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978-0-521-09133-6 - Studies in Numismatic Method: Presented to Philip Grierson

Edited by C. N. L. Brooke, B. H. I. H. Stewart, J. G. Pollard and T. R. Volk

Excerpt

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Thoughts on the beginnings of coinage

M. J. PRICE

It was probably almost twenty years ago that Philip Grierson turned my thoughts to the problems involved in the first appearance of coined metal. Since then his pen has been responsible for many important papers in various numismatic fields; but for the ancient historian the publication of his Creighton Lecture¹ deserves particular attention. It brings together many different strands of evidence to concentrate on the origins of money, reminding us that history is in the first instance about people, a fact which is rarely evident in numismatic studies. In that lecture the question of the origin of coinage had to be passed over in favour of the broader, more basic problems of money itself; and I would like to take the opportunity offered by this volume of essays to explore this subject further, in deep admiration of Philip Grierson's contributions to many spheres of numismatic study.

The broad picture of the development of the first coinage is well attested, although evidence for accurate chronology is still lacking.² The earliest context in which coins have been found is in the foundations of the archaic temple of Artemis at Ephesus, finally constructed, after three earlier 'phases', during the reign of Croesus of Lydia, 560–546/5 BC. The first structure built on the site consisted of two rectangular bases linked by a cross wall, and it is one of these, filled with votive offerings, which provides the earliest context for coins. The sides of that base apparently burst, and a retaining wall was thrown around the whole complex making a single rectangular platform for the second stage of the building. This was then extended to form the third stage, and the platform of the so-called 'Croesus' temple was finally thrown over the whole to make the fourth stage.

The only room for disagreement is in the absolute chronology accorded each stage of building, and here scholars have been vague. Hogarth³ dismissed the evidence of the numismatist B. V. Head, and put the first building shortly before 700 BC. Gjerstad,⁴ in answer to those who thought that all the structures were merely foundations of a single building, underlined the correctness of the archaeological evidence for the phases, but on no real evidence gave each stage a 25-year existence. Jacobsthal and Robinson,⁵ on

the more pragmatic grounds of the objects discovered in the original Basis deposit, decided that a date *c.* 600 BC must be about right for its construction, even though it had to be admitted that there were some probable sixth-century pieces present.⁶ Neither stressed the remarkable similarity of objects found inside and outside the first structure; and their date too may have been influenced by the need to provide sufficient time for three buildings to rise and fall before the construction of the platform of the Croesus temple.

In the deposits as reconstructed by Hogarth and Head, some of the latest coins were found in the earliest context (pl. 1, nos. 1–4, 8–10, depict some of the types found in the Artemisium). An electrum coin inscribed with the name *Walwel* was present in the original basis, from the same reverse punch die as one found outside.⁷ This small coin was struck by only half the obverse die, which in its complete state depicted two lion heads facing inwards with the inscription down the centre (pl. 1, no. 2). Stylistically it comes at the end of a long series with a single lion's head, uninscribed, which has been attributed to Sardes (pl. 1, no. 7).⁸ Typologically it resembles the coins attributed to Croesus of the mid sixth century (pl. 1, nos. 11–12); and, if the latter are rightly attributed,⁹ it is difficult indeed to see how the *Walwel* issue could be far removed from the time of Croesus. In the filling of the other base, also of the first building period, was found a coin with stag forepart type (pl. 1, no. 4) which shows close affinities to the famous issue of Phanes (pl. 1, nos. 5–6),¹⁰ and in particular the manner in which the head and dappled coat of the stag have been engraved suggests the possibility that the coin found in the base is a fraction of that same issue. The exact date of the Phanes coins has not been established; but the reverse punches have been engraved with patterns, and this together with the presence of the inscription would suggest a date well after the striking of the first coins. Again it is difficult to see how such well-developed types could have been engraved 50 or more years before the time of Croesus. A sixth-century date seems to be necessary for this coin also. The commonest coins found throughout the four building periods are pieces with lion's head and the fractions with a type described as a lion's paw (pl. 1, no. 8). These are as common in the Basis deposit as elsewhere,¹¹ and since the limited number of dies from which they were struck demands a rather short period of issue, it would be surprising indeed to find them apparently as fresh and little used as ever during the building of the fourth structure, if that took place 50 or more years after the construction of the first.

It should be noted that there is no evidence of any architectural member from above the foundation level to be connected with the three earlier phases. It is possible, of course, that the buildings were constructed of wood; but the fact is that we know nothing of them except that the foundations existed, and that objects of a not dissimilar nature were enclosed with each phase. A further important fact to note is that the Artemisium was built on wet sand, and we know that the earliest builders experienced difficulties in raising the structure, since Pliny¹² tells us that Theodoros of Samos was brought in – presumably after local builders had failed – to lay the foundations on charcoal and fleeces to prevent them from sinking. It should be suggested that the four building phases were in fact tentative steps towards a final structure. We know that the original basis collapsed, and

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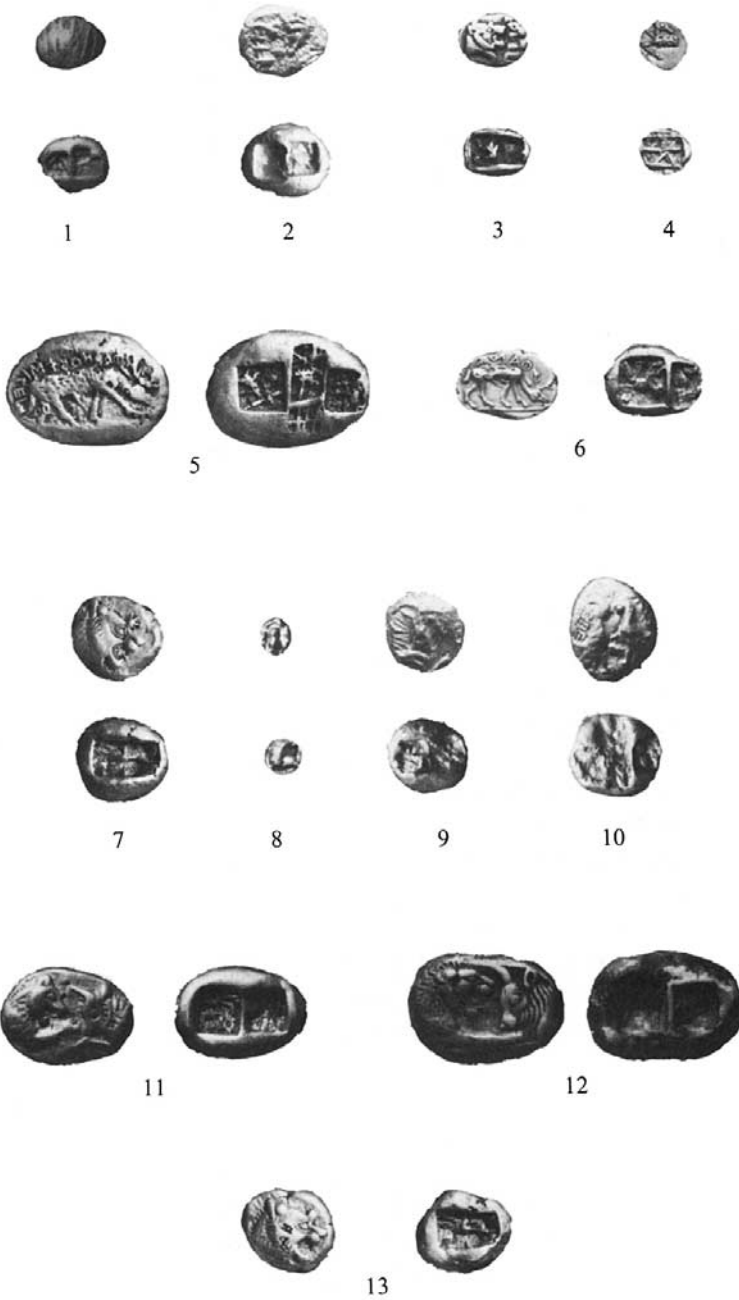


Plate 1

in the marshy conditions this could have happened only a short time after its construction. The second phase might be attributed to Theodoros as a trial and the pot hoard discovered in this context, found at the bottom of an earth filling, may be a second foundation deposit complementing that found in the original basis.¹³ The third phase would then be an extension of that trial to form the foundations of the temple proper. At this point another of the traditions becomes meaningful. We are told¹⁴ that the original scheme of the architect Chersiphron was enlarged and completed by his son; and this tradition could reflect the extension of the third phase to the final platform that had begun at least during Croesus' reign.¹⁵ If this interpretation were correct, the original basis may have been constructed less than a lifetime before the temple attributed to Croesus was started. There may never have been three separate sanctuaries constructed before the final temple was erected; and a date as late as *c.* 575 could be given to the earliest Basis deposit. If that were so, the recent attempt to push back the origin of coinage into the early seventh century BC must be rejected,¹⁶ and even the 'traditional' date of *c.* 640, based on a late seventh-century date for the earliest deposits of the Artemisium at Ephesus, may prove to be too early. Dr Weidauer's study of the dies of these early electrum coins shows how few were employed for any particular series, and at the same time her work emphasises how difficult it is to place the various series in a sequence.¹⁷ It seems rather that there were several places of minting, each with fairly short series, rather than one or two mints producing a long sequence over a long period of time. Whatever the minting arrangements, if the *Walwel* coin and the fraction possibly associated with the Phanes stater are to be placed before 600 BC, there is very little coinage extant which may be attributed to the years immediately preceding Croesus. On the other hand, there is very little sign of development in technique and fabric between the earliest electrum pieces (e.g. pl. I, nos. 1–10) and coinage attributed to Croesus (e.g. pl. I, nos. 11–12), less indeed than in any hundred-year period of Greek coinage; and this alone makes a date before 650 BC extremely suspect. Changing types and stylised fabric continue to be a feature of the electrum coinage of Cyzicus, Mytilene, and Phocaea; but such aspects may have developed from the tradition of early electrum, and the distinction between the early electrum and silver coinage must be made. Apart from the Artemisium deposits, the only *terminus ante quem* is the earliest appearance in literature of a probable coin term,¹⁸ when Alcaeus was given 2,000 staters for military expenses early in the sixth century. All in all, a date in the last quarter of the seventh century, rather than in the third quarter or earlier, for the appearance of the earliest coins seems very probable.

Silver dumps, flattened but not struck with a type, were found in the deposits from the Artemisium;¹⁹ but neither there, nor in the four main hoards of related electrum coins,²⁰ were silver coins present. It appears that in the area of Lydia and Ionia, where the electrum coinage originated, no silver coinage was minted until the time of Croesus.²¹ For at least 50 years electrum coins alone were struck, even though, as the Artemisium deposits show, ingots of silver, or indeed of gold, could be used beside the coins. This phenomenon requires some explanation, particularly when viewed against later practice. In the years after Croesus the minting of electrum was considerably restricted, and by the end of the sixth century the use of silver as a coin medium had virtually supplanted

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electrum. The earliest electrum coins are found in western Asia Minor, in the general area in which they must have been minted. Their alloy, as far as has been ascertained,²² is extremely variable, although the weights are accurate, and the coins must therefore have been used at a fixed, generally accepted value. This in turn must have been no lower than the highest point of the range of their intrinsic value, with the result that most of the coins must have been valued above their intrinsic value. This overvaluation in itself would account for their remaining within a close radius of their place of origin, since no foreign merchant would accept an overvalued nugget of metal which would not retain its value abroad. In this the early electrum differs from the later sixth-century silver coinage, of which it is true to say that most coins are more commonly found outside the area of origin than in its vicinity. On the other hand, the hoards and the deposits from Ephesus show that within the Lydian and Ionian sphere there must have been some travelling of coin to account for the remarkable variety of types found together, which can hardly have all been the products of one mint.²³

It is normally assumed that the stamp of the punch and the resulting type acted as a guarantee for the coin; but if so, such a guarantee could only hold within the limited area controlled by the issuing authority. Coins of varying intrinsic value would require some more general guarantee of value if they were to be accepted in transactions outside the immediate area of the mint, and this would be more probably effected through some convention accepted amongst traders of the ratio of electrum to gold, than through a stamp impressed on the coin. It is possible that this idea of a guarantee is an assumption based on a preconceived notion of the function of coinage, which in turn is based on later practices.

Differences between the early electrum and silver coinages have already been mentioned with regard to types and circulation, and there is also a difference in the denominations minted. Whereas sixth- and early fifth-century silver is normally of stater size, with few small fractions, much of the early electrum has survived in minute and impractical fractions, down to the ninety-sixth of a stater. Some allowance must be made for the chances of survival of small silver and large electrum; but to those handling the coins, this difference is very marked, and, added to the other differences noted, suggests the possibility that the early coins of electrum and of silver were not intended to perform exactly the same functions.

It has been suggested from the time of Aristotle onwards that coins were intended to facilitate trade by providing ready weighed and guaranteed pieces of metal. This is often thought of as retail trade, trade in small quantities for daily necessities; but Dr Kraay²⁴ has pointed out that even the smallest electrum piece must have had a fair value in terms of silver, about two Attic obols, and would thus provide a whole day's pay rather than the exchange for a loaf of bread. The idea of a retail trade grows out of the existence of a generally accepted medium practical for small transactions; and conversely payment for service through a single medium is only practical when retail trade in commodities of very small value is established. Such retail trade as is demanded of an urban society could not have taken place through the medium of minute shavings of electrum, silver, or gold. It was as a result of the progress of the economy towards such a system that

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bronze coinage was instituted during the second half of the fifth century, and that very small denominations in silver began to be commonly minted.

If the above observations are correct, it is clear that the theory proposed by R. M. Cook,²⁵ and now widely accepted, that coinage was to provide payments for mercenaries, does not fit the facts as we now know them. Not only is it clear that the localised circulation would require that such mercenaries settled in local communities, but it is also doubtful whether mercenaries would happily have accepted overvalued lumps of electrum as payment. Dr Kraay proposed a more complicated view to take account of the facts, that governments were seeking by means of these objects to standardise payments to their own servants, so that in return they could standardise taxes, fines, and similar payments to the state.²⁶ This appears to obviate the necessity to view the electrum coins as supplying a retail trade; but in the first instance the coins must in the main have been put into circulation as payments. The theory assumes that payment for service was acceptable, and this in turn would suggest at least in part that coins were suitable for retail trade. Fines and taxes would still represent only a small part of the coins' function. The theory also rests on the assumption that the state or monarch was the issuer of the object. Although with later coinage this is clearly so, the nature of the early electrum coinage does not preclude the possibility that private individuals might have been responsible for their issue.²⁷ Again, the difference with later silver coinage must be emphasised. Electrum coins were issued in numerous small series of many different types, very few of which were later adopted as city types or are obviously religious symbols – whereas the silver coinage forms into recognisable issues of particular city mints. None of the electrum coins from before the time of Croesus appears to have been inscribed with the name of a city.²⁸ The coins of *Walwel* found in the excavations at Ephesus were once thought to be the issue of King Alyattes of Sardes; but a new variety is linked by the use of the same reverse punch to the *Walwel* issues, but is inscribed *Kalil*,²⁹ a name which has no connection with the royal line of Lydia. Another variety with facing boar heads has other letters which again do not form a recognisable royal name.³⁰ There are two other inscriptions, one not legible, the other the famous Phanes issue (pl. 1, no. 5), which includes the surprising addition EMI ΣΗΜΑ which would be entirely superfluous if the type was a royal or state symbol, but which is perfectly acceptable if the type was derived directly from the seal of an individual. Once in circulation some coins were repunched with countermarks, mainly of a linear type, but the function of which may be related to the main type.³¹ These countermarks at least must be private marks, and it must be admitted that the evidence could point to the coins themselves being the issues of private individuals not of states. Monarchs as individuals no doubt struck coins, such as the lion's head issues of 'Sardes'; but any interpretation of the function of the earliest coins should take into account the possibility that their issue was not the monopoly of the state. How much less can an individual, albeit as influential person such as a banker, 'guarantee' the circulation of a coin at a value above the intrinsic value of the metal.

There can be little doubt that the origin of the coin type in general terms lies in seals, whether they are the marks of cities or of persons. The seal was a mark of ownership,

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and in acting as a signature it identified the authority of its owner. In the same way a coin type gave the object an official mark of origin, not necessarily to guarantee its circulation, but like a seal to identify its source. At this stage in the economy there is no reason to presuppose an extension of the function of the seal merely because the types were applied to nuggets of precious metal.

It is also reasonable to assume that at this stage in the economy payment in metals for service was not normal. Metals only provide livelihood when exchanged, and, as stated above, daily requirements call for a retail trade in minute quantities of metal. We can gain some idea of the practice of employment from literature;³² and it would seem that employees were normally given board and lodging in return for service, and 'payment' was received at the end of service by way of a bonus, which could presumably, but not necessarily, be given in metals. This is very different from the idea of payment for service, such as the *dikastikon* and the *ekklesiastikon* of fifth-century Athens, since the bonus was more in the form of a parting gift. The arrangement did not require that livelihood should depend on payments of money, and such a system worked perfectly well without the existence of coins for over 1,000 years, even though metals were well recognised as a form of amassing wealth or of giving valuations.³³ The servant must have been very much tied to his master, and democracy could hardly flourish without the freedom that a system such as that of coinage brought to society. The introduction of coinage could and did bring about a change in the previous system; but there is no reason to believe that the change had already taken place before the appearance of the first electrum coins.

Coins could well have provided a means for standardising bonus payments, or gifts of any sort. In the first instance coins must have been regarded as payments in the broadest sense, since only in this way could they have been put into circulation. But there is this difference; that, as bonus payments, the coins are far more akin to gifts (or medals) than to coins as we know them. On a theoretical level, others such as Edouard Will³⁴ have stressed the importance of the gift in the early Greek economy, and the personal nature of early electrum coins seems to require a specific function of this sort. The donor could be the state, or a monarch, or indeed a private individual. While it might be realised that the recipient could use the metal to acquire other objects or to make any form of payments, he could equally keep it as indicative of wealth. This, after all, is in the nature of a bonus. The coin type as the seal of origin represents the source of the bonus, the personal authority of the issuer. The coin, accurately weighed according to a recognised weight system, would be perfectly acceptable as a gift or bonus, even if made of electrum and not of gold or silver. On the other hand it is notable that for the first 50 or so years only this alloy was struck into coin, and we may suppose that the attraction of coining electrum lay in the profit that the use of such an alloy brought to the issuer. The place of such objects in the economy would grow as the practice of electrum bonus payments and gifts of coin became more widely adopted and as the coins circulated in other transactions. By the time Croesus of Sardes had brought within his kingdom the cities of the western seaboard such as Ephesus, the economy was ripe for the reform which brought gold and silver coinage into existence for the first time. It is then that the view

of coinage as a medium for standardising payments to the state becomes attractive. With the existence of coins it would become normal to standardise in terms of coins; but even so, during the later sixth and early fifth centuries the evidence would suggest that much of the silver coined at the main mints went abroad, either through mercenaries or in the form of trade; and in these cases it seems unlikely that the issues were made specifically for use within the state. With the increasing use of coin in payments of all sorts, the fifth and fourth centuries saw many cities overvaluing coin against bullion, so that valuable silver, with certain notable exceptions, tended to stay at home. At the same time overvalued copper was introduced to provide a practical medium for a daily retail trade.

The problems involved in the introduction of coinage are very far from being solved; but the suggestion that the early electrum coins represent gifts or bonus payments made first in the last quarter of the seventh century BC is an attempt to formulate a picture that is in accordance with the facts. The basic questions of data and attribution still require to be studied in detail, and it is necessary before further progress can be made to place the earliest coins in their social and historical context, so that their function can be conceived in terms of the people who first produced them.

NOTES

- 1 P. Grierson, *The origins of money*, London 1977.
- 2 For the most recent discussions see L. Breglia, 'Il materiale proveniente dalla base centrale dell'Artemision di Efeseo e le monete di Lidia', *Annali dell'Istituto Italiano di Numismatica* XVIII/XIX 1971/1972 [1974], 9–23; C. M. Kraay, *Archaic and classical Greek coins* (hereafter *ACGC*), London 1976, 20–30; T. Hackens, 'Chronique numismatique I. Les monnaies grecques les plus anciennes (VII^e–VI^e s. av. J.-C.)', *L'Antiquité Classique* XLVI 1977, 205–218 at 205–213; L. Weidauer, *Probleme der frühen Elektronprägung* (hereafter *Probleme*), Typos I, Fribourg 1975.
- 3 D. G. Hogarth, *Excavations at Ephesus. The archaic Artemisia* (hereafter *Ephesus*), London 1908, 239–246; compare B. V. Head, 'The coins', in the same volume, 74–93 at 91–92 (present disposition of the coins: Arkeoloji Müzesi, Istanbul).
- 4 E. Gjerstad, 'Studies in archaic Greek chronology II. Ephesus', *Annals of Archaeology and Anthropology issued by the Liverpool Institute of Archaeology* XXIV 1937, 15–34.
- 5 P. Jacobsthal, 'The date of the Ephesian foundation deposit', *JHS* LXXI 1951, 85–95; and E. S. G. Robinson, 'Coins from the Ephesian Artemision reconsidered' (hereafter 'Artemision'), in the same volume, 156–167. Comparing the 2,000 unstratified objects with the 1,000 of the Basis deposit, both agree (Robinson, 'The date of the earliest coins', *NC*⁶ XVI 1956, 1–8 at 3) that 'many resemble basis types so closely that they can with certainty be dated to the same period'.
- 6 Emphasised by R. M. Cook, 'Ionia and Greece, 800–600 BC', *JHS* LXVI 1946, 67–98 at 90 n. 190.
- 7 Head, *Ephesus*, 83, no. 43 (Basis); 85, no. 72 (unstratified); Weidauer, *Probleme*, 26–27, nos. 99 and 112 (Istanbul: Arkeoloji Müzesi).
- 8 A. R. Bellinger, 'Electrum coins from Gordion', *Essays in Greek coinage presented to Stanley Robinson* (ed. C. M. Kraay, G. K. Jenkins), Oxford 1968, 10–15 at 13; compare Weidauer, *Probleme*, 60.
- 9 A good deal of what follows is based on the assumption that the earliest gold and silver pieces, with heads of lion and bull, were

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- indeed struck under Croesus 560–546/5 BC. The coinage of these types continued to be struck under the Persians to the last quarter of the sixth century, and there are no grounds for placing their introduction much before the middle of the century.
- 10 Kraay, *ACGC*, 23; P. R. Franke, R. Schmitt, 'Phaneos – phanos emi sēma', *Chiron* IV 1974, 1–4.
 - 11 Head, *Ephesus*, 82–85. Basis deposits, 14 examples; later phases, 22 examples.
 - 12 Pliny, *Natural History* xxxvi 14. The burnt layer found in the excavations (Hogarth, *Ephesus*, 32 and 239) adds a graphic touch to the story. Early sixth-century sherds were found below the burnt layer (Hogarth, *Ephesus*, 32).
 - 13 Head, *Ephesus*, 74–75. E. S. G. Robinson, 'The date of the earliest coins', *NC*⁶ XVI 1956, 1–8 at 3, would prefer the coins of the pot hoard to be earlier; but the context does not allow this. Differences in engraving technique, given the novelty of engraving coin dies, could equally be due to geographical as to chronological considerations.
 - 14 Vitruvius vii 159; compare Strabo xiv 1–22.
 - 15 Herodotus i 92.
 - 16 The insistence of Weidauer, *Probleme*, 72–76, that the temple of Artemis destroyed by the Cimmerians must be on the site of the Croesus temple is without foundation. Compare Robinson, n. 13 above, 7–8. On the contrary, the destruction of that sanctuary in 626 BC could well have resulted in the move to a new site; and if so, the destruction may even provide a *terminus post quem* for the Basis deposit.
 - 17 Weidauer, *Probleme*, 43–57. T. R. Volk reminds me that the idea of a progression from unstruck dump to struck coin with striated surface (pl. 1, no. 1) to struck coin with type is an unnecessary rationalisation of the situation. There is no need to view the latter two steps as separate phases of development. All three clearly circulated together; and coins with striated surfaces and coins with recognisable types may well have been made in different places at the same time.
 - 18 Alcaeus frag. D 11; L. Breglia, 'Gli stateri di Alceo', *Quaderni Ticinesi [di] Numismatica e Antichità Classiche* III 1974, 7–12. An inscription from Chios of comparable date mentions staters: *A selection of Greek historical inscriptions to the end of the fifth century BC* (ed. R. Meiggs, D. Lewis), Oxford 1969, 14, no. 8, B3.
 - 19 Together with the unstruck dumps of electrum: Robinson, 'Artemision', 166–167, nos. 1 and 48.
 - 20 *An inventory of Greek coin hoards* (ed. M. Thompson, O. Mørkholm, C. M. Kraay), New York 1973, 155, no. 1154 (pot hoard, Ephesus); 155–156, no. 1158 (Samos); 156, no. 1161 (Hellespont); 158, no. 1176 (Gordion).
 - 21 M. Price, N. Waggoner, *Archaic Greek coinage. The Asyut hoard*, London 1975, 122; C. M. Kraay, 'The Asyut hoard: some comments on chronology', *NC*⁷ XVII 1977, 189–198 at 197. This view may not be subscribed to by H. A. Cahn, 'Asiut. Kritische Bemerkungen zu einer Schatzfundpublikation', *Schweizer Numismatische Rundschau* LVI 1977, 279–287 at 281–286.
 - 22 S. Bolin, *State and currency in the Roman Empire to 300 AD*, Stockholm 1958, 38–40. For an important discussion of early silver and electrum coinage from the metallurgical point of view see J. Dayton, *Minerals, metals, glazing, and man*, London 1978, 103–115.
 - 23 The thirteen main varieties are listed by Kraay, *ACGC*, 22. Of these only four may be related to later city coinage of Ionia.
 - 24 Kraay, *ACGC*, 318 n. 2.
 - 25 R. M. Cook, 'Speculation on the origins of coinage', *Historia* VII 1958, 257–262.
 - 26 C. M. Kraay, 'Hoards, small change and the origin of coinage', *JHS* LXXXIV 1964, 76–91; *ACGC*, 317–324. Philip Grierson makes a similar observation for the early gold Germanic and Anglo-Saxon coinages, but he also underlines the importance of the gift in the economy in 'La fonction sociale de la monnaie en Angleterre aux VIIe–VIIIe siècles', *Moneta e scambi nell'alto medioevo* (Spoleto, 1–27 April 1960), *SSAM* VIII 1961, 341–362 at 357–359 (reprinted in *Dark Age numismatics* as article xi).

- 27 Kraay recognises this possibility in *ACGC*, 23, but would limit it to rulers and tyrants. With the subjugation of much of this area by the Lydian empire, one wonders whether a rich Lydian such as Pythios (Herodotus vii 27), whose wealth at a slightly later date was given as 4,000,000 *darics*, might not have been on an equal footing, as far as coining was concerned, with the tyrants of the Ionian cities.
- 28 With the possible exception of the *stater* of 'Phocaea' with seal type, of which a forty-eighth was present in the Basis deposit: Head, *Ephesus*, 87, no. 87. L. H. Jeffery, *Local scripts of archaic Greece*, Oxford Monographs on Classical Archaeology, Oxford 1961, 341, is very doubtful about the letter form.
- 29 M. Thompson, 'Some noteworthy Greek accessions', *ANS-MN* xii 1966, 1–18 at 1–4; C. M. Kraay, 'Report of the Acting Keeper of the Heberden Coin Room', *Report of the Visitors [of the] Ashmolean Museum* 1968, 39–50 at 43–44; Weidauer, *Probleme*, 46–47.
- 30 Weidauer, *Probleme*, 21, no. 56 (London: British Museum). For a detailed study of the Phanes issue, but publishing a coin of which the authenticity has been doubted, see P. R. Franke, R. Schmitt, n. 10 above.
- 31 E.g. A. R. Bellinger, n. 8 above, 11: examples from the Gordion hoard.
- 32 E.g. Homer, *Odyssey* xviii 350–361 and *Iliad* xxi 450–452. Compare the method of paying mercenaries in the Hellenistic period: G. T. Griffith, *Mercenaries in the Hellenistic world*, Cambridge 1935, 264–316.
- 33 See the formula evolved to describe a rich man: Homer, *Iliad* vi 48; x 379; xi 133; *Odyssey* xxi 10.
- 34 É. Will, 'Réflexions et hypothèses sur les origines du monnayage', *RN*⁵ xvii 1955, 5–23 at 18–21.

KEY TO ILLUSTRATIONS

Plate 1

- 1 Electrum $\frac{1}{8}$ *stater*, typeless (Fitzwilliam Museum, Cambridge: SNG IV, no. 4835).
- 2 Electrum $\frac{1}{3}$ *stater*, two lion heads facing inwards, *Walwel*, as Head, *Ephesus*, pl. ii, no. 71 (Arkeoloji Müzesi, Istanbul).
- 3 Electrum $\frac{1}{8}$ *stater*, similar (British Museum: *BMC Lydia*, p. 3, no. 16).
- 4 Electrum $\frac{1}{12}$ *stater*, forepart of stag, as Head, *Ephesus*, pl. ii, no. 74 (Istanbul).
- 5 Electrum *stater*, stag, *Phanes* (British Museum: *BMC Ionia*, p. 47, no. 1).
- 6 Electrum $\frac{1}{2}$ *stater*, similar (British Museum).
- 7 Electrum $\frac{1}{3}$ *stater*, lion's head (Fitzwilliam Museum: SNG IV, no. 4837).
- 8 Electrum $\frac{1}{12}$ *stater*, lion's paw, as Head, *Ephesus*, pl. ii, no. 56 (Istanbul).
- 9 Electrum $\frac{1}{3}$ *stater*, forepart of goat, as Head, *Ephesus*, pl. i, no. 14 (Istanbul).
- 10 Electrum $\frac{1}{2}$ *stater*, two cocks, *Ephesus*, pl. i, no. 20 (Istanbul).
- 11 Gold *stater* (*croeseid*), foreparts of lion and bull (Fitzwilliam Museum: McClean Collection, no. 8635).
- 12 Silver *stater*, similar (Fitzwilliam Museum: general collection).
- 13 Electrum $\frac{1}{3}$ *stater*, lion's head, showing punch marks on obverse and reverse (Fitzwilliam Museum: SNG IV, no. 4838).