

# Establishing a dynasty in ideology and practice: The *aedes Vestae aurei* of Vespasian<sup>1</sup>

## 1 INTRODUCTION

When Vespasian came to power in AD 69, his sons Titus and Domitian were among his greatest assets. With Titus already 30 years old and Domitian in his late teens, Vespasian was—unlike both his rivals and his Julio-Claudian predecessors—well placed to establish a dynasty.<sup>2</sup> The advantages of this situation did not go unremarked. In a speech attributed to Titus, for example, Tacitus writes that ‘Neither legions nor fleets are as strong a fortification of imperial power as a great number of children’.<sup>3</sup>

Yet the fact alone of Vespasian’s children would not be enough to establish a Flavian dynasty; that task required the active promotion of his sons as worthy rulers. To this end, Vespasian granted both Domitian and (especially) Titus important titles, responsibilities, and

---

<sup>1</sup> This paper is offered in memory of Professor Ted Buttrey. Many people have offered help and advice throughout this project, and we extend our thanks to Andrew Burnett, François de Callataÿ, Johan van Heesch, Alicia Jimenez, Saskia Kerschbaum, Bill Metcalf, Federico Pastrone, Adi Popescu, Jen Trimble, Terry Volk, David Weidgenannt, and Bernhard Woytek. We would also like to thank Fran Stroobants (Brussels), Jesper Ericsson (Glasgow), Volker Heuchert (Oxford), Helle Horsnaes (Copenhagen), and Klaus Vondrovec (Vienna), who kindly supplied us with images of coins in their collections. Publication of this article was supported in part by a grant from the Baldrige Book Subvention fund through the Humanities Institute of the College of Humanities and Sciences at the University of Montana. Standard abbreviations are used; additional abbreviations are listed at the start of the catalogue. References to *RIC* without further qualification are to *RIC* II.1<sup>2</sup>, and unless a page number is supplied, to the coin types of Vespasian.

<sup>2</sup> Neither Galba nor Otho had natural children who were alive in 69; Vitellius had one son and one daughter, but neither was yet adult (Morgan 2006: 149).

<sup>3</sup> Tac., *Hist.* 4.52: ‘non legiones, non classis proinde firma imperii munimenta quam numerum liberorum’; cf. Tac., *Hist.* 2.77; Joseph., *BJ* 4.596–9.

opportunities for public recognition.<sup>4</sup> He also advertised their status as his heirs and co-rulers in a broad range of media, from statues, to inscriptions, to coins.<sup>5</sup>

In this article, we shed new light on Flavian dynastic ideology by examining an important and hitherto underappreciated component of attempts to establish Titus and Domitian as viable heirs: an aureus type depicting the *aedes Vestae* (Figs. 1–2) that was the first precious metal issue struck with obverse portraits showing all three Flavian men. In the first section we approach the type from an ideological perspective. We offer a new interpretation and suggest why this type was suitable to be shared between all three members of the imperial house. In the second section, we turn to more practical considerations. We use a die study of the *aedes Vestae* type to elucidate the transformation of Roman imperial coin production during the Flavian period. The two parts of the paper together illustrate the ideological and practical aspects of minting a coinage to propagate a dynasty.

The evidential basis of this paper is a die study of 234 *aedes Vestae* aurei—as well as previously unpublished denarius versions of the type—as set out in the catalogue provided in the appendix.<sup>6</sup> A die study is a numismatic method that attempts to identify the individual

---

<sup>4</sup> For example, Titus shared in Vespasian’s Judaeian triumph, amassed seven consulships and fourteen imperial acclamations before the death of his father, and could be described as the ‘partner and even protector of imperial power’ (Suet., *Tit.* 6.1: ‘participem atque etiam tutorem imperii’). Domitian, though the younger brother, was acclaimed as Caesar and Princeps Iuventutis, and, in his role as *praetor urbanus consulari potestate* in 70, acted as his father’s regent in Rome before the latter’s return from the East.

<sup>5</sup> See e.g., Seelentag 2010; Wood 2016; Levick 2017: 201–12.

<sup>6</sup> Material for the die study was collected from major public collections, both published and unpublished, published coin hoards, and auction sales catalogues up to October 2022. The 234 aurei in the catalogue were struck from 65 obverse dies and 37 reverse dies. The estimated coverage of the sample (calculated according to the formula of Esty 2006: 359) for obverse dies is 91 per cent, and for reverse dies 95 per cent; this suggests that the probability of any new coin being struck from a new obverse die is only about 9 per cent, and 5 per cent from a new reverse die. The full statistics of the die study, using the formulae of Esty 2006 as updated by Esty 2011, are as follows: for series *r*, obverses:  $n = 188$ ,  $d = 55$ ,  $d_l = 17$ ,  $D_{est} = 77 \pm 10$ ; for series *r*, reverses:  $n = 188$ ,  $d = 18$ ,  $d_l = 3$ ,  $D_{est} = 19 \pm 2$ ; for series *l*, obverses:  $n = 46$ ,  $d = 10$ ,  $d_l = 4$ ,  $D_{est} = 12 \pm 3$ ; for series *l*, reverses:  $n = 46$ ,  $d = 19$ ,  $d_l = 9$ ,  $D_{est} = 32 \pm 12$

punches, known as dies, used to strike the coins. Since each die was engraved by hand and leaves an exact negative impression upon the coin, it is possible to determine, simply from examining the coins themselves, which coins were struck from the same, and which from different, dies.<sup>7</sup> While the vagaries of archaeological survival do not allow us to investigate more than a tiny fraction of the total number of coins originally minted, it is possible to gather a sample of coins that includes not only most of the dies that were originally used, but also most of the pairings between obverse and reverse dies. A die study thus takes us as close as possible to the original production process, which is crucial for both sections of this paper. For the iconographic analysis in the first part, examination of all known dies allows us to identify variants in the iconography and not be led astray by the peculiarities of one specimen.<sup>8</sup> In the second section, the fundamental principle that coins struck from the same die were produced roughly contemporaneously and in the same place allows us to investigate the geographical and chronological aspects of production.<sup>9</sup>

## 2 IDEOLOGY

The *aedes Vestae* reverse depicts a round, tetrastyle building, with prominent antefixes and an ‘ornamental top’.<sup>10</sup> A figure stands within the building, which is flanked by two statues, one to either side. Above the building, a legend reads VESTA. The building has been identified as either the *aedes Vestae* in the Forum or a putative *aedicula, aedes*, or *fanum Vestae* on the Palatine.<sup>11</sup> The central figure has been identified as a cult statue of

---

[where  $n$  = number of coins,  $d$  = number of dies observed,  $d_i$  = number of dies that struck exactly one coin in the sample,  $D_{est}$  = estimated original number of dies (with 95 per cent confidence interval)].

<sup>7</sup> On the theory of die studies, see Metcalf 2012: 5–6.

<sup>8</sup> The importance of this is stressed by Elkins 2009: 32–3.

<sup>9</sup> This principle is implicit in every die study, but was first expressed explicitly by Friedrich Imhoof-Blumer, the progenitor of ancient die studies: Imhoof-Blumer 1876: 289.

<sup>10</sup> To quote Mattingly’s wonderfully ambiguous phrase (*BMCRE* p. 17 no. 90).

<sup>11</sup> For these and the following identifications, see, e.g., Donaldson 1859: 68–71; Dressel 1900: 20–31; *RIC* II<sup>1</sup>; Brown 1940 esp. pp. 6, 10, 19; *HCC* pp. 193, 230–1, 245; *BMCRE*; Cody 1973: 48; R.-Alföldi 1983 pl. 37; Hill 1989: 31–2; Fischer-Hansen 1990: 417–19; Cecamore 1994–1995: 18–21; Cappelli 1999; Scott 1999: 127; Giard 2000: 146; *RIC*;

Vesta, a representation of Vesta herself, and the Palladium. The flanking figures have typically been ignored, acknowledged but otherwise disregarded, or described in generic terms like ‘female figures’ or ‘statues’. Mattingly, however, has identified the figure on the right as Mercury with a purse and caduceus, a goddess with a purse, and Lug (the tutelary deity of Lugdunum) with a native attribute; and the figure on the left as both Jupiter with a sceptre and patera and a goddess with a sceptre.<sup>12</sup> Cecamore has identified the leftmost figure as a vestal virgin bearing a replica of the Palladium.<sup>13</sup>

On the basis of the individual identifications listed above, some have interpreted the reverse as a mechanism to publicize a variety of particular events: for example, the centenary of the *res publica restituta*, a ‘ceremony of propitiation in view of the great fire’, or a renovation of either the *aedes Vestae* in the Forum or the putative shrine on the Palatine.<sup>14</sup> Others have argued for more general interpretations, suggesting, for example, that the type was an indication of Vespasian’s religiosity or ‘just a way of celebrating Rome itself’.<sup>15</sup> Some, however, have simply punted on the issue, avoiding the central questions of why this particular design was chosen and how it was interpreted by Roman viewers.<sup>16</sup>

We have included this survey of existing scholarship to demonstrate both that the significance of the *aedes Vestae* type remains an open question and that a new approach is necessary. In the section that follows, we address these issues by analysing the *aedes Vestae* type with a new approach that has three distinguishing characteristics. First, we interpret the type as a composite of five semantic units—namely, the legend, the building, the central figure, and the two flanking figures—that interact both autonomously and in coordination to

---

Marzano 2009: 150–1. For discussion of the arguments that support these identifications, see below.

<sup>12</sup> *BMCRE* pp. xxxvi, lx, 90.

<sup>13</sup> Cecamore 1994–1995: 26.

<sup>14</sup> **Centenary:** Grant 1950: 91. **Ceremony of propitiation:** *BMCRE* p. xxvi. **Forum rebuilding:** Eckhel 1796: 332; Donaldson 1859: 71; Dressel 1900: 23 n. 3; Brown 1940: 17; Armstrong 2001: 164. **Palatine rebuilding:** Cecamore 2002: 159.

<sup>15</sup> Religiosity is suggested by *RIC* II<sup>1</sup> pp. 5–6. The quotation is from Griffin 2000: 14. Cf. Ziegert 2020: 121–2, who interprets the type as an attempt to restore faith in *aeternitas* after the rupture at the end of the Julio-Claudian era.

<sup>16</sup> E.g., Hill 1989: 32; *RIC* pp. 53–6.

communicate with their intended audiences.<sup>17</sup> Second, we believe that these aurei were both intentionally and effectively polyvalent. Accordingly, we eschew the traditional search for a single, authoritative message and instead consider a range of possible interpretations. Finally, we approach the iconography from the perspectives of both audience and issuer in an integrated manner.<sup>18</sup> We first consider the question of how Roman viewers might have interpreted the coins and only then turn our attention to the question of what the issuers intended. We take this approach because we believe that issuers would have considered possible audience reactions while designing coin types. Accordingly, to talk about intention without first considering reception would be to put the cart before the horse.

### 2.1 *The legend*

At first glance, it is tempting to take the legend **VESTA** as a caption or label to identify one or more of the components that appear below it. Interpreting the legend in this manner, however, has two major shortcomings: the reverse does not provide viewers with the information necessary to determine which of the other components the caption refers to, and the legend is too vague to function as a caption, even if we could identify the component to which it refers. Consequently, our putative caption could be—and, indeed, has often been—understood to identify the building as the *aedes Vestae* in the Forum.<sup>19</sup> Alternatively, however, it could just as easily be understood to identify the building as a shrine to Vesta on the Palatine, the central figure as either Vesta or a cult statue of Vesta, or the whole assemblage as a temple complex dedicated to Vesta either in the Forum or on the Palatine. Accordingly, we reject the temptation to interpret the legend as a caption and instead interpret it in more general terms, as an indicator to the viewer of the general context against which the images should be interpreted.

---

<sup>17</sup> This aspect of our approach was inspired by the work of Tonio Hölscher, who persuasively interprets Roman art as a semantic system in which a ‘flexible interplay of elements together form a coordinated whole’ (Hölscher 2004: 2; see also Hölscher 1980; 1982; 1984. Cf. Fuchs 1969: 92–101; Elkins 2009: 39–41; Elkins 2015).

<sup>18</sup> For the contrast between these two approaches to numismatic iconography, see Kemmers 2006: 196–197; Elkins 2009: 43.

<sup>19</sup> See above, n. 11.

## 2.2 *The building*

The building has been identified as either the *aedes Vestae* in the Forum or a shrine that Augustus may have dedicated to Vesta on the Palatine.<sup>20</sup> Of these identifications, the former is more plausible. There are serious doubts that the Palatine shrine ever existed,<sup>21</sup> and,

---

<sup>20</sup> **Forum:** e.g., Donaldson 1859: 68–71; Brown 1940: esp. 6, 10, 19; *BMCRE* p. xxvi; Cody 1973: 48. **Palatine:** e.g., Hill 1989: 31–2; Cecamore 1994–1995: 18–21; Cappelli 1999; Marzano 2009: 150–1. **Noncommittal:** e.g., *RIC* II<sup>1</sup>; Scott 1999: 127; *RIC*. See also works cited in n. 11.

<sup>21</sup> Arguments for the existence of the Palatine shrine rely on four bodies of evidence: a reference by Ovid to an unspecified dedication to Vesta on the Palatine (*Fast.* 4.951–4), a lacunose passage in the *Fasti Praenestini* that may indicate the dedication of a shrine to Vesta on the Palatine (Degrassi 1963 no. 17 = EDCS-38000281); iconographic analyses of coins and reliefs (esp. our aureus, a Tiberian dupondius (*RIC* I<sup>2</sup> p. 99 nos. 74–6), and the ‘Sorrento Base’) that have been interpreted representing a shrine to Vesta on the Palatine (e.g., Rizzo 1932; Guarducci 1971; Cecamore 2004), and a circular foundation on the Palatine that was initially—but only temporarily—identified as a shrine to Vesta (Cecamore 2002: 156 *contra* Cecamore 1994–1995). For a general discussion, see Fishwick 1992. Because our argument does not require us to take a definite stance on the issue, we content ourselves with the following observations. None of the evidence can stand on its own merits; the *Fasti Praenestini*, for example, can be restored to indicate the dedication of a shrine (e.g., Guarducci 1971: 91; Scott 1982: 459 n. 107; Cecamore 2002: 158–9), but the most economical restoration does not (Degrassi 1963: no. 17: ‘[signu]m et a[ra]’), based on the fact that the *Fasti Caeretani* (Degrassi 1963: no. 8 = EDCS-45300002) already indicate the dedication of a signum to Vesta on the Palatine). Arguments in favour of the shrine are invariably circular: for example, claims that the relevant coins and/or reliefs depict the shrine cite the *Fasti Praenestini*, while claims that the *Fasti Praenestini* refer to a shrine cite the coins and/or reliefs. As far as we can tell, the idea that Augustus dedicated a shrine (rather than just a *signum* and *ara*) owes its existence to an implausible restoration of the *Fasti Praenestini* by Mommsen (*CIL* I<sup>2</sup>.1: 236): ‘[aedicula] et a[ra]’). As demonstrated first by Degrassi (1955: 144; 1963: no. 17), the letter preceding ‘et’ must be an ‘m’, there is only room on the stone for five letters before the ‘m’, and ‘signum’ is the most economical option,

even if it did exist, we would have no reason to believe that our coins depict it rather than the *aedes Vestae*.<sup>22</sup> For our purposes, however, the relative merits of these opposing viewpoints are immaterial. In accordance with the statement of method provided above, we do not seek definitive identifications or messages. Instead, we try to understand how Roman viewers would have interpreted what they saw. And, once we turn our attention to this related, but nonetheless distinct question, answers become much easier to find. Regardless of whether or not there was a shrine to Vesta on the Palatine, the *aedes Vestae* in the Forum was both the most famous and the most recognisable shrine dedicated to Vesta. Crucially, moreover, the building depicted on our reverse bears a striking resemblance to both the *aedes Vestae* itself and representations of the *aedes Vestae* on coins that were already in circulation (e.g., Figs. 3–4).<sup>23</sup> Accordingly, we can be confident that most Romans who viewed these coins would have thought first and foremost of the *aedes Vestae* in the Forum.

---

as indicated above. The idea of the *aedicula Vestae* on the Palatine has outlasted Mommsen's restoration because, by the time his mistake had been recognized, enough coins and reliefs had been identified with the putative shrine to allow for the circular arguments discussed above. The resilience of this idea, despite the crumbling of its foundation more than six decades ago, is a particularly interesting example of scholarly inertia.

<sup>22</sup> Many proponents of a Palatine shrine neglect to explain their identifications (e.g., Hill 1989: 31–2; Cappelli 1999). Others (e.g., Cecamore 2002: 156–9; Marzano 2009: 150–1) attribute their identifications to the fact that our coins show flanking figures to either side of the building, while other contemporary (e.g. *RIC* 492, 599–601, 639–40, 647–8) and near-contemporary (e.g. *RIC* I<sup>2</sup> p. 153 nos. 61–2) types that depict the *aedes Vestae* do not. Their arguments, however, rest on two traditional assumptions that have been thoroughly discredited: that Roman imperial coin types depict monuments as they actually were; and, consequently, that differences between numismatic depictions of monuments necessarily correspond to differences between the real-world monuments they depict. For discussion of these assumptions and their broader significance, see Fuchs 1969: 92–129 esp. 116–29; Burnett 1999; Elkins 2015: 1–7. See also below, n. 31.

<sup>23</sup> Similar types had been issued during the republic (e.g., *RRC* 428), under Tiberius (*RIC* I<sup>2</sup> p. 99 nos. 74–6), and under Nero (*RIC* I<sup>2</sup> p. 153 nos. 61–2); on the differences between these types and the Vespasianic aurei, see below.

### 2.3 *The central figure*

In his standard reference text on Roman architectural coinage, Hill identifies the central figure as the Palladium.<sup>24</sup> Though he offers no explanation for this identification, it makes sense from a conceptual perspective; after its removal to Rome, the Palladium was housed within the *aedes Vestae*, and it was closely associated with Vesta in the Roman imagination.<sup>25</sup> Furthermore, the specimen that Hill illustrates (our coin 47) shows a figure whose angularity and stiffness recall contemporary representations of the archaic Palladium. The other dies, however, invariably show a more lifelike figure, whose flowing robes and curving limbs are inconsistent with Hill's arguments and instead recall contemporary representations of Vesta herself.<sup>26</sup> Accordingly, we reject Hill's identification and turn our attention to the majority opinion: that the central figure represents either Vesta herself or a cult statue of Vesta.

In the *Fasti*, Ovid clearly indicates that, in his time, the *aedes Vestae* in the Forum did not contain a cult statue of the goddess.<sup>27</sup> This seems to be confirmed by depictions of the building on republican and early imperial coins, which all show it as aniconic. Indeed, some Tiberian dupondii even seem to highlight the absence of a cult statue by the presentation of negative space.<sup>28</sup> Beginning in the reign of Nero, however, coins representing the *aedes*

---

<sup>24</sup> Hill 1989: 132. Cf. R.-Alföldi 1983 pl. 37, who claims that 'Vesta holds the small statue [sc. The Palladium] in her hand', but this is not supported either by the specimen she is commenting on (our coin 230), or by any other die we have seen.

<sup>25</sup> Ov., *Fast.* 6.424–36; Plin., *HN* 7.45; Plut., *Vit. Cam.* 20.5; Herodian 1.14.4; cf. Dion. Hal., *Ant. Rom.* 2.66. Note, however, that Hill's identification of the building as a putative *aedicula Vestae* on the Palatine weakens the force of this argument.

<sup>26</sup> The impression that Hill only considered this one specimen is reinforced by his identification of the acroterion as 'two horns', despite most dies showing palmettes with either three or four branches.

<sup>27</sup> Ov., *Fast.* 6.295–8.

<sup>28</sup> *RIC I*<sup>2</sup> p. 99 nos. 74–6. These types employ two techniques commonly used to allow for the representation of cult statues, namely distorting the façades of the temples they depict by creating a gap between the middle columns and omitting the cella wall (Burnett 1999: 147). Rather than fill the resulting space with a cult statue, however, the engravers of the Tiberian



*Vestae* began to include a figure between the innermost columns of the façade (Fig. 3).<sup>29</sup> The reoccurrence—on coins of gold, silver, and bronze—of a figure within the building under both the Flavians and Severans has led to a division of scholars into two groups: one that reads the coins as evidence that a cult statue must have been set up, and another that sees the figure as purely representational.<sup>30</sup>

Of these contradictory viewpoints, the latter is more plausible. Arguments for the introduction of a cult statue fail to meet the burden of proof.<sup>31</sup> Nor can their proponents explain how or why the putative cult statue changed so substantially over time—going from

---

dupondii left it empty. Furthermore, they chose to emphasize this emptiness by carving out an additional declivity—a representation, as clear as possible, that there *was nothing there*. We interpret this unusual—indeed, unique, to our knowledge—choice to represent absence, in the very spot where viewers would normally expect to find a cult statue, as an indication that the temple under consideration must have been aniconic; and, consequently, that the famously aniconic *aedes Vestae* in the Forum is our best available choice.

<sup>29</sup> *RIC I*<sup>2</sup> p. 153 nos. 61–2. These coins are dated by *RIC I*<sup>2</sup> to AD 65–6, on the basis that they commemorate Nero’s rebuilding after the Great Fire, but below we offer reasons to question whether the *aedes Vestae* was in fact destroyed at all. The Neronian aurei and denarii must pre-date AD 66, since Nero lacks the *praenomen imperatoris*, and they are clearly part of the first post-reform issue (MacDowall 1979: 33–4), but given recent arguments to uncouple Nero’s reform from the fire of AD 64 (Butcher and Ponting 2014: 229–33), we should be wary of trying to date them more precisely.

<sup>30</sup> **Cult statue:** Scott 1999: 127; Cecamore 1994–1995: 19–20. **Purely representational:** Hill 1989: 23; Richardson 1992: 412–13; Stewart 2004: 212; Mekacher 2006: 57 n. 445.

**Noncommittal:** Fischer-Hansen 1990: 419; Scott 2009: 21 n. 23, 74; Lindner 2015: 15–16.

<sup>31</sup> Evidence for the introduction of a cult statue is entirely numismatic, and its proponents rely on the same problematic assumptions as proponents of the Palatine shrine to Vesta—namely, that Roman imperial coinage depicted monuments as they actually were; and that, consequently, substantial differences between numismatic depictions of a single monument necessarily indicate substantial alterations to the real-life monument they depict. For further discussion, see above, n. 22. On the absence of both textual and archaeological evidence for substantial reconstructions of the *aedes Vestae* during the late 60s and early 70s, see Scott 2009: 52–7.

seated, with a patera in its right hand and a sceptre in its left, under Nero; to standing, with similar attributes, under the Flavians; and then back to seated, but this time with no discernible attributes, under the Severans.<sup>32</sup> For our purposes, however, the relative merits of these viewpoints are immaterial. In either case, most of the Romans who viewed the *aedes Vestae* reverse would have taken the figure to represent the presence of the goddess in her shrine.

#### 2.4 *The flanking figures*

We begin our discussion of the flanking figures with a more detailed description than has hitherto been offered. Both figures stand on pedestals. The figure on the left appears in two variants. In series *r*, which we will later argue was struck at Rome, the figure's right hand is upraised and grasps an unidentifiable object (Fig. 1). Its left arm is bent down toward its hip or waist and may grasp a second unidentifiable object. The figure's body twists in an almost dance-like motion, and its arms curve in the shape of a diagonal S. Dies of series *l*—struck, as we will later argue, in Lyon—show a figure with similar posture and general appearance (Fig. 2). Its right hand, however, grasps a long staff or spear. The addition of this attribute does not seem to have been intentional, nor did it affect more than a small minority of the coins struck.<sup>33</sup> In the analysis that follows, therefore, we focus primarily on the variant that was struck at Rome.

The figure on the right appears in only one variant. Its right hand is outstretched at a downward angle and may grasp an unidentifiable object. Its left hand is upraised and grasps a long staff or spear, on which the figure leans. Similarly, but not identically, to the figure on the left, its body twists as though it were in motion, and its arms exhibit an eye-catching curve.

In trying to assess the possible reactions of Roman viewers to these flanking figures, one is struck by an apparent paradox. On the one hand, they are clearly important. When our aurei went into production, several types that were similar in most respects but lacked the

---

<sup>32</sup> *RIC* IV.1, p. 171 nos. 584–6, 587A; p. 209 no. 868; p. 211 nos. 892–3; p. 247 nos. 249–50; pp. 251–2 nos. 271–2; p. 274 no. 392; p. 311 no. 594; p. 313 no. 607. These Severan coins do, of course, post-date the destruction of the *aedes* in the fire of 191, see Herodian 1.14.4.

<sup>33</sup> See further below, 'Mint attribution'. Note also the fact that the figure maintains the same posture, which is incongruous with the addition of a spear.

flanking figures were in widespread circulation.<sup>34</sup> Accordingly, we can infer that the addition of the figures would have been particularly striking to viewers; and, consequently, that the figures would have played a central role in viewers' interpretation of the type overall.<sup>35</sup> On the other hand, the flanking figures would have been very difficult to identify. Aurei are only about the size of a ten-pence piece, and the figures themselves are less than half a centimetre high. Even with the benefit of microscopes and high-resolution photographs, modern scholars struggle to determine, for example, whether the rightmost figure is male or female; or what attribute it is holding in its right hand.<sup>36</sup> With the naked eye, such questions are impossible to answer. Accordingly, we have to recognize that the very elements whose novelty marks them out as particularly important would have been difficult if not impossible for their intended audience to identify.

To resolve this seeming paradox, we suggest that the flanking figures were not intended to represent specific entities. Nor were Roman viewers intended to identify them—at least not definitively, and not all in the same way. Rather, the figures were intended to shape the viewers' interpretation of the type as a whole by evoking three distinct but complementary associations: the *lares*, the *penates*, and the Castores. While these associations are contradictory when viewed as identifications—the figures cannot, for example, be both *lares* and Castores—this is not the sense in which we intend our suggestions to be read. Rather, we seek to understand the directions in which the ancient viewer's thoughts would have turned. And, in this sense, the three associations are mutually reinforcing. Because the *lares*, *penates*, and Castores were so similar conceptually and were

---

<sup>34</sup> *RIC* I<sup>2</sup> p. 153 nos. 61–2 (aurei of Nero; for dating see above, n. 29), *RIC* 492 (asses of Vespasian; AD 72). All of the base metal coins of Vespasian with *aedes Vestae* types (*RIC* 492, 599–601, 639–40, 647–8) lack the flanking figures, except *RIC* 600 (AD 73), known from a single specimen, which was presumably modelled on the aurei.

<sup>35</sup> On the importance of the flanking figures, see also Cecamore 1994–1995: 18–20. By contrast, Ziegert 2020: 201 ignores the flanking figures and presents the type as a direct copying of the Neronian aurei.

<sup>36</sup> Note, for example, the many identifications proposed by Mattingly (above, n. 12). On the difficulties presented by the small size of Roman coins, see Fuchs 1969: 93.

represented in such similar ways, they were often conflated and confused.<sup>37</sup> Accordingly, thinking about one would naturally lead to thoughts of the others. Although the type's ideological message is conveyed most powerfully by the combination of all three associations, any one of them alone would lead the viewer towards a similar interpretation. The design therefore stands as an example of deliberate and constructive ambiguity, allowing different viewers to read the iconography in different ways, yet always leading them in the same general direction.<sup>38</sup>

The first association begins with the leftmost figure, which recalls an image that would have been familiar to any first-century AD Roman: the so-called dancing *lar familiaris*, with rhyton upheld in one arm and the other downturned, grasping a patera or situla (Fig. 5). The *lares familiares* were the guardian gods of a Roman household and its constituent family members, deities who were strongly connected with the hearth, the centre of the house, of which Vesta was the patron. Representations of the *lares familiares* are known from across the empire.<sup>39</sup>

The close connection between Vesta and the *lares* is attested by a range of literary, epigraphic, and figural evidence.<sup>40</sup> For our purposes here, the most important are Pompeian wall paintings, many of which show them together (Fig. 6).<sup>41</sup> While other deities and animals sometimes appear alongside them, and Vesta's iconography varies slightly from case to case,

---

<sup>37</sup> The literature on the relationship between the *lares*, *penates*, and Castores (or Dioscuri) is vast. See esp. Waites 1920; Weinstock 1960; Piccaluga 1961; Peyre 1962; Masquelier 1966; Radke 1981; Dubourdiou 1989; Giacobello 2008; Buxton 2014: 95–7. For discussion, see below. Note also that, in this particular case, the already strong tendency to conflate and confuse the *lares* and *penates* would have been reinforced by their shared association with Vesta (below, esp. nn. 42 and 47).

<sup>38</sup> For similar instances of deliberate ambiguity in coin iconography, see Cheung 1998 and Rowan 2016.

<sup>39</sup> See, e.g., the examples depicted and discussed in Tran Tam Tinh 1992. See also Kaufmann-Heinimann 1998: 181–315 on the contexts in which bronze statuettes of the *lares* have been found.

<sup>40</sup> In addition to the visual evidence discussed here, see the literary and epigraphic sources discussed in n. 47.

<sup>41</sup> See, e.g., Boyce 1937: nos. 185 (= pl. 21.1), 236, 240, 247, 313, and 316 (= pl. 24.1).

two conventions remain conspicuously constant in depictions of the group: first, Vesta's position as (one of the) central figure(s); second, the placement of one *lar* to either side, each with his inner arm lowered, grasping a rhyton, and his outer arm raised, grasping a patera.

The *aedes Vestae* type bears more than a passing resemblance to these seemingly conventional representations; it not only groups Vesta with a subordinate to either side, but also depicts the leftmost figure in the distinctive, almost idiosyncratic posture of a *lar* and places in its hands objects that certainly could be the conventional rhyton and patera. Furthermore, the characteristic, round shape of the *aedes* itself simultaneously recalls two of the objects around which *lares* are most commonly grouped—a domed niche containing a cult image and a rounded altar—and thus provides an additional, visual, link between the *aedes Vestae* type and household shrines to the *lares* (Fig 7). On the other hand, however, the comparison of our coin type with other depictions of the *lares* also reveals a critical problem: although the rightmost figure exhibits the twisting posture we would expect of a *lar*, its iconography is clearly incompatible; we do not, therefore, have the twin *lares* that the iconography of household religion would lead us to expect. As a result, our first hypothesis—that the flanking figures might represent the *lares*—proves unsatisfactory, or at least insufficient.

The second association begins with the rightmost figure. Here, the iconography is profoundly unhelpful. A figure leaning on a staff or spear could represent almost any being, divine or mortal. In order to determine its identity, therefore, we need to take a second body of contextual knowledge as our point of departure. More specifically, we need to consider which of the many figures conventionally depicted with a staff or spear a Roman viewer would have been most likely to associate with Vesta and/or the *aedes Vestae*.

In her public manifestation at the *aedes Vestae*, Vesta was most closely associated with the *penates publici* brought from Troy by Aeneas and housed in the *penus Vestae*.<sup>42</sup>

---

<sup>42</sup>At Verg., *Aen.* 2.293–7, for example, the ghost of Hector entrusts Aeneas with Vesta, the *penates* and other *sacra* simultaneously: “‘Troy commends its *sacra* and its *penates* to you: take them as companions to your fortune, seek great walls for them, which you will finally found once you have wandered the sea.’” So said [Hector] and with his hands brought forth filleted Vesta and the eternal fire from the sacred hearth’ (‘*Sacra suosque tibi commendat Troia penatis: / hos cape fatorum comites, his moenia quaere / magna, pererrato statues quae denique ponto. / Sic ait, et manibus vittas Vestamque potentem / aeternumque adytis effert penetralibus ignem*’.) See also Tac., *Ann.* 15.41, Serv., *ad Aen.* 3.12, Cic., *Nat. D.* 2.67–8. For

According to Dionysius of Halicarnassus (*Ant. Rom.* 1.68), the *penates publici* were depicted as two youths bearing spears, and his description may find support on the so-called ‘Aeneas Relief’ from the Ara Pacis, which shows two seated figures with spears, who have traditionally been interpreted as the *penates* in their temple on the Velia.<sup>43</sup> Furthermore, a variety of other sources suggest that the *penates* were both represented as and conflated with the Castores—who were also represented as youths bearing spears (Fig. 8).<sup>44</sup> Accordingly, the iconography of the rightmost figure set in the general context provided by the legend and the building would have been likely to provoke thoughts of the *penates publici*.

If we accept this second association suggested above, the grouping of the legend VESTA, the *aedes Vestae*, Vesta herself, and one of *penates publici* works from both an iconographic and a conceptual standpoint. However, the iconography of the leftmost figure is inconsistent with this interpretation. Furthermore, the *penates publici* are typically depicted as twins, and the flanking figures do not match. As a result, our second hypothesis—that the flanking figures represent the *penates publici*—also proves unsatisfactory, or at least insufficient.

Thus far, we have considered two possible interpretations of the flanking figures: that they represent the *lares familiares*; that they represent the *penates publici*. Although both of our hypotheses accounted for a majority of the semantic units that comprise the reverse,

---

discussion of the ties between Vesta and the *penates*, see esp. Radke 1981; Dubourdiou 1989: 292–8, 453–520.

<sup>43</sup> This interpretation was first proposed by Petersen 1902: 57 and has since found wide acceptance: e.g., Sieveking 1907: 186–8; Zanker 1990: 201–6; Buxton 2014: 95–7. For alternatives, see esp. Rehak 2001 (who interprets the central figure as Numa) and Flower 2017: 324–7 (who interprets the central figure as Titus Tatius). On Flower’s interpretation, the seated figures represent the *lares praestites* (on whom, see below).

<sup>44</sup> On the relationship between the *penates* and the Castores, see n. 37. For depictions of the *penates* as Castores, see the denarii of Mn. Fonteius (*RRC* 307/1, with discussion by Crawford 1961), C. Sulpicius (*RRC* 312/1, with discussion by Valverde 2016), and C. Antius Restio (*RRC* 455/2). Similar types struck by members of the gens Fonteia (e.g., *RRC* 290/1) have traditionally been interpreted as representations of the Castores, but it is tempting to think they may represent the *penates* as well. For our purposes here, determining the ‘correct’ identification is unimportant; the ambiguity is the point.

neither accounted for all five. In order to reconcile the inconsistencies, we need to take a deeper look into the relationship between the *lares* and *penates*. The available evidence indicates a close relationship between the *lares* and the *penates*, and the two pairs of deities were similar in many respects—so similar, in fact, that the Romans themselves sometimes confused or even conflated them.<sup>45</sup> Of their many similarities, three pertain directly to the matter at hand: i) both *lares* and *penates* were typically represented in pairs; ii) both were strongly associated with Vesta; and iii) both have one manifestation that protected the individual domus and another that protected Rome as a whole. To elaborate, the domestic *penates* and the *lares familiares* protect the individual domus; the *penates publici* and the *lares praestites* protect the patria as a whole.

The *lares praestites* were represented with iconography that was indistinguishable from that of the *penates publici* (Fig. 9).<sup>46</sup> Accordingly, they help resolve the inconsistencies noted above; as *lares* who had both the same role and the same iconography as the *penates publici*, they provide a bridge between the two apparently incompatible interpretations. On this hybrid interpretation, the aureus reverse brings together Vesta herself, the *aedes Vestae*, the *lares familiares*, the *lares praestites*, and the *penates publici*—all under the legend VESTA.

To summarize, we have argued i) that the iconography of the leftmost figure, the posture and bearing of both flanking figures, and the overall composition of the reverse would have drawn the Roman viewer toward the initial hypothesis referenced above; and ii) that the iconography of the rightmost figure and knowledge of the close association between Vesta, the *aedes Vestae*, and the *penates publici* would have drawn him or her toward the second hypothesis. Crucially, however, the Roman viewer would not have interpreted these impulses as contradictory. Rather, he or she would have interpreted them as complementary indicators of a nuanced message that conflated the protective deities of the domus, on the one hand, and the patria, on the other.

At first glance, the interpretation offered above may seem implausibly complex. In other words, it may seem unlikely that any Roman viewer would have recognized i) the

---

<sup>45</sup> See above n. 37 and below, n. 47.

<sup>46</sup> Cf. Flower 2017: 325, who identifies the spear-bearing twins depicted on the ‘Aeneas Relief’ of the Ara Pacis as the *lares praestites*. On the traditional interpretation of these twins as the *penates publici*, see above, n. 43.

iconography of the *lar*, ii) the conceptual ties between Vesta, the *aedes Vestae*, and the *penates publici*, and iii) the close relationship between the *lares* and the *penates*. However, this third component provides a solution to the apparent difficulty: because of the strong relationship and even overlap between the *lares* and the *penates*, recognition of one would have actually facilitated recognition of the other; likewise, the fact that the *lares*, *penates*, and Vesta are a common triad in both the literary and epigraphic record.<sup>47</sup> In order to provide additional support for this interpretation, we turn to a third sort of contextual knowledge that would facilitate identification by a particular subset of Roman viewers: familiarity with the topography of the Forum.

The *aedes Vestae*—which, as discussed above, housed the *penates publici*—was not the only structure in its vicinity that was connected to the worship of the *lares* and the *penates*. The city’s primary temple to the *penates*, the *aedes deum penatium in Velia*, was probably located just across the *via sacra*.<sup>48</sup> A shrine to the *lares compitales* certainly stood nearby, even if its precise location is disputed.<sup>49</sup> The Regia complex just to the north has plausibly been associated with the development of the public *lares* and *penates* from the private household gods of the kings.<sup>50</sup> Just a short way down the *via sacra* stood two buildings dedicated to the Castores—the Lacus Iuturnae and the Temple of the Castores—

---

<sup>47</sup> E.g., *CIL* XIII 6709 (= EDCS-11000753), which is addressed ‘to the *numina* of the *Augusti*, Jupiter Optimus Maximus, Fortuna, Vesta ... the *lares*, and the *penates*’. In similar fashion, Ascanius entreats Nisus in the name of the *penates*, the *lares*, and Vesta at Verg., *Aen.* 9.258–60: ‘I swear, Nisus, by the great *penates*, and by the *lar* of Assaracus, and by the shrines of hoary Vesta’ (‘per magnos, Nise, penatis / Assaracique larem et canae penetralia Vestae / obtestor’).

<sup>48</sup> Dubourdieu 1989: 387–419.

<sup>49</sup> The existence of a compital shrine in the vicinity of the *aedes Vestae* is demonstrated by *CIL* VI.30960 (= EDCS-18600557). Some scholars (e.g. Lanciani 1882: 229–31; Pisani Sartorio 1988: VIII,2; Scott 2009: 72) have identified this shrine with the small *aedicula* discovered near to the *atrium Vestae*, a structure argued by Coarelli 1983: 266–70 to have been dedicated to the *lares praestites*. Neither identification is secure, see Flower 2017: 133–5. Lindner 2015: 94–5 argues that the *aedicula* housed a statue of Vesta flanked by statues of the *lares* and *penates*.

<sup>50</sup> Coarelli 1983: 70–9, 269–70; Cornell 1995: 240–1.



who had been associated with, and even assimilated to, the *penates publici* since the early first century BC at the very latest.<sup>51</sup> Furthermore, the Lacus Iuturnae and the Temple of the Castores both held paired statues of the Castores, while the *aedes deum penatium in Velia* held statues of the *penates* as divine twins.<sup>52</sup>

Familiarity with the topography of the forum, we suggest, would have influenced certain viewers' interpretation of the *aedes Vestae* type.<sup>53</sup> More specifically, the density of buildings associated with the *lares*, *penates*, and Castores would have reinforced the associations we have suggested above. So too would the proximity of so many statues depicting divine twins, which find echoes in the figures that flank the building on the *aedes Vestae* type.<sup>54</sup>

In short, we have argued that the iconography of the flanking figures, combined with various forms of contextual knowledge that an educated Roman could be expected to possess, would have drawn a viewer's thoughts towards three sets of divinities: the *lares*, the *penates* and the Castores. The flanking figures were not intended to be identified as any of these three possibilities individually; indeed, their ambiguity was a feature not a bug. It was both deliberate and essential, because the lack of unambiguous attributes that would have cut off interpretive possibilities allowed viewers to interpret the flanking figures in a variety of distinct but complementary ways. Each of the three associations suggested above could have stood on their own, but would also have worked to reinforce rather than undermine the other two.

## 2.5 *The dynastic ideology of the aedes Vestae aurei*

Having discussed each of the individual semantic units, we now turn to a consideration of the reverse as a whole. Previous scholarship has interpreted the reverse as a single unit, commonly focusing on the edifice itself to the detriment of the other elements. By

---

<sup>51</sup> See above, esp. nn. 37 and 44.

<sup>52</sup> On the *Lacus Iuturnae* and the statues of the Castores, see Steinby 1989–2012; Geppert 1996.

<sup>53</sup> Cf. Fuchs 1969: 98 on the importance of topographical situation for identifying architectural images on coins.

<sup>54</sup> Platt 2018: 230–5 stresses the 'same but different' nature of the Dioscuri, which may be echoed in the 'same but different' nature of the flanking figures.

contrast, we prefer to analyse the reverse as a complex of the five distinct but complementary semantic units discussed above; in this way, the multifaceted and nuanced message conveyed by the type becomes clearer.

The legend VESTA sets the stage. It does not merely identify either the structure or the central figure but rather indicates to the viewer the general context against which the type should be interpreted. In other words, it functions to activate the particular types of contextual knowledge necessary to read the remainder of the type. Proceeding to the images, the pairing of the *aedes Vestae* and the *penates publici* or the *lares praestites* emphasizes the civic aspect of the type. At the same time, however, the household triad of Vesta, *lares*, and *penates* is best understood as a metonymy for hearth and home. The depiction of Vesta within her *aedes* and thus in a more public role establishes a point of contact and relationship between these two alternatives. Furthermore, the fact that both *lares* and *penates* functioned as metonyms for either the individual domus or the patria allows the reverse to suggest that the two can be actually conflated.<sup>55</sup>

Consideration of the figures in isolation reveals a second public-private axis: on the left, one of the *lares familiares*, who protect the individual domus; on the right, one of either the *penates publici* or the *lares praestites*, who protect the patria as a whole; in the middle, Vesta, who protects both the domus and the patria and therefore functions as a hinge and point of contact between them. On this interpretation, the role of all three figures as protective deities puts the conflation of domus and patria in the particular context of safety and security: the safety of the patria is the safety of the domus; ensure the one, and one ensures the other.

This connection of domestic security and the security of the state is of course realized most fully in the imperial family. It was the emperor who was entrusted with protecting the Roman state, but his continued guarantee of such security was only possible through his family; it was Titus and Domitian who would continue in the role of the state's guardian after Vespasian's death. The importance of Titus and Domitian is highlighted by the allusions to the Castores, with whom they were frequently equated,<sup>56</sup> and by the pairing of this type with

---

<sup>55</sup> For the use of *lares* and *penates* as metonyms, see e.g., Cic., *Verr.* 2.3.125, Cic., *Sest.* 30, Luc., 2.384–5. On conflation and confusion, see above, n. 37.

<sup>56</sup> Rebggiani 2018: 118–19.

obverses of both Flavian heirs. The safety of the imperial family was thus inextricably linked to the safety of Rome; the coin type emphasizes Vesta's patronage of both.

It is quite logical that this connection between the safety of the imperial family and the safety of the Roman state should be made with reference to the *aedes Vestae*. It was here that the *pignora imperii* were housed, the symbols of Rome's prosperity and the guarantee of her continued rule.<sup>57</sup> Similarly, Titus and Domitian were symbols of the Flavian dynasty's continuance. Moreover, by equating the public and private spheres, the coins suggest that the *pignora* housed within the temple were pledges not just of Rome's *imperium*, but also of Flavian *imperium*.

In much of this Vespasian found a model in Augustus, the Roman dynastic founder *par excellence*.<sup>58</sup> Augustus, of course, had also intimately linked the prosperity of the Roman state to the continued power of his own family.<sup>59</sup> Furthermore, Vesta had been a favourite goddess of Augustus, who was represented as a descendant of Aeneas, the hero who brought Vesta's flame from Troy, together with the *penates* and the Palladium.<sup>60</sup> Augustus had also shown favour to the cults of the *lares*, rebuilding the *aedes larum in summa sacra via*, and allowing the compital *lares* to share in his epithet with their new name of *lares augusti*.<sup>61</sup> Moreover, some scholars have argued that Augustus tried to assimilate his household gods with the public versions of the *lares*, *penates*, and Vesta.<sup>62</sup> The subtle allusions on the *aedes Vestae* aurei to these actions and favoured deities of Augustus connected Vespasian to the first princeps and established the legitimacy of his and his family's rule.

---

<sup>57</sup> Ov., *Fast.* 3.421–8; Livy 5.52.7, 26.27.14.

<sup>58</sup> On parallels in the imperial households under Augustus and Vespasian, see Acton 2011: 178–236.

<sup>59</sup> On 'the assimilation of Augustus' successors into the national mythology', see Zanker 1990: 215–38.

<sup>60</sup> Zanker 1990: 207. Note also the numerous coins of Vespasian that depict Vesta seated (*RIC* 45–6, 359, 820, 889, 1002, 1086–8) or standing (*RIC* 360, 1556). The hoard analysis of Ziegert 2020: 239–42 suggests that images of Vesta were among the five most common reverse types for Vespasian's denarii, accounting for between 5 and 10 per cent of all denarii struck under Vespasian.

<sup>61</sup> *RGDA* 19.2 with Flower 2017: 86–91 and 255–347.

<sup>62</sup> Cecamore 1994–1995: 24–5; Kleiner and Buxton 2008: 63–5.

Dynastic imagery was an integral part of Vespasian's coinage from the beginning of his reign.<sup>63</sup> The *aedes Vestae* aurei, however, represent a shift in how this imagery was presented. On aurei and denarii struck during the first three years of Flavian rule, Titus and Domitian appear primarily on reverses and are often represented in their official capacities, with legends outlining their precise offices.<sup>64</sup> For example, some of the earliest denarii struck in Rome after Vespasian's recognition by the senate show the two Caesares either riding or seated on curule chairs, accompanied by the legend **TITVS ET DOMITIAN CAES PRIN IV**.<sup>65</sup> At the same time, numerous coin types from early in Vespasian's reign stress the security and stability of government, through images like *Securitas* or *Fortuna* with a rudder.<sup>66</sup> The *aedes Vestae* coins bring these two themes together by coupling images of Titus and Domitian on the obverse with an image concerning dynastic harmony and stability on the reverse. In contrast to earlier types depicting Titus and Domitian, which increasingly stressed the differences in status and rank that separated the male members of the Flavian house,<sup>67</sup> the shift to a more allegorical composition on the reverse on the *aedes Vestae* coins evokes the very concept of family and emphasizes the unity of the imperial household. In doing so, the type may have been responding to contemporary rumours of disharmony between the brothers.<sup>68</sup>

---

<sup>63</sup> Seelentag 2010; Ziegert 2020: 185–7.

<sup>64</sup> E.g., *RIC* 5–6, 15–16, 54–6, 1132–3, 1301–2, 1344, 1362–3, 1401–5. Titus and Domitian had appeared on the obverse of some aurei struck in Judaea in 70 (*RIC* 1534–8), as well as aurei and denarii from Ephesus in 71 (*RIC* 1435–49), but the character of these coins is more that of provincial coinage than imperial issues: see introduction to *RIC* ad loc. Titus appears on the obverse of a few precious metal types struck in Rome (*RIC* 365–71, dated 72–3) that may pre-date the *aedes Vestae* aurei.

<sup>65</sup> *RIC* 5–6, with commentary by Ziegert 2020: 52–3.

<sup>66</sup> E.g., **SECVRITAS P ROMANI**, *Securitas* seated (*RIC* 38, 281, 326–7); **SECVRITAS AVGVSTI**, *Securitas* seated (*RIC* 280, 1155–7, 1171–4, 1197); **FORTVNA AVGVSTI**, *Fortuna* standing with rudder (*RIC* 1116); **AETERNITAS P R**, Vespasian receiving the Palladium from Victory (*RIC* 32).

<sup>67</sup> Titus' higher status become particularly apparent on the coinage after he shared in his father's Jewish triumph in summer 71, see Seelentag 2010: 175–7.

<sup>68</sup> Suet., *Tit.* 9.3; Suet., *Dom.* 2.2; Tac., *Hist.* 4.85–6; Cass. Dio 65.3.4.

### 3 PRACTICE

Existing scholarship recognizes the Flavian period as a crucial turning point in the history of the Roman imperial coinage, establishing the pattern for generations to come.<sup>69</sup> More specifically, scholars have identified three major changes: the sharing of types with the imperial heirs, the centralisation of all minting in Rome, and changes to the internal operation of the mint.<sup>70</sup> In this section, we use the die study of the *aedes Vestae* aurei—the first precious metal type to be struck for all three Flavians—to elucidate these changes, with particular attention to the question of whether the new prominence of Titus and Domitian on the coinage was accompanied by, or even necessitated, a reorganization of coin production. We conclude by examining the extent to which these practical considerations were interwoven with the dynastic messaging discussed in the previous section.

This section makes frequent reference to the die study, the results of which are set out in the catalogue provided as an appendix to this article. Since we are only dealing with one reverse type, and the obverse image is always a right-facing head of the relevant member of the imperial house, we use the word type to refer to groups of coins with the same obverse legend. Each type is individually numbered (Table 1), with separate numbering for series *r* and series *l*, the difference between which is set out below. Obverse dies are numbered within each type, whereas reverse dies are numbered continuously and are prefaced with the letter R and suffixed with a subscript *r* or *l*, depending on the series. Numbering of types and dies reflects our understanding of the chronology, as far as it is possible to ascertain, but there is a good deal of uncertainty; see further below, ‘Chronology’.

---

<sup>69</sup> See, for example, Carradice 2012: 375: ‘[Flavian coinage] emerged from the chaos of the Civil Wars and was formed into a settled and systematic production with characteristics that broadly changed little for the next century’. Cf. *RIC* II<sup>1</sup> p. 1: ‘inaugurates a new and lasting tradition at Rome’; *RIC* p. 1: ‘crucial in setting the pattern for the next few generations’.

<sup>70</sup> Sharing of types: *RIC* p. 55. Centralisation: *RIC* pp. 3–5. Mint organization: Carradice 1983: 145–6; *RIC* pp. 5–7.

### 3.1 Mint attribution

While the second edition of *RIC* attributes all of the *aedes Vestae aurei* to the mint of Rome, at least some of these coins have been assigned to other mints in older catalogues. The first edition of *RIC*, published in 1926, suggested that coins with the legend **IMP CAESAR VESPASIANVS AVG** (*RIC* II<sup>1</sup> p. 51 no. 304; our type 5) were struck at Lyon, while the other *aedes Vestae* types then known were given to Rome. Four years later, *BMCRE* went further and assigned a further three types to Lyon (*BMCRE* 411–12 and p. 83; our types III, 1 and 4), as well as one to Tarraco (*BMCRE* 365; our type VII) and one to an uncertain mint (*BMCRE* 372; our type I). Giard's corpus of the coinage of Lyon largely followed *BMCRE* in assigning three *aedes Vestae* types to that mint (Giard 2000: nos. 59–61).<sup>71</sup> These attributions were made principally on stylistic grounds, a practice considered flawed by Carradice and Buttrey in *RIC* II.1<sup>2</sup>, following Kraay's die study of the Vespasianic *aes*, which showed multiple die links between coins of different styles.<sup>72</sup> Although we agree that many scholars have been too eager to seize upon minor differences of style to assign coins to different mints, we nonetheless believe that the question of the location of the mint for the *aedes Vestae aurei* needs to be revisited.<sup>73</sup>

It has already been noted that there are two distinct groups with respect to the iconography of the left-hand flanking figure on the reverse: series *r*, where the figure stands with raised right arm, and series *l*, where the raised arm also holds a staff. These two groups can be differentiated on other grounds as well. Series *l* invariably depicts the acroterion as a simplified palmette, or *anthemion*, with precisely three branches, while series *r* either omits the central branch entirely or replaces it with a simple dot or a replica of the remaining two suspended above them, without obvious means of support. The prominent antefixes pictured on every die of series *l* are conspicuously absent from those of series *r*, while the two groups also differ markedly with respect to the number and regularity of the steps leading up to the

---

<sup>71</sup> A summary of these mint attributions and a concordance with our type numbers is given in Table 2.

<sup>72</sup> Kraay 1978; cf. *RIC* p. 3–5.

<sup>73</sup> Metcalf 2015 has recently questioned the mint attribution of various coins struck around the same time as the *aedes Vestae aurei*, but we cannot accept his conclusions; see below, n. 76.

temple.<sup>74</sup> In addition to such specific differences, the dies of series *l* are noticeably cruder and more irregular than even the least sophisticated example of series *r*.

The two groups also differ in terms of certain technical properties. While coins of series *r* were struck with die axes of either 12 or 6 o'clock, the die axis of all series *l* coins, where recorded, is 12 o'clock. Furthermore, the two series differ with respect to both the ratio of obverse to reverse dies and the manner in which those dies were employed: series *l* used roughly twice as many reverses as obverses, and the dies were used one after another, in sequence; series *r*, in contrast, used more than three times as many obverses as reverses, and the dies were used in parallel sequences, which suggests the operation of multiple workstations or die boxes.<sup>75</sup>

Crucially, there are no obverse die links between reverses of series *r* and series *l*, and only two obverse legends are common to both groups (see Table 1). While the absence of evidence cannot, of course, be considered evidence of absence, the distinct iconographic characteristics of the two groups, their technical differences, and the lack of links between them are suggestive of two separate units of minting. It is possible that these two units of production were simply different parts of the same mint, but we hold this to be unlikely given the differences in iconography between the two groups. Variations such as the staff held by the left-hand figure suggest fundamentally different conceptions of the type, conceptions that were, moreover, never altered by coming into contact with the other. This is suggestive of geographical distance between the two units of production, and we may therefore conclude that series *r* and *l* were struck in separate mints.

In light of the many die links between series *r* and other types generally accepted to have been struck at Rome, these coins can be assigned to that mint with relative certainty.<sup>76</sup> Series *l* shares many characteristics of coins from the mint of Lyon. While the obverse portraits are not quite as distinctive as other products of that mint, there is a certain similarity,

---

<sup>74</sup> Whereas series *l* shows only two or, at the most, three relatively crude and irregularly-cut steps, series *r* shows at least three or, more often, four or five whose appearance is more uniform.

<sup>75</sup> For the interpretation of such parallel sequences, see Esty 1990; Watson forthcoming.

<sup>76</sup> For the die links, see below, Table 4. These die links also suggest that the arguments of Metcalf 2015 for a short-lived auxiliary mint producing denarii of the PONTIF MAXIM type (e.g., RIC 546, 556) are mistaken.

and the lettering on the obverses certainly displays the ‘neat and close arrangement’ that Mattingly took to be distinctive of the Lyon mint.<sup>77</sup> The use of the unabbreviated **CENSOR** in type 1—a form only otherwise employed in the coinage of Vespasian by the mint of Lyon—is also suggestive of Lyon as the origin of series *l*.<sup>78</sup> While certainty is impossible, we believe that the balance of probabilities weights in favor of assigning series *l* to the mint of Lyon.

Carradice and Buttrey noted that many reverse types employed at the mint of Lyon in AD 70–2 were ‘adapted from contemporary types of the mint of Rome, but with apparently deliberate differences in detail’.<sup>79</sup> We seem to have a similar instance in the case of the *aedes Vestae aurei*, and the addition of the staff to the left-hand figure is particularly interesting. If, as suggested above, the figure’s raised hand is intended to evoke the iconography of a dancing *lar*, the addition of a staff makes little sense. A plausible explanation would be that the Lyon mint was sent a coin or die, either perhaps slightly worn, from which the design was copied. The difference in detail results from the satellite mint’s different understanding of the visual information they received.<sup>80</sup>

### 3.2 *Chronology*

Six elements of titulature appear in the obverse legends of the *aedes Vestae aurei* that can help with the absolute dating of the series; these are laid out in Table 3.<sup>81</sup> Buttrey has clearly set out the chronology of the Flavian titulature, highlighting that titles could be used

---

<sup>77</sup> *BMCRE* p. lviii–lix.

<sup>78</sup> Unabbreviated **CENSOR** appears only on *RIC* 1245–86. Ziegert 2020: 114 explains the use of the full word on type 1, which he attributes to the mint of Rome, as ‘eine Abweichung von der Absprache’.

<sup>79</sup> *RIC* p. 33.

<sup>80</sup> This hypothesis would be consistent with the suggestion of Beckmann 2007: 88–9 that the Roman mint employed ‘archetypal dies’ upon the introduction of a new reverse type, from which later dies were copied.

<sup>81</sup> The reference to Titus **TR POT** in types II and III clearly alludes to his tribunician power *in genere*, but the lack of reference to a specific iteration means it is not helpful for dating purposes.



commemoratively, allowing them to appear on coins for longer than the office was actually held.<sup>82</sup>

The reconstruction of the chronology of series *r* presents few problems. The mention of Vespasian TR POT IIII, along with the absence of any reference to his censorship, fixes type I at some point prior to April 73. Type II, also omitting reference to the censorship, appears to be a parallel issue for Titus. The only known die of type II is linked, either directly or indirectly, to dies of types III, IV, V, VI and VII, and the frequent references to Vespasian and Titus' censorship fix the continuation of this sequence after April 73. Reference to Vespasian COS IIII in type V gives a *terminus ante quem* of January 74, but this sequence is more likely to terminate in mid-73. Dies of type VII are also linked to dies of the remaining four types of series *r*, which are dated to the second half of 73 or later by the direction of the obverse legend.<sup>83</sup> Analysis of the die wear in this last sequence suggests that much of it was struck in parallel, and this fact, together with the lack of reference to Vespasian's fifth consulship, suggests that minting of the *aedes Vestae* type at Rome came to end in late 73. In summary then, minting of series *r* seems to have begun in March/April 73 and extended in a continual sequence until around the end of the year. A possible reconstruction of the sequence of striking is given in the die chart shown in Figure 10.<sup>84</sup>

The dating of series *l* is more problematic, and for convenience we exclude type 6 from the initial discussion. Types 1, 2 and 3 must belong after April 73 because of the reference to Vespasian and Titus' censorship, as must type 4, which is die linked to type 3. There are, however, no other die links between types to help us any further. The lack of the CENSOR title on type 5, may suggest that it belong prior to April 73, but the direction of the obverse legend suggests that it belongs with types 3 and 4. Two possible sequences therefore

---

<sup>82</sup> Buttrely 1980.

<sup>83</sup> *RIC* p. 25.

<sup>84</sup> Esty 1990 has shown that, in the case of die charts with crossings (such as Figure 10), the sequence of die links alone does not permit chronological inferences, but must be supplemented by external information, such as that regarding die wear. Figure 10 takes into account our observations of wear, but even this does not provide enough information to definitively fix the precise order of each and every die.

arise: 5–(April 73)–3–4–1–2 or (April 73)–1–2–3–4–5.<sup>85</sup> Although there is little to decide between the two, we tend towards accepting the latter, since in that reconstruction both obverse legends and obverse legend directions parallel the mint of Rome. It is not possible to set a *terminus ante quem* for the first five types of series *l*, but it seems reasonable to suggest the minting ended roughly contemporaneously with series *r*, that is to say in late 73.

Type 6 refers to Titus' sixth consulship, and therefore dates to between January 77 and January 79, far later than any other types of the *aedes Vestae aurei*. Lyon is not known to have struck any precious metal coins in this period, although it did produce a large volume of *aes* coinage in the years 77–8.<sup>86</sup> Although type 6 is represented by only a single specimen, we see no reason to doubt its authenticity nor, given our arguments above, to assign it to the mint of Rome.<sup>87</sup> It appears, rather, that the resumption of minting at Lyon in 77–8 encompassed not just bronze coinage, as has long been recognized, but also a small volume of precious metal coins, perhaps as a sort of commemorative issue. The reverse type appears to have been chosen not for any particular relevance at that moment in time, but simply because it was the last type used when the mint last produced aurei. We have not at present been able to identify any other aurei or denarii that belong to this issue, though these may appear in future; we note, however, the possibility that type 5 could also be dated to this later period.

### 3.3 Mint operation

The die study allows us to assess the relative volumes of *aedes Vestae aurei* issued in the name of each of Vespasian, Titus and Domitian. Since each obverse die is likely to have struck approximately the same number of coins, the ratios of numbers of obverse dies depicting the three family members should give a rough indication of the number of coins

---

<sup>85</sup> Type 5 may of course come either side of types 3 and 4, but this makes little material difference.

<sup>86</sup> *RIC* 1204–94; Kraay 1978: 56; Ziegert 2020: 168–73.

<sup>87</sup> It is possible that the reverse die used for type 6 (R371) was used in 73 in a currently unattested die pairing, before being transferred to Rome when the Lyon mint stopped operating, meaning that type 6 was in fact struck at Rome. Such a convoluted explanation seems unlikely both on the principle of Occam's Razor, and because the obverse of type 6 shows no stylistic affinities with the coinage of Rome for 77–8.

struck in each of their names. At both Rome and Lyon, the vast majority of dies showed Vespasian, with far fewer for his sons. At Rome, 38 dies depict Vespasian, fifteen show Titus, and just one is for Domitian; at Lyon, seven show Vespasian, two Titus, and one Domitian. Despite the fact that the reverse type stresses family harmony and seems appropriate for pairing with obverses showing family members, it is the emperor himself who in fact dominates the obverses of this coinage.

Despite the emphasis on Vespasian, there is little to suggest any differentiation between members of the imperial family in terms of operation of the mint. At Rome, coins of all three are die linked, either directly or indirectly, to one another, while at Lyon coins of the two Caesars are similarly linked, even if their father's are not.<sup>88</sup> Working units within the mint, commonly labelled *officinae*, do not seem to have been divided on the basis of obverse portrait. There is also no sign of differing weight standards for the coins of the Caesars, as Duncan-Jones has observed for denarii of Titus and Domitian during their father's reign.<sup>89</sup>

The production of the coinage of Domitian does, however, seem less regularized than that of Vespasian or Titus. It has already been noted that Domitian's coinage was struck from just one obverse die at each mint, and at Rome in particular, the striking for Domitian seems somewhat unplanned. In its pairing with obverse die IV.1 for Domitian, the reverse die R4<sub>r</sub> is noticeably more worn than when paired with obverses of Vespasian (V.1, V.2, V.3) or Titus (II.1, III.2, III.3). This suggests that the Domitian obverse was employed right at the end of the sequence, almost as an afterthought. It is noticeable that obverse IV.1 was also utilized for the reverse type of Domitian on horseback (see Table 4), a type noted for its abundance.<sup>90</sup> It seems probable that the obverse was principally intended for use with this type, and not with the *aedes Vestae* reverse. We hesitate to label Domitian's *aedes Vestae* aurei true mistakes, or 'mint mules', where obverse and reverse dies for different issues were accidentally paired together, since the striking of a parallel issue for Domitian at Lyon suggests some form of intentionality. It does appear, however, that the inclusion of obverses of Domitian in this issue was not the main focus of the mint.

---

<sup>88</sup> Given that we are only dealing with a sample of the coins originally produced, it would be unwise to read anything into the lack of die links between coins of Vespasian and those of his sons at Lyon.

<sup>89</sup> Duncan-Jones 1994: 240–2.

<sup>90</sup> *RIC* p. 25; cf. also Carradice 1998: 110 on the commonness of denarii of this type.

It is clear that, at Rome at least, the *aedes Vestae aurei* did not form a discrete and separated unit of production. A by no means exhaustive search of readily available material has uncovered eleven obverse dies that were also used for other reverse types (Table 4). The majority of these external die links are to coins of the PAX AVG type, and the rest seem to have an exceptional character: four are to denarii, while the use of the obverse of Domitian (IV.1) for RIC 538 has been discussed above. This suggests that the *aedes Vestae aurei* and the PAX AVG aurei were produced by the same division of the mint, which was not much involved in the striking of other types during the same time period. The division of the mint does therefore seem to be based around different reverse types, even if we hesitate to label this an *officina*, or to speculate on the number of these divisions within the mint overall.<sup>91</sup>

The use of obverse dies for other reverse types also to a certain extent explains a strange technical feature of the *aedes Vestae aurei* of series *r*, namely that obverse dies outnumber reverse dies by more than 3:1.<sup>92</sup> Since reverse dies took the direct force of the hammer strike, they tended to wear out faster, and die studies therefore normally show that more reverses were used than obverses. The striking reversal of the normal pattern in the case of series *r* demands explanation. External die links offer some explanation—the types listed in Table 4 were struck from some of the same obverses, but different reverses, thus redressing the balance—but it would take a vast number of PAX AVG reverses coupled with very few new obverses to even bring the ratio close to 1:1. Indeed, a number of die studies of Roman aurei have revealed more obverses than reverses, suggesting that this may actually

---

<sup>91</sup> The operational divisions of the Roman mint have occasioned much scholarly discussion. Control marks on the coinage of the mid-third century show that at that time the mint was divided into six *officinae*, each responsible for the production of a different reverse type; this has led to many attempts to discover a similar system operating in the earlier principate, chief among which is Carson 1956. Some scholars have questioned whether reverse types can be seen as the principal indicator of internal divisions of the mint (e.g. Clay 1979: 23; Beckmann 2011: 177), though for at least one period of Domitian's reign this does seem to have been the case (Carradice 1983: 143–6). Woytek 2012: 113–17 offers the most recent review of the evidence and concludes that we are in a position neither to define what constituted an *officina* in the first and second centuries, nor to determine how many there were.

<sup>92</sup> 55 obverses and eighteen reverses were observed. The discrepancy is exacerbated by looking at the estimates for the original numbers of dies used: see above, n. 6.

have been a common pattern.<sup>93</sup> Beckmann's suggestion that obverse dies may have been more frequently inspected for signs of wear, and thus replaced sooner, is plausible but by no means the only possible explanation.<sup>94</sup> It is also possible, for example, that Roman aurei of the imperial period were struck with the reverse fixed in the anvil and the imperial portrait upon the loose die.<sup>95</sup> More studies are required to determine how widespread this pattern is and what its cause may have been.

The comments above regarding die links to other types and the ratio of obverses and reverses are relevant only to series *r*, which we have attributed to the mint of Rome. We have found no evidence that obverses in series *l* were used for other reverse types.<sup>96</sup> The ratio of obverses to reverses in series *l* is a far more normal 1:1.9.<sup>97</sup> This difference in the practicalities of the use of dies between the two series is further support for our assertion that they were struck in different mints.

---

<sup>93</sup> A useful overview of such statistics is given by Bland 2013: 279–80. Martin Beckmann (*in litt.*) has advised us that another example of the same pattern is found for aurei of Hadrian struck in the years AD 117–29.

<sup>94</sup> Beckmann 2000: 133.

<sup>95</sup> A ratio of more obverses than reverses would also occur if reverse dies—but not obverse dies—were ‘hubbed’, that is to say, impressed by a positive punch that produced many dies. This is unlikely given that (a) hubbing would be far more likely with a standardized design such as the imperial portrait than with a detailed and intricate design like the *aedes Vestae* reverse, and (b) there is no evidence for hubbing in antiquity, see Stannard 2011.

<sup>96</sup> We cannot, of course, state for certain that no die links exist or existed; we have, however, consulted all of the illustrations in *RIC*, as well as the published catalogues for the collections in London, Paris, Glasgow and Madrid, and the material available on the *OCRE* website (<http://numismatics.org/ocre/>) as of June 2020 (totalling 556 coins that could possibly have shared a die with series *l*), and are confident that this lack of evidence is in fact evidence of a lack.

<sup>97</sup> The die studies summarized by Bland 2013: 279–80 generally have ratios between 1:1 and 1:2.

Our study has also uncovered two denarii of the *aedes Vestae* type (Fig. 11); *RIC* does not list any genuine coins of this type in silver.<sup>98</sup> They are both of good weight and struck from a die pair that also produced aurei (obverse IX.12 and reverse R14<sub>r</sub>), and there can therefore be little doubt that they are genuine products of the mint. However, given that these silver coins are known from only one die pair, we are inclined to view them as accidental products resulting from confusion in the mint over which dies were to be employed for which metals, and not as an intentional and substantial issue. Along with the die links to other denarius types (Table 4), the *aedes Vestae* denarii do, however, provide evidence for the same internal division of the mint producing coins in both gold and silver.

### 3.4 Practicalities of minting for a dynasty

We began this section by posing the question of whether Flavian reforms to minting practice were linked with the shift towards a more dynastic coinage, of which the *aedes Vestae* aurei, with their dynastic reverse type and obverses for all three family members, may be seen as something of an apogee. The answer that emerges from the forgoing discussion is a resounding ‘not at all’. The appearance of all three male members of the imperial family on obverses, and the sharing of reverse types between them, was not the driver for the centralization of precious metal minting in Rome; this occurred later, and the initial issues of the new dynastic coinage were struck both in the capital and in the branch mint. The internal divisions of the mint do not seem to have been restructured around the family members. We could imagine, for example, one unit producing coins of Vespasian and another those of Titus and Domitian; but this is not the case. The internal structure of the mint remained based around reverse types.

Though negative conclusions such as these may be unsatisfying at first glance, there is an important point to be made here. It is all too easy to present a teleological account of

---

<sup>98</sup> The Berlin denarius (our coin 145) is noted by Ziegert 2020: 117 n. 600 and explained as a hybrid. *BNC* III Vespasian 434 is a plated denarius of the *aedes Vestae* type in Paris. The coin was mentioned by *BMCRE* p. 11n., with no indication that it is suspect, and by *RIC* II<sup>1</sup> p. 19n., with a note that it is plated. Cohen 1880: 413 notes a plated specimen in Paris with a different obverse legend, but this is presumably the same coin and Cohen has misread. Eckhel 1796: 332 records aurei and denarii of the *aedes Vestae* type, but it is not clear whether he had seen any genuine coins in silver or only plated specimens.

Flavian coinage, in which all changes are part of the same march towards the stable system that continued on into the second century. We see that Titus and Domitian appeared first on the obverses of bronze coins, then on the precious metal, and it seems logical that the next step should be that they share precious metal reverse types with their father. The *aedes Vestae* reverse, which we have argued had a programmatically dynastic message, would appear to be the obvious choice for this final step. In reality, however, the process was far messier, and one is left with the impression that the coupling of the *aedes Vestae* reverse with obverses of all three members of the imperial house was somewhat improvised. This is shown most clearly by the fact that Domitian appears on only one obverse die at Rome, and that die seems to have been utilized in a rather ad hoc manner. The brief re-utilization of the type for a small issue at Lyon in 77–8 reinforces the impression that the practicalities of Roman imperial coin production were often improvised. The *aedes Vestae* aurei are, therefore, not the beginning of the truly dynastic era of Flavian coinage, but rather one step in the series of trials and errors that made the Flavian coinage what it was.

#### 4 CONCLUSIONS

Recent scholarship on the iconography of the Roman imperial coinage has, in general, moved away from the detailed investigation of individual types that was common in the first half of the twentieth century.<sup>99</sup> This has been replaced by attempts to discern trends and developments over longer periods of time—perhaps the reign of one or more emperors—often accompanied by quantitative analyses that use coin hoards and finds to determine the relative importance of each coin type.<sup>100</sup> This ‘quantitative turn’ has reinvigorated discussion of Roman coin iconography, moving beyond what had become a stale debate about who chose types and why to focus instead on the question of how Roman viewers might have interpreted the coins they encountered in circulation. This welcome shift in numismatic

---

<sup>99</sup> The introductions to individual reigns in *BMCRE* stand as paradigmatic of this approach.

<sup>100</sup> Noreña 2001 can be considered the progenitor of this approach, while Elkins 2009 sets out a programmatic agenda. Specific examples include Manders 2012; Rowan 2012; Elkins 2017. The shift in focus is highlighted by the overview of recent scholarship by Kemmers 2019: 21–30, who lists two studies concerning individual types, and 21 that focus on longer term trends.

scholarship has substantially improved our understanding of the role these images played in Roman society, but it has rather left gold coins lying by the wayside, since they do not appear frequently enough in hoards and finds to reward quantitative analysis.<sup>101</sup> The iconography of gold coinage is therefore easier to investigate in terms of production, as we have done in this paper, rather than use. Nonetheless, we believe that there are a number of points of intersection between our more old-fashioned analysis of a single aureus type, and the new quantitative approach to Roman coin iconography, and we aim to highlight some of these, and to draw out their significance, in this conclusion.

In order to detect the broad patterns and trends emphasized by scholarship of the ‘quantitative turn’, recent iconographic studies tend to group coinage into themes: for example, military types, religious types, or types referring to current events. Our study suggests that detailed analysis of individual types is a necessary complement to quantitative analysis along these lines. Prior to our study, the *aedes Vestae aurei* might have been classified either as religious or as referring to current events (if they were to be connected with the rebuilding or rededication of the temple), but scarcely anyone would have thought them dynastic. Clearly the complexity of Roman imperial coin types requires study at both the macro and micro scale.<sup>102</sup>

The most striking pattern in Vespasian’s coinage is the proliferation of ‘imitative’ types that are based on earlier precedents.<sup>103</sup> At first glance, it seems tempting to interpret the *aedes Vestae* type as a simple manifestation of this tendency: it closely follows the Neronian precedent and may draw on other numismatic representations of the *aedes Vestae* more indirectly.<sup>104</sup> Our analysis, however, suggests that it would be unwise to interpret the *aedes*

---

<sup>101</sup> Noreña 2001; Rowan 2012; Elkins 2017 all deal at best cursorily with gold coinage.

Manders 2012 is able to give more weight to gold coinage, since she bases her quantification on *RIC* types, but this methodology has been heavily criticized, e.g. by Rowan 2013.

<sup>102</sup> A similar point is acknowledged by Rowan 2013: 551.

<sup>103</sup> The literature on this topic is vast. Buttrey 1972 is seminal, while Ziegert 2020: 191–220 is the most recent contribution, with earlier bibliography.

<sup>104</sup> Ziegert 2020: 201, for example, explicitly identifies our aureus as a copy of the Neronian issue. Note also the angular design of the temple on reverse die R15r and the prominent antefixes on the dies of series *l*, both of which features strongly echo the Neronian dies. This suggests that at least some of the engravers were aware of the Neronian prototype.



*Vestae* type as a mere copy; the addition of the flanking figures provides the key to our interpretation of the type and allowed the coin issuers to convey a more complex message of dynastic stability. In this way, our study raises important questions about both the nature and the purposes of ‘imitative’ coinage that demand further investigation.

A further issue relates to audience, which has been a central concern of the new iconographic studies. Numerous studies have shown that coin iconography could be differentiated according to potential audience groups, either by selecting specific imagery for specific denominations, or by supplying particular coin types to particular geographical areas.<sup>105</sup> What has received less attention is the possibility of the same coin type speaking to different audiences—and in different ways.<sup>106</sup> Our reading of the flanking figures takes us in this direction, since the three associations that we suggest these images may have evoked need not have been thought of by one and the same viewer. Different viewers with different cultural backgrounds and knowledge bases may have found that one or two of the associations spoke to them more. For example, it is unlikely that a resident of the provinces would have made the association with the Castores, since this requires knowledge of the physical location of the *aedes Vestae* within the *Forum Romanum*, but the imagery of the *lares familiares* is likely to have been known to them. Whether a viewer recognized one or all of the associations suggested above, a dynastic interpretation of the type as a whole would have been suggested. Such an approach to individual coin types has the potential to reconcile the subtlety of messaging that recent research has revealed with the search for the ‘meaning’ of individual types that was the focus of earlier scholarship. As such we believe it is a more fruitful route forward than any attempts to pin down a single authoritative intent behind the choice of each coin type.

We do not believe that this multiplicity of different possible associations came about by chance. The very complexity of the iconography of the *aedes Vestae* aurei suggest that coin issuers could have been aware of—and taken into consideration when designing types—the different possible reactions that viewers might have had to coin images. Though coin issuers could not have considered every possible reaction, it seems reasonable to suggest that they were savvy enough to think about a multiplicity of different interpretations. Thus, an

---

<sup>105</sup> Denominational targeting: Metcalf 1993; Marzano 2009; geographical targeting: Kemmers 2005; Barbato 2014; Ellithorpe 2017.

<sup>106</sup> The brief remarks of Cheung 1998: 54–5 remain the only steps in this direction.

integrated approach that considers both the intent of coin issuers and the possible reaction of different viewers appears to be the most promising angle from which to approach the iconography of complex coin types like the *aedes Vestae aurei*.

Closely connected with older investigations of individual types was the question of who chose the designs to be put on coins, which was considered crucial to discovering the intent, and therefore the meaning, behind the images.<sup>107</sup> This issue has rather been sidestepped by the new iconographic scholarship, but it is not entirely ungermane.<sup>108</sup> The state of our sources mean that we are unlikely ever to be able to identify a particular official with the responsibility for choosing coin types.<sup>109</sup> We have attempted in this paper to address the question of intentionality from a different perspective. Our investigation of the practicalities of the production of the *aedes Vestae aurei* revealed a somewhat haphazard approach, a far cry from the seemingly well-planned iconographic programs that much recent scholarship proposes. The re-use of the type at Lyon in 77–8, apparently because it was the last type used by the mint four years previously, suggests that the choice of types was not solely governed by issues of communication. This is not to downplay the ideological content of the iconography, or the impact that it could have had on viewers, but simply to state that not every single aspect of that iconographical program was micro-managed and well thought through. It is these kinds of insights that can only be drawn out by combining iconographic study with detailed investigation of the context of production.

---

<sup>107</sup> Scholars who wanted to downplay the importance of coin images suggested that types were chosen by lowly mint-workers (e.g. Buttrely 1972), while others have suggested mid-ranking officials (Levick 1982), or even those close to the emperor himself (Sutherland 1986). For an overview of the debate, see Wolters 1999: 255–63.

<sup>108</sup> For example, the long-running debate is alluded to by Noreña 2001 in just one sentence and one footnote (p. 147 n. 3). Note, however, the dissatisfaction of one reviewer (König 2018) with the treatment of the issue by Elkins 2017.

<sup>109</sup> The suggestion of Claes 2014, on the basis of the coinage of Nero and Domitian, that type selection was controlled by the *procurator a rationibus* is convincing, but not necessarily transferrable to other reigns.

## 5 POSTSCRIPT: SOME MODERN FORGERIES

Three *aedes Vestae* aurei, struck from two obverse and two reverse dies, have not been included in our analysis, since we judge them to be modern forgeries (Figs. 12–14).<sup>110</sup> The first coin has obverse legend CAESAR VESPASIANVS AVG (our type F1; *RIC* 704), a type not otherwise known for *aedes Vestae* aurei and attested elsewhere in the coinage of Vespasian only in the years 77–8.<sup>111</sup> *RIC* note that the coin is ‘unique and unusual’, and date it to 74 only with serious reservations. We cannot, however, accept it as genuine. Neither obverse nor reverse is die linked to any other coin. The style of the obverse portrait is very unusual, while the reverse exhibits a number of anomalous features, notably the stylized ‘m’ of the acroterion, the embellishments atop each the columns, and the staff held under the left-hand statue’s left arm. None of these features are paralleled on any other dies in our sample. Moreover, the reverse has been engraved with great regularity, and both the baseline of the temple and the lines of the steps are straighter than even the most regular die in series *r*. The coin has been in the British Museum since 1931, but can be provenanced a little further back, to 1926. We therefore suggest that it is the product of an engraver operating in the early twentieth century, perhaps even from the workshop of the Tardanis, father and son forgers who operated around this time.<sup>112</sup>

The other two coins were struck from the same die pair, with the obverse legend T CAESAR IMP VESPASIAN (our type F2; *RIC* 708). This obverse legend is also unknown for genuine *aedes Vestae* coins and is suitable only for the years 74–6.<sup>113</sup> Both obverse and reverse dies are only known from these two coins. As with the previous type, the reverse exhibits a number of anomalies, namely the absence of a plinth for any of the three statues, their curiously rounded limbs, the missing right arm of the central figure, apparently a feature of the die, and the omission of a third, decorated course from the entablature of the temple. The third and fourth of these are particularly noteworthy, because they resemble worn examples of genuine coins. Both coins are also suspiciously heavy; at 7.47g and 7.57g they

---

<sup>110</sup> It should be stressed that the acceptance of any of these coins as genuine would not alter our conclusions.

<sup>111</sup> *RIC* 963–70, 977, 979–84.

<sup>112</sup> On the Tardanis, see Amandry 2009.

<sup>113</sup> *RIC* 705–8, 780–6, 804–5, 807, 809–10, 856–65.

are the heaviest two coins in our sample.<sup>114</sup> One specimen is in trade and can be traced back through auctions to the Bunbury sale of 1895, while the other has been in the Berlin collection since before 1839; these coins therefore appear to be forgeries dating from the early nineteenth century or earlier.<sup>115</sup>

## APPENDIX: CATALOGUE OF COINS

The following catalogue lists 234 genuine aurei of the *aedes Vestae* type, as well as two denarii and three modern forgeries of aurei. Two further aurei are known to us from hoards in Pompeii, but they are not included in the catalogue as we have not been able to obtain images (see Cantilena, R. 2008: *Pompei: Rinvenimenti monetali nella Regio VI*, Studi e materiali 14, Rome, pp. 345 and 359). Each entry for a coin comprises, from left to right: a running number, metal, obverse die, reverse die, weight in grams, die axis expressed in hours of the clock, collection and/or publication information. For an explanation of the numbering of coins, types, and dies, see Section 3 of the main article.

Coins 97 and 230 are illustrated in the main text (Figs. 1–2), as are one example of the denarius version of the type (Coin 145, Fig. 11) and the three coins we identify as modern forgeries (Coins 237–9, Figs. 12–14). One example from each obverse and reverse die is illustrated on the pages following the catalogue; an asterisk before the coin's catalogue number indicates that that coin's obverse die is illustrated, while an asterisk after the coin's catalogue number indicates that that coin's reverse die is illustrated. In addition, where the coin number in the catalogue is printed in bold, an image of the coin can be accessed by visiting the URL formed by appending the coin number to 'https://rebrand.ly/aedes\_vestae\_'. So, for example, an image of coin 1 (= *BMCRE* 372) can be found at [https://rebrand.ly/aedes\\_vestae\\_1](https://rebrand.ly/aedes_vestae_1).

---

<sup>114</sup> The mean weight of the 106 aurei in our catalogue for which weight data are available is 7.21g, with standard deviation of 0.27g. A survey of good weight coins by Butcher and Ponting 2014: 329 to establish the weight standard of Vespasianic aurei showed a mean of 7.31g (standard deviation = 0.07g); the heaviest coin they recorded weighed 7.55g.

<sup>115</sup> This dating would coincide with the activity of the famous forger Carl Wilhelm Becker (1772–1830), but Becker is not known to have made any forgeries of this type: see Pinder 1843: 34.

The following additional abbreviations have been used in the catalogue:

*Collections*

ANS	American Numismatic Society, New York
B	Münzkabinett, Staatliche Museen zu Berlin [numbering refers to object numbers in the online catalogue]
Bologna	Museo Civico Archeologico, Bologna
Boston	Museum of Fine Arts, Boston
Brussels	Bibliothèque Royale de Belgique, Brussels
Budapest	Magyar Nemzeti Múzeum, Budapest
C	Fitzwilliam Museum, Cambridge
Cop	Nationalmuseet, Copenhagen
Frankfurt	Deutsche Bundesbank, Frankfurt am Main
G	Hunterian Museum, Glasgow
Gaziantep	Adıyaman Müzesi, Gaziantep
Göttweig	Benediktinerstift Göttweig
Harvard	Harvard Arts Museum, Harvard
L	British Museum, London
Luton	Wardown Park Museum, Luton
Mad	Museo Arqueológico Nacional, Madrid
Naples	Museo Archeologico Nazionale di Napoli
Netherlands NNC	Nationale Numismatische Collectie, The Netherlands
Nîmes	Musée de la Romanité, Nîmes
O	Ashmolean Museum, Oxford
P	Bibliothèque nationale de France, Paris
R	Museo Nazionale, Rome
Seville	Gabinete Numismático Municipal, Seville
St. Paul	Benediktinerstift St. Paul im Lavanttal
Toulouse	Musée Saint-Raymond, Toulouse
Trier	Rheinisches Landesmuseum, Trier
V	Kunsthistorisches Museum, Vienna
Vatican	Biblioteca Apostolica Vaticana, Vatican City
Wilhering	Zisterzienserstift Wilhering

*Publications and other records*

- Alfaro Asins Alfaro Asins, C. 1993: *Catálogo de las monedas antiguas de oro del Museo Arqueológico Nacional*, Madrid.
- Arquennes hoard Hoard recorded in archive in Brussels, now dispersed.
- BMCRE Mattingly, H. 1930: *Coins of the Roman Empire in the British Museum. Volume II: Vespasian to Domitian*, London.
- BNC Giard, J.-B. 1998: *Monnaies de l'Empire romain. III. Du soulèvement de 68 après J.-C. à Nerva*, Paris and Strasbourg.
- Calicó Calicó, X. 2003: *The Roman Aurei. Volume I. From the Republic to Pertinax, 196 B.C. – 193 A.D.*, Barcelona.
- CH *Coin Hoards*
- CHRB *Coin Hoards of Roman Britain*
- Didcot hoard Bland, R., and Orna-Ornstein, J. 1997: 'Didcot, Oxfordshire: 126 aurei to AD 160,' in *CHRB X*, London, 91–100.
- Du Chastel de Callataÿ, F. and van Heesch, J. 1999: *Greek and Roman coins from the Du Chastel Collection: coin cabinet of the Royal Library of Belgium*, London.
- HCC Robertson, A. S. 1962: *Roman Imperial Coins in the Hunter Coin Cabinet, University of Glasgow: I. Augustus to Nerva*, Glasgow.
- Liberchies hoard Thirion, M., Claes, P. and Léva, C. 1972: *Le trésor de Liberchies. Aurei des I<sup>er</sup> et II<sup>e</sup> siècles*, Brussels.
- Mazzini Mazzini, G. 1957: *Monete Imperiali Romane I: Pompeo Magno – Domizia*, Milan.
- Sear, *Roman Coins* Sear, D. 2000: *Roman Coins and their Values, The Millennium Edition*, London.
- Shillington hoard Curteis, M. and Burleigh, G. 2002: 'Shillington A and B, Bedfordshire,' in *CHRB XI*, London, 65–74.
- Trier hoard Gilles, K.-J. 2013: *Der römische Goldmünzenschatz aus der Feldstraße in Trier*, Trier.
- TVB's files Photo file records of Professor Ted Buttrey
- via Po hoard Cesano, S. L. 1929: 'Ripostiglio di aurei imperiali rinvenuto a Roma,' *Bullettino della Commissione Archeologica Comunale di Roma* 57, 1–119.

*Series r: Mint of Rome*

Type I: IMP CAES VESPAS AVG P M TR P III P P COS III Clockwise, inwardly

\*1\* AV I.1 R1<sub>r</sub> 6.57 5 L 1923,1105.43 (= BMCRE 372 = ex Spink = Glendining (22/III/1923) 182)

Type II: T CAES IMP VESP PON TR POT Clockwise, inwardly

\*2\* AV II.1 R2<sub>r</sub> 7.18 7 V RÖ 6691  
 3 AV II.1 R2<sub>r</sub> 6.96 2 Trier (= Trier hoard 1308)  
 4 AV II.1 R2<sub>r</sub> 6.85 6 Trier (= Trier hoard 1309)  
 5 AV II.1 R4<sub>r</sub> 7.39 Leu/MMAG [Niggeler 3] (2/XI/1967) 1169 = Bourgey (16/XII/1913) 162  
 6 AV II.1 R4<sub>r</sub> 7.13 Varesi 67 (18/XI/2015) 48 = Heritage 3040 (9/IV/2015) 29231 = Emporium Hamburg 72 (13/XI/2014) 443  
 = Emporium Hamburg 71 (8/V/2014) 118  
 7 AV II.1 R4<sub>r</sub> 7.11 7 Madrid (= Alfaro Asins 139)  
 8 AV II.1 R4<sub>r</sub> 7.07 Arquennes hoard 220 = Calicó 797  
 9 AV II.1 R4<sub>r</sub> 7.04 7 Heritage NYINC Signature Sale 3098 (18–19/I/2022) 33286 = Roma Numismatics E-Sale 61 (22/VIII/2019)  
 669 = Heritage 3071 (6/I/2019) 32070 = CNG 26 (11/VI/1993) 456 = Classical Numismatic Review 18  
 (January 1993) 219

Type III: T CAES IMP VESP PON TR POT CENS Clockwise, inwardly

\*10 AV III.1 R2<sub>r</sub> 7.01 Artemide Aste XLIV (12/XII/2015) 211  
 11\* AV III.2 R3<sub>r</sub> 6.84 6 Trier (= Trier hoard 1312)  
 12 AV III.2 R4<sub>r</sub> 7.36 6 Roma Numismatics XVI (26/XI/2018) 703 = Bourgey (10/III/1976) E = Bank Leu 10 (29/V/1974) 106 =  
 Hess/Leu 41 (24/IV/1969) 144  
 13 AV III.2 R4<sub>r</sub> 7.30 Freeman & Sear List 10 (Spring 2005) 94  
 14 AV III.2 R4<sub>r</sub> 7.27 Mazzini 349  
 \*15\* AV III.2 R4<sub>r</sub> 7.26 G GLAHM:24896 (= HCC p. 230 no. 5)  
 16 AV III.2 R4<sub>r</sub> 7.03 Bologna MCA-NUM-30977 (= F. Panvini-Rosati, *La Moneta Romana Imperiale da Augusto a Commodo: catalogo della mostra; Museo Civico Archeologico, 31 gennaio - 15 marzo 1981* (Bologna, 1981) 223)  
 17 AV III.2 R5<sub>r</sub> 7.22 6 Morton & Eden 100 (2/V/2019) 333 = Calicó 796 = Lanz 28 (7/V/1984) 470 = ex Biaggi de Blasys coll. =  
 MMAG 19 (5–6/VI/1959) 195  
 18 AV III.3 R4<sub>r</sub> 7.14 Gorny & Mosch 207 (15/X/2012) 611  
 19 AV III.3 R5<sub>r</sub> 7.43 Vico 109 (10/XI/2005) 1348 = Argenor (13/IV/2005) 138 = M&M GmbH 14 [Arthur Bally-Herzog] (16/IV/2004)  
 99 = ex J. Hirsch

20	AV	III.3	R5 <sub>r</sub>	7.25		Naples 12575 (= ex Pompeii III, 7 garden hoard (3/XI/1959))
<b>21</b>	AV	III.3	R5 <sub>r</sub>	7.07	6	CNG EA 479 (21/X/2020) 172
*22	AV	III.3	R5 <sub>r</sub>	6.77	6	O HCR6830 (Keble College coll. = bought of Spink (2/I/1890) = Rollin and Feuarent [M. le Comte de D***] (27/V/1889) 307)
23	AV	III.3	R5 <sub>r</sub>	7.10		R (= via Po hoard 132)
24	AV	III.4	R5 <sub>r</sub>	7.34		Schweizerischer Bankverein 5 (16/X/1979) 429
<b>25</b>	AV	III.4	R5 <sub>r</sub>	7.20	6	L R.10352 (= <i>BMCRE</i> 411)
*26	AV	III.4	R5 <sub>r</sub>	6.91	6	Trier (= Trier hoard 1311)
*27	AV	III.5	R6 <sub>r</sub>			TVB's files 297

#### Type IV: CAES AVG F DOMITIAN COS II Clockwise, inwardly

*28	AV	IV.1	R4 <sub>r</sub>	7.20		Numismatica Ars Classica O (13/V/2004) 1957
29	AV	IV.1	R4 <sub>r</sub>	6.98		Mazzini 614
30	AV	IV.1	R4 <sub>r</sub>			Münzhandlung Basel 6 (18/III/1936) 1633

#### Type V: IMP CAES VESP AVG P M COS III CEN Clockwise, inwardly

31	AV	V.1	R4 <sub>r</sub>	6.96	6	Trier (= Trier hoard 1035)
32	AV	V.1	R4 <sub>r</sub>			R 87189
*33*	AV	V.1	R5 <sub>r</sub>	7.07	7	V RÖ 6213
34	AV	V.1	R5 <sub>r</sub>			Bickelmann List 20 (IX/1969) 2
35	AV	V.1	R5 <sub>r</sub>			Rollin & Feuarent [Montagu] (25-28/IV/1896) 190
*36	AV	V.2	R4 <sub>r</sub>	7.02		Or Gestion Numismatique (O.N.G.) e-shop (31/I/2013)
37	AV	V.3	R4 <sub>r</sub>	7.06	6	Trier (= Trier hoard 1034)
*38*	AV	V.3	R6 <sub>r</sub>	7.26	6	Brussels 44.30 (= Du Chastel 439 = Boscoreale hoard)
<b>39</b>	AV	V.3	R6 <sub>r</sub>	7.08	6	Nomos obolos 18 (21/II/2021) 565 = G. Hirsch 137 (29/VI–2/VII/1983) 134 = G. Hirsch 130 (21–23/I/1982) 138
40	AV	V.3	R6 <sub>r</sub>	7.05		Gaziantep 22252 (= A. Ergeç, 'The Kuşakkaya Hoard of Aurei' in R. Ashton (ed.) <i>Studies in Ancient Coinage from Turkey</i> (London, 1996) Nr. 11)
41	AV	V.3	R6 <sub>r</sub>			Calicó 694 = ex Biaggi de Blasys coll. = Santamaria [Signorelli 2] (4/VI/1952) 1284
*42	AV	V.4	R6 <sub>r</sub>	7.14		J. R. Subastas (4/III/1993) 79 = Aureo (31/III/1992) 52
43	AV	V.5	R6 <sub>r</sub>	7.36		Gorny & Mosch 48 (2/VIII/1990) 815 = Monimat/Rauch (22/XI/1989) 236 = ANA Auction (Galeries des Monnaies/New England Rare Coin Auctions) 1 (1/VIII/1979) 2467 = Brandt & Sonntag (n.d.) List 6 no. 387
*44	AV	V.5	R6 <sub>r</sub>	7.15		Hess (9/V/1951) 57



45	AV	V.6	R6 <sub>r</sub>	7.35		A.E. Cahn 71 (14/X/1931) 1523
*46	AV	V.6	R6 <sub>r</sub>	6.97	6	CNG EA 364 (2/XII/2015) 559
47	AV	V.7	R7 <sub>r</sub>	7.33	6	L 1843,0116.17 (= <i>BMCRE</i> 90 = ex Nott coll.)
*48	AV	V.7	R7 <sub>r</sub>	6.66	7	V RÖ 6212
*49*	AV	V.8	R7 <sub>r</sub>	7.31	6	P IMP-7506 (= <i>BNC</i> <i>Vespasian</i> 77)
50	AV	V.8	R7 <sub>r</sub>	7.19	6	Künker 376 (18–19/X/2022) 4938 = Leu Numismatik Web Auction 16 (22–24/V/2021) 3426 (7.23g) = Chaponnière & Firmenich 12 (18/X/2020) 74 (7.17g) = Maison Palombo 15 (22/X/2016) 41 = Vinchon (5/X/1989) 25
51	AV	V.8	R7 <sub>r</sub>	7.15	6	Bertolami Fine Arts 9 (29/IV/2014) 476 = Bertolami Fine Arts 7 (20/V/2013) 544
52	AV	V.8	R7 <sub>r</sub>	7.02	6	B 18219183 (= ex Landesmuseum Kassel)
53	AV	V.8	R7 <sub>r</sub>	5.90	6	CNG EA 318 (15/I/2014) 634

Type VI: **T CAES IMP VESP CEN** Clockwise, inwardly<sup>116</sup>

54	AV	VI.1	R6 <sub>r</sub>	7.24	6	Heritage Dallas Signature Sale 3085 (5–7/VIII/2020) 30041 = Santamaria [Magnaguti 2] (16/II/1949) 594
*55	AV	VI.1	R6 <sub>r</sub>	7.20	7	Cop BP 618.3
56	AV	VI.1	R6 <sub>r</sub>			Hess Lucerne (24/XI/1937) 95 = L. Hamburger (19/X/1925) 695

Type VII: **IMP CAES VESP AVG CEN** Clockwise, inwardly

*57	AV	VII.1	R6 <sub>r</sub>	6.99	6	Trier (= Trier hoard 1027)
*58*	AV	VII.2	R8 <sub>r</sub>	6.93		Cop GP 3147.1 (= A. Kromann, <i>Romersk guld: mønter i Den kgl. Mønt- og Medaillesamling</i> (Copenhagen, 1989) 78)
59	AV	VII.2	R8 <sub>r</sub>	6.39	1	Trier (= Trier hoard 1030)
*60	AV	VII.3	R8 <sub>r</sub>	7.10		Emporium Hamburg 98 (2–5/V/2022) 323 = Emporium Hamburg 95 (8–11/XI/2021) 430 = Emporium Hamburg 89–90 (22–24/IV/2020) 349
61	AV	VII.4	R8 <sub>r</sub>	7.27		Madrid, Old Collection (= Alfaro Asins 1452)
62	AV	VII.4	R8 <sub>r</sub>	7.12	1	CNG Triton XXI (9/I/2018) 734 (7.09g) = Roma Numismatics XI (07/IV/2016) 782 (7.12g)
63	AV	VII.4	R8 <sub>r</sub>	7.10	12	Florange-Ciani (14–15/VI/1923) 15 = Dupriez 110bis (4/XI/1912) 1760
64	AV	VII.4	R8 <sub>r</sub>	7.08		G. Hirsch 256 (5/V/2008) 481 = CNG Triton VIII (11/I/2005) 1117 = Lanz 97 (22/V/2000) 512 = Naville 8 [Bement] (25/VI/1924) 733
65	AV	VII.4	R8 <sub>r</sub>	7.02	12	CNG 96 (5/V/2014) 766

<sup>116</sup> A further coin of this type appeared in trade too late to be fully included in the catalogue (Heritage Dallas Signature Sale 3102 (2–4/XI/2022) 32261). It is struck from obverse VI.1 and a new reverse die.

66	AV	VII.4	R8 <sub>r</sub>			private coll.
67	AV	VII.4	R9 <sub>r</sub>	7.32		CNG 67 (22/IX/2004) 1360 = CNG EA 74 (1/X/2003) 74 (7.07g) = CNG 63 (21/V/2003) 1271 = M&M GmbH 11 (7/XI/2002) 276 = A.E. Cahn 71 (14/X/1971) 1522 (7.38g)
68	AV	VII.4	R9 <sub>r</sub>	7.32	12	CNG Triton XXIV (19–20/I/2021) 150 = Spink 1302 (27/III/2002) 152 = Glendining (27/IX/1962) 181 = Numismatica Ars Classica XII (18/X/1926) 2806
*69*	AV	VII.4	R9 <sub>r</sub>	7.25	12	L 1996,0316.13 (= Didcot hoard 13)
70	AV	VII.4	R9 <sub>r</sub>	7.10		Bruun Rasmussen 764 (11/XII/2006) 5702 = J. Schulman [Vierordt 2] (17/VI/1924) 692 = J. Schulman [Vierordt] (5/III/1923) 1028 = Merzbacher (2/XI/1909) 1296
71	AV	VII.4	R9 <sub>r</sub>	7.08	12	Trier (= Trier hoard 1025)
72	AV	VII.4	R9 <sub>r</sub>	7.00		Arquennes hoard 188
73	AV	VII.4	R9 <sub>r</sub>	6.90		Soler y Llach 1096 (04/V/2017) 126 = Hervera-Soler y Llach 63 (21/XII/2010) 3591
74	AV	VII.4	R9 <sub>r</sub>			Gibbons coin list 9 (Spring 1976) 322
75	AV	VII.4	R9 <sub>r</sub>			Gilhofer & Ranschburg/Hess [Trau] (22/V/1935) 585
76	AV	VII.4	R9 <sub>r</sub>			Naville 3 [Evans] (16/VI/1922) 41
77	AV	VII.4	R9 <sub>r</sub>			Page-Ciani [Couturier] (7–10/IV/1930) 109 = Egger 45 (12/XI/1913) 982
78	AV	VII.4	R9 <sub>r</sub>			J. Schulman [Vierordt] (5/VI/1930) 359
79	AV	VII.4	R9 <sub>r</sub>			Vitalini [Capo] (9/III/1891) 453
*80	AV	VII.5	R8 <sub>r</sub>	7.11		P IMP-7521 (= BNC Vespasian 92)
81	AV	VII.5	R9 <sub>r</sub>	7.19	11	V RÖ 6257
82	AV	VII.5	R9 <sub>r</sub>	7.06		Numismatica Ars Classica 84 (21/V/2015) 1820
83	AV	VII.5	R9 <sub>r</sub>	5.56	10	Budapest 105.1872.2
84	AV	VII.6	R9 <sub>r</sub>	7.16	6	CNG Triton XX (20/I/2017) 689 = CNG 85 (15/IX/2015) 868
85	AV	VII.6	R9 <sub>r</sub>	6.93		Künker 133 (11/X/2007) 8708 = Aureo (14/I/1992) 2039
*86	AV	VII.6	R9 <sub>r</sub>	6.89	6	Trier (= Trier hoard 1028)
87	AV	VII.6	R9 <sub>r</sub>			Vatican Vespasiano 206
*88	AV	VII.7	R9 <sub>r</sub>	7.40	12	L R1874,0715.20 (= BMCRE 365 = ex Rollin & Feuarent)
89	AV	VII.7	R9 <sub>r</sub>	7.27		Bolaffi 35 (28/XI/2019) 101 = Leu/MMAG [Niggeler 3] (2/XI/1967) 1160
90	AV	VII.7	R9 <sub>r</sub>	6.87	12	Trier (= Trier hoard 1029)
91	AV	VII.8	R9 <sub>r</sub>	7.12	12	Roma Numismatics XXI (24–25/III/2021) 555
92	AV	VII.8	R9 <sub>r</sub>	7.03		Henzen List 258 (X/2013) = Henzen List 218 (XII/2010) = Henzen List 172 (X/2006) 349 = Henzen List 168 (V/2006) 346 = Henzen List 160 (VI/2005) 326 = Credit de la Bourse (22–23/IV/1992) 39
93	AV	VII.8	R9 <sub>r</sub>	6.89	12	Boston 1975.778
*94*	AV	VII.8	R10 <sub>r</sub>	7.30		Netherlands NNC RO-02893
95	AV	VII.8	R10 <sub>r</sub>			Calicó 690 = ex Biaggi de Blasys coll. = Sambon & Canessa [Strozzi] (15/IV/1907) 1858
*96	AV	VII.9	R10 <sub>r</sub>	7.16		Felzmann 150 (4/XI/2014) 297
*97*	AV	VII.10	R11 <sub>r</sub>	7.38	12	ANS 1956.184.26

98	AV	VII.10	R11 <sub>r</sub>	7.30	12	Luton (= Shillington hoard 82)
99	AV	VII.10	R11 <sub>r</sub>	7.17	12	L 1912,0607.74 (= <i>BMCRE</i> 107 = Second Corbridge Find (1912))
100	AV	VII.10	R11 <sub>r</sub>	7.11	12	CNG EA 392 (1/III/2017) 523
101	AV	VII.10	R11 <sub>r</sub>	7.03	12	Trier (= Trier hoard 1026)
102	AV	VII.10	R11 <sub>r</sub>	7.01		Künker 280 (26/XI/2016) 543
103	AV	VII.10	R11 <sub>r</sub>	6.35	12	Trier (= Trier hoard 1031)
104	AV	VII.10	R12 <sub>r</sub>	7.20		Afinsa (7/V/2002) 86

#### Type VIII: IMP CAES VESP AVG CEN Anti-clockwise, outwardly

105	AV	VIII.1	R11 <sub>r</sub>			Colosseum Coin Exchange 11 (31/VIII/2010) 59 = Aufhäuser 9 (7–8/X/1993) 289
*106*	AV	VIII.1	R12 <sub>r</sub>	7.32	1	V RÖ 6258
*107	AV	VIII.2	R12 <sub>r</sub>			Santamaria (16/I/1924) 189
108	AV	VIII.3	R12 <sub>r</sub>	7.10	12	CNG EA 330 (31/VIII/2010) 333
109	AV	VIII.3	R13 <sub>r</sub>	7.12		St. Paul (= M. Alram, R. Denk, W. Szaivert & F. Dick, <i>Die Münzsammlungen der Benediktinerstifte Kremsmünster und St. Paul im Lavanttal</i> (Vienna, 1983) No. 649)
*110	AV	VIII.3	R13 <sub>r</sub>	6.91		Calicó 690a = M&M GmbH 11 (7/XI/2002) 275 = Sternberg & Apparuti 14 (24/V/1984) 292 = Hess (9/V/1951) 56
*111	AV	VIII.4	R13 <sub>r</sub>	7.10	11	CNG EA 412 (17/I/2018) 502 (7.07g, 12h) = Roma Numismatics XII (29/IX/2016) 689
112	AV	VIII.5	R14 <sub>r</sub>	7.28		Vinchon (7/XI/1977) 106 = Santamaria [Hartwig] (7/III/1910) 1179
*113	AV	VIII.5	R14 <sub>r</sub>	7.23	12	L 1864,1128.40 (= <i>BMCRE</i> 108 = ex Wigan coll.)
114	AV	VIII.5	R14 <sub>r</sub>	7.09	12	Nomos AG list (Winter/Spring 2014) 40 = J. Hirsch 30 (11/V/1911) 930
115	AV	VIII.5	R14 <sub>r</sub>	7.06	12	Brussels 62.664 (= Liberchies hoard 109)
116	AV	VIII.5	R14 <sub>r</sub>	6.84		Künker 204 (12/III/2012) 574

#### Type IX: IMP CAES VESP AVG CENS Anti-clockwise, outwardly

117	AV	IX.1	R14 <sub>r</sub>	7.22		MMAG 38 [Voirol] (6/XII/1968) 387
*118*	AV	IX.1	R14 <sub>r</sub>	7.17	7	Toulouse 2000.14.95 (= "Monnaies romaines en or de la République et du Haut-Empire, jusqu'à Titus" in <i>Les Monnaies d'or des Musées de Toulouse, Musée Saint-Raymond, Musée Paul Dupuy</i> (Toulouse, 1994) No. 95 = C. Roumeguère, <i>Description des médailles grecques et latines du Musée de la ville de Toulouse précédée d'une introduction à l'étude des médailles antiques</i> (Toulouse & Paris, 1858) p. 126 no. 185)
*119	AV	IX.2	R14 <sub>r</sub>	7.24		Künker 168 (12/III/2010) 7709 (7.22g) = Numismatica Ars Classica 52 (7/X/2009) 373 = Künker 94 (27/IX/2004) 1870 = Spink 168 (15/IV/2004) 27
120	AV	IX.2	R14 <sub>r</sub>			O. Voetter, <i>Sammlung Bachofen von Echt: Römische Münzen und Medaillons</i> (Vienna, 1903) No. 949
121	AV	IX.2	R14 <sub>r</sub>			Egger 39 (15/I/1912) 797

*122	AV	IX.3	R14 <sub>r</sub>	7.15		Goldberg 62 (01/II/2011) 3180 (7.13g) = Cederlind 156 (30/IX/2010) = Stack's (12/I/2009) 2270
123	AV	IX.4	R14 <sub>r</sub>	7.24	11	Heritage ANA Signature Sale 3056 (3/VIII/2017) 30004 = ex Acre hoard ( <i>CH VII</i> (1985) no. 243 p. 157)
*124	AV	IX.4	R14 <sub>r</sub>	6.97	12	Trier (= Trier hoard 1043)
*125	AV	IX.5	R14 <sub>r</sub>	6.70		Mazzini 578
*126	AV	IX.6	R14 <sub>r</sub>	6.65	12	C CM.LS.3273-R (= Lewis coll.)
*127	AV	IX.7	R14 <sub>r</sub>	7.27	12	L R.10303 (= <i>BMCRE</i> 109 = ex George IV, 1825 = ex George III)
128	AV	IX.7	R14 <sub>r</sub>	7.18		MMAG 43 (12/XI/1970) 321
129	AV	IX.7	R14 <sub>r</sub>			Glendining [Ryan] (20/II/1951) 1688
130	AV	IX.8	R13 <sub>r</sub>	7.25	12	Künker 341 (1–2/X/2020) 5838 = Editions V. Gadoury (16/XI/2018) 62 (7.27g) = Santamaria [Brunacci] (24/II/1958) 1059 = G. Hirsch 9 (26/VI/1956) 431a = Dorotheum [Zeno] (06/VI/1955) 378
*131	AV	IX.8	R13 <sub>r</sub>	7.20	12	CNG EA 460 (29/I/2020) 618 = Cayón (12/XII/2015) 67
*132	AV	IX.9	R13 <sub>r</sub>	7.21		Heritage ANA Signature Sale 3094 (19–20/VIII/2021) 34213 = NAC Spring Sale 2021 (10/V/2021) 1249
133	AV	IX.10	R13 <sub>r</sub>	6.12		Nomisma (San Marino) 51 (15/X/2014) 583 = Kölner Münzkabinett 76 (7/V/2002) 198 (6.10g)
*134	AV	IX.10	R14 <sub>r</sub>	7.33		Calicó 691 = CNG 40 (4/XII/1996) 1422 = ex Biaggi de Blasys coll. = Glendining [Hall 2] (16/XI/1950) 1165 = Feuarent [Ready] (8/VII/1919)
135	AV	IX.10	R14 <sub>r</sub>	7.30		Hervera-Soler y Llach 1068 (25/X/2011) 200 (7.21g) = Hervera-Soler y Llach 61 (23/X/2010) 39
136	AV	IX.10	R14 <sub>r</sub>	7.22	12	G GLAHM:24706 (= <i>HCC</i> p. 193 no. 43)
*137	AV	IX.11	R16 <sub>r</sub>	7.16	12	Wilhering (= R.V.D. Dick, <i>Die Münzsammlungen der Zisterzienserstifte Wilhering und Zwettl</i> (Vienna, 1975) No. 272)
138	AV	IX.12	R14 <sub>r</sub>	7.41	10	Sear, <i>Roman Coins</i> 2255 = Numismatic Fine Arts 26 (14/VIII/1991) 227 = Hess/Leu [ESR] (23/III/1961) 104
139	AV	IX.12	R14 <sub>r</sub>	7.39		Harmers 1 (25/IX/2020) 61 = Künker 312 (8/X/2018) 2832 (7.41g) = Künker 280 (26/IX/2016) 544 = Gorny & Mosch 236 (7/IV/2016) 434 = Sotheby's 94 (6/X/1994) 34 = Hess [Löbbecke] (6/I/1926) 1017
*140	AV	IX.12	R14 <sub>r</sub>	7.30	12	ANS 1944.100.39927 (= Sotheby's [O'Hagan] (13/VII/1908) 195)
141	AV	IX.12	R14 <sub>r</sub>	7.17	6	CGB (12/IX/2017) 98 = Vinchon (31/V/2017) 165 = Vinchon (3/XII/2015) 35 = Vinchon (X/1973) 57 = Gilhofer & Ranschburg/Hess [Trau] (22/V/1935) 586
142	AV	IX.12	R14 <sub>r</sub>			L. Ciani [Collection F. M...] (25/X/1920) 164
143	AV	IX.12	R14 <sub>r</sub>			Delaune list 1 (n. d.) 465
144	AR	IX.12	R14 <sub>r</sub>	3.94	6	Harvard 1942.176.146
145	AR	IX.12	R14 <sub>r</sub>	3.81	6	B 18221692 (= ex A.E. Cahn)
146*	AV	IX.12	R17 <sub>r</sub>	7.26		Sotheby's (7/III/1996) 173 = Sotheby's Zurich [Brand] (1/VII/1982) 7 = J. Hirsch 18 (27/V/1907) 678
147	AV	IX.13	R14 <sub>r</sub>	7.19	1	V RÖ 6256
148	AV	IX.13	R18 <sub>r</sub>	7.30	12	MMAG list 408 (II/1979) 21 = MMAG list 377 (IV/1976) 26 = L. Hamburger (19/X/1925) 666
149	AV	IX.13	R18 <sub>r</sub>	7.28	12	Heritage Auctions CICF Signature Sale 3032 (10/IV/2014) 23568 = Goldberg 53 (26/V/2009) 1880 (7.2g) = Künker 62 (13/III/2001) 366 (7.25g)
150	AV	IX.13	R18 <sub>r</sub>	7.17		Pegasi 6 (8/IV/2002) 13
151	AV	IX.13	R18 <sub>r</sub>	7.12	12	Roma Numismatics XXII (7–8/X/2021) 710
*152*	AV	IX.13	R18 <sub>r</sub>	7.01	1	Brussels 62.665 (= Liberchies hoard 110)

153	AV	IX.13	R18 <sub>r</sub>			Bruun Rasmussen 829 (2/V/2012) 5328
154	AV	IX.14	R18 <sub>r</sub>	7.02		Edlins 131 (4/III/2000) 358 = Arquennes hoard 189
*155	AV	IX.14	R18 <sub>r</sub>			Noble 106 (29/VII/2014) 3307 = Noble 96 (5/IV/2011) 4922= Downies 263 (16/VII/1997) 748
*156	AV	IX.15	R18 <sub>r</sub>	7.32		G. Hirsch 169 (20–22/II/1991) 791
157	AV	IX.15	R18 <sub>r</sub>			Rollin & Feuardent [M. le Comte de D***] (27/V/1889) 293
158	AV	IX.15	R18 <sub>r</sub>			Seaby's Coin & Medal Bulletin 707 (VII/1977) 1202

Type X: T CAES IMP VESP CEN Anti-clockwise, outwardly

<b>159</b>	AV	X.1	R13 <sub>r</sub>	7.39	1	Brussels 47.12 (= Du Chastel 441 = Rollin & Feuardent [Ponton d'Amécourt] (25/IV/1887) 163)
<b>160</b>	AV	X.1	R13 <sub>r</sub>	7.32	12	Leu Numismatik 87 (6/V/2003) 13
<b>161</b>	AV	X.1	R13 <sub>r</sub>	7.28	1	Heritage ANA Signature Sale 3094 (19–20/VIII/2021) 32032 = Roma Numismatics XX (29/X/2020) 575 = Roma Numismatics 4 (30/IX/2012) 535 = Calicó 794 = Sotheby's (8/VII/1996) 101 = Bank Leu 36 (7/V/1985) 247 = ex Biaggi de Blasys coll. = MMAG 13 (17/VI/1954) 666 = ex Boscoreale hoard
* <b>162*</b>	AV	X.1	R13 <sub>r</sub>	7.27	12	P IMP-7528 (= <i>BNC</i> Vespasian 99)
<b>163</b>	AV	X.1	R13 <sub>r</sub>	7.25		Künker 273 (14/IV/2016) 681 = Rauch 96 (10/XII/2014) 309
<b>164</b>	AV	X.1	R13 <sub>r</sub>	7.17	12	CGB 60 (4/XII/2013) 34
165	AV	X.1	R13 <sub>r</sub>			Vatican Tito 142
166	AV	X.2	R13 <sub>r</sub>	7.15		J. Hirsch [Weber] (10/V/1909) 1223
<b>167</b>	AV	X.2	R13 <sub>r</sub>	7.14		Künker 168 (12/III/2010) 7713 (7.09g) = Comptoir Général Financier 1 (28/XII/1996) 63
<b>168</b>	AV	X.2	R13 <sub>r</sub>	7.08	12	Numismatica Ars Classica 114 (6/V/2019) 1476 = G. Hirsch 202 (25/XI/1998) 420 = Lanz 102 (28/V/2001) 513 = Elsen 42 (16/XII/1995) 193
<b>169</b>	AV	X.2	R13 <sub>r</sub>	7.08		Numismatica Ars Classica 84 (21/V/2015) 1824
* <b>170</b>	AV	X.2	R13 <sub>r</sub>	7.06	1	P IMP-7527 (= <i>BNC</i> Vespasian 98)
<b>171</b>	AV	X.2	R13 <sub>r</sub>	6.93		Stack's (17/I/2020) 20098
172	AV	X.2	R13 <sub>r</sub>	6.18	12	Trier (= Trier hoard 1328)
* <b>173</b>	AV	X.3	R13 <sub>r</sub>	7.18	12	Rauch 91 (5/XII/2012) 319 = Künker 216 (8/X/2012) 878 = CNG Triton XV (3/I/2012) 1510 = Herrero (21/XII/2000) 134
* <b>174</b>	AV	X.4	R14 <sub>r</sub>	5.40	12	B 18229420

Type XI: T CAES IMP VESP CENS Anti-clockwise, outwardly

<b>175</b>	AV	XI.1	R14 <sub>r</sub>	7.31	12	L R.10306 (= <i>BMCRE</i> 120 = ex George IV, 1825 = ex George III)
*176	AV	XI.1	R14 <sub>r</sub>	7.24		G GLAHM:24901 (= <i>HCC</i> p. 231 no. 9)
177	AV	XI.1	R14 <sub>r</sub>	7.14		Hess (09/V/1951) 73

178	AV	XI.1	R14 <sub>r</sub>	7.05		Seville (= F.d.P. Pérez Sindreu, <i>Catálogo de monedas y medallas de oro: Gabinete Numismático Municipal</i> (Seville, 1980) No. 20)
179	AV	XI.1	R14 <sub>r</sub>	6.98		Budapest 53.1960.39
180	AV	XI.1	R14 <sub>r</sub>	6.67	12	Trier (= Trier hoard 1331)
181	AV	XI.1	R14 <sub>r</sub>			R 87217
182	AV	XI.1	R14 <sub>r</sub>			S.L. Cesano, <i>Catalogo della Collezione Numismatica di Carlo Piancastelli</i> (Forli, 1957) No. 905
<b>183</b>	AV	XI.2	R15 <sub>r</sub>	7.18	12	Nomos 13 (7/X/2016) 269 = Leu Numismatik 91 (10/V/2004) 527 (7.32g) = Bourgey (5/XII/1977)
<b>*184*</b>	AV	XI.2	R15 <sub>r</sub>	7.15	12	Heritage CICF Signature Sale 3024 (18/IV/2013) 24869 (7.17g) = Arquennes hoard 226
<b>185</b>	AV	XI.2	R15 <sub>r</sub>	6.96		Sondermann e-shop (8/V/2013) = Künker 153 (14/III/2009) 8680 = Gorny & Mosch 147 (6/III/2006) 2049
<b>*186</b>	AV	XI.3	R15 <sub>r</sub>	7.01	12	Trier (= Trier hoard 1329)
187	AV	XI.3	R15 <sub>r</sub>	7.00	12	Münzhandlung Basel 6 (18/III/1936) 1627
188	AV	XI.4	R16 <sub>r</sub>	7.31		Numismatica Ars Classica A (27–28/II/1991) 1778
189	AV	XI.4	R16 <sub>r</sub>	7.12		Calicó 795 = Sear, <i>Roman Coins</i> 2423 = Gorny & Mosch 56 (7/X/1991) 441
<b>*190*</b>	AV	XI.4	R16 <sub>r</sub>	7.01	12	Trier (= Trier hoard 1330)

## 5.1 Series I: Mint of Lyon

Type 1: IMP CAESAR VESP AVG CENSOR Clockwise, inwardly

<b>*191</b>	AV	1.1	R19 <sub>l</sub>	7.35		Rauch 98 (21/IX/2015) 372 = Gilhofer & Ranschburg/Hess [Trau] (22/V/1935) 587
<b>192*</b>	AV	1.1	R19 <sub>l</sub>	7.26		Netherlands NNC RE-07028
<b>193</b>	AV	1.1	R19 <sub>l</sub>	7.19	12	ANS 1944.100.39926
194	AV	1.1	R19 <sub>l</sub>	7.09		MMAG 17 (2/XII/1957) 421
195	AV	1.1	R19 <sub>l</sub>	7.06		Göttweig (= W. Szaivert, <i>Die Münzsammlung des Benediktinerstiftes Göttweig</i> (Vienna, 1983) No. 99)
196	AV	1.1	R19 <sub>l</sub>	6.97	12	Nîmes 18 (= <i>BMCRE</i> pl. 14 no. 10)
197	AV	1.1	R20 <sub>l</sub>	6.90	12	Peus 338 (27/IV/1994) 595 = Bickelmann 14 (22/XI/1986) 287 = Bickelmann 12 (23/XI/1985) 136
<b>198*</b>	AV	1.2	R20 <sub>l</sub>	7.11		J. Elsen 133 (10/VI/2017) 271
<b>199*</b>	AV	1.2	R21 <sub>l</sub>	7.17		G. Hirsch 368 (23/IX/2021) 3288 = G. Hirsch 364 (11/II/2021) 1267 = G. Hirsch 357 (18/VI/2020) 432 = G. Hirsch 352 (25–26/IX/2019) 2813 = Hess-Divo 336 (27/V/2019) 96 = Künker 204 (12/III/2012) 572 = Hess 257 (12/IX/1986) 236 = J. Schulman (18/I/1954) 672 = J. Schulman [Laugier] (5/V/1913) 122 = Scheiner D-37 (n.d.) 3867 = Scheiner D-35 (n.d.) 4150
<b>200</b>	AV	1.2	R22 <sub>l</sub>	7.21		Künker 111 (18/III/2006) 6643
<b>*201*</b>	AV	1.2	R22 <sub>l</sub>	7.11	12	B 18219188 (= ex Adler coll., 1821)
202	AV	1.2	R22 <sub>l</sub>	7.09		Mazzini 580 = Santamaria 16 (24/I/1938) 394
<b>203*</b>	AV	1.2	R23 <sub>l</sub>	7.30		Künker 347 (22–23/III/2021) 1078 = Künker 288 (13/IV/2017) 475 (7.32g) = G. Hirsch 319 (02/V/2016) 432 = G. Hirsch 314 (23/IX/2015) 2732

<b>204</b>	AV	1.2	R23 <sub>1</sub>	7.19		Rauch Sommerauktion 2013 (18/IX/2013) 537 = Bourgey (23/V/1910) 174 = J. Hirsch [Weber] (10/V/1909) 1192
205	AV	1.3	R19 <sub>1</sub>	7.22	12	Cop KP 294.13
206	AV	1.3	R23 <sub>1</sub>	7.36		MMAG 21 (19/III/1960) 30 = Bourgey [M. le Docteur Rousset de Philadelphie] (24/IV/1908) 272 = Sangiorgi [Strozzi] (15/IV/1907) 1859
207*	AV	1.3	R24 <sub>1</sub>	7.06	12	Trier (= Trier hoard 1032)
*208*	AV	1.3	R25 <sub>1</sub>	7.20	12	G GLAHM:24707 (= HCC p. 193 no. 44)
209	AV	1.3	R25 <sub>1</sub>			Calicó 693
210	AV	1.3	R25 <sub>1</sub>			Rollin & Feuardent [M. le Comte de D***] (27/V/1889) 294
<b>211*</b>	AV	1.3	R26 <sub>1</sub>	7.13		Numismatica Ars Classica 119 (6/X/2020) 27
212	AV	1.3	R26 <sub>1</sub>		12	Kölner Münzkabinett 65 (12/XI/1996) 585 = MMAG List 289 (VI/1968) 29
*213*	AV	1.4	R27 <sub>1</sub>	7.22		Bank Leu 20 (26/IV/1978) 260 (7.25g) = Myers 11 (11/IV/1975) 264 = Sotheby's (10/X/1974) 120

Type 2: **IMP CAES VESP AVG CEN** Clockwise, inwardly

*214*	AV	2.1	R28 <sub>1</sub>			Egger 41 (18/XI/1912) 1174
-------	----	-----	------------------	--	--	----------------------------

Type 3: **T CAES IMP VESP CEN** Anti-clockwise, outwardly

*215	AV	3.1	R29 <sub>1</sub>	7.20	12	L 1929,0704.1 (= Helbing 57 (20/VI/1929) 4162)
------	----	-----	------------------	------	----	--

Type 4: **CAES AVG F DOMIT COS II** Anti-clockwise, outwardly

<b>216</b>	AV	4.1	R29 <sub>1</sub>	7.26	12	L BNK,R.19 (= <i>BMCRE</i> 412 = ex Bank of England coll., 1877)
217	AV	4.1	R29 <sub>1</sub>	7.14		Madrid, Old Collection (= Alfaro Asins 2268)
*218*	AV	4.1	R29 <sub>1</sub>	7.04		G GLAHM:24972 (= HCC p. 245 no. 1)
<b>219</b>	AV	4.1	R29 <sub>1</sub>	7.04		CNG 67 (22/IX/2004) 1381 = Numismatica Ars Classica H (30/IV/1998) 1895 (7.15g) = Gorny & Mosch 55 (14/V/1991) 538
<b>220</b>	AV	4.1	R30 <sub>1</sub>	7.37		Numismatica Ars Classica 101 (24/X/2017) 216 = Calicó 940 = Numismatica Ars Classica 24 (5/XII/2002) 56 = CNG Triton II (1/XII/1998) 866 = Leu/MMAG [Niggeler 3] (2/XI/1967) 1177 = Rollin & Feuardent [Evans] (26/V/1909)
221*	AV	4.1	R30 <sub>1</sub>	6.92	12	Cop RP 2878.1 (= C. Ramus, <i>Catalogus Numorum Veterum Graecorum et Latinorum Musei Regis Daniae. Pars II Moneta Romanorum</i> (Copenhagen, 1816) Domitian 15)
222*	AV	4.1	R31 <sub>1</sub>	6.77		Hess (9/V/1951) 85

Type 5: **IMP CAESAR VESPASIANVS AVG** Anti-clockwise, outwardly

<b>223</b>	AV	5.1	R32 <sub>1</sub>	7.47		Peus 392 (4/V/2007) 4507 = Numismatica Ars Classica 34 (24/XI/2006) 13 = Astarte 14 (24/IV/2004) 400 = Calicó 695 = ex Biaggi de Blasys coll. = Santamaria [Larizza 2] (18/VI/1928) 159
<b>224</b>	AV	5.1	R32 <sub>1</sub>	7.28		Stack's (11/I/2010) 370
<b>*225*</b>	AV	5.1	R32 <sub>1</sub>	7.20	11	P IMP-7739 (= <i>BNC</i> Vespasian 310)
226	AV	5.1	R32 <sub>1</sub>	7.20		Münzhandlung Basel 8 (22/III/1937) 624
227	AV	5.1	R32 <sub>1</sub>	7.20		Varesi 56 (3/VI/2010) 70
<b>228</b>	AV	5.1	R32 <sub>1</sub>	7.17	11	CNG 106 (13/IX/2017) 723 (7.15g) = Noble 79 (26/VII/2005) 3341 = Lanz 117 (24/XI/2003) 618
229	AV	5.1	R32 <sub>1</sub>			Scheiner D-37 (n.d.) 3868
230*	AV	5.1	R33 <sub>1</sub>	7.33		Frankfurt (= M. R.-Alföldi, <i>Ancient Gold Coins from the Deutsche Bundesbank Collection</i> (Frankfurt, 1983) No. 37 = ex Money Museum, Zurich = Kress 102 (6/XII/1956) 246 = Dorotheum [Zeno] (13/VI/1955) 407)
<b>231*</b>	AV	5.1	R34 <sub>1</sub>	7.05		Künker 304 (19/III/2018) 1093 (7.03g) = Rauch 103 (23/IV/2017) 237 = Nomisma 49 (14/V/2014) 150 = Varesi 48 (7/XI/2006) 187
232*	AV	5.2	R35 <sub>1</sub>	7.33		Naples 12574 (= ex Pompeii III, 7 garden hoard (3/XI/1959))
<b>*233*</b>	AV	5.2	R36 <sub>1</sub>	7.38	12	L R.10353 (= <i>BMCRE</i> 413)
234	AV	5.2	R36 <sub>1</sub>	6.87		Madrid, Old Collection (= Alfaro Asins 1453)
235	AV	5.2	R36 <sub>1</sub>			Santamaria [Brunacci] (24/II/1958) 1060

Type 6: **T CAESAR IMP VESPASIAN COS VI** Anti-clockwise, outwardly

<b>*236*</b>	AV	6.1	R37 <sub>1</sub>	7.31		Baldwin [The New York Sale XL] (11/I/2017) 1218
--------------	----	-----	------------------	------	--	---

## 5.2 Modern Forgeries

Type F1: **CAESAR VESPASIANVS AVG** Anti-clockwise, outwardly

<b>237</b>	AV	F1	FR1	7.10	5	L 1931,0602.1 (= ex Baldwin = J. Schulman [Vierordt] (5/VI/1930) 360 = Naville/Ars Classica 12 (18/X/1926) 2807)
------------	----	----	-----	------	---	--

Type F2: **T CAESAR IMP VESPASIAN** Anti-clockwise, outwardly

<b>238</b>	AV	F2	FR2	7.54	6	CNG 78 (14/V/2008) 1757 = Pars coins (e-shop 10/X/2006) = Goldberg 37 (10/IX/2006) 3457 = Astarte 17 (8/V/2005) 235 = Calicó 793 = Sotheby's Zurich [Metropolitan Museum of Art (Durkee)] (10/XI/1972) 61 = Sotheby's [Bunbury] (10/VI/1895) 580
<b>239</b>	AV	F2	FR2	7.47	6	B 18229423



## BIBLIOGRAPHY

- Acton, K.L. (2011) *Vespasian Augustus: Imperial Power in the 1st century CE*. University of Michigan, PhD thesis.
- Amandry, M. (2009) Mazzini, Auguste 503. *Schweizerische Numismatische Rundschau* 88: 211–14.
- Armstrong, N. (2001) *Round Temples in Roman Architecture of the Republic through the Late Imperial Period*. University of Oxford, D.Phil thesis.
- Barbato, M. (2014) Flavian typology: the evidence from the ‘sottosuolo urbano’ of Rome. In N.T. Elkins and S. Krmnicek (eds.), “*Art in the round*”: *New Approaches to Ancient Coin Iconography* (Tübinger Archäologische Forschungen 16): 173–80. Rahden, Verlag Marie Leidorf.
- Beckmann, M. (2000) The Early Gold Coinage of Trajan’s Sixth Consulship. *American Journal of Numismatics* 12: 119–56.
- Beckmann, M. (2007) Trajan’s gold coinage, AD 112–117. *American Journal of Numismatics* 19: 77–129.
- Beckmann, M. (2011) Trajan’s gold coinage dated COS V, AD 103–111. *American Journal of Numismatics* 23: 169–88.
- Bland, R. (2013) What happened to gold coinage in the 3rd century AD? *Journal of Roman Archaeology* 26: 263–80.
- Boyce, G.K. (1937) Corpus of the Lararia of Pompeii. *Memoirs of the American Academy in Rome* 14: 5–112.
- Brown, D.F. (1940) *Temples of Rome as Coin Types* (American Numismatic Society Museum Notes 90). New York, American Numismatic Society.
- Burnett, A. (1999) Buildings and Monuments on Roman coins. In G.M. Paul and M. Ierardi (eds.), *Roman Coins and Public Life under the Empire: E Togo Salmon Papers II*: 137–64. Ann Arbor, University of Michigan Press.
- Butcher, K. and Ponting, M. (2014) *The Metallurgy of the Roman Silver Coinage. From the Reform of Nero to the Reform of Trajan*. Cambridge, Cambridge University Press.
- Buttrey, T.V. (1972) Vespasian as moneyer. *Numismatic Chronicle* 12: 89–109.
- Buttrey, T.V. (1980) *Documentary evidence for the chronology of the Flavian titulature* (Beiträge zur klassischen Philologie 112). Meisenheim am Glan, Anton Hain.
- Buxton, B.A. (2014) A New Reading of the Belvedere Altar. *American Journal of Archaeology* 118(1): 91–111.

- Cappelli, R. (1999) Vesta, ara, signum, aedes (in Palatino). In E.M. Steinby (ed.), *Lexicon Topographicum Urbis Romae V (T–Z)*: 128–9. Rome, Quasar.
- Carradice, I. (1983) *Coinage and finances in the reign of Domitian, A.D. 81-96* (British Archaeological Reports, International Series 178). Oxford, British Archaeological Reports.
- Carradice, I. (1998) Towards a new introduction to the Flavian coinage. In M. Austin, J. Harries and C. Smith (eds.), *Modus Operandi. Essays in Honour of Geoffrey Rickman* (Bulletin of the Institute of Classical Studies. Supplement 71): 93–117. London, Institute of Classical Studies.
- Carradice, I. (2012) Flavian Coinage. In W.E. Metcalf (ed.), *The Oxford Handbook of Greek and Roman Coinage*: 375–90. Oxford, Oxford University Press.
- Carson, R.A.G. (1956) System and product in the Roman mint. In R.A.G. Carson and C.H.V. Sutherland (eds.), *Essays in Roman Coinage presented to Harold Mattingly*: 227–39. Oxford, Clarendon Press.
- Cecamore, C. (1994) Apollo e Vesta sul Palatino fra Augusto e Vespasiano. *Bullettino della Commissione Archeologica Comunale di Roma* 96: 9–32.
- Cecamore, C. (2002) *Palatium: topografia storica del Palatino tra III sec. a.C. e I sec. d.C.* (Bullettino della Commissione archeologica comunale di Roma. Supplementi 9). Rome, L’Erma di Bretschneider.
- Cecamore, C. (2004) La base di Sorrento: le figure e lo spazio. *Mitteilungen des Deutschen Archaeologischen Institut. Römische Abteilung* 111: 105–41.
- Cheung, A. (1998) The political significance of Roman Imperial coin types. *Schweizer Münzblätter* 48: 53–61.
- Claes, L. (2014) A note on the coin type selection by the *a rationibus*. *Latomus* 73: 163–73.
- Clay, C.L. (1979) The Roman coinage of Macrinus and Diadumenian. *Numismatische Zeitschrift* 93: 21–40.
- Coarelli, F. (1983) *Il foro romano: periodo arcaico*. Roma, Quasar.
- Cody, J.M. (1973) New Evidence for the Republican Aedes Vestae. *American Journal of Archaeology* 77(1): 43–50.
- Cohen, H. (1880) *Description historique des monnaies frappées sous l’empire romain communément appelées Médailles Impériales I* (second edition). Paris, Rollin.
- Cornell, T. (1995) *The Beginnings of Rome: Italy and Rome from the Bronze Age to the Punic Wars (c.1000–264 BC)*. London/New York, Routledge.

- Crawford, M. (1961) A Roman representation of the ΚΕΡΑΜΟΣ ΤΡΩΙΚΟΣ. *Journal of Roman Studies* 61: 153–4.
- Degrassi, A. (1955) Esistette sul Palatino un tempio di Vesta? *Mitteilungen des Deutschen Archäologischen Instituts* 62: 144–54.
- Degrassi, A. (1963) *Inscriptiones Italiae XIII: Fasti et Elogia. Fasc. 2 Fasti anni Numani et Iuliani. Accedunt Ferialia, Menologica rustica, Parapegmata*. Rome, La Libreria dello Stato.
- Donaldson, T.L. (1859) *Architectura numismatica; or, architectural medals of classic antiquity*. London, Day & Son.
- Dressel, H. (1900) Numismatische Analekten (I). *Zeitschrift für Numismatik* 22: 20–39.
- Dubourdieu, A. (1989) *Les origines et le développement du culte des pénates à Rome* (Collection de l'École française de Rome 118). Paris, Diffusion de Boccard.
- Duncan-Jones, R. (1994) *Money and government in the Roman empire*. Cambridge/New York, Cambridge University Press.
- Eckhel, J.H. (1796) *Doctrina Numorum Veterum. Pars II de Moneta Romanorum. Volumen VI continens Numos Imperatorios a Iulio Caesare usque ad Hadrianum eiusque Familiam*. Vienna, Joseph Camesina.
- Elkins, N.T. (2009) Coins, contexts, and an iconographic approach for the 21st century. In H.-M. von Kaenel and F. Kemmers (eds.), *Coins in Context I. New perspectives for the interpretation of coin finds. Colloquium Frankfurt a.M., October 25–27, 2007* (Studien zu Fundmünzen der Antike 23): 25–46. Mainz am Rhein, Philipp von Zabern.
- Elkins, N.T. (2015) *Monuments in Miniature: Architecture on Roman Coinage* (Numismatic Studies 29). New York, American Numismatic Society.
- Elkins, N.T. (2017) *The image of political power in the reign of Nerva, AD 96–98*. New York, Oxford University Press.
- Ellithorpe, C. (2017) Striking a dissonant chord: the geographical targeting of Trajan's debellator coinage in Dacia. In M. Caccamo Caltabiano (ed.), *Proceedings of XV International Numismatic Congress: Taormina 2015*: 742–8. Rome, Arbor Sapiente Editore.
- Esty, W.W. (1990) The theory of linkage. *Numismatic Chronicle* 150: 205–21.
- Esty, W.W. (2006) How to estimate the original number of dies and the coverage of a sample. *Numismatic Chronicle*, 166: 359–64.

- Esty, W.W. (2011) The geometric model for estimating the number of dies. In F. de Callataj (ed.), *Quantifying Monetary Supplies in Greco-Roman Times* (Pragmateiai 19): 43–58. Bari: Edipuglia.
- Fischer-Hansen, T. (1990) Vesta. In *Lexicon Iconographicum Mythologiae Classicae V (Herakles – Kenchrias)*: 412–20. Zurich/Munich, Artemis.
- Fishwick, D. (1992) A temple of Vesta on the Palatine? In J.A. Overman and R.S. MacLennan (eds.), *Diaspora Jews and Judaism: essays in honor of, and in dialogue with, A. Thomas Kraabel* (South Florida studies in the history of Judaism 41): 51–7. Atlanta, Scholars Press.
- Flower, H.I. (2017) *The dancing Lares and the serpent in the garden: religion at the Roman street corner*. Princeton/Oxford, Princeton University Press.
- Fuchs, G. (1969) *Architekturdarstellungen auf römischen Münzen der Republik und der frühen Kaiserzeit* (Antike Münzen und geschnittene Steine 1). Berlin, de Gruyter.
- Geppert, S. (1996) *Castor und Pollux: Untersuchung zu den Darstellungen der Dioskuren in der römischen Kaiserzeit* (Charybdis 8). Münster, Lit.
- Giacobello, F. (2008) *Larari pompeiani: Iconografia e culto dei Lari in ambito domestico*. Milano, LED Edizioni Universitarie.
- Giard, J.-B. (2000) *Le monnayage de l'atelier de Lyon. De Claude Ier à Vespasien (41–78 après J.-C.) et au temps de Clodius Albinus (196–197 après J.-C.)* (Numismatique romaine 20). Wetteren, Editions Numismatique romaine.
- Grant, M. (1950) *Roman anniversary issues: an exploratory study of the numismatic and medallion commemoration of anniversary years 49 B.C.-A.D. 375*. Cambridge, Cambridge University Press.
- Griffin, M. (2000) The Flavians. In A.K. Bowman, P. Garnsey and D. Rathbone (eds.), *The Cambridge Ancient History. Volume XI: The High Empire, A.D. 70–192* (second edition): 1–83. Cambridge, Cambridge University Press.
- Guarducci, M. (1971) Enea e Vesta. *Mitteilungen des Deutschen Archäologischen Instituts. Römische Abteilung* 78: 73–118.
- Hill, P.V. (1989) *The Monuments of Ancient Rome as Coin Types*. London, Seaby.
- Hölscher, T. (1980) Die Geschichtsauffassung in der römischen Repräsentationskunst. *Jahrbuch des Deutschen Archäologischen Instituts* 95: 265–321.
- Hölscher, T. (1982) Die Bedeutung der Münzen für das Verständnis der politischen Repräsentationskunst der späten römischen Republik. In *Actes du 9ème Congrès*

- International de Numismatique*: 269–82. Louvain-la-Neuve, Association internationale des numismates professionnels.
- Hölscher, T. (1984) *Staatsdenkmal und Publikum: vom Untergang der Republik bis zur Festigung des Kaisertums in Rom* (Xenia: Konstanzer Althistorische Vorträge und Forschungen 9). Konstanz, Universitätsverlag Konstanz.
- Hölscher, T. (2004) *The language of images in Roman art* (translated by A. Snodgrass and A. Künzl-Snodgrass). Cambridge, Cambridge University Press.
- Imhoof-Blumer, F. (1876) Griechische Münzen in dem Kgl. Münzkabinett im Haag und in anderen Sammlungen. *Zeitschrift für Numismatik* 3: 269–353.
- Kaufmann-Heinimann, A. (1998) *Götter und Lararien aus Augusta Raurica: Herstellung, Fundzusammenhänge und sakrale Funktion figürlicher Bronzen in einer römischen Stadt* (Forschungen in Augst 26). Augst, Römerstadt Augusta Raurica.
- Kemmers, F. (2005) Not at random. Evidence for a regionalised coin supply? In J. Bruhn, B. Croxford and D. Grigoropoulos (eds.), *TRAC 2004: Proceedings of the Fourteenth Annual Theoretical Roman Archaeology Conference, Durham 2004*: 39–49. Oxford, Oxbow Books.
- Kemmers, F. (2006) *Coins for a Legion. An analysis of the coin finds from the Augustan legionary fortress and Flavian canabae legionis at Nijmegen* (Studien zu Fundmünzen der Antike 21). Mainz, Philipp von Zabern.
- Kemmers, F. (2019) The Functions and Use of Roman Coinage. *Brill Research Perspectives in Ancient History* 2(3): 1–83.
- Kleiner, D.E.E. and Buxton, B. (2008) Pledges of Empire: The Ara Pacis and the Donations of Rome. *American Journal of Archaeology* 112(1): 57–89.
- König, A. (2018) Reviewed work: *The Image of Political Power in the Reign of Nerva, AD 96-98* by N.T. Elkins. *Bryn Mawr Classical Review* 2018.06.09.
- Kraay, C.M. (1978) The bronze coinage of Vespasian: classification and attribution. In R.A.G. Carson and C.M. Kraay (eds.), *Scripta Nummaria Romana. Essays Presented to Humphrey Sutherland*: 47–58. London, Spink.
- Lanciani, R. (1882) I nuovi scavi eseguiti nel Foro romano dal febbraio all’aprile, diedero argomento alla seguente relazione del ch. prof. R. Lanciani. *Notizie degli scavi di antichità* 216–38.
- Levick, B. (1982) Propaganda and the Imperial coinage. *Antichthon* 16: 104–16.
- Levick, B. (2017) *Vespasian* (second edition). London/New York, Routledge.

- Lindner, M. (2015) *Portraits of the Vestal Virgins, Priestesses of Ancient Rome*. Ann Arbor, University of Michigan Press.
- MacDowall, D.W. (1979) *The Western Coinages of Nero* (Numismatic Notes and Monographs 161). New York, American Numismatic Society.
- Manders, E. (2012) *Coining images of power. Patterns in the Representation of Roman Emperors on Imperial Coinage, A.D. 193-284* (Impact of Empire 15). Leiden/Boston, Brill.
- Marzano, A. (2009) Trajanic building projects on base-metal denominations and audience targeting. *Papers of the British School at Rome* 77: 125–58.
- Masquelier, N. (1966) Pénates et Dioscures. *Latomus* 25(1): 88–98.
- Mekacher, N. (2006) *Die vestalischen Jungfrauen in der römischen Kaiserzeit*. Wiesbaden, Reichert.
- Metcalf, W.E. (1993) Whose Liberalitas? Propaganda and audience in the early Roman empire. *Rivista Italiana di Numismatica e scienze affini* 95: 337–46.
- Metcalf, W.E. (2012) Introduction. In W.E. Metcalf (ed.), *The Oxford Handbook of Greek and Roman Coinage*: 3–11. Oxford, Oxford University Press.
- Metcalf, W.E. (2015) A New Vespasianic Mint? In R. Bland and D. Calomino (eds.), *Studies in Ancient Coinage in Honour of Andrew Burnett*: 139–42. London, Spink.
- Morgan, G. (2006) *69 A.D: The year of four emperors*. Oxford, Oxford University Press.
- Noreña, C.F. (2001) The communication of the emperor's virtues. *Journal of Roman Studies* 91: 146–68.
- Petersen, E. (1902) *Ara Pacis Augustae*. Vienna, A. Hölder.
- Peyre, C. (1962) Castor et Pollux et les Pénates pendant la période républicaine. *Mélanges de l'école française de Rome* 74(2): 433–62.
- Piccaluga, G. (1961) Penates e lares. *Studi e Materiali di Storia della Religioni* 32: 81–98.
- Pinder, M. (1843) *Die Beckerschen falschen Münzen*. Berlin, Nicolaische Buchhandlung.
- Pisani Sartorio, G. (1988) Compita larum: edicole sacre nei crocicchi di Roma antica. *Bollettino della Unione Storia ed Arte* 31: 23–34.
- Platt, V.J. (2018) Double Vision: Epiphanies of the Dioscuri in Classical Antiquity. *Archiv für Religionsgeschichte* 20(1): 229–56.
- Radke, G. (1981) Die dei penates und Vesta in Rom. In W. Haase (ed.) *Aufstieg und Niedergang der römischen Welt* II.17.1: 343–73. Berlin, De Gruyter.
- R.-Alföldi, M. (1983) *Ancient gold coins from the Deutsche Bundesbank Collection*. Frankfurt am Main, Deutsche Bundesbank.

- Rebeggiani, S. (2018) *The fragility of power: Statius, Domitian and the politics of the Thebaid*. Oxford, Oxford University Press.
- Rehak, P. (2001) Aeneas or Numa? Rethinking the meaning of the Ara Pacis Augustae. *The Art Bulletin* 83(2): 190–208.
- Richardson, L. (1992) *A New Topographical Dictionary of Ancient Rome*. Baltimore, Johns Hopkins University Press.
- Rizzo, G.E. (1932) La base di Augusto. *Bullettino della Commissione Archeologica Comunale di Roma* 60: 7–50.
- Rowan, C. (2012) *Under divine auspices: divine ideology and the visualisation of imperial power in the Severan period*. Cambridge/New York, Cambridge University Press.
- Rowan, C. (2013) Reviewed work: *Coining Images of Power. Patterns in the Representation of Roman Emperors on Imperial Coinage* by E. Manders. *Classical Review* 63(2): 550–2.
- Rowan, C. (2016) Ambiguity, Iconology and Entangled Objects on Coinage of the Republican World. *Journal of Roman Studies* 106: 21–57.
- Scott, R.T. (1982) PROVIDENTIA AUG. *Historia* 31(4): 435–59.
- Scott, R.T. (1999) Vesta, aedes. In E.M. Steinby (ed.), *Lexicon Topographicum Urbis Romae V (T–Z)*: 125–8. Rome, Quasar.
- Scott, R.T. (ed.) (2009) *Excavations in the Area Sacra of Vesta (1987-1996)* (Memoirs of the American Academy in Rome. Supplementary volume 8). Ann Arbor, University of Michigan Press.
- Seelentag, G. (2010) Kinder statt Legionen: Die Vorbereitung der Nachfolge Vespasians. In N. Kramer and C. Reitz (eds.), *Tradition und Erneuerung: Mediale Strategien in der Zeit der Flavier* (Beiträge zur Altertumskunde 285): 167–90. Berlin/New York, de Gruyter.
- Sieveking, J. (1907) Zur Ara Pacis Augustae. *Jahreshefte des Österreichischen archäologischen Instituts in Wien* 10: 175–99.
- Stannard, C. (2011) Evaluating the money supply: were dies reproduced mechanically in antiquity? In F. de Callataÿ (ed.) *Quantifying Monetary Supplies in Greco-Roman Times* (Pragmateiai 19): 59–79. Bari, Edipuglia.
- Steinby, E.M. (1989–2012) *Lacus Iuturnae*, 2 vols. Rome, de Luca.
- Stewart, P. (2004) *Statues in Roman Society: Representation and Response*. Oxford, Oxford University Press.

- Sutherland, C.H.V. (1986) Compliment or Complement? Dr Levick on Imperial Coin Types. *Numismatic Chronicle* 146: 85–93.
- Tran Tam Tinh, V. (1992) Lar, Lares. In *Lexicon Iconographicum Mythologiae Classicae VI (Kentauroi et Kentaurides–Oiax)*: 205–12. Zurich/Munich, Artemis.
- Valverde, L.A. (2016) C. SULPICI C. F. (RRC 312). *Nummus* 39: 7–17.
- Waites, M.C. (1920) The nature of the lares and their depiction in Roman art. *American Journal of Archaeology* 24(3): 241–61.
- Watson, G.C. (forthcoming) Die boxes, workstations, graph theory and die charts. *Numismatic Chronicle* 182.
- Weinstock, S. (1960) Two archaic inscriptions from Latium. *Journal of Roman Studies* 50: 112–18.
- Wolters, R. (1999) *Nummi Signati: Untersuchungen zur römischen Münzprägung und Geldwirtschaft* (Vestigia 49). Munich, C.H. Beck.
- Wood, S. (2016) Public Images of the Flavian Dynasty: Sculpture and Coinage. In A. Zissos (ed.), *A Companion to the Flavian Age of Imperial Rome*: 129–47. Hoboken, Wiley.
- Woytek, B. (2012) System and product in Roman mints from the Late Republic to the High Principate: some current problems. *Revue Belge de Numismatique* 158: 85–122.
- Zanker, P. (1990) *The Power of Images in the Age of Augustus* (translated by A. Shapiro). Ann Arbor, University of Michigan Press.
- Ziegert, M. (2020) *Zwischen Tradition und Innovation. Die Münzprägung Vespasians* (Veröffentlichungen des Instituts für Numismatik 22). Vienna, Institut für Numismatik.