

Aristophanes' πονηρὰ χαλκία: A Reply

John H. Kroll

IN a recent number of this journal Adalberto Giovannini vigorously challenged the widely-held view that the token bronze coinage issued by Athens in the closing years of the Peloponnesian War was silver-plated.¹ According to Giovannini (p.187), this coinage—τὰ πονηρὰ χαλκία of Aristophanes, *Frogs* 725–26, alluded to later in *Ecclesiastusae* 815–22—was instead an emission of undisguised bronze money that can be identified in a variety with the types: Athena head in Corinthian helmet / Owl left or right, legend ΑΘΗ.² While there is much of value in his discussion, he has shown little familiarity with the relevant numismatic evidence, which in fact runs counter to his thesis. My purpose here is to review this evidence and to defend the theory of a plated coinage against Giovannini's inconclusive and essentially speculative argumentation.

I

In attributing the bronze coins with the ΑΘΗ inscriptions to the time of Aristophanes, Giovannini was apparently unaware that the latest available chronology of Athenian bronze coinage dates these coins to the late fourth century.³ Abundant, albeit largely unpublished, contextual evidence from the Agora excavations has confirmed the correctness of this dating. Such coins have been found in the excavations by the dozens, but in not one instance has a specimen shown up in an archaeological context that antedates the later 300s.⁴ A detailed demonstration of this and the other evidence

¹ A. Giovannini, "Athenian Currency in the Late Fifth and Early Fourth Century B.C.," *GRBS* 16 (1975) 185–90 [hereafter, GIOVANNINI].

² Sv. (= J. N. Svoronos, *Les monnaies d'Athènes* [Munich 1923–1926], republished as *Corpus of the Ancient Coins of Athens* [Chicago 1975]) 22.80–84 (owl right), 85–88 (owl left).

³ J. P. Shear, "Analytical Table of Coins," *Hesperia* 5 (1936) 123, where the coins are assigned to 330–307 B.C.

⁴ For two published contexts, see the 8 examples (owl left) in a relatively unworn condition from the bottom of a Kerameikos well that, according to the excavators, was not even constructed until ca. 300 B.C. (K. Braun, "Der Dipylon-Brunnen B₁," *AthMitt* 85 [1970] 138, 192, p.78, nos. 37–44); and the 12 specimens (owl left, extremely worn, and owl

bearing on the chronology of the earlier bronze coinage of Athens is being prepared and in a few years will appear in the journal *Hesperia*. In the meantime, I shall summarize some of the other evidence. As recent work at the Agora has shown, the ΑΘΗ coins in question are not the earliest bronze struck by Athens; they are preceded by three issues, the first of which has the reverse type of a double-bodied owl and can be dated stylistically with reference to Athenian silver no earlier than *ca.* 350 B.C.⁵ Hence, if the earliest Athenian bronze falls after mid-century, our fourth series with legends in ΑΘΗ must belong considerably later, probably well along in the last quarter of the century, as the contextual finds from the Athenian Agora independently attest.

Since neither this nor any other known Athenian bronze issue can be dated as early as *ca.* 400,⁶ we are left to ask what bronze is spoken about in the *Frogs* and the *Ecclesiazusae*? It cannot comprise the very small bronze tokens that J. N. Svoronos and E. S. G. Robinson have plausibly identified as the *kollyboi* mentioned in Aristophanes, *Peace* 1199–201, and Eupolis, fr.233.⁷ The former has *kollyboi* circulating by the later 420s; but the bronze money of *Frogs* 725–26 (produced in January 405) is said to have been struck just “yesterday,” as is indeed confirmed by the scholion on the passage that dates the bronze (*i.e.*, its beginning) to 406/5. Moreover, the small tokens are stamped with a plethora of symbols and letters, implying that they were issued by private individuals such as money-changers (*kollybistai*), right, slightly less worn) in an Agora hoard that was buried in the second quarter of the third century B.C. (M. Thompson, “Coins for the Eleusinia,” *Hesperia* 11 [1942] 223 n.32, with J. H. Kroll, “Numismatic Appendix,” *AthMitt* 89 [1974] 202–03).

⁵ Sv. 22.35–45. The Athenian bronze issues of the fourth and third centuries are illustrated in sequence in F. Kleiner, *Greek and Roman Coins in the Athenian Agora, Excavations of the Athenian Agora Picture Book No. 15* (Princeton 1975) fig.13.

⁶ Giovannini (p.187) duly notes that the unplated Athenian bronze obols (?) and diobols (?) which E. S. G. Robinson (“The Tell el-Mashkuta Hoard of Athenian Tetradrachms,” *NC SER.* IV 7 [1947] 119, and “Some Problems in the Later Fifth-Century Coinage of Athens,” *ANSMN* 9 [1960] 14) originally attributed to the years around 400 are now known to have been minted by Timotheos during the siege of Olynthos in the 360s (E. S. G. Robinson and M. J. Price, “An Emergency Coinage of Timotheos,” *NC SER.* VII 7 [1967] 1–6). The rare Athenian bronze *tritectoria* (Sv. 22.50–51 plus two unpublished examples in the British Museum) can hardly be earlier than the middle of the fourth century on grounds of style (pointed visor of Athena’s helmet) and the silver denomination which they reproduce, for the denomination seems not to have begun until well along in the fourth century, cf. M. Thompson, “A Hoard of Athenian Fractions,” *ANSMN* 7 (1957) 4, 9, pl. 4, nos. 81–87.

⁷ J. N. Svoronos, “Οἱ κόλλυβοι,” *JIAN* 14 (1912) 123–60; Sv. 18; Robinson 1960 (*supra* n.6) 6–7.

whereas it is clear from *Ecclēsiāzusaē* 815–16 that the bronze of 406/5 was an official striking, voted by the Athenian *demos*. For the bronze of 406/5 there seem to be only two possibilities. Either it is to be equated with the silver-plated bronze coins that have long been known in two denominations, tetradrachms and drachms; or it was a coinage of which no examples have survived, a coinage that having circulated for a number of years has left not a trace in the unusually rich archaeological record of Athens. The latter hypothesis, of course, would be attractive only if there was nothing to be said in favor of the former.

The identification with the plated coins was first proposed by Head in 1911 and has been accepted by virtually all numismatists since then.⁸ Yet the numismatic basis for the identification has been spelled out only once, in a posthumously published article by Svoronos that Giovannini overlooked.⁹ Writing in February 1918, Svoronos announced that he was able to confirm Head's view "par la très importante trouvaille, encore inédite, faite il y a quelques années au Pirée et se composant de milliers d'exemplaires, tous fourrés, de tétradrachmes et de drachmes frappés indubitablement avec des coins gravés par les mêmes artisans qui avaient exécuté ceux ayant servi à l'émission des monnaies d'or authentiques frappées avec l'or des Victoires de l'Acropole. Je puis pour ma part certifier cette constatation après un minutieux examen et une comparaison attentive de leur style et technique identiques en tous points." Svoronos goes on to state that examples of the plated tetradrachms and drachms are illustrated together with specimens of the gold on plate 15 of his *Les monnaies d'Athènes*, so that every reader can see for himself that both coinages were unquestionably contemporary and the work of the same die-engravers.

Although the vast Peiraeus hoard described by Svoronos is not listed in either edition of Noe's *Bibliography of Greek Coin Hoards* or in the recent *Inventory of Greek Coin Hoards*, the latter has an entry for a suspiciously similar hoard said to have been discovered at Eleusis in 1902 and to have consisted of a great number of plated drachms.¹⁰ The sole documentation for this 'Eleusis' find is a passing statement

⁸ B. V. Head, *Historia Numorum*² (Oxford 1911) 373. To my knowledge the only dissenter till Giovannini is P. Gardner, *A History of Ancient Coinage 700–300 B.C.* (Oxford 1918) 295–97.

⁹ J. N. Svoronos, "La monnaie d'or attique," *JIAN* 21 (1927) 157–58.

¹⁰ M. Thompson, O. Mørkholm, C. Kraay, *An Inventory of Greek Coin Hoards* (New York 1973) no.46.

in a 1947 article by Robinson,¹¹ but the statement is apparently inaccurate as regards both the hoard's provenience and its contents. When discussing the plated drachms and tetradrachms in a later article, Robinson makes no reference to Eleusis and writes instead that "an enormous hoard of both denominations was unearthed some fifty years ago in the Peiraius."¹² It seems then that he knew really of only one burial, Svoronos' great Peiraeus hoard, which on Robinson's authority we may now date to the year 1902.

There can be little doubt that most of the *fouillée* drachms and many of the *fouillée* tetradrachms of late fifth-century style that are found today in most large numismatic collections derive from this hoard. The drachms are especially numerous. Without attempting to be exhaustive, I have examined more than 60 specimens, three-quarters of which are in the trays of the American Numismatic Society in New York.¹³ Their style, as Svoronos witnessed earlier, is identical to the style of the gold staters and fractions that Athens began to strike in 407/6.¹⁴ The significant similarities are found in the obverse Athena heads, which have the same eye and nose profiles and the same upright fleur-de-lys pattern of the tendril ornament on the goddess's helmet. With the extant plated tetradrachms there is a problem of distinguishing those that may have come from the Peiraeus find and those that stylistically could not and must be set aside as random ancient forgeries from almost any time in the later part of the fifth century. Only those that are close in appearance to the hoard drachms and the 407/6 gold may be taken as representative of the hoard tetradrachms that Svoronos examined and recognized as being contemporaneous with the gold.¹⁵ Admittedly, such

¹¹ Robinson 1947 (*supra* n.6) 199.

¹² Robinson 1960 (*supra* n.6) 10.

¹³ For the published examples, see n.18 *infra*. A detailed presentation, including the New York specimens, will appear in a future volume of ANSMN. My study of the drachms has been greatly facilitated through the kind offices of Nancy M. Waggoner of the American Numismatic Society, Mando Caramessini Oeconomides of the Numismatic Collection of Athens, and M. J. Price of the British Museum.

¹⁴ For example, one needs only to compare the gold stater illustrated in Robinson 1960 (*supra* n.6) pl. 1.12 with the silver-plated drachm of *ibid.* pl. 2.8 to see that the dies prepared for both coins may very well have been engraved by the same artisan. The exact likeness of these two pieces is by no means exceptional.

¹⁵ E.g. the two tetradrachms illustrated in Robinson 1960 (*supra* n.6) pl. 2.6–7 and three of the examples in Athens published by Svoronos: Sv. 15.12, 13 (which was inventoried in 1904/5 with the hoard drachms Sv. 15.20–23 [*infra* n.18]) and 14 (also acquired in 1904/5, though not with any drachms). Sv. 15.15–18 seem not to be from the hoard and in part are

'stylistic contemporaneity' is relative and cannot exclude the possibility that the hoard drachms and tetradrachms were struck, say, as much as a decade or so before the 407/6 gold; in fact there are some authentic silver drachms and tetradrachms with the same stylistic characteristics that must have been minted before the silver was discontinued in 406/5.¹⁶ But if it can be shown that the plated coins from the Peiraeus hoard were officially minted and were not the stock of a private forger, it follows that they can only belong to the bronze emission we know from Aristophanes.

When discussing the plated drachms from the misnamed 'Eleusis' find, Robinson remarked that "the very fact of their being hid away in a hoard suggests that they were an official issue."¹⁷ Giovannini (p.189) countered that the contents of the hoard "can be confidently attributed to a private forger." I cannot feel so confident. The Peiraeus hoard actually in question contained thousands of coins, drachms *and* tetradrachms. From my analysis of a mere 60 drachms from the hoard I can report that the hoard drachms were struck from a minimum of four obverse and four reverse dies,¹⁸ which is an improbably high number for a forger's workshop when one considers that very few contemporary Greek civic mints employed as many as four obverse dies for a single denomination over a short span.¹⁹

stylistically suspect. C. Seltman, *Greek Coins*² (London 1955) pl. 27.10, is a very crude non-Athenian forgery. And I have strong stylistic reservations about the three *fouillée* tetradrachms attributed to 406/5 in respectively *CAH Plates II* (1928) 4–5.e; V. Ehrenberg, *The People of Aristophanes* (Oxford 1951) pl. 18.c; and C. G. Starr, *Athenian Coinage 480–447 B.C.* (Oxford 1970) 72, no.29, pl. 23.12. The features of the Athena head on the first coin look too delicate; on the last two tetradrachms Athena's eye, unlike the eyes on the gold and Peiraeus hoard drachms, is closed at the inner corner.

¹⁶ E.g., the drachms Sv. 16.25–33.

¹⁷ Robinson 1947 (*supra* n.6) 119.

¹⁸ Three of the die-pairs are represented in published specimens from the Athens Numismatic Collection—obv. and rev. dies "A": Sv. 15.21, 24 and 26; obv. and rev. dies "B": Sv. 15.22, 23 and 25; obv. and rev. dies "C": Sv. 19 and 20. All of these coins have acquisition dates of 1902/3 or 1904/5. A fourth pair of dies, known to me only from this one coin, is attested by the British Museum drachm published in Robinson 1960 (*supra* n.6) pl. 2.8; the coin was inventoried in 1902 along with a second drachm from the first pair of dies ("A"). Seltman, *op.cit.* (*supra* n.15) pl. 27.11, illustrates another piece from the "B" dies. The drachm Sv. 15.27, though of similar style, is not from the hoard and was minted from still a fifth pair of dies.

¹⁹ Cf. J. P. Barron, *The Silver Coins of Samos* (London 1966) 66–67, 96, 104, recording an average of only one or occasionally two obverse tetradrachm dies *per annum*; and the remarks of C. M. Kraay, rev. of C. G. Starr, *Athenian Coinage 480–449 B.C.*, *NC SER. VII 12* (1972) 316 (only 111 tetradrachm dies used at Syracuse between 475/465 and 400).

Moreover, our four obverse drachm dies are only the attested minima and do not even pertain to the hoard tetradrachms that were presumably minted from a comparable quantity of dies. Thus the provision of two denominations, the use of an impressive number of dies identical in style to the dies cut for the 407/6 gold, the burial of thousands of the coins in the Peiraeus, the most troubled quarter of Athens during the aftermath of the Peloponnesian War—all of this bespeaks a systematic, profuse, hence official minting of the time when Athens is known to have been striking her “wretched bronze.”

II

Having ignored the numismatic concerns of style and dies, Giovannini objects on other grounds to the notion that Athens would have struck a plated coinage. For instance, he emphasizes (p.186) that Aristophanes speaks only of bronze money, χαλκία, χαλκοῦς etc., never of plated bronze (ὑπόχαλκος). But J. R. M. Jones has demonstrated (and Giovannini concedes) that sometimes χαλκία etc. did serve in antiquity to describe coins of plated bronze.²⁰ The usage was more or less informal. But so too is the diction of Aristophanes. We may expect him to use popular terminology rather than the technical language of treasurers and bankers.

Following Robinson, Giovannini notes (p.186) the difficulty entailed in the lack of any plated denominations smaller than a drachm when such fractional denominations would have been necessary in most daily private transactions and are, indeed, alluded to in two passages from Aristophanes that make fun of the demonetization of the bronze money. At *Ecclesiazusae* 814 Chremes tells how he sold some grapes, put his bronze change in his cheek, and was about to buy some barley when the herald announced that bronze coins were no longer acceptable. In a similar vein the speaker of *Aiolosikon*, fr.3 (Koch), jokes about his diobol that was suddenly transformed into a *dikollybos*. The absence of plated fractions, however, is partially made up by three unpublished plated triobols (respectively in the Berlin, Munich and Athens cabinets) that have recently come to my attention and will be published presently. Their style agrees so closely with that of the gold and plated drachms that we can add a third denomi-

²⁰ J. R. Melville Jones, “Epigraphical Notes on Hellenistic Bronze Coinage,” *NC SER.* VII 12 (1972) 41–43.

nation to the plated series. And if this third denomination has only now been recognized, it seems to me that further denominations can be expected to turn up in time. Plated diobols, obols and possibly even half-obols may very well have been struck. If so, their absence is best understood in light of the established numismatic fact that fractional pieces, which were less subject to hoarding, regularly survive at a much lower rate than coins of large denomination.²¹

Continuing his argument against the plated bronze, Giovannini is troubled by two further considerations (pp.188–89): “First . . . the simultaneous circulation of authentic and plated silver would have caused great confusion. And the confusion would have been still greater at the moment when the Athenians would return to a silver currency and withdraw the bad coins from circulation, as they actually did. Secondly, the minting of plated coins would have discredited the Athenian coinage completely. The Athenian currency enjoyed a high reputation in the Greek world because of its consistent quality . . . This reputation would have been lost at once and would have been very hard to regain.”

An answer to the second point is provided by Giovannini’s own recognition (pp.188–89) that the bronze coinage must have been intended solely as a domestic currency and could never have circulated abroad simply because no one outside of Attica would have accepted it. I think it is safe to add that this principle would apply equally whether the coinage was plated with silver or not. Subaerate coins are easily detected, providing one is wary enough to suspect them. Their weight is 15 to 25 per cent lower than their counterparts in full silver (roughly 3 grams less for tetradrachms, about 1 gram less for drachms); with only a slight amount of circulation their silver envelope begins to flake or to rub away; and they can always be tested by a scratch or a light chisel cut. Since all foreigners trading with Athens would have known that Attic silver was suspect after the token coinage was voted, they would have been on their guard and would have insured that the plated money stayed at home. On foreign markets, meanwhile, a good Athenian tetradrachm, once passed, remained as valuable as ever; and we may be sure that all payments abroad by the Athenian government will have remained in gold and the verifiably authentic silver. But even if Attic silver did

²¹ Thompson, *op.cit.* (*supra* n.6) 5; M. Thompson, *The New Style Silver Coinage of Athens* (New York 1961) 709–10; R. T. Williams, *The Silver Coinage of the Phokians* (London 1972) 55.

become less readily acceptable as an international currency—at best an arguable possibility—it is very doubtful that this would have been of much concern in Athens in 406 when the city was preoccupied with a desperate war and her very survival.

As for the alleged confusion arising from the circulation of good silver and the plated bronze money within Athens, Aristophanes is our witness that the two coinages apparently did not circulate together. Writing in January 405, no more than six months after the bronze money was voted,²² he mentions (*Frogs* 720–25) the fine 'old' silver and the 'new' gold coinage and laments that "we do not use these, but rather these wretched bronzes struck yesterday." Now, the new gold, inaugurated in the previous year, need not concern us here; as W. E. Thompson has explained in a fundamental paper,²³ it was struck primarily, if not exclusively, as a foreign exchange currency for the purchase of war materiel abroad, the payment of rowers in the fleet in the Eastern Aegean, and the like. The old silver, on the other hand, was the standard domestic currency that the bronze money was intended to supplement or replace; and its disappearance by the time of the *Frogs* can be plausibly explained in two different ways.

According to Thompson,²⁴ as Athens' silver reserves were exhausted, the token bronze was created as a means for the state to meet her various expenses at home, of which the most burdensome were the subsidies paid to large segments of the Athenian citizenry. The bronze money was gradually introduced through such expenditures, but quickly drove the good silver out of circulation.

We owe the alternative reconstruction to Giovannini, who acutely argues (p.190) that the introduction of the bronze may have been accompanied by a withdrawal of the silver, which would have reverted to the state and been freed for expenditure abroad. In effect the residents of Athens would have loaned the locally available silver to the state and received the bronze money in return.²⁵ Such a

²² According to the chronological reconstruction of W. S. Ferguson (*CAH* V [1927] 355–356), as revised by B. D. Meritt ("The Choiseul Marble: the Text of 406 B.C.," in *Mélanges helléniques offerts à Georges Daux* [Paris 1974] 266–67, esp. n.3), the striking of gold was authorized in the last month or so (May–June) of 407/6, the bronze coinage in the first month (June–July) of 406/5.

²³ W. E. Thompson, "The Functions of the Emergency Coinages of the Peloponnesian War," *Mnemosyne* SER. IV 19 (1966) 342–43.

²⁴ *Ibid.* 341–42.

²⁵ If such a measure was put into effect in Athens in 406, there seem to be two ways by which it might have been done. One is by requiring the acceptance of the bronze and for-

policy would have been enormously profitable to Athens and, as Giovannini emphasizes, is known to have been employed by the city of Clazomenae ([Arist.] *Oec.* 2.2.16). The policy, too, would have made the most use of the large tetradrachm denomination that figures prominently in the bronze currency. Yet for all its attractions, it would be presumptuous to insist that this was the policy actually chosen by the Athenians. Though I doubt it, they nevertheless may have been so unwise as to have issued the bronze without recalling any silver.

Whichever measure was adopted, however, I believe that 'confusion' is too strong a word to describe the inconvenience resulting from the changeover from a silver to a bronze currency, even if the bronze was weakly disguised by plating. If all silver or all silver that would have passed in commerce was withdrawn under penalty of prosecution, there was no question of it ever circulating alongside the bronze. In the case of Thompson's reconstruction, the silver and bronze would have coexisted during a transitional phase until the silver dropped from sight. But in view of the light weight and ready detectability of Greek plated coins, I find it difficult to believe that any Athenian—any more than any numismatist or collector today—would have been unsure which of his coins were and were not of true metal. Furthermore, one does not expect that the question of inconvenience would have weighed heavily, if it was clearly anticipated at all, during the Assembly debate before the bronze issue was voted. It is even less probable that the Assembly would have troubled itself with hypothetical problems connected with the future recall of the bronze money once it was no longer needed.

For his final objection Giovannini notes (p.189) that the token bronze of 406/5 was not meant to deceive its users. Aristophanes and his audience knew that the money was bronze. The Athenian

bidding the use of silver. This is the possibility favored by Giovannini, who cites (p.190) an analogous provision from the decree implementing the substitution of bronze obols for silver obols at Hellenistic Gortyn (*SIG*³ 525). At the outset and continuously thereafter every Athenian would exchange as much of his silver as he expected to use; all surplus silver, i.e. savings, however, remained in private hands. The other course is more thorough and direct. It is simply to declare the very possession of silver illegal and to call it *all* in for exchange at once. In principle this was the procedure employed by the Clazomenians, who, however, called in only as much silver as was needed and then only from the wealthier citizens, who supplied it in proportion to their wealth. Compare the Ephesian law that in a time of emergency compelled all women to lend their gold jewelry to the state ([Arist.] *Oec.* 2.2.19).

Assembly had voted it into existence. Why, then, Giovannini asks, would the Athenians have gone to the trouble and expense of silver-plating it? His answer is that they would not have been so "silly" as to have done such a thing and that the bronze money therefore must have been unplated. Another answer, however, is suggested by the plated copper dimes, quarters, half-dollars and 'silver' dollars that have been in use in America for some years now.²⁶ Here too the purpose is to conserve silver, and there is no attempt at deception since the copper cores are left plainly visible around the coins' edges. Nevertheless, through plating, the coins are able to maintain the fiction of being silver. Their true metallic content is camouflaged. And any obvious alteration in their familiar appearance was avoided. Such emotional benefits of plating surely would not have been lost on the Athenians. When they decided to issue a token coinage, civic pride and the urge to continue business as usual would have been powerful incentives to disguise the unseemly bronze with a redeeming veneer of silver.

III

In all the standard accounts of Athenian coinage, one reads that the token money remained in use till 393, when Konon returned to Athens with a treasure of Persian gold and rebuilt the long walls and the walls around the Peiraeus (Xen. *Hell.* 4.8.8–10; Diod.Sic. 14.85.1–4).²⁷ The time is deduced from the date of the *Ecclesiazusae* (393 or 392 B.C.) with its reference to the reintroduction of silver. Giovannini (p.190 n.19) rightly points out, however, that an emergency token coinage ought to have been abolished as soon as it could be. Consequently, he proposes that the Athenians began to reintroduce silver in exchange for the bronze shortly after the Peloponnesian War was over but that the process was very gradual and not completed till 393 when the final step of demonetizing the bronze was taken. But this solution still does not face up to the circumstance that

²⁶ See *Annual Report of the Director of the Mint—For the Fiscal Year Ending June 30, 1965* (Washington 1966) 181–82, 190–92 *et passim*; and *For the Fiscal Year Ending June 30, 1971* (Washington 1972) 3–4, 61. The coins, which contain no real silver whatsoever, are clad with a copper-nickel alloy that has a silverish appearance.

²⁷ E.g., Head, *op.cit.* (*supra* n.8) 373; Seltman, *op.cit.* (*supra* n.15) 177–78; Ehrenberg, *op.cit.* (*supra* n.15) 222; Robinson 1960 (*supra* n.6) 14; C. M. Kraay, *Coins of Ancient Athens* (Minerva Numismatic Handbooks II, Newcastle upon Tyne 1968) 7.

the reference in the *Ecclesiazusae* need not pertain to a particularly fresh incident.

This is clear, I think, when one reads the passage in context (lines 812–29):

- A. As if you do not always see such decrees passed. Don't you remember the one voted about salt?
- Ch. I do.
- A. And those bronze coins, don't you remember when we voted them?
- Ch. Indeed, that turned out to be a bad strike for me. For selling my grapes I set off with my jaw full of bronzes and then came to the market for some barley. When I was just holding out my bag, the herald cried out not to accept bronze any longer, "For we are using silver."
- A. Then recently did we not swear that 500 talents would accrue to the city from the $2\frac{1}{2}$ per cent tax assessed by Euripides? Right away everyone was for gilding Euripides. But when they scrutinized it, the thing proved to be a Zeus' Corinth and too little. Then everyone was for tarring Euripides.

Now the humor here obviously does not depend on the bronze coinage law being very recent. The law is manifestly the old one of 406/5; and it is mentioned, like the law on salt and the 'recent' abortive tax scheme of Euripides, because of its ridiculous consequences—consequences in this case when the law was finally repealed. If the law itself was not recent, its repeal too may have occurred a goodly number of years before the play was produced.²⁸ The comparable lines about the demonetization of the bronze money from Aristophanes' lost *Aiolosikon* (*supra* p.334) are no help chronologically since there were two versions of the play, the second produced as late as *ca.* 386, the first at some prior date, probably shortly after 402.²⁹ Should the fragment come from the original play, the bronze coinage would have been abolished soon after the war; should it derive from the second version, we would have to conclude that the demonetization had given rise to a stock joke that continued

²⁸ Thus in his commentary on *Ecclesiazusae* 815, B. B. Rogers (*The Comedies of Aristophanes* V [London 1902]) similarly reasoned that the bronze coins "were doubtless called in soon after the war was closed."

²⁹ So J. M. Edmonds, *The Fragments of Attic Comedy* I (Leiden 1957) 573 n. 'c'.

to be repeated years after the event of which it makes fun.³⁰ In sum, the literary sources allow for the termination of the bronze coinage at any time between the restoration of democracy in 403 and the time of the *Ecclesiazusae* ten years later.³¹

The restored democracy of 403 was committed to reestablishing normalcy in all public affairs. Its founding decree, the decree of Teisamenos (Andoc. 1.83), enjoins not only that the Athenians return to the laws of Solon but also to Solon's weights and measures, implying that Athens' traditional weights and measures (like the silver coinage) had been tampered with during the later years of the Peloponnesian War.³² But whereas weights and measures could be restored by fiat, the restoration of the coinage required silver. It did not require that the Laurion mines be reopened; for, although nearly all Greek cities coined silver, extremely few were blessed with their own mines. Rather, it depended on how much silver was left to the state in 403 and how quickly the treasury was enriched through normal peacetime revenues. Pseudo-Aristotle (*Oeconomica* 2.2.16) tells us that when the Clazomenians recalled the lead token coins they had issued in place of silver borrowed from the citizenry, they did so gradually, reintroducing the silver a little at a time as revenues made

³⁰ For some time-worn references in Aristophanes, R. G. Ussher, ed. *Aristophanes, Ecclesiazusae* (Oxford 1973) xxvi. Probably another is the reference to the Athenian Coinage Decree at *Birds* 1040–41 (414 B.C.). If the decree was passed in 449/8 (now see B. D. Meritt, "Perikles, the Athenian Mint, and the Hephaisteion," *ProcPhilSoc* 119 [1975] 267–74), the reference is not to a relatively fresh law but to a very old and tired one.

³¹ The numismatic evidence is even more ambiguous. The earliest silver tetradrachms of Athens to have been minted after the Peloponnesian War are easily identified by their remodeled style, which so diverges from the previous silver, gold and plated bronze that one must assume that the production of coinage ceased for a time at the end of the war (Kraay, *op.cit.* [*supra* n.27] 7–8 with pl. 4.5 and 6). The break in minting need not have lasted for more than one or two years, however. For the new style of tetradrachms that followed it implies only that the die-engravers were given a new model to copy, not that they were unable to copy the style of the former coinage if they had been instructed to do so. Such renovated tetradrachms (*cf.* Sv. 19.2,5, 13–14; 26.7–9, 13) turn up with surprising consistency in early fourth-century hoards in Sicily, e.g. the Contessa 1888, Manfria 1948 and Lentini 1957 hoards, nos. 2119, 2121 and 2117 in *Inventory of Greek Coin Hoards* (*supra* n.10). But if C. M. Kraay (*Greek Coins* [New York 1966] 288) is correct in assigning the later 'Euainetos' Syracusan tetradrachms and decadrachms in these hoards to the 390s and 380s (as opposed to the late fifth century, to which they are traditionally dated), the hoards would be too late to fix the striking of the post-war Athenian silver before 393.

³² M. Lang and M. Crosby, *Weights, Measures and Tokens, The Athenian Agora X* (Princeton 1964) 4, 8, 10, 19. Miss Lang identifies a number of weights that could have belonged to an abnormal standard in use in the period before 403.

it available. It stands to reason that the Athenians would have done likewise, as Giovannini argues. But the exchange ought not to have dragged on for a full decade and may very well have been concluded closer to 403 than to 393.

THE UNIVERSITY OF TEXAS AT AUSTIN

October, 1976