

ON THE SYMBOLISM AND THE MONETARY FUNCTION OF THE WEST PONTIC ARROWHEAD-SHAPED SIGNS

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Rezumat: În articolul de față sunt discutate două aspecte ale semnelor monetare emise de apoikiai milesiene din vestul și nord-vestul coastei Mării Negre: Borysthenes, Olbia, Histria și Apollonia: semnificația formei și funcția monetară. O parte dintre acestea au fost turnate în tipare de vârfuri de săgeți de luptă, care sunt cunoscute în literatură ca vârfuri de săgeți scitice, datorită descoperirilor frecvente ale acestui tip de obiecte în arealul nord-vest pontic. Deși reprezintă un mic procent din totalul descoperirilor de semne monetare, este unul din principalele argumente ale teoriei unei presupuse semnificații simbolice, pe care populația autohtonă le-ar fi atribuit-o, și drept urmare principalul motiv pentru care ionienii au ales această formă locală particulară pentru primele lor emisiuni monetare. Acest raționament vine în continuarea teoriei după care necesitatea dată de comerțul extern a avut un rol decisiv în apariția monedei. De aici înainte, fără să se țină cont de o altă explicație care arată legătura strânsă dintre simbolismul ambelor tipuri de semne monetare (vârfuri de săgeți și frunze) și principala divinitate a celor trei cetăți emitente, Apollo Ietros, care a rămas marginală în toată discuția, acestea au fost înțelese din perspectiva acelorora, a căror principală preocupare erau relațiile dintre greci și populațiile indigene.

Articolul prezintă slăbiciunile acestei teorii: atât cadrul teoretic, cât și interpretarea surselor aduse ca argumente sunt analizate. O primă problemă privește funcția monetară a acestor semne în formă de vârfuri de săgeată nefuncționale, atunci când sunt puse în contextul mai larg al apariției monedelor din bronz în general. Nu numai că abia se potrivesc contextului grecesc, având în vedere apariția lor timpurie, dar în cel indigen acestea sunt și mai problematice; ceea ce justifică înainte de toate termenul de semne monetare. Cu toate acestea excesul de valoare convențională fixă dată unei piese din metal comun (caracterul fiduciar), și încrederea colectivă necesară acceptării sale sunt princi-

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palele trăsături ale monedei grecești în perioadele arhaică și clasică. Acestea sunt și trăsături ale semnelor monetare în formă de vârful de săgeată nefuncționale și frunze din bronz. Observația vine în sprijinul deja recunoscutei funcții monetare, argumentată prin funcția de mijloc de schimb care justifică tezaurizarea, precum și prin asocierea târzie cu monede din bronz (e.g. tipul cu roata la Histria).

Mai departe se argumentează că de vreme ce aceste trăsături monetare sunt înrădăcinate în practica reciprocității și a distribuției din ritualul sacrificiului, originea semnelor monetare vest-pontice trebuie căutată mai degrabă tot în cult. Ambivalența formei, vizibilă în coexistența celor două tipuri, dar și în ambiguitatea majorității pieselor, forma de frunză și de vârf de săgeată confundându-se în una și aceeași piesă, corespunde ambivalenței atributelor apolinice: săgeată și ramură, expresii ale dublei puteri divine a lui Apollo în general, și al lui Apollo Ietros în special, anume de a trimite molima, dar de a și vindeca-o. Mai mult decât atât, vârfulurile de săgeți sunt o ofrandă simbolică, printre alte arme dedicate de regulă lui Apollo în perioada arhaică, în amintirea virtuților războinic-atletice apreciate în concursurile din timpul festivităților sale.

Articolul continuă arătând că de la ofrandă votivă simbolică la plată pentru zeu nu a fost de făcut decât un mic pas, anticipând astfel apariția monedei propriu-zise. Acest episod nu poate fi înțeles decât în contextul colonizării milesiene. Dacă Miletul, alături de alte cetăți din Ionia, a avut un rol cheie în apariția monedei din metal prețios (EL), coloniile sale au făcut pasul următor spre moneda din bronz în forma de vârf de săgeată și frunză. Deja familiarizați cu societatea monetizată din cetatea de origine și nemaifiind condiționați de raporturile vechi comerciale, în care era esențială valoarea metalului prețios, ionienii au venit cu această soluție pentru a răspunde unor nevoi interne legate, cel puțin într-o primă fază, de desfășurarea cultului divinității lor principale, Apollo Ietros. Simbolul monetar este nu doar expresia originii lor comune, cât mai ales dovada existenței unei uniuni a interesului comun. Avantajele acestei dezvoltări au atras și populația locală. Nu a fost o încercare eșuată, ci una de succes, care a durat un secol, după care a fost înlocuită cu un produs actualizat – moneda de bronz și de argint.

Abstract: *The article discusses two related aspects of the monetary signs issued by the Milesian apoikiai from the West and Northwest coast of the Black Sea: Borysthenes, Olbia¹, Histria and Apollonia: the symbolic meaning and the monetary function. A part of these pieces were cast in arrowheads moulds, usually labelled Scythian arrowheads, because of the occurrence of this type of items mainly in the North-western Pontic area. Although these represent a small percentage of the total discoveries of monetary signs, it is one of the main arguments of the theory regarding a supposed symbolic meaning that the native populations would have attached to them, and as a result the main reason for which the Greeks have chosen this particular local form for their first monetary issues. This reasoning follows the theory according to which the necessity for foreign trade had a decisive role in the appearance of the currency. Henceforth, regardless of another explanation that points to the close connection between the symbolic meaning of both types of monetary signs (arrowheads and leaves) and the main deity of the three issuing cities, Apollo Ietros, which remained marginal throughout the discussion, these were*

¹ During the second half of the 6th century BC, Borysthenes had a more important role in minting arrowhead-shaped signs than Olbia: see RUBAN 1982; cf. ANOHIN 1986, p. 75; SOLOVYOV 2006, p. 64, 71. Olbia minted the arrowhead-shaped type in the first half of the 5th century BC, but more intensely it issued signs in dolphin shape.

understood from the viewpoint of those, whom the main concern were the relations between Greek colonies and the native populations.

The paper presents the faults of this theory: both the theoretical framework and the interpretation of the sources brought as arguments are scrutinized. The first problem regards the monetary function of the non-functional signs, when these are put in the wider context of the beginning of the bronze currency in general. Not only it hardly fits in the Greek context, when considering its early occurrence, but in the native one is even more problematic; which justify above all the name of monetary signs. However the excess of fixed conventional value given to a piece of base metal, and the collective trust needed for its acceptability are the main features of the Greek coin during the Archaic and the Classical periods. This are also features of the non-functional arrowheads and leaves of bronze. The observation supports the already acknowledged monetary function that was recognised in the function of means of exchange that justify hoarding, and also in their later association with bronze coins (e.g. of the wheel type at Histria).

Furthermore it is argued that since these monetary features are embedded in the practice of reciprocity and distribution in the ritual of sacrifice, the origin of the West-Pontic monetary signs should rather be searched for in cult. The ambivalence of the form, visible in the coexistence of the two types, but also in the ambiguity of most of the signs, the leaf and the arrowhead shape being hard to distinguish in one and the same piece, corresponds to the ambivalence of the two Apollonian attributes: arrow and branch, expressions of the twofold divine powers of Apollo in general, and of Apollo Ietros especially, namely to send the plague, and to cure it. Furthermore the arrowheads are symbolic offerings, among other weapons and armour items commonly dedicated to Apollo during Archaic period, as reminders of the warrior-athletic virtues prized in contests during his festivities. The paper continues by showing that from votive symbolic offering to payment for the god was a small step to make, anticipating the emergence of the proper currency. This episode is understandable only in the context of the Milesian colonisation. If Miletus, among other Ionian cities, had a key role in the emergency of the coin made of valuable metal (EL), it was its oversea settlements that made the next step to the bronze coin in arrowhead/leaf shape. Already familiarized with a monetized society from their mother-city, and no more conditioned by old trade customs that valued the precious metal in coins, the Ionian settlers come up with this solution for some internal needs related, at least in an earlier phase, to the well-functioning of the cult of their main deity, Apollo Ietros. The shared monetary symbol is a proof not only of their common origin, but mainly of a union of common interest. The advantages of this development attracted also the local population. It was not a failed attempted, but a successful one that lasted a century, being afterwards replaced with an updated product – the coin of bronze and of silver.

The uniqueness of the monetary signs in arrowheads shape has generated a lot of discussions, leaving open questions about their significance and monetary function. Recently, questioning the monetary function of non-functional arrowheads, Francois de Callatay² highlighted the main problems of this type of finds, when put in the context of the emergence of the coins in the Greek world. Thus these items might have not had a monetary function from the very

² DE CALLATAY 2019, *passim*; cf. TALMAȚCHI 2020b, p. 199–238.

beginning, and were probably some kind of special purpose money that only later were broadly accepted. In guise of conclusion, he spoke for an older hypothesis, which he reformulated: "...these dolphins and arrowheads are best conceived as *originally created* as tokens for worshippers of Apollo (i.e. as payments for the god). And from then onwards, they may have functioned as monetary tokens depending on the context..."³. Following this direction of research, this paper argues against the "Scythian influence" in the choice of this particular shape, namely it makes a point of showing that a local item, such as the Scythian arrowhead, was taken over by the Greeks, who gave it their own symbolic value that has little to do with the acceptance of these items in the trade with the local population. Moreover, the Apollonian symbolism of the arrowhead and leaf shape, as well as the practice of dedicating offerings during the Archaic period suggest a connection between the symbolic offering and the first issues with monetary value of the three Milesian colonies. The cultic context gives an explanation both for the particular shape of these pieces, as well as for their monetary function. For a start, some typological observations relevant to the problem of the symbolism of monetary signs will be made. Then the argumentation is divided into two main parts. In a first part it is presented the state of the question, namely the theory of the "Scythian influence" in choosing the arrowhead shape type, and the problem of its monetary function from the numismatic perspective. In the second part are discussed the symbolism of the two apollonian attributes, the arrowhead and the leaf, as well as the problem of the role of the offerings in the appearance of the coin, and of the monetization in the practice of offerings dedication. Finally, since this argumentation leaves open questions, several considerations are also made about two intensively debated issues: what made the West Pontic colonies adopt this particular form of bronze coin earlier than other cities, and what made the native populations hoard them more intensively than the inhabitants of the colonies.

Typological observations

The ambiguity of the shape of the monetary signs suggested a multitude of interpretations⁴: arrowheads, different leaves – laurel, willow, or olive –, wheat grains, and even pine trees. First of all, I shall discuss the last two possibilities. The comparison between the shapes of the Western-Pontic signs and of the wheat grains on the monetary issues of Leontinoi would suggest their understanding as wheat grains⁵. However the grain is characterized by a median dent, not a relief rib, as shown by the West-Pontic signs, a significant detail to lay aside this hypothesis. Regarding the explanation of the lateral ribs, which occasionally appear on some pieces, as the branches of a pine tree⁶, these are rather to be seen

³ DE CALLATAȚ 2019, p. 268.

⁴ A recent find from Histria presents a fish on one side of a leaf-shaped sign: TALMAȚCHI 2021, p. 359–360, cat. 2. This rather belongs to the late, isolated, and „experimental” series of monetary signs, on which additional symbols are added, such as the wheel, the anchor, or the letter A.

⁵ TALMAȚCHI 2013a, p. 307–326.

⁶ MĂNUCU-ADAMEȘTEANU 1984, p. 20; TALMAȚCHI 2010, p. 64–65.

as part of the whole piece and not separately from it, given the fact that the representation consists both in form and in the accompanying details. Consequently, the lateral ribs are nothing but the veins of the leaf. Hereinafter I stick to the common opinion that these items represent two symbols: the arrowhead and the leaf, corresponding to the two groups in the typology of monetary signs⁷.

The arrowhead-shaped signs (2nd group) have usually two or three blades, with or without a spine. These present several characteristics of non-functionality: blunt tips and unfinished blades (compared to the battle ones, which after casting have polished tips and edges), the conical median rib, which together with the socket and the spine is sometimes broken or flattened, as well as the detailing of a single side, due to the single-mould. Another element of non-functionality is the filling of the socket with lead. The common opinion of the numismatists is that these pieces either have been modified from battle arrowheads, or are refuses from the casting process. It is worth noting the observation of Gabriel Talmațchi⁸ about their constant occurrence in large number in hoards, which puts a question mark on the interpretation as a result of the technological process. What they have in common is negligence in casting and finishing. I am inclined to believe that both the unfinished and the incorrect casted pieces are the result not of the craftsmen's clumsiness, but on the contrary of their intention to cast bronze pieces in the shape of non-functional arrowheads. Comparing it with the two-step process of 'blanks' shaping and then stamping, casting in arrowhead moulds was a simple, efficient and handy way to produce relatively standardized metal pieces⁹. The technique was so efficient that not only the pieces in arrowhead shape continued to be cast for about a century, but the following bronze coins of the wheel type were also cast, until they were replaced by other struck coin types towards the middle of the 4th century BC¹⁰.

The leaf-shaped signs (1st group). The diversity in terms of the width of the edges and the length of the mid rib resulted in a typology with several subtypes, some distinguishing between bay (the widest), willow (narrower, also the more numerous), or olive leaves¹¹. What characterizes this type is the median rib, equal from one tip to the other, at the narrow ones the tips exceeding the size of the edges. In some pieces one can still distinguish at one end, what appears to be the trace of a stem. So we wonder if there was an evolution of the shape from arrowhead to leaf. According to Timo Stingl the leaf-shaped type shows a detachment from the "warrior aspect", emphasizing more the unit of measure and means of payment¹². In the preliminary stage, in which we are in the study of the discoveries of monetary signs from the Histrian sacred area, the contexts in which

⁷ For typology, see e.g. ANOHIN 1986, p. 75–76; PREDA 1998, p. 31–37.

⁸ TALMAȚCHI 2010, p. 37–38, 40, 42; cf. ANOHIN 1986, p. 76.

⁹ In this regard see also Constantin Preda's observation about the similar weight between battle arrowheads and monetary arrowheads, which is why he assumed that the former served as a model for the latter, PREDA 1991, p. 23.

¹⁰ Few struck coins of the wheel type are known, and these are dated later in the second half of the 4th century BC, see PREDA 1998, p. 63.

¹¹ TALMAȚCHI 2010, p. 41; TALMAȚCHI 2013a, p. 340.

¹² STINGL 2005, p. 122.

they appear suggest that both types were used from the beginning¹³. There is no trace of a transition from one type to another over time, but only the preponderance of the leaf-shaped type, especially in a later period¹⁴.

The ambivalence of the form persists not only in the coexistence of the two symbols, arrowhead and leaf, in the two types, but also in their recognition in one and the same piece, in the case of many monetary signs being difficult to distinguish between the two shapes, the arrowhead socket being easily confused with the leaf stem. This indicates rather that the ambivalence of the shape is intentional. In fact, it is remarkable the characterization of some arrowheads as leaf-shaped, but also of some types of leaves as arrowhead-shaped. A curiosity in this regard is the similarity between the leaf-shaped monetary signs and the type of lanceolate arrowhead with a tang¹⁵, widespread in the Aegean since the end of the Bronze Age¹⁶. Certainly the lanceolate type was as familiar to the Ionians as the Scythian one, but this matters less. Most likely, the West Pontic signs do not consider a certain type of arrowhead, or a certain type of leaf (hence the variations of each group), but the equivalence of the two. The ambiguity of the arrowhead- and leaf-shaped monetary signs is due to the polysemic nature of the Apollonian attribute, and to the strategy of the issuer, which makes these signs not because he is unable to make a distinction in their representation, but because he does not intend to do so. The identification is not explicit, but suggested to the viewer, a feature of the figurative art of the Archaic period¹⁷.

The “Scythian influence” on choosing the arrowhead-shaped type

The socketed bilobate, or trilobate arrowheads, with or without a spur, commonly called Scythian, are often found in the North Pontic area, from where it seem to have spread to Anatolia during the 7th century BC¹⁸. The resemblance of the monetary signs with the battle arrowheads of the Scythians has been made

¹³ In addition to the extant bibliography, observations on their typology were possible after the analysis of the coin finds from the excavations in the sacred area from Histria, which we are preparing for publication together with Gabriel Talmațchi (MINAC) and Theodor Isvoranu (IAB). It is worth mentioning that in an archaeological layer with Late Archaic finds (context no. His 2003 T 19), dated around 500 BC, all types and variants appear.

¹⁴ See also ANOHIN 1986, p. 76, who noticed that the arrowhead-shaped signs are fewer and probably earlier than the leaf-shaped ones.

¹⁵ It belongs to an Oriental type widespread in Syria and Cyprus, also known in Anatolia, at Troy and in Rhodos since ca 1450 BC; see BUCHHOLZ 1962, p. 26–27; cf. RICHTER 1915, p. 403 ff.; about the different modes of attaching the head to the shaft, which varies with the material: tang for reed shaft, socket for wooden shaft, see PETRIE 1917, p. 33–34.

¹⁶ Which continues to be used even after the spread of the Scythian arrowhead type in the 7th century BC. A comparison between the ash-leaf and the lanceolate arrowhead is well illustrated at MONBRUN 2003, p. 161–163, fig. 6–8. The author notes the ambivalence both of the ash-leaf and of the arrow, attributes of Apollo, which embody the power to send life, or death. About this ambivalence of the Apollonian attributes, see below.

¹⁷ DIETRICH 2018, *passim*, esp. p. 186–188, 204–210.

¹⁸ MALLOY 1993, p. 8. For similar finds from Dobrudja, see MOTOTOLEA & POTĂRNICHE, 2009, p. 47–70.

since the first publication of these signs¹⁹. Later, B.N. Grakov, gathering written, archaeological and numismatic evidence regarding these pieces, sustained the theory of the Scythian contribution to the creation of the monetary signs²⁰. As, in the meantime, most arguments support the issuing of monetary signs by the Greek cities²¹ – the wheel and the anchor, which later appear on the actual coins being the most relevant of them – the theory of the “Scythian influence” has been reformulated and nuanced. Thus, at present most numismatists and archaeologists believe that what motivated the Greeks to choose the shape of the Scythian arrowhead for their monetary signs was the need to give them acceptability in the trade with the natives²². Moreover, the need to intensify trade with the natives led to the finding of this particular means of exchange²³. The main argument of this theory is given by the presence of hoards in the nearby region (*chora* and hinterland), in contrast to the isolated finds from the cities²⁴. As no source of precious metal was at hand, and the available electrum coins were a too large unit of exchange for daily transactions, the settlers came with the idea of creating coins in the shape of Scythian arrowheads²⁵. As Timo Stingl²⁶ briefly put it: “Die Aufnahme indigener Wertstrukturen und bronzener Wertmesser macht deutlich, daß die Griechen ihre Geld- und Wertsysteme nicht auf ihre jeweilige Chora übertrugen, sondern sich bestehenden Verhältnissen anpassten”. In other words, the Greeks adapted their monetary practice to the local values of the natives, which they met in the new territories. Not only this choice would be atypical and completely unusual, but this theory forgets to explain the purpose of the leaf-shaped, or of the Olbian dolphin-shaped signs²⁷. Moreover, the need for trade with the natives is considered a determining factor not only for the choice of the monetary symbol, but also for the decision to issue the currency itself.

The problem of the monetary function – the numismatic perspective

The particular form, the anonymity of the issuer, and the base metal justify the terms monetary signs. But what most justifies this term is the ambiguity of

¹⁹ ANOHIN 1986, p. 68–75; KARYŠKOVSKIJ 1988, p. 30; cf. DE CALLATAÏ 2019, p. 262.

²⁰ GRAKOV 1968, p. 101–115; GRAKOV 1971, p. 125–127.

²¹ KARYŠKOVSKIJ 1968, p. 333; PREDA 1991, p. 25; TOPALOV 1993, p. 11; TALMAȚCHI 2010, p. 28.

²² E.g. BANARU 2003, p. 295: “Aufgrund dieser Fundsituation ist davon auszugehen, dass alle diese Volksgruppen die Bedeutung der Pfeilspitzen kannten und, unabhängig davon, ob sie von Griechen oder Barbaren herstammten, ihre Verwendung im eigenen Milieu akzeptieren. Sonst ließen sich Eindringen und Umlauf eines fremden und bedeutungslosen Objektes in einer anderen Gesellschaft schwer vorstellen”. More on the history of research, see ANOHIN 1986, p. 68–75.

²³ E.g. PREDA 1991, p. 25: “Die Notwendigkeit einer Intensivierung des Tausches zwischen den beiden Gesellschafts- und Wirtschaftstypen bildete die Grundlage für das Aufkommen der ersten Tauschmittel, in unserem Fall der prämonetären Pfeilspitzen”.

²⁴ TALMAȚCHI 2020b, p. 210; TALMAȚCHI 2021, p. 364. For a map of the hoards and of the isolated finds see TALMAȚCHI 2010, p. 70–77, pl. 66, 69.

²⁵ KARYŠKOVSKIJ 1988, p. 33.

²⁶ STINGL 2005, p. 122.

²⁷ ANOHIN 1986, p. 83.

their monetary function, especially when they appear outside the polis, in the indigenous milieu. In the Greek context, arrowheads certainly served as a means of exchange or payment, as evidenced by their appearance in funerary contexts at Olbia²⁸ and Tomis²⁹, as well as the payment for the service mockingly mentioned by a graffito from Olbia³⁰. These testimonies show a monetized world of the polis, at least by the end of the 6th – beginning of the 5th centuries BC, but the same can hardly be said about the discoveries from the territory. If there is agreement in the literature that the arrowhead shape was adopted by the Greeks to facilitate its acceptance by the natives, it remains unclear whether the arrowheads are for the latter a currency, or if it arrived in the indigenous milieu by other means, which do not necessarily imply the recognition of the coin value, respectively as gifts³¹.

A feature of the currency is also the tendency to be quantified and to provide a measure of value. There is no agreement in the literature on the standard used, whether they actually used a standard, and whether it had a unit value, or was assessed in bulk, weighed in balance³² (which would imply different treatment not as coins, but as bullion). A noteworthy remark was made by De Callataÿ³³: the fiduciary nature does not require calibration in the case of bronze coins. This only makes sense in the case of precious metal coins, which have a double value: intrinsic (of the material) and conventional/nominal (of the coin)³⁴.

In the Archaic and Classical periods, the fiduciarity was a purely Greek phenomenon³⁵. In the Near East, where the non-monetised silver had a long history as means of exchange, the Greek coins were treated for a period as bullion³⁶. Compared to the precious metal coin, the bronze coin is “an abandonment of the principle of intrinsic value”³⁷. When taken into consideration

²⁸ KARYŠKOVSKIJ 1968, p. 217.

²⁹ TALMAȚCHI 2020a, p. 331–350.

³⁰ GRAKOV 1968, p. 115; DUBOIS 1996, cat. 31, p. 73.

³¹ AVRAM 1989, p. 76. The hoards of monetary signs from the Histrian territory are seen as objects with value of the status symbols, „prestigious goods offered by the Milesians to the Getic noble elite to sanctify alliances and collaborations” (authours trans.), also AVRAM 1991, p. 27; AVRAM 1996, p. 249. For other ways than trade that would explain the presence of hoards in the territory for later periods, see MUNTEANU 2013, p. 362–396; recently COJOCARU 2021 (in print).

³² SORDA 1979, p. 185–206, makes a point in showing that the production of these pieces does not take into account the calibration. For more on the subject, see TALMAȚCHI 2010, p. 51, with the bibliography.

³³ DE CALLATAÿ 2019, p. 266.

³⁴ Raymond Bogaert distinguished a third value: besides the nominal value, established by the issuing city and confined to the territory that it controls, there is the commercial value, which functions beyond the limits of the influence of the issuing city. The base of the commercial value lies both in the intrinsic value, as well as in the economic power of the issuing city, being essential for the acceptability on the foreign market that is not under the control of the issuing city, see BOGAERT 1968, p. 316.

³⁵ About coinage „an essentially Greek phenomenon, which non-Greek peoples (...) were slow to adopt”: KRAAY 1976, p. 317; see also HOWGEGO 1995, p. 18; SEAFORD 2004, p. 145; SCHAPS 2004, p. 49, 53, 106.

³⁶ FIGUEIRA 1998, p. 31, e.g. the hoards from Egypt contain pieces from various issuers and periods, but also coins damaged through testation, and non-monetised silver.

³⁷ KRAAY 1976, p. 252.

the symbolism of the arrowhead and leaf shape of the monetary signs, not only they are made of base metal, but the represented objects are also equally ordinary. If the arrowheads had the value given by their utility, no matter how small, the leaves are the *embodiment of non-value*. This are the defining features of the monetary signs: on the one hand the lack of intrinsic value of the metal, and on the other hand the symbolic value of the shape, which fits to the conventional value of the coin perfectly.

On the other hand, the theory of the emergence of coinage out of the need to intensify foreign trade presents a fundamental problem. First of all, it was not the need for commercial transactions that led to the appearance of the coin, which existed before without it. Technology was not a determining factor either. Near Eastern societies have long known the application of the seal on bullion, which functioned as a medium of exchange, and their economies were much more complex than that of the Greeks. Decisive was the fundamental concept of abstract value, which has its roots in the relations of reciprocity and distribution within the Greek society³⁸. Secondly, currency has value only in a society, where custom has imposed acceptance of abstract value. We can distinguish two stages in the process of the emergence of the coin: initially the stamped piece of precious metal received an excess of value over the intrinsic one (electrum coin in Ionia, 620–560 BC), and only after the psychological threshold from precious metal to base metal was overcome, did the bronze coin occur³⁹. This did not happen until late⁴⁰, in Sicily around 450, in some parts of the Aegean and mainland Greece at the end of the 5th century, in the rest, including in Ionia, only in the 4th century, and even then the innovation has met a strong opposition⁴¹. Or, if we accept that the monetary signs functioned as coins, then in the West-Pontic area these are attested from the middle of the 6th century BC⁴². Therefore, the apparent anachronism, the early occurrence, rather than the particular shape, anonymity, or non-calibration, makes it difficult to name these signs monetary, or coins. The question is not only whether the indigenous communities were prepared for this step, but also for the colonial society it is not clear how this happened. This reasoning, of the incompatibility with the historical and numismatic context questioned the monetary function of the arrowhead/leaf-shaped signs, and determined the search for alternative explanations: hoards from the vicinity of the Ionian cities should be seen not as the result of the trade relations, but of the gifts-exchange⁴³, or the monetary signs can be understood only in the context of the

³⁸ SEAFORD 2004, p. 9; SCHAPS 2004, p. 17.

³⁹ SEAFORD 2004, p. 145.

⁴⁰ PRICE 1968, p. 94–98; KRAAY 1976, p. 328.

⁴¹ The most quoted being the monetary crisis from Athens, cut off from its silver mines after 413 BC, that lead to the temporary bronze issues, which were soon demonetised (406/404–392 BC), see KRAAY 1976, p. 68–70; HOWGEGO 1995, p. 111; recently KONUK 2011, p. 151, n. 5.

⁴² For Histria: TALMAȚCHI 2017, p. 54; for Berezan/Borysthenes: CHISTOV 2019, p. 101.

⁴³ AVRAM 1991, p. 19–30. But, as Mihaela Mănușu-Adameșteanu remarked, most of the hoard finds are concentrated in small settlements from the territory, and then these are in the end merely base metal hoards, one can hardly called them prestigious gifts, MĂNUȘU-ADAMEȘTEANU 1992, p. 61; MĂNUȘU-ADAMEȘTEANU 1996, p. 104.

polis that issued them, as payment for the god (Apollo)⁴⁴.

The arrowhead and leaf – Apollo's attributes

This last interpretation started from the observation of Anna Rusjaeva⁴⁵, who first made the connection between the arrowhead and dolphin-shaped signs, and the two aspects of the cult of Apollo from Olbia: Ietros and Delphinios. The bow and arrow are the attributes of Ietros, as we learn from the phrase "Ietros toxophoros philios" from the oracular *graffito* from Berezan⁴⁶ and from a representation of Apollo Ietros on a series of Hellenistic coin issues of Apollonia Pontica⁴⁷. Moreover, on the coin of Apollonia the god appears with bow and arrow in one hand, and a branch in the other.

The arrow is the symbol of the god's power to send the disease through his arrows⁴⁸. The leaf is an abbreviation of the branch⁴⁹, a symbol of the god's power to heal⁵⁰. Therefore, the arrow and the leaf express the two aspects of Apollo divine power: to send plague or to heal, to bring death or life. It is not the only case in which a monetary type refers to such an abstract symbol. It is worth mentioning here only the bees on the first electrum coins of Ephesus, which could be read also as a symbol of the souls of those initiated in the mysteries of Artemis⁵¹. More than a personal badge of the issuer⁵², it has a meaning related to cult, namely to the cult of the issuer. Thus the typological ambivalence of the monetary signs observed above corresponds to the divine ambivalence well known to Apollo in general, and which obviously fits to the epiclesis Ietros the best.

Although this explanation has been accepted in the literature, it has remained marginal in the discussion of monetary signs, which further emphasized the symbolic value of the Scythian arrowheads for indigenous peoples and the implications of this supposed value for the trade relationship with the Greeks. In an attempt to find an agreement between the existing opinions, Victor Cojocaru proposed the idea of a double meaning of the signs from the Greek and the Scythian/indigenous perspective: for both sides they had a certain, but different significance⁵³. But if for the Greeks they made a direct reference to their main divinity, it remains unclear what they represented to the

⁴⁴ DE CALLATAÏ 2019, p. 268; previous ANOHIN 1986, p. 78–87.

⁴⁵ RUSJAEVA 1986, p. 49–50; RUSJAEVA 1992, p. 31–40; RUSJAEVA 2005, p. 229–231; cf. ANOHIN 1986, p. 84.

⁴⁶ RUSJAEVA 1986, p. 38; DUBOIS 1996, cat. 93, p. 146–153.

⁴⁷ STÉPHANOVA 1985, p. 272–282; KARAJOTOV 1995, p. 404, cat. 28–29, fig. 23–24.

⁴⁸ "The image of arrows showered down upon a group of people seems to be a common ancient explanation of the multiple appearance of fevers and epidemic plagues in an army or any other closely packed group of people", FARAONE 1992, p. 59. E.g. the plague send to the camp of the Achaeans (Iliad 1.43–54), or the death of Niobe's children (Iliad 24.605–606); more on the bow-bearing god Apollo, at FARAONE 1992, p. 59–61.

⁴⁹ See the leaf on several coins of Leontinoi, FRANKE & HIRMER 1972, pl. 6. 18R, 19R.

⁵⁰ E.g. the episode in which the Milesians were healed by Branchos: PARKE 1985, p. 5; FARAONE 1992, p. 60.

⁵¹ MCCLEAN ROGERS 2013, p. 183.

⁵² KRAAY 1976, p. 22; KARWIESE 1995, p. 113–114.

⁵³ COJOCARU 2012, p. 33.

local populations. According to Timo Stingl⁵⁴, for the Greeks the monetary signs had only the practical utility of the weapon and the value of the metal, while for the locals they had an ideal, or symbolic value, which made it possible to accept them, and therefore to transform them into a kind of currency.

This symbolic value that the arrowhead had for the local populations, Thracians or Scythians, is a widespread and constant idea in the literature⁵⁵. Several quotes from ancient authors are brought as arguments. Nonetheless the significance of the arrows in some quotations is linked to the idea of death that these items can bring, both in the Scythians' oath (Hdt. 4.70), and in the responses given to Dareios (Hdt. 4.131), or to Philip II (Just. *Epit.* 9.2.13). As for the passage from Herodotus 4.81, this was seen not only as a proof for the special meaning that the arrowheads had for the Scythians, but also for their ability to quantify by number and quantity⁵⁶, which is nothing but one of the monetary functions. Herodotus tells that in Scythia there was a bronze vessel, made from the arrowheads gathered from Scythians, one piece pro person, at the demand of their king, Ariantas. Judging by the gigantic size of the vessel from Herodotus' information, its existence was considered unlikely⁵⁷. The key to understand this reference is given by the votive practice of the Greeks, namely by the custom of collecting coin offerings and transforming them into a single larger dedication. Different types of voluntary or imposed contributions were usually collected in a stone box called *thesauron*⁵⁸. Its administration was regulated by a series of inscriptions, which gave instructions on the destinations of the raised funds⁵⁹. After the purchasing of the sacrificial animals, these were mainly durable dedications. Thus put in the context of the Greek votive practice, the story about the huge bronze vessel made from numerous arrowheads seems to be rather a metaphor used by Herodotus to describe the multitude of the Scythians using a comparison from the practice of offerings, familiar to him and to his audience⁶⁰. The whole passage 81 is about the large number of Scythians living in the areas

⁵⁴ STINGL 2005, p. 121.

⁵⁵ E.g. SORDA 1979, p. 185–206, about arrowheads – as sacred and venerated objects of the Scythians; see also AVRAM 1989, p. 76; AVRAM 1996, p. 249.

⁵⁶ E.g. STINGL 2005, p. 123. It results that the monetary value was first acknowledged by the locals, who demanded the choice of the shape although the minting initiative belonged to the Milesian colonists. On the contrary, I would argue that both the monetary value and the meaning of the chosen symbols belong to the issuing city; see also KARYŠKOVSKIJ 1988, p. 32.

⁵⁷ ARMAYOR 1978, p. 50–57.

⁵⁸ DEBORD 1982, p. 195; CRAWFORD 2003, p. 70; on *thesauri* and cult fees: PAFFORD 2006, p. 123–179. Such a *thesauron* is documented for the Hellenistic period also at Olbia (IOSPE I² 76; SOKOLOWSKI 1969, cat. 88; DUBOIS 1996, cat 88; cf. SUK FONG JIM 2014, p. 251) and Miletus (I.DIDYMA 418; cf. PAFFORD 2006, p. 164), being an important piece of furniture in a sanctuary, but not necessarily an essential one.

⁵⁹ E.g. the law for the sanctuary of Aphrodite and Asklepios of Kos, of the hero Theogenes of Thasos, or one of the sacred laws of Oropos, see PAFFORD 2006, p. 124–131.

⁶⁰ Another fictional story told by Dionysius of Halicarnassus (*Ant.Rom.* IV. 15.4) presents a similar pattern: according to this, Servius Tullius ordered everyone from the same pagus to contribute one coin each for the sacrifice and the festival *Paganalia*, see CRAWFORD 2003, p. 70.

described in the book. The exaggeration is intended to express an unimaginable great geographical space.

Furthermore, bow and arrows are considered ethnic/cultural attributes since Antiquity⁶¹, which defined in the eyes of the Greeks not only the local populations, but I would argue also the Ionians living in Scythia. Thus, when they appear on the coins of Olbia⁶², the Scythian weapons are a reference to the Greek version of the myth of the Scythian origin⁶³. As I have recently tried to demonstrate, it is not a question of the legitimacy of a Scythian protectorate over Olbia, but of that of the Olbians over the territory occupied in Scythia⁶⁴. Likewise, the two young men on the silver issues of Histria are heroes of the local *mythopoesis*: Heloros and Aktaios, sons of Istros, and leaders of the Scythians, allies of the Mysians⁶⁵. I will not insist on them here, since I already made a broader argument in this regard on another occasion⁶⁶. In short, the non-Greek, autochthonous element, which became part of the identity of the newcomers, legitimizes in myth their claim over the occupied territory. It is a common strategy of self-representation on the monetary issues of the Archaic and Classical periods. And from the same perspective I would also interpret the monetary signs: the arrowhead might be a local product, but its symbolism is entirely Ionian. This particular item was chosen precisely because not only it was an efficient way to produce standardized metal pieces, but also the ambiguity of the arrowhead/leaf shape illustrated best the two attributes of Apollo Ietros, the main god of Olbia, Histria and Apollonia. As V.A. Anohin⁶⁷ already reminded long ago an often omitted fact, the arrowhead-shaped signs are less numerous compared to the leaf-shaped ones, hoards included; and on another hand, if arrowheads were sacred to the Scythians, the monetary signs in leaf or dolphin-shape had no such meaning to them.

The role of offerings in the emergence of the coin, and of monetization in the dedication of offerings

The adoption of the coin is closely related to polis. A common opinion among archaeologists and numismatists is that the coin appeared from the public needs of the city⁶⁸. According to another view, the foreign trade⁶⁹ was a

⁶¹ The notoriety of the ancient Scythian archer made its garments and weapons an identity mark in the Attic imaginary, not necessarily an ethnic one, but a cultural one, as Ivantchik has already demonstrated, see IVANTCHIK 2006. The Scythian weapons characterize a way of fighting specific to nomadic populations, but also to Persians, which is translated into a social and political behavior opposite to the Greek one; here Scythian representations could be understood from the perspective of the Greek-Persian antinomy, which developed in the Attic milieu after the victory against the Persians.

⁶² STOLBA 2019, p. 523-541.

⁶³ Hdt. 4.8-10, in which the central character is Skythes, son of Heracles and the nymph of Hylaia. For a thorough study of this myth, see IVANTCHIK 1999, p. 141-192; IVANTCHIK 2001, p. 207-216; also recently IVANTCHIK 2016, p. 305-320.

⁶⁴ PANAIT-BÎRZESCU 2020, p. 153-156.

⁶⁵ Philostr. *Her.* 23.11-13, 23.21-22.

⁶⁶ PANAIT-BÎRZESCU 2016, p. 137-146.

⁶⁷ ANOHIN 1986, p. 75 ff.

⁶⁸ KRAAY 1976, p. 321; HOWGEGO 1995, p. 15-33; FIGUEIRA 1998, p. 95.

determinant factor. Finally, the civic pride⁷⁰ is supposed to be one possible motive. But none of these are sufficient to explain the emergence of the coinage. I am more inclined to believe, like Richard Seaford⁷¹, that both the concept of abstract value and its acceptance, essential criteria of the coin, were embedded in the custom of votive offerings, and in the common distribution of meat in the ritual of sacrifice. On the one hand, through participating in the sacrifice, where everyone had an equal share, the solidarity of the group was created, and so did the trust in the common symbols; in fact, to take part in ritual was a condition for citizenship⁷². On the other hand, the lasting offering (first the skin, horns and bones of the animal, then the cult instruments, such as *obelos*, *lebes*, tripod, etc.) are reminders of the sacrificial act⁷³, which when valuable may act like repository of value. The cauldrons, tripods, iron spits functioned as "utensil monies". They appear in sanctuaries, are valuable cult instruments, and have at least a monetary function: means of exchange and payment that justifies hoarding⁷⁴. The battle arrowheads on the other hand are at most symbolic offerings (just as the coin is in later votive practice⁷⁵), given that it takes thousands of pieces to make a valuable offering (see the comment on Hdt. 4.81).

Weapons, including arrowheads, are documented as popular offerings for Apollo in Archaic Greece, as tokens of the warrior-athletic virtues prized in contests, during his festivities⁷⁶. Offerings in general and arrowheads in particular, present the characteristics of the coin: symbolic value, non-functionality, mass production, base metal, durability⁷⁷. The replacement of the perishable offering with a long-lasting one, was extended, as R. Seaford noticed, to the substitution of the last with the coin, which had the advantage not only of the durability of the material, but also of the conventional value, which can be quantified, and therefore better managed⁷⁸. The evolution from offerings to this particular kind of money in arrow-shape can only be presumed⁷⁹.

⁶⁹ MARTIN 1996, p. 259, n. 5. On the different currents of opinion explaining the adoption of the coin through an un-embedded vs. embedded economic behaviour in society, see SCHAPS 2004, p. 22; cf. SEAFORD 2004, p. 8–9.

⁷⁰ E.g. LE RIDER 2001, p. 242–246; a contrary opinion at MARTIN 1996, p. 257–283.

⁷¹ SEAFORD 2004, *passim*; cf. SCHAPS 2004, *passim*.

⁷² SEAFORD 2004, p. 49 ff.

⁷³ SEAFORD 2004, p. 63–66.

⁷⁴ SCHAPS 2004, p. 82–88, esp. p. 88: "They did not, in our terms, use spits for money; they simply traded in spits".

⁷⁵ About the coin as ex-voto in cultic contexts, see DEBORD 1982, p. 193; CRAWFORD 2003, p. 72–73; GORINI 2011, p. 250–252; also GARDNER 1883, p. 247.

⁷⁶ E.g. for Peloponnese, see DENGATE 1988, p. 101, 111–112; for Ionia, see SIMON 1986, p. 237–239.

⁷⁷ SEAFORD 2004, p. 67.

⁷⁸ SEAFORD 2004, p. 78–84.

⁷⁹ As already did e.g. TOPALOV 1993, p. 11; POENARU-BORDEA 2001, p. 9. Most likely, as in the rest of the Greek world, the votive practice has created the conditions for the appearance of the coin, but the triggering factor, or better say the occasion that pushed for such an innovating decision might be another story. The payment of mercenaries seems to have been such a trigger factor in the adoption of both the electrum coin in the 7th century (SEAFORD 2004, p. 120, 128), as well as of the bronze coin in the 4th century BC Ionia; the

Once created, the coin became a means imposed by norm to regulate the common activities, including the cultic ones, a means necessary to ensure the correct distribution (of the participation in the ritual) and contribution (of offerings). The coin facilitated the cumbersome procedure of managing the offerings, well-illustrated by an inscription from Oropos, which listed the offerings from the sanctuary, and which mentioned the weighing of offerings that were not in coin⁸⁰. Thus the perishable offering, like *pelanos* and *aparche*, is transformed into coin, as decrees and sacred laws attest since the Classical period. These kind of perishable offerings most likely existed before this date. The inscriptions do not regulate an innovation, but a long-standing custom, most likely from the 6th century BC⁸¹. *Pelanos* is a cake made of flour and honey, which was placed on the altar in the preliminary sacrifices of the oracular cults. Over time it became a term for the coin offering, which replaced the perishable one⁸². Similarly *aparche*, the offering from the first fruits, voluntary and occasional, at the end of an income-generating activity, became synonymous with the coin offering⁸³. Thus the coin fees were, as Isabelle Ann Pafford⁸⁴ remarked, a „ritually significant activity”, closely related to the votive offering and sacrifice, the coin mediating the collective participation in ritual.

The two Apollonian attributes – arrowhead and leaf – make us aware of the destination of the monetary signs, a lot of offerings being destined for the main divinity, Apollo, as the epigraphic finds of the Archaic and Classical periods from Histria and Olbia show⁸⁵. The arrowheads could be an offering of a young teenager in a contest of archery, or a suitable prize for the winner, such contests being attested at Olbia⁸⁶. In analysing the evidence of Apollo’ cults from Peloponnese, Christina Dengate⁸⁷ underlined the close connection between Apollonian festivals and the image of the god on the coin issues, the former being a determining factor for the later. Public sacrifices and festivals were one of the public expenditures through which the city could have introduced the coin on the

4th century first bronze Ionian currency is best described by Koray Konuk in the phrase “war-tokens for silver” (KONUK 2011, p. 151–161).

⁸⁰ MARTIN 1996, p. 275.

⁸¹ DAVIES 2001, p. 119; PAFFORD 2006, p. 31.

⁸² DAVIES 2001, p. 119, with examples of offerings in kind and in coin. The author notices that the inscription of Delphi, around 500 BC, which mentions the payment of *pelanos* in coin is contemporaneous with the first coin issues of Delphi; a similar observation at PICARD 2005, p. 61–63. For other examples: DEBORD 1982, p. 210; SEAFORD 2004, p. 78; PAFFORD 2006, p. 137.

⁸³ E.g. Paiania’s law, 450–430 BC, on the conversion of the portion of the slaughtered animal for the priest in coin. Also the wheat dedicated as *aparche* to the Eleusinian feasts in Attica was collected in silos and then sold, and the coin hoarded in the sanctuary was used to purchase offerings and sacrifices, PAFFORD 2006, p. 25. See also DEBORD 1982, p. 193, 225; DIGNAS 2002, p. 20; SUK FONG JIM 2014, *passim*.

⁸⁴ PAFFORD 2006, p. 92, 200.

⁸⁵ RUSJAEVA 2005, p. 221–246; CHIEKOVA 2008, p. 15–43.

⁸⁶ A 4th century BC inscription praising the deeds of Anaxagoras, son of Demagores, who shoot in an archery contest the longest distance, IOSPE I² 195; cf. DUBOIS 1996, cat. 47.

⁸⁷ DENGATE 1988, p. 44–46; cf. KRAAY 1976, p. 3.

market, either as a form of distribution⁸⁸, or as simplification in the management of offerings⁸⁹. This could be the early phase, in which the West-Pontic monetary signs might have functioned as special purpose money for cult expenses, as suggested by De Callataÿ⁹⁰. This reasoning is supported by the fact that the monetary issues in the first centuries are considered insufficient for the volume of commercial transactions, the currency remaining marginal in the economy⁹¹. Therefore it is a common opinion among some numismatists that the initial function of the coin must have been fulfilled internal social needs of the city, other than trade⁹². Discontinuous issues seem to be more appropriate for certain panegyric occasions⁹³, and less for supplying a market based on coin transactions. And given that the main way by which the coin was distributed among the citizens was through state expenditure⁹⁴, one may assume that the arrowhead/leaf-shaped signs were issued for public necessitates involving cult payments.

However, there still remain some loose ends in this argumentation that need clarification. First is the early adoption of this fiduciary bronze coinage that questions the monetary function. Secondly is the hoarding pattern that shows a difference between city and territory, the presence of hoards in the territory being a strong argument of the theory about the influence that the trade relations with the natives had in the choice of the arrowhead shape.

The early occurrence of the fiduciary coinage in the Black Sea colonies

The bronze coins firstly appeared in the colonies of the South Italy and Sicily⁹⁵. In the Black Sea, the first bronze issues of Histria (the wheel type) were considered „a separate development from base metal money in the form of arrowheads”⁹⁶. When discussing the motivations, the driving force behind the adopting of the bronze coin, one main reason is considered, in the words of Koray Konuk, the “practical response to the increasing use of coinage in everyday transactions”⁹⁷, by replacing the fractional silver coins. This rather fits to a later period, when the silver coinage was already circulating for some time. In our case

⁸⁸ At Athens the surplus of public revenues from the silver mines were distributed among citizens, KRAAY 1976, p. 323.

⁸⁹ Either the surplus offering in kind was changed in coin at the gate of the sanctuary, in the agora (see above), or by the means of the coin were procured the necessaries for sacrifices: charcoal, spices, honey, wheat, the animal for sacrifice, cf. LINDERS 1988, p. 267–269.

⁹⁰ DE CALLATAÿ 2019, p. 268.

⁹¹ MEADOWS 2014, p. 169–189.

⁹² BOGAERT 1968, p. 328; KRAAY 1976, p. 320; SCHAPS 2004, p. 97, 108.

⁹³ BOGAERT 1968, p. 296–297; DEBORD 1982, p. 231–233, 243.

⁹⁴ HOWGEGO 1995, p. 91; FIGUEIRA 1998, p. 95; also KRAAY 1976, p. 321–322.

⁹⁵ KRAAY 1976, p. 230. The first experiments have taken unusual forms at Akragas, Selinus, and Himera: cast in pyramid or melon seeds shapes in the first half of the 5th century BC.

⁹⁶ HOWGEGO 1995, p. 7; cf. PRICE 1968, p. 94–98.

⁹⁷ KONUK 2011, p. 151; see also MEADOWS 2014, p. 188.

the bronze monetary issues preceded the silver coins with several decades⁹⁸.

According to another opinion, the base metal coinage appeared as a response to a crisis⁹⁹. Such temporary issues of bronzes that replace silver in time of crisis are well documented, an example being that of Athens¹⁰⁰. But Athens abandoned this innovation as soon as the economic conditions were re-established; the bronze issues were only a measure of emergency. The case of the Hellenistic Chersonesus lead *tesserae* is another similar example from the Black Sea¹⁰¹. The arrowhead/leaf-shaped monetary signs were not a temporary solution; they lasted for a century.

There are two aspects that need to be underlined here. First of all the use of coin was already known to the colonists from their mother-city¹⁰². The colonization contributed to the spreading of the coin. Moreover it is noteworthy that the bronze coinage was first adopted by the colonies from the South Italy and Sicily, as well as from the Black Sea. Both areas had in common a society familiarized with the use of the coin, and above all with the concept of abstract value. One of the most compelling arguments of R. Seaford's theory (see above), according to which there is a structural link between sacrificial distribution and monetization, comes from Olbia, and has Orphic associations¹⁰³. A series of rectangular bone plaques polished on both sides were found scattered in the sanctuary and in the residential quarters. Three of them are dated in the 5th century BC and bear graffiti that mention the names: Dionysos and *orphikoi*, as well as the words: *bios-thanatos-bios*. Martin L. West¹⁰⁴ interpreted them as "membership tokens" symbolizing participation in sacrifice. The analogy is remarkable on the other hand also for the symbolism of the arrowhead/leaf-shaped signs that imply also the idea of death and life. This does not necessarily highlight a similarity between the faith of the *orphikoi* from Olbia and the users of the monetary signs (although they are the same), but rather highlights the tendency to connect such an object to an abstract concept, a basic requirement for the adoption of the coin.

But what made the bronze issues not only to be adopted so early, but also to last so long, when in other parts, like Athens and Ionia, have met strong opposition? The electrum coinage could be a good analogy; it is well represented

⁹⁸ Although it might have functioned as small change, in parallel with the electrum issues, cf. SOLOVYOV 2006, p. 65.

⁹⁹ SEAFORD 2004, p. 139.

¹⁰⁰ In 413 BC, Athens was cut off from its silver mines; after a first attempt, a gold issue in 407/6 BC, minted from the melting of several dedications on the Acropolis, Athens started to struck bronze coins in 406/5 until 392 BC, when they were demonetized: KRAAY 1976, p. 68–70, 74; HOWGEGO 1995, p. 111; FIGUEIRA 1998, p. 497; KONUK 2011, p. 151.

¹⁰¹ KOVALENKO 2004, p. 125–163; cf. DE CALLATAÏ 2019, p. 269, n. 75.

¹⁰² The first monetary issues in the Greek world belonged to the Ionian cities, among which Miletus played an important role, the Milesian standard being used in South Ionia and Lydia, KRAAY 1976, p. 27.

¹⁰³ SEAFORD 2004, p. 108. The coin issuing in Western Greek colonies are also contemporary with the Orphic current, the invention of the coin being linked by tradition with Pythagoras, KRAAY 1976, p. 164; SEAFORD 2004, p. 267. More on the Pythagorean current and monetization see SEAFORD 2004, p. 266–275.

¹⁰⁴ WEST 1983, p. 18.

in the Black Sea area until late in Hellenistic times¹⁰⁵, while in Ionia it was quickly replaced with silver or gold coins (the Croesus's reform)¹⁰⁶. The reason for which the Lydians choose to substitute them was the semi-fiduciary nature¹⁰⁷, the proportion between gold and silver being unequal they had a significant nominal value, which made them improper to be used as bullion. In comparison, the colonial milieu of the Black Sea was free from the burden of Near East trade custom that valued the precious metal in coins. As Thomas Figueira noticed, the *xenia* type relations between Greek colonists and the local elites "dispelled some of the uncertainty that would prevail in some advanced markets"¹⁰⁸. On the other hand the Greek colonies had good location that made it easier for them to impose their token currency in their territory and in the neighbouring area. Just like the iron coins of Byzantium, the bronze arrowheads/leaves-shaped signs were "a product of special circumstances". In the case of Byzantium, the iron currency lasted because of the unique location between Propontis and the Black Sea, which made it impossible to risk "the diversion of business to alternative locales"¹⁰⁹. What Western Mediterranean and West Pontic colonies had in common besides a monetized society and familiarity with the concept of abstract value was also the opportunity for innovation offered by a new environment that was no more bound by old trade customs. There the colonists were in the best position to dictate the rules of their exchange relations, in which the conventional value was no longer an issue; which explains both the early occurrence and the resilience of the token currency in the Black Sea area.

The question of the hoarding pattern in the relation city - territory

The presence of hoards in the vicinity of the cities (*chora* and hinterland¹¹⁰), in contrast to the isolated finds from the cities, is a central argument of the theory about the special meaning of the arrowheads for the local population, that influenced the choice of the arrowhead shape. First of all, the hoards are not a direct proof for trade, but rather an evidence of insecurity¹¹¹, probably related to war that made impossible the recovery. In addition the coin circulated also

¹⁰⁵ FIGUEIRA 1998, p. 42; cf. KARYŠKOVSKIJ 1968, p. 215–216; KARYŠKOVSKIJ 1988, p. 28–29.

¹⁰⁶ KARWIESE 1995, p. 149 ff.

¹⁰⁷ KEYBER & CLARK 2001, p. 116.

¹⁰⁸ FIGUEIRA 1998, p. 96.

¹⁰⁹ FIGUEIRA 1998, p. 62.

¹¹⁰ E.g. in the territory of Histria, and beyond, in settlements situated on the shores of the Danube, see IRIMIA 2007, p. 137–225; cf. TALMAȚCHI & CUSTUREA 2011. At the time the hoard finds from the Danubian settlements of the local population seemed to be more of isolated nature, in comparison to the settlements from the Histrian territory. The recent illegal excavations, mainly made with metal detectors, have yielded numerous hoards of monetary signs, see TALMAȚCHI 2020b, p. 210; TALMAȚCHI 2021, p. 364.

¹¹¹ HOWGEGO 1995, p. 88: "Concentration of hoards tend to reflect not prosperity or heavily monetized contexts, but rather the insecurity (particularly warfare) which resulted in owners not recovering their treasure (...). Patterns of hoarding may give a distorted picture of how coins circulated in antiquity (...)" ; on the limits of hoards evidence, see further HOWGEGO 1995, p. 88–90; also FIGUEIRA 1998, p. 22–25.

through a number of other non-trade relations, such as the gift-exchange¹¹². On the other hand the lack of hoards is not an evidence of a lesser trade in the city, but quite the opposite, of the intensive use of the coins. The electrum hoards are also missing in the cities, instead they are present in the territory¹¹³; this does not mean that this currency was less well received in the city, and better by the local population. It rather points to the efficiency of the mechanisms both of conversion into local coin and of recirculation of the foreign coins back in the area of the issuing city¹¹⁴. If the pattern of finds, recordings and publications are not misleading, it might show rather a different behaviour in hoarding between city and territory¹¹⁵.

There might be yet another explanation for the lack of hoards in the city: the arrowhead/leaf-shaped signs do not necessarily imply hoarding, at least in sanctuaries. The story of Herodotus and the epigraphic evidence show the practice of transforming the small contributions in coins into a suitable form of hoarding: dedications made of precious metal. This is best seen in the inventory lists of Delphi and Didyma sanctuaries, where the silver *phialae* figure as typical offerings for Apollo¹¹⁶. The accumulation of offerings led to the formation of a financial fund, which could, if necessary, supplement expenses for cult or even for city in times of crisis. From a Hellenistic decree of Olbia¹¹⁷ we find out about the sacred vessels, which were put as a guarantee for a loan of 100 staters given to the city by a certain Polycharmos, and which were in danger of being melted down to be converted into currency, so that the creditor could recover his loss. It is an example of an occasion, in which the valuable metal hoarded in sanctuary was reintroduced into circulation through coin. Thus, the different pattern in hoarding between *polis* and *chora* may betray not only the insecurity of the territory, and the highly circulated market of the city, but also a hoarding custom, in which the token bronze currency, unlike the precious metal, was more appropriate to flow than to be stored.

Conclusions

Resuming, in regard to the particular shape of the monetary signs, the casting in arrowhead moulds was a simple, efficient and handy way to produce relatively standardized metal pieces, representing not a certain type of

¹¹² AVRAM 1991, p. 19–30; about other non-trade relations, see MUNTEANU 2013, p. 362–396.

¹¹³ On the finds from the Black Sea area, see FIGUIERA 1998, p. 30; cf. KARYŠKOVSKIJ 1968, p. 215–216; KARYŠKOVSKIJ 1988, p. 28–29, who noted that the fractions of electrum Cyzicenes are better attested in cities compared to the few examples in the hoards from the territory.

¹¹⁴ About the absence of the Attic tetradrachms in the West Greek colonies, see FIGUEIRA 1998, p. 26.

¹¹⁵ E.g. the *aes* hoards from South Italy, MURGAN & KEMMERS 2016, p. 285.

¹¹⁶ DEBORD 1982, p. 14, 217; DIGNAS 2003, p. 18. These offerings were made both by private individuals, and cities. A Hellenistic Milesian decree recalls the rejected request of one of its colonies, Cius, to be exempted from this obligation, see SUK FONG JIM 2014, p. 223–225.

¹¹⁷ The honorific decree for Protogenes: IOSPE I² 32+230; cf. BOGAERT 1968, p. 124–125, 320; HOWGEGO 1995, p. 33.

arrowhead, or a certain type of leaf, but rather the equivalence of the two. Arrow and leaf are here considered two Apollonian attributes, which speak of the divine powers of Apollo Ietros: to send plague/death, and to heal/to bring life. Therefore the typological ambivalence of the monetary signs fits well to the divine ambivalence of Apollo Ietros, the main deity of Histria, Olbia and Apollonia. The particular shape of the monetary signs makes sense when discussed in the context of the votive practice, which also created the conditions for the adoption of the coin. The passage from Herodotus 4.81 is interpreted, from this viewpoint, as metaphor used to describe the multitude of the Scythians using a comparison from the practice of offerings. However the triggering factor and the nature of the crisis that prompted the decision to cast the first issues with monetary value are hard to discern. They might have been connected to the articulation and the solidarity of the new build community. The opportunity for innovation offered by the new environment, which was not longer bound by the old tradition of social and economic relations, explains both the early occurrence and the enduring production of this particular token currency.

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