

FLORILEGIUM 9, 1987

## VARIARUM I.X OF CASSIODORUS AS A PROGRAM OF MONETARY POLICY

Luciana Cuppo Csaki

Magnus Aurelius Cassiodorus Senator does not, by and large, enjoy a good reputation among scholars. "Epistulae . . . admirationem movent exilitate sua et vaniloquentia": this is what Theodor Mommsen<sup>1</sup> wrote about the *Variae*, and his ghost still looms on the scholarly horizon.<sup>2</sup> Further comments by Mommsen: "Sylloge Cassiodorana Variarum Libri XII . . . quod nullum verbum habet, quo aut Germani offendantur aut Iustinianus, ingenium auctoris testatur et pavidum et callidum et ita umbratile, ut ne ii quidam laudare queant qui imitantur."<sup>3</sup>

These words, published in 1894, set the tone for much of subsequent scholarship. *Var.* I.X is no exception; if considered at all by scholars, this letter has been seen as a response to complaints by allegedly underpaid guards, or as a proof for certain features of the Western Byzantine monetary system.<sup>4</sup> Actually, it is far more than that.

*Var.* I.X, written in the name of Theoderic and addressed to "Boethio v. i. atque patricio," is occasioned by a complaint presented jointly by the palace excubitors to the king ("adunata nobis supplicatione conquesti sunt," I.X.10): allegedly, the guards were being paid in solidi of substandard weight ("nec integri ponderis," I.X.11) by the *praefectus arcae*. Theoderic called upon Boethius to investigate the matter and ascertain the truth, so as to

make sure that the proper weight of the *solidi* be maintained. We do not know why Boethius was put in charge of the investigation or how the reduction in weight of the *solidi* was achieved. *Var. I.X* refers (obliquely) to Boethius' prudence and learning ("prudentia vestra lectionibus erudita dogmaticis," I.X.13) and the investigation may have required specialized knowledge.<sup>5</sup> However, Theoderic's choice may have fallen upon Boethius because he was a member of the family of the Anicii, not only influential in Rome but also well connected at Constantinople.

The weight of the *solidi* could have been altered by clipping the coins, by diluting the gold content and replacing part of the gold with other metals, or by altering the scales (*exagia*) used to weigh the gold. Clipping is unlikely: it would have been easily detected, even without Boethius' learning. Diluting the gold is the possibility accepted by Francesco Della Corte; it would suit very well Boethius' expertise, but nothing in the text of *Var. I.X* suggests this particular method. The third possibility, accepted by Lelia Cracco Ruggini, is tampering with the scales.<sup>6</sup> This method can be inferred from the text of *Var. I.X*. The *exagia* of Theoderic now at the British Museum are unaccountably lighter than they should be, and the loss of weight cannot be explained from natural causes. It would be tempting to relate it to the fraud allegedly occurring when *Var. I.X* was written, but the evidence is not sufficient.

*Var. I.X.*, however, goes well beyond the investigation of a complaint: a careful analysis shows it to be a program of monetary policy for the Ostrogothic kingdom in Italy. The letter contains a number of statements that are not directly pertinent to the complaints of the excubitors. Such statements have been dismissed as verbosity, superfluous digressions, displays of erudition. But such digressions and erudition are not superfluous at all; they have a definite purpose, which is to provide the theoretical foundations for the monetary system of Theoderic and to present such system in the light of an exemplum for the contemporary and for posterity.

This should come as no surprise, because Cassiodorus clearly states his intentions in the preface of the *Variae*. He does not intend to write the chronicle of the Ostrogothic kingdom, but to provide a memorial for posterity, to correct mores, to curb the arrogance of the proud, to inspire fear for the laws. Deeds should be consistent with the stated principles:

Quos si celebrandas posteris tradas, abstulisti, consuetudine maiorum morientibus decenter interitum. Deinde mores pravos regia auctoritate recorris, excedentis audaciam frangis, timorem legibus reddis. Et adhuc dubitas edere quod tantis utilitatibus probas posse congruere? Celas etiam, ut ita dixerim,

speculum mentis tuae, ubi te omnis aetas ventura possit inspicere. Contingit enim dissimilem filium posse generari: oratio dispar moribus vix potest inveniri. (Praef. 63-73)

Consistent with the intent expressed in the preface, *Var.* I.X aims not only at correcting specific abuses but also at setting an example valid for contemporaries and for posterity. Specifically, *Var.* I.X sets the example of what a monetary system should be and by what principles it should be governed. A brief outline of the text will make this clear. The carefully structured letter contains elements which could not be explained, were the purpose simply to rebuke a *praefectus arcae* not too scrupulous in weighing his gold. The structure may be outlined as follows:

- 1-8 introduction stating general ethical principles (the labourer is worth his hire);
- 8-15 complaint by guards, allegedly paid with solidi of substandard weight, and steps taken by Cassiodorus to remedy the situation;
- 15-33 theoretical disquisition on arithmetics;
- 33-37 transition from numerical principles in the abstract to numerical principles applied to the daily use of money;
- 37-47 program of monetary policy under Theoderic;
- 47-61 praise of such program and necessity of adhering to it.

Cassiodorus' program for the monetary system under Theoderic should be read in the light of the previous tradition, both pagan and Christian, and of the contemporary situation of the writer.<sup>7</sup>

The evil of money is a topos in Latin literature: as an example it will suffice to cite *Aen.* III.56-57, "Quid non mortalia pectora cogis — auri sacra fames," where greed caused the murder of Polydorus, because this passage epitomizes the attitude of most classical writers. But one text stands out because it singles out the coinage of money as the source of all evils, while providing a history of Roman coinage: the passage from *Nat. Hist.* XXXII. XIII and XIV. The Leitmotiv of the Plinian passage is that the *fames auri* is the source of all evils, but Pliny specifies that greed and all ensuing evils come from coinage: "Sed a nummo prima origo avaritiae faenore excogitatio quaestuosaque segnitia; nec paulatim exarsit rabie quadam non iam avaritia, sed fames auri."<sup>8</sup>

Cassiodorus was familiar with Pliny: the CSEL edition of the *Variae* lists eighteen loci of Pliny the Elder used by Cassiodorus, and there may

well be additional unlisted ones. Just as Pliny was specific in saying that coining money in Rome was the root of all evils, Cassiodorus is specific in saying that certain features of the Ostrogothic monetary system (6,000 nummi to a solidus and the uncia as a unit of weight) are good because they mirror the order of creation. So the praise of coinage by Cassiodorus stands in direct antithesis to the Plinian *damnatio* of the same and is in opposition to the bulk of Latin pagan tradition which had linked money with greed. By contrast, the text of *Var. I.X* sees money as inherently good:

Pecuniae ipsae quamvis usu celeberrimo viles esse videantur, animadvertendum est quanta tamen a veteribus ratione collectae sunt. Sex milia denariorum solidum esse voluerunt, scilicet ut radiantis metalli formata rotunditas aetatem mundi, quasi sol aureus, convenienter includeret. Senarium vero, quem non inmerito perfectum antiquitas docta definit, unciae, qui mensurae primus gradus est, appellatione signavit, quam duodecies similitudine mensium computatam in librae plenitudinem ad anni curricula collegerunt. O inventa prudentia: O provisa maiorum: Exquisita res est, quae et usui humano necessaria distingueret et tot arcana naturae figuraliter contineret.<sup>9</sup>

The reason for the goodness inherent in the monetary system is that such a system reflects the goodness of creation and the order of the universe, symbolized by the number six. The idea of the excellence of the number six did not originate with Cassiodorus; he drew upon the tradition available to him, found initially in the commentary to Genesis by Philo of Alexandria and developed by Christian authors.<sup>10</sup> In addition to Philo such tradition comprises Saint Augustine,<sup>11</sup> Macrobius,<sup>12</sup> and Martianus Capella.<sup>13</sup>

In *De Opificio Mundi* 3.13 Philo stresses that order (*τάξις*) is necessary to creation (*τοῖς γινομένοις ἔδει τάξεως*), not to the Creator. Number is part of such order and six is the first perfect number after the monad. Thus the idea found in *Var. I.X*, that order must needs be present in all creation and that number is implicit in that order, is already contained in Philo's text.

*Civ. 11.30* is an almost literal translation of Philo's passage, but Saint Augustine considers the number six a symbol of perfection rather than *γεννητικώτατος*, most appropriate to generation. In Saint Augustine the stress lies on the aspect of fulfillment (the completion of God's work) rather than on the aspect of development by generation. The aspect of completion is also the one stressed by Cassiodorus. The aspect of perfection returns in Martianus Capella. The perfection he extols is a mathematical one, and his sources are Euclid and Aristotle. Any reference to creation is absent from the cited passage.

Macrobius, too, extols the perfection of the number six ("plenus perfectus atque divinus," *Sat.* VII. 13.10), but the causes of such perfection are deliberately omitted, "causaque . . . ego nunc ut praesentibus fabulis minus aptas relinquo."<sup>14</sup> The same thought returns in the *Comm.*: "senarius vero, qui cum uno coniunctus septenarium facit, variae ac multiplicis religionis et potentiae est."<sup>15</sup> In *Comm.* we find the idea of fertility of the number six, reminiscent of Philo of Alexandria, "haec sexies multiplicata creant decem et ducentos, qui numerus dierum mensem septimum claudit. Ita est ergo natura fecundus hic numerus, ut primam humani partus perfectionem quasi arbiter quidam maturitatis absolvat."<sup>16</sup>

Two lines of thought emerge from the cited texts: the idea of six as generative power (Philo, Macrobius) and the concept of six as perfection or completion (Euclid, Aristotle, Saint Augustine). Throughout the ages the development of the doctrine of the number six touches upon arithmetics and in some cases upon theology, but it does not, as yet, affect numismatics. Cassiodorus is the first one to apply metrological-theological principles to ordinary everyday pennies. In the lines which mark the transition from the metrological passage to the discussion of coinage, Cassiodorus seems to foresee possible objections, "pecuniae . . . *quamvis viles . . . quanta tamen a ratione* collectae sunt."<sup>17</sup> But he stresses that little coins, cheap and dirty though they may be, partake of the excellence of the number six and of the order of creation; they are a component of such order, but only inasmuch as they continue to mirror it, by remaining steady in their value and denominations.

The passage of *Var.* I.X in praise of the number six (lines 15-33) is a homage to Boethius, the addressee of the letter and the author of *De Arithmetica*. It is a theoretical passage, where "senarius" means "number six," just as "denarius numerus" means ten.<sup>18</sup> By extolling the virtues of the number six Cassiodorus places himself in the ancient tradition whose last representative was Boethius and lays the theoretical foundations for the discussion that follows. This done, he turns to the main concern of his letter: to show how the excellence of the number six finds concrete application in the monetary system of the Ostrogothic kingdom. Cassiodorus speaks not only of numbers but also of coins, weights and scales. At this point, leaving for a moment the text of *Var.* I.X, it will be well to examine the available numismatic evidence for the use of the number six in the monetary system of the sixth century, both in regard to coins and weights.

The denominations mentioned by Cassiodorus are the solidus and the "denarii" or nummi, the smallest denomination (in the sixth century the

terms *denarii* and *nummi* are used interchangeably). The weights discussed in *Var. I.X* are the *uncia* and the *libra*. The number six appears in the following metrological relationships: 6,000 *denarii* to a *solidus*, six *solidi* to an *uncia*, 12 *unciae* to a *libra*.

The valuation of the *solidus* at 6,000 *nummi* is confirmed by Italian silver coins with the mark of value CN (250), PK (120), and PKE (125). The scale of 6,000 to a *solidus* seems limited to the West. Philip Grierson sums up the situation as follows:

The simultaneous striking of silver coins in Italy marked PK (120) and PKE implies a *solidus* which was there reckoned at 6,000 *nummi*, but Procopius refers to Justinian's calling down the value of the *solidus* from 210 to 180 *folles*, i.e. from 8,400 to 7,200 *nummi*, which it had been at a century before. The date of this is uncertain. Procopius seems to imply that it occurred during Peter Barsymas' second term of office as Count of the Sacred Largesses and during the lifetime of Theodora, which would fix it at 548, but on general grounds it is more likely to have been done on the occasion of his introduction of the heaviest system of *folles* in 539.<sup>19</sup>

While recognizing that there are still many uncertainties in regard to sixth century coinage, Grierson — without any specific reference to *Var. I.X* — acknowledges the numismatic evidence which in fact confirms Cassiodorus' scale.

Ernst Stein seems to take a different view. While acknowledging the existence of the scale of 1:6,000, he implies that Cassiodorus referred to the antiquity, not the sixth century: "D'après Cassiod. *Var. I* 10, 5, le sou d'or aurait valu 6.000 *deniers* dans un temps très éloigné de celui de l'auteur."<sup>20</sup> This remote time is, according to Jean-Pierre Callu, the age of the Valentinianic dynasty: "A mon avis le *solidus* est à 6000 *nummi* (le mot *denarius* resurgit pour être transféré sur le *nummus*) sous la dynastie valentinienne et, montant doucement à la fin du IV. et au V.s, atteint 11520 *nummi* avec la réforme d'Anastase. A cette époque, en effet 1 sou = 24 siliques; 1 siliqua = 12 folles; 1 follis = 40 *nummi* (voir mon article sur le tarif d'Abydos)."<sup>21</sup>

That was the time of various monetary reforms, eventually reflected in the *Codex Theodosianus*, so that the "veterae" referred to by Cassiodorus are the persons responsible for such reforms and the compilation of the Code, which was the basis for fiscal legislation in Italy during the Ostrogothic kingdom. Although a systematic study of the influence of the *Codex Theodosianus* in the *Variae* is still a desideratum, the presence of the Code is felt throughout the book. Thus, if the *veteres* are to be identified with

the emperors and jurists of the Valentinianic dynasty, the clear implication is that their dispositions, which became the law of the land, were still in force in Theoderic's time.

Finally, Michael Hendy's hypothesis that the denarius in the West was the equivalent of two nummi deserves careful consideration.<sup>22</sup> But, as he himself notes, one of the documents adduced as evidence (an undated papyrus, seventh century or later) is too late to be conclusive.<sup>23</sup> The same holds true for the gloss cited on p. 485, supposedly equating *dinoummia* with *denaria*, where the very form "denaria" (instead of *denarii*) suggests a late date.

The word "senarius" appears again on line 39 of *Var. I.X*. This time it cannot mean simply number six, because the context refers to solidi and to the uncia, defined as a unit of measure. It must, therefore, mean "unit of six": either the equivalent of six solidi in weight or a coin (multiple) weighing as much as six solidi. Did such coins exist? Theoretically, they should have; a text by Lampridius lists a number of multiples of the solidus.<sup>24</sup> The senarius is not among them, but the text suffices to prove that the word "senarius" may, by analogy, mean a coin.

But here a word of caution. Coins larger (and heavier) than the regular size are commonly, albeit inaccurately, called medallions. The definition of medallions given in Toynbee's work is, "Pieces . . . which never correspond completely to any of the coin denominations in regular use and which the evidence, external and internal, proves to have been struck by the Emperor, for special or solemn commemorations."<sup>25</sup> Yet such coins should more appropriately be called multiples.<sup>26</sup> These are coins heavier than the standard weight, issued to celebrate special occasions; their weight is a multiple of the standard weight (hence the name). They were used as currency or as keepsakes, often mounted on brooches, belts, and the like. All senarii we know of were mounted, or at any rate do not seem to have been used as currency. This attests to their rarity, which is consistent with the idea of excellence expounded by Cassiodorus.

What senarii do we have? In his study Pierre Bastien lists only two probable senarii, as opposed to a large number of other multiples. In the late sixth century we have evidence of four senarii published by Grierson.<sup>27</sup> In addition, we have the description of a 36-solidi multiple, formerly at the Cabinet de France.<sup>28</sup> The conclusion: senarii existed, were extremely rare, and were destined for special occasions.

In *Var. I.X*, then, senarius means the equivalent of six solidi in weight. Cassiodorus calls such weight "uncia," specifying that the weight itself was

marked (*signata*) with the characterization (*appellatione*) "uncia." Is there any numismatic evidence for such weights?

Indeed there is, coming from the British Museum. A thorough description (with bibliography) of the weight now at the British Museum can be found in the Sternberg Catalogue Auktion XI, No. 1017 (November 1981). The author of the description doubted that the weight was the equivalent of six solidi, because of its scarce weight.<sup>29</sup> The piece was recently acquired by the British Museum, and Mr David Buckton, of the Department of Medieval and Later Antiquities, has provided a sketch of the weight and a description, which I transcribe in part:

Obverse: inlaid in silver with the inscription DN/THEOD/ERICI. Reverse: engraved with a two-part wreath, in which, inlaid in silver, is the denomination-mark — I (one ounce).

The weight was apparently one of a series: the British Museum has another weight (the equivalent of three solidi), also in the name of Theoderic, published in the Catalogue of Early Christian Antiquities.<sup>30</sup>

In summary, we can say that numismatic evidence (all uncertainties which still limit our knowledge of the sixth century notwithstanding) supports Cassiodorus' classification. He is, then, certainly attuned to the situation of his time.

The section of *Var.* I.X on the scale of six in the monetary system is among the remarks which are not explainable with the complaint by the *excubiae*. The guards appear solely concerned with how much gold they were getting, not with how many pieces of small change they could, theoretically, obtain for a solidus. There must, therefore, be some other reason for such digressions. A close reading of the text make it clear.

In the passage beginning at line 37 Cassiodorus outlines features of the monetary system which are either specifically western or go back in some respects to the ancient Roman numismatic tradition. The 6,000 nummi to a solidus was a western and more particularly Italian feature; in the East the scale was different and further modified by Justinian I. When Cassiodorus says that the solidus is "quasi sol aureus" this is reminiscent of an expression of Vergil, the Roman poet *par excellence*. The adjective "aureus" reminds the reader of the aureus, the Roman gold coin predecessor of the solidus. When Cassiodorus says that the uncia marks the first degree of measurement, he is going back to the Roman tradition which saw the uncia as a unit of reckoning — although the metal and the equivalent in weight of the Roman uncia varied from the uncia of the sixth century. The first text which comes to mind in this regard is Varro,<sup>31</sup> but there are references to



the uncia also in the Plinian text cited above. To show how common the uncia was — colloquially — as a unit of reckoning, we may remember the delightful passage from *Ars Poetica*:<sup>32</sup>

dicat filius Albini: si de quincumce remotast  
 uncia, quod superat? poteras dixisse' 'triens' 'eu!'  
 rem poteris servare tuam. rediv uncia, quid fit?  
 'semis'.

In Cassiodorus' time the uncia was also a common unit of reckoning: in *Var.* V.V we find, "duarum unciarum auri damno feriatur."<sup>33</sup> The uncia as unit of weight for gold coins is also found in texts of Gregory the Great.

Cassiodorus defines the uncia as the twelfth part of a pound: this is perceived by the contemporary as a western trait. Priscianus, whom Cassiodorus knew and outlived, has this to say in *De Ponderibus et Mensuris*:<sup>34</sup>

Unicaque in libra pars est, quae mensis in anno.  
 Haec magno Latio libra est, gentique togatae:  
 Attica nam minor est: ter quinque hanc denique drachmam  
 Et ter vicenis tradunt explerier unam. (vv. 28–32)

Priscianus distinguishes the values of the uncia in the Greek and in the Roman world, and stresses that the uncia as 1/12 of a pound is a trait found in Latium, among the "people with the toga." Cassiodorus, like Priscianus, compares the number of unciae in a pound to the number of months in a year. As he describes it, the uncia is a typical western feature.

The references to Roman antiquity establish the fact that the Ostrogothic monetary system is in many ways the heir to Roman tradition: thus the identity of Theoderic's system is defined as western and Roman by Cassiodorus. In so doing, did Cassiodorus have any specific purpose? Quite possibly. *Var.* I.X was originally written between 507 and 509 (Boethius is not addressed as consul, which he became in 510), during the reign of the Emperor Anastasius, and it may contain a veiled but pointed allusion to eastern events.

"Talia igitur secreta violare, etc." (lines 47–49) refers to the metrology of the monetary system, not merely to a fraud in payments. If addressed solely to a *praefectus arcae*, these are strong words indeed. Furthermore, no such magistrate had the authority to alter monetary scales of value or to change denominations: the emperor did. Hence the emperor is the target of Cassiodorus' criticism.

Anastasius may have "violated the secrets" with his monetary reform of 498.<sup>35</sup> As Robert Blake points out,<sup>36</sup> the word *προχωροῦν* used by Malalas

in his chronicle of the event, implies a "calling-in or demonetization" of the existing currency, which was replaced by larger denominations.<sup>37</sup> Such existing currency were precisely the "denarii" of Cassiodorus (nominally 1/6,000 of the solidus), also called "nummi" or "minimi" in modern numismatic publications. The years 507–509 coincide with a period of tension between Theoderic and Anastasius: it was the proper time for Cassiodorus' exhortations to preserve the Roman tradition in Italy, with the clear implication that Anastasius was not doing so.

Justinian I, the ruling emperor at the time of publication of the *Variae*, is also a possible target for Cassiodorus' remarks. Internal evidence proves that the *Variae* could not have been published before 537, when the last letters were written. Generally accepted dates for compilation and publication range from the end of 537 (proposed by Mommsen) to 540 (siege of Ravenna by the Byzantines). But there is no evidence for a precise date after 537. Mommsen, by his own admission, presents nothing more than a hypothesis: "Itaque universum corpus *probabile est* prodiisse autumno anni 537" (emphasis added).<sup>38</sup> In the preface of the *Variae*, however, Cassiodorus makes it clear that a book should be carefully thought out and polished for the canonical number of nine years; it is unlikely that he published the work immediately after gathering the documents. Mommsen fails to make a distinction between the collecting of the material (which necessitated the archives at Ravenna) and the compilation, rearrangement, and publishing of the same. The editing must have taken some time, perhaps a considerable amount of time. Thus it is likely that Cassiodorus was perfectly aware of Justinian's calling down the solidus and that *Var. I.X*, while affirming western and Roman identity and autonomy, contains a comment on the emperor's actions — actions which were worthy of praise if consistent with the ancient order, but open to criticism if they departed from it.<sup>39</sup>

In *Var. I.X* Cassiodorus outlines a monetary system whose goodness is based on its resemblance with God's creation. The goodness of creation is a tenet of both Jewish and Christian religions: in Gen. 1:1–31 the statement, "Et Deus vidit, quod esset bonum (bonam)" is repeated five times, one for each day of creation, and reiterated on the sixth and final day: "Vidit Deus cuncta quae fecerat, et erant valde bona" (Gen. 1:31). The biblical idea of the goodness of creation is elaborated by Philo of Alexandria and the Church Fathers; Cassiodorus is the first one to include money, from the stately solidus down to the smallest penny, among the created things which are very good. In this sense the monetary system envisioned by Cassiodorus is based on the Judaeo-Christian tradition and antithetical to the views of

pagan Latin writers, for whom money is inherently evil; Cassiodorus' system is, however, the heir of the Roman monetary system handed down from the time of the Christian emperors, from Constantine to Theodosius II. Cassiodorus' praise of elements more specifically western and linked to Roman antiquity contributes to define the identity of the Ostrogothic monetary system and may contain a reproach to any emperor who did not maintain stability in the monetary system of the East.

The insistence on theoretical principles governing money (above and beyond the moral obligation to give the workers their due) is indicative of the character of *Variae*. These letters are not pieces of chronicle, but exemplary in nature. Therefore, historians should be aware that facts not considered exemplary may be omitted. On the other hand, passages that do not contain historical data should not be dismissed as superfluous or exornative, but considered as the theoretical enunciation of the principles which the exempla are meant to illustrate.

Manhattanville College

#### NOTES

<sup>1</sup> *Magni Aurelii Cassiodori Variarum Libri XIII*, Corpus Christianorum Series Latina (Turnholti 1973). This work is commonly referred to as *Variae*. In this article the abbreviation *Var.* will be used.

<sup>2</sup> MGH Auctorum antiquissimorum tomus XII, Cassiodori Senatoris *Variae* recensuit Theodorus Mommsen (Hannoverae 1894), praef. XXII.

<sup>3</sup> Mommsen (at n.2) praef. XXII.

<sup>4</sup> Lelia Cracco-Ruggini thinks that the letter was written "per controllare misure ponderali che si dicevano adulterate"; see *Atti: Congresso internazionale di studi boeziani*, ed. L. Obertello (Roma 1981) 87 n. 61. Michael Hendy is of the opinion that the statement of *Var.* I.X. "Sex milia denariorum solidum esse voluerunt," "represented a valid observation of the contemporary situation," see *Studies in the Byzantine Monetary Economy* (Cambridge UP, 1985) 485 n. 177.

<sup>5</sup> "Quapropter prudentia vestra lectionibus erudita dogmaticis scelestam falsitatem a consortio veritatis eiciat, ne cui sit appetibile aliquid de illa integritate subducere." (*Var.* I.X. 13-15).

<sup>6</sup> Francesco Della Corte, "Boezio e il principio di Archimede," *Atti* (at n. 4) 201-10, thinks that Boethius was capable of detecting the presence of various metals in coins thanks to his knowledge of the principle of Archimedes.

<sup>7</sup> Coins of the ANS and photos from the Society's photo file were studied for this article. Special thanks are due to Francis D. Campbell, Director of the Library at the ANS, for his expert assistance and unfailing courtesy.

<sup>8</sup> Pliny, *Nat. Hist.* XXXIII. XIV. 1 ff. Loeb Classical Library (London 1938).

- <sup>9</sup> *Var. I.X.* 35–46.
- <sup>10</sup> Philo, *De Opificio Mundi*. Loeb Classical Library (London 1956).
- <sup>11</sup> St Augustine, *De Civitate Dei*. Loeb Classical Library (London 1952).
- <sup>12</sup> Macrobius, *Opera Omnia*, vol. I (Leipzig 1963).
- <sup>13</sup> Martianus Capella, *Opera* (Leipzig 1983) 7.753.
- <sup>14</sup> *Macr. Sat.* VII. XIII. 10.
- <sup>15</sup> *Macr. Comm.* I. 6. 12.
- <sup>16</sup> *Macr. Comm.* I. 6. 16–17.
- <sup>17</sup> *Var. I.X.* 35–36.
- <sup>18</sup> I am indebted to Professor Jean-Pierre Callu for the interpretation of this passage and I wish to thank him for his kindness in providing answers to my questions.
- <sup>19</sup> Philip Grierson, *Byzantine Coins* (London and Berkeley 1982) 46.
- <sup>20</sup> Ernst Stein, *Histoire du Bas-Empire*, (Bruges 1949) 2, 767 n. 1.
- <sup>21</sup> Letter addressed to the present author by Jean-Pierre Callu, dated Paris, January 10, 1988. "Le tarif d'Abydos et la réforme monétaire d'Anatase" was published in *Ninth International Congress of Numismatics* (Berne 1979) 2, 731–40.
- <sup>22</sup> Hendy (at n. 4) 485–86.
- <sup>23</sup> Hendy (at n. 4) 497.
- <sup>24</sup> Lampridius, SHA, *Alex. Sev.* 39.9–10.
- <sup>25</sup> J.M.C. Toynbee, *Roman Medallions*, with a preface by William E. Metcalf (New York 1986) 16.
- <sup>26</sup> See Pierre Bastien, "Les multiples d'or de l'avènement de Dioclétien à la mort de Constantin," *Revue Numismatique* 14 (1972) 49–82.
- <sup>27</sup> Grierson (at n. 19) 50.
- <sup>28</sup> Ernest Babelon, "Histoire d'un médaillon disparu," *RN* (1899) 1.
- <sup>29</sup> Mr Frank Sternberg kindly confirmed this in a letter to me. The weight stated in the catalogue is 22.45 g. I wish to thank him for his courtesy and for the information he provided on this piece.
- <sup>30</sup> O.M. Dalton, *Catalogue of Early Christian Antiquities* (London 1901) 93.
- <sup>31</sup> Varro, *De Ling. Lat.* Loeb Classical Library (London 1958) V.171.
- <sup>32</sup> *Q. Horatii Flacci Opera*, ed. O. Keller (Leipzig 1899), AP 326–330.
- <sup>33</sup> *Var. V.V.* 25.
- <sup>34</sup> *Prisciani Grammatici De Laude Imperatoris Anastasii et de Ponderibus et Mensuris Carmina*, ed. Stephan. Ladisl. Endlicher (Vindobonae 1828). I am maintaining the traditional attribution to Priscianus. The poem has been attributed to other (earlier) authors; if this is correct, it would mean that the uncia was perceived as a western (Latin) unit of measurement already before Cassiodorus' time.
- <sup>35</sup> Johannes Malalas, XVI, ed. Bonn 400. 16–21 = Migne, PG 97. 593A.
- <sup>36</sup> Robert P. Blake, "The Monetary Reform of Anastasius I and its Economic Implications," *Studies in the History of Culture* (Cambridge 1982).
- <sup>37</sup> Blake (at n. 36) 92.
- <sup>38</sup> Mommsen (at n. 2) XXX.
- <sup>39</sup> Grierson (at n. 19) 50.