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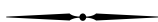
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EN ZEGELKUNDE

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REVUE BELGE DE NUMISMATIQUE
ET DE SIGILLOGRAPHIE



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NUMISMATIEK EN ZEGELKUNDE

CONTROL MARKS ON HELLENISTIC ROYAL COINAGES: USE, AND EVOLUTION TOWARD SIMPLIFICATION?

Abstract – This paper aims to shed light on the interpretation of secondary marks (symbols, monograms and letters) on Hellenistic royal issues. These marks have been variously interpreted as personal marks of a range of people, acting either outside the mint (the eponym magistrate of the city, the magistrate in charge of the monetary affairs, the benefactor who provides the metal, or even the military commander for whom coins were primarily issued) or inside the mint (the mint master, the engraver or various subordinate monetary officials). They have also been attributed to non-personal purposes (to identify officinae, indicate the source of the metal, or to designate military units as beneficiaries). Not all these explanations are convincing, and several appear very unlikely or exceptional (magistrates, liturges, engravers, military officers or units). The marks are best viewed as internal control marks, whose number and efficiency have to be considered in their broader archival context. Hence, the paucity of secondary marks on late Ptolemaic issues (a year and a mint) likely implies a more secure system of written records.

THE QUESTION OF HOW A HELLENISTIC ROYAL MINT FUNCTIONED IS A problem that requires a cautious approach. ^[1] The diversity of cases does not allow simplification to one or two explanatory hypotheses. ^[2] And the coin material itself does not allow for Hellenistic monarchies the positive tone used by Harold Mattingly: “*We are at last in a position to enquire profitably into the workings of the Roman mint in the late Republic*” (MATTINGLY 1982, p. 9). The only clear glimpse we do possess is the famous letter of

* @ : callatay@kbr.be. The author wishes to express his deep gratitude to Rick Witschonke in improving once more his English.

[1] Among many possible quotations, see LENORMANT 1879, vol. 3, p. 38: “Il n’est aucune partie des constitutions des diverses cités helléniques qui soit moins connue que le rang, la qualité et la désignation des fonctionnaires chargés des monnaies” or PICARD 1979, p. 9, note 1: “Il manque une étude d’ensemble sur l’organisation des ateliers monétaires grecs, comparable à celle de H. ZEHACKER, *Moneta* (1973), p. 91-195” (= ZEHACKER 1973).

[2] GAUTHIER 1975, p. 195 summarized the various proposals made so far under three possibilities: these control marks were *a)* for eponym magistrates, *b)* for citizens in charge, *katastatheutes epi...* in Greek, or *c)* to mark a liturgical responsibility, *i.e.* to indicate who gave the money.

Demetrios, the presumed master of the Alexandrian Mint, to the *dioecetes* Apollonios, dated 258 BC, about reminting coins (*P. Cair. Zen.* 1 59021).^[3] What we are informed of in this letter fits with what we know from pseudo-Aristotle in his *Oeconomica* (1.3), *i.e.* the decision to strike coinage (when and of what nature) belongs solely to the king. And coinage is, in fact, one of his main responsibilities (VAN GRONINGEN 1933, pp. 3 and 31-32).

The object of this contribution is to identify the nature of the control marks (symbols or letters) on Hellenistic royal issues.^[4] Letters appear in different ways: single letters, sets of two or more,^[5] full names,^[5] and monograms. These marks have been variously interpreted as *personal* marks for a range of people acting outside or inside the mint. Proposals for individuals outside the mint include: the eponym magistrate of the city (whatever the magistracy in each city),^[6] the magistrate in charge of monetary affairs (or, more generally, the person responsible for control at the highest level, the superintendent), benefactors who offered the metal (liturges, but see *infra*), or even military commanders, for whom the coins were primarily issued. Inside the mint, the proposals include: the mint master, the engraver (but see *infra*), or various subordinate monetary officers.

To that list, *non-personal* proposals can be added, not all of the same degree of attractiveness: these control marks may have referred to mints^[7] or *officinae* (workshops functioning separately inside the same mint); they may also have been used to indicate the source of the struck metal;^[8] or the military unit for whom they were made, as recently argued by Makis Aperghis for the Seleucids (APERGHIS 2010). Letters could be used as marks of value (very rare);^[9] the

[3] See HUNT & EDGAR 1934, no. 409 and BAGNALL & DEROW 1981, p. 133-134. See LE RIDER 1998A for a recent numismatic comment.

[4] I do not consider the pellets on Aesillas tetradrachms, explained by FISHER 1985, as a control system very much like the secret marks on certain modern coinages, a hypothesis which appears anachronistic, and does not fit the evidence (see BAUSLAUGH 2000, p. 85-89, who favours another unconvincing idea: that these pellets were added by the engravers to distinguish their production).

[5] An attested practice was to reduce a name to its first and last letter (PICARD 1979, p. 88).

[6] This possibility is best argued when the full name is introduced by ΕΠΙ (see FURTWÄNGLER 1982). For *ephors*, see PFEILER 1965, p. 49-51 and MØRKHOLM 1991, p. 32.

[7] For posthumous issues of Alexander the Great, see PRICE 1991, p. 35. For Thessalonica and the Aesillas coinage, see BAUSLAUGH 2000, p. 84-85.

[8] For Macedonian royal coinages, see MACKAY 1970 and MATHISEN 1983, p. 46. That general principle has been denied by MØRKHOLM 1979, p. 82 & 1983, p. 92, n. 9 (about FISCHER 1975). It is presented as a working hypothesis by HOUGHTON & LORBER 2002, p. XXI.

[9] Marks of value appear *on the obverse* of some bronze issues for Antiochus IV in the mints of Seleucia on the Tigris, Antioch of Mygdonia and in an undetermined Western mint (and *only* on these issues, c. 169/8-164 BC). Later, they reappear briefly in Ecbatana under Timarchus (c. 162-160 BC), Alexander Bala (c. 150-148/7 BC) and even under Mithridates I of Parthia (LE RIDER 1994, p. 21-25 & 1998B, p. 45-48).

year within an era (frequent); or any numerical suite where A is used for 1, B for 2, etc. For Ptolemaic coinages, we should have in mind the case of Arsinoë's coins, for which such a numerical sequence has been proved to have nothing to do with regnal years (TROXELL 1983). Also, some late issues of royal Bithynian tetradrachms display a date on the reverse and a letter on the obverse. Moreover, symbols have sometimes been explained as propagandistic, without any control function (but see *infra*: *Engravers*).^[10]

These marks have been sporadically commented upon by many scholars, but we lack a general study on this important topic.^[11] What follows should be considered a preliminary essay (limited to Hellenistic royal coinages), preparing the ground for such a general study. This paper offers general comments, first on what appear to be unlikely explanations or explanations of rarely-encountered situations, and second on likely explanations. It is thus mainly conceived as a list of *caveats* to keep in mind when looking at any particular coinage.

1. Unlikely explanations

1.1. *Magistrates*. A first lexical comment is to insist that the word 'magistrate', used so generously,^[12] is likely to be inadequate in most cases in dealing with Greek coinages. Indeed, to speak about magistracy implies a well established function for which responsible officers are elected or designated at fixed dates, a board of persons who, upon taking office, receive accounts from their predecessors, and cannot leave office without submitting their accounts to their successors. Although epigraphic material is informative about many of the various magistracies of the Greek world, nothing has emerged so far related to the striking of coins. The only text of the Hellenistic period dealing with an individual involved with the coinage is the well-known decree of Sestos in honour of Menas (OGIS 339, some time before 120 BC), but no title is attached to his coinage responsibility. Menas and his colleague were authorized to strike for an *ad hoc* purpose. They are not magistrates; they are not even *katastathentes epi...* 'in charge of'. Most Hellenistic coinages were produced on an inter-

[10] CACCAMO CALTABIANO *et al.* 1997, p. 120. These symbols, which appear on the obverse of coins of Hieron II of Syracuse and his family, are not systematically described in the catalogue, and nowhere gathered in a list, thus implying that they were not related to the mint organization.

[11] The most thorough investigation remains LENORMANT 1879, vol. 3, p. 37-143 (*Les magistrats monétaires chez les Grecs*). For Greek coinages, see mainly GAUTHIER 1975 (especially p. 174-179: 'Noms de magistrats') and FURTWÄGLER 1982 (mostly for Archaic and Classical coinages).

[12] Louis Robert almost always used the word 'monétaire' (as in ROBERT 1936, p. 271). E.T. Newell, reacting against L. Müller and his mint attributions, used systematically the word 'magistrate'. Provincial coinages struck under Roman rule were different in that respect (*e.g.* ROBERT 1934).

mittent basis. Mints (here the word does not even imply the existence of a specific building as in Athens) were more often closed than open. For these reasons, it is preferable to call them ‘*ad hoc* officers’, and to avoid the word ‘magistrates’,^[13] especially since it may imply the idea of an annual tenure, which is often inappropriate.^[14] It should also be noted that the word ‘*Münzbeamten*’, commonly used in German while referring to all these control marks, is not neutral, since it conveys the idea of a regular designated college.^[15]

Even when we do find regularity, it would be dangerous to posit that officers in charge always remained in office for one year (as it is the case at Athens for a college of two). Officials stayed in office for six months at Tyre and Sidon. For Aradus, it has long been thought that official tenures lasted two months, until Jörg Muller recently proposed a different solution, which is hard to reconcile with ‘magistrates’.^[16]

Nonetheless, a few names of magistrates appear on Hellenistic coinages, although very sporadically, and none in conjunction with royal coinages as illustrated by the following table.^[17]

Mints	Magistracy	Period	Nature
Erythrai (Ionia) ^[18]	Exestatai	c. 375–360 BC	bronze coins
Apameia (Phrygia) ^[19]	Eglogistai	Hellenistic	bronze coins
Kos (Karia) ^[20]	Prostatai/Boulè	Late Hellenistic	tetrobols

[13] This idea still persists in many minds: see *e.g.* COHEN 1995, p. 11; HOLT 1999, p. 52; and TREVETT 2001, p. 28.

[14] The hypothesis of yearly magistrates is particularly pernicious since it is often presented as a natural assumption, not requiring analysis. It is beyond the scope of this paper to describe its history and development. See for example, HOLLOWAY 1969, p. 30–31 (confronted with the problem of having too many names for a thirteen months reign) and his conclusion: “*The magistrates cannot be annual magistrates*” (p. 31).

[15] FÜRTWÄGLER 1982, p. 7, n. 20. Indeed, it is likely that – consciously or not – many have in mind the model of the Roman *tresviri monetales*.

[16] SEYRIG 1950, p. 28–31 (for Tyre and Sidon). For Aradus, see MÜLLER 2005, p. 316–319.

[17] Tarent does not appear on the list, even if some have interpreted the letters ΕΦΣΩΔ-ΑΜΟΣ, as ‘Eph(or) Sôdamos’, a name attested elsewhere (BRUNETTI 1960, p. 51–52 and PFEILER 1965, p. 49–51) or even ‘ΕΦΑΝ’, as a proof that the coinage was struck under the authority of the eponym ephor. This has been shown to be in error by FÜRTWÄGLER 1982, p. 15 and FISCHERT-BOSSERT 1999, p. 402, since the name appears in nominative.

[18] KINNS 1980, pp. 23–24 and 422.

[19] FRÖHLICH 2004, p. 208–225.

[20] In Kos, the letters ΠΡΟΣΤΑΤ and ΒΟΥ (combined with another name) on some late Hellenistic issues of ‘tetrobols’ have prompted the idea that they should refer to the *prostatai* (a college of magistrates documented at Cos by c. 30 epigraphic inscriptions) or the *boule* (KROLL 1964, p. 91–99).

Iasos (Karia) ^[21]	Archontes	c. 150 BC	bronze coins
Pergamon (Mysia) ^[22]	Prytaneis	c. 92-67 BC	cistophori
Smyrna (Ionia) ^[23]	Prytaneis	c. 88-85 BC	staters
Antioch on the Maeander ^[24]	Synarchia	Early Imperial	bronze coins

At Apameia in Phrygia, near the end of the Hellenistic period, names with patronyms appear on bronze coins (FRÖHLICH 2004, p. 208-225). Out of c. 50 names known for three bronze denominations, five are followed by, instead of patronyms, the word *eglo(gis)*. This is a clear reference to their status as *eglogistai*, who were in charge of financial matters. Pierre Fröhlich sees two possibilities: either only five out of these c. 50 magistrates were *eglogistai*, a function thus not directly related with their monetary responsibilities; or they were all *eglogistai*, and only five of them chose to make it explicit. Neither explanation is completely satisfying, but I do not share his view that all these names were ‘magistrates’ (and, in fact, ‘yearly magistrates’).

The three best documented cases of magistrates signing Hellenistic coinages are Erythrai, Apameia and Iasos. These are all bronze coinages, but different magistracies are involved in each case: *exestatai*, *eglogistai* and *archontes*. The very fact that the names of magistrates vary sporadically, within long sequences of individual names, argues against the idea that they were all magistrates. It is thus likely that only the designated persons were magistrates, a fact they wished to make clear on the coins.

1.2. *Engravers*. It seems natural to suppose that gems, especially intaglios, were produced by the same skilled artisans who engraved monetary dies. However, it has been long noted that, while we do have names of famous engravers for gems, both in the literature (Pliny) and on the gems themselves, the literary sources do not mention the name of any engraver of coin dies (e.g. HENNIN 1872, p. 62-64). It comes as no surprise that some have been tempted to see engravers behind these control marks. To the best of our knowledge, engraver’s signatures were rare in the Hellenistic period (DE CALLATAÏ 1995).

[21] ASHTON 2007, p. 71.

[22] KLEINER 1978, pp. 79 and 103-105. In Pergamum, if our reading of a monogram (ΠΥ) is correct, *cistophori* struck in the late 90’s and after were also placed under the responsibility of *prytanes* (LENORMANT 1879, p. 61-62).

[23] KINNS 1980, p. 24. A rare gold issue in Smyrna (two specimens known), thought to have been struck during the first Mithridatic war (c. 88-85 BC), has the legend ΖΜΥΡΝΑΙΩΝ ΠΡΥΤΑΝΕΙΣ (the *prytanes* of the citizens of Smyrna). Also in Smyrna, it has been noticed that several names appearing on the issue ‘Head of Tyche r./Lion r. in an laurel wreath’ are accompanied by a monogram of various forms which was read (incorrectly) as the first letters of ‘Prytanes’ (LENORMANT 1879, p. 60-61).

[24] RPC no. 2829-2831, 2834, 2836.

And, when they are present (but we clearly have to be cautious about the circular argument here), these signatures appear in minute full letters, normally under the neck's truncation. The engraver-hypothesis was accepted and discussed for a long time (19th and first half of the 20th century). However, in recent decades, it has lost support, and several cases have been formally contradicted.^[25] For Hellenistic royal coinages, there has been much discussion of the minute letter Δ, found hidden in the elephant's or Aegis' skin on the obverse of coins of the Ptolemies (mostly Ptolemy I Sôtér) (*Ill. 1*).



Ill. 1 – Tetradrachm of Ptolemy I, c. 310 BC (Ira & Larry Goldberg Coins & Collectibles, Auction 41, 27/V/2007, no. 2895 – Δ on the top of the Aegis on the obverse (© Coinarchives.com)

R.A. Hazzard, who devoted a full chapter to this mark, saw an engraver, “*the best engraver of the Hellenistic Age*” (HAZZARD 1995, p. 25). However, it has been demonstrated that this Δ (and other letters, including the letter K) may be found considerably later, until the years 250 BC, and the coins involved show the style of several hands. Hence the conclusion of C.C. Lorber: “*This letter has been supposed to be an artist’s signature, but its presence on dies of artist B refutes that belief and the letter must have had a control function of some sort*” (LORBER 2005, p. 56).

Two main arguments militate against the engraver-hypothesis. First, there is simply no link between the style of the dies and the control marks. As a rule, differences of style do not correspond to new monograms or symbols, and the opposite is true as well. The monogram AI, for example, which is found on many issues of Demetrius Poliorcetes in Pella, survived many style changes and, incidentally, several type changes.^[26]

Second, control marks were regularly erased, extended or recut on Greek coins, and this is indeed another strong argument against the engraver-hypothesis. Examples of recut control marks are plentiful on many civic and royal

^[25] Engravers, who were skilled artisans, may have been illiterate (HOOVER 1996). For the KAΛ signature in Tarent, Heraclea and Metapontum, see FISCHER-BOSSERT 1999, p. 399-401 (*pace* CAHN 1999).

^[26] NEWELL 1927, p. 81-97 (Series II-VI).

coinages.^[27] We may get an idea of the extent of this phenomenon by reviewing the list compiled by Georges Le Rider.^[28] These examples of recutting contradict the engraver-hypothesis (or the idea that symbols were used casually for their iconography). Clearly, people cared about these marks, which are thus best seen as control marks, engraved for accounting purposes.^[29]

1.3. *Liturges*. It has been proposed that these names or monograms were placed on the dies to honour people who donated the metal for the coinage, especially if these names appear in full. This hypothesis, mainly argued by American scholars,^[30] has been categorically rejected by Louis Robert and Philippe Gauthier.^[31] The theory is not supported by any epigraphic evidence (despite some exceptions, such as *Inscripfen von Priene* 174, which would have favoured its mention), and is incompatible with the basic fact that, as a rule, full names do not appear on Hellenistic coinages.^[32] So, we are faced again and again with marks that do not reveal, except for initiates, whom (or what) they intend to refer to and that therefore can hardly be taken as marks of honour.

Another argument is perhaps even more decisive: the financial burden of a liturgy at Athens was between c. 300 and c. 6,000 drachms, which makes one talent (COHEN 1992, p. 196). That was a large sum even for the most wealthy citizens, but the amount is still well below the average productivity of a single reverse die, especially if we are dealing with Attic tetradrachms (1,500 tetradrachms [1 talent] is substantially under the average number of coins struck by

[27] For Tarentum, see the extensive list given by Fischer-Bossert, *Chronologie der Didrachmenprägung von Tarent*, p. 401. Recutting may also be seen on Alexander tetradrachms and drachms (see TROXELL 1997, p. 42-43 [a stern over a grape, an eagle head over an ivy-leaf] or THOMPSON 1983, p. 59 [A recut over ME]) or on Philip posthumous 'fifths' (TROXELL 1997, p. 68 [a crescent recut on a monogram]). Other examples include a letter B added on a reverse of a Macedonian tetradrachm struck in Amphipolis c. 280-270 BC (MATHISEN 1983, p. 45), and the name ΑΙΝΗΤΩΡ cut over ΣΤΑΣΙΩΝ on a Rhodian posthumous Alexander (PRICE 1991, p. 317 and 319). The phenomenon of recut dies, examples of which have been listed here in a most unsystematic way, certainly deserves to be studied systematically.

[28] LE RIDER 1977, p. 477, s.v. 'Regravure de coins' (there are mentions of six symbols recut over other ones and three erased symbols, justifying the general statement: "les retouches de coins sont fréquentes à Pella et Amphipolis"), and 1999, p. 1412, s.v. 'Monogramme'.

[29] A different (and exceptional) case may be observed in Antioch where, under Antiochus I, a specific monogram (apparently for a person named ΘΕΜ) on bronze coins was systematically obliterated, as a gesture – it seems – of *damnatio memoriae* (HOUGHTON & LORBER 2002, p. XXI).

[30] See MILNE 1941, p. 28-29; WALLACE 1950, p. 21-26; BELLINGER 1958, p. 23-24 & 1961, p. 26, note 93; THOMPSON 1961, p. 584-599; KROLL 1964, p. 94-99; JONES 1979, p. 81-90 – but see (earlier) REGLING 1927, p. 165.

[31] ROBERT 1966, p. 83 & 1973 and GAUTHIER 1975, p. 176-178.

[32] This is not entirely true, since there is a clear trend during the late Hellenistic period to have more complete names on coins.

a single reverse die).^[33] If there were distinct marks for each liturgy, we would be confronted with a huge number of reverses, each of them with a different signature, and none of them used to their maximal capacity. This is not at all the pattern we observe. Take the extreme case of the Hellenistic wreathed tetradrachms of Magnesia-on-Maeander, for which liturgies have been strongly advocated (JONES 1979, p. 81-90). Three pair of names are respectively attested by 8, 17 and 9 obverse dies. Taking an average productivity of 20,000 specimens per obverse die, that makes *c.* 106, *c.* 226 and *c.* 120 Attic talents of silver, an amount by far too high for any citizen, and stratospherically beyond what was requested for any liturgy. It seems thus better to avoid the liturgical hypothesis in explaining monetary marks for the Hellenistic world.^[34]

1.4. *Batches of metal.* Control marks may not refer to individual persons. As argued by Martin Price: “*On the other hand, it is important to keep in mind that there are other possible interpretations for these marks. It may have been necessary, for example, to mark batches of metal by stamping the ingots with a symbol or monogram to indicate the source, and at times of heavy productivity the products of each batch of metal could have been easily identified by placing the same mark in the coin design. Instead, therefore, of having several ‘magistrates’ in office at one time, the interlinking of different varieties at times of heavy production may signify the concurrent striking of different batches of metal*” (PRICE 1991, p. 34). This passage summarizes an idea expressed with conviction by Margaret Thompson and presented as plausible by many others:^[35] control marks may have served to document the metallic provenance of the coins.

If this explanation is correct, we should observe conventional marks (such as letters, for example) engraved on dies, including some of them at least for a couple of years, which means on many dies. Such a pattern is rarely observed (one possibility would be the tetradrachms in name of Aesillas the Quaestor in Macedon, for which, however, letters are best interpreted as mint-marks: BAUSLAUGH 2000, p. 28-29). There was too much coined silver with a single mark to sustain the liturgical hypothesis; here, there is not enough.

We may wonder too why no mine-marks appear on the Athenian coinage produced during the 5th c. BC with the silver of the Laurium mines. A simple explanation would be that people did not care about provenances. They cared

[33] DE CALLATAÏ 2000, p. 87-109 and FISCHER-BOSSERT 1999, p. 403.

[34] Despite the comments of FURTWÄNGLER 1982, p. 8-9; HOUGHTON & LORBER 2002, p. XXII; and MØRKHOLM 1991, p. 32. The Roman Imperial world was different in that we do possess coin legends with a personal name and including the explicit verb ANEΘHKE (he offered).

[35] THOMPSON 1961, p. 613-622. See, among others: MACKAY 1970, p. 258; JONES 1979; MATHISEN 1983, p. 27 (“*some of the markings ... might represent the output of certain veins in the mines*”); or, recently, HOUGHTON & LORBER 2002, p. XXI (“*tracking consignments of bullion*”).

greatly about quality: not to buy poor silver for the mint and not to risk a death penalty for issuing silver coins with a metallic content under the prescription. Thus, questions like ‘who brought the metal?’ or ‘where did it come from?’ may have been judged as irrelevant.^[36]

1.5. *Military officers or army corps.* To explain marks on Seleucid coins, Makis Aperghis argues entirely differently. For him, “*the two monograms mostly found on Seleukid coins of this period show an issuing and a receiving official. When a single monogram is present, it usually denotes an issuer, but in several cases it may be that of a recipient. Issuers tend to be financial administrators, sometimes even the dioiketai of satrapies, and recipients are civil/military commanders and district financial officials in need of funds. Some known historical figures may be identified in the monograms. Symbols are associated with many coin issues. I believe that the most common show branches of the royal army: anchor for the infantry, horse head for the cavalry and elephant head for the elephant corps, while the dolphin was used for the Mediterranean navy. Until Seleukos II, the anchor served for the entire royal army.*”^[37] The idea of identifying control marks not with the issuers but with the end-users is certainly interesting to explore (as has already been done with potter’s marks for vases, see VIVIERS 2006) but, alas, available evidence is more complex than these mechanics. This attempt has been coldly welcomed by critics.^[38]

2. General comments

If not magistrates, engravers, liturges, or military commanders, who were these people who put a personal mark on the coins?

When confronted with two marks, the natural assumption is to identify one as the mark of the delegate of the political power, the so-called ‘magistrate’, and the other as the mark of the chief artisan with professional skills who, just as for modern and better-documented times, is the mint master.

When confronted with more than two marks (I do not know, for Hellenistic royal coinages, examples where the number of control marks exceeds four), we may consider, along with the mint master and, possibly, the general master in charge of all mints, one or more subordinate officers, whose mission was to assist the mint master. But it is unlikely that these marks refer to any duty linked with the control of weight, or the alloy of the coins, since it would be odd to fix on the die a mark of guarantee only disputable after the strike.

[36] We cannot fail to observe that numismatists who favour the liturgical hypothesis often also consider the mine hypothesis as a plausible explanation.

[37] Correspondence sent by Makis Aperghis to some thirty colleagues in January 2011. See APERGHIS 2010 and other forthcoming papers: *The armed forces of Seleukos I, with help from coins and Taxation and money in the Seleukid empire* (to appear in the proceedings of the conference held in Amsterdam in May 2011).

[38] I plan to refute this theory at length, but this goes beyond the scope of this paper.

As some Hellenistic civic coinages make clear, boards of two officers were sometimes appointed. The best example is the autonomous wreathed tetradrachms of Magnesia-on-Maeander, for which three pairs of patronymic names given in full (+ two other poorly documented names), all in a highly die-linked sequence (JONES 1979, p. 66-73, esp. p. 67, Table 1). (Ill. 2).



Ill. 2 – Tetradrachm of Magnesia-on-Maeander, c. 165 BC
(Busso Peus, sale 401, 3/XI/2010, no. 369 – © coinarchives.com)

For Roman Republican *denarii* at the beginning of the 1st c. BC, at least for the coinage of P. Crepusius, it is pretty clear too that two anvils (or two sets of anvils) were at work simultaneously, and that two master engravers were responsible for producing the dies (BUTTREY 1976).

For Alexander the Great, Martin Price formulated the idea of a system “under which three symbols were used together” (PRICE 1991, p. 35). There are indeed three identical symbols used at the mint of ‘Amphipolis’ for both the last tetradrachms in the name of Philip II and the first of Alexander the Great, and again three in the same place for both the last tetradrachms without the title ΒΑΣΙΛΕΩΣ, and the first with it.

The idea of a board of responsible delegates applies also to the Macedonian coinage of Demetrius Poliorcetes. For the peak of his production, Edward T. Newell speaks about ‘a college of moneyers’, with the signature of the ‘higher official’ (*‘the chief incumbent of the office of monetarius’*) above in the inner left field, a moneyer of lesser importance below in the left field, and an ‘assistant magistrate’ (who was ‘subordinate’) in the outer or inner right field (NEWELL 1927, p. 105). Also in Macedon, a college of three officials operating simultaneously has been proposed for the Pan-head tetradrachms (MATHISEN 1983, p. 44). And the same hypothesis of a college of designated persons directed by a superior seems also to be the most satisfactory explanation for the Seleucid coinages (HOUGHTON & LORBER 2002, p. XXI). Such a systematic approach was not universal, and a majority of Hellenistic royal coinages display less sophisticated systems with one or two control marks active for a limited period of time.

2.1. *Long-term versus short-term control marks.* In theory, it makes sense to suppose that the highly skilled employees of the mint (even the mint master who, in Modern times, was very often a jeweller) were not replaced often, and

certainly not every year. Moreover, these skilled people may have been employed in different successive mints. Conversely, the citizens elected to control the mint were, in all probability, replaced regularly. In other words, a monogram active for many years is unlikely to refer to someone acting outside the mint. For the same reason, a monogram active at the same period in different mints close enough (both geographically and historically) to allow the hypothesis that this personal mark refers to a single individual means that he was probably a skilled artisan, and not a political appointee. On the other hand, a rapid turn-over of signatures is likely to represent some external political control system. Late Hellenistic civic coinages offer abundant examples of issues with several names shown in full, each of them attested by a limited number of dies (very often by only one). Thus, there is nothing to support the uncritical view which holds that the longer-lasting control mark represents the 'primary moneyer' or 'primary control mark'.^[39] In fact, the opposite is more likely: the subordinate mint employees would normally have stayed in office longer than the official delegate(s) of the central power.^[40] The late posthumous Alexanders struck in Chios, c. 190-160 BC, offer what looks like an exemplary case: at least 30 names (nominative case) appear in full in the exergue (BAUSLAUGH 1979, p. 29-34, Period 4). On average, each name is represented by just one reverse die. There are 13 die-links between these names, including three cases where three names are linked by the same obverse (obverses 84, 88 and 91). It seems most unlikely that these names each represented an annual tenure of office. This rapid turn-over suggests instead a shorter tenure of several months. But these were the higher-ranking officials, whose names were considered worthy of appearing in full. At the same time, more permanent but abbreviated control marks appear in the left field, such as the letters ΠΟ (Series 64-72) and the monogram AP (Series 67 and Series 74-82). It is tempting to recognize here the skilled artisans of the mint.

Royal Hellenistic coinages display many monograms which were employed for a very long time, which is a matter of perplexity for commentators. For the symbol of Artemis Kindyas used at Mylasa over a period of three decades, Georges Le Rider suggests three possibilities: it may refer to the same person;

[39] An unconvincing example is furnished by MATHISEN 1983, p. 10, who tried to distinguish among 'Group Identifier' ('a symbol other than a monogram [sic!], i.e. a design or possibly a single letter, which appears on all the specimens of some, but not all, of the groups in the left field, usually in conjunction with one or more other symbols'); 'Primary Control mark' ('a symbol, usually a monogram, which changes infrequently and which usually appears below the throne or in the exergue'); 'Secondary Control mark' ('a symbol, usually a monogram, which changes frequently and often occurs in conjunction with a Primary Control mark, usually in the left field'); and even 'Supplementary Control mark' ('a symbol, usually not a monogram, which sometimes accompanies a Secondary Control mark').

[40] Thus, "the temptation to recognize in the primary symbol an official appointed for a fixed term must be resisted" (PRICE 1991, p. 35).

to the father and the son; or to an *officina* (LE RIDER 1990, p. 549). The letters ΑΓ appear at the Seleucid mint of Ptolemais under Antiochus IV, Antiochus V and Alexander Balas, and we cannot exclude the possibility that they refer to the same person. Generally speaking, any time a control mark is observed as a constant element over a long period, it is likely to be a mint-mark or an *officina*-mark. This is the explanation given for a monogram attested for seventy years at Ecbatana.^[41] It has also been suggested – to my mind, not convincingly – that these long lasting marks may have been badges not of individuals, but of families, as is the case in modern times.^[42]

Conversely, sporadic appearances of a control mark within the same mint are likely to be explained as a reference to the same person ... or as a coincidence. Prudence is clearly required. Noting that a same set of three monograms was used at Lysimacheia under Antiochus II and Antiochus III, with a gap of c. 50 years, Georges Le Rider concludes: *“Il est difficile d’admettre qu’il s’agit, après tant d’années, des mêmes personnages. Le revers de notre monnaie ... apparaît comme une sorte de rappel des émissions frappées antérieurement dans l’atelier. Mais pourquoi aurait-on voulu reprendre des marques anciennes et comment les aurait-on retrouvées ? Je n’ai aucune explication satisfaisante à donner”*.^[43]

2.2. *On symbols and monograms.* Symbols and monograms appear in great numbers on royal Hellenistic coinages. There is no reason to treat them differently, and any attempt – as appealing as it might seem – to interpret symbols as having propagandistic motives is best avoided. For the issues of Alexander the Great and those of Philip III Arrhidaeus, Martin Price gathered c. 300 symbols and c. 1,500 monograms (PRICE 1991, p. 550-630). Most of the monograms and many of the symbols are only documented from a single usage, but more common ones may be found on dozens of issues (meaning different mints or denominations: 40 for a thunderbolt, 38 for an ivy-leaf, 32 for a club, 74 for the letter A, etc.). To give an idea, there are 12 occurrences for the letters ΑΙ and 21 more for the monogram with these letters, not taking into account the many combinations which start with ΑΙ. For the Seleucids, the indices produced by Arthur Houghton and Cathy Lorber include 101 symbols and c. 1,200 letters or monograms (171 for all the combinations with the letter A alone).^[44]

[41] NEWELL 1938, p. 163-195; LE RIDER 1999, p. 1020 and HOUGHTON & LORBER 2002, p. XXI.

[42] PRICE 1991, p. 35 (but anachronism may colour our judgement).

[43] LE RIDER 1988, p. 204-205 (= LE RIDER 1999, p. 548-549). Another perplexing case are the letters ΙΞΙ found on Seleucid coins (at Antioch, Seleucia on Calycadnus and Elaiussa Sebaste) for half a century, from the first reign of Demetrius I to the death of Seleucus VI (HOUGHTON & LE RIDER 1988, p. 409, n. 36 = LE RIDER 1999, p. 623).

[44] HOUGHTON & LORBER 2002, vol. 2, pp. 219-226 (Index 2B for symbols) and 226-280 (Index 2C for letters and monograms).

To decipher monograms is a difficult task, since they rarely provide an obvious reading.^[45] It cannot be taken for granted that the most visible letter is the initial of the name. Otherwise, how does one explain that many monograms seem to feature the letter M, whereas names beginning with a Mu are comparatively scarce in the published volumes of the *Lexicon for Greek Personal Names*?^[46] On the other hand, it comes as no surprise that the letters ΔI are one of the very most frequent control marks, since Dionysios seems to have been the most common first name of the Greek world.^[47]

Some cases of die-linked issues make clear that the same person could simultaneously use different monograms with his name's letters (or variants of the same monogram), as found on many examples of the Chian Alexanders.^[48] Consequently, it is likely that modern numismatists, in dealing with monograms, tend to overstate the actual numbers of varieties, all the more since there is a natural and understandable tendency for dealers and collectors to look for what appear to be new varieties. Not only could monograms designating the same person appear in various forms, but their position (vertical or horizontal), may not have mattered.^[49]

Perhaps the best example of a secure reading for a sophisticated monogram that I am aware of is for Alexander tetradrachms struck in Rhodes at the end of the 3rd c. Here we find two reverse dies, linked by the same obverse, one with the full name ΑΡΙΣΤΟΒΟΥΛΟΣ, and the other with the monogram ΑΒ.^[50] (Ill. 3).



Ill. 3 – M.J. PRICE, 1991, pl. 70

[45] See MATHISEN 1983, p. 46 (for Pyrrhus, Demetrius and Seleucus).

[46] For Vol. I (Aegean Sea), Menekrates comes first for the letter Mu, but in 49th position overall, with 117 occurrences. For Vol. II (Attica), Menandros is most common for Mu, but in 32nd position overall, with 168 occurrences (see www.lgpn.ox.ac.uk).

[47] At least, it is classified first in the first four volumes of the *LGPN*; see also BOEHRINGER 1972, p. 85.

[48] BAUSLAUGH 1979 (with even three possibilities for Series 11/12, 17, 22, 48).

[49] *Ibid.*, Series 52.

[50] PRICE 1991, p. 318, no. 2515-2516 and pl. 70. Other full names of the Rhodian list may have their corresponding monograms: see p. 317 (as for ΣΤΑΣΙΩΝ, no. 2512 and 2517).

This remarkable case is indicative of why it can be dangerous to postulate a natural division between full names as marks of honour (for ‘liturges’), and monograms for employees risking a death penalty in case of adulteration.

The temptation to identify monograms or letters with historical characters must also generally be avoided. Few numismatists have been convinced ^[51] by the attempts to recognize Tryphon on tetradrachms of Antiochus VI, Johannes Hyrcanus on tetradrachms of Antiochus VII (FISCHER 1975), or to identify known main figures at the court of Ptolemy V, like Skopas, Aristomenes, Nikon, and the two Sosibius. ^[52]

2.3. *Implications of dates as control marks.* A question we may ask is whether dates were intended as control marks? For late Ptolemaic coinage it seems they were: the only marks we find on late Ptolemaic tetradrachms are the year and the mint (in Cyprus: ΠΑ for Paphos, ΚΙ for Kition and ΣΑ for Salamis). Generally speaking, it is noticeable that the Ptolemies did not heavily use control marks, and made less use of them than the Seleucids. ^[53]



Ill. 4 – Tetradrachm of Ptolemy VIII Evergetes, 138/137 BC
(CNG, EA 259, 2/VII/2011, no. 173 – © coinarchives.com)

However, the Ptolemies, inheriting Pharaonic practices, are known to have achieved remarkable control of nearly all aspects of the daily life of their subjects, and it would be surprising if monetary affairs were an exception. The most likely explanation is that, indeed, the Ptolemaic administration was highly organized, with a long tradition of accounting records, which were securely kept, and would allow the tracing of the mint officials who were responsible for a certain year at a particular mint. A likely implication is that tenures of monetary offices in that time were annual (or multi-annual) and started and finished with the year. But it would be wrong to argue from the

[51] Reactions vary: MØRKHOLM is hostile to the principle (1979, p. 82 & 1983, p. 92, n. 9); FURTWÄNGLER is not as severe (1982, p. 9-12).

[52] POOLE 1864, p. 12-14; LENORMANT 1879, p. 90-91; and more recently KYRIELEIS 1973, p. 213-246. It would be worthwhile to compile a list of the most common monograms and to compare it, for each area, with the most common names, as found in the several volumes of the *Lexicon of Greek Personal Names (LGPN)*, starting with Dionysios, Demetrios, Apollonios and Philôn.

[53] LE RIDER & DE CALLATAÏ 2006, p. 58-60 (*Les marques secondaires*).

Ptolemaic evidence that the Ptolemies were less careful about monetary controls than the Seleucids. Their records were probably better organized and more safely kept. ^[54] A proof, *ex absurdo* that dates can effectively replace several control marks is provided by the Cypriot mint of Paphos under Ptolemy V (204–180 BC). For a while, undated tetradrachms were struck but, significantly, with no less than three sets of letters. ^[55] Other dated coinages show that dates on coins are not combined with many other control marks, proving *ex absurdo* that dates were an efficient manner of tracing the names of the people in charge. Dated tetradrachms for both Pontic and Bithynian kingdoms, for example, have only one control mark as a rule (DE CALLATAÏ 1997).


2.4. *Stories about itinerant moneyers.* The same monogram may sometimes be found at different places. It is then tempting to follow the mark, and reconstruct the career of a person in charge of monetary matters. Of course, we have to be cautious in light of the possibility that the same monogram designates two or more different people (all the more if it is a common one; see 2.1.).

As early as 1927, Edward Newell proposed that a responsible mint official active in Tarsus for Demetrius Poliorcetes fled in time to escape Seleucus and reach Macedon, where he acted for a long time as senior officer at the mint of Pella (NEWELL 1927, p. 82–83). However, with his typical cautious mind, Newell added: “*All of which, to be sure, remains a mere conjecture, but a conjecture enjoying a certain amount of probability and one that adds yet another touch of human interest to Demetrius’ coinages*” (NEWELL 1927, p. 83). Newell also noted what he called his ‘old friends’, found here and there (NEWELL 1927, p. 111).

Seleucid coinages offer ample material to support this kind of conjecture. ^[56] Recently, Arthur Houghton and Cathy Lorber have made attractive proposals for some monograms. ^[57] The monogram ΩΡ (or ΡΩ), as they reconstruct his career, opened an uncertain mint located in Phrygia, was active at Antioch (c. 212–210 BC), provided some services to the ‘Rose mint’ (Edessa?) and to the Uncertain Mint 67 (Carrhae?), was helpful in ‘Sardes’ to “*regularize the mint’s semibarbarous tetradrachms*”, and opened another mint in western Asia Minor (Uncertain Mint 55). Some monograms attested at the ‘Rose Mint’ (Edessa?) and Tarsus are found later in southern or eastern Syria and even northern Mesopotamia. Hence they view the ‘Rose Mint’ as “*an incubator for officials*”

^[54] We emphasize here the warning made by BUTTREY 1976, p. 103–107 and endorsed by MATTINGLY 1982, p. 23 for the Republican *denarii*.

^[55] MØRKHOLM & KROMANN 1984, p. 162–163 and HAZZARD 1995, p. 35–36, fig. 63 (ΠΟ and two other sets of two letters).

^[56] For example, we may follow the monogram  active in Ecabataka under Antiochus I and then (?) on all denominations of a new and so far unidentified subsidiary mint in Bactria (HOUGHTON & LORBER 2002, p. XXI). Under Antiochus III, we may see the transfer of some official from Antioch to Nisibis (LE RIDER 1965, p. 25).

^[57] HOUGHTON & LORBER 2002, p. 359–360 (under Antiochus III).

(HOUGHTON & LORBER 2002, p. 359). A similar phenomenon is noticeable for Tarsus and the Cilician mints. While these cases are not proved and may be at least partly coincidental, it seems reasonable to suppose that highly qualified employees traveled from one mint to another, especially to launch the production of a newly opened mint.^[58] We are on firmer ground when a conjunction of two monograms is found, or if an elaborate monogram appears in places which may be judged plausible both from a geographical and historical point of view.^[59] The Seleucid coinages again offer some good examples.

An apparently very illuminating case has been put forward by Cathy Lorber and Frank Kovacs (LORBER & KOVACS 1997). Several issues attributed to the mint of Soli (Cilicia) present an identical, and elsewhere unattested, combination of control marks on the reverse: an owl combined with the letters AP (sometimes contracted as a monogram) or ON.

Mint of Soli (Cilicia)	left field	right field
Ptolemy V (c. 202-197 BC)	owl above MO	AP or ON
Antiochus III (c. 197-193[?] BC)	A above Athena head	different monograms
Antiochus III (c. 193[?]-187 BC)	A or ΔI above owl	ΑΠ or ON
Seleucus IV (c. 187-184/3 BC)	ΔI or ΣA above owl	ON
Mint of Paphos (Cyprus)		
Last years of Ptolemy V (c. 184/3-180 BC)	ΘE above ON or AP	ΠO

Even if, as it seems, the first dies for Antiochus III in Soli bear other control marks (thus creating a gap between the two sequences), the use of three identical marks between Ptolemy V and his rival Antiochus III is unlikely to be a coincidence. We are encouraged to reconstruct the colourful story of men working in Cilicia first for the Ptolemies, then employed by their new Seleucid master, before moving to Cyprus to be reengaged by the Ptolemaic king: “*All observations about the behaviour of mint personnel are really deductions from the behaviour of monograms inscribed on these coins. These monograms are*

[58] MØRKHOLM 1982, p. 211 (between Sidon and Tyre in 332 BC); LE RIDER 1999, p. 871. For the hypothesis of a monogram (AB) of Antioch under Seleucus IV found later at Ptolemais under Antiochus IV, see MØRKHOLM 1957, p. 7 (but see LE RIDER 1999, p. 391: “*Il est peut-être nécessaire d’accepter que deux monogrammes identiques apparaissent simultanément dans deux ateliers différents*”).

[59] But, even then, caution is required. A combination of two rare monograms appears in the same positions on drachms of the Cappadocian ‘Mint D’ of the pro-Pontic Ariarathes VII Philometor (dated of the years IA and IC, c. 106 and 101 BC) as well as on drachms of the 14th year (c. 81 BC) of Ariobarzanes I Philoromaioi (DE CALLATAÏ 1997, p. 193 and 210).

commonly interpreted as the signatures of mint magistrates. The term ‘magistrates’ implies an executive position, political or honorary in nature, for which, in the Hellenistic world, no special training was required beyond a general literacy education. Specific technical skills, on the other hand, resided in the lower levels of the civil service. Mint workers who remained in place after a violent change of regime, or who were permitted to change their allegiance repeatedly, are less likely to have been magistrates than technicians with scarce but needed skills” (LORBER & KOVACS 1997, p. 95).

Indeed, if we allow it is possible to follow ‘careers’ of some of these moneyers (HOUGHTON & LORBER 2002, p. XXI), this leads us to identify them as skilled employees (including the mint masters), and not as officials in charge of the mint. This is especially compelling when these moneyers were kept in their positions despite violent changes of regime, as happened in Tarsus when Ptolemy III expelled the Seleucids in 246–245 BC (NEWELL 1941, p. 222).^[60]

2.5. *Bronze coins versus gold and silver.* As a rule, gold and silver Hellenistic royal coinages use similar or identical control marks. This is clear for Alexander coinages: Lysimachus, Demetrius Poliorcetes, the Seleucids and the others. This does not, however, hold true for the bronze coins. They sometimes utilize the same control marks as on the gold and silver, as is the case with the lifetime alexanders in Sardes and Miletus, and for the mints of Salamis and Tarsus under Demetrius Poliorcetes.^[61] But, also for Demetrius Poliorcetes, another pattern emerges in the Macedonian mints of Pella and Amphipolis, where control marks for bronze coins differ markedly from those on gold and silver coins. Edward Newell makes an interesting, though speculative observation: “It is probable that the less valuable metal was coined either in a special officina of the mint and under the supervision of an entirely different set of magistrates, or, as it is very likely, the coining of bronze pieces was farmed out to private individuals. Such a practice may have been more prevalent in ancient times than we suspect or have means of determining” (NEWELL 1927, p. 120). Indeed, it is difficult to contradict such a hypothesis (which would lead us far beyond the scope of this paper). However, we are not convinced. As far as we know, free coining was unknown in Hellenistic times, and the idea of private mints largely relies on a passage of Polybius (XXXVI.10.3) reported by Athenaeus, about Antiochus IV Epiphanes mingling at night among the *argurokopteiois*, sometimes wrongly translated as ‘moneyers’ (instead of silversmiths).^[62]

It has also been noted that control marks found on royal issues may sometimes be found on contemporary civic coinages (it is even more convincing

[60] For Ptolemaic coinage, Alain Davesne proposed such a transition for the ‘engraver Δ’ (DAVESNE 1998, p. 438–439), which throws much light on the topic... except that all this must be rejected since the letter Δ is clearly not an engraver’s signature.

[61] THOMPSON 1983 and NEWELL 1927, pp. 25 and 49–50.

[62] See BABELON 1901, col. 844–845 and DE CALLATAÏ 2005, p. 212.

when this involves complex monograms or rare personal names). At Pergamum, several common sets of control marks have been observed between the last *philetairoi* struck by Eumenes II, and the first *cistophori*.^[63] At Alexandria Troas, a unique civic gold stater bears the same control marks as a tetradrachm struck by the city under Antiochus Hierax (LE RIDER 1999, p. 336). At Ilium, an uncommon monogram is shared by Seleucid tetradrachms of Antiochus Hierax and some civic bronze coins.^[64]

As a rule, Ptolemaic and Seleucid bronze coins were characterized by a fewer number of control marks: generally one, sometimes two (for the Seleucids), but occasionally none, as is the case with the Ptolemaic bronze coins with two eagles, which were heavily imitated.^[65] This makes sense with the less valuable bronze coins, where control was less important, but, again, this general pattern was not systematic, and exceptions exist. In Pontus, Mithridates Eupator issued pseudo-civic coinages, often with two or three control marks, while using only one for his own coins (not taking the year and the month into account).

Concluding remarks

The fact that these control marks are today nearly the only surviving evidence about how mint control was exercised in Hellenistic times does not mean that, at the time, they played a unique or even dominant role in this control: “*They can never represent by themselves the really tight and effective control of production that we must surely postulate for Republican Rome. Supervision would be secured rather by marks on the side or hafts of dies themselves and by stringent mint-regulations*”.^[66] For Roman Republican issues, control marks appear sporadically on *denarii* in the years 110–60 BC (MATTINGLY 1982, p. 23).

Indeed, the use of control marks on coins was rarely systematic. Changes in their placement and number occurred within the same issue. Sometimes, as with some posthumous alexanders struck in Chios c. 270–220 BC,^[67] a particular variety lacked any control marks, whilst the remainder of the issue used them. As seen *supra* (2.3), it would be misleading to estimate the efficiency of the control by the number of marks. For the Ptolemies, we have good reason to suspect the opposite. Monograms, which were common if not numerous under Ptolemy Sôter, disappear with the reform of Ptolemy Philadelphus (c. 261/260 BC).

What changed through time is the form of these control marks. Considering the Hellenistic period in its entirety, monograms are the most common

[63] KLEINER & NOE 1977, p. 15; NICOLET-PIERRE 1989 and LE RIDER 1989, p. 171–172.

[64] BELLINGER 1961 and LE RIDER 1999, p. 334.

[65] See the unpublished Diss. of Th. Faucher (Sorbonne/Paris IV – December 2006).

[66] MATTINGLY 1982, p. 23, referring to the work of BUTTREY 1976, p. 103–107.

[67] BAUSLAUGH 1979, Series 37 (no controls instead of two; two obverses out of which one linked with a reverse with two control marks).

form of control mark from the beginning to the end. However, within these three centuries, there is an undeniable trend from symbols to monograms, and then from monograms to full names, as we see in, for example, the summary of Rhodian issues given by Richard Ashton (ASHTON 2001). The transition from symbols to monograms may be clearly observed looking in the coinages of Philip II and the lifetime issues of Alexander the Great.^[68] The 3rd c. BC saw a heavy predominance of monograms over other forms of control marks. The first half of the 3rd c. BC may be characterized as the golden age of monograms and, generally speaking, of control marks. After that, a reduction was noticeable for the Ptolemies, but not for the Seleucids. In the 2nd and 1st c. BC, Seleucid and Cappadocian kings (very much their followers) expanded the use of these control marks, regularly including a set of three different marks per die. Others – Attalids, kings of Pontus, Bithynia, Armenia or Parthia – were more moderate, generally employing only one mark, along with, in many cases, a chronological indicator.

Full names remained nearly unknown on Hellenistic royal coinages (one may note, however, a Philip for the Seleucids – *Ill. 5*).



Ill. 5 – Tetradrachm of Demetrius with the name of Philip
(CNG, EA 175, 24/X/2007, no. 111 – © coinarchives.com)

But they became more and more common on civic coinages, including some late Posthumous Alexander's issues. They did not appear in Rhodes before c. 275 BC (ASHTON 2001, p. 105-111) nor on Alexanders before the end of the 3rd c. BC (LE RIDER 1999, pp. 815 and 1203). These Hellenistic coinages with full names, most of them dated to the 2nd c. BC, are characterized by a large number of names with a rapid turn-over, so each name is typically recorded from one or a few obverse dies.^[69] The natural assumption is then that these names stand not for employees of the mint, but for some political officials.

Royal coinages behaved differently. The responsibility for the weight and alloy control was placed on the shoulders of one or several employees of the

[68] See LE RIDER 1977; THOMPSON 1983 and PRICE 1991, *passim*.

[69] See e.g. BOEHRINGER 1972, p. 186-189 (for Alabanda); ASHTON 2001 (for Rhodes) and KINNS 1980 (for Ionia).

mints, whom we may find working elsewhere later, with a slower turn-over. This system is still found on the coinage of the last great Hellenistic king, Mithridates Eupator of Pontus, with only one monogram (besides the year and the month), typically remaining in office for two to four years (DE CALLATAÿ 1997, pp. 40 and 47). The individuals who signed the coins were not engravers or liturges. They were not, strictly speaking, magistrates, but commissioners *ad hoc*, often appointed in a college of two or three, with tenures whose lengths may have varied.

So, to place the use and evolution of control marks on Hellenistic coinage in a larger context, these control marks seem to have something to do with a growing level of literacy and the development of written archives. It may be argued that the entire history of Greek coinage illustrates the passage from images to letters, and the time of Alexander the Great is clearly an important phase, with monograms supplanting symbols. But what happened later is possibly even more interesting: instead of many control marks with personal references, royal administrations began to favour simpler systems with, typically, a year and one mark (as in Egypt, Bithynia, Pontus, and also on the Ephesian cistophoric tetradrachms, or in Parthia and other minor near-eastern dynasties). This simpler approach was enough if (and only if) secure written archives, recording the individuals responsible for each year of coinage, also existed.

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