

# Zecca

## THE MINT OF VENICE IN THE MIDDLE AGES



Alan M. Stahl



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# The Age of the Grosso, c. 1200–1285

## THE INTRODUCTION OF THE GROSSO

The minting of the grosso was Venice's first monetary act of any significance beyond its immediate region.<sup>1</sup> Of fine silver and much heavier weight than any continental European coin of recent centuries, the grosso was to have a great influence on the coinages of most European issuers and ultimately on Byzantium and Islamic minters. Grosso coins are known in the name of Enrico Dandolo (1192–1205) and all succeeding doges for the next century and a half; there can therefore be no doubt that the coin was introduced in his reign. The reign of Enrico Dandolo also saw the continued minting of a penny on the Veronese model, a halfpenny, modeled on that of Vitale Michiel II, and a new coin identified as a quarter penny called a quartarolo.<sup>2</sup> The halfpenny and quarter penny would continue to be minted in the reigns of succeeding doges, but not the

<sup>1</sup>For discussions of the significance of this new coinage, see *PMV*, xvii–xxi; Roberto Sabatino Lopez, "Prima del ritorno all'oro nell'occidente duecentesco: I primi denari grossi d'argento," *Rivista storica italiana* 79 (1967): 174–81; Carlo M. Cipolla, *Le avventure della lira* (Bologna, 1975), 31–37; Philip Grierson, "The Origins of the Grosso and of Gold Coinage in Italy," *Numismatický Sborník* 12 (1971–72): 33–34, reprinted in his *Later Medieval Numismatics* (London, 1979); Louise Buenger Robbert, "Reorganization of the Venetian Coinage by Doge Enrico Dandolo," *Speculum* 49 (1974): 48–60; Donald E. Queller, "A Note on the Reorganization of the Venetian Coinage by Doge Enrico Dandolo," *RIN* 77 (1975): 167–72; Frederic C. Lane and Reinhold C. Mueller, *Coins and Moneys of Account*, vol. 1 of *Money and Banking in Medieval and Renaissance Venice* (Baltimore, 1985), 112–23; Peter Spufford, *Money and Its Use in Medieval Europe* (Cambridge, 1988), 225–29; Andrea Saccocchi, "Tra Bizanzio, Venezia e Friesach: Alcune ipotesi sull'origine della moneta grossa in Italia," *Numismatica e antichità classiche* 23 (1994): 313–41; Stahl, "Coinage of Venice in the Age of Enrico Dandolo."

<sup>2</sup>Papadopoli, 1:86–87.



penny, which would not be minted again until the reign of Lorenzo Tiepolo (1268–75) (fig. 3).

The earliest chronicle to discuss the introduction of the grosso is that of Martin da Canal, composed around 1275.<sup>3</sup> In his description of the building of ships for the participants in the Fourth Crusade in 1202, he says that Dandolo immediately had silver coins made to give as wages to the masters. He then notes that it was in the time of Dandolo that Venice began to make the noble silver coins called “ducats” that circulated throughout the world because of their value. He does not actually say that the introduction of the coinage was in conjunction with the Crusade, only that on that occasion the doge had silver coins made and that the denomination was introduced in the reign of Dandolo. The other early narrative for the introduction of the grosso is in the chronicle compiled by the future doge Andrea Dandolo in the early fourteenth century. He specifically places the event in the second year of Enrico’s reign (1193–94), saying that the doge then decreed for the first time that the silver coins worth 26 piccoli, commonly called Venetian grossi or matapans, be made with the image of Jesus Christ on one side and that of Saint Mark and the doge on the other.<sup>4</sup> Most other chronicles copy Dandolo’s account more or less accurately, though the chronicle attributed to Pietro Giustinian, also of the fourteenth century, uses completely different wording and puts the inception specifically in 1194.<sup>5</sup>

The earliest contemporary reference to the Venetian grosso is in the arithmetical treatise of Fibonacci (Leonardo Pisano), composed in 1202.<sup>6</sup> The text does not identify the coin as a grosso, but in an arithmetical problem involving the calculation of the value of a given weight of coins, the example is given of a coin of Venice worth twelve times that of Pisa. The equivalence is hypothetical, but Fibonacci’s problems are always based on reasonable hypothetical values, and twelve to one is reasonable for the Venetian grosso of the time and ridiculous for the penny.<sup>7</sup> The first mention of the grosso by name appears in

<sup>3</sup>Martin da Canal, *Les estoires de Venise*, ed. Alberto Limentani, *Civiltà veneziana, Fonti e testi*, 12, 3d ser., 3 (Florence, 1972), 46, c. 37.

<sup>4</sup>Dandolo, *Chronicon*, 273

<sup>5</sup>Pietro Giustinian, *Venetiarum historia*, ed. Roberto Cessi and Fanny Bennato, *Monumenti storici*, n.s., 18 (Venice, 1964), 132.

<sup>6</sup>Leonardo Pisano (Fibonacci), *Il Liber abbaci*, ed. Baldassarre Boncompagni, *Scritti di Leonardo Pisano*, 1 (Rome, 1857), 106. This edition is based on MS Magliabecchiana I. 2616, a fourteenth-century copy of the 1202 treatise; a manuscript that is not identified by the editor as bearing Fibonacci’s corrections of 1228, as are other MSS: Baldassarre Boncompagni, *Della vita e delle opere di Leonardo Pisano* (Rome, 1852), 32; cf. 25.

<sup>7</sup>Cf. Peter Spufford, *Handbook of Medieval Exchange*, Royal Historical Society, Guides and Hand-



Fig. 3. Venetian coins of the reign of Enrico Dandolo (1192–1205).

a. Grosso. b. Penny. c. Half penny. d. Quarter penny.

Sources: a. ANS 1967.182.52. b. ANS 1898.43.7. c. MCC, Papadopoli 4797. d. Museo Bottacin, Padua

the will of Jacopo della Scala of Venice in 1211, in which he notes that he is owed “denarios grossos tres” by one individual and 37 “denarios grossos” by another; all his bequests are in “libras denariorum venecialium.”<sup>8</sup> Another will drawn up in Venice in 1221 contains the first known accounting in terms of sums of grossi; while most sums are expressed in terms of “libras denariorum venecialium,” one obligation is given as “solidos venecialium grossorum quinque” and another as “solidos denariorum venecialium grossorum octo.”<sup>9</sup> The Venetian grosso also appears in 1221 in the receipts of the bishop of Padua from clergy in Aquileia.<sup>10</sup>

The imagery of the grosso was a great departure from earlier Venetian coins and from those of other northern Italian mints. The most complex image on the earlier coins was the diminutive facing head of Saint Mark on the pennies in the name of the emperor Henry and of Vitale Michiel II. On the grosso the obverse contains a scene with full-length figures of the doge and Saint Mark holding a standard between them and on the reverse a seated figure of Christ. Although there are parallels to this depiction on twelfth-century seals of Venice, the clear source for it is from Byzantine coins, specifically the electrum aspron

books, 13 (London, 1986), 102–3: the penny of Pisa was worth about two pennies of Venice in the period, so a 12:1 ratio for the grosso would be about right.

<sup>8</sup>MRLD, 2:74–77, #535.

<sup>9</sup>Ibid., 134–36, #595.

<sup>10</sup>Guido Levi, ed., *Registri dei Cardinali Ugolino d'Ostia e Ottaviano degli Ubaldini*, Fonti per la storia d'Italia, Registri—secolo XIII (Rome, 1890), 111–12, #87. I thank Andrea Saccocci for calling this document to my attention.

trachy of the twelfth century.<sup>11</sup> The most significant differences between the Venetian grosso and the Byzantine aspron are that the grosso was of pure silver rather than a gold-silver alloy and that the Venetian coin was flat, unlike the Byzantine one, which was cup shaped.<sup>12</sup> Unlike Byzantine coins, and many contemporary European ones, the edge of the design for the grosso had a beaded ring that was usually lined up with the edge of the flan. This would make any clipping of the coin while in circulation evident and allow the coins to be used by count in transactions rather than having to be weighed.

The original standards of the grosso are not known from any contemporary source. The earliest definition of them is from the capitulary, or manual, of the mintmasters for silver, which is extant in a redaction edited in 1278; there is no indication in the document whether these standards were original or the result of more recent alterations.<sup>13</sup> In the capitulary the weight of the grosso is fixed at 109½ coins per mark and a fineness at 98.5 percent silver.<sup>14</sup> There is no documentation to indicate a change in standard of the grosso between its inception and this documentation, nor is any alteration visible in physical appearance or to be inferred from patterns of circulation. Therefore, it is likely that the standards of 1278 represent the standards of the grosso as it was introduced under Enrico Dandolo. The unit of weight in effect in Venice in the twelfth century was the mark of Cologne, which probably varied a bit in this period but was about equal to 238.5 modern grams.<sup>15</sup> This would give the grosso an ideal weight of about 2.18 grams, consistent with that found in examples in the name of Enrico Dandolo in a recent hoard.<sup>16</sup> While this weight is only about one-third higher than that of the original Venetian penny of the ninth century, it is at least six times as high as that of the Venetian pennies of the time of Dandolo.<sup>17</sup>

<sup>11</sup>Hendy, *Coinage*, pl. 10, 1–6 (John II, 1118–43); pl. 13, 3–4, and pl. 14, 6 (Manuel I, 1143–80); and pl. 22, 4–7 (Alexius II, 1180–84). The grosso also resembles a Norman coin of 1140, also called a ducat, but there is no reason to believe that it was derived from that coin rather than from the more common Byzantine prototype of both: cf. Lucia Travaini, *La monetazione nell'Italia normanna*, Istituto Storico Italiano per il Medio Evo, Nuovi studi storici, 28 (Rome, 1995), 210–24.

<sup>12</sup>The flatness is especially noteworthy, in that the Venetian pennies preceding the grosso, and those that would be minted later in the thirteenth century, were also cup-shaped.

<sup>13</sup>Papadopoli, 1:311–38, #4, and *PMV*, 15–34. For this document, see Alan M. Stahl, "The Mint of Venice in the Thirteenth Century," ed. N. J. Mayhew and P. Spufford (Oxford, 1988), 110–15.

<sup>14</sup>See below, Chap. 15, for further discussion of the fineness standard.

<sup>15</sup>Rialto, 1123: Gloria, *Codice*, 2:108, #132; for a review of medieval Venetian weight units, see Lane and Mueller, *Coins and Moneys of Account*, 526.

<sup>16</sup>Andrea Saccocci, "Un ripostiglio di monete aquileiesi, triestine e veneziane da Aquileia," *RIN* 92 (1990): 235.

<sup>17</sup>Morrison and Grunthal, *Carolingian Coinage*, 59–60, 147; Papadopoli, 1:86–87. Surviving exam-



What was most revolutionary about the grosso, however, was not its appearance or its weight but its fineness. The fineness of the contemporary penny was about 20 percent.<sup>18</sup> The imperial pennies of northern Italy in the late twelfth century were finer than those of Venice and Verona but nowhere near that of the grosso.<sup>19</sup> The coins of Norman Sicily began with under 50 percent silver in the ducat of Roger II but had declined to below one-third fine by the end of the twelfth century.<sup>20</sup> In the twelfth century the Byzantine Empire issued no truly silver coins; there were "electrum" coins with an alloy of silver and gold, and billon ones with a high amount of copper mixed in with the silver.<sup>21</sup> Outside Italy, there were a few coinages of fine silver. The minting of fine-silver coins by the Muslim rulers of Syria began about 1175, and their imitation by Crusaders seems to have begun about the same time as the grosso.<sup>22</sup> In northern Europe, the mints of Cologne and England produced silver coins about 92.5 percent fine in the period of Enrico Dandolo.<sup>23</sup>

In both weight and fineness, the grosso represented a complete innovation not only in relation to Venetian coins but in respect to most of the coinages with which the Venetians were familiar. With 109½ coins to the mark, it was not made at a convenient reference to existing weight standards, and its fineness of 98.5 percent would have required the additional refinement of virtually any supplies of silver which came into Venice, in the form of either coins or ingots. These standards must have been chosen for a specific reason, the most likely of which is to make a coin that would fit evenly into an existing monetary system of importance to the Venetian economy.

The two chronicles that give a value for the earliest grosso in terms of the money of Venice put it at 26 pennies, but they were both composed more than a century later and may reflect later values.<sup>24</sup> The earliest document that gives an equivalence between the grosso and the penny of Venice (or of Verona) is a

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ples of the Dandolo penny suggest that it was actually minted at a somewhat lower weight than that inferred by Papadopoli: *CNI*, 7:27–29.

<sup>18</sup>See above, Chap. 1, n. 58.

<sup>19</sup>Cipolla, *Avventura*, 32–34 and n. 41.

<sup>20</sup>Travaini, *Monetazione*, 220–33.

<sup>21</sup>Hendy, *Coinage*, 14–25.

<sup>22</sup>Bates and Metcalf, "Crusader Coinage," 435 and 457–60.

<sup>23</sup>Walter Hävernck, *Die Münzen von Köln . . . vom Beginn der Prägung bis 1304*, *Die Münzen und Medaillen von Köln*, 1 (Cologne, 1935), 10–11; Nicholas J. Mayhew, "From Regional to Central Minting, 1158–1464," in *A New History of the Royal Mint*, ed. C. E. Challis (Cambridge, 1992), 109 and 161 n. 253.

<sup>24</sup>See above, nn. 4 and 5.

receipt of 1231 in which the agent for the patriarch of Aquileia, charged with borrowing £10,000 of Venetian piccoli, acknowledges the receipt of £800 in Venetian grossi, a ratio of 25 piccoli to the grosso.<sup>25</sup> A procuration made in 1259 to collect a debt gives the rate of 9 grossi per pound, that is, 26 $\frac{2}{3}$  pennies per grosso.<sup>26</sup> A document of Padua of 1265 speaks of a payment of three “denariorum Venetorum grossorum a XXVII,” implying that the grosso was worth 27 pennies.<sup>27</sup> These sources, then, put the value of the grosso in terms of the penny of Venice in the range of 25 to 27 pennies, figures that do not correspond easily to the basic system of account, in which even multiples of 12 or subdivisions of 240 would be the logical choice for a new coin.

Though there are no documentary sources to describe the stages of the introduction of the grosso, we can construct at least a hypothetical scenario. At the time of the election of Enrico Dandolo in 1192, the coinage comprised a penny and halfpenny. The debasement of the coinages on which the Venetian economy depended, especially Veronese and Byzantine, made this limited system inadequate. Soon, probably in 1194, the grosso was introduced. The minting of the grosso was to continue virtually unchanged for a century and a half, but by the end of Dandolo's reign in 1205, the penny was no longer minted, and a new denomination, the quarter penny, had been introduced. The most plausible original value for the grosso is 24 pennies, making it worth an even 2 shillings of account and making 10 grossi equal to a pound. Its weight was probably set to give it twenty-four times the amount of silver as the penny.

The Venetian minting authorities would then have faced a problem that would plague all medieval minters who tried to keep coinages in “white” money and “black” money circulating side by side at a fixed relationship. The differential utility value of the two coinages could cause higher demand on one or the other, which would cause hoarding and strain the market relationship. Moreover, the lower production costs of 1 grosso compared with 24 pennies would

<sup>25</sup>Known from an eighteenth-century transcription by Giuseppe Bianchi in the Biblioteca Civica di Udine, Fondo Principale, MS 899, Documenti per la storia del Friuli dal 1200 al 1400, vol. 3, n. 109. I am grateful to Andrea Saccocci for calling this document to my attention and providing me with a copy of it.

<sup>26</sup>MRLD, 2:374–75, #850. A date of 1254 for the law giving an equivalence of 9 grossi and 5 piccoli to the pound of Venice is hypothetical; cf. Lane and Mueller, *Coins and Moneys of Account*, 124, and Frederic C. Lane, “Le vecchie monete di conto veneziane ed il ritorno all'oro,” *Atti dell'Istituto Veneto di Scienze, Lettere ed Arti* 117 (1958–59), reprinted in idem, *Studies in Venetian Social and Economic History*, ed. Benjamin G. Kohl and Reinhold C. Mueller (London, 1987), 55–56 n. 3.

<sup>27</sup>Giovanni Brunacci, “De re nummaria Patavinorum,” in Argelati, *De monetis Italiae*, 1:233. In the reign of Lorenzo Tiepolo (1268–75) a new Venetian penny was introduced, so quotations after 1268 may be in reference to the new penny rather than that of the beginning of the century.

encourage the mint to produce only the larger-denomination coin. To make the production of pennies a realistic enterprise, the mint may have debased the silver content of them, counting on the demand for small change to override their lesser intrinsic value. This could have had the effect of leading to the culling and even melting of grossi; the rarity of those in the name of Dandolo in finds compared with the apparently high number of dies used for the issue suggests such hoarding (see below, Chap. 16). This situation could have led the government to suspend the minting of the penny and let small change be limited to halfpennies and quarter pennies of such low alloy as to offer no threat to the grosso.

By this time, the value of the grosso would have risen against the penny. When the quantity of old pennies in circulation had diminished, the system of values would have become based on the grosso. The traditional pound of Venice based on the penny (L: *libra parvorum*; V: *lira di piccoli*) was defined at the rate of  $26\frac{2}{3}$  pennies per grosso, or  $9\frac{5}{26}$  grossi per pound, by the mid-thirteenth century. To simplify accounting, a new pound of account came into use, defined as 240 grossi (L: *libra grossorum*; V: *lira di grossi*); it was worth  $26\frac{2}{3}$  times as much as the old pound of pennies.<sup>28</sup>

#### THE AGE OF THE GROSSO: THE THIRTEENTH CENTURY UP TO 1284

For a half century after the innovations of the reign of Enrico Dandolo, the coinage of Venice remained essentially unchanged. The grosso gradually established itself as the basic coin of Venice, though old pennies of the twelfth century continued to circulate, as did a variety of other local coinages. An example of this mixed circulation is offered by the record of a series of thefts of Venetian merchants carried out by men believed to be in the hire of the Este lords of Ferrara in the 1220s: one merchant lost 44 Venetian grossi, 780 Venetian pennies, and 2,640 pennies of Ravenna, and another lost 169 grossi, 1,680 Venetian pennies, 2,160 pennies of Verona, and 60 English sterlings, among other coins.<sup>29</sup>

Virtually no documentation on Venetian minting can be ascribed to the first half of the thirteenth century. A brief mention in a fragmentary record of the Great Council notes that in 1224 those in charge of minting appeared before the doge and his counselors and took an oath upon their capitulary and entered into office.<sup>30</sup> This is the first extant mention of the office and its rule book; there

<sup>28</sup>See Lane and Mueller, *Coins and Moneys of Account*, 7–13 and 123–24, for moneys of account in general and for these two pounds of account.

<sup>29</sup>June 1225 and 12 Apr. 1228: DMC, 1:81, 194.

<sup>30</sup>19 Mar. 1224: DMC, 1:56, #40; PMV, 6, #4.



are no further references for several more decades. The mint was given a commercial advantage in 1237 by an act of the Great Council which exempted those who sold their silver to it from any import duty on the bullion; this provision stayed in effect for more than a century.<sup>31</sup> In this era, the doges swore in their inaugural oath to maintain the coinage as they had found it, unless new standards were set by a council.<sup>32</sup>

In the reign of Jacopo Tiepolo (1229–49), a system of distinctive marks becomes evident on the grosso, first as variations in the punctuation on the obverse and then in the use of small marks around the feet of Christ on the reverse.<sup>33</sup> These no doubt correspond to the provision in the 1278 capitulary of the mintmasters for grossi that they put a mark on their coins so that it could be known that a given piece was minted during their period in office.<sup>34</sup> There seem to be two marks per year, which suggests two masters in office at a time for a term of one year.<sup>35</sup>

While the Venetian mint continued a stable regime of production of grossi from 1194 to 1268, other mints, responding to the same circumstances that had led to the introduction of the grosso, and also no doubt to the example set by Venice, introduced silver coins above the penny denomination.<sup>36</sup> By the middle of the century Genoa had issued a grosso, perhaps as early as 1217.<sup>37</sup> The Tuscan mints of Pisa, Lucca, Sienna, and Florence were all producing grossi by 1239, and perhaps earlier.<sup>38</sup> Closer to home, Verona also introduced a fine-silver grosso in the first half of the century, which by 1265 was worth 20 pennies in the equivalent systems of Verona and Venice.<sup>39</sup> By this period as well, rich sources of sil-

<sup>31</sup>25 Sept. 1237: *DMC*, 2:43–44; *PMV*, 10, #12.

<sup>32</sup>*ASV*, *Secreta*, *Promissioni*, R. 1, f. 2 (Jacopo Tiepolo, 1229), f. 6v (Marin Morosini, 1249), f. 10v (Rainiero Zeno, 1253), f. 19 (Lorenzo Tiepolo, 1268). Beginning in 1232 the doges also swore to prosecute counterfeiters: *Novissimum Statutorum ac Venetiarum Legum Volumen* (Venice, 1729), pt. 2, f. 7.

<sup>33</sup>Papadopoli, 1:98, 103, and 106; *CNI*, 7:34, 36 and 38.

<sup>34</sup>*CMM*, c. 9.

<sup>35</sup>Later in the century, when three masters are known to have rotated for a term of a year, the number of marks averages 3 per year of the doge's reign; see below, Chap. 11.

<sup>36</sup>In general, see Spufford, *Money and Its Use*, 227–29. For Italy, see Grierson, "Origins of the Grosso"; Cipolla, *Avventure*, 32–37; Saccocci, "Tra Bisanzio," 334–36.

<sup>37</sup>Lopez, "Prima del ritorno all'oro nell'occidente duecentesco," 178–81.

<sup>38</sup>David Herlihy, "Pisan Coinage and the Monetary History of Tuscany, 1150–1250," in *Le zecche minori toscane fino al XIV secolo*, Centro Italiano di Studi di Storia e d'Arte, Pistoia (Pistoia, 1967), 189–92. The introduction of the grosso in at least some of these mints before 1200 has been argued on the basis of indirect evidence: Michael Matzke, "Vom Ottolitus zum Grossus: Münzprägung in der Toskana vom 10. bis zum 13. Jahrhundert," *Schweizerische numismatische Rundschau* 72 (1993): 179–84.

<sup>39</sup>Quintilio Perini, *Le monete di Verona* (Rovereto, Italy, 1902), 38 and 92, #10 and #11.

ver in the Carinthian Alps had made their way to a number of mints to the north and east of Venice, chief among which were Friesach, Aquileia, Gorizia, and Triest.<sup>40</sup> The coins of these mints, which circulated under the name *friesacher*, fit into the Venetian system of the thirteenth century with a value of about 12 Venetian pennies, or 1 shilling. The Tyrolean Alps were another rich source of silver, and the counts of Tyrol and bishops of Trent issued grossi on the standards of those of Verona, worth 20 pennies in Venice.<sup>41</sup>

### THE REINTRODUCTION OF THE VENETIAN PENNY

Shortly after 1268, the mint of Venice resumed the production of pennies. No pennies are known in the name of Ranieri Zeno (1253–68), but those in the name of his successor, Lorenzo Tiepolo, are relatively common in finds and in collections.<sup>42</sup> By the end of 1269 the new penny seems to have been in circulation. In February of that year an official rate of 26.11 pennies to the grosso was set for the pay of officials.<sup>43</sup> In December of that year, a circulating rate of 28 pennies to the grosso was recognized, and it was established that all transactions less than £50 in value be made in pennies, except for precious metals.<sup>44</sup> This reintroduction may have been occasioned by the local circulation of Veronese coins and *friesachers*, or it may have been a response to the gradual attrition of the old pennies from the coin supply (fig. 4).<sup>45</sup>

For the next decade, a series of reforms established separate minting teams for the petty coinages and the grosso.<sup>46</sup> The two masters in charge of the small

<sup>40</sup>Andrea Saccocci, "La monetazione dell'Italia nord-orientale nel XII secolo," in Härtel, *Die friesacher Münze*, 300–303.

<sup>41</sup>Helmuth Rizzolli, *Münzgeschichte des alpenländischen Raumes im Mittelalter* (Bolzano, Italy, 1991), 1:103–26. Soon after 1274, Count Meinhard II of Tyrol raised the fineness of his grosso with the issue of the aquilino of Merano, which circulated as 22 pennies in Venice: *ibid.*, 127–31.

<sup>42</sup>Papadopoli, 1:107 and 112; Paolucci, *Monete dei dogi*, 20; below, App. B, table B.2, #1–9, 131–34.

<sup>43</sup>17 Feb. 126[9]: Papadopoli, 1:343, #8; DMC, 2:336. That this rate was official and unchanging is demonstrated by its reiteration in 1278, after the market value had certainly changed: 11 Apr. 1278: Tafel and Thomas, *Urkunden*, 3:281–87, #371.

<sup>44</sup>6 Dec. 1269: DMC, 2:393. 11 Dec. 1269: DMC, 2:393. This rate of 28 pennies to the grosso was recognized in Padua in 1274: Andrea Gloria, ed., *Statuti del Comune di Padova dal secolo XII all'anno 1285* (Padua, 1878), 274, #828; in the manuscript, the number 28 was added in a later hand over a canceled earlier figure: Gloria, *Statuti*, 58, n.a.

<sup>45</sup>In hoards of the late thirteenth and earlier fourteenth centuries, pennies from the twelfth century represent a small but significant portion of the circulation; see below, App. B, table B.2, #132–35.

<sup>46</sup>7 Aug. 1270: DMC, 2:397; this act is known only from a rubric: ASV, MC, Rubriche, R. 2, f. 8. Before this date the masters had been referred to simply as *massarii monete* or *illi qui sunt super mone-*



Fig. 4. Venetian coins of the reign of Lorenzo Tiepolo (1268–75).

a. Grosso with Mint master's mark (triangle under left elbow). b. Debased penny.

Sources: a. ANS 1956.174.1. b. MCC, Papadopoli 4860

money supervised the minting of pennies and the lower denominations, which now included the bianco, or halfpenny; the quartarolo, or quarter penny; and a new denomination visually equivalent to the quartarolo but twice its weight.<sup>47</sup> These masters for small coinage were given a minimum number of coins they had to produce, but they were allowed to produce more.<sup>48</sup> An act of 1272 sought to ban the circulation within Venice of “bagattini,” probably the pennies of Verona.<sup>49</sup>

By 1274, the three masters for grossi had their own capitulary.<sup>50</sup> New regulations were passed by the Council of Forty in 1276, which sought to guard against any possible illegal profiteering by the mintmaster for grossi.<sup>51</sup> It is in these acts that the system of rotation among the three masters by fortnight of service (*quindena*) is first documented with its series of provisions for the oversight of each master by his colleagues (see below, Chap. 11). Twenty reverse marks are visible on grossi of the seven years of office of Lorenzo Tiepolo.<sup>52</sup> As

*tam*; their number earlier is not documented: 16 June 1266: *DMC*, 2:312–13; 13 Sept. 1269: *DMC*, 2:233.

<sup>47</sup>This new denomination was continued at least until 1289: Papadopoli, 1:113, 119, 138, 145. Its role is unclear—if it was a double quartarolo, as it is usually interpreted, it would have had the same value as the bianco. It is possible that the lighter coin of the same appearance (minted since the reign of Enrico Dandolo) was in actuality an eighth of a penny and it was to this new coin that Andrea Dandolo referred as a “quartarolus valoris quartae partis unius denarii” in the section of his chronicle dealing with the construction of the Rialto bridge in 1264: *Chronicon*, 313.

<sup>48</sup>30 Nov. 1271: *DMC*, 2:406. This act, known only in rubric, also allowed them to “dare tabulam,” which presumably meant to act as moneychangers; cf. Charles Du Fresne Du Cange, *Glossarium mediae et infimae latinitatis*, new ed., 10 vols. (1883–87; reprint, Graz, Austria, 1954), s.v. *Tabula*.16.

<sup>49</sup>13 Apr. 1272: *DMC*, 2:408; this act is known only from its rubric.

<sup>50</sup>9 Oct. 1274: *DMC*, 2:246; *PMV*, 14–15, #22.

<sup>51</sup>22 Dec. 1276: *DMC*, 2:246–48.

<sup>52</sup>Papadopoli, 1:112; *CNI*, 7:39–42.



there seem to be about three marks per year, these marks probably correspond to the yearly production of each of the masters in office.

In March 1278, three men were chosen by the Forty to revise the regulations governing the mintmasters and the gold estimators and to establish rules for a new office, that of the mint weighers.<sup>53</sup> Their recommendations were accepted, and new capitularies were drawn up for all three offices; of these, that for the mintmasters for the *grosso* survives in a manuscript incorporating additional provisions through the end of the thirteenth century. The chief changes evident in the 1278 capitulary from regulations known from before are those that stem from a reorganization of the administration of the mint. The basic text assumes three masters for *grossi* and two mint weighers for silver. In general, the weighers took over responsibilities related to minting which had been assigned the gold estimators in 1276; they also served as adjudicators of disputes in place of the masters for pennies. Another change was the requirement that the masters render their accounts every six months, rather than only at the end of their one-year term.

In December 1278 the staffs for the production of *grossi* and pennies were merged, and new standards were set for the penny: an alloy of just under 20 per cent silver with a weight of just over 0.30 grams.<sup>54</sup> This is consistent with the weights recorded for pennies of the doge in office at the time (Lorenzo Tiepolo) and his two successors, Jacopo Contarini and Giovanni Dandolo.<sup>55</sup> These standards for the penny represented a decline from those minted in the twelfth century and were accompanied by a drop in the value of the coin in relation to the *grosso*. In May 1282, the Great Council changed the official value of the *grosso* from the 28 pennies set in 1269 to 32 pennies.<sup>56</sup> A few months later, the Forty asked the mintmasters at what standards they could make the penny without loss, encouraging them or anyone else to think of a way to improve the standard.<sup>57</sup> The masters recommended minting on standards that they said were currently in effect, almost identical to those given in the capitulary, resulting in a penny containing about 0.06 grams of *grosso*-grade silver.<sup>58</sup> As the *grosso* was to be made at a weight of about 2.17 grams of silver, it would have contained

<sup>53</sup>CMM, c. 77.

<sup>54</sup>CMM, c. [85a].

<sup>55</sup>The pennies of these three reigns show a modal weight in the range of 0.25–0.29 grams: *CNI*, 7:42–43, 45, 50–51.

<sup>56</sup>28 May 1282: *DMC*, 2:75, #124; Papadopoli, 1:120–21.

<sup>57</sup>*DMC*, 3:10–11, #48; Papadopoli, 1:121.

<sup>58</sup>There were to be 226 carats of *grosso*-grade silver, with a cut of 784 pennies per mark.

just over thirty-six times as much silver as the penny.<sup>59</sup> The penny, tarified at 32 to the grosso, was then overvalued by 12.5 percent in relation to it; its utility as a divisional coin as well as greater costs of minting would have justified such a disparity in values.

The debasement of the penny did represent a lowering of the silver content of sums calculated in terms of it, but this was offset by the introduction of a new system of accounting.<sup>60</sup> In addition to the pound of pennies (L: *libra parvorum*; V: *lira di piccoli*), representing 240 of the new, base pennies, and the pound of grossi (L: *libra grossorum*; V: *lira di grossi*), 240 grossi, a new pound of account came into use, the pound based on the grosso (L: *libra ad grossos*, V: *lira a grossi*). The basis of this system was a ghost penny defined as  $\frac{1}{26.11}$  of a grosso, the value it had had before the debasement. A sum traditionally calculated in pennies could still be paid with the same amount of silver grossi as before the debasement, if it was defined as being in lira a grossi, rather than lira di piccoli. For those payments that were calculated in this new accounting system (and it is not always clear to us from documents which system was used for a given payment), the debasement of the penny had no effect.

The reintroduction of the penny at a debased standard enabled Venice to achieve what it had failed at a century earlier: a system with a large fine-silver coin suitable for trade and a coin with a small amount of silver which could serve as the basis of its low-level, internal economy.

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<sup>59</sup>CMM, c.1.

<sup>60</sup>See Lane and Mueller, *Coins and Moneys of Account*, 123–33, for an explanation of the systems in use in this period.

## *The Age of the Ducat, 1285–1330*

### THE INTRODUCTION AND ESTABLISHMENT OF THE DUCAT

The reintroduction of the penny at a debased standard brought Venetian silver currency into an equilibrium that lasted for the next half century. Soon thereafter, the republic turned its attention to a major innovation in its coinage, the first gold coin in its almost five centuries of minting (fig. 5).

As we have seen, in the twelfth century Venice's trade was based in large part on Byzantine coins, especially the hyperpyron of 21 (87.5%) carat gold and the electrum aspron trachy of 7 (29.2%) carats. These were debased in the late twelfth century and eliminated with the fall of Constantinople to the Fourth Crusade in 1204. The minting of the hyperpyron appears to have been resumed by the Nicaean claimant John III Vatatzes (1222–54), whose coins imitated closely those of John II Comnenus (1118–43) but with a lower and varying gold content.<sup>1</sup> These were in turn imitated by the Latin emperors of Constantinople, whose hyperpyra were known in Italy as being 16¾ carats (69.8%) fine.<sup>2</sup> Though Venetian commercial documents continued to reckon sums in hyperpyra in the thirteenth century, these appear to be based on other coins, chiefly European silver issues.<sup>3</sup>

In the course of the thirteenth century, European rulers began the regular

<sup>1</sup>Morrisson et al., "La monnaie d'or," 158–66.

<sup>2</sup>Francesco Balducci Pegolotti, *La pratica della mercatura*, ed. Allan Evans (Cambridge, Mass., 1936), 288.

<sup>3</sup>In Thebes there was a system based on *yperperatas sterlingorum*, that is, in terms of a hyperpyron defined as one-seventh of a mark of coins of Cologne of sterling fineness: 10 May 1256: MRLD, 2:359–60, #833. Crete used a hyperpyron defined as 13 Venetian grossi: 24 May 1255: MRLD, 2:354–55, #827. See Alan M. Stahl, *The Venetian Tornese: A Medieval Colonial Coinage*, American Numismatic Society, Numismatic Notes and Monographs, 163 (New York, 1985), 53–59, for accounting systems based on the hyperpyron as they appeared in the fourteenth century.





Fig. 5. A Venetian ducat of the reign of Giovanni Dandolo (1280–89).

Source: ANS 1954.237.1

issue of gold coins for the first time since the pre-Carolingian age.<sup>4</sup> The exceptional cases had been Latin rulers who were involved in the Islamic trade network and minted in that tradition: Crusaders in the Levant, Castilians and Aragonese in Iberia, and Salernitans and Normans in southern Italy and Sicily.<sup>5</sup> The earliest gold coin of the south, even preceding the Norman presence there, was the tari, a gold coin of variable weight with a fineness that by the thirteenth century became fixed at  $16\frac{1}{3}$  carats (68%) fine.<sup>6</sup> The tari was supplemented, though not replaced, by Frederick II in 1241 with the augustalis, a coin of fixed weight (5.28 grams) and an alloy known as *pagliola*:  $20\frac{1}{2}$  carats gold (85.4%),  $2\frac{5}{8}$  carats silver,  $\frac{7}{8}$  carat copper.<sup>7</sup> Trade between Venice and southern Italy, especially Apulia, was important in the thirteenth century, and payments were sometimes made in gold for grain purchased there. The basis of this trade at first appears to have been gold ingots at about the *pagliola* standard; in 1227 Venice sent gold to Apulia in ingots worth about £8,850, some with a fineness of  $20\frac{1}{2}$  carats and others  $21\frac{1}{2}$  carats.<sup>8</sup> Later, however, Venetian payments seem to have been made mainly in bars of silver and grossi. By the second half of the century, the accounts of the royal treasury of Apulia were being carried out in terms of the Venetian grosso.<sup>9</sup> In 1264 the Council of Forty banned the trade within Venice of gold of *pagliola* fineness in amounts of more than 2 marks (about one-half kilo) and insisted that such gold be refined into ingots.<sup>10</sup> The standard for Venetian gold

<sup>4</sup>The classic study of this is Roberto Sabatino Lopez, "Settecento anni fa: Il ritorno all'oro nel occidente duecentesco," *Rivista storica italiana* 65 (1953): 19–55 and 161–98. See also Grierson, "Origins of the grosso," 40–44; Lane and Mueller, *Coins and Moneys of Account*, 276–85; Spufford, *Money and Its Use*, 163–86.

<sup>5</sup>Spufford, *Money and Its Use*, 166–68.

<sup>6</sup>Travaini, *Monetazione*, 101–3.

<sup>7</sup>Heinrich Kowalski, "Die Augustalen Kaiser Friedrichs II," *Schweizerische numismatische Rundschau* 55 (1976): 77–150.

<sup>8</sup>24 Apr. 1227: DMC, 1:181, #46; BG, 35–36, #24 and #25.

<sup>9</sup>Francesco Carabellese, *Carol d'Angiò nei rapporti politici e commerciali con Venezia e l'Oriente*, Commissione Provinciale di Archeologia e Storia Patria, Documenti e monografie, 10 (Bari, 1911), 150–52.

<sup>10</sup>30 Oct. 1264: DMC, 2:311; PMV, 11, #13.

was set in 1269 as at least  $23\frac{3}{4}$  carats fine, that is, about as close to pure as medieval technology could achieve.<sup>11</sup>

The precedent for the Venetian minting of gold coins came from the west of Italy rather than directly from the south. In 1252 both Genoa and Florence initiated the minting of coins of pure gold at the same weight, 3.53 grams.<sup>12</sup> The example of Florence and Genoa was followed by Lucca by 1256 and by Perugia in 1259; neither issue proved long lived or successful.<sup>13</sup> Outside Italy, Henry III of England minted a gold penny in 1257, and Louis IX of France a gold écu by 1270; neither of these issues entered regular circulation.<sup>14</sup> Nor is it clear that even the genovino and the florin were immediate successes. The genovino is documented in a few Genoese documents of the 1250s, but little after that.<sup>15</sup> Even for the florin, there is little evidence that it was widely used in its first few decades of minting. In papal collections of about 1275, the gold florin did not achieve the wide prominence that it would have by the end of the century.<sup>16</sup> Only two coin hoards containing florins are known from the thirteenth century, one from Pisa and one from the Levant; no genovini are known from finds from this period.<sup>17</sup>

On 31 October 1284, the Council of Forty approved the issue of Venice's gold coin, the ducat.<sup>18</sup> As the records of the Forty are lacking for this period,

<sup>11</sup>8 Dec. 1269: DMC, 2:304–5; Papadopoli, 1:339–40, #5.

<sup>12</sup>Lopez, "Settecento anni fa," 40–49.

<sup>13</sup>Thomas W. Blomquist, "The Second Issuance of a Tuscan Gold Coin: The Gold Groat of Lucca, 1256," *Journal of Medieval History* 13 (1987): 317–25; Lopez, "Settecento anni fa," 168–69.

<sup>14</sup>Spufford, *Money and Its Use*, 182–86.

<sup>15</sup>Lopez, "Settecento anni fa," 38–40. The "denaros . . . Janue auro . . . que valent solidos decem Janue" of 1292 appear to be a later, baser issue: G. I. Bratianu, *Recherches sur le commerce génois dans la Mer Noire au XIII<sup>e</sup> siècle* (Paris, 1929), 320, #17, 322, #19, and 323, #20; Lopez, "Settecento anni fa," 52.

<sup>16</sup>For example, in Viterbo, 1274–80, the 197 florins were only a small part of the collection, which also included 4,459 Venetian grossi that were worth almost twice that amount: Giulio Battelli, ed., *Rationes decimarum Italiae nei secoli XIII e XIV Latium*, Studi e testi, 96 (Vatican City, 1946), 278–79.

<sup>17</sup>The Pisa hoard appears to date from the late 1250s; it contained 1 Byzantine gold coin, 119 southern Italian tari, 1 gold grosso of Lucca, and 88 very early florins: Luciano Lenzi, *Il ripostiglio di monete auree scoperto in Pisa sotto le logge dei Banche* (Pisa, 1978). The Aleppo hoard is from the last decade of the thirteenth century or later; it comprised mainly florentine florins but had Venetian ducats (of G. Dandolo [1285–89] and P. Gradenigo [1289–1311]) and French gold coins from 1290. It is known only from a note in Philip Grierson, "The Interpretation of Coin Finds (1)," *Numismatic Chronicle*, 7th ser., 5 (1965), reprinted in his *Later Medieval Numismatics* (London, 1979), 21:vi n. 2. Grierson dates the hoard to 1291 and connects its burial to the fall of Acre in that year.

<sup>18</sup>DMC, 3:88, #163; PMV, 40–41, #36; Papadopoli, 1:123.

the act is known only from its inclusion in the registers of the Great Council. There is no way to know the context of this act, whether it was carried out after failed motions reaching back perhaps years and even decades and whether it was the result of strong controversy or compromise. It is of note that the recorded act states that only twenty-nine members of the Forty were present; this was a weak quorum, especially if it included the doge and his six counselors who sat with the Forty.<sup>19</sup> The vote to adopt was even weaker; only twenty-two members approved the measure, while seven abstained.

The act is brief and straightforward.<sup>20</sup> It lacks a preamble stating the context and necessity of the legislation, a common feature of acts of this period. The entire act is a single sentence. There should be 67 of the new coin (whose name is not given) per mark of gold, which is at least as good as that in the florin. The gold should be received at a price that allows the coin to be given for 18 grossi. The design should be selected by the doge, his six counselors, and the three heads of the Forty, who are authorized to review and alter designs.

It is explicit from the standards that the new coin was intended to be a response to the Florentine florin and to be its equal in value. The cut of 67 coins to the Venetian mark is an awkward figure compared with the 8 coins per ounce of the Florentine standard. It is probably as close as one could come to the florin's weight in integers or even common fractions; a cut of  $67\frac{1}{3}$  ducats to the mark would have made them exactly equal.<sup>21</sup> At 67 coins to the mark, the ducat would then be about a half of a percent heavier than the florin (3.545 grams, compared with 3.53) and at least as fine as the nominally pure florin.

The imagery chosen for the ducat in 1284 was maintained virtually unchanged through the reign of the last Venetian doge in 1797. In iconography it appears to be derived almost entirely from the grosso, but in style it represented a great advance on the linear frozen appearance of the grosso.<sup>22</sup> The minting of

<sup>19</sup>Giuseppe Maranini, *La costituzione di Venezia* (1927; reprint, Florence, 1974), 1:267–68.

<sup>20</sup>It is identical in the register of the Great Council and the copy of the state advocates: ASV, MC Luna, f. 32v, and AC Cerberus, f. 106v: "Capta fuit pars quod debeat laborari moneta auri communis, videlicet LXVII pro marcha auri tam bona et fina per aurum vel melior ut est florenus, accipiendo aurum pro illo precio quod possit dari moneta pro decem et octo grossis, et fiat cum illa stampa que videbitur domino duci et consiliariis et capitibus de quadraginta et cum illis melioramentis que eis videbuntur, et si consilium est contra sit revocatum quantum in hoc; pars de XL et erant XXVIII de quadraginta congregati, ex quibus voluerunt hanc partem XXII et septem fuerunt non sinceri et nullus de non."

<sup>21</sup>Pegolotti, *Pratica*, 146: 1 mark of Venice equaled 8 ounces, 10 denarii of Florence in the early decades of the fourteenth century. The ounce of Florence was divided into 24 denarii, so the equivalent of the Venetian mark would have produced  $67\frac{1}{3}$  florins at the rate of 8 to the ounce.

<sup>22</sup>See below, Chap. 13, for the iconography, style, and legend of the medieval ducat.



the ducat began in March 1285, an event marked by the erection of a marble inscription at the mint which remained until it was taken down in the early sixteenth century.<sup>23</sup> Two new masters for gold were appointed, whose office was renewed the next year.<sup>24</sup> The next month the rules governing the bullion market were amended so that Germans could sell their gold directly to the mint; up to that time the sales of gold had been carried out by the vice-lords of the German *fondaco* on behalf of the Germans.<sup>25</sup>

There were clearly problems attracting gold to the mint and getting the ducat to circulate at its intended value. In June 1285 a set of regulations was passed, apparently by the Great Council, to effect its circulation at about 18.4 grossi, rather than the 18 grossi specified half a year earlier.<sup>26</sup> In order to control the value of the ducat versus the grosso, the masters were given the option of paying in whichever coin they preferred. Venetian merchants who wanted ducats to carry with them in trade to Apulia or the East were given a special rate until the return of the fleets; their gold would be minted into ducats for a fee of 5 grossi per mark, which was said to be the actual cost of minting. The mint was allocated enough capital from the state treasury for more than 4,000 ducats' worth of gold, so that it could give foreigners ducats for their gold with no delay. Up until this point, there is no documentation of the mint holding capital; the documents imply that the regular procedure for grossi was for those bringing silver to the mint to await the end of the master's quindena to get their own bullion back in minted form. The same appears to be true in the special provision for Venetians getting ducats for trade at a reduced rate. However, the establishment of the ducat was deemed important enough for the state to advance enough cap-

<sup>23</sup>Marin Sanudo, *Vite dei dogi*, cc. 574–75. In his 1515 revision of a 1493 account of the zecca, Sanudo noted that this inscription had been removed: Marin Sanudo, *De origine, situ e magistratibus urbis Venetiae ovvero la città di Venetia* (1493–1530), ed. Angela Caracciolo Aricò (Milan, 1980), 63–64, 132, 264.

<sup>24</sup>Vincenzo Padovan, "La nummografia veneziana: Sommario documentato," *AV* 14 (1877): 26: "Da una cronachetta di Donato Contarini già esistente nella Biblioteca Foscariniana, e citata dal Sanudo, si apprende: 'Nel dicto tempo (1285) fo facto i primi ofiziali a far far ducati Ser Zuanne Bondimier e Ser Matio de Rainaldo e per e'l so bon operar fo confermado quello nel 1286.'" I have been unable to find the citation within the works of Sanudo or in any of the chronicles currently attributed to Donato Contarini in the Biblioteca Marciana, or any other documentation relating to Giovanni Bondulmier or Matteo de Rainaldo as mintmasters.

<sup>25</sup>17 Apr. 1285: *DMC*, 3:104, #49, and *PMV*, 50, #39. Compare 30 Dec. 1272: *DMC*, 2:301.

<sup>26</sup>2 June 1285: *DMC*, 3:109–10, #76; *PMV*, 51, #40 (as 30 May); Papadopoli, 1:342, #7. This is the earliest extant document to call the coin a *ducatus* rather than *moneta aurei*. The ducat was set at 40 shillings ad grossos. A grosso was 26⅓ pennies ad grossos, so a ducat at 40 shillings ad grossos would be 18.39 grossi. See below, Chap. 8, for a discussion of the profit margin implied in this act.

ital to the mint to pay foreigners up front for their gold. Capital at the mint seems to have been the key to getting the ducat into circulation. For the next decade, the state authorized the mint to borrow from a number of state agencies the gold necessary to keep a supply of ducats on hand (see below, Chap. 8).

### THE REORGANIZATION OF MINTING

The introduction the gold ducat occasioned alterations in minting in late-thirteenth-century Venice, both administrative and physical. These changes coincided with a general reordering of the Venetian state often subsumed under the rubric of the Serrata, or Closing of the Great Council.<sup>27</sup> The mechanisms and effects of this procedure on Venetian society as a whole are controversial, but one result was the explicit definition of powers and responsibilities that had up to that point been governed by tradition and circumstance. For the mint, this definition included the specification that both the election of officials and the setting of regulations to cover them was the province of the Council of Forty, whose acts would have force as if they had been done by the Great Council.<sup>28</sup>

The existence of masters designated as being in charge of the minting of gold and having their own capitulary is documented from 1285, the first year of the minting of the ducat.<sup>29</sup> Provisions in this capitulary specify two masters and a single weigher for gold, as well as a separate vault to which only these officials had keys.<sup>30</sup> There is no documentation at this point of the other physical arrangements for the minting of gold; it was probably carried out in separate rooms within the same building complex as the silver mint, across the Piazzetta from the doge's palace.

The Venetian mint began to be referred to as the *zecca* during the period when the gold ducat was first struck; its use is first documented in 1285.<sup>31</sup> The word is derived from the Arabic *sikka*, literally "die" and, by extension, mint.<sup>32</sup>

<sup>27</sup>See Cessi, *Storia della Repubblica*, 266–80; Frederic C. Lane, "The Enlargement of the Great Council of Venice," in *Florilegium Historiale: Essays Presented to Wallace K. Ferguson*, ed. J. G. Rowe and W. H. Stockdale (Toronto, 1971), 237–74, reprinted in his *Studies in Venetian Social and Economic History*, ed. Kohl and Mueller; Cracco, *Un "Altro Mondo"*, 98–112.

<sup>28</sup>21 Aug. 1287: DMC, 3:180, #97; PMV, 54, #47; Papadopoli, 1:344, #11. 14 Dec. 1288: DMC, 3:225, #168; Papadopoli, 1:343, #10. See below, Chap. 6.

<sup>29</sup>28 Aug. 1285: DMC, 3:120, #147; PMV, 52, #42.

<sup>30</sup>CMO, cc. 1 and 3. See Stahl, "Mint of Venice in the Thirteenth Century," 107–10, for a discussion of the composition of this capitulary.

<sup>31</sup>17 Apr. 1285: DMC, 3:104, #49; PMV, 50, #39.

<sup>32</sup>Lucia Travaini, "Mint Organization in Italy between the Twelfth and Fourteenth Centuries:

Before this time, the term for the mint had been *moneta*, and the word *zecca* had appeared in Venetian documents in reference to Islamic mints.<sup>33</sup> It had also appeared in reference to the minting in Genoa and Tuscany of coins referred to as *miliarenses*, which may have been imitation Islamic silver coins or grossi.<sup>34</sup> By 1290, the term *zecca* was used for the silver mint of Venice as well as that for gold.<sup>35</sup>

In 1291 the mint suffered a fire, which destroyed the *domum operariorum*, the workshop in which those who made the blanks worked.<sup>36</sup> This provided an opportunity for rearranging the facilities to take into account the reorganization necessitated by the resumption of the minting of pennies and the introduction of gold coinage in recent decades. The mintmasters were instructed to adapt the doors and balconies and to buy whatever supplies were needed to resume minting. In the meantime, only those on staff would be entitled to their pay; nothing was authorized for the workers, emenders, or strikers. The expenses of this rebuilding were to come out of the mint profits, past and future.

#### THE EARLY FOURTEENTH CENTURY: A PERIOD OF UNEASY TRIMETALLISM

By the beginning of the fourteenth century, Venice had a three-tiered monetary system in place. At the top was the ducat, a coin of pure gold and fixed weight, almost identical to the gold coins of Florence and Genoa. As sophisticated traders in bullion, the Venetians must have recognized that the relationship of values between gold and silver was constantly fluctuating. In the first third of the fourteenth century, the gold-silver ratio rose dramatically in the Mediterranean world, from a range of values around 11:1 at the beginning of the century to rates that hovered around and exceeded 14:1 in the years up to 1335.<sup>37</sup> There were occasional decrees of various authorities to define what specific state agencies should value the ducat at for limited periods, but for the most part, the

A Survey," in *Later Medieval Mints: Organisation, Administration, and Techniques*, ed. N. Mayhew and P. Spufford (Oxford, 1988), 42–43.

<sup>33</sup>E.g., the pact with the sultan of Aleppo in 1207–8 which gives provisions for Venetians who wish to have silver struck at the sultan's mint, "ala zecha": Tafel and Thomas, *Urkunden*, 2:62–66, #185.

<sup>34</sup>Lopez, "Settecento anni fa," 46–47 n. 3: "miliarensium argenti de ceca Ianue vel de ceca Tuscie."

<sup>35</sup>29 Sept. 1290, ASV, AC Cerberus, f. 11v (dated 29 Aug.): "Et portent [denarios grossos de Brescoa] ad zecam et dentur parvis denarii 28."

<sup>36</sup>CMM, c. 116.

<sup>37</sup>Spufford, *Money and Its Use*, 267–73, esp. graph 2, p. 272.



ducat was left to float free in value against other coinages, both Venetian and foreign.<sup>38</sup> In the years from 1300 to 1330 the ducat's value in Venetian grossi fluctuated between 18½ and 28 grossi to the ducat.<sup>39</sup>

The grosso remained stable at the standards that had been fixed since the end of the twelfth century. It continued to circulate at the value of 32 piccoli defined in 1282.<sup>40</sup> In this period, foreigners were forbidden from exporting newly struck grossi, and Venetians could not do so by land or within the Adriatic without special permission.<sup>41</sup> This regulation must have been to ensure a good supply of the coinage for use within Venice and, especially, for trade with the Levant. The minting of silver appears to have fallen off significantly in the 1280s, a phenomenon that was probably connected with the beginning of minting of the ducat, though the chronology and causation are not clear (see below, Chap. 16). Things improved soon thereafter; in 1306 there was a rise in the supply of silver from "Germans" which required the spreading out of the intake of bullion over the quindene of successive masters and justified the hiring of new emenders and the granting of raises to the die engraver and blacksmith.<sup>42</sup> In 1319 the mint was recognized as too small to meet the needs of production and was enlarged by expansion into the adjacent *arsena*, where the Procurators of San Marco stored their wood.<sup>43</sup> As it was the masters for grossi who were granted an extension on their accounts because of the disruption caused by this expansion, it is likely that the demand for more space came from an increase in the volume of minting of grossi.<sup>44</sup>

The black money, the penny, halfpenny, and quarter penny, continued in

<sup>38</sup>In 1297 the rate paid for gold leaf was raised by order of the Justiciars: 26 Sept. 1297: G. Monticolo and E. Besta, eds. *I capitolari delle arti veneziane*, Istituto Storico Italiano, Fonti per la storia d'Italia, 26–28 (Rome, 1896–1914), 3:317–8, #37. In 1328 the Forty set the value of the ducat at 24 grossi for the next two years: NMC, 186–87, #245. Lane and Mueller viewed the 1328 act as part of as an expansionist and anti-inflationary policy: *Coins and Moneys of Account*, 322–26.

<sup>39</sup>Lane and Mueller, *Coins and Moneys of Account*, 565; Spufford, *Handbook*, 86.

<sup>40</sup>Lane and Mueller, *Coins and Moneys of Account*, 129–33. Certain traditional payments, involving Venetian officials in outlying places, were paid at archaic rates of 28 or 30 pennies per grosso: 5 Dec. 1307: *BC*, 58–59, #62 (patriarch of Aquileia at 30 pennies per grosso); 23 Mar. 1307: *LCR*, 1:72, #311 (procurator of Ravenna at 28 pennies per grosso); 12 June 1308: G. Giomo, ed., *Lettere di Collegio* 1308–10 (*reg.*), Monumenti storici, Miscellanea III, vol. 1 (Venice, 1910), 328, #309, #310 (podesta of Farra and Brazza at 30 pennies); cf. *PMI*, xlv n. 1.

<sup>41</sup>16 Dec. 1315: NMC, 129–30, #171.

<sup>42</sup>22 Aug. 1306: ASV, MC Commune II, f. 84v. 24 Oct. 1306: ASV, MC Commune II, f. 85. 11 June 1309: ASV, MC Presbiter, f. 10.

<sup>43</sup>7 Jan. 131[9]: ASV, MC Fronesis, f. 9v. 24 Feb. 131[9]: *PMI*, 70, #76.

<sup>44</sup>12 June 1319: ASV, AC Neptunus, f. 74v, #766, #767, #768; see below, App. A, table A.4, for the identification of these men as masters for grossi.

this period with no documented change in standard or value. Despite its high overvaluation, there was apparently some resistance in the mint to the manufacture of the penny. In 1291 the masters were enjoined to make at least 250 marks of pennies per quindena; to encourage greater production the masters were offered a personal boon of 1 penny per mark above this amount.<sup>45</sup> At 790 pennies to the mark and a quindena of two months, this production would have been almost £5,000 per year. Citing the scarcity of Venetian pennies in circulation and the poor quality of its halfpennies, the Commune of Treviso decided in 1317 to resume minting after a hiatus of more than a century and a half.<sup>46</sup> In 1318 the Forty of Venice noted that the mintmasters were not required to make any specific number of pennies and ordered a production of at least £1,000 a month, more than double the earlier rate.<sup>47</sup> Before this date, the production of black money had probably been curtailed but not been stopped; *piccoli* in the name of Pietro Gradenigo (1289–1311) are relatively common in finds, though there are none known in the name of his successor, the short-lived Marino Zorzi (1311–12).<sup>48</sup> *Piccoli* are known in the name of Giovanni Soranzo (1312–28), but they are considered rare and are found in small quantities in excavations by comparison with earlier and later issues.<sup>49</sup>

In addition to these mint issues, there were other coins circulating in Venice in these decades, some of which caused problems for the government and for the mint and some of which were accepted without difficulty. In general, the well-informed and competitive moneychangers could be relied upon to evaluate foreign issues and keep them circulating according to their respective market values. In a few cases, especially those of exotic coinages, the state intervened at least to the point of investigating the intrinsic content of the coins so that their relative value would be common knowledge.<sup>50</sup>

The Florentine gold florin was specifically authorized to circulate alongside the ducat at the same value and under the same conditions.<sup>51</sup> Even the Venetian state used florins in transactions, as in a purchase of grain in 1329 which the commune paid for with about 7,000 ducats and 3,500 florins.<sup>52</sup> When it came to the silver coinage, that of Venice was preferred for state transactions; officials were

<sup>45</sup>21 May 1291: CMM, c. [84a]; misdated in *PMV*, 38–39, #32.

<sup>46</sup>Angelo Marchesan, *Treviso medievale: Istituzioni, usi, aneddoti, curiosità*, 2 vols. (Treviso, 1927), 1:253.

<sup>47</sup>19 May 1318: NMC, 135–36, #180.

<sup>48</sup>See below, App. B, table B.2, #1–10, 132–36. Papadopolis, 1:148.

<sup>49</sup>Paolucci, *Monete dei dogi*, 26; See below, Chap. 16.

<sup>50</sup>18 Oct. 1315: *PMV*, 68, #71.

<sup>51</sup>28 May 1317: *PMV*, 68–69, #72.

<sup>52</sup>14 Apr. 1329: *LCR*, 2:28, #161.

forbidden in 1302 from taking payments in the coinages of neighboring mints worth 20 and 22 pennies, respectively.<sup>53</sup> For other purposes, however, such foreign grossi, mainly from Verona and mints in the Tyrol, were actually protected within Venice by the prosecution of individuals making or passing counterfeits of them.<sup>54</sup> In the case of imported black money, pennies with a great deal of added value, a bit more care was taken to control circulation. In 1306 a new issue of Lombard pennies were observed to be circulating at par with the Venetian penny at 32 to the grosso, while their intrinsic value dictated a lower rate of 40 to the grosso; these coins were banned from circulation.<sup>55</sup> In 1322 all foreign pennies but a couple of old, common ones were banned from circulation.<sup>56</sup>

One foreign coinage that aroused significant concern among the governing councils of Venice was that made by the kings of Serbia from their silver mines in Bosnia (fig. 6).<sup>57</sup> Unlike patently foreign coins, whose values would be discounted on the Venetian market, these coins were closely copied after Venetian grossi.<sup>58</sup> When they first appeared in the 1280s, they were of appropriate fineness, though of uncertain weight, and the mint was instructed to exchange grossi for them at a weight-for-weight basis.<sup>59</sup> Their fineness dropped after that, and in 1294 they were valued at 28 pennies each (compared with 32 pennies for a Venetian grosso), and the Venetian mint paid £11.25 per mark of them.<sup>60</sup> By the end of the century, these coins were allowed to circulate freely at 24 pennies each, and the mintmasters were instructed to perform monthly assays on circulating examples to make sure there was no further debasement in their standard.<sup>61</sup> In typical Venetian fashion, the bureaucratic office that had been created to deal with this specific issue lived on under the name *Office of Serbian Grossi* for another quarter century, gathering unrelated competencies and disputing other offices for jurisdictions (see below, Chap. 7).

<sup>53</sup> 21 July 1302: *PMV*, 63, #67.

<sup>54</sup> 16 May 1314: ASV, SN, R. 16, f. 62; 16 May 1324: ASV, AC Raspe, R. 3641/1, f. 2; 21 May 1325: NMC, 180, #233; 22 Mar. 1330: NMC, 199–200, #262.

<sup>55</sup> 3 May 1306: *PMV*, 63, #68.

<sup>56</sup> 26 Feb. 132[2]: NMC, 158–59, #204.

<sup>57</sup> Desanka Kovačević, "Dans la Serbie et la Bosnie médiévale: Les mines d'or et d'argent," *Annales: Économies, Sociétés, Civilisations* 15 (1960): 248–50.

<sup>58</sup> Vujadin Ivanišević, "Le début du monnayage des gros serbes," *Actes du XIe Congrès International de Numismatique* 1991 (Louvain-la-Neuve, Belgium, 1993), 3:203–7. The notoriety of this imitation caused the king of Serbia (or "Rascia") to be immortalized by Dante as "quel di Rascia / che male ha visto il conio di Vinegia" (*Paradiso*, Canto XIX).

<sup>59</sup> 28 Oct. 1282: DMC, 3:12, #54 (with incorrect date).

<sup>60</sup> 25 June 1294: CMM, c. [121]; DMC, 3:360–61, #29; *PMV*, 59–60, #60.

<sup>61</sup> 30 May 1299: DMC, 3:453, #26.





**Fig. 6. A Serbian coin modeled on the Venetian grosso, c. 1300.**

*Source:* ANS 1913.91.8

A persistent problem related to the circulation of the Venetian grosso, and most medieval European coins, was clipping (see below, Chap. 10). The clipping of grossi became severe enough in 1321 to cause special action by government councils. The earliest indication of a problem is the arrest of a certain Bonifacius of Milan, known as Clericus, who was arrested that summer for clipping grossi within Venice and suffered the usual punishment of the loss of a hand and an eye and banishment.<sup>62</sup> In October, the Forty ordered state officials to refuse any grosso more than 1.3 percent below the prescribed minimum mint weight of 2.18 grams; they were given an extension on their accounts to allow for the problems caused by such measures.<sup>63</sup> The long-term remedy for this situation included the creation of a new office to deal with clipped grossi and a re-minting of clipped ones in circulation.<sup>64</sup> Individuals who were suspicious of the coins they received in transaction from moneychangers or other individuals could take them to the officials of clipped grossi to be weighed and certified. This documented recoinage of grossi does not seem to have resulted in greatly increased activity at the mint. There are none of the usual pleas for raises by employees which correspond with heavy production, nor are the grossi in the name of the reigning doge, Giovanni Soranzo, particularly common in hoards of the period (see below, Chap. 16 and App. B, table B.2, #83–95).

The decade of the 1320s seems to have been a period of slow activity in the production of ducats, as the gold mint was authorized repeatedly to lend out its capital to other agencies.<sup>65</sup> The apparent reduction of the minting of ducats was

<sup>62</sup>16 July 1321: ASV, SN, R. 16, f. 68.

<sup>63</sup>19 Oct. 1321: ASV, Cinque Savi alla Mercanzia, R. 22bis (Cap. degli Estraordinarii), f. llv. The capitulary gives the minimum weight as "grossos 9 denarios 3 grossos" per mark, an apparent error for 95 3d grossorum. 27 Oct. 1321: PMV, 70–71, #77.

<sup>64</sup>25 Oct. 1321: ASV, MC Fronesis, f. 81v. 26 Nov. 1321: PMV, 71–73, #79. See below, Chap. 7, for the officials of clipped grossi.

<sup>65</sup>Loans to doge—1323: LCR, 1:255, #395. For galleys—18 June 1323: PMV, 74–75, #81; 19 June 1324: PMV, 75, #82. For the patriarch of Aquileia—13 Oct. 1323: ASV, MC Fronesis, f. 120. For

probably connected to the price of gold, which in these years reached its highest value in relation to silver.<sup>66</sup>

The era witnessed an unusually high level of irregularities in coinage both outside the mint and within it. In 1310, the duke of Crete banned the import there of counterfeits of Venetian grossi manufactured in Chios and ordered their confiscation.<sup>67</sup> A series of accusations were brought against some Venetians in 1324 and 1325 for operating a mint in Romagna which counterfeited Venetian piccoli as well as a variety of other regional coinages.<sup>68</sup> It was no doubt in response to this case and others like it that the Forty adopted a series of laws in 1328 which forbade Venetian citizens and residents from operating any foreign mint as contractors and from making or owning any implements of minting other than those of the zecca.<sup>69</sup>

Widespread corruption within the mint was exposed in a series of prosecutions between 1325 and 1330. Two involved casters who were accused of taking 10 marks (2.4 kg) and 26 marks (6.0 kg) of silver, respectively.<sup>70</sup> One workman who took 7 marks of silver was only deprived of office and required to make restitution, but another who substituted copper filings for silver had his right hand amputated and was banished.<sup>71</sup> The blacksmith of the mint was convicted of various thefts and was hanged and his body left hanging in front of the mint around the clock as an example to future malefactors; his accuser was granted the right to bear arms out of fear of reprisals from his family.<sup>72</sup> Two mintmasters were implicated in these activities and removed from office.<sup>73</sup> One of them, Donato Bobizo, had had a history of illegal actions before going to work at the mint: he had been excommunicated for prohibited commerce with

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Justinopolis (Capo d'Istria): 5 May 1325: ASV, MC Fronesis, f. 153, and succeeding years through 1343, ASV, AC Brutus and AC Philipicus passim through f. 102v. For Slavonia—5 Aug. 1326: *PMV*, 75, #83. For grain—30 Nov. 1326: *PMV*, 76, #84; 13 Oct. 1327: ASV, AC Brutus, f. 70v. For armaments—9 Apr. 1329: ASV, AC Brutus, f. 101v. See Reinhold C. Mueller, *The Procuratori di San Marco and the Venetian Credit Market* (New York, 1977), 24 n. 35, for the legal basis of this transfer.

<sup>66</sup>Spufford, *Money and Its Use*, 271–72. There are insufficient published hoards of ducats from this period to allow any comparison of their production on the basis of finds; see below, Chap. 16.

<sup>67</sup>21 Sept. 1319: Paola Ratti Vidulich, ed., *Duca di Candia: Bandi (1313–1329)*, FSV, 1st sec. (Venice, 1965), 90, #245.

<sup>68</sup>6 May 1324: ASV, AC Raspe, R. 3641/1, f. 1v. 4 Jan. 132[5]: ASV, AC Raspe, R. 3641/1, f. 12. 13 Feb. 132[5]: ASV, AC Raspe, R. 3641/1, f. 13v.

<sup>69</sup>1328: CMA, ff. 22–23. 20 Dec. 1328: NMC, 194, #255.

<sup>70</sup>29 Oct. 1326: ASV, AC Raspe, R. 3641/1, f. 34. 4 Sept. 1330: ASV, GR, R. 3, f. 60v.

<sup>71</sup>23 Nov. 1328: ASV, AC Raspe, R. 3641/1, f. 63. 15 Feb 132[9]: ASV, AC Raspe, R. 3641/1, f. 63v.

<sup>72</sup>20 Mar. 1329: ASV, AC Raspe, R. 3641/1, f. 66. 30 Apr. 1329: ASV, AC Brutus, f. 102.

<sup>73</sup>16 Aug. 1328: ASV, AC Brutus, f. 86. 2 Feb. 132[9]: ASV, AC Brutus, f. 98.

Egypt in 1324 and fined in 1326 for passing counterfeit coins as a moneychanger.<sup>74</sup> He fled Venice and was given special protection to come back and settle his debts, but not without being physically attacked and robbed by the father of one of his former colleagues as mintmaster in retribution for losses suffered by the son.<sup>75</sup> By this time the mint was certainly ready for a major reform.

<sup>74</sup>1 Oct. 1324: *LCR*, 1:260–61, #415. 22 Sept. 1326: ASV, AC Raspe, R. 3541/1, f. 32.

<sup>75</sup>14 Aug. 1328: ASV, AC Brutus, f. 86. 7 Sept. 1328: ASV, AC Raspe, R. 3641/1, f. 60v. 30 July 1329: ASV, GR, R. 3, f. 4v, #52.



Table B.2. (continued)

## 61. Gradac, Tetovo, Macedonia 1280

## Grosso

P. Ziani	21
J. Tiepolo	62
M. Morosini	8
R. Zeno	110
L. Tiepolo	70
J. Contarini	38

341 coins known of total of 4,500. Others Serbian grossi of Urosh I and Stefan Dragutin.

Source: Dispersed and unpublished; I am grateful to Katerina Hristovska for communicating the contents of the hoard to me.

## 62. Zrancha, Pazardshik, Bulgaria c. 1275

## Grosso

L. Tiepolo	21
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Source: T. Gerassimov, "Trésors monétaires découvertes en Bulgarie en 1960 et 1961," *Bulletin de l'Institut d'Archéologie [Sofia]* 26 (1963): 266.

## 63. Verona, Italy c. 1290

## Grosso

P. Ziani	64
J. Tiepolo	225
Ma. Morosini	69
R. Zeno	1,225
L. Tiepolo	710
J. Contarini	706
G. Dandolo	441

3,477 coins total. Others Serbian grossi.

Source: Giuseppe Gerola, "Numismatica serbo-veneta: I 'grossi di Brescova' di un ripostiglio veronese," *Rassegna numismatica* 27 (1930): 177-82.

## 64. Ayios Andreas, Attica, Greece c. 1290

## Grosso

R. Zeno	3
L. Tiepolo	4
J. Contarini	6
G. Dandolo	6

Found along with 1 fragmentary grosso in excavation of Monastery.

Source: Mina Galani-Krikou, "Symbole sten Kyklophoria Venetikon Grossi 13'-14' AI ston Elladiko Choro," *Archaiologika Analekta ex Athenon* 21 (1988): 163-84.

## 65. Salzburg, Austria c. 1300

## Grosso

P. Ziani	5
J. Tiepolo	8
R. Zeno	45

(continued)

**Table B.2.** (*continued*)

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L. Tiepolo	29
J. Contarini	35
G. Dandolo	86

28,344 coins total. Others pfennigs of Austria, Bavaria.

Source: Bernhard Koch, "Ein Mittelalterlicher Münzschatz aus der Stadt Salzburg," *Numismatische Zeitschrift* 93 (1979): 45–53.

66. Delphi, 1933 c. 1305

Grosso

J. Tiepolo	1
Ma. Morosini	1
R. Zeno	3
L. Tiepolo	2
J. Contarini	2
G. Dandolo	8
P. Gradenigo	1

57 coins total. Others mainly deniers tournois of Greece.

Source: Metcalf, "The Currency of *Deniers Tournois* in Frankish Greece," *Annual of the British School of Archaeology at Athens* 55 (1960): 54–55, #C.

67. Carribollo, Vallonara, Italy c. 1310

Grosso

P. Ziani	6
J. Tiepolo	12
Ma. Morosini	3
R. Zeno	60
L. Tiepolo	30
J. Contarini	42
G. Dandolo	62
P. Gradenigo	102

921 coins total. Others mainly of Merano and Serbia.

Source: Q. Perini, "Il ripostiglio di Carribollo," *Bollettino di numismatica e di arte della medaglia* 3 (1905): 34–38; Saccocci, "Circolazione," 281, #1.

68. Bassano, Italy c. 1310

Grosso

P. Ziani	1
R. Zeno	3
L. Tiepolo	1
J. Contarini	2
G. Dandolo	2
P. Gradenigo	4

94 coins total. Others mainly of Merano and Serbia. May have been parcel of Carribollo hoard despite reported find spot.

Source: G. Gerola, "Un piccolo ripostiglio di monete Veneziane e Meranesi," *Bollettino del Museo Civico di Bassano* 2, no. 4 (1905): 101–2.

(*continued*)

Table B.2. (continued)

## 69. Rosola, Modena, Italy c. 1310

## Grosso

L. Tiepolo	1
J. Contarini	2
G. Dandolo	3
P. Gradenigo	4

1,300 coins total. Others northern Italy, Serbia.

Source: D. Celestino Cavedoni, "Ragguaglio storico del ritrovamento di un ripostino di monete d'argento," *R. Accademia di Modena, Memorie* 3 (1860): 1-19.

## 70. Concorezzo, Monza, Italy c. 1310

## Grosso

Ma. Morosini	?
R. Zen	?
L. Tiepolo	?
J. Contarini	?
P. Gradenigo	?

15 Venetian grossi among 6 gold and 292 coins. Others gros tournois of Philip IV of France and soldi and grossi of Milan.

Source: "Ripostiglio di monete medioevali a Concorezzo," *RIN* 26 (1913): 570; Saccocci, "Circolazione," 286, #9.

## 71. Dobrište, Tetovo, Macedonia c. 1310

## Grosso

P. Ziani	1
J. Tiepolo	1
R. Zeno	2
L. Tiepolo	7
J. Contarini	6
G. Dandolo	4
P. Gradenigo	5

Approx. 900 coins total. Others chiefly Serbian grossi.

Source: Mirnik, *Coin Hoards*, 107, #471.

## 72. Usje, Skopje, Macedonia c. 1310

## Grosso

J. Contarini	2
G. Dandolo	3
P. Gradenigo	7

96 coins in total. Others Serbian grossi.

Source: Vujadin Ivanišević, "Hoard of Serbian and Venetian Coins from Usje (Fourteenth Century)," *Macedonian Numismatic Journal* 2 (1996): 113-38.