

ABOUT SOME DISCOVERIES OF ARROWHEADS - MONETARY SIGNS IN SOUTH - WEST DOBRUJA

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Rezumat: În cursul ultimului deceniu al secolului trecut au fost descoperite în zona malului dobrogean al Dunării - pe plaja aflată între localitățile Izvoarele (fostă Pârjoaia, com. Lipnița, jud. Constanța) și punctul Gura Canliei (Canlia, com. Lipnița, jud. Constanța)-, în mod întâmplător, o serie de vârfuri de săgeți-semne monetare (nu deținem nici un fel de informații privind eventualul context arheologic sau oricare alte date mai precise privind locul de descoperire). Deși informațiile sunt extrem de lacunare am considerat necesar să introducem în circuitul științific respectivele descoperiri având în vedere și complexitatea siturilor prezente în zonă, ca și existența deja în descoperiri mai vechi și a altor semne monetare (din păcate apărute tot întâmplător). Piesele prezente în catalog ar putea face parte dintr-un singur depozit, deși nu avem această certitudine. Sunt prezentate 9 vârfuri de săgeți de luptă și alte 14 semne monetare (fie special turnate în formă de frunză de măsline - prima grupă tipologică-, fie transformate din vârfuri de săgeți de luptă pentru a fi folosite ca semne monetare - a doua grupă tipologică-). Ceea ce este de remarcat este descoperirea lor în mediu getic, în apropierea unui important centru economic și comercial, ca și lângă un vad de trecere a fluviului în perioadele preromană și romană.

In terms of premonetary and then monetary aspect, the period around the middle of the 6th century B.C., represents at Histria the moment when a standard for measuring/equating merchandise amount, to eliminate barter, to certainly facilitate trade, appeared on the market in the framework of the transformation of the city into a production centre. For Histria this means was the arrowhead either adapted from fight arrowhead, or cast in a pattern on purpose. It is not produced only by Histria, but it seems that this activity was practiced by a great number of Milesian colonies¹. It would be difficult to explain the emergence of a "financial"

¹ARICESCU 1975, p. 23; OBERLÄNDER-TÂRNOVEANU 1978, p. 147; MĂNUCU-

union for monetary signs so early, but we can establish the existence of trends in the western and north-western areas of Pontus Euxinus of casting standards required by the economic realities, in order to ensure a perfect bond for goods circulation. The arrowheads-monetary signs, the small dolphins etc. do not seem to have had a clear determined value, but they used to respond to some economic demands, but also having religious and political implications. They did not meet all the characteristics and functions coin had in the Greek world.

In the early stages of relations between colonists and natives, the likely production of arrowheads-monetary signs by the Greek in Histria and other Milesian centers was necessary to facilitate trade - if they are accepted as a medium of exchange -, simplifying exchange itself and attracting locals in an economic process that influenced them in many ways, so they became gradually a significant element even in the western and north-western colonies.

This way, an auxiliary privileged tool for trade was created, in the exchange process, in a defined and standardized manner, which probably had a "legal" value and was guaranteed by the local authority, with a system of quasi-created pond, but which did not have all the features and functions of the Greek coin. At this stage of research, we do not know if all the Milesian colonies cast arrowheads-monetary signs, but if there was such a situation it would have appeared since the middle of the 6th century B.C. and accepted in the local Greek communities, probably even only local, especially since the second half of that century.

During the last decade of the last century, a series of arrowheads monetary signs² have been discovered by chance in the area of the Dobrujan bank of the Danube - on the beach between the point Izvoarele (formerly Pârjoaia, Lipnița commune, Constanța County) and in the point "Gura Canliei" (Canlia, Lipnița commune, Constanța County). These samples probably occurred on the occasion of an accidental outbreak of the Dobrujan bank, outbreak occasioned by the increased rise of the level of the Danube River³.

Though information are extremely incomplete, we considered necessary to introduce among the scientific theories these findings⁴ taking into consideration also the complexity of the sites present in the area, plus the already existence of the earliest discoveries of other monetary signs (unfortunately appeared also by chance). Thus three - four arrowheads, monetary signs, of which at least two were transformed from fight arrowheads, appeared incidentally in 1973 in the area "Kala Gherghi". They were preserved in the private collection V. Culică, but later on they were brought to the Lower Danube Museum in Călărași, at the inv. no.

ADAMEȘTEANU 1984, p. 23; POENARU BORDEA 1978, p. 3.

² We have no information about the possible archaeological context or other more precise data regarding the discovery place.

³ The phenomenon of the erosion of the Dobrujan and Wallachian bank of the river becomes more and more obvious in the last twenty years.

⁴ We are also convinced that different aspects regarding the premonetary activity of the western Dobrujan Pontic mints are to be searched and revealed for a period large by the complexity of the presented problems, with rich in military and economical events, which influenced that beyond no doubt.

14.954 and 16.692⁵.

At Izvoarele the area is well-known by the existence of numerous pre-Roman vestiges, including the existence of a Thracian-Dacian settlement having a defence earthwork wall and fosse⁶, in the area „La Tablă” (dated broadly in the 6th-1st century B.C.⁷). Taking into consideration the site proportions, it was considered that we deal with a very important political and economical power center, controlling an important part of the river by the trade frequented place (one of the most important present on Dobrujan territory⁸) present here next to the Wallachian territory. Due to surface researches, a large number of archaeological materials have been gathered, the ceramic and monetary ones⁹ prevailing. The second area marking the limits of their possible discovery territory is the one named „Gura Canliei”, where a settlement (largely dated also in the 6th-1st century B.C.) was found, considered as being only a possible „satellite” for the above mentioned power center¹⁰.

Further on we present the discoveries list:

CATALOGUE

I. Fight arrowheads:

1. Head with two wings, centre rib, tube with rod and re-curved spin; 34.2 mm; 4.13 g (fig. 1, no. 1).
2. Idem; 39.5 mm; 4.42 g (fig. 1, no. 2).
3. Head with three wings prolonged to the base, conical, tube for the rod; it has an aperture for the fixing nail; 27.6 mm; 1.19 g (fig. 1, no. 3).
4. Idem; 33.8 mm; 1.38 g (fig. 1, no. 4).
5. Idem; 27.3 mm; 1.93 g (fig. 1, no. 5).
6. Idem; 43.6 mm; 2.33 g (fig. 1, no. 6).
7. Idem; 41.2 mm; 2.62 g (fig. 1, no. 7).
8. Head with three wings, at the base level, conical, aperture for rod; aperture for the fixing nail; 22.3 mm; 1.65 g (fig. 1, no. 8).
9. Idem; 23.8 mm; 1.81 g (fig. 1, no. 9).

⁵ CONOVICI 1979, p. 87-88; CONOVICI 1980, p. 50; IRIMIA 1981, p. 74 and note 69; MITREA 1984, p. 118, nr. 10; PREDA 1998, p. 33; POENARU BORDEA 2004, p. 42, nr. 14; TALMAȚCHI 2006, p. 83, nr. 20.

⁶ CULICĂ 1967, p. 681

⁷ IRIMIA 2007, p. 146.

⁸ DIACONU 1971, p. 315-316; TALMAȚCHI 1998, p. 27.

⁹ MITREA 1965, p. 608, nr. 4; CONOVICI, MUȘEȚEANU 1975, p. 547; IRIMIA 1980, p. 74, n. 69; IRIMIA 1988, p. 36, n. 43; VERTAN, CUSTUREA 1988-1989, p. 372; POENARU BORDEA, MITREA 1989, p. 260, nr. 3; PREDA 1998, p. 77, 83; TALMAȚCHI 2001, p. 128, nr. 65; TALMAȚCHI 2000-2001, p. 183-197; TALMAȚCHI 2002-2003₁, p. 382, nr. 219; TALMAȚCHI 2002-2003₂, p. 400, nr. 17, p. 405, nr. 11; TALMAȚCHI 2003, p. 28, nr. 40-41; POENARU BORDEA 2004, p. 45, nr. 15, p. 52, nr. 63, p. 61, nr. 23, p. 64, nr. 12; IRIMIA 2006, p. 71-79; IRIMIA 2007, p. 146, 174-180.

¹⁰ IRIMIA 2007, p. 147 and n. 47.

II. Arrowheads-monetary signs:

1. Olive leaf aspect arrowhead, cast as a monetary sign, on purpose; one of the heads is cut; 35.2 mm; 3.70 g (fig. 2, no. 1).
2. Idem; 35.8 mm; 3.77 g (fig. 2, no. 2).
3. Idem; 39.2 mm; 3.83 g (fig. 2, no. 3).
4. Idem; 44.7 mm; 4.06 g (fig. 2, no. 4).
5. Idem; 47.2 mm; 4.35 g (fig. 2, no. 5).
6. Idem; 39.9 mm; 4.44 g (fig. 2, no. 6).
7. Idem; 42.3 mm; 5.06 g (fig. 2, no. 7).
8. Idem; there appear metal protuberances on one side of the piece, as a result of preserving some rough remains as consequence of cast process; 41.4 mm; 5.12 g (fig. 2, no. 8).
9. Idem; 46.8 mm; 5.17 g (fig. 3, no. 1).
10. Idem; 45.5 mm; 5.80 g (fig. 3, no. 2).
11. Arrowhead with cut head, transformed into a monetary sign; with two edges, spin and empty rod; 38.1 mm; 5.03 g (fig. 3, no. 3).
12. Arrowhead with cut head, transformed into a monetary sign; with two edges and rod filled with lead; 37.1 mm; 5.60 g (fig. 3, no. 4).
13. Arrowhead with cut head, transformed into a monetary sign; with two edges without spin and rod filled with lead; 40.2 mm; 4.52 g (fig. 3, no. 5).
14. Idem; 38.4 mm; 5.31 g (fig. 3, no. 6).

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Analyzing the complex process of contacts between the local population and the Greek origin one, Bucur Mitrea established an initial stage, taking into consideration product against product exchanges (barter), continued to its end by the emergence of the monetary signs¹¹. The latter probably have been demanded by the emergence of some inherent problems, caused by the exchange based only on barter, by the necessity of making a workable exchange standard for everyone, much easier to handle and transport over long distances.

The economic and trade contacts between local population and Greek communities experienced early stages, during which the former progressively took over many innovative and superior aspects of material, social culture etc. from the latter, being at an advanced stage of development, between the two sides being created a real network of relationships, concerning the greater part of everyday life. At the same time with the economical changes and accelerated standard based exchanges rhythm, the native Thracian-Dacian society also reaches a certain level of understanding and knowledge about economic mechanisms specific to the epoch¹², otherwise well organized and defined in the Greek world. On this scale of evolutionary economic systems, the emergence, first of the monetary signs and then of the coin itself pointed out and completed the trade and economic process as such. As for the trade, the ones at sea and on rivers were predominant; it must be reminded

¹¹ MITREA 1961, p. 84.

¹² LÉVÈQUE 1987, p. 338.

that during those historical periods, the rivers existing north of the Danube, in Wallachia and Moldavia, were navigable.

The discovery of arrowheads-monetary signs individually does not confirm the common practice of things. However, there are isolated findings of such signs, but they are not absolutely to be put on the account of rendering deposits incomplete¹³. The majority of the hoards consisting of arrowheads-monetary signs were discovered by chance, without being able to have further details, including the context of discovery. Some of them were recovered shortly after the discovery, others have reached the collections of the Romanian state in a selective manner.

The samples in the catalogue may be part of a single deposit, but we are not fully convinced about that. As one can see, nine fight arrowheads and other 15 monetary signs are present (either cast in an olive leaf shape cast on purpose - the first typological group, or transformed from fight arrowheads to be used as monetary signs - the second typological group). The samples are distinguished by special stamped signs, as we have seen elsewhere. Their discovery in a Gethian environment is to be noticed, near an important economical and trade center and near to a river ford in pre-Roman and Roman periods. From the chronological point of view, taking into account the existing information in specialty bibliography, the beginnings of monetary signs cast seems to belong to the half of the 6th century B.C. (possibly \pm 500), as proposed in 1982 by V. V. Ruban¹⁴ or as tangentially C. Preda¹⁵ mentioned and Gh. Poenaru Bordea limited the date post 550¹⁶. From our point of view, taking into account a series of data, we sustained the descent of the issuing date, as a working hypothesis, of these arrowheads-monetary signs to the middle of the 6th century B.C. and not to the second half of it, probably to the last two decades of the first half of that century¹⁷. In substantiation of our opinion we pointed out that many of the arrowheads-monetary signs discovered until today emerge in the Greek - native settlements or in the Greek cities in the first inhabitation level (usually in huts), dated based on pottery in the second half of the 6th century B.C. This aspect does not exclude their presence in an earlier period we should see at Histria. But the lack of clear archaeological contexts, as we have mentioned before, cannot help us¹⁸. Then,

¹³ TALMAȚCHI 2008, p. 8-9.

¹⁴ RUBAN 1982, p. 17-18; we also notice an observation of the same scholar done in 1981, according to whom the arrowheads-monetary signs appear in the Greek settlements north of Olbia and the left side of Bug at the middle of the 6th century B.C. (!!), lacking from the settlements founded in the middle and in the second half of the same century, according to RUBAN 1981, p. 71.

¹⁵ PREDA 1998, p. 37.

¹⁶ POENARU BORDEA 2001, p. 9; POENARU BORDEA 2005, p. 29.

¹⁷ TALMAȚCHI 2002-2003¹, p. 360.

¹⁸ Such discoveries emerge at Histria in the area of the Roman *thermae* I, in the section S XII, in a bed of pavement made of mixed Greek material, according to SUCEVEANU 1982, p. 16; about mentioning other similar discoveries at Histria see at POENARU BORDEA 1974, p. 319; finally, some data of interest on our subject were provided to us by our colleague and friend Iulian Bîrzescu. Thus, in the sector T, arrowheads-monetary signs have been discovered in specific context for the archaic or classical period (discovered during the last years). More exactly, the most numerous arrowheads-monetary signs emerge in the above mentioned sector in contexts of the last third of the 6th century B.C. Some of these arrowheads have lead inside the fixing aperture. Very few arrowheads-

their emergence in discoveries, including the 5th century, sometimes beside the "wheel type" coins, less as number¹⁹, impose their presence in monetary contexts, maybe as tradition and inertness of their usage as regarding the mentality of the Dobrujan Greek-autochthonous communities until they were totally replaced.

The hoards including arrowheads-monetary signs can be divided, according to the samples number, in three categories. The first includes those constituted in small amounts, of 20-50 pieces. If the samples in the catalogue are included in a compact deposit, they should be integrated to this first group, even if it also has proper fight arrowheads in its compenence.

The more or less pronounced differences appearing in the form of monetary signs have been connected with the religious, economic and political differences present in each city separately²⁰. At the same time, some stylistic changes could be caused by a certain period of time between two similar forms, but still not identical.

The fight arrowheads present in the catalogue belong, as shape to three forms as follows: two arrowheads with wings, centre rib, tube with rod and curved point, then arrowheads with three wings, elongated towards the base, conical, aperture for rod (it has also an aperture for the fixing nail) and arrowheads with three wings, towards the base, conical, aperture for rod (it has also aperture for the fixing nail). Their dating belongs to a wider period limited by the 5-6th century B.C²¹. The presence of some proper fight arrowheads in the same deposit with arrowheads-monetary signs (cast on purpose and transformed from fight arrowhead) is not a new element, this can be identified in four deposits of this type (Baia, Baia comune, Tulcea County; Enisala, Sarichioi commune, Tulcea County; Floriile, Aliman commune, Constanța County; Vișina, Jurilovca commune, Tulcea County). The fact that this association exists between the two categories - fight arrowheads and arrowheads monetary signs - should not be difficult to explain in our opinion. Probably, the fight arrowheads were to be "processed" by cutting the tip and from case to case, depending on the weight of samples, to be filled with lead and in the stem area. Also, the fact that among the proper fight arrowheads different types and variations appear (which might be also different from chronological point of view) could be explained by the selection made by those "masters" having the possibility of filling the stem, but also the initial existence of a standard pond or as close by the as the hypothetical standard to be considered. In conclusion, several samples can be presented in their raw form, the "fighting weapons", even if they were integrated in a monetary complex destined for exchange.

The monetary signs adapted from fight arrowheads belonging to the second typological group might be due to the activity of the autochthonous population interested in purchasing exchange signs demanded on the local market. In this context we also took into account the fact that the monetary signs of the second group

monetary signs have been discovered in earlier contexts, from the first half of the 6th century. But the presence of the latter can help us to argue their issuing beginning with the middle of the 6th century B.C. and not in its second half, maybe even in the last two decades of the first half of that century.

¹⁹ POENARU BORDEA, OBERLÄNDER-TÂRNOVEANU 1980, p. 149.

²⁰ TOPALOV 2007, p. 730.

²¹ SIMION 2005, p. 33-34; MOTOTOLEA, POTÂRNICHE 2009, p. 62.

are to be found in contexts, including archaeological sites, where there "classical" fight arrowheads emerge (their number vary from several copies to tens or even hundreds, mixed with monetary signs²²).

A probable route of arrowheads-monetary signs penetration into the local environment was the Danube. But the discoveries made here until now are accidental and can only suggest trade directions, without being able to certify their presence in archaeological complexes and their current use because of practical needs. Only discoveries outside the rural territories of the colonies could possibly indicate us the presence of large communities near routes used by Greek merchants looking for new and profitable lines of trade. And from here their deviation from the relatively safe routes. The exchange facilities between two worlds having complementary needs and different levels of development was highlighted in a first phase, precisely through monetary signs.

From our point of view we join the opinion that these samples have primarily an economic role, being already classified as forms of payment, both in the local Greek and Greek in particular, within the poleis area or inside the economic and political influence area. Their "circulation" and acceptance in the transactions is due to the shape and not necessarily to the pond²³. The moment of their use and the realities context at the beginnings of the colonies on the western coast of Pontus Euxinus should also be taken into account. The area of discoveries, either single or in hoards, help to substantiate these theories. Their frequent hoarding may belong to local people, the Greek communities having the "task" to produce and spread them. The presence of arrowheads-monetary signs among the discoveries inside the Istros-Pontic territory shows the existence of economic and trade links between local communities and Greek merchants from the coast.

The arrowheads-monetary signs are still a very important chapter for understanding the existing specific trade realities before the emergence of the proper coin. Especially because these coins were not considered enough, sometimes being only mentioned, with no further commentaries. Or, on another occasion they were mixed in the great mass of fight arrowheads, being seen only as deviations from the well-known „classical" shapes, mostly bringing together variations from the general form. The arrowheads-monetary signs are creations specific to the west and north west area of Pontus Euxinus, being only a developed stage of the peaceful tactics to approaching the local communities to obtain economical and trade benefits.

²² Their discovery "mixed" sometimes with proper fight arrowheads, in the autochthonous environment, can offer the hypothesis of finding some arrowheads already transformed, or arrows which are going to be transformed. In the final stage of producing and circulation of these monetary signs, we cannot exclude some piles of arrowheads in which some are accepted with a monetary value, without being transformed, and from one situation to another, the rod was filled with lead, to obtain a proper weight. At the same time, it is possible that the same master produced in different patterns, but in the same workshop, both monetary signs and arrowheads necessary as offensive fighting material.

²³ MĂNUCU-ADAMEȘTEANU 1984, p. 22.

BIBLIOGRAPHY

ARICESCU 1975 - A. Aricescu, *Tezaurul de semne de schimb premonetare de la Enisala*, SCN 6 (1975), p. 17-24.

CONOVICI 1979 - N. Conovici, *Contribuții numismatice privind legăturile Histriei cu geții de la Dunăre în secolele VI-II î.e.n.*, SCIVA 30 (1979), 1, p. 87-93.

CONOVICI 1980 - N. Conovici, *Les relations entre les Gètes des deux rives du Bas-Danube à la lumière des données archéologiques et numismatiques (IV-II siècles av.n.é.)*, în *Actes du II^e Congrès International de Thracologie (Bucarest, 4-10 septembre 1976, vol. II, Histoire et Archéologie, București, p. 43-54.*

CONOVICI, MUȘETEȘTEANU 1975 - N. Conovici, C. Mușeteșteanu, *Câteva torți de amfore ștampilate elenistice din județul Ialomița și sud-vestul Dobrogei*, SCIVA 26 (1975), 4, p. 541-550.

CULICĂ 1967 - V. Culică, *O unealtă scitică de orfevrerie la Dunărea de Jos*, SCIV 18 (1967), 4, p. 677-685.

DIACONU 1971 - P. Diaconu, *În căutarea Dafnei*, Pontica 4 (1971), p. 311-313.

IRIMIA 1980 - M. Irimia, *Date noi privind așezările getice din Dobrogea în a doua epocă a fierului*, Pontica 13 (1980), p. 66-118.

IRIMIA 1981 - M. Irimia, *Observații preliminare privind așezarea antică de la Gura Canliei*, Pontica 14 (1981), p. 47-131.

IRIMIA 1988 - M. Irimia, *Unele considerații privind sfârșitul Latène-ului geto-dacic și continuitatea civilizației autohtone în Dobrogea*, SCIVA 39 (1988), 1, p. 33-44.

IRIMIA 2006 - M. Irimia, *Les rapports entre les autochtones et les grecs et le problème des emporia de la zone du Danube Inférieur*, în *Orgame/Argamum, Supplementa 1, A la recherche d'une colonie, Actes du Colloque International 40 ans de recherche archéologique à Orgame/Argamum, Bucarest - Tulcea - Jurilovca, 3-5 octobre 2005, textes réunis par Mihaela Mănușcu-Adameșteanu, Bucarest, p. 241-261.*

IRIMIA 2007 - M. Irimia, *Considerații privind așezările getice din Dobrogea și problema existenței unor emporia în zona Dunării inferioare*, Pontica 40 (2007), p. 137-225.

LÉVÊQUE 1987 - P. Lévêque, *Aventura greacă*, vol. II, București.

MĂNUȘCU-ADAMEȘTEANU 1984 - M. Mănușcu Adameșteanu, *Tezaurul de semne premonetare în formă de vârf de săgeată de la Vișina (com. Jurilovca, jud. Tulcea)*, SCN 8 (1984), p. 17-24.

MITREA 1961 - B. Mitrea, *Sur les monnaies des cités pontiques découvertes sur le territoire des populations locales*, StCl 3 (1961), p. 83-88.

MITREA 1965 - B. Mitrea, *Descoperiri recente și mai vechi de monede antice și bizantine în R. S. România*, SCIV 16 (1983), 3, p. 605-618.

MITREA 1984 - B. Mitrea, *Etape cronologice în relațiile Histriei cu geto-dacii pe baza monedelor*, Thraco-Dacica 5 (1984), 1-2, p. 111-122.

MOTOTOLEA, POTĂRNICHE 2009 - A. Mototolea, T. Potârniche, *Vârfuri de săgeți din colecția Muzeului de Istorie Națională și Arheologie Constanța*, Pontica 42 (2009), p. 47-70.

POENARU BORDEA 1974 - Gh. Poenaru Bordea, *Recenzie, Constantin Preda și H. Nubar, Histria III. Descoperirile monetare 1914-1970. Editura Academiei Republicii Socialiste România, București, 1973, 258 p.*, în SCIVA 25 (1974), 2, p. 319.

POENARU BORDEA 2001 - Gh. Poenaru Bordea, *Atelierul monetar al cetății Istros în perioada autonomiei*, în *Simpozion de Numismatică, dedicat împlinirii a patru secole de la prima unire a românilor sub Mihai Voievod Viteazul, Chișinău, 28-30 mai 2000, Comunicări, studii și note*, București, p. 9-33.

POENARU BORDEA 2004 - Gh. Poenaru Bordea, *La diffusion des monnaies d'Istros, Callatis et Tomi du VI^e au I^{er} siècle av. J.-C dans leurs territoires, zones d'influence et ailleurs*, în *Presenza e funzioni della moneta nelle choraie delle colonie greche dall'Iberia al Mar Nero, Atti del XII Convegno organizzato dall'Università „Frederico II” e dal centro internazionale di studi*

numismatici Napoli, 16-17 giugno 2000, Roma, p. 27-70.

POENARU BORDEA 2005 - Gh. Poenaru Bordea, *Tezaurul de la Dăieni, jud. Tulcea. Catalogul monedelor din colecția Muzeului Național de Antichități*, în *Simpozion de numismatică dedicat centenarului Societății Numismatice Române (1903-2003), Chișinău, 26-28 noiembrie 2003, Comunicări, studii și note, București, p. 11-22.*

POENARU BORDEA, MITREA 1989 - Gh. Poenaru Bordea, B. Mitrea, *Découvertes monétaires en Roumanie - 1988 (XXXII)*, *Dacia N.S. 37 (1989)*, 1-2, p. 259-266.

POENARU BORDEA, OBERLÄNDER-TÂRNOVEANU 1980 - Gh. Poenaru Bordea, E. Oberländer-Târnoveanu, *Contributions à l'étude des monnaies-pointes de flèche à la lumière des trésors de Jurilovca, dép. de Tulcea*, în *Actes du II^e Congrès International de Thracologie (Bucarest, 4-10 septembre 1976, vol. II, Histoire et Archéologie)*, București, p. 141-150.

PREDA 1998 - C. Preda, *Istoria monedei în Dacia preromană*, București.

RUBAN 1981 - V. V. Ruban, *Archeologičeskij kompleks iz poselenija Čertovatoe, rna. Bugskom Limane, PDKSZP 1981*, p. 63-73.

SIMION 2005 - G. Simion, *Metalurgia la geții de pe teritoriul Dobrogei*, în *Aspecte privind prelucrarea și circulația metalelor în Dobrogea din Preistorie până în Evul Mediu*, Tulcea, 2005, p. 33-40.

SUCEVEANU 1982 - Al. Suceveanu et alii, *Histria VI. Les Thermes Romains*, Bucarest-Paris, 1982.

TALMAȚCHI 1998 - G. Talmațchi, *Unele considerații privind evoluția Sucidavei Moesice în secolele IV a.Chr. - VI p.Chr.*, *AnDob 4 (1998)*, 1, p. 25-34.

TALMAȚCHI 2001 - G. Talmațchi, *Contribuții privind circulația monetară dobrogeană în secolele VI-I a. Chr.*, *Analele UCDC 4 (2001)*, p. 120-145.

TALMAȚCHI 2000-2001 - G. Talmațchi, *Monede autonome histriene, tomitane și callatiene descoperite în Dobrogea*, *ArhMold 23-24 (2000-2001)*, p. 183-197.

TALMAȚCHI 2002-2003₁ - G. Talmațchi, *Descoperiri premonetare și monetare în Dobrogea (sec. VI-I a.Chr.)*, *Pontica 35-36 (2002-2003)*, p. 357-394.

TALMAȚCHI 2002-2003₂ - G. Talmațchi, *Scurtă privire asupra ariei de difuzare a monedelor autonome emise de Callatis și Tomis*, *Pontica 35-36 (2002-2003)*, p. 395-408.

TALMAȚCHI 2003 - G. Talmațchi, *Descoperiri monetare macedonene în Dobrogea*, *BSNR 146-151 (1998-2003)*, p. 27-37.

TALMAȚCHI 2006 - G. Talmațchi, *Les monnaies autonomes d'Istros, Callatis et Tomis, Circulation et contexte*, Wetteren.

TALMAȚCHI 2008 - G. Talmațchi, *Semnele monetare și monetăriile vest-pontice dobrogene (secolele VI-V a.Chr.) - stadiul cercetărilor, noi ipoteze și perspective*, în *Monedă și Comerț în Sud-Estul Europei*, II, Sibiu, p. 7-32.

TOPALOV 2007 - S. Topalov, *Apollonia Pontica. Contribution to the study of the coin minting of the city 6th - 1st c. B. C.*, vol. I-II, Sofia.

VERTAN, CUSTUREA 1988-1989 - A. Vertan, G. Custurea, *Descoperiri monetare în Dobrogea (VIII)*, *Pontica 21-22 (1988-1989)*, p. 369-390.

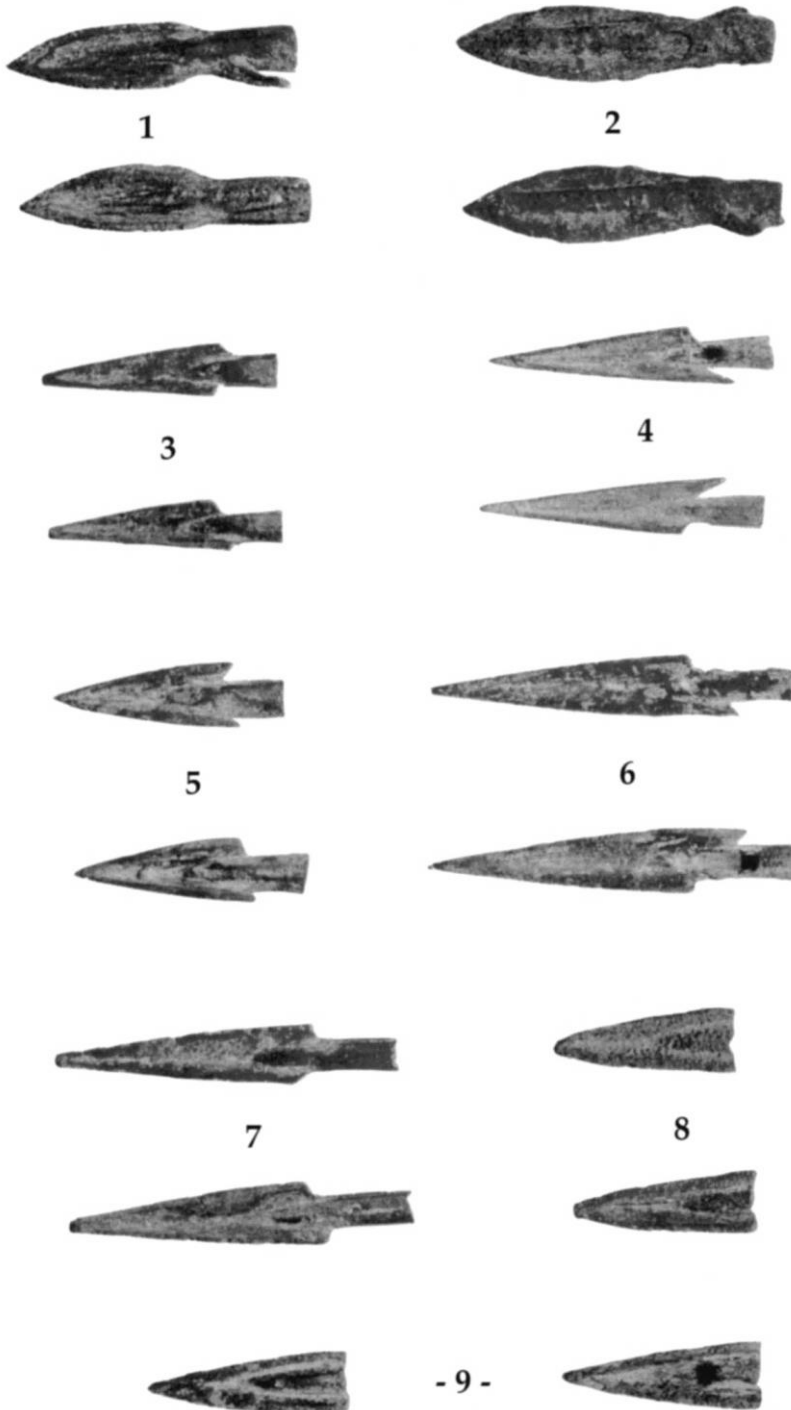


Figure 1 - Samples of the proper fight arrowheads category.

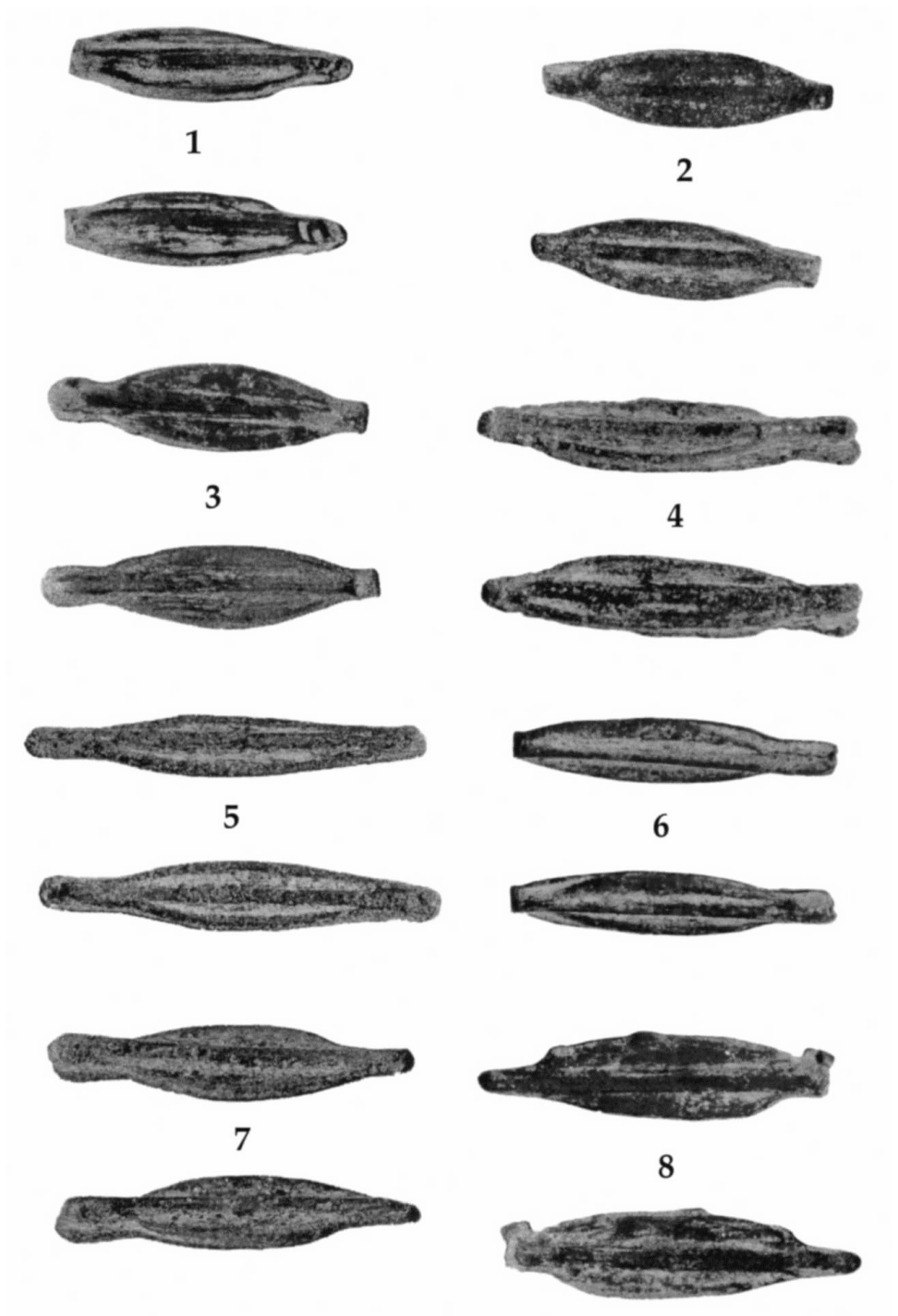


Figure 2 - Samples of the first arrowheads-monetary signs category.

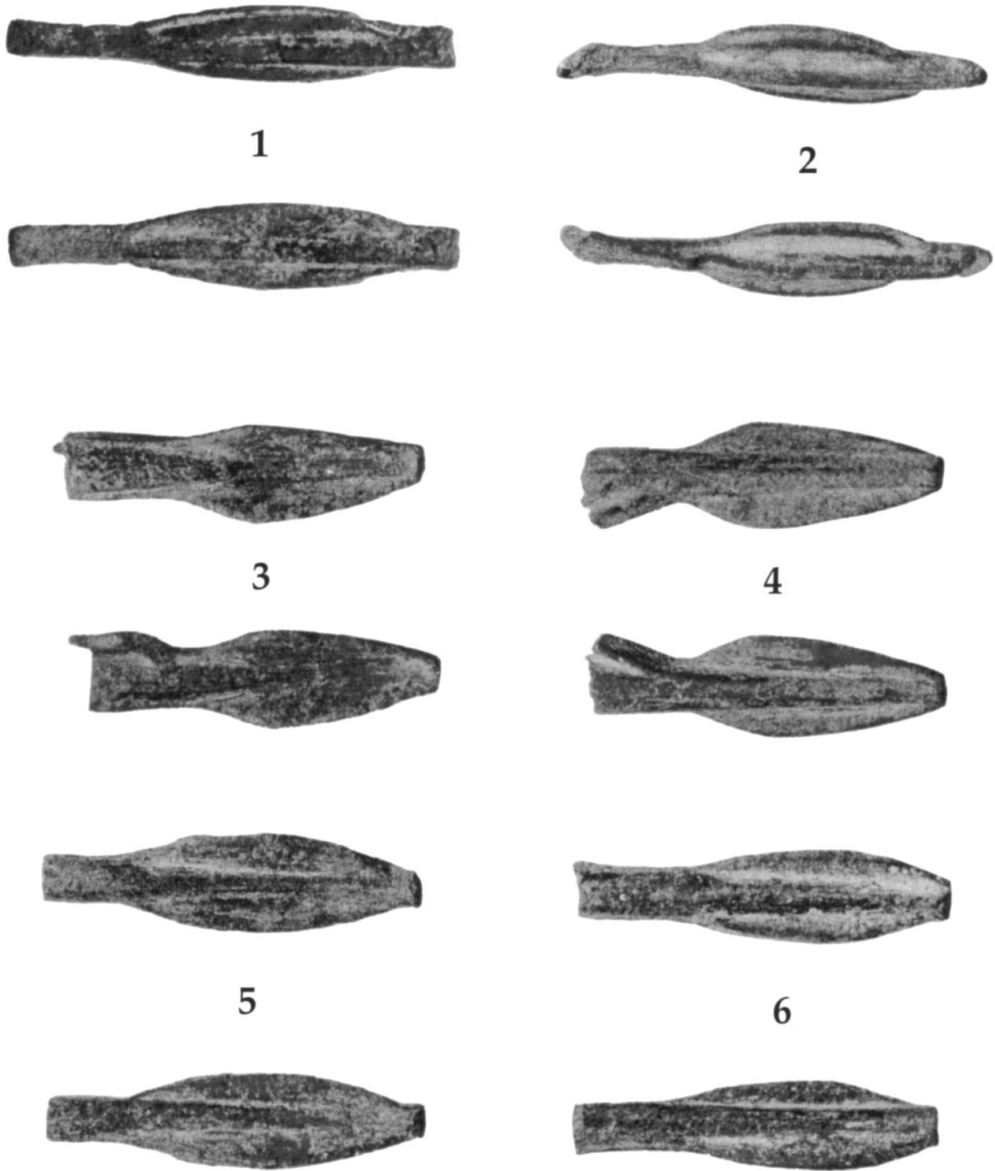


Figure 3 - Samples of the second arrowheads-monetary signs category.