et al., *Șantierul arheologic Popești*, *SCIV* 6, 1-2, 1955, pp. 239-271.
- Vulpe 1957 – R. Vulpe, *Șantierul arheologic Popești*, *Materiale* 3, 1957, pp. 227-247.
- Vulpe 1959a – R. Vulpe, *Șantierul Arheologic Popești*, *Materiale* 5, 1959, pp. 339-349.
- Vulpe 1959b – R. Vulpe, *Șantierul arheologic Popești*, *Materiale* 6, 1959, pp. 307-324.
- Vulpe 1960 – R. Vulpe, *Șantierul arheologic Popești*, *Materiale* 7, 1960, pp. 321-338.
- Vulpe 1962 – R. Vulpe, *Șantierul arheologic Popești*, *Materiale* 8, 1962, pp. 457-462.
- Vulpe, Gheorghită 1976 – A. Vulpe, M. Gheorghită, *Bols à reliefs de Popești*, *Dacia N.S. 20*, 1976, pp. 167-203.
- Vulpe 1997 – A. Vulpe, *CAMNI* 10 (Săpăturile de la Popești. Prezentarea campaniilor 1988-1993), 1997, pp. 163-173.
- Vulpe, Teodor 2003 – R. Vulpe, S. Teodor, *Piroboridava. Așezarea geto-dacică de la Poiana*, București, 2003.
- Zhuravlev 2002 – D.V. Zhuravlev, *Terra Sigillata and Red Slip Pottery in the North Pontic Region (a short bibliographical survey)*, in *Ancient Civilization from Scythia to Siberia* 8, 2002, 3-4, pp. 237-309.
- Warner-Slane 1990 – K. Warner-Slane, *The Sanctuary of Demeter and Kore: Roman Pottery and Lamps*, *Corinth XVIII*, no. 2, 1990.

Abbreviations:

MB – Museal Complex „Julian Antonescu”, Bacău
 MNA – National Museum of Antiquities, Bucharest
 MNIR – National Museum for the History of Romania, Bucharest
 MT – Tecuci Town Museum

Further abbreviations:

inv. no. – inventory number; cat.- catalogue; c. – carreau; loc.- house; m. – meter; S. – section; L. - length ; w. – width ; D.- diameter; H. – height ; *Ref.* – References