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978-0-521-39504-5 - Early Hellenistic Coinage: From the Accession of Alexander to the Peace of Apamea (336–188 B.C.)

By the Late Otto Mørkholm and Edited by Philip Grierson and Ulla Westermark

Excerpt

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PART I

GENERAL FEATURES OF THE
COINAGE

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At the beginning of the Hellenistic period, which is here taken to start with the accession of Alexander the Great in 336, the Greek world had become accustomed to the use of coinage over a period of about 200 years. The resulting money economy was based on coins of intrinsic value in gold, silver and (sporadically) electrum. In addition, during the fourth century, the use of a fiduciary or token coinage in bronze to supplement the larger denominations in the noble metals had gradually spread throughout the Greek world.¹ In Hellas itself, as well as in most of the colonial areas, coinage played its role, not only in wholesale transactions but also in the ordinary exchange of daily goods in the market place.

Outside the Greek world some of the economically better-developed areas on its fringes had begun to produce coinages of their own. This applies to the southern Anatolian districts from Caria to Cilicia, the island of Cyprus and the important trading centres of the Phoenician coast. Even in Egypt a sizeable production of Athenian imitations and a few issues with local types appeared in the first half of the fourth century.² But of the non-Greek peoples in the western Mediterranean only the Carthaginians seem to have started a coinage of their own, and this was apparently restricted to a specific purpose: the payment of mercenaries who were hired to fight the Greeks in Sicily for the possession of the island. This coinage started in the late fifth century, but we must wait until the Hellenistic period before coins were struck for more general purposes at Carthage itself.

1 Price 1983, 1979c.

2 Buttrely 1982.

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I

METALS AND WEIGHT STANDARDS

(a) METALS

The raw material for coin production in the ancient world – gold and silver for coinages of intrinsic value, copper and tin for token ones of bronze – was ultimately derived from a number of widely scattered mines.³ Our knowledge of the location and relative importance of these mines is scant and sporadic, but it seems certain that the vast majority of minor coin-producing states had no mines of their own and were thus forced to acquire metal either directly by purchase or through the public income from tolls and dues of various kinds, possibly also in some cases from liturgies of wealthy citizens. The interest in finding new sources of metal is well illustrated by the fact that Alexander the Great, on his expedition into Asia, had on his staff a professional prospector, Gorgos, who is said to have reported on gold and silver mines in India.

The rich gold and silver mines of the Thraco-Macedonian area, which had already supplied Philip II with his financial strength, continued to function under Alexander and his successors on the Macedonian throne. Under Philip V we hear of an increased activity in prospecting for new mines and the re-opening of older ones.⁴ After 168 the Macedonian mines were closed down by the Romans for a decade. They were re-opened in 158 and remained productive well into the first century, as is shown by the substantial silver coinages from that period.

In Attica the Laurion silver mines were also being worked, at least to the end of the second century. We hear of revolts involving slaves from the mines around 134 and again in 104/100. But Strabo informs us that in his time, at the end of the first century B.C., the mines were exhausted.⁵

In Asia Minor gold and silver were mined on Mount Ida in the Troad, supplying the kingdom of Pergamum, as well as in the region near Abydus and Lampsacus, accounting for the relatively abundant production of Alexander gold in these two cities. Other mines were found in the mountainous interior, for instance silver mines in Pontus and in the Taurus mountains on the confines of Cilicia and Cappadocia.

³ Healy 1978, 47, 56, 58 (inadequate for the Hellenistic period); Rostovtzeff 1941, II.1170–6; Will 1975.

⁴ Livy 39.24.2.

⁵ Strabo 9.1.23 and 10.1.9. For the slave revolts see Ferguson 1911, 379, 427–8.

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Apart from the mineral wealth of Asia Minor, the first Seleucid kings could draw upon the resources of the Middle East. River gold and silver mines were present in Carmania according to Onesicritus, one of Alexander's followers.⁶ And through the eastern province of Bactria gold from distant Siberia and the Altai mountains may have reached the Seleucid empire. It is significant that after the reign of Seleucus II, when Bactria and Parthia were lost to the Syrian kings, the quantity of Seleucid gold coinage was much reduced.

The Ptolemies had access to the gold mines in Nubia⁷ and had at their disposal the very rich copper mines of Cyprus. On the other hand, they had a problem with silver, as they had only insignificant mines in Cyprus directly under their control. Most silver had to be imported into Egypt, but a positive trade balance was sufficient to secure a reasonable flow of this metal into the country. There can, however, be no doubt that the relatively greater importance accorded to coinages in gold and bronze in the Ptolemaic monetary system from c. 260 onwards was largely caused by difficulties in acquiring silver.

In the West the most important mines for all the monetary metals were situated in Spain, where mines were scattered from the Pyrenees in the north to Turdania in the south. Both the Greeks in Sicily and Magna Graecia and the Carthaginians derived most of their metal from the Iberian peninsula, the latter developing the mines around New Carthage energetically in the late third century. Gold may also have come to the western Mediterranean from the fabulous Gold Coast in Africa through Carthaginian trade by sea,⁸ and it may have arrived at Carthage and Cyrenaica by way of the caravans crossing the Sahara. Another mining district of importance was situated near Aquileia in the territory of the Noric Taurisci. According to Polybius the opening of a new mine in that area during his own times brought the price of gold in Italy temporarily down by one-third, showing the effect of a single lucky find.⁹

The tin necessary for the production of bronze was found almost exclusively in the West. Apart from the Spanish deposits, tin was imported from Brittany and Cornwall by way of Massilia.

Gold and silver were the metals normally used for coinage of intrinsic value. Electrum, an alloy of gold and silver with a silver content of at least 20%, was in the Hellenistic period used only in Sicily and Carthage. In the latter place the gradual increase of the silver component seems to indicate that Carthaginian electrum may actually be regarded as a debasement of an original gold coinage.

During the period from 336 until c. 310 a truly bimetallic system seems to have been functioning with the easily calculated ratio of 1:10 between gold and silver. Alexander's control of the Macedonian mines and the Persian treasuries allowed him to maintain this ratio, but from

6 Strabo 15.2.14.

7 A famous description of working conditions in the Ptolemaic gold mines by Agatharcides is reproduced in Diodorus Siculus 3.12–17.

8 On Carthaginian trade with the Gold Coast in earlier periods see Herodotus 4.196.

9 Polybius 34.10.10.

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about 310 gold apparently rose in value as compared to silver. The fluctuations gave rise to changes in the weight standards of gold and silver coins in Egypt and Cyrenaica. Apparently the ratio of 1:10 gradually gave way to a ratio of 1:12 which was in operation around 290. Later in the third century an official ratio of *c.* 1:12.8 could not be maintained. In commercial transactions a premium or agio was paid on the gold coins which might vary but generally placed the ratio at slightly above 1:13.

While Egypt, undoubtedly prompted by her lack of silver mines, strove to maintain a gold currency, the response of most other Greek states to these fluctuations was to return to a monometallic currency system based on silver. Even in Egypt the unit of account in the third century was the silver stater (tetradrachm). The result was a marked decline in the general production of gold coins after 310, except in a few regions where local circumstances or special demands made their production attractive. Sometimes an economic crisis might necessitate the mobilization of all resources of a state, including the gold. A few of the royal gold issues outside Egypt may have been intended as propaganda, a demonstration of the wealth and power of the issuers. One's general impression, however, is that silver not only provided the common means of exchange but was also regarded as the fundamental measure of value for all commodities including gold.

Coins of gold or silver might in principle be accorded an official value well above the intrinsic value of their metal content. That was done in Egypt, and with the cistophoric coinage in Pergamum. But as the overvaluation was achieved by reducing the weight of the coins while maintaining their official value, the policy was at once apparent to everybody using them. In this way, a category of semi-fiduciary coinage was created which could only function properly when accorded a monopoly as the single official means of exchange within the issuing state.

Another more devious method of raising the profits from the striking of coin was to tamper with the fineness of the metal, a method well known from Roman practices of the Second Punic War and the third century A.D., as well as from later periods. However, during the Hellenistic period this simple way of stretching a given stock of bullion and making an extra profit without informing the public was rarely used. Published analyses of Hellenistic silver coins show in general a silver content well above 90%. Except for local emergencies it was not until the first century that a serious and systematic debasement of silver coinage took place in Syria and especially in Egypt, in the latter case reducing the silver content to below 50%.¹⁰ But other series, as for instance the Athenian New Style coinage, maintained their fineness fairly well until the end.

In addition to official manipulation we have to take account of outright forgeries. The private production of counterfeit coins seems on the whole to have been negligible, although a few specimens are known from hoards. The rare examples on record were often produced by

¹⁰ Walker and King 1976, 139–42, 150–2. The average fineness of samples of Egyptian tetradrachms of Ptolemy XII Auletes between 80/79 and 73/2 was found to be 912.8 millièmes; of ones of the same ruler between 68/7 and 54/3 it was 848.6 millièmes; and on ones of Cleopatra VII between 45/4 and 31/30 it was 457.2 millièmes.

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plating, a core of some base metal like bronze being covered with a thin envelope of silver. Such counterfeits are usually recognizable by their low weights. As far as is known there are no examples of plated coins being produced by official dies at any established mint.

The production of bronze coinage differed from that of coinages in the noble metals by the fact that the profit to the issuing authority was much greater, the bronze being used as a token coinage of very little intrinsic value. The profit motive behind the issuance of bronze coinage is directly mentioned in an inscription from Sestus of the second century.¹¹ This explains the eagerness of the cities to obtain the right of issuing bronze coins and the discrimination shown by the kings in according this privilege. It was one of the more important benefactions at the disposal of a ruler in his dealings with cities under his suzerainty.

One of the results of the function of the bronze issues as a token or fiduciary coinage was that their area of circulation was very restricted as compared with the silver. A token coinage can only maintain its official value within the territory under the political control of the issuing authority. This meant that the many city issues in bronze circulated only within the narrow territory of the city itself and perhaps a few neighbouring city states. This fact has greatly helped both numismatists and historical geographers in establishing the location of many minor places. Royal bronze coinages had, of course, a much wider circulation, especially the issues from the great central mints. Seleucid bronze coins of Antioch on the Orontes were predominant at Dura-Europos. And, during some periods at least, the majority of the bronze coins circulating at Susa derived from Seleucia on the Tigris. In both cases distances of about 400km in a direct line were involved.

The determination of the metals of which coins are made is not always easy, but since the Second World War a number of non-destructive methods for metal analysis have been developed. In the context of ancient coins they have been used to answer two questions. One is the straightforward metallic composition, that is to say the fineness achieved in the production of supposedly pure gold and silver coins and the exact proportions of the various components in the fiduciary coinages. The other is that of throwing light on the source of the metal of a given coin series, and if possible of determining from what mines the bullion derived.

The first question is fairly easily answered, and a number of studies have shown for the Hellenistic period in general a surprisingly well-maintained fineness of the coinages in the noble metals, at least down to the beginning of the first century B.C.

The second question is much harder to answer, as it mainly depends on the occurrence of trace elements in the coins. These trace elements then have to be compared with ore samples from ancient mines, and it has to be proved that each special combination of trace elements is peculiar to that mining district and not found elsewhere. In recent years scientists have tended to concentrate on lead isotopes. But I fear that the sceptical numismatist must register a warning. In the first place, the great majority of ancient mines are not located with certainty, so that the sampling of ores still leaves much to be desired. Secondly, all metals in antiquity were so valuable that they were melted down and re-used time and time again, and I personally have

¹¹ The famous Menas inscription (OGIS no. 339. 45–6).

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no doubt that most of the bullion used for coinage in the Hellenistic period was already mixed from a diversity of sources. The issues of Athens and the mints in Macedonia were probably exceptions, since in each case metal was available from local sources, but it hardly seems worth while spending money and energy in complicated analyses to prove this quite obvious point.

(b) WEIGHT STANDARDS

The study of the ancient weight standards used for striking coins was long dominated by the quest for a common origin of the various standards. This was usually located in Babylonia, and the most complicated arithmetical exercises, leading to quite arbitrary results, were performed in order to derive the different theoretical norm weights from the light or heavy Babylonian *mina*. This highly speculative field of research subsequently came under attack from more pragmatic scholars who preferred to concentrate on the actual weights.¹² Although the pan-Babylonian ghost shows a tendency to reappear at intervals, the pragmatic attitude may now be said to dominate the study of ancient metrology.

Four different methods are available for dealing with the actual weights. In the first place, the average weight of any group of coins may be ascertained. Secondly the median weight, that is the weight of the specimen placed exactly in the middle of a series of coins arranged in a sequence according to their weights, may be used. The third method consists in taking as the norm the heaviest weight of an unbroken sequence of coins arranged by centigrammes, disregarding exceptionally heavy pieces that are separated from the main body of material by breaks in the sequence. Fourthly and finally, the mode of a coin series may be established by the use of a frequency table, where the individual weights of the coins are plotted against a scale with intervals of 0.1g or 0.05g. The interval showing the greatest concentration of weights, the peak of the table, represents the mode.¹³

In theory, when a large body of reliable information is available, the different methods should give the same results. However, in this imperfect world, the frequency table offers the best chance of neutralizing errors. For such a metrological study all coins ought in theory to be weighed under exactly the same conditions on one and the same balance. Normally, however, we have to deal with a very miscellaneous mass of material, weights being culled from different publications or from notes supplied by public collections. Under these circumstances a frequency table, preferably with not too narrow steps, is better suited to eliminate small inaccuracies and mistakes than any of the other methods.

The same considerations apply to the difficulties deriving from the different amount of wear and tear to which the coins have been subjected in circulation. To this must be added the varied effects of soil and climate during the time they were buried. Pierced and broken coins, and those with visible damage, have of course to be excluded, and the same applies to material from hoards which have suffered loss of weight due to peculiar circumstances. The real trouble begins

¹² See especially Viedebantt 1923, 1–24.

¹³ Hill 1924; Naster 1975.

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when degrees of ordinary wear have to be estimated, and here there is a clear advantage in the frequency table. It allows us to concentrate on the peak, disregarding the large number of light-weight coins that always turn up in a given series. On the other hand, such light coins will have a serious effect on both the calculations of the average and the position of the median.

Even the peaks, however, will not provide us with the original or standard weights. Most of the coins, even apparently uncirculated ones, will have lost some of their weight. To obtain a single figure for the standard weight of an issue we should probably add 1–1.5% to the peak centre for the silver, and *c.* 0.5% for the gold (which circulated less and was more carefully adjusted). The figures in the following survey have been arrived at in this way, whenever a frequency table has been available.

In addition to their fineness, the weights of the gold and silver coins decided their value in international trade. From the preceding period the Hellenistic world inherited a number of different weight standards of which only the most important can be mentioned here.

Owing to the great popularity of the Athenian owls the Attic weight standard was known far and wide. Adopted by Philip of Macedon for his gold and by Alexander for both gold and silver, it rapidly became the dominant weight standard for international trade coinages. All the Diadochi except Ptolemy adhered to it. In Syria, Macedon and the lesser kingdoms of Asia Minor it was used continuously down to the end of their dynastic history. Most cities in Greece and Asia Minor adopted it for their pseudo-royal or autonomous coinages. Its acceptability is clearly demonstrated by the large number of Hellenistic coin hoards which are of a very mixed composition with respect to mints but contain exclusively coins of Attic weight.

The Attic weight standard nevertheless underwent some changes during the 300 years of the Hellenistic period.¹⁴ At the time of Alexander the common trade coin, the silver tetradrachm, weighed 17.28g. By 300 this weight had been slightly reduced to *c.* 17.20g. An examination of the development at the mint of Antioch in Syria, where the material is most readily available, shows that about 172 the weight of the tetradrachm was reduced to *c.* 16.80g. A further official reduction in *c.* 105 brought the weight down to about 16.30g, and the following decades saw a gradual but rapid decline to well below 15.00g, combined with a greater carelessness in the standardization of the individual weights. Elsewhere the development seems to have followed the same general lines. Attic-weight tetradrachms of the second century normally conform to the 16.80g standard, but there are exceptions. It is especially noteworthy that at Athens herself the last issues of Athenian New Style tetradrachms show a weight increase to about 17.00g from the 16.60g/16.80g of the preceding issues.

The weights of the gold issues were always very carefully adjusted. The gold coins of Philip and Alexander, struck on an Attic standard of *c.* 8.64g for the stater or didrachm, show how near to perfection the Greek mints could come in this matter when they so desired.

Another important weight standard in the pre-Hellenistic period was the Aeginetan. It continued to be used in various coinages of central Greece, the Peloponnese and Crete during the early Hellenistic period, with a didrachm slightly above 12.00g. Especially in Crete the

¹⁴ Mørkholm 1982a.

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abundant coinages of the cities show a tendency already in the late fourth century towards a weight reduction to slightly below 12.00g.

During the third century and the first half of the second very abundant issues of hemidrachms or triobols were produced at various Peloponnesian mints (Argos, Sicyon, Megalopolis, Sparta) as well as by the Achaean and Aetolian Leagues. The earliest of these issues were struck with a weight of *c.* 2.80g, while later the official weight was reduced to *c.* 2.40g/2.50g. There can hardly be any doubt that this weight standard should be called 'reduced Aeginetan'. It has recently been suggested, very plausibly, that the so-called 'Corcyrean' weight system with staters or didrachms of *c.* 10g (Corcyra, the Epirote League) and drachms of *c.* 5g (Elis, Boeotia) is actually identical with the reduced Aeginetan, the common element being the Corinthian drachm of *c.* 2.88g to which the original Aeginetan hemidrachm of 3.0g was first assimilated.¹⁵

Among the weight systems surviving from the preceding period there was the Persian one, with a stater or double siglos of *c.* 11.2g and a siglos or drachm of *c.* 5.6g. Hemidrachms of this standard were issued at Byzantium and other mints of the Propontis region in the early Hellenistic period. During the third and second centuries it reappears with certain issues of Phaselis in Lycia and Aspendus in Pamphylia. As appears from Table 1, the Persian standard

Table 1. *Eastern Hellenistic coin standards*
(The weights are given in grammes.)

	Tetradrachm	Didrachm	Drachm	Hemidrachm
Aeginetan		12.2	6.1	3.05
Reduced Aeginetan (= Corcyrean)		11.5–10.0	5.75–5.0	2.8–2.5
Persian		11.2	5.6	2.8
Attic	17.3–16.8	8.65–8.4	4.3–4.2	2.15–2.1
Chian	15.6	7.8	3.9	
Ptolemaic	14.3	7.15	3.55	
Rhodian	13.6–13.4	6.8–6.7	3.4	
Cistophoric	12.6	6.3	3.15	

corresponded to a certain phase of the reduced Aeginetan, but the two standards are well separated both geographically and chronologically.

The Chian standard with a tetradrachm of *c.* 15.6g and a didrachm of *c.* 7.8g is another

¹⁵ Giovannini 1979, 48–9.

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survivor. It was used on the west coast of Asia Minor, on the Aegean islands and on Rhodes. Owing to the economic importance of the last-named island it is often called 'Rhodian', but it seems preferable to reserve this name for the lighter Hellenistic variant described below.

During the Hellenistic period several new standards were introduced. Already about 310 Ptolemy I of Egypt began reducing the weight of his silver tetradrachm from the normal Attic weight to *c.* 15.8g. After an intermediate stage of *c.* 14.9g he finally, around 290, arrived at the weight *c.* 14.3g/14.4g for his tetradrachm, a standard that was maintained, with a minimum weight of *c.* 14.2g, until the early first century. It was very close to the standard used in the great Phoenician trading centres in the fifth and fourth centuries, the unit of which was the shekel of slightly above 7g. This may, however, be a coincidence. It is hard to see why local conditions in Phoenicia some forty years later should have exerted a strong influence on Ptolemy I. The development in Egypt was more probably governed by the wish to retain a workable ratio between gold and silver. On the other hand, the coincidence turned out to be very fortunate indeed. The Ptolemaic standard was regarded by the Phoenicians as their own and became so popular that even the Seleucid kings, beginning with Alexander Balas, had to adopt it for their Phoenician province. And when towards the end of the second century the Phoenician cities became autonomous they all, except Tripolis, continued to strike their civic silver on this standard, the Tyrian double shekel becoming the most acceptable and most abundant coinage of the region. I prefer to call this standard Ptolemaic rather than Phoenician, although the later designation is widely used.

At the beginning of the Hellenistic period the important trading city of Rhodes lowered the weights of its coins. The tetradrachm, originally struck on the Chian standard of 15.6g, was reduced first to 15.2g and then to about 14.9g, apparently before the Ptolemaic reductions. Soon, however, the production of tetradrachms came to an end. They were replaced by didrachms, the first of which weighed about 7.0g, but after a short while a further reduction brought the weight down to *c.* 6.7g/6.8g. In this book the term Rhodian weight is used for this final variant.

Mention, too, should be made of the cistophoric standard, though since it was introduced by the king of Pergamum *c.* 175 it really belongs to a later period. The cistophorus weighs *c.* 12.6g or exactly three-quarters of the Attic-weight tetradrachms of the same period (16.8g). Halves and quarters were also issued, but sparingly. The standard was also used by such cities on the confines of the Pergamene kingdom as Alabanda in Caria and Cibyra in Lycia.

The weights of the bronze coins were generally far less accurately adjusted than the coins in the precious metals, as is only to be expected of fiduciary or token coinages. Moreover, bronze coins normally suffered greater corrosion during burial, with a further differentiation of the weights as a result. Under these circumstances the diameter of different denominations is often a better distinguishing mark than the weight. It also becomes difficult to use frequency tables to establish the norm weights. Often the best we can do is to calculate rough averages. Except in the few cases where the denominations are specifically indicated on the coins, designations in catalogues such as 'unit', 'double' and so forth are only modern speculations.

During the third century, bronze coinage began to play a very special role in the Egyptian currency system. Around 260 Ptolemy II introduced a series in eight different denominations,