

# NOTAE NUMISMATICAE

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# ZAPISKI NUMIZMATYCZNE



Tom XV

MUZEUM NARODOWE W KRAKOWIE  
SEKCJA NUMIZMATYCZNA  
KOMISJI ARCHEOLOGICZNEJ PAN  
ODDZIAŁ W KRAKOWIE

Kraków 2020

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Dear Readers,

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## Mints Locations and Chronology of Gnaeus and Sextus Pompey's Bronze Coinage (RRC 471, 478 and 479): A Die Axes Study

**ABSTRACT:** The coinage of Pompey the Great's sons has long attracted the attention of numismatists and historians trying to reconstruct a detailed chronology of their activities. One of the problems examined was the location of the places they minted coins. This article tries to indicate the possible locations of mints producing Gnaeus' and Sextus' bronze coinage (RRC 471, RRC 478, RRC 479) based on the analysis of the die axes of 794 coins and attempts to interpret the results based on local traditions regarding this aspect of coin morphology. The results show that RRC 471 was most likely minted in Corduba. The unusual die alignment of the RRC 478 indicates that it may have been minted not in Spain or Sicily, but in Achaia or Bithynia. It is, however, difficult to reconcile this with the geographical distribution of the finds that points to Sicily. Nonetheless we should probably move dating of this type until after the signing of the Treaty of Misenum in 39 BC. The die axes of the RRC 479 is consistent with traditions of most Sicilian mints. The exception to this is one of the series whose different rotation pattern indicates production in one of only two Sicilian mints (Panormos or Centuripae) or one of the several South Italian cities (most probably Rhegium).

**KEY WORDS:** die axis study, Gnaeus Pompey, Roman numismatics, Roman Republican coinage, Sextus Pompey

**ABSTRAKT:** *Lokalizacja mennic i chronologia brązowych monet Gnejusza i Sekstusa Pompejuszów (RRC 471, 478 i 479). Studium rotacji stempli*

Mennictwo synów Pompejusza Wielkiego od dawna przyciągało uwagę numizmatyków i historyków starających się zrekonstruować szczegółową chronologię ich działań. Jednym z badanych problemów była lokalizacja mennic, w których bito monety. W niniejszym artykule autor próbuje wskazać możliwe miejsce produkcji brązowych monet Gnejusza i Sekstusa Pompejuszów (RRC 471, RRC 478, RRC 479), opierając się na wynikach analizy orientacji stempli 794 monet i porównując je z lokalnymi tradycjami w zakresie tej cechy morfologicznej.

Wyniki wskazują, że najbardziej prawdopodobnym miejscem wybicia monet typu RRC 471 była Corduba. Niezwykła orientacja stempli monet należących do typu RRC 478 wskazuje, że mogły być one produkowane nie w Hiszpanii czy na Sycylii, ale w Achai lub Bitynii. To jednak stoi w sprzeczności z geograficzną dystrybucją znalezisk, wskazującą na mennicę na Sycylii. Niemniej jednak powinniśmy prawdopodobnie przesunąć datowanie tego typu na okres po podpisaniu porozumienia w Misenum w 39 r. p.n.e. Orientacja stempli typu RRC 479 jest zgodna z tradycjami większości mennic sycylijskich. Wyjątkiem jest tu jedna seria tych monet, której wzorzec rotacji osi wskazuje na jedną z dwóch mennic sycylijskich (Panormos lub Centuripae) lub któreś z kilku miast południowoitalskich (najprawdopodobniej Rhegion).

**SŁOWA KLUCZOWE:** analiza stempli, Gnejusz Pompejusz, numizmatyka republikańska, numizmatyka rzymska, Sekstus Pompejusz

## INTRODUCTION

Gnaeus and Sextus Pompey, sons of Pompey the Great, were thorns in the side of the Caesarians for a number of years. During their initially joint operations, continued after Gnaeus' death by Sextus in Spain, for a short time in Massalia (Marseille) and then in Sicily they minted several types of coins to pay for their activity. These were in gold (RRC 511/1), silver (RRC 469, RRC 470, RRC 477, RRC 483, 511/2–4) and bronze (RRC 471, RRC 478, RRC 479). One of the aspects of the research on their coins is an attempt to identify the mints which they were produced in.<sup>1</sup> This, in turn, combined with the information we draw from written sources, can help to establish a detailed chronology of their actions, especially

<sup>1</sup> LAFFRANCHI 1917: 21; BAHRFELDT 1918: 157; URLICH-BANSA 1954: 50–53; BUTTREY JR. 1960a: 86–87; IDEM 1960b; CAMPO 1973: 63; CRAWFORD 1974: 487; MORAWIECKI 1983: 62; IDEM 1989: 70; AMELA VALVERDE 1990–1991: 189–192; IDEM 2000a; IDEM 2000b: 112, 116; IDEM 2015; LOWE 2002: 80–81; MARTINI 1989: 65; IDEM 1995: 42–43; BELTRÁN MARTÍNEZ 1949: 248; GRANT 1969: 22, 455; KOPIJ 2009: 91, 97; IDEM 2017: 178–182; FERREIRO LÓPEZ 1993: 413; VILLARONGA 1987: 240; RIPOLLÈS 1982: 130; VILLARONGA AND BENAGES 2011: 689–690; WOYTEK 2003: 555; BURNETT, AMANDRY AND RIPOLLÈS 1992: 19 and 38.

those of Sextus, including their propaganda activities.<sup>2</sup> In this study, the patterns of die axes have been analysed and compared with local traditions, adding another argument in the discussion on the localisation of mints and chronology of Gnaeus and Sextus Pompey's bronze coins.

The first type of coins in question (RRC 471; Fig. 1)<sup>3</sup> was minted by Gnaeus Pompey in Spain sometime between autumn of 47 and the battle of Munda in March 45.<sup>4</sup> The only researcher who believes that the production of these coins continued after the death of Gnaeus is Martini, who has divided this issue into 4 series, the last three of which were minted after the Battle of Munda by Sextus Pompey in Spain, Massalia and Sicily.<sup>5</sup> Apart from his opinion, two mints are considered above all: Corduba and Carthago Nova.

The second type of coins in question (RRC 478; Fig. 2)<sup>6</sup> is co-signed by Sextus Pompey and Eppius. It is commonly dated to 45–44, the period of Sextus Pompey's independent activity on the Iberian Peninsula,<sup>7</sup> however not all scholars agree. The first doubts were expressed by Villaronga,<sup>8</sup> who noticed a small number of such coins in Spanish finds and collections. This might suggest that these coins were only minted during Sextus Pompey's stay in Massalia or Sicily. This opinion was supported by Martini,<sup>9</sup> who additionally claimed that stylistic aspects also speak for it. Furthermore, he listed a number of finds of this type from Morgantina that may also support the Sicilian provenance. As a result the Italian scholar dates the type precisely from time between the arrival of Sextus on the island and the first successes over Salvidienus Rufus. A number of scholars emphasized, however, that the weighting standards used are more suited to the Spanish territories.<sup>10</sup> Their opinion was challenged by Martini<sup>11</sup> and Woytek<sup>12</sup> who stated that RRC 478 differs morphologically from Pompey the Younger's coins minted in Spain (RRC 471).

<sup>2</sup> E.g. BUTTREY JR 1960b; MORAWIECKI 1989: 58–122; AMELA VALVERDE 1990–1991: 189–192; IDEM 2000b: 112, 116; IDEM 2015; WOYTEK 1995; IDEM 2003; TRUNK 2008; KOPIJ 2011; IDEM 2015; IDEM 2017; WELCH 2012; BERDOWSKI 2014; IDEM 2015; IDEM 2017a; IDEM 2017b.

<sup>3</sup> As. *Obverse*: laureate head of Janus. *Reverse*: prow right (legend: CN·MAG IMP).

<sup>4</sup> LAFFRANCHI 1917: 21; GRANT 1969: 22; BELTRÁN MARTÍNEZ 1949; CRAWFORD 1974: 481; AMELA VALVERDE 1990: 185–188; IDEM 2000a; IDEM 2015. All dates BC unless stated otherwise.

<sup>5</sup> MARTINI 1995: 38–39.

<sup>6</sup> RRC 478/1a: As. *Obverse*: laureate head of Janus; in centre, altar (legend: MAGNVS/MAGNVS/MAGNV/MAGN and PIVS·IMP·F). *Reverse*: prow right (legend: EPIVS LEG).

RRC 478/1b: As. *Obverse*: laureate head of Janus (legend: MAGNVS/MAGNVS/MAGNV/MAGN and PIVS·IMP·F). *Reverse*: prow right (legend: EPIVS LEG).

<sup>7</sup> LAFFRANCHI 1917: 21; BUTTREY JR. 1960b: 86–87; CRAWFORD 1974: 487; MORAWIECKI 1989: 70; IDEM 1983: 62; AMELA VALVERDE 1990–1991: 189–192; IDEM 2000b: 112; IDEM 2015; LOWE 2002: 80–81.

<sup>8</sup> VILLARONGA 1987: 240.

<sup>9</sup> MARTINI 1989: 65; IDEM 1995: 42–43.

<sup>10</sup> AMELA VALVERDE 1990–1991; IDEM 2000b; LOWE 2002.

<sup>11</sup> MARTINI 1995: 113.

<sup>12</sup> WOYTEK 2003: 501–502.

They should therefore be regarded as having been minted in Sicily and dated from late 43.

It is commonly considered that the production of the third type of the coins in question (RRC 479; Fig. 3)<sup>13</sup> started later than RRC 478. Laffranchi<sup>14</sup> divided this type into two issues – Spanish and Sicilian. He believed that the production of these coins began in Spain and continued after Sextus Pompey's 'headquarters' moved to Sicily.<sup>15</sup> Others believe that this type was minted only in Sicily.<sup>16</sup> Woytek argues that this issue was produced between 42–38, while Martini dates it from October 39 (signing of the Treaty of Misenum) to 36. Controversy over the dating of these coins naturally translates into the question of the location of the mint or mints striking them. If they were produced in Spain, the natural indications are Corduba<sup>17</sup> and Carthago Nova.<sup>18</sup> If, on the other hand, they were minted also or only in Sicily, the most logical location is Messana, which was the main base of Sextus Pompey on the island.<sup>19</sup> We do not know, however, if these coins were not produced in several Sicilian cities. The minting of the first two of the Martini series is located "in the east of the island".<sup>20</sup>

## METHOD

In 1996 François de Callataÿ published the results of his analysis of die alignments in the Greek coinage, noting that longstanding traditions have developed in some regions regarding this aspect of coin morphology.<sup>21</sup> Generally, there is no such tradition in Roman republican coinage.<sup>22</sup> However, for some types the regularity is observed.<sup>23</sup> This stems from the fact that some coins were not produced in the Roman mint, particularly after the outbreak of the civil wars in 49. It is assumed that this is a result of the moneyers using the services of local workshops and craftsmen, which operated according to established traditions.<sup>24</sup> Despite some interesting results,<sup>25</sup> however, this method is not fully reliable, as i.e. Crawford has already

<sup>13</sup> As. *Obverse*: laureate head of Janus, with features of Pompey the Great (legend: MAGNVS/MAGNV/ MAGN/MGN). *Reverse*: prow right (legend: PIVS IMP).

<sup>14</sup> LAFFRANCHI 1917: 22.

<sup>15</sup> Cf. CRAWFORD 1974: 487; MORAWIECKI 1983: 62; IDEM 1989: 71.

<sup>16</sup> MARTINI 1989: 25–26; IDEM 1995: 49–54; WOYTEK 2003: 499–505.

<sup>17</sup> GRANT 1969: 23–24; AMELA VALVERDE 1990–1991: 190; IDEM 2000b: 107–108, 113.

<sup>18</sup> BELTRÁN MARTÍNEZ 1949: 248; AMELA VALVERDE 1990–1991: 190; IDEM 2000b: 107–108, 113.

<sup>19</sup> LAFFRANCHI 1917: 22–23; MARTINI 1995: 49–54.

<sup>20</sup> *Ibidem*: 49–54.

<sup>21</sup> DE CALLATAÿ 1996.

<sup>22</sup> Except in the 60s of the 1<sup>st</sup> century BC, when a certain regularity is visible in the Roman mint and the moneyers seems to choose the 6h axis. After that, however, the lack of regularity returns (JEHNE 2016: 295).

<sup>23</sup> Cf. JEHNÉ 2016; HOLLSTEIN 2016; IDEM 2017; WOYTEK 2016.

<sup>24</sup> JEHNÉ 2016: 298–302.

<sup>25</sup> HOLLSTEIN 2016; IDEM 2017; WOYTEK 2016.

briefly pointed out.<sup>26</sup> Therefore, it is crucial to compare the results of the analysis with the conclusions of a broader view of the problem.

The study therefore analysed the orientation of the RRC 471, the RRC 478 and the RRC 479 die axes based on a database compiled from the CRRO web catalogue<sup>27</sup> and the catalogue published by Martini.<sup>28</sup> The database not only considers the basic types according to Crawford's typology, but also groups and series distinguished by Martini on the basis of die combinations as well as morphological similarities of flans and stylistic similarities of the effigy.<sup>29</sup>

The database created in this way was the basis for quantitative analysis of the die orientations of individual coin types.<sup>30</sup>

## RESULTS

A total of 794 items were covered by the analysis, for which the die axis was determined. 637 of them belonged to the type RRC 479, 89 to the type RRC 471 and 69 to the type RRC 478.

As can be seen in Table 1 and Chart 1, the analysis shows that the die axes of the RRC 471 minted by Pompey the Younger in Spain are random.

As can be seen in Table 2 and Chart 2, 61 out of 69 (or 88.4%) RRC 478 specimen in database show the die axis at 9h. It also seems that there are no differences between the series (A–C)<sup>31</sup>, which Martini distinguished, as can be seen in Table 3. All three are dominated by the 9h die axis.

As can be seen in Table 4 and Chart 3, 575 out of 637 (or 90.3%) RRC 479 specimen in database show the die axis at 12h.

In this case, however, there are differences between the series distinguished by Martini (Series 1–4). As can be seen in the Table 5, Martini's series 1–3 show similar proportions of the die axes with 12h dominance. In the case of Martini's series 4, this dominance is not visible and the die alignment seems random. These differences are particularly well visible on Charts 4–7 showing the cumulative total, where the curve for Martini's series 4 differs significantly from the curves for other series.

A comparison of the cumulative curves of the RRC 479 Martini's series 4 and the RRC 471 (Chart 8) shows that the die axes of both are similarly random and no patterns emerge.

<sup>26</sup> CRAWFORD 2012: 339.

<sup>27</sup> <http://numismatics.org/crro/>

<sup>28</sup> MARTINI 1995: 94–186.

<sup>29</sup> For RRC 478, series A–D (where D is made up of unreadable coins that could not be assigned to other groups); for RRC 479 groups 1–4 with subgroups (1A–F – where F is made up of unreadable coins that could not be assigned to other subgroups; 2A–B).

<sup>30</sup> Dataset available online at DOI: 10.5281/zenodo.4501164.

<sup>31</sup> Series D is not included here as it consists of illegible A–C series specimen.

## DISCUSSION

The absence of any pattern regarding the die axes of the RRC 471 corresponds to the tradition of mints located in Eastern Spain (both *Hispania Citerior* and *H. Ulterior*).<sup>32</sup> Some notable exceptions relevant to these considerations should be highlighted, however. Also coinages of Corduba,<sup>33</sup> Obulco<sup>34</sup> and Castulo<sup>35</sup> show a random die alignment, at least periodically. As we know from the works of ancient writers, Pompey the Younger operated mainly in the southern part of Spain (*Hispania Ulterior*). He established his headquarters in Carthago Nova.<sup>36</sup> However, when the burden of action moved westwards, other cities also gained in importance, such as Corduba, whose garrison was commanded by Sextus Pompey during the Battle of Munda.<sup>37</sup> One of these two cities (i.e. Cartago Nova or Corduba) was usually indicated as the place of issue.<sup>38</sup> Interestingly, in general these cities are located in regions with different traditions in terms of die alignment.<sup>39</sup> Unfortunately, there are three exceptions to this trend mentioned above, one of which is Corduba. Thus, based solely on coin rotation analysis we are not able to exclude any of the two most popular possibilities. The geographic distribution of finds of this type (Map 1) shows a concentration in the vicinity of Corduba and Seville, where the main fights between Pompey the Younger and Caesar took place indicating Corduba as more probable place of issue. The low total number of registered finds in the database (20) does not allow, however, drawing binding conclusions on this basis. It is therefore more probable that RRC 471 was minted in Corduba than Carthago Nova. These conclusions may change as a result of subsequent finds of this type of coins.

The analysis of the of RRC 478 die axes reveals an interesting pattern, according to which almost 90% of copies (89.5% for Martini's group A, 92.3% for group B and 94.1% for group C, respectively) are oriented at 9h. This tendency has already been noted by Martini<sup>40</sup> and Woytek,<sup>41</sup> who claimed that these coins were minted in Sicily and not in Spain, as most numismatists saw it (cf. Introduction). However, it is worth noting that according to de Callataÿ neither Sicily nor Spain had a mint in the tradition of minting coins oriented with dies oriented this way.

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<sup>32</sup> DE CALLATAÿ 1996: 22–27.

<sup>33</sup> CHAVES TRISTÁN 1977: 102–119, 151–186.

<sup>34</sup> ARÉVALO GONZÁLEZ 1999: 119–131.

<sup>35</sup> Cf. GARCÍA-BELLIDO 1982.

<sup>36</sup> D.C.XLIII.20.1.

<sup>37</sup> *BHisp.* 3.1.

<sup>38</sup> GRUEBER 1910: 367; LAFFRANCHI 1917: 21; GRANT 1969: 22; VILLARONGA 1987: 138–139; CRAWFORD 1974: 481; AMELA VALVERDE 1990–1991: 186–188; IDEM 2000a: 382.

<sup>39</sup> DE CALLATAÿ 1996: 26–27.

<sup>40</sup> MARTINI 1995: 113–114.

<sup>41</sup> WOYTEK 2003: 555.

De Callatay noted only a few mints, with a tradition of minting coins with the die axes at 9h: Athens, Samos, Cyzicus and Heraclea.<sup>42</sup> It should be made clear that coins minted in this way were mainly produced in times well before the second half of the first century BC and mostly only for some specific issues. However, the uniqueness of this feature, which does not appear neither on other types of Sextus Pompey's coins nor in the Roman coinage of this period (49–31),<sup>43</sup> encourages speculation about the place of issue of these coins. As I wrote in the introduction, researchers believe that RRC 478 was minted in one of three places: Spain, Massalia or Sicily, the main areas of activity of Sextus Pompey before the Battle of Naulochos in 36. However, it should be remembered that in addition to this, Sextus Pompey also operated in Sardinia and Corsica, in the south of the Apennine Peninsula, and as a result of the Treaty of Misenum he received Achaia. Moreover, after leaving Sicily until his death in 35, he was still operating in north-western Asia Minor.<sup>44</sup> With this in mind, we should consider whether we should not move the dating of this coin to the period after signing the Treaty of Misenum. In this context, we should reflect on the presence of the name of *legatus* Eppius on the coin. In a recently published article, Augier argues that Sextus was only given the right to appoint legates in the Treaty of Misenum.<sup>45</sup> If that was the case, he could not have minted a coin with the name of that office before 39.<sup>46</sup>

Based on scarce source material,<sup>47</sup> it is usually believed that Sextus Pompey never took control of Achaia.<sup>48</sup> According to Appian the delay was caused by tax collection. Antony demanded that Pompey pay the tribute owed to him by Achaian cities or wait until he collected it himself. It should be remembered that the vast majority of written sources usually describe the activities of Sextus Pompey very briefly. It is therefore possible that we do not know the details of the actions he took before he started protesting that Antony was violating the treaty. However speculative it may be, Sextus may have sent his legate Eppius to take over the province from Antony and started protesting only after it turned out that it was not going as he expected. Eppius could also have start minting coins co-signed with his name at that time as a sign of establishing Sextus' jurisdiction

<sup>42</sup> DE CALLATAY 1996: 59–62, 66–72.

<sup>43</sup> Cf. Table 6.

<sup>44</sup> App.BC.V.133–142; D.C. XLIX.17–18.

<sup>45</sup> AUGIER 2018.

<sup>46</sup> Another legate of Sextus Pompey was L. Plinius Rufus (App.BC.V.97.405, 122.505, cf. BROUGHTON 1952: 405; IDEM 1986: 159). His office is confirmed by inscriptions from Lilybaeum (SILVESTRINI 2014). One of them he is also referred to as *praetor designatus*, which would indeed indicate its creation after the Treaty of Misenum.

<sup>47</sup> App.BC.V.77; D.C. XLVIII.46.1.

<sup>48</sup> HADAS 1966: 102–104; WELCH 2012: 264–265; BERDOWSKI 2015: 371–379.



over province under his legate. Unexpected troubles from Mark Antony and the final abandonment of the idea of taking control of Achaia quickly caused the minting of Eppius' coins to stop, which may explain their smaller number of specimen compared to other types. The small number of registered finds (only 10 registered findspots) and their significant territorial spread (cf. Map 1) do not in any way help to resolve this issue. The largest set of coinfinds of this type comes from Morgantina (25), which would indicate Sicily as the most likely place of issue.<sup>49</sup> At first glance, a comparison of the number of finds of RRC 478 and RRC 479 (as many as 192 found in Morgantina) shows a large disproportion and encourages further speculation. However, this difference disappears when we take into account the size of both issues proxied by the number of dies distinguished by Martini (193 obverse dies for RRC 479 and 18 dies for RRC 478). The overall low number of registered finds shows that the state of research is insufficient to definitively answer the question of the place of production, it nevertheless reduces the probability of placing the mint outside Sicily. It is theoretically possible that Eppius minted coins in Achaia, but he had to evacuate it quickly, taking most of the production with him. Such circumstances of production would also explain the relatively small issue. This is pure speculation, however. The presence of the legate L. Plinius Rufus in Sicily also shows that the subordinates of Sextus did not have to be outside the island to bear this title.

This, however, is not the only possible explanation for the unique die axes of the RRC 478 type.<sup>50</sup> For usually no great importance is attached to the year or so of Sextus Pompey's activity between leaving Sicily and his death in Miletus. It is, however, worth noting not only the paragraph of Appian, who writes that *Pompeius took Nicaea and Nicomedia, from which he obtained large supplies of money, and his strength was augmented in all respects with a rapidity that exceeded his expectations*<sup>51</sup> but also the list of people who remained loyal to him at this point, including: Caius Cassius Parmensis (Q. 43, Proq. 42),<sup>52</sup> Quintus Nasidius,<sup>53</sup>

<sup>49</sup> BUTTREY JR. 1989: 126, 153. Finds of Sextus Pompey's bronze coins are also briefly discussed in CRAWFORD 2015.

<sup>50</sup> Table 6 shows the percentage share of 9h orientation (including 8/9 and 9/10) in the Roman coinage between 49 and 31 BC. No type shows a pattern like RRC 478, although there are some that show a relatively high percentage of 9h die axes like: RRC 509 (with 44.44%), RRC 451 (with 28.57%), RRC 521 with (26.47%). Particularly for RRC 509, a more detailed analysis seems reasonable in the future since the total of just 18 specimen in the database may distort the analysis results.

<sup>51</sup> App.BC.V.139.576 in the translation of Horace White (Appian. *Roman History, Volume IV: The Civil Wars, Books 3.27–5*. Translated by Horace White. Loeb Classical Library 5. Cambridge, MA: Harvard University Press, 1913).

<sup>52</sup> BROUGHTON 1952: 341, 360; IDEM 1986: 52.

<sup>53</sup> BROUGHTON 1952: 394, 423; IDEM 1986: 147.



Caius Sentius (Saturninus?),<sup>54</sup> Quintus (?) Minucius Thermus (Tr. pl. 62, Pr. 53?),<sup>55</sup> Caius Antistius Reginus,<sup>56</sup> Caius Fannius (Pr. 50?)<sup>57</sup> and last but not least Lucius Scribonius Libo (cos. 34).<sup>58</sup> Eppius is not on the list, but we must remember that it is a mere selection, and Appian himself writes about *other distinguished men of his party who were still with him as friends*. Given that Cyzicus – where a traditions of minting coins with die axes at 9h is noted – is not far from the Nicea and Nicomedia mentioned by the Greek historian, it is not excluded that RRC 478 was only minted in the north-eastern part of Asia Minor in 35 BC when Sextus Pompey hoped to establish his new base of operation there<sup>59</sup>. Such a location of the mint and dating – however tempting – would be even more difficult to explain in the light of finds from Morgantina.<sup>60</sup> Therefore, it should be rejected.

To sum up, RRC 478 was most likely minted in Sicily after the treaty of Misenum. Such a dating would correspond to Crawford's thought, expressed only very succinctly, who wondered whether after a few years Sextus Pompey had not abandoned the production of bullion coins in favour of bronze ones.<sup>61</sup> However, the mystery of the highly unusual die axis at 9h remains unresolved.

Finally, we can reflect on the results of the RRC 479 die axes analysis. For Martini's groups 1–3, they do not bring any revelations. The clear tendency to orient die axes at 12h is in line with the traditions of most Sicilian cities.<sup>62</sup> However, Martini's group 4 stands out from the rest, as it's die axes are random. This may mean that the coins of group 4 were minted in another mint, a mint with a different tradition. De Callatay listed only two Sicilian cities whose coins had no particular orientation of die axes: Centuripae and Panormos.<sup>63</sup> It is therefore possible that the coins belonging to Martini's group 4 were minted in one of these two mints.

However, it cannot be ruled out that Martini,<sup>64</sup> who believed that this issue could have been produced in one of the cities of southern Italy, was correct. Map 2 shows the South Italian mints without an established tradition regarding die axes. If Sextus Pompey minted coins from Martini's group 4 in any of them, the most likely

<sup>54</sup> Probably identified with C. Sentius, cf. BROUGHTON 1952: 496; IDEM 1986: 191.

<sup>55</sup> Maybe identified with Q. Minucius Thermus, cf. BROUGHTON 1952: 171, 194, 228, 238, 243, 151, 262, 351.

<sup>56</sup> BROUGHTON 1952: 231, 238, 244, 252; IDEM 1986: 18.

<sup>57</sup> BROUGHTON 1952: 222, 262, 351, 365; IDEM 1986: 90.

<sup>58</sup> BROUGHTON 1952: 269, 282, 451, 614; IDEM 1986: 187.

<sup>59</sup> Although it must be noted that as far as we know Sextus' attempts to capture Cyzicus were unsuccessful, cf. App.BC.V.137.

<sup>60</sup> BUTTREY JR. 1989: 126, 153.

<sup>61</sup> CRAWFORD 2012: 337.

<sup>62</sup> DE CALLATAY 1996: 32–39.

<sup>63</sup> *Ibidem*: 36.

<sup>64</sup> MARTINI 1995: 96.

choice would be Rhegion, Vibo Valentia or Petelia – especially the first two – as they are located closest to Sicily and could enter the sphere of Pompey's activity.

## CONCLUSIONS

The civil war period (49–31) was a time of turmoil, not only political, but also in terms of minting coins. The development of imperial coinage and activities covering different regions of the Mediterranean basin favoured minting chaos. As a result, for some types of coins we do not know the mint. So far, attempts to identify them involved analyses of written sources as well as stylistic, metrological and morphological analyses of coins and the geographical distribution of their finds. In recent years, mainly thanks to the project *Die Bedeutung der Stempelstellung für die Interpretation römisch-republikanischer Münzen. Lokalisierung von Münzstätten, Datierungen, Deutung von Münzbildern*<sup>65</sup> directed by Wilhelm Hollstein the results of the die alignments have also begun to be looked at. It seems that in some cases it may help to identify the mints or at least narrow down their possible locations.

Analysis of the coin rotation of the bronze coins of Gnaeus and Sextus Pompey shows that:

a) RRC 471 – the lack of an alignment indicates that they were most likely minted in Corduba,

b) RRC 478 – most researchers believe that they were minted in Spain, Massalia or Sicily. The unusual rotation at 9h (61 out of 69 copies in the database, i.e. 88.4%) would indicate that the coin was minted after the signing of the Treaty of Misenum (39) in Attica or in late 36–early 35 in Bithynia. These locations of the mints, however, do not explain the geographical distribution of finds that focus mainly on Sicily. In this case, the explanation of the unusual rotation remains a mystery. Nevertheless, in the face of Augier's arguments, the presence of the legate Eppius's name on the coin indicates that this type was minted after the signing of the Treaty of Misenum in 39,

c) 479 – the die axis at 12h (575 out of 637 copies in the database, i.e. 90.3%) is consistent with the tradition of most Sicilian mints. This is at least the case of 3 out of 4 series distinguished by Martini. However, group 4 has no specific alignment, that indicates that they were minted either in Centuripae or Panormos in Sicily, or in southern Italy (Rhegion, Vibo Valentia or Petelia).

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<sup>65</sup> <http://forschung.skd.museum/projekte/details/c/pC/a/show/project/79-die-bedeutung-der-stempelstellung-fuer-die-interpretation-roemisch-republikanischer-muenzen/>

Scholarship. I would also like to thank Dr Wilhelm Hollstein for providing me with the data gathered during the implementation of the project: *Die Bedeutung der Stempelstellung für die Interpretation römisch-republikanischer Münzen. Lokalisierung von Münzstätten, Datierungen, Deutung von Münzbildern* directed by him. I also thank the anonymous reviewers, whose comments helped me to reflect on some of the issues discussed in the article in more detail. Moreover, I would also like to thank Prof. Alicia Arévalo for her help in obtaining access to her book about the coins of Obulco.

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PLATE 1	<p>Fig. 1. As of Pompey the Younger (RRC 471). Source: gallica.bnf.fr / Bibliothèque nationale de France</p> <p>Fig. 2. As of Sextus Pompey and Eppius (RRC 478/1a). ©Trustees of the British Museum</p> <p>Fig. 3. As of Sextus Pompey (RRC 479). Source: gallica.bnf.fr / Bibliothèque nationale de France</p>
PLATE 2	<p>Table 1. Die axes of RRC 471 (N – number of specimen)</p> <p>Chart 1. Pareto chart of the RRC 471 specimen with determined die axes and cumulative total represented by the line</p> <p>Table 2. Die axes of RRC 478 (N – number of specimen)</p> <p>Chart 2. Pareto chart of the RRC 478 specimen with determined die axis and cumulative total represented by the line</p>
PLATE 3	<p>Table 3. Number of specimen of RRC 478 with certain die axis including Martini's division into 3 series. The colours highlight the differences in the number of copies (green for maximum, red for minimum)</p> <p>Table 4. Die axes of RRC 479 (N – number of specimen)</p> <p>Chart 3. Pareto chart of the RRC 479 specimen with determined die axis and cumulative total represented by the line</p>
PLATE 4	<p>Table 5. Number of specimen of RRC 479 with different coin rotations following Martini's division into 4 series</p> <p>Table 6. Highest percentages of 9h in Roman coinage minted between 49 and 31 BC. Based on data provided by W. Hollstein</p>
PLATE 5	<p>Chart 4. Pareto chart of the RRC 479 (Martini's Series 1) specimen with determined die axes and cumulative total represented by the line</p> <p>Chart 5. Pareto chart of the RRC 479 (Martini's Series 2) specimen with determined die axis and cumulative total represented by the line</p> <p>Chart 6. Pareto chart of the RRC 479 (Martini's Series 3) specimen with determined die axis and cumulative total represented by the line</p>
PLATE 6	<p>Chart 7. Pareto chart of the RRC 479 (Martini's Series 4) specimen with determined die axis and cumulative total represented by the line</p> <p>Chart 8. A comparison of the cumulative curves of RRC 479 Martini's Series 4 and RRC 471. Blue: RRC 479 series 4; orange: RRC 471</p>
MAPS	<p>Map 1. Finds of analysed coins based on data from Martini 1995</p> <p>Map 2. Mints in southern Italy without an established tradition of die axes according to de Callatay 1996: 36</p>



1



2



3



Die axis	N
12h	14
1h	5
2h	17
3h	5
4h	1
5h	7
6h	4
7h	5
8h	7
9h	15
10h	6
11h	3

Table 1

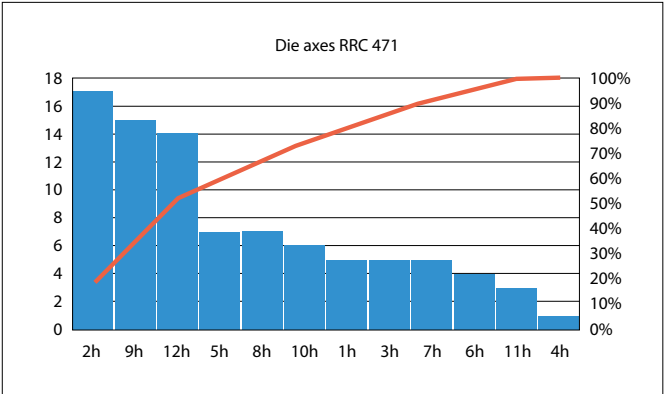


Chart 1

Die axis	N
12h	1
1h	0
2h	2
3h	1
4h	0
5h	0
6h	1
7h	0
8h	0
9h	61
9/10h	1
10h	1
11h	1

Table 2

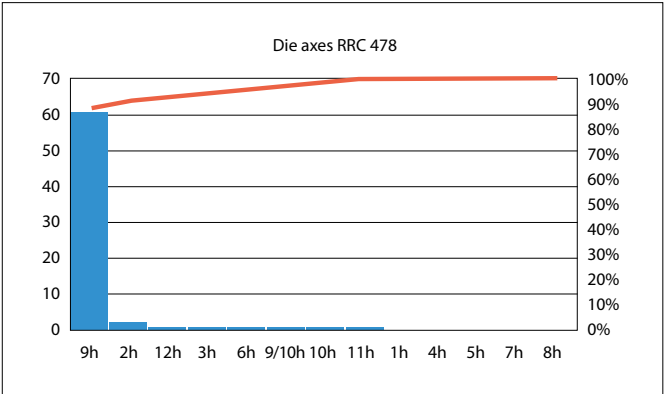


Chart 2



	RRC 478 A	RRC 478 B	RRC 478 C
12h	1	0	0
1h	0	0	0
2h	0	0	0
3h	1	0	0
4h	0	0	0
5h	0	0	0
6h	0	0	1
7h	0	0	0
8h	0	0	0
9h	17	24	16
9/10h	0	1	0
10h	0	1	0
11h	0	0	0

Table 3

Die axis	N
12h	575
12/1h	5
1h	6
2h	5
3h	4
4/5h	1
5h	3
6h	3
7h	7
8h	1
9h	4
10h	3
10/11h	2
11h	18

Table 4

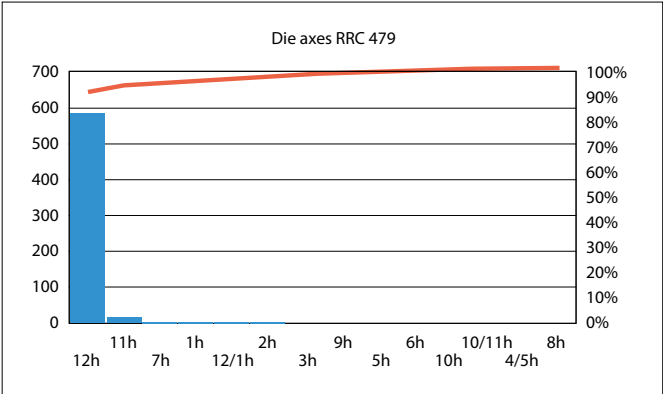


Chart 3

	RRC 479 S1	RRC 479 S2	RRC 479 S3	RRC 479 S4
12h	266	33	247	8
12/1h	1	0	1	3
1h	1	0	0	1
2h	0	0	0	5
3h	0	0	1	3
4/5h	0	0	0	1
5h	0	0	0	3
6h	0	0	0	3
7h	0	0	1	5
8h	0	0	0	1
9h	0	0	0	4
10h	0	0	1	2
10/11h	1	0	0	1
11h	8	1	4	2

Table 5

RRC no	% of 9h
509	44,44
451	28,57
521	26,47
471	23,81
488	22,64
518	18,92
525	18,18
460	17,65
452	17,05
461	17,02
534	17,02
497	14,29
542	13,89
515	13,64

Table 6

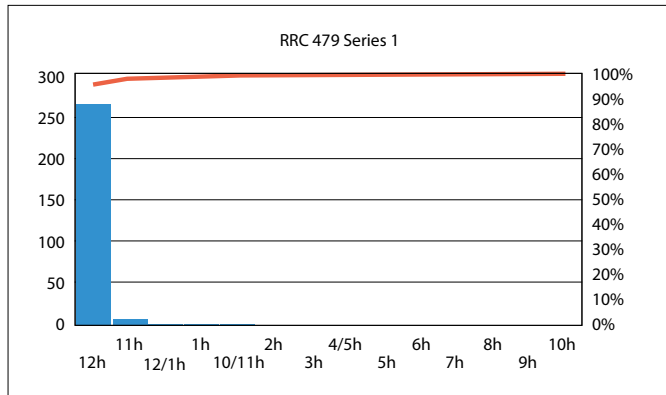


Chart 4

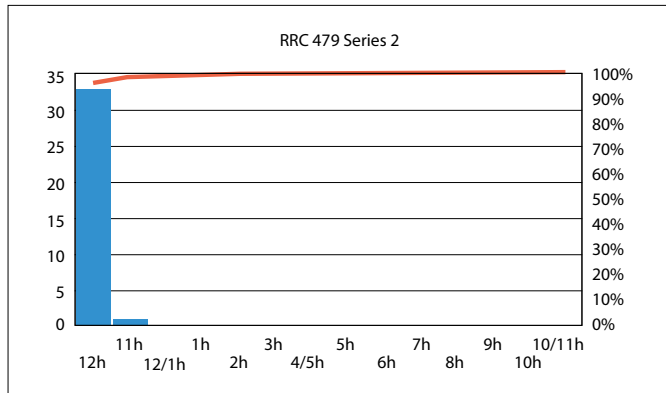


Chart 5

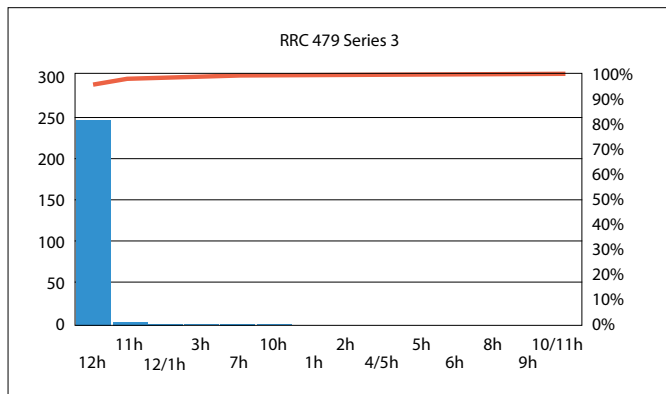


Chart 6

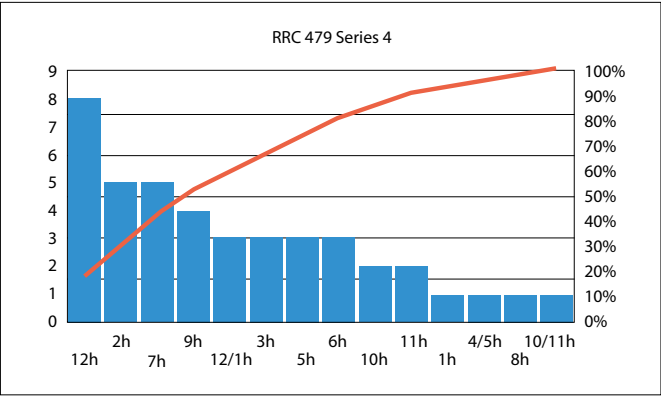


Chart 7

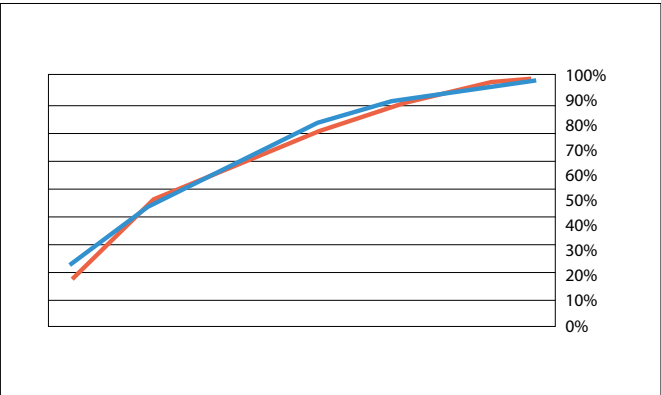


Chart 8



Map 1. Finds of analysed coins based on data from Martini 1995

Purple dots – RRC 471; yellow dots – RRC 478; red dots – RRC 479; orange square – RRC 471 and RRC 479; blue square – RRC 471 and RRC 479; grey squares – RRC 417, RRC 478 and RRC 479; white squares – RRC 478 and RRC 479



Map 2. Mints in southern Italy without an established tradition of die axes according to de Callataÿ 1996: 36