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# THE WAPPENMUNZEN

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It was recognised very early in the study of numismatics that a series of archaic, uninscribed, silver coins of uniform standard, fabric, incuse reverse pattern and similarly executed obverse design, formed some sort of homogeneous group. The early French school of numismatists attributed these coins to Athens, claiming that they were the result of Solons' economic reforms.<sup>1</sup> The Germans dubbed them "Wappenmunzen" or "heraldic coins", in reference to the varied motifs employed on their obverse sides.

The Wappenmunzen series consists of didrachms and subdivisions of the so called "Euboic" or "Attic" weight of c. 8.4 g. On the punch, or reverse side, they bear the impression of an incuse cross hatched square and on the anvil

side, or obverse, one of fourteen or so different design types, often enclosed in a circular border. The obverse types occurring on the didrachms are (fig. 1):—<sup>2</sup>

1. Scarab beetle
2. Bulls-head, facing
3. Owl to left
4. Horse standing, unbridled
5. Amphora
6. Forepart of bridled horse, to right
7. Forepart of bridled horse, to left
8. Horse hindquarters, to right
9. Astragalus
10. Triskeles of human legs
11. Wheel, archaic type, one transverse crossed by two supports
12. Wheel, four spokes, strutted
13. Gorgon's head



Fig. 1: Examples of Wappenmunzen obverse types (×2)

1. Beule, E. *Les Monnaies d'Athens*. 1858, pp. 7-20.
2. Babelon, E. *Traite des Monnaies grecques et romaines*. Deuxieme Partie, tome 1, 1907, pp. 674-675.  
Kroll, J. H. "From Wappenmunzen to Gorgonia to Owls". *ANSMN*, Vol. 26, 1981, p. 32.

Some of the Gorgon obverse type have a variant reverse with a tiny lion mask shown in one of the triangles of the incuse. Later, or so it seems, Wappenmunzen tetradrachms were also struck, bearing the Gorgoneion on the obverse and a bull-head or lion-head on the reverse.

Beulé declared that this variety of types was so considerable, and the similarity of fabric so great, that all of them, or none, must come from the mint of Athens.<sup>3</sup> It was this question of attribution, however, that was to become the first problem of the Wappenmunzen to be considered.

Towards the end of the nineteenth century, Germany's premier numismatists, Imhoof-Blumer and Curtius, expressed the view that the series was not Athenian at all, but belonged to the various cities of Euboea.<sup>4</sup> Barklay Head, then assistant-keeper of coins at the British Museum and engaged at the time in writing up the mammoth work that was to become the British Museum's Catalogue of Greek Coins, quickly became an adherent to this view.<sup>5</sup>

“the restoration of the archaic silver coins of various types hitherto generally treated as Athenian, to the islands of Euboea, is a real step in advance for the science of numismatics, and it only remains now to decide to what cities the several types are to be assigned.”<sup>6</sup>

Head conjecturally assigned some of the types, as follows, to the cities of Euboea:—<sup>7</sup>

Chalcis — Wheel, Triskeles.  
 Eretria — Gorgoneion, bull's head.  
 Cyme — Horse; fore or hind part of horse.  
 Athenae Diases — Owl, astragalus.  
 Histiaea — Amphora.

The designs on the coins were then to be seen as a civic emblem of the city striking them.

He was convinced that the inscribed tetradrachms, with what seemed a very primitive head of Athena on the obverse and an owl on the reverse, must represent the earliest coinage of Athens inaugurated by Solon.<sup>8</sup> Since the fabric of the Wappenmunzen was entirely different to these tetradrachms, he considered it “hardly conceivable that Athens, at any period in her early history, could have issued coins of all these various types, either simultaneously with, or subsequently to, her earliest inscribed tetradrachms.”<sup>9</sup> His explanation of the fact that more of the coins were found in Athens than anywhere else was that there was an arrangement between Athens and Euboea, allowing free circulation of Euboean coinage throughout Attica.<sup>10</sup>

At this time it was intuitively thought that a city state would only strike a single identifying type, and in Athen's case it was the tetradrachm owls that were considered to be this coinage. Consequently such was the prestige of Head that other eminent scholars of the time, such as Poole, Hill and Wroth sided with him and such of those that should seek argument on the point<sup>11</sup> were treated with incredulity.

3. Beule, E. 1858, p. 13.

4. Curtius, E. “Studien Zur Geschute von Korinth”. *Hermes*, Vol. X, 1876, pp. 215-243; Imhoof-Blumer, F. *Die euborische Silberwahrung, Monatsbericht, der K. Preuss Akad. der Wissensch.* 1881, pp. 657-674. quoted in Head, B. V. *British Museum Catalogue*, Vol. VIII, 1884, p. 220.

5. Head, B. V. 1884, P. XliX.

6. Head, B. V. “Metrological Notes on the Ancient Electrum Coins Struck Between the Lelantian Wars and the Accession of Darius”. *NC*, second series, Vol. XV, 1887, p. 279.

7. *Id.*, 1884, p. xlix.

8. Head, B. V. “On Coins recently attributed to Eretria (Reply to letter of Sir Henry Howart)”. *NC*, third series, Vol. XIII, 1893, p. 164.

9. *Ibid.*, p. 165.

10. *Ibid.*, p. 165.

This evidence of the hoards (see notes 34, 35) is inconclusive in this respect. Perhaps the Attic coins found in Euboea can be explained by the Persian Wars.

11. For example Howarth, H. H. “On Coins Recently Attributed to Eretria”. *NC*, third series, Vol. XIII, pp. 153-157.

“With regard to your next contention, I must confess that if the arguments I have already urged in the Introduction to my Catalogue of the Coins of Attica, p. xvii., have failed to convince you that the Athenian tetradachms, with the primitive effigy of the head of Athena represented on Pl. I. of the above mentioned catalogue, belong to the very earliest period of archaic art, and that they are most distinctly anterior to the numerous series of coins with the Gorgonein, Horse, Half horse, Wheel, &c., &c., which Curtius and Imhoof have attributed to the towns of Euboea, I fear that the few additional remarks which I now submit for your consideration may prove equally unconvincing.”<sup>12</sup>

Even eminent collectors such as Thomas Jones were persuaded to surrender the Athenian attribution of these excessively rare pieces to the less financially rewarding shores of Euboea, by the argument of “Mr Head and his learned colleagues”.<sup>13</sup>

Babelon<sup>14</sup> continued to try to show the appropriateness to Athens of some of the types by literary or mythical argument. Generally, however, by the time Head had his last word on the subject,<sup>15</sup> his views had reached a state of orthodoxy. Even Percy Gardiner, the last prominent British nineteenth century numismatist to propose an Attic origin for some of the series was to write . . . “it is thus clear that these coins had a wide and general circulation; and it seems almost certain that they belong to a monetary convention of some kind”,<sup>16</sup> and “the conclusive reason for assigning them to

Eretria rather than to Athens is that they are certainly later than the earliest coins . . . of Athenian origin”.<sup>17</sup>

Such was the state of play when, in 1924, Charles Seltman published his complete survey of the entire corpus of pre-Persian coinage in all the then known die varieties.<sup>18</sup> He discovered that Wappenmunzen with different types, were sometimes struck with the same punch and thus by formally establishing die linkages between them, he confirmed Beule’s assumption that they must indeed come from the one and the same mint. He further demonstrated the technical development of the series and showed that the Archaic owls with Athena obverse, were related to but in general came after the Wappenmunzen.

Broadly the framework of his suggested development of Attic coinage is as follows:—

1. Pre-Solonian, incuse didrachms, etc., of Aeginetan weight with amphora obverse (S. type A.)<sup>19</sup>
2. Solonian, incuse didrachms, etc., of “Euboic” or “Attic” weight with amphora type (S. type Bi)<sup>20</sup>
3. Post Solonian Wappenmunzen of other types (S. type Bii-Bvi)<sup>21</sup>
4. Overlapping with Pisistratid and post — Pisistratid, Euboic — Attic tetradrachms, etc., with Athena and the Owl, interrupted during the years of Pisistratis’ exile by further Wappenmunzen, (S. Di-iii)<sup>22</sup> and after the expulsion of Hippias by an issue of tetradrachms with gorgoneion and bull’s head or lion-head reverse (Group K).<sup>23</sup>

12. Head, B. V. 1893, pp. 160-161, in reply to Howarth.

13. Jones, T. “Athens? or Chalcis?” *NC*, third series, Vol. VI, 1886, p. 20. Jones had in fact obtained an Owl Wappenmunzen, the one type which Head was inclined to give to Athens. See Head, B. V. 1887, p. 279, n. 16.

14. Babelon, E. 1907, p. 705.

15. Head, B. V. *Historia Nummorum*, second edition, 1910, pp. 355-368.

16. Gardiner, P. “The Earliest Coins of Greece Proper”. *PBA*.

17. *Ibid.*, p. 179.

18. Seltman, C. T. “*Athens. Its History and its Coinage before the Persian Invasion*”. 1924.

19. *Ibid.*, Ch II, *passim*; pp 151-152, Plate I.

20. *Ibid.*, Ch III, pp. 16-20; p. 153, Plate I.

21. *Ibid.*, Ch III, pp. 20-22; Ch IV, V, *passim*; pp. 153-158; Plate I, II.

22. *Ibid.*, Ch. VII, *passim*; pp. 162-167; Plate III, IV.

23. *Ibid.* Ch XII, *passim*; pp. 195-196. Plate XIV.

Although criticized for not presenting all his evidence and for driving his theories further than the evidence allowed, nearly all commentators were willing to accept Seltman's die links as establishing once and for all that the Wappenmunzen were wholly Attic and must be viewed as the earliest coinage of Athens.<sup>24</sup>

Seltman had claimed a large number of die links between the Wappenmunzen and also with the early owl coinage of Athens, which he integrated with them, lending further support to his case for making them Athenian coins. Robinson in his review of Seltman's book expressed doubts regarding some of these links,<sup>25</sup> but they were not exhaustively tested until Hopper<sup>26</sup> reassembled the material using photographs and casts and also added in additional coins which were unknown to Seltman or had been discovered in the intervening years.

As Hopper points out, the study of dies and die links for the Wappenmunzen is difficult, because of the small number of coins involved and the often unreliable nature of photographs and casts. It is made more so by the problem of evaluating the progressive breakdown of the diagonally divided punch from the exceedingly simple incuse design left on the coins.<sup>27</sup>

Hopper leaves aside Seltman's group A of 'heavy amphora' coins, as it has been clearly demonstrated that they are not connected to Athens.<sup>28</sup> He is forced to reject many of Seltman's identifications but did find some of the punch die links between different obverse dies<sup>29</sup> as noted by Seltman. For example the well known and long agreed link between the amphora obverse S13a (P9/A7) and the triskeles S. 14a (P9/A7) and another: the bridled horse S. 25a (P17/A18) and the horse forepart to right S. 26a (P17/A19)<sup>29</sup> (fig. 2).

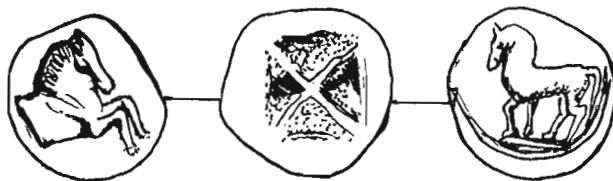


Fig. 2: Reverse die links (× 1)

24. For example see Robinson, E. S. G. Review of C. T. Seltman "Athens . . ." in *NC*, fifth series, Vol. IV, 1924, pp. 329-334; Kraay, C. M. "The Archaic Owls of Athens: Classification and Chronology" *NC*, sixth series, Vol. XVI, 1956, pp. 43-46, and Wallace, W. P. "The Early Coinage of Athens and Euboea" *NC*, Seventh series, 1962, pp. 23-24. Milne, J. G. "The Early Coinages of Athens and Euboea" *NC*, sixth series, Vol. 1, 1941, pp. 8-15, however, still finds it necessary to parcel out some of the issue to various Euboean cities.
25. Robinson, E. S. G. 1924, p. 330.
26. Hopper, R. J. "Observations on the Wappenmunzen". In C. M. Kraay and G. K. Jenkins eds. *Essays*. 1968 Ch III, pp. 16-39.
27. *Ibid.*, pp. 17-18.
28. Robinson, E. S. G. 1924, p. 333-334 points to the marked difference between the amphora on these coins and those on the lighter Wappenmunzen. He notes that they are similar to those made by the potters at Carthaea on Ceos which is where these coins should be assigned. In addition the reverse punch clearly dissociates these coins from the Wappenmunzen, but finds parallels in many of the island series as does the fabric and the weight. See also Kroll, J. H. and Waggoner, N. M. "Dating the Earliest Coins of Athens, Corinth and Aegina" *AJA*, Vol. 88, No. 3, 1984, p. 327, V. 10.
29. Hopper, R. J., 1968, p. 20. See also Kraay, C. M. *Archaic and Classical Greek Coins*, 1976, p. 57.

More importantly Hopper has shown that contrary to Seltman's implausibly complex organization, the Wappenmunzen issues must have followed one another in an orderly sequence and were not overlapped by any of the Athena and owl issues.<sup>30</sup>

Another unifying feature is the fact that all the coins are struck on the same weight standard — the Euboic/Attic. Most of the Wappenmunzen are didrachms weighing between 8.4 and 8.5g, the less common subdivisions were drachms (4.0-4.3g) and obols (0.55-0.65g).<sup>31</sup> The homogeneity of the group is marked by the fact that although assimilated by weight to the Euboic standard the divisions were made according to the Aeginetan system. The Wappenmunzen had as standard unit, the didrachm, which was subdivided into drachms and into six obols (fig. 3) like the heavier coinage of Aegina. Users of the Euboic standard, however, such as Corinth and Chalcis, divided their base unit into three and it was therefore a tridrachm.<sup>32</sup>



**Fig. 3: Wappenmunzen obol, wheel obverse and reverse. (×3)**

That the mint issuing the Wappenmunzen must have been in Central Greece is clear, because apart from a few isolated “floaters” — coins that had drifted far afield<sup>33</sup> — all finds are concentrated in Attica or Euboea. In all five hoards have been found, containing large number of Wappenmunzen, three in Attica<sup>34</sup> and two in Euboea.<sup>35</sup> The composition of the hoards points to Attica as the area of circulation, particularly “because it is from Attica that most of the smaller denominations come; and this is an important indication, because they are the pieces that circulate locally in their area of issue”.<sup>36</sup> The stray single find of five Wappenmunzen in the Agora, in the nineteen thirties,<sup>37</sup> also points to Athens.

Finally to these arguments may be added obvious Athenian flavour of the owl and gorgoneion obverses and the Athenian shaped amphora used on the Wappenmunzen.

Thus it is clear that the Wappenmunzen were Athenian. In making this attribution, however, a number of other questions arise:—

30. Hopper, R. J. 1968, pp. 22-23.

31. *Ibid.*, pp. 24, 36-38.

32. Kraay, C. M. 1976, pp. 57-58.

33. For example the two Wappenmunzen found amongst the 900 or so, coins amongst the “Asyut” hoard from Middle Egypt. Price M. and Waggoner, N. *“Archaic Greek Coinage, The Asyut Hoard.”* 1975, pp. 11.

34. The first Attic hoard was discovered by Cousinery at Athens in 1788. It consisted of six Wappenmunzen didrachms and several fractions, three Athena/owl tetradrachms and one Wappenmunzen tetradrachm. Beule, E. 1858, p. 17; Seltman, C. T. 1924, p. 146.

The second hoard found at Eleusis in 1833 contained six Wappenmunzen fractions, one Athena/owl tetradrachm and one Wappenmunzen tetradrachm. Gardiner, P. 1911, p. 182; Seltman, C. T. 1924, p. 146.

A third hoard was found on the Acropolis in 1886, consisting of fifteen Wappenmunzen fractions and thirty four Athena/owl tetradrachms. Seltman, C. T. 1924, p. 147.

35. Near Cyme in 1883, a hoard containing seven Wappenmunzen didrachms many tetradrachms and lesser coins of Eretria and Athena/owl tetradrachms.

Another hoard from at Eretria in 1870 contained tetradrachms and didrachms of Eretria and Athena/owl tetradrachms, a Wappenmunzen tetradrachm and several didrachms.

Gardiner, C. M. 1976, p. 57.

36. Kraay, C. M. 1976, p. 57.

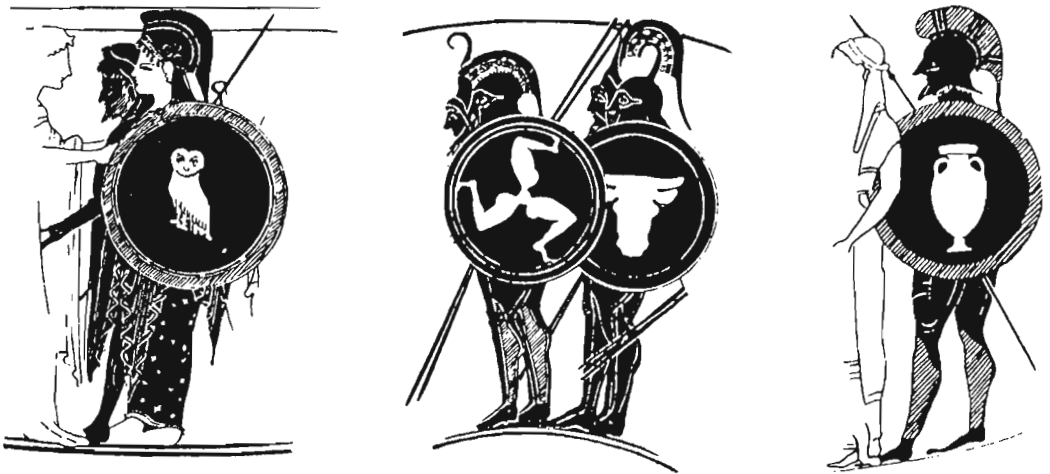
37. Hopper, R. J. 1968, p. 25.

1. If the devices on the coins are not civic emblems of the different cities it has been assumed were striking them, what did they represent?
2. What is the chronology of the series — when did it start and when did it cease?
3. What is the historical significance of the Wappenmunzen and how do they relate to the assumed monetary reforms of Solon and the sixth century chronology of Athens as a whole?
4. Finally in what sequence were they struck and what is their evolutionary relationship with the Athena/owl tetradrachms?

Seltman's hypothesis regarding the Wappenmunzen types was that they were meant to reproduce the "Wappen" or Coats-of-Arms of the leading Eupatrid families of sixth century Athens.<sup>38</sup> Many of the types, but not all, have the obverse design surrounded by a heavy circle which suggested to Seltman the rim of a shield. All the designs seen on the

Wappenmunzen appear on Attic black figure vases, on the shields of deities, heroes and unidentified hoplites, and this further suggested the theory that the vase painters copied the shields they saw being carried about in the street by the men at arms of Athen's great Eupatrid families (fig. 4). These devices, he maintained, were placed also on the coins issued by members of these same families.

Seltman sought to give support to his theory from the literary sources, by making use of a passage from Aristophanes, *Lysistrata* 665-70 and the scholia on it. In this, he believed, there was a reference to a white triskeles blazon of the Alcmaeonid family. Hopper has shown, however, that Seltman has misinterpreted and stretched the passage to fit into his preconceived theory, and that the passage in fact, does not refer to such a shield blazon at all.<sup>39</sup> Seltman further declares that "the love of heraldry was strong in the sixth century"<sup>40</sup> and supports this statement by saying "the



**Fig. 4: Scenes from Attic black figure vases showing shield blazons similar to those on Wappenmunzen.**

38. Seltman, C. T. 1924, pp. xviii-xix, 19-38.

39. Hopper, R. J. "A note on Aristophanes *Lysistrata* 665-70" *CQ*, Vol. 10, pp. 242-247.

40. Seltman, C. T. 1924, p. 19.

maintenance of clan or family coat-of-arms is vouched for by other Greek monuments and especially by the Heracleian Tables”.<sup>41</sup> Both Hopper and also Van Buchem stress that, in this Seltman is mistaken as there is no supporting literary evidence for clan blazons in Ancient Greece.<sup>42</sup> Furthermore, Seltman’s identification of particular coin devices with particular families goes quite beyond the evidence.<sup>43</sup>

To the above argument must be added the implications of the revised low chronology (see below) which makes it clear that we can no longer consider the Wappenmunzen as a pre-Pisistratid coinage and thus we cannot see the designs on them as reflecting the power struggle between a succession of powerful families periodically gaining control of the state and the mint, each family in turn having the coinage stamped with its hypothetical emblem (fig. 5). It is now recognized that the Wappenmunzen belong in the later sixth century, when Pisistratid rule was absolute and the competition between blocks of aristocratic families had been eliminated as a factor in Athenian politics.

If the devices are not the blazons of the Athenian Eupatrid families, what do they represent? Three suggestions have been proffered in this respect, and recently summarized by Kraay, although he makes no decision between them.

“Types may have been officially current for short periods only, as in the Middle Ages, thus compelling holders of currency to pay a premium to have their silver restamped at intervals; this might explain why some Wappenmunzen issues survive in so few specimens . . .

An association of changing types with successive Panathenaic festivals has also been suggested, for most of the types

refer to the cult of Athena or to Panathenaic contests.

Finally the ‘heraldic theory’ can perhaps be salvaged in part; a fragment of an archon list from the reign of Hippias proves that some noble families acquiesced in Pisistratid rule to the extent of accepting public office; it would not be unlike Pisistratus to invite rich men to shoulder part of the cost of issues of coinage from time to time, and to require them to stamp such coins with some distinctive device as a mark of their responsibility for good weight and quality.”<sup>44</sup>

The wheels, the various types of horse motifs and the gorgoneion, could refer to aspects of the cult of Athena, or agonistic contests at the Panathenaic games and the amphora awarded to the winners.<sup>45</sup> This seems however, to require an enormous amount of conjecture, and in addition it is hard to place the scarab, the astragalus and some of the other designs, such as the frog which appears on Wappenmunzen obols, in this context. This theory would date the start of the Wappenmunz coinage at 566/7 B.C. to coincide with the inauguration of the Greater Panathenaia — a date that seems too early (see below). In addition it seems extremely unlikely that the monetary requirements of Athens could be met by the striking of Panathenaic “festival money” at four yearly intervals.<sup>45</sup>

Hippias a son of Pisistratus is meant to have called in the existing coinage at a discount in order to restrike it, but as Kraay points out, “the context of the tale is in the realm of unorthodox devices for raising money, so that it more probably refers to the unique occasion of the change from Wappenmunzen to owls than to a recurrent practice”.<sup>46</sup>

41. *Ibid.*, p. 24, n. 2.

42. Hopper, R. J. 1960, p. 244; van Buchem, H. J. H. “Family Coats-Of-Arms in Greece?” *CR*, Vol. 40, 1926, pp. 181-183.

43. Robinson, E. S. G. 1924, p. 330.

44. Kraay, C. M. 1976, pp. 59-60.

45. Kleiner, T. *Greek and Roman Coins*. Agora Picture book No. 15, 1975, p. 6 favours the supposition. The theory has little support, however: see Kroll, J. H. and Waggoner, N. M. 1984, p. 331, n. 42.

46. Kraay, C. M., 1976, pp. 59-60.



CHART OF THE EUPATRID COINAGE

COIN TYPES <sup>1</sup> of GROUPS B and D	B.C.	HISTORIC EVENTS
Amphora	594	Solonian legislation
Triskeles	590	Faction. Alcmaeon commanding Athenian army
Forepart of horse	589	
	586	Faction
Beetle		
Astragolos		
	582	Damasias Archon
	581	Damasias Archon
Cartwheel } Bull } Horse } Forepart of horse }	580	
	578	
	577	
Wheel	572	
	570	Peisistratus takes Nisaea and Salamis
Hindpart of Horse	566	Hippocleides Archon. Greater Panathenaia founded
	561	Peisistratus tyrant: later retires to hills. ("Imperial" Mint opened)
Wheel	560	Peisistratus returns, allied with Megacles
Owl	556	Peisistratus withdraws to Thrace. ("Imperial" Mint transferred to Thrace)
Bull's head		
Gorgoneion	550	
	548	Delphic temple burnt down
Mint closed	546	Peisistratus returns: firmly established. ("Imperial" Mint returns to Attica)

<sup>1</sup> Dated approximately.

**Fig. 5: Hypothetical sequence of Wappenmunzen according to Seltman (1924).**

Kroll has argued strongly for the third of these suggestions. He points out that far from being unique to Wappenmunzen, changing obverse types were characteristic of a number of other Greek coinages.<sup>47</sup> In addition, all of the Wappenmunzen types are paralleled on other Greek coinages, with changing types or symbols. There is also evidence from some of these coinages that the changing types were indeed the personally chosen devices of mint magistrates.<sup>48</sup>

Moneyer's signatures, whether pictorial or inscribed, remained a prominent feature of the majority of Greek coinages, through the Hellenistic period and down into Roman times, where it reached its florescence in the late Republic. It is in this light that the Wappenmunzen types should be viewed.

Not knowing the names of the Wappenmunzen magistrates, it is only possible to speculate on the possible motives that governed selection of the various devices. If we take the occasional punning magistrate symbols on the new style Athenian silver as an example, some of the Wappenmunzen types may contain canting allusions to personal names. Certain of the horse types for instance could represent magistrates whose names commenced with "Hipp-" such as Pisistratis' sons, Hipparchus and Hippias.<sup>49</sup>

The remaining set of interrelated questions, all concern chronology and will be the subject of the discussion in the remainder of this article. Both the relative and absolute chronology of the series depend on two reference points — the date of the earliest electrum coinage of Lydia and Ionia and the date for the introduction of Athens of what was to become their characteristic coinage for four hundred years, the tetradachms with Athena obverse and an owl on the reverse, ("owls") for it is between these dates that the Wappenmunzen must lie. Relevant to this is the meaning of Solon's economic reforms, and his alleged reformation of the monetary system at Athens and similar testimonia regarding Pheidon and the coinage of Aegina.

Basically the traditional "high chronology" accepts a mid-seventh century date for the closure of the Central Basis deposit in the Artemisium at Ephesus. Found here in 1904 was a hoard of electrum coins, in many ways the most important hoard ever found, containing as it did the earliest hoarded coins.<sup>50</sup>

This closure date, puts the invention of coinage back to around 700 B.C. and this could imply that it spread to Aegina around the mid-seventh century and thence to Corinth and Athens later in the seventh century. If Athen's first coinage

47. Kroll, J. H., 1981, pp. 3-10.

The most conspicuous non Athenian coinages with changing obverses were five classical electrum and gold coinages of East Greece. Those of Cyzicus whose approximately 200 different obverses were coupled with a typless square punch reverse. Those of Phocaea, Mytilene and Lampsacus and the well documented case of Samos, who issued successively five known obverse devices; ram, flying bird, swan, lion's head and tetraskeles.

See also Kroll, J. H. and Waggoner, N. M. 1984, p. 331.

48. Kroll, J. H. 1981, pp. 3, 5-8.

For example the pre Croesus Lydian coinage, bearing the lion-head device of the Lydian monarchy, carried various names which were not those of any Lydian kings and therefore must have been the signatures of royal officials charged with minting.

The coins of Samos mentioned above carry signatures — like Phanes — of moneyers responsible for the separate issues along with the changing obverses.

49. *Ibid.*, p. 9.

50. For an account of the find see Jacobsthal, P. "The date of the Ephesian Foundation Deposit" *JHS*. Vol. LXXI, 1951, pp. 85-95; Robinson, E. S. G. "The Coins From the Ephesian Artemision Reconsidered" *JHS*, Vol. LXXI, 1951, pp. 156-167, and Seltman, C. T. "The Earliest Hoarded Coins" *Num. Circ.*, Vol. LCIII, 1955a, p. 167.

was the Wappenmunzen, then Solon's reforms of c. 594 B.C., must have involved the replacement of this series by the "owls".<sup>51</sup>

Advocates of the "low chronology", have on the basis of a re-assessment of the archaeological debris associated with the Basis Treasure, fixed the closure date at c. 600 B.C. and the invention of coinage at c. 640 B.C.<sup>52</sup> In addition, the evidence of the hoards has anchored particular late stages of the archaic coinages of Aegina, Corinth and Athens to c. 500 B.C. Working back from this date, the available evidence would point to a mid-sixth century date for the commencement of coinage at Aegina and slightly later for Corinth and Athens.<sup>53</sup>

According to the literary record which has come down to us, Solon was responsible for a reform of the coinage in the early sixth century.<sup>54</sup> Some scholars have interpreted the ancient testimonia as revealing a weight reduction, others as implying a weight increase, but as we have seen, the fact of the matter, is that Athens commenced striking a base unit of the didrachm at Attic — Euboic standard of about 8.4g, and this remained in effect, unchanged down into the Hellenistic period. There was one major change however, and that was in the introduction of the Wappenmunzen tetradrachm with gorgoneion as the major denomination.

How then is one to understand Solon's reforms? It seems likely that since coins

were named after the weights they represented, and since we can clearly see from other writers on the subject, that no record had been kept pertaining to the introduction of coinage, that Solon reformed the weights only and it was just assumed that he had reformed the coinage.<sup>55</sup>

The gorgoneion tetradrachms were introduced toward the end of the Wappenmunzen series and Kraay<sup>56</sup> and Wallace<sup>57</sup> have shown that the style and fabric of these issues, links them to the earliest and finest of the owl tetradrachms (Seltman type H). The Wappenmunzen tetradrachms were the first bifacial coins produced at Athens. The fact that the gorgoneion obverse was retained through the two issues of bulls-head and lions-head reverse types (fig. 6), indicate that this was the public coin type of Athens.<sup>58</sup>

The sole surviving tetradrachms of the gorgoneion/bulls-head type, is die linked (S.A/208) with several of the more common gorgoneion/lions-head issue and the wear of the die shows the bulls-head to be the earlier type.

Didrachms with bulls head badge are of normal Wappenmunzen type, with supposed moneyers device obverse and incuse — square reverse. The didrachms with lion-head symbol show a significant alteration of tradition, however, the obverse being the gorgoneion and the reverse showing a tiny lion mask in the upper triangle of the incuse square reverse. These issues clearly fall at the

51. The high chronology has been championed by Seltman, for example see *Id.* 1924, pp. 6-15, 1955a Ch II-IV *passim*. In recent years D. Kagen has revived this chronology. See *Id.*, "Pheidon's Aeginetan Coinage". *TAPA*, Vol. XCI, 1960, pp. 121-136, and "The Dates of the Earliest Coins", *AJA*, Vol. 86, No. 3, pp. 343-360.
52. Robinson, E. S. G. 1951, *passim*; *Id.*, "The date of the Earliest Coins". *NC*, Sixth series, Vol. XVI, 1956, pp. 1-8.
53. See Kroll, J. H. and Waggoner, N. M. 1984. pp. 325-326 for a concise assessment of the high and low chronology.
54. See *Ibid.*, pp. 326-327.
55. Kroll, J. H. and Waggoner, N. M., 1984, p. 333.
56. Kraay, C. M., 1956 *passim*; *Id.* "The Early Coins of Athens: A Reply". *NC*, seventh series, Vol. II, 1962, pp. 417-423.
57. Wallace, W. P., 1962, *passim*. Wallace and Kraay do differ, however, on the date for the transition from the Wappenmunzen tetradrachms to the owl types. It is not possible to take the relative chronology of the Wappenmunzen much past these conclusions as the die linkages as recommended by Hopper have proven too inconclusive to draw up an ordered list of the other thirteen types. See Hopper, R. J., 1968, p. 30.
58. The centrepiece of Athena's aegis was the gorgoneion and like her owls, was one of the most appropriate symbols of her city.



**Fig. 6: Wappenmunzen tetradachm obverse and reverse (×2.5)**

very end of the Wappenmunzen didrachm series by association with the tetradrachms. In addition Hopper, although uneasy about some of Seltman's obverse die linkages, has found die link support for this arrangement in a newly discovered coin.<sup>59</sup>

Furthermore metallurgical analysis has shown that the gorgoneion Wappenmunzen have silver of the same purity as the fifth century owl-coinage with minimal gold and copper content, suggesting that both issues were struck from silver from the Laurion mines. The earlier Wappenmunzen however, appear to have been struck from non Attic silver, as it has a much higher impurity content.<sup>60</sup>

The evidence of the coin hoards has enabled scholars to empirically assign dates to the earliest owls (Seltman's Group H). The fact that they are not present in hoards before 500 B.C. (fig. 7) strongly suggests that they did not begin much before this time. Scholars have not been able to reach uniformity on the date

however. Kraay has suggested they began as early as 525 B.C.<sup>61</sup>. Although in recent times he has been inclined to lower this somewhat, because of stylistic comparison between the representations of Athena's helmet shown on Attic vases and Group H owls suggests a date after 520 B.C.<sup>62</sup> and Wallace<sup>63</sup> and Price and Waggoner<sup>64</sup> have pushed the chronology down even further to link the change in coin types to dramatic breaks in Athenian political history. They suggest either 511/510 B.C. when the oligarchic government came to power after the expulsion of Hippias or 507/506 B.C. the time of inauguration of democratic government under Cleisthenes.

It is now understood that the innovation of the owl tetradrachms was not quite so dramatic as had been previously assumed. It was merely the final step in the evolution from Wappenmunzen didrachms, to Wappenmunzen tetradrachms, to owls and it would therefore seem more likely that introduction of the owls "was the achievement of a single, stable, and

59. Hopper, R. J. 1968, pp. 23-24, 27.

60. Wallace, W. P. 1962, pp. 27-28.

61. Kraay, C. M. 1962, p. 417.

62. Kraay, C. M. 1962, p. 417.

63. Wallace, W. P. 1962, p. 25 ff.

64. Price, N. and Waggoner, N. M. 1975, pp. 64-66.

Classifiable Athenian coins by Groups (and, in parentheses, Seltman's Groups)										
Wappenumunzen "Unwreathed" Owls										
Hoard	IGCH No.	Termini	Date	I (B, D, K)	II (H)	III (L)	IV (M + G)	V (C + F)	VIZ (E)	"Wreathed" Owls
Attica	2		ca. 525-515	18 +						VII (N)
Sakha (Egypt)	1639		ca. 500-490	2						
Taranto (Italy)	1874	after 506	ca. 500-490	2	5					
Benha (Egypt)	1640		ca. 490-485	1	4	2				
Asyut (Egypt)	1644	after ca. 490	ca. 475 or later	2		7	154			
Gela (Sicily)	2066	after ca. 490	ca. 480		2-4	2	134	31		
South Anatolia	1177	after ca. 490	ca. 480-475				6	13		
Athens Acropolis	12	in or before 480	480	17		1	2	4	30	
Zagazig (Egypt)	1645	after ca. 490	after 470				3 +	4 +		18

Fig. 7: Hoards significant for the Chronology of Archaic Athenian Coinage. (Kroll and Waggoner, 1984)

economically minded government that was accustomed to striking the traditional privately signed drachms. The established government in question should be that of Hippias".<sup>65</sup> In addition it seems unlikely that so late a date would be possible, given the enormous output of archaic issues. Kroll settles on a date between these extremes of c. 515 B.C.<sup>66</sup> which is perhaps not far from the mark.

The consequence of this date means that it is now possible to work backward. If the Wappenmunzen types are to be identified as magistrate's symbols, then it is highly likely that, with the exception of the unchanging gorgoneion, each type was normally employed for a single year in line with a yearly magistracy.<sup>67</sup>

Counting the gorgoneion device with plain reverse and omitting the lion mask/gorgoneion for the moment, there are 14 private devices on Wappenmunzen didrachms. To this should be added four devices appearing on fractional Wappenmunzen, but not represented on surviving didrachms: frog (obols), pomegranate (hemio bols), leaf (hemio bol), and eye (quarter obols). A

year is allotted to each of the private moneyer's types and an additional four or five years, to cover for any magistrates who may have served longer than a year<sup>68</sup> and for the possibility that a few types have not survived. Add to this three years for the prolonged striking of the gorgoneion/lion head tetradrachms and the result is a minimum span of about 25 years. A realistic maximum therefore, allowing for years when no coins may have been struck, ought not to be greater than 30 years.<sup>69</sup> Thus using Kroll's date of 515 B.C. for the initial issue of the owls, the Wappenmunzen may be placed between c. 545-515 B.C. and a chronology for sixth century Athenian coinage may be drawn up (fig. 8).

This initial date coincides well with the year 546 B.C. when Pisistratis returned from exile to take firm control of Athens and provides an excellent historical support for the dates proposed. Regardless of the actual date it now seems certain that the coinage now known to us as the Wappenmunzen did not conclude with Pisistratis, rather it was he who instigated them.

	Kraay 1956/62	Wallace 1962	Price & Waggoner 1975	Kroll 1982
Wappenmunzen	575-525	545-510	545-510	545-515
Archaic Owls	525-480	510-490	510-490	515-490

**Fig. 8: Chronology for sixth century Athenian Coinage.**

65. Kroll, K. H. 1981, p. 25.

66. *Ibid*, p. 30.

67. Kroll, J. H. 1981, pp. 20-22 outlines the case for assuming that the mint magistrates would hold office for a year in line with the practice of other office holders from Archaic times on.

68. The strutted wheel for example is exceedingly prolific and is represented by about 10 obverse dies. The unstrutted wheel and horse foreparts l. and r. are also well represented by 4-7 dies whereas all other types are known through only one or at most two dies.

69. Kraay, C. M. 1956 assigns fifty years to the Wappenmunzen which seems too long, considering the fact that there is almost no stylistic or technological development of the series and the small numbers issued.

## BIBLIOGRAPHY

### Abbreviations:

ANSMN	American Numismatic Society Museum Notes.
AJA	American Journal of Archaeology.
CQ	Classical Quarterly.
CR	Classical Review.
Essays	Essays in Greek Coinage Presented to Stanley Robinson.
JHS	Journal of Hellenic Studies.
NC	Numismatic Chronicle.
Num.Circ.	Numismatic Circular.
PBA	Proceedings of the British Academy.
TAPA	Transactions and Proceedings of the American Philological Association.

- Babelon, E. 1907 *Traite des Monnaies grecques et romaines*. Deuxieme Parte, tome I. Paris.
- Beule, E. 1858 *Les Monnaies d'Athens*. Paris.
- Gardiner, P. 1911 "The Earliest Coins of Greece Proper". *PBA*, Vol. V, pp. 164-201.
- Head, B. V. 1884 Catalogue of Greek Coins in the British Museum. Vol. VIII, Central Greece. London.
- 1887 "Metrological Notes on the Ancient Electrum Coins struck between the Lelantian Wars and the Accession of Darius". *NC*, second series, Vol. XV, pp. 277-308.
- 1893 On Coins Recently Attributed to Eretria (Reply to Letter of Sir Henry Howarth), *NC*, third series, Vol. XIII, pp. 158-165.
- 1910 *Historia Nummorum*, second edition. Oxford.
- Hopper, R. J. 1960 "A Note on Aristophanes Lysistrata 665-70". *CQ*, Vol. 10, pp. 242-247.
- 1968 "Observations on the Wappenmunzen" *Essays*, CH. III, pp. 16-39.
- Howarth, H. H. 1893 On Coins Recently Attributed to Eretria, *NC*, third series, Vol. XIII, pp. 153-157.
- Jacobsthal, P. 1951 "The date of the Ephesian Foundation Deposit". *JHS*, Vol. LXXXI, pp. 85-95.
- Jones, T. 1886 Athens? or Chalcis? *NC*, third series, Vol. VI, pp. 19-22.
- Kagan, D. 1960 "Pheidon's Aeginetan Coinage" *TAPH*, Vol. XCI, pp. 121-136.
- 1982 "The Dates of The Earliest Coins". *AJA*, Vol. 86, No. 3, pp. 343-360.
- Kleiner, 1975 *Greek and Roman Coins*. Agora Picture Book No. 15.
- Kraay, C. M. 1956 "The Archaic Owls of Athens: Classification and Chronology". *NC*, sixth series, Vol. XVI, pp. 43-68.
- 1962 "The Early Coinage of Athens: A Reply" *NC*, seventh series, Vol. II, pp. 417-423.
- 1976 *Archaic and Classical Greek Coins*. London.
- Kroll, J. H. 1981 "From Wappenmunzen to Gorgoneia to Owls" *ANSMN*, Vol. 26, pp. 1-32.
- Kroll, J. H. and Waggoner, N. M. 1984 "Dating the Earliest Coins of Athens". *AJA*, Vol. 88, No. 3, pp. 325-340.
- Milne, J. G. 1941 "The Early Coinage of Athens and Euboea". *NC* (Sixth series), Vol. I, pp. 8-16.
- Price, M. and Waggoner, N. M. 1975 *Archaic Greek Coinage. The Asyut Hoard*. Vecchi and Sons: London.
- Robinson, E. S. G. 1924 Review of C. T. Seltman "Athens . . ." in *NC*, fifth series, Vol. IV, pp. 329-341.
- 1951 "The Coins from the Ephesian Artemision Reconsidered". *JHS*, Vol. LXXI, pp. 156-157.
- 1956 "The Date of the Earliest Coins" *NC* (sixth series), Vol. XVI, pp. 1-8.
- Seltman, C. T. 1926 *Athens. Its History and Coinage Before the Persian Invasion*. University Press: Cambridge.
- 1955a *Greek Coins*. Methuen: London.
- 1955b "The Earliest Hoarded Coins" *Num. Circ.*, Vol. LXII (April), p. 167.
- van Buchen, H. J. H. 1926 "Family Coats-of-Arms in Greece". *CR*, Vol. 40, pp. 181-183.
- Wallace, W. P. 1962 "The Early Coinages of Athens and Euboea" *NC* (seventh series), Vol. II, pp. 23-42.