#NotAllElephants (are Pyrrhic)

Finding a Plausible Context for RRC 9/1

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This paper revisits the history and historiography of a specific type of Roman bronze currency bar weighting approximately five Roman pounds. The curious design—an Indian elephant wearing a bell on one side and a female pig on the other—has inspired current interpretations, especially an assumption that it *must* have been created in the aftermath of the Pyrrhic War. This presumed dating for this bar has complicated how we understand the development of Roman coinage in the third century—a contentious topic with the debate often divided between those who wish to make the evidence fit the literary sources and those who restrict their dating to the physical evidence.[1]

There is no smoking gun (or, no new DNA evidence, to update a tired metaphor). The evidence offered here is all circumstantial. Nevertheless, when taken as a totality it demonstrates that there is no definite reason that the elephant and pig bar need be assigned to the 270s BCE and that the balance of evidence suggests such a date is far less plausible than one in the first Punic War. The evidence is presented in five sections: (1) the discovery of specimens and their interpretations to date; (2) a historiographical analysis of ancient literary testimony that has been central to these earlier interpretations; (3) comparative iconography that suggests the bar may evoke events of the First Punic War, especially the triumph of L. Caecilius Metellus in 251 BCE; (4) review of find spots, metrology and metallurgical data for Roman currency bars as a cohesive group and likely relatively limited historical phenomenon; (5) evidence supporting the close association of the bar as a group with the time of First Punic War.

[1] Coarelli 2013 with Burnett and Crawford 2014 and Bernard 2017.

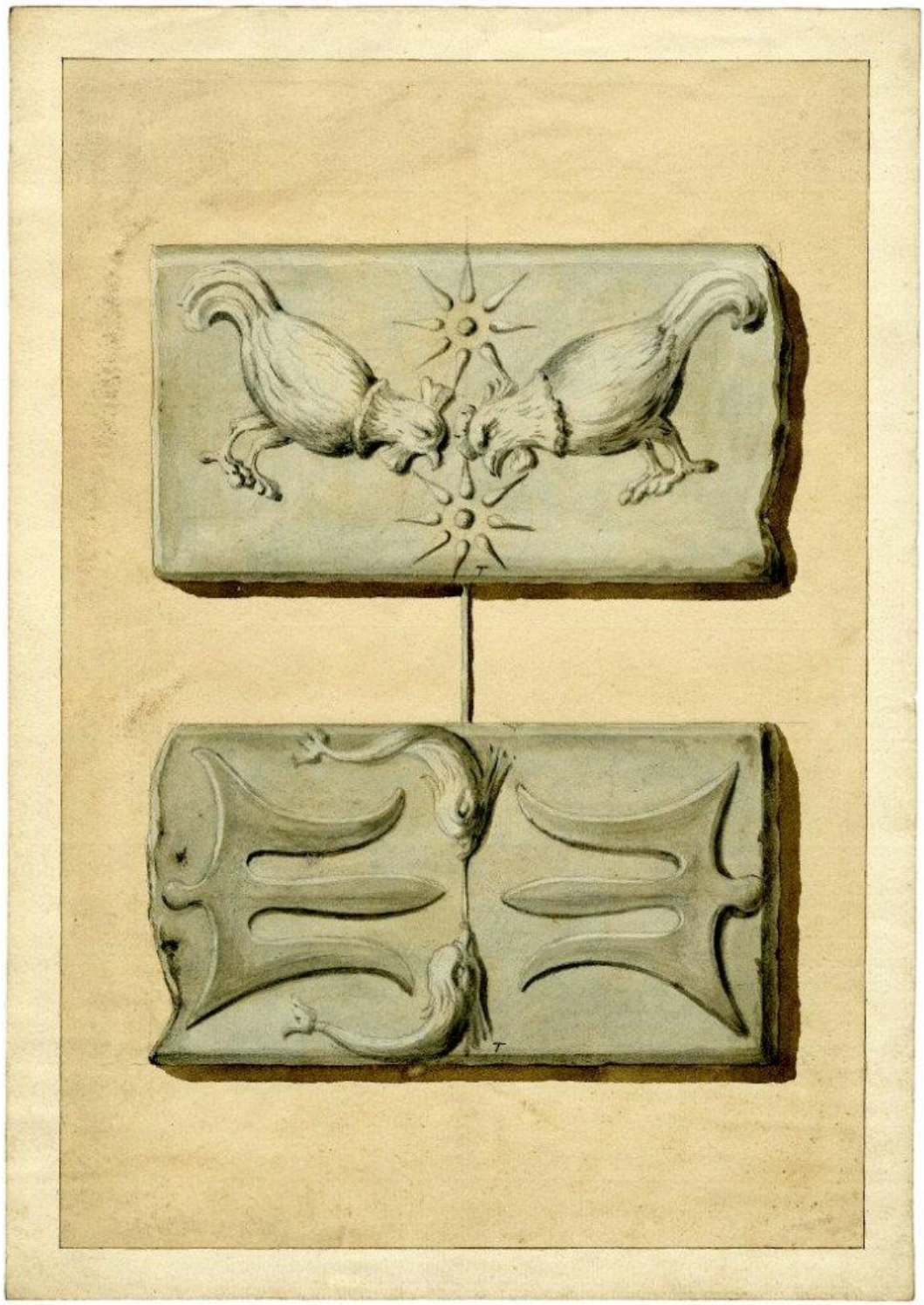

***FIGURE 1**: BM 2010,5006.525, graphite and watercolor likely by James Byres, 1778. Depicts a bronze currency bar of the RRC 12/1 type recovered as part of a hoard in Tuscany in autumn 1778. Not to Scale. Public Domain.*

***FIGURE 2**: BM 1867,0212.2. RRC 9/1, Bronze currency bar, Rome, c. 250? BCE, 1746 grams, 157 mm length, 89 mm width, and between 13 and 32 mm in depth . Purchased from Giulio Sambon in 1867, said by Haeberlin to have been in Guadagni Collection. Depicts an Indian elephant wearing bell walking right and on the other side a sow facing left.* ***Illustrated to Scale**. CC BY-NC-SA 4.0.*

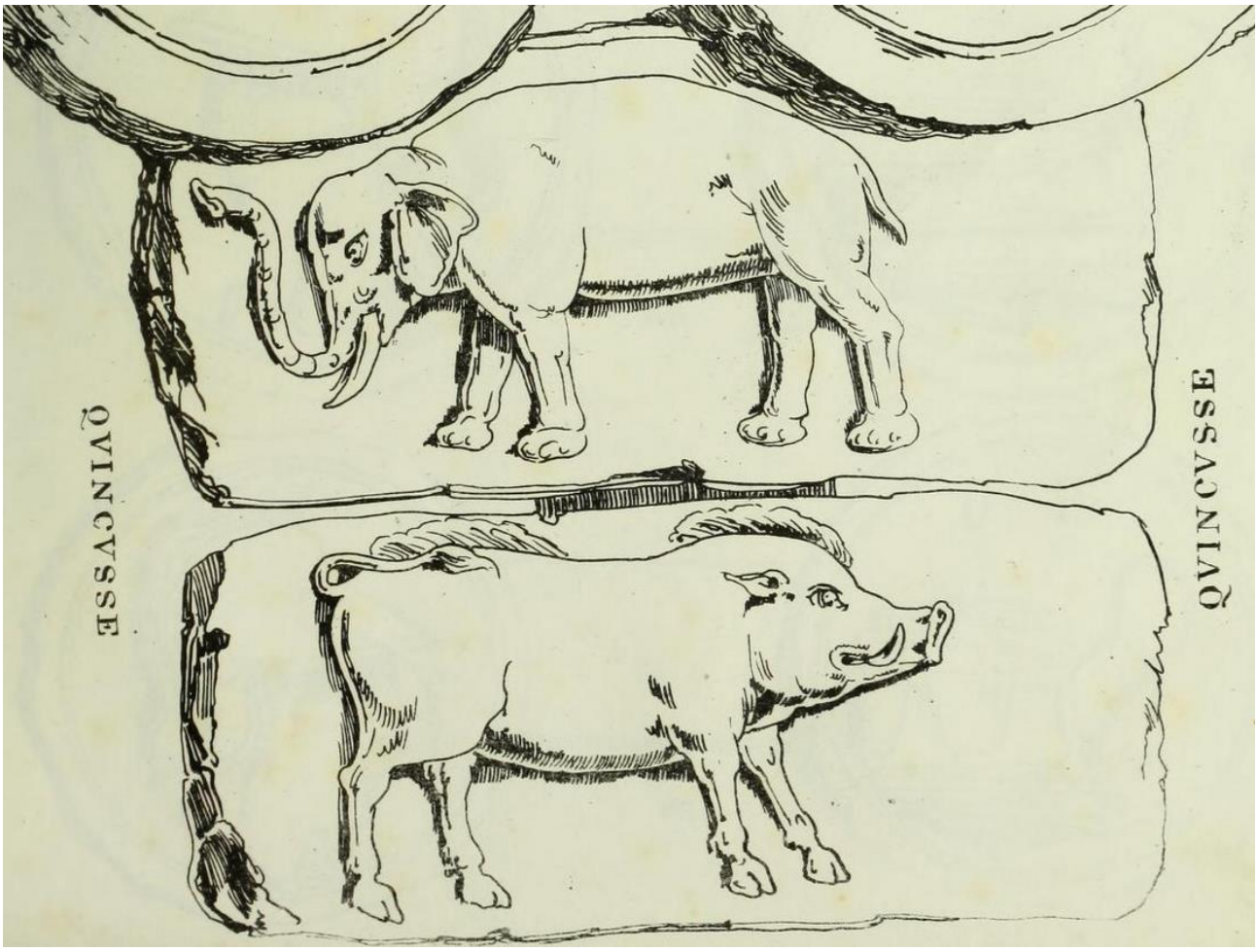

***FIGURE 3**: Detail of Riccio 1836: plate 67 depicting an elephant and pig 'quincusse' but with animals reversed and bar of different proportions, earliest illustration of the type. Not to scale. Public Domain.*

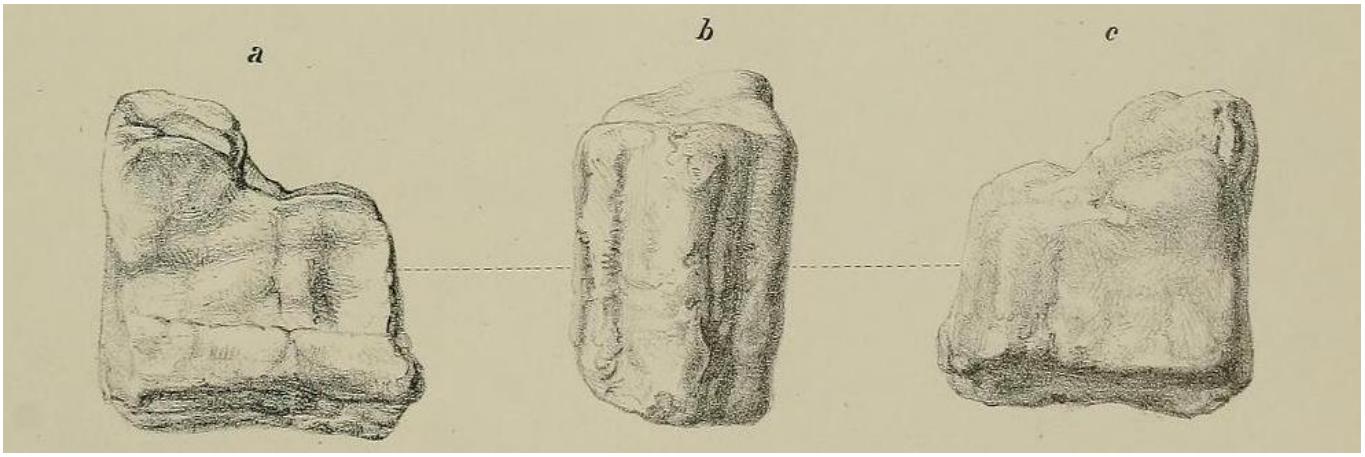

***FIGURE 4**: Detail of Garrucci 1885: plate 22, no. 2. Said to be a fragment of an elephant and pig bar found at Ceveteri (ancient Caere). Not to scale. Public Domain.*

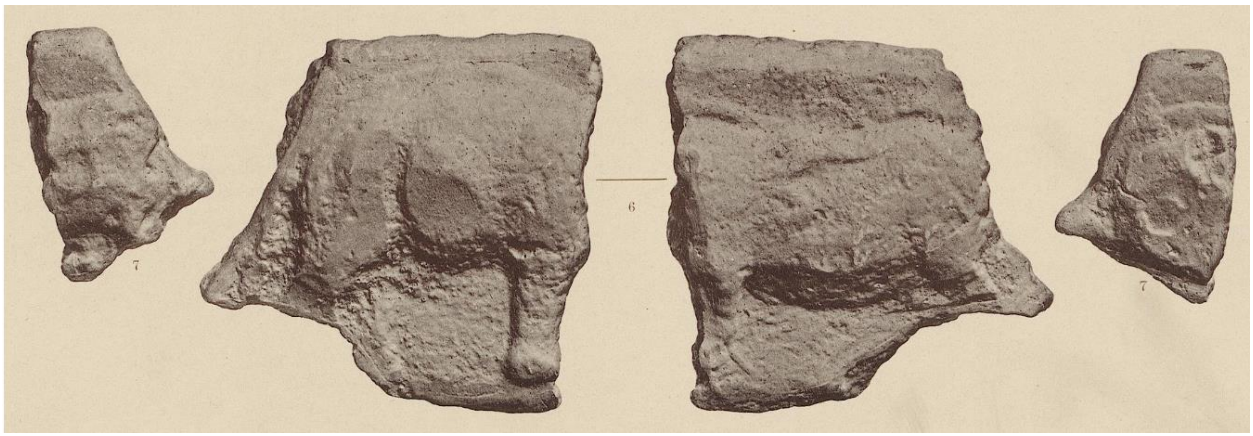

FIGURE 5*: Detail of Haeberlin 1910: plate 61, nos. 6 and 7. Photographs of casts taken from pieces found in the Mazin hoard and now in the Zagreb museum. Not to scale. Public Domain.*

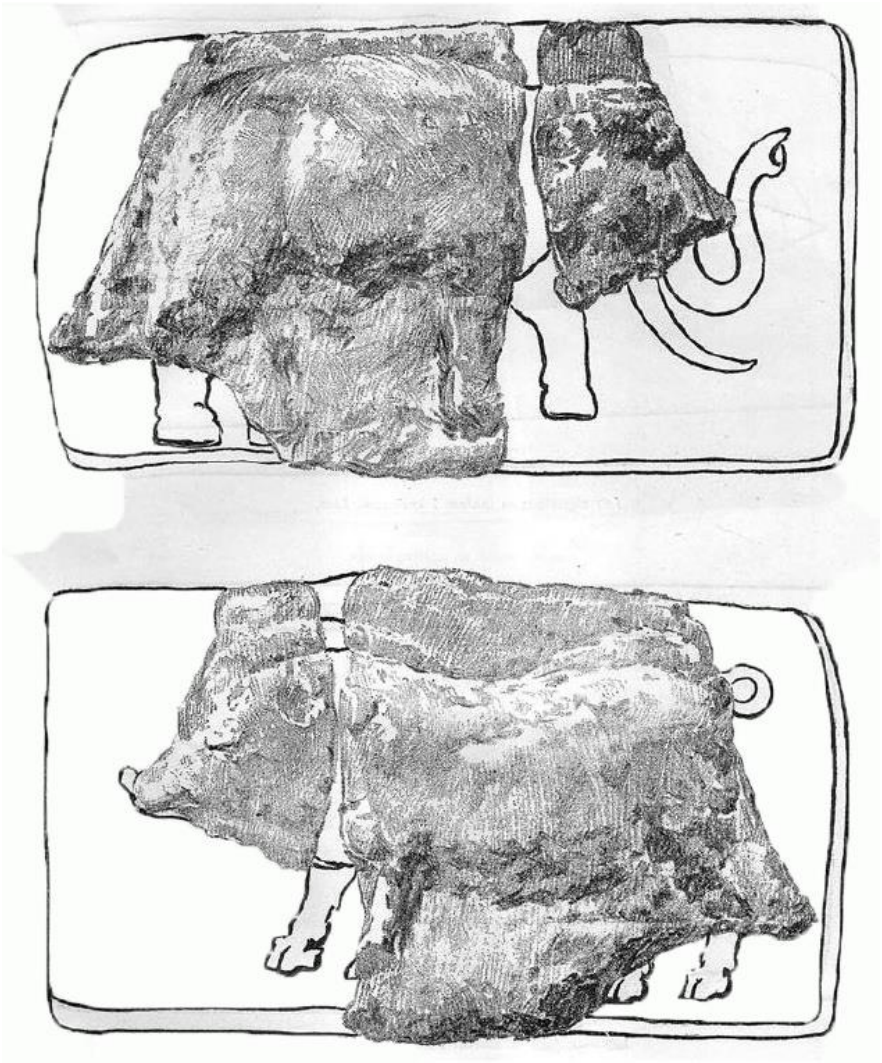

FIGURE 6*: Detail of Brunšmid 1896/97: pl. 3. A drawing of the same fragments illustrated in* ***fig. 5*** *but laid out to suggest possible reconstruction. Not to scale. Public Domain.*

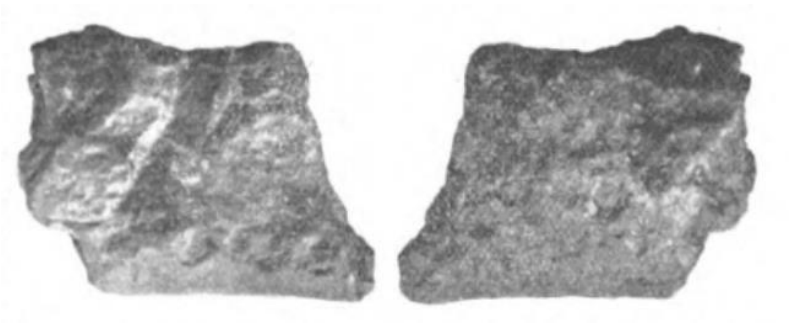

***FIGURE 7**: Detail of Brunšmid 1905: fig. 16. Photograph of third fragment of elephant and pig bar found in the Mazin hoard and gifted to the Belgrade Museum, Serbia. Not to scale. Public Domain.*

***FIGURE 8**: Copenhagen 2060.1, bronze currency bar, c. 250? BCE. Purchased from P. and P. Santamaria, Piazza di Spagna in Rome in 1948-49. Image reproduced with permission of Nationalmuseet. Photographed by Rasmus H. Nielsen. Not to scale. CC-BY-SA.*

***FIGURE 9**: Fragment in trade. Last sold at public auction 2009 Numismatica Ars Classica. Not to scale. Image rights not established.*

1. Discovery and Interpretation

In December 1778, James Byres wrote from Rome to Charles Townley in England about an extra-ordinary find of four cast bronze bars along with exquisite original pen and ink with watercolor illustrations (cf. **fig. 1**).[2] Byres, a well-known artist, dealer in antiquities and gentleman tour-guide, had made his home in Rome since 1758.[3] He was hoping that Townley would buy the four objects and makes clear that he's already been in communication with other buyers throughout continental Europe. Byres in the letter emphasizes their rarity and that similar types of objects are only known from three examples. From his allusions to these earlier objects in Paris and Pesaro, it is not clear at all that those objects were in fact the same type of Roman currency bar. The drawings and letters survive in the Townley papers deposited at the British Museum and their numismatic significance as possibly our earliest documented hoard of Roman currency bars has only recognized because of the BM's collection digitization. Its seems likely that at least one of these bars ended up in the British Museum, but the whereabouts of the other bars have not (yet) been established (cf. **fig. 26**). In 1784 two more bars came to light at Velletri, one of which had an inscription identifying it as Roman.[4] Such bars quickly became highly desirable collectors' pieces and by 1818 we hear about the creation of large numbers of forgeries.[5]

We do not know where any whole elephant and pig bar was found, but as the type was known to Luigi Lanzi we can use his death in 1810 as a *terminus anti quem* for its original discovery, and Byres' letter provides a likely, if not certain, *terminus post quem*. Lanzi believed that three whole bars existed: one in the Museo Guadagni (Florence), one that had belonged to Baron Stosch and then moved to England, and another in the Florentine coins and medals collection. The last has been widely denounced as forgery with a very different design by the cataloguer of the Florentine collection.[6] The Guadagni specimen was sold by Guilo Sambon to the British Museum in 1867 along with many other objects (**fig. 2**). The Stosch collection was also originally in Florence; Langford and Sons of Covent Garden, auctioned a great number of bronzes from the collection in 1764, but the terse sales catalogue gives no hint that such a bar was among the items sold. Lanzi is also the first to connect the elephant to the Roman triumph over Pyrrhus, but makes no speculation about the significance of the pig.

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[2] See online entries for BM 2010,5006.525 (Rostra and Cocks) cf. 524 (Bulls) and 526 (Shield) which contain transcription of Byres letter dated 9 December 1778 (TY7/686). The hoard contained an unquantified amount of aes rude and aes formatum, as well as 1 – RRC 5/1, 2 – RRC 7/1, 1 – RRC 12/1. Three of the bars were published in d'Hancarville 1785: pl. 2-4 and in Byres 1842, part 5, pl. 4-5, but neither publication seems to have been known to later scholars; d'Hancarville suggests the bars may have remained in Byres' possession and the editor's note in the posthumous Byres publication suggests the bars may have been acquired by either King's College, Aberdeen or the British Museum, but neither institution has a record of them. I believe **fig. 23** is the same bar as that in **fig. 1**. There exists a 1790 inventory of Byres Strada Paolina house in Rome that was created ahead of the relocation of his household to Tonley, Scotland (cf. Russell 1978); I've not yet been able to locate this inventory.

[3] Coen 2011: 298-308; Ford 1974.

[4] RRCH 4.

[5] Haeberlin 1910: 64. Cf. the original drawing of the Velletri bar sent to Charles Townsley, BM 2010,5006.527.

[6] Fontana, "Lettera Critica Numismatica" p. 3 which is appended with separate pagination to the end of his 1827 catalogue and followed by Haeberlin 1910: 146 and Garrucci 1885: 11.

The type is first illustrated (very badly and with the animals facing the wrong direction) by Riccio in 1836 (**fig. 3**). Riccio claims that examples existed in the collection of the Bourbons of Naples and other private collections in that kingdom. Haeberlin, the leading early twentieth century authority on the materials, rejects Riccio's assertions outright.[7] However, given our knowledge of forgeries of other bars in Naples and the survival of forgeries not dissimilar in size to Riccio's illustration, we might allow that perhaps Riccio did in fact see bars with such designs that he believed to be genuine.[8]

Garrucci in 1885 seems to be the first to suggest that the elephant was paired with the pig because the Romans are said to have used grunting pigs at the battle of Asculum to scare Pyrrhus' elephants. In doing so, he cites Aelian and Pliny—authors and passages that will be discussed in greater detail in section 2 below. He also provides testimony of a hoard (?) of *aes formatum* found at Ceverteri—when or under what circumstances is unclear. This find is said to contain a fragment of an elephant and pig bar, but the details in published images are not clear that this identification certain (**fig. 4**).[9] However, in 1895 an exceptionally large hoard of bronze found in Mazin came to light containing three fragments of one or more elephant and pig bars thus confirming that the bar in the British Museum was not just a clever forgery (**figs. 5-7**).[10] Then in 1945 a second whole bar came up for sale without any provenance and was purchased along with other currency bars by the Royal Cabinet in Copenhagen (**fig. 8**).[11]

Garrucci's interpretation influenced what the next generation of scholars saw when interpreting this bar. Haeberlin dates the bar to the triumph over Pyrrhus in 273 BCE and describes the sow as grunting.[12] Hill's view is worth quoting in full.[13]

> It is impossible to deny that in some way or other it must be associated with the war with Pyrrhus. Legend says that at the battle of Asculum in 279 B.C. the elephants of Pyrrhus were frightened by the grunting of swine on the Roman side. The five elephants taken later at the battle of Beneventum were led in triumph in 273, and it was probably on this occasion, when elephants were first seen in Rome, that the piece was issued at Capua. Whether the story of the swine is true, or had already been invented by that time, or was even a later growth, inspired by the types of the "brick," who shall say?

Scullard in 1948 affirmed that the bar 'must' reflect Rome's encounter with Pyrrhus since the elephant is Indian, not African. Some 30 years later he re-affirms this view and goes so far as to suggest the use of

[7] Haeberlin 1910: 146.
[8] Haeberlin 1910: 64, cf. pl. 98.1-2 and 99.3.
[9] Garrucci 1885: pl. 22.2.
[10] Two specimens are in the Zagreb collection; Bilić 2015: no. 9 and 10, first published Brunšmid 1896/97; another specimen was gifted to the Belgrade Museum and published Brunšmid 1905; Haeberlin 1910: 146 expressed uncertainty of the attribution, but Crawford 1969: no. 142 seems to accept it.
[11] There is no way to ascertain (yet) if this was a new discovery or the bar reportedly in the Stosch collection in the eighteenth century. A third whole bar *may* exist in a private collection: Vecchi 2014 reports a weight range of 1535g-1746.49g, this suggests an unpublished specimen of 1535g was known to the author. Another fragment appeared at public auction in Switzerland in 2009 with no provenance (**fig. 9**).
[12] Haeberlin 1910: 146.
[13] Hill 1909: 26.

squealing pigs in battle was possible, if not certainly true.[14] Mattingly's interpretation of the bar in 1990 is no different than Hill's, and, as recently as 2014, Vecchi allows for the possibility that the bar is connected to the Pyrrhic triumph and cites Aelian and Scullard.[15]

To his credit, Comparette in 1919 clearly saw that any possible connection with Aelian's grunting pigs was historically illogical, but his rejection of that interpretation of the iconography led to another logical fallacy, by which he denied the Roman origins of the bar and instead suggested the pig symbolized the treaty sworn by various Italian communities and Pyrrhus.[16]

By far the most influential voice in Roman Republican numismatics remains, however, Michael Crawford and his definitive catalogue of the series that appeared in 1974. His views on this topic are published in different parts of this two-volume monumental work. In the interpretive essays he says that the type "may perhaps preserve a record of an incident in the Pyrrhic War, when Pyrrhus' elephants were frightened away by die presence of pigs."[17] In the introduction on dating he says "the different varieties of *aes signatum*, are I am sure, contemporary with the first four issues of *aes grave*…all issues whose types convey any indication of date must be of the period of or later than the Pyrrhic War."[18] In the catalogue itself, he assigns very broad date ranges for the different currency bars 280-242 BCE for nos. 3-8, 275-242 for no. 9, our elephant and pig bar, and then 260-242 for those with 'naval types'. These date ranges indicate that he thought it *possible* that all the bars might date as late as the end of the First Punic War, but the placing the upper limit of the range for elephant and pig bar at 275 BCE seems to also take into account the potential influence of the Pyrrhic War. Crawford dated the first three *aes grave* (RRC 14, 18, 19) to 275-270 and the fourth (RRC 21) to 269-266. Based on recent archaeological finds it seems like RRC 14 and 18 are likely to have been made in the period right before the First Punic War, perhaps c. 265 BCE.[19] However, the dating of early Roman coinage remains contentious with the debate often divided between those who wish to make the evidence fit the literary sources and those who restrict their dating to the physical evidence.[20]

I would concur that all the *aes signatum* is likely contemporary with the *aes grave*. As Crawford wrote: "the hoard context of *aes signatum* [is] the same as that of the earliest *aes grave*…[and] the notion of creating currency bars … with types logically follows the notion of creating coins with types."[21] We can add to these observations that the bars not only conform to a weight standard, but also conform to the same weight standard as the early *aes grave*. The strong scholarly tradition of associating the elephant and pig currency bar with the Pyrrhic War has been holding back a general

[14] Scullard 1948: 158; 1970: 113-116.
[15] Mattingly 2004: 112 (a republication of a 1990 paper); Vecchi 2014: no. 21.
[16] Comparette 1919: 30-35; he is correct that pigs were used in oath-swearing rituals and related iconography, but all physical evidence points toward the bars being Roman.
[17] Crawford 1974: 2.718; citing not just Aelian, but also Thomsen 1957: 3.145-7.
[18] Crawford 1974: 1.41n.5; on *aes grave* and currency bars being contemporary with one another, he cites Alföldi 1961: 70-71, as well as the supporting evidence of his own hoard analyses.
[19] Jaia and Molinari 2011.
[20] Coarelli 2013 with Burnett and Crawford 2014 and Bernard 2017.
[21] Crawford 1974: 1.41n.5.

logical acceptance that like libral standard *aes grave*, Roman currency bars should all likely be dated to a period from the 260s to the 240s BCE.

***FIGURE 10**: BM 1849,0620.4. Black-glazed clay askos (oil jar) said to be found at Vulci. Photograph from Hyspaosines via Flickr. CC BY-SA 2.0.*

***FIGURE 11**: Museo Nazionale Etrusco, "Villa Giulia", Rome, inv. no. 23.949. Ceramic plate found in Capena, Italy, central tondo depicts war elephant with tower and cub following behind. CC BY 4.0.*

***FIGURE 12**: Yale 2004.6.6, c. 280-272 BCE, silver Nomoi, Taras. 6.36 grams. 21 mm. Obverse: Male figure right, crowing horse left, young jockey; in right field ΓΥ, between horse's legs ΑΡΙΣΤΙΠ; Reverse: Dolphin rider right, holding bow and arrow, below elephant right. Not to scale. Public Domain.*

2. Historiographical Considerations

Pyrrhus was certainly the first to bring elephants to Italy. And, those animals made an immediate impression on the Italian mind. Thoughout Italy, they show up on coins, in votive offerings and the decorative arts (**figs. 10-12**)**FIGURE** .[22] However, as the title of this essay clearly indicates not all elephants in Italic art are necessarily references to Pyrrhus. In the case of the Roman currency bar the primary reason for associating the elephant with Pyrrhus has been two sentences in Aelian' *On the Nature of Animals*:

> The elephant fears the horned ram and the grunting of a pig. Thus, the Romans are said to have routed the elephants of Pyrrhus, king of the Epirotes and brought about brilliant victory for themselves.[23]

This assertion cannot live up to any measure of historical plausibility. [24] Aelian affirms the fear later in his writing but in a context that suggests it is a proverbial mystery on par with how to scare a basilisk!

> But it is no business of mine to explore the mysteries of nature, and rightly so, since the lion goes in fear of the cock, and so does the basilisk, moreover the elephant dreads a pig. But those who

[22] Ambrosini 2001.

[23] 1.38: Ὀρρωδεῖ ὁ ἐλέφας κεράστην κριὸν καὶ χοίρου βοήν. οὕτω τοι, φασί, καὶ Ῥωμαῖοι τοὺς σὺν Πύρρῳ τῷ Ἠπειρώτῃ ἐτρέψαντο ἐλέφαντας, καὶ ἡ νίκη σὺν τοῖς Ῥωμαίοις λαμπρῶς ἐγένετο.

[24] Academic publications often present flaming pigs as historical phenomenon: Mayor 2014: 292 and 2003: 6-10 and 202; Kistler 2007: 87-92; or allow for the possibility, Scullard 1970: 113-116. They also appear under the name 'incendiary pigs' in the popular video game: *Rome: Total War*. Creative Assembly, 2004.

> have much leisure to spend in seeking the reasons for these things will take no account of time, and for all that, will never come to the end of their researches.[25]

Aelian relied on earlier compilers for his anecdotes, Pliny's *Natural Histories* among others.[26] Pliny records a similar fear of pigs, but makes no mention of its historic applications:

> They are the most important factor in eastern warfare, scattering the ranks before them and trampling armed soldiers underfoot. Nevertheless they are scared by the smallest squeal of a pig; and when wounded and frightened they always give ground, doing as much damage to their own side as to the enemy. [27]

Accounts of the use of pigs do appear in a variety of historical narratives. The most well attested is how the Megarans drove off Antigonus II Gonatas.[28] Polyaenus' *Stratagems* is quoted here, but Aelian gives a similar report.[29]

> At the siege of Megara, Antigonus [II Gonatas] brought his elephants into the attack; but the Megarians daubed some swine with pitch, set fire to it, and let them loose among the elephants. The pigs grunted and shrieked under the torture of the fire, and sprang forwards as hard as they could among the elephants, who broke their ranks in confusion and fright, and ran off in different directions. From this time onwards, Antigonus ordered the Indians, when they trained up their elephants, to bring up swine among them; so that the elephants might thus become accustomed to the sight of them, and to their noise.[30]

In both our surviving versions of the Megaran incident the author is concerned to explain why this military tactic cannot be still used against elephants, namely that those training elephants now counteract this natural tendency. Moreover, both authors wrote some four hundred years after the events they recall.

Procopius of Caesarea includes in his account of Mermeroes' siege of Archaeopolis (mod. Nokalakevi) during the Lazic Wars a digression on strategies used against elephants. Although the unexpected Roman sally outside the walls effects a rout and causes one of the Persian elephants to

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[25] 8.28: φύσεως δὲ ἀπόρρητα ἐλέγχειν οὐκ ἐμόν, καὶ εἰκότως, ἐπεὶ καὶ ἀλεκτρυόνα δέδοικε λέων καὶ τὸν αὐτὸν βασιλίσκος καὶ μέντοι καὶ ὗν ἐλέφας· τὰς δὲ αἰτίας ὅσοι σχολὴν ἄγουσι πολλὴν ζητοῦντες τοῦ μὲν χρόνου καταφρονήσουσιν, οὐ μὴν ἐς τέλος ἀφίξονται τῆς σπουδῆς.

[26] Scholfield 1958: xiii notes no Latin author is named in the text and summarizes the earlier work of German scholars on the named and unnamed sources (xv-xxv); On potential intertexts with Pliny, see now Smith 2014: 84-85 and passim. More recent scholarship on Aelian has focused on understanding his texts as compositions in their own right, rather than as derivative works, see esp. Hindermann 2016 and Smith 2014, both with references to earlier works. On Aelian's literary use of 'exotic' animals, see Müller-Reineke 2010.

[27] 7.27: *magnaque ex parte orientis bella conficiunt: prosternunt acies, proterunt armatos. iidem minimo suis stridore terrentur; vulneratique et territi retro semper cedunt haut minore partium suarum pernicie.*

[28] Gabbert 2002: 77 n. 47 treats this and the Roman use of pigs against Pyrrhus as historical events. The chronology of this portion of Gonatus' reign is disputed, Hammond, Griffith and Walbank 1988: 282.

[29] Aelian 16.36 may derive from Polyeanus, or they may both derive from a common unidentified source.

[30] 4.6.3: Ἀντίγονος Μέγαρα πολιορκῶν τοὺς ἐλέφαντας ἐπῆγεν. οἱ Μεγαρεῖς σύας καταλείφοντες ὑγρᾷ πίσσῃ καὶ ὑφάπτοντες ἠφίεσαν· αἱ δὲ ὑπὸ τοῦ πυρὸς καιόμεναι κεκραγυῖαι πολλῷ δρόμῳ εἰς τοὺς ἐλέφαντας ἐνέπιπτον· οἱ δὲ οἰστρῶντες καὶ ταρασσόμενοι ἄλλος ἄλλῃ διέφευγον. Ἀντίγονος τοῦ λοιποῦ προσέταξε τοῖς Ἰνδοῖς τρέφειν ὗς μετὰ τῶν ἐλεφάντων, ἵνα τὴν ὄψιν αὐτῶν καὶ τὴν κραυγὴν τὰ θηρία φέρειν ἐθίζοιτο.

trample Persian troops, Procopius believes the Romans should have known "the proper way" to repel an elephant attack. He critiques the techniques used at Archaeopolis by comparison with events at the siege of Edessa just shy of a decade earlier (544 CE). While in his earlier account of this siege in book 2 of his *Histories of the Wars* there is no mention of elephants, here in this digression Procopius claims:

> The Romans, however, by suspending a pig from the tower escaped this peril. For as the pig was hanging there, he very naturally gave vent to sundry squeals, and this angered the elephant so that he got out of control and, stepping back little by little, moved off to the rear. Such was the outcome of that situation. But in the present case the omission due to the thoughtlessness of the Romans was made good by chance. [31]

The point of the digression is to provide commentary on the difference between good luck and skill, not to reflect on historical events and strategies. The digression goes on to report a prodigy of an infant borne at Edessa with two heads, further emphasizing the thematic and moralizing function of Procopius' momentary shift away from strict chronological narration.[32]

Perhaps the most revealing text on ancient war elephants and pigs is the pseudo-historical account in *Alexander's letter to Aristotle*, a Latin text dating to the seventh century, but believed to be based on an earlier Greek version. Such a letter and its embellishment is found in a number of the versions of the *Alexander Romance*.

> Porus assured me that these [wild elephants] in a captive state were suitable for use in war and could be easily turned [for this purpose] if the swine continued to be beaten by the cavalry [and thus made to violently squeal].[33]

In this account the herd faced by Alexander is huge, more than 980 elephants, and they are described as marvelous beasts such as the reader may not be able to imagine, from their different colors to their teeth and horns. Porus, is cast here in the role of the wise eastern advisor, sharing the 'secret' of how to harness the terrifying power of the elephants. This is much like the portrayal of Harpagus the Mede in book one of Herodotus where he advices Cyrus of how he can defeat the Lydian cavalry by creating a mock camel cavalry to frighten the horses (1.80). The elephants' proverbial fear of pigs was a widespread narrative element and likely believed by many (like say their fear of mice!), but it is a literary trope related to simultaneous fear and wonder inspired by contact with 'the Other'. It plays to the hope that there must be a simple easy trick to address a real and terrifying problem.

The Romans used no pigs to defeat Pyrrhus, but they did use a good deal of creative stratagems. We have detailed accounts of these from Dionysius (20.1.6-7).[34] These excerpts of the *Roman*

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[31] 8.14.37-38, Loeb trans.; ἀλλὰ Ῥωμαῖοι χοῖρον ἐκ τοῦ πύργου ἐπικρεμάσαντες τὸν κίνδυνον τοῦτον διέφυγον. κραυγμὸν γάρ τινα, ὥν, ὡς τὸ εἰκός, ἠρτημένος, ὁ χοῖρος ἐνθένδε ἠφίει, ὅνπερ ὁ ἐλέφας ἀχθόμενος ἀνεχαίτιζε καὶ κατὰ βραχὺ ἀναποδίζων ὀπίσω ἐχώρει. ἐκεῖνο μὲν οὖν ταύτῃ ἐχώρησε. νῦν δὲ τὸ παρειμένον τῇ Ῥωμαίων ὀλιγωρίᾳ ἡ τύχη ἐπλήρου.

[32] Palmer 2000 explores other literary and thematic uses of Edessa in Procopius, particularly the floods.

[33] Adapted from Gunderson 1980: 149; Cf. Stoneman 2011: xxii-xxiii and 12. Boer 1973: 31: *Hos Porus capi habiles mihi usus bellorum affirmabat facileque averti posse, si ab equitibus verberari sues non desisterent.*

[34] Tacitly accepted by Mommsen 1862: 413 which in turned influenced the interpretation of the bar offered by Comparette 1919: 30-35.

Antiquities come from an early manuscript found in the monastery on Mt. Athos, and are now held in Paris, and have as headings "From Dionysius' History, Book XX," then "Of Pyrrhus and the Roman consuls Publius Decius and Publius Sulpicius."

> Outside the line they stationed the light-armed troops and the wagons, three hundred in number, which they had got ready for the battle against the elephants. These wagons had upright beams on which were mounted movable traverse poles that could be swung round as quick as thought in any direction one might wish, and on the ends of the poles there were either tridents or swordlike spikes or scythes all of iron; or again they had cranes that hurled down heavy grappling-irons. Many of the poles had attached to them and projecting in front of the wagons fire-bearing grapnels wrapped in tow that had been liberally daubed with pitch, which men standing on the wagons were to set afire as soon as they came near the elephants and then rain blows with them upon the trunks and faces of the beasts. Furthermore, standing on the wagons, which were four-wheeled, were many also of the light-armed troops — bowmen, hurlers of stones and slingers who threw iron caltrops; and on the ground beside the wagons there were still more men.[35]

Later in the same narrative, Dionysius again returns to anti-elephant tactics including the confusion cause by the wounding of a cub and the ability to take eight alive with their drivers by surrounding them. (20.12.3). Dionysius is, of course, also imitating earlier historiographical topoi, especially Polybius' intense interest in military technology such as the corvus ('crow'), a swinging spiked arm on Roman warships used to immobilize and board enemy ships (1.21). In fact, the description of the corvus and elephant wagon devices is so similar it may be either that Dionysius used the corvus as an aid to his historical reconstruction, or perhaps, it is just possible that this wagon technology was adapted into the corvus. Yet on the whole Dionysius' account passes the plausibility test better than the pig story and the detail of the role of wounding the cub seems confirmed by multiple depictions of cubs with war elephants in Italic art (**fig. 11**).[36]

As Comparette observed in 1919, the pig cannot possibly have been inspired the military tactics of the Pyrrhic war.[37] The Aelian passage is a red herring that has distracted numismatists from exploring alternative explanations.

[35] ἐκτὸς δὲ τάξεως τούς τε ψιλοὺς κατέστησαν καὶ τὰς ἁμάξας, τριακοσίας τὸν ἀριθμόν, ἃς παρεσκευάσαντο πρὸς τὴν τῶν ἐλεφάντων μάχην. αὗται κεραίας εἶχον ἐπιβεβηκυίας στώμιξιν ὀρθαῖς πλαγίας, εὐτρόχους, ὅπη βουληθείη τις ἅμα νοήματι περιάγεσθαι δυναμένας—ἐπ᾽ ἄκρων δὲ τῶν κεραιῶν ἦ τριόδοντες ἦσαν ἢ κέστροι μαχαιροειδεῖς ἢ δρέπανα ὁλοσίδηρα—ἢ καταρράκτας τινὰς ἐπιρριπτοῦντας ἄνωθεν βαρεῖς κόρακας. πολλαῖς δὲ αὐτῶν χεῖρες προσήρτηντο πυρφόροι στυππεῖα πολλῇ πίττῃ λελιπασμένα περὶ αὐτὰς ἔχουσαι, προεκκείμεναι τῶν ἁμαξῶν, αἷς ἔμελλον ἑστηκότες ἐπ᾽ αὐτῶν τινες, ὅτε πλησίον γένοιντο τῶν θηρίων, πλήσαντες πυρὸς ἐπὶ τὰς προβοσκίδας αὐτῶν καὶ τὰ πρόσωπα τὰς πληγὰς φέρειν. ἐφεστήκεσαν δὲ ταῖς ἁμάξαις τετρακύκλοις ὑπαρχούσαις καὶ τῶν ψιλῶν συχνοί, τοξόται καὶ χερμάται καὶ τριβόλων σιδηρῶν σφενδονῆται, καὶ παρ᾽ αὐτὰς κάτωθεν ἔτι πλείους ἕτεροι.

[36] Votive offering from Veii and two ceramic plates; Ambrosini 2001 and Roma 1973: nos. 33 and 34.

[37] Comparette 1919: 30-35.

***FIGURE 13**: Reverse of RRC 262/1, BnF REP-6033. Not to scale. Public Domain.*

***FIGURE 14**: Reverse of RRC 263/1a, Berlin 18201350. Not to scale. CC BY-NC-SA 3.0 DE.*

***FIGURE 15**: Reverse of RRC 269/1, Berlin 18201352. Not to scale. CC BY-NC-SA 3.0 DE.*

***FIGURE 16**: Reverse of RRC 374/1, Yale 2001.87.1534. Not to scale. Public Domain.*

***FIGURE 17**: Terracotta votive offerings on display in the Syracuse Museum, depicting female figure (Demeter? Kore? Worshipper?) holding pig. Public Domain.*

***FIGURE 18**: Terracotta votive offerings on display in the Syracuse Museum, depicting female figure (Demeter? Kore? Worshipper?) holding pig in right hand and torch in left. Public Domain.*

***FIGURE 19**: Reverse of RRC 342/3b, BnF REP- 19893. Not to scale. Public Domain.*

3. An Alternative Explanation of the Iconography

From a numismatic perspective, an acceptance of the elephant and pig story has depended upon and simultaneously been used to date a Roman currency bar and its uncertain symbolism has been explained through the myth of the elephant being scared of the pig. This is improbable, not only because of the nature of the literary sources just discussed, but also because the bar fits better both in terms of iconography and metrology in a First Punic War context, not a Pyrrhic one.

At the battle of Panormus, the consul L. Caecilius Metellus captured the Carthaginian elephants and brought them back for his triumph in Rome (251 BCE).[38] The Caecilii Metelli used the elephant as a numismatic family emblem from the middle of the second century to the very end of the republic (**figs. 13-16**).[39] In fact, excepting the issues of Pompey and Caesar, all elephants on the republican coin series are associated with the Caecilii Metelli.[40] An intriguing feature of all the elephants on the coins of the Caecilii Metelli is that they wear bells. It appears from high resolution digital images of both the British Museum and Copenhagen specimens of RRC 9/1 that that the elephant on the bar also wears a bell. Bells on elephants is an iconography regularly found on Bactrian, Indo-Greek, and Indo-Sythian coinage.[41] Bells do not appear on the best-known Carthaginian representations of elephants.[42]

An apparent difficulty with associating RRC 9/1 with the triumph of L. Caecilius Metellus or the First Punic War more generally is that the elephant is clearly modeled on an Indian elephant (*Elephans maximus*), not an African 'forest' elephant (*Loxodonta cyclotis*). Besides having smaller ears, the Indian elephant also has a convex back and a domelike forehead, whereas the African forest elephant, like its larger cousin the Loxodonta africana, African Bush elephant, has larger ears, a concave back and no pronounced forehead, but does have an extra skin flap connecting its stomach and rear legs.[43] For many, if not most, ancient artistic representations of elephants there is a lack of clear species distinction, likely due to the fact that artisans tended to work from models or memory, not life.[44] Thus, to my eye, the elephants on these later republican coins are not so anatomically executed that it is particularly meaningful to describe them as intended to represent a member of the African or Indian species. There are, however, some notable exceptions that clearly indicate species, such as silver

[38] Battle and capture: Polyb. 1.19.11; triumph and display: Liv. *Per*. 19, Plin. *NH* 7.139, 8.16-17, 18.17; Eutrop. 2.24.1.
[39] Not illustrated: Bronzes of RRC 262 series, 369/1 (a restoration of RRC 263), 459/1, and 461.
[40] Nousek 2008 convincingly argues that Caesar's famous elephant coin (RRC 443) is in dialogue with the imagery used by the Caecilii Metelli.
[41] Perrot 2013.
[42] E.g. Hispano-Punic coin: ANS 1944.100.81012; Siculo-Punic coin: ANS 1997.9.225.
[43] Charles 2008: 338-9. There has been some suggestion Ptolemy II, and perhaps thus through him others, used Loxodonta Africana in warfare, but Charles 2016 urges caution. There is also out-of-date view that there was another species of elephant native to North Africa (*Loxodonta africana pharaohensis*) that went extinct, whereas in fact the *Loxodonta cyclotis* used to have a wider range including North Africa, but that range was reduced though overhunting (cf. Charles 2008: 339 n. 7).
[44] See the richly illustrated van Oppen de Ruiter 2019.

coinage produced on behalf of Hannibal during the Second Punic War which clearly shows an African elephant (likely *Loxodonta cyclotis*).[45]

Likewise, historical sources are aware of the distinctions between the two species, primarily the military superiority of the Indian over the African.[46] Nevertheless, we are often left to deduce what type of elephant was most likely used in any given context and there are documented instances of elephants of both species being used together.[47] We have no direct testimony as to the species of Hamilcar's elephants and most assume the elephants were African, although Polybius speaks of their drivers as 'Indians' (Ἰνδόι), a word generally taken to mean any elephant-driver, not necessarily an indication of actual place of origin.[48] The designer of RRC 9/1 was clearly using an Indian elephant or an accurate representation of one as his model, but the species is not a sufficient piece of evidence to help us situate the currency bar in a historical context.

The other side of RRC 9/1 has a sow, a female pig. The gender is made clear by the presence of teats along the profile of the belly. Pigs have a number of different iconographic functions in ancient Italy and among the Romans, such as the Laurentine sow and oath-swearing scenes.[49] Boars specifically are widely used, sometimes to recall heroic narratives such as the Calydonian boar hunt or Erymanthian boar, sometimes simply a symbol of virility.[50] Prior to changes during Marius' second consulship, the boar had even served as one of the standards of the Roman legions.[51] However, by far and away the most common association with the sow is the cult of Demeter, the goddess who was most closely associated with Sicily (**figs. 17-19**) .[52]

[45] The types cited in n. 42 clearly depict *Loxodonta cyclotis*.
[46] Cf. Plin. *HN* 8.27 and 35, Livy 37.39.14, and App. *Syr*. 31.
[47] Battle of Pydna, 168 BCE, Romans field both species: Livy 42.62.2, 43.6.13, and Polyaenus 4.21. Polybius 5.84 can be read to suggest Ptolemy IV used both at the battle of Raphia, 217 BCE, so Charles 2008: 346-7. Hannibal may have received some of both species from Bomilar at Locri in 215 BCE, Livy 23.41.10 with Charles 2008: 343 n. 26. At very least, Hannibal is said to have had at some point an elephant named Surus, i.e. 'Syrian', Plin. *NH* 8.11.
[48] Polyb. 1.40.15 with Charles 2008: 341 and Prevas 1998: 61. Cf. Cretan and Tarentine as military, not ethnic identifiers, Craven 2017: 43-46 with summary of earlier scholarship.
[49] Varro *RR* 2.4.9 with RRC 28/1 vel sim and 2.4.18 with Altar of the Lares Augusti, Inv. No. 1115, Musei Vaticani, Museo gregoriano profano.
[50] Cf. RRC 385/2 and 407/2.
[51] Pliny *NH* 10.12 and Fest. (Paul. exc.) 267.6-8 with Dušanić and Petković 2003; I am not wholly convinced by their arguments that the boar standard should be associated with Ceres, but if correct supporting evidence *might* be found in RRC 121, which represents a fierce female boar with distended teats, not unlike the wolf on RRC 388/1. To my mind the Ceres is an unlikely war goddess, and boars are readily associated with Hercules as well: RRC 385/2, cf. RRC 39/2.
[52] On the association of Demeter with Sicily, Diod. 5.2.3; Cic. Verr. 2.4.106, as well as papers in Di Stefano 2008, Kowalzig 2008, Hinz 1998, and White 1965. Pigs associated with Demeter in Sicily: coins of Abakainon has as a primary reverse type a boar (sex of which is not clear) sometimes with a piglet; terracotta statuettes of worshippers holding pig(let)s as offerings are widely found: at a shrine at Entella, De Angelis 2006-2007: 177; and at a kiln-site near the Hippari River, De Angelis 2011-2012: 156; a sanctuary at Morgantina, De Angelis 2011-2012: 171; a sanctuary at Montagna di Ramacca, Wilson 1995-1996: 76; at Argigento, Wilson 1995-1996: 88. at Selinous Temple B the animal bone finds are mostly made up of piglets, De Angelis 2011-2012: 189, cf. Sabucina, Wilson 1995-1996: 100.

Nevertheless, iconography alone is a weak dating criteria. What follows in the next section is a broader discussion of the available evidence on Roman currency bars as a class of historical object and explores the extent to which the First Punic War may be the likely context for the creation of most of these bars.

***FIGURE 20**: Reported findspots of Roman currency bars based on locations recorded by Vecchi 2014.*

4. The Bars as a Cohesive Group

The available evidence suggests that Roman currency bars a cohesive group of numismatics objects made over a relatively short period of time, probably to facilitate the distribution of booty, rather than as a store of wealth or a medium for making payments. The high relief of the design on the bars make them unsuitable for stacking and the very heavy weight makes them unsuitable for every day payments.[53] In hoards they are typically found broken into smaller pieces. The cohesiveness of the Roman currency bars as a class of numismatic objects can be demonstrated by three key types of physical data: the limited distribution of known findspots, the similar physical dimension and the weight standard to which they conform, and the shared metallurgical profile.

There are eleven known types of bronze currency bars widely accepted as Roman: RRC 3/1-12/1 and the amphora-spearhead type which has been called [RRC 12/2] for convenience.[54] Only two have a legend identifying them as Roman, and only one has a complete legend: ROMANOM. The -OM is an archaic Latin ending, known to have been in use after 263 BCE from the coinage of the colony of Aesernia, and still appeared in some instances as late as 186 BCE and beyond.[55] Finds are known around

[53] Crawford 1974: 1.41n.5.
[54] Crawford 1974: 548 n. 23 suggested the Copenhagen specimen (KP 2060.2) was likely to be a forgery, but metallurgical testing of the subsequently acquired BM 1978,0721.2 of the same type suggests otherwise. Ghey, Leins & Crawford 2010 uses the designation [RRC 12/2] to integrate the type into the RRC system.
[55] RRC 3-4, cf. *ILLRP* 319 quoted below and the use of the -om on the legend of the coins of Aesernia, a Roman colony founded 263 BCE (HN Italy 430, VOLCANOM); AIQVOM in the *senatus consultum de Bacchanalibus*; QVOM appears regularly instead of *cum* through the late republic.

Rome, in Etruria and in the central northern Apennines (**fig. 20**).[56] The bars were used concurrently with the full-weight *aes grave*, that is 'heavy bronze' on the libral, that is a one (Roman) pound weight standard and also circulated with *aes rude*, unformed bronze pieces used as money.[57] There are only six hoards documented that had more than one bar type present, but even with this limited data it is possible to see how much the types overlap. In four hoards the Bull type and the Cocks/Rostra type appear together strongly suggesting a common period of manufacture, likewise the Eagle/Pegasus overlaps three times with the Sword/Scabbard Type. The presence of the shield type with bars from both those 'sets' helps us see how closely connected their issues are all likely to be. Bars when found whole are typically in excellent condition.

		n/a	CHRR 10	CHRR 13	CHRR 4	CHRR 16	CHRR 142
		Tuscan 1778	***Vulci***	***Ariccia***	***Velletri***	***La Bruna***	***Mazin***
RRC 4/1	Eagle/Pegasus				1	1	F
RRC 8/1	Sword/Scabbard			F	1	F	FF
RRC 7/1	Shield	2		2			F
RRC 5/1	Bull	1	FF			1	FFF
RRC 12/1	Cocks/Rostra	1	FF			F	F
RRC 11/1	Trident/Caduceus					1	FF
RRC 10/1	anchor/Tripod					3	FF
RRC 6/1	Corn-Ear/Tripod						F
RRC 9/1	Elephant/Pig						FFF

FIGURE 21: Appearance of bars in hoards containing more than one type. F stands for fragment.

Known bars have an average (mean) weight of c. 1528 g, but the variation in the data makes the average a poor reflection of the likely target weight.[58] Molds cannot be overfilled beyond a certain point and are more likely to be underfilled, than overfilled. Well-preserved Roman currency bar specimens have three smooth edges and a rough edge where the mold was filled. Typically, the fill edge is broken in a concave manner, but occasionally the casting sprue remains attached.[59] A histogram suggests a target weight in the mid 1600s may have been more likely (**fig. 22**). The weight of the Roman pound likely varied in different times and places, but c. 327 (± 3) g. is typical and it is likely these bars are intended to weigh five pounds.[60] The bars are thus considered a quincussis (five-as) monetary unit in a denominational relationship with the round cast coins (*aes grave*). Notice in figure 20 there are no

[56] Find spots taken from Vecchi 2014: 29-31 with the addition of Lavinium based on Molinari 2011: San Marinella (CHRR 21), Ariccia (CHRR 13), Mazin, La Bruna (CHRR 16), Tor Marancia (CHRR 1), Città di Castello (CHRR 3), Via Tiberina, Vulci (CHRR 10), Velletri (CHRR 4), Ceveteri (CHRR 8), Castelgandolfo (CHRR 2), Vicarello, Alba Fucens (CHRR 5), Bomarzo (CHRR 6), and Terni (CHRR 9).

[57] With *aes grave*: CHRR 13, 16, 21 and Molinari 2011 on third century hoard from Lavinium found during the excavation of a building razed by fire; with *aes rude*: CHRR 8, 10, 13.

[58] Weights taken from Vecchi 2014: 29-31 and 80, Thurlow and Vecchi 1979: 17-18, Thompson 1957: 55-59, CRRO, and the BM collection database. These have a median weight of 1577g, a standard deviation of 191 and a mean average deviation of 85.

[59] The two specimens of RRC 10/1 illustrated on CRRO well illustrate both a typical concave break (Berlin) and the more unusual casting sprue remnant (BM): http://numismatics.org/crro/id/rrc-10.1.

[60] Butcher and Ponting 2014: 206-208 with review of earlier literature; cf. Riggsby 2019: 83-129, esp. 100-114.

significant variations in typical weights between different types making clear all the bars are likely part of the same monetary phenomenon, if not actually manufactured at the same time.

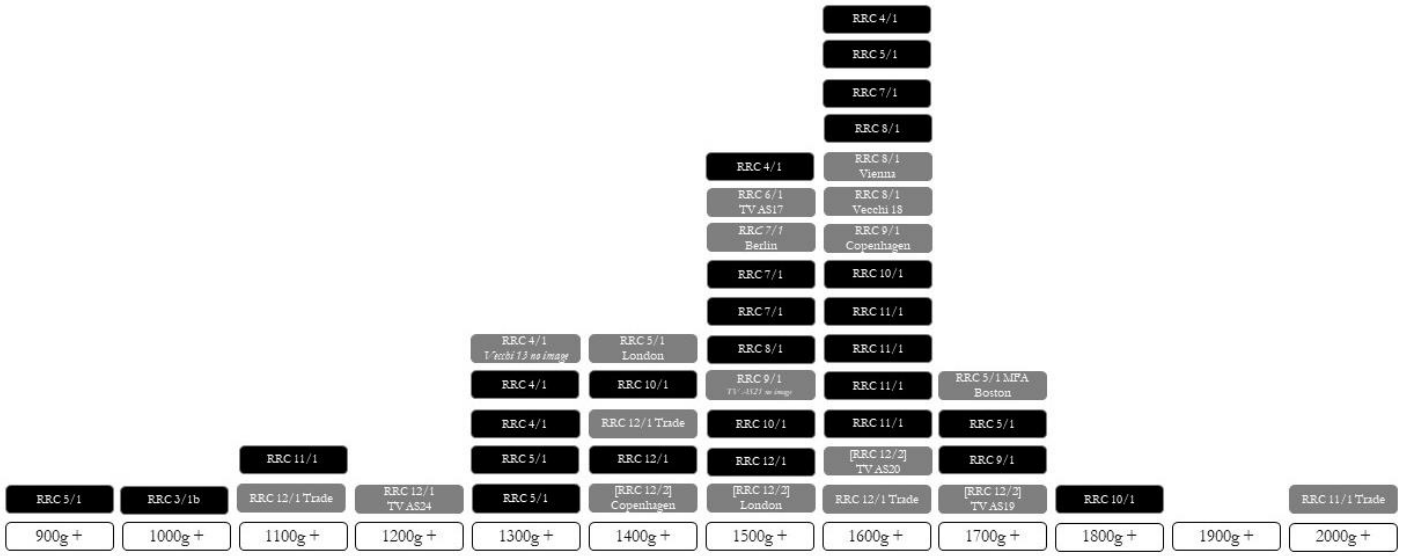

***FIGURE 22**: Histogram of the reported weights of known currency bars. Black are specimens with weights recorded by Haeberlin 1910. RRC 7/1 (Berlin) is neatly halved and thus recorded under its presumed whole weight.*

In the mid 1980s drilled samples from the currency bars in the British Museum collection were subjected to Atomic Absorption Spectrometry (**fig. 23**).[61] The bull bars (RRC 5/1) seem to have a different compositional profile than the rest—on average almost 10% less lead—suggesting perhaps a separate period of manufacture. By contrast, the composition of the other types has little variation, again suggesting a unified period of production.[62]

[61] Burnett, Craddock and Meeks 1986.

[62] When RRC 5/1 is included there is a standard deviation of 3.4% copper and 4.5% lead, with RRC 5/1 removed the standard deviation drops to 2.41% and 3.33%.

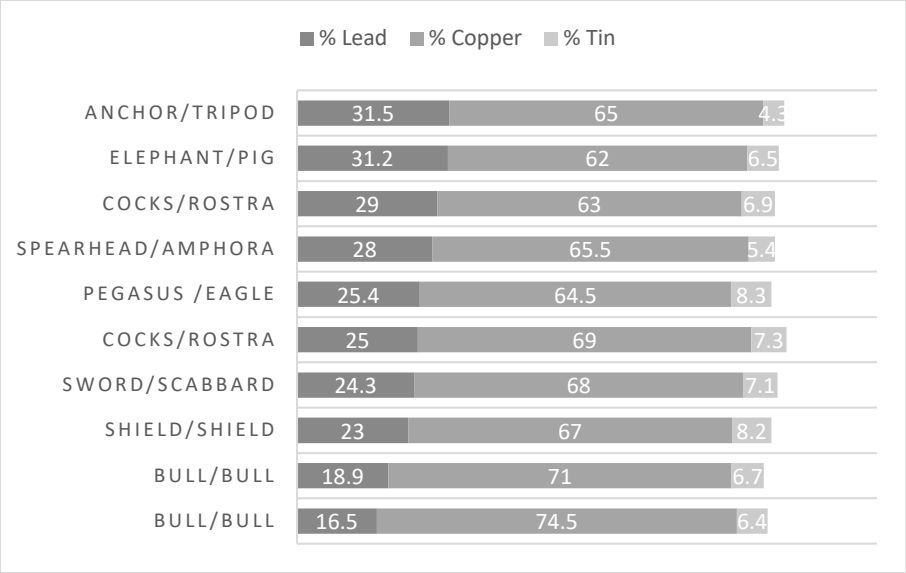

***FIGURE 23**: Metallurgical Profile of Ten Roman Currency Bars in the British Museum after Burnett, Craddock and Meeks 1986*

We have unfortunately very little metallurgic testing of other Italic bronze monetary pieces to help us contextualize the results of the BM tests on the Roman bars in scientific terms. The testing which has been done seems to confirm the relative homogeneity of the Roman bars and the distinctiveness of their metallurgical profile. Some comparative testing was done on *ramo secco* and Tarquinian bars in the BM collection at the same time as that on the Roman bars. The *ramo secco* had little to no lead, but an unexpectedly high iron content.[63] The three Tarquinia bars have lead levels far exceeding that found in the Roman bars (46-71%) and only trace iron. *Aes rude* recovered in the course of the excavation of an Etruscan site occupied in the third century reveal a wide variety of metallurgical profiles, but of the 21 published metallurgical tests, only two pieces were found to a profile anything akin to the Roman currency bars.[64] Likewise, only one out of the 17 pieces tested from a Sardinian *aes rude* hoard had a similar bronze to lead ratio.[65] Thus, Roman currency bars are clearly of a material that *could* circulate with other Italian monetary instruments, but cannot be said to share a typical profile with any of the tested classes of objects.[66] It would be most revealing to compare these results with the early *aes grave* series (RRC 14, 18, 19, 21, 24) and hopefully such tests will be forthcoming.

The high levels of lead in the Roman currency bars, especially in the types other than RRC 5/1, does however seem to be paralleled by initial analysis of one of the rams recovered from the area of the decisive sea-battle at the Aegates Islands in 241 BCE which effectively ended the First Punic War.

> An experimental analysis [using X-ray fluorescence] of the Egadi 3 ram provided an indication of its composition on its outer, corroded surface. The unusually high percentages of lead (27.0-36.3)

[63] A Sardinian find of *aes rude* had 12 out of 17 pieces with a similarly high iron content, Ingo et al 2006; iron renders bronze unusable for almost all functional purposes, cf. Craddock and Meeks 1987, esp. 201.
[64] Baldassarri et al. 2006.
[65] Ingo et al 2006.
[66] Of the 17 pieces from the Sardinian *aes rude* hoard only one had a similar bronze to lead ratio; Ingo et al 2006.

> and tin (12.7-20.2) as compared to copper (37.7-41.2) is partly explained by the leaching of copper. Analysis of bronze cores is required to determine original relative percentages, but it is already clear that a surprisingly high percentage of lead is present.[67]

Egadi 3 is clearly identified as of Carthaginian manufacture by the presence of a Punic inscription made by incising the mold prior to the casting of the ram itself. The small number of samples and the different technologies make the comparison of ram and currency bars highly imperfect, but we can say that a high lead content is a feature which is shared by both. In the original publication of the BM currency bar data the reason for the high lead content was explained thus:

> The addition of lead to bronze renders the molten metal more fluid and depresses the melting point, both of which are of considerable help when casting. The resulting alloy, however, is much weaker and cannot be satisfactorily shaped by hammering. Presumably, therefore, the lead was added to maximize weight...[68]

It is not inconceivable that leaded bronze was desirable for both casting currency bars and rams as separate, independent phenomenon. Neither requires additional work with a hammer, unlike, for instance, bronze arms and armor. The easier casting may have given speed to the currency bar production and facilitated the manufacture of the larger, cumbersome rams. In both the heavier weight of the final product may have been perceived as advantageous. It is, however, just possible that the similar metallurgical profile just might derive from the reuse of the metal of the rams in the bars.

FIGURE 24: Detail from the late first century BCE tomb of Cartilius Poplicola (Ostia, Regio IV, Insula IX). Photograph by R. Ulrich. Image rights not established.

[67] Tusa and Royal 2012: 18; results of further testing are forthcoming.
[68] Burnett, Craddock and Meeks 1986: 129.

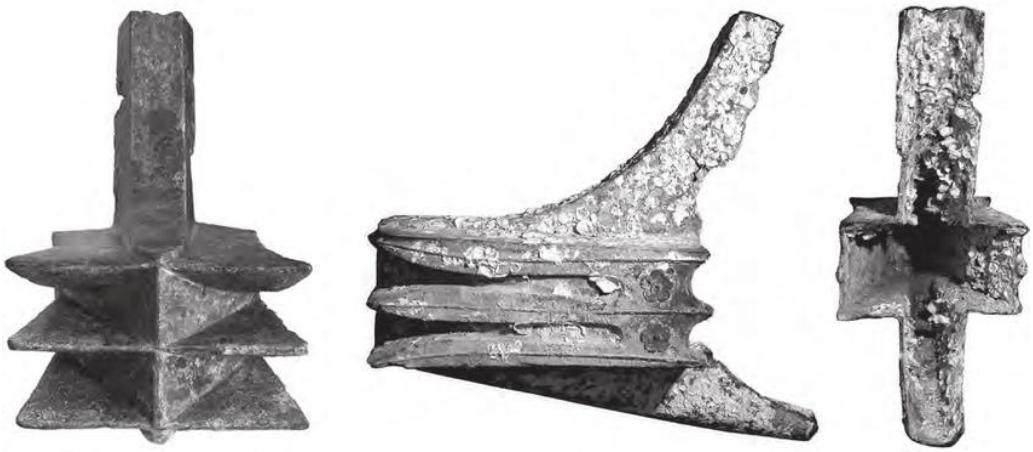

***FIGURE 25**: Egadi Ram 1. Photography by S. Tusa. Image rights not established.*

***FIGURE 26**: A specimen of RRC 12/1 observed and photographed in the British Museum, but not in the major catalogues. Based on comparison with drawings by Franciszek Smuglewicz and etched by Charles Norton as they appear in Byres 1842: part 5 pl. 5, I believe this to be the same bar as that owned by James Byres (cf. **fig. 1**). Not to scale. Image courtesy of Andrew McCabe.*

FIGURE 27: Harvard 4.2002.16019.2. 35mm color slide, Untitled (two birds cockfighting), Jack Gould, 1951. ©President and Fellows of Harvard College.

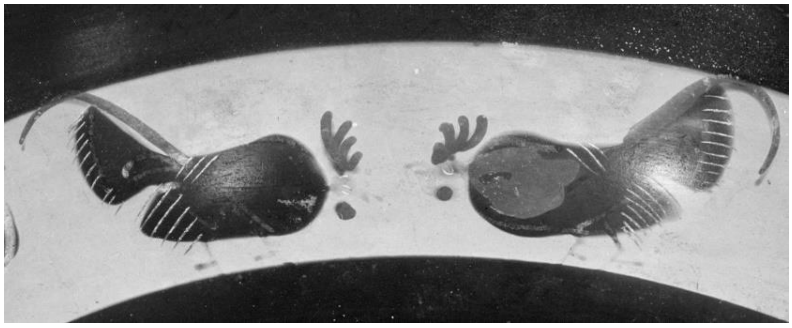

FIGURE 28: Detail of Met 06.1021.157, Attic black figure kylix, c. 560–550 BCE. Public Domain.

FIGURE 30: *Yale 2004.6.20. Bronze coin of Cales, 265-240 BCE, 21 mm diameter. Not to scale. Public Domain.*

FIGURE 29: Mosaic, Santangelo collection, originally from Pompeii, now in the Naples National Archaeological Museum. Photograph by Carole Raddato. Public Domain.

5. Connecting the Bars as group to the First Punic War

Before the Egadi Rams and their possible metallurgical parallels came to light, Kondratieff argued that the three currency bar types with naval imagery (RRC 10-12) represent Duilius' distribution of booty to the Roman people at his triumph in 260 BCE, the first ever *triumphus navalis*.[69] There is a likely Augustan age restoration of a mid-republic inscription honoring Duilius, which lists his military accomplishments and captured spoils, including the number of gold and silver coins and the amount of bronze, 2.9 to 3.4 million pounds depending on what was written on the now broken parts of the stone.[70] After listing the bronze captured, the inscription reads:

[_ _ _ _ _]OQUE NAVALED PRAEDAD POPLOM [DONAVET]

and … he gave the people navel booty

Suggested restorations for the missing portion lean towards different interpretive frameworks. One restoration would have him be 'also the first' to give such a gift; another would specify his triumph as the occasion of the gift.[71] Neither is without certain difficulties. While other scholars have thought the naval successes of the First Punic War to be the most likely context for the naval imagery of the currency bars, Kondratieff makes the case that the currency bars should be associated with this donation above. He estimates that perhaps as much as 100 to 150 tons of bronze could have been stripped from the 31 captured ships. He also points out that the design on RRC 12/1 which has been identified often as a trident is in fact the ram of a ship and suggests that the bars might have been made from melting down such prows.[72] His assertion that two rostra are depicted on RRC 12/1 can be confirmed by comparison with the form of the Egadi 1 Ram which has a Latin inscription on its lower cowl nosing (**figs. 24-26**).[73] His theory that the currency bars represent *navaled praedad* in the form of melted and recast rams is made perhaps more attractive by the high lead content of both.

However, we should also ask ourselves the likelihood of a large number of rams from captured ships being melted down, instead of being reused to augment the strength of the Roman navy. The reuse of captured ships is attested in both the literary and archaeological evidence.[74] Duilius' victory

[69] Polyb. 1.21-24; Kondratieff 2004; the same idea is already found in Milani 1891 and rejected by Haeberlin 1910 because of the erroneous believe that the denarius was introduced c. 268 BCE and thus the bars *must* all be earlier.
[70] *ILLRP* 319.
[71] *primos quoque*; Mommsen followed by Dessau vs. *triumphoque*; Degrassi followed by Kondratieff.
[72] Kondratieff 2004: 20, 26 and 29.
[73] Further Images available online: https://rpmnautical.org/outing/egadi-1-ram/. This ram was recovered in the course of fishing in the general vicinity of the Egadi islands, not as part of the systematic archaeological survey of the naval battle site. Lack of context and stylistic differences make its dating less certain than the other Egadi Rams; Prag 2014: 58-9 attests that epigraphically it would fit comfortably in a third century context, but allows it could be as late as the early second century. Similar ram iconography is also found on the late first century BCE tomb of Cartilius Poplicola (Ostia, Regio IV, Insula IX, **fig. 24**).
[74] Polyb. 1.29.1; 1.53.2; Tusa and Royal 2012: 45, cf. Egadi 7 with the face of a Roman deity vandalized, suggesting possible reuse of the ram by the Carthaginians: https://rpmnautical.org/findings/egadi-7-ram/.

comes early in the war at a point where there was every expectation of ongoing conflict and Rome was in a high need of improving its naval capacity. As more metallurgical studies and archaeological finds add to our available information the likelihood of a connection will become easier to assess.

The currency bar with the *rostra* and dolphins has on the other side two cocks and two stars (**fig. 25**). The birds have often been misidentified as chickens and their lowered heads taken to suggest eating; a mistake also of historiographical origins. The Romans are known to have divined the will of the gods before engaging in battle by the feeding of sacred chickens. If the birds ate, the gods were pleased to have the Romans engage in battle; if they failed to eat, the prudent commander would not engage with the enemy. The most famous sacred chickens in Roman history are those which the consul of 249 BCE, P. Claudius Pulcher, tossed into the sea before the battle of Drepanum, saying 'if they won't eat, let them drink'. His willful disregard of the auspices was used not only to explain the Roman defeat, but also as a morality tale about the importance of religious observance by a whole host of writers: four times in Cicero, in three different later epitomes of Livy, and also by Valerius Maximus and Suetonius.[75] The story is, however, notably absent for our earliest and most detailed source on the battle, Polybius.[76] This memorable story from the First Punic War has certainly clouded our interpretation of the birds on the currency bars.

The birds on the currency bar are better identified as cocks.[77] They are represented with impressive combs, wattles, hackles, and sickles, that is to say the head, neck and tail anatomy and plumage associated with the mature male of the species. The representation of the two birds head down facing each other is typical of cock fighting both in real life and in ancient art (**figs. 27-29**).[78] The symbolism of the cock in Greco-Roman art is not straight forward. They were courting gifts in pederastic relationships and thank-offerings to the gods for athletic victories.[79] They flank Athena on Panathenaic Prize Amphorae.[80] Individual cocks are not uncommon as a Greek coin type appearing at numerous cities across the Mediterranean at different times.[81] The cock is often an attribute of Mercury, a god of diverse, but overlapping, aspects.[82] He is the bringer of good news, wealth, fecundity more generally, and a protector of boundaries. Notice how two of his other attributes, the caduceus and purse are

[75] Cic. *ND* 2.7, *Div*. 1.29, 2.20 and 71; Liv. *Per*. 19, Flor. 1.18.29, Eutrop. 2.26, *cf*. Livy 22.42.9; Val. Max. 1.4.3, 8.1.4; Suet. *Tib*. 2.
[76] Polyb. 1.49-52.
[77] They were correctly identified as such by Poole 1873: 64-65.
[78] Comparative iconography: Attic black figure cup, c. 550-525 BCE (BM 1978,0502.6); Roman mold-made lamp from Puetoli, first century CE (BM 1856,1226.486); Gaulish Red Slip Ware late first century CE (BM 1814,0704.1548); Green Jasper Intaglio (Guiraud 2004: no. 358); Moonstone Intaglio (Boston MFA 1972.956); mosaic from the Santangelo collection (Naples).
[79] BM gem no. 2794; Callim. *Epig*. 56.
[80] Mitchell 2009: 130-131; one also appeared with Athena's cult image at Elis, Paus. 6.26.3.
[81] Examples: Bactria, c. 246-235 BCE (SNG ANS 21-23); very regularly at Himera (cf. SNG ANS 158); Dardanus (ANS 1970.142.366 and 1967.152.421); Panormus (SNG ANS 532-6); Dicaea (ANS SNG 243); Carystus (ANS 1944.100.20263); Luceria (ANS 1967.153.215).
[82] Cf. RIC III Marcus Aurelius 1074-1076; These illustrate a temple of Mercury on the reverse with the following in the pediment: tortoise, cock, ram, petasus, winged caduceus, and purse. There are also numerous intaglios which show Mercury with a cock at his feet, e.g. Thorvaldsen 1305.

worked into the cockfight scene from the Santangelo collection of mosaics from Pompeii (**fig. 29**).[83] Through cockfighting, the cock itself becomes associated with virility and victory, often appearing with a palm branch.[84]

The iconography of RRC 12/1, the *rostra* and cocks type, shares the same symbolism as the coins struck by allied communities at the beginning of the First Punic War. Six Italic communities, all allied with Rome, struck nearly identical bronze coinages, differentiated only by the names. The obverse has the head of Minerva (Athena) with a Corinthian helmet, the reverse a cock, star and a legend in Latin (**fig. 30**). The juxtaposition of a cock and star may, or may not, have a particular special meaning, the star being a common numismatic motif not necessarily representing any one specific deity, but rather being more generally evocative of divine favor.[85] Cocks are not without precedence at regional mints in preceding periods, used regularly at Himera in Sicily, and on a triobol of Neapolis likely in the first quarter of the third century.[86] Of the six mints striking the Minerva cock type—Suessa Aurunca, Teanum Sidicium, Aquinum, Cales, Caiatia and Telesia—Suessa, Teanum, and Cales also produced other coinage in and around this period.[87] Cales and Suessa were Latin colonies, established 334 and 313 BCE respectively, the pre-existing communities in these locations and that of Teanum had a fraught and intertwined history that led to their dependency on Rome less than century earlier.[88] These Minerva cock bronzes are the only coinage of Teanum that uses Latin, instead of Oscan, for the legend. Aquinum, Caiatia and Telesia are not known to have produced any other coinage; none of these towns feature in the literary accounts of the First Punic War. The six towns are all located in topographically strategic locations on the northern edges of the Campanian plain, controlling key access routes (**fig. 31**). The Minerva cock bronzes are strongly associated with the first five years or so of the First Punic War (c. 264-259 BCE), being rapidly overstruck by the Apollo-man-faced bull type produced primarily at Naples (the IΣ series), but also in the name of Cales, Suessa, Teanum, Aesernia, and Compulteria.[89]

[83] Cf. cock fight mosaic from House of the Labyrinth, Pompeii (Naples inv. no. 9982) with Herm in background.
[84] Mould-made clay lamps: Drôme, c. 90-150 CE (BM 1904,0204.476), Egypt, c. 50-80 CE (BM 1925,1120.54); intaglios: Unpublished Tassies (tray 14.2, ref. nos. 906-7), Thorvaldsen I1300; terracotta stamp: MFA 88.913.
[85] Cf. stars on RRC 2/1 and 15/1. Comparette 1919: 47-54 also believed the birds to be cocks not hens and connected the imagery with the allied bronzes, but he went a step farther and connected the star to Pliny, NH 10.46 where he says that roosters *norunt sidera!*
[86] HN Italy 581; also found much earlier at Croton *HN Italy* 2131 and 2210 (with Athena obverse). It is possible that the Naples triobol, which do often have a star as well, provided the model for these bronzes.
[87] Minerva cock bronzes: *HN Italy* 449, 453, 432, 435, 433, and 457; Diadrachms: Cales, Suessa, and Teanum: HN Italy 434, 447, 451-1, see also n. 89.
[88] Livy 8.15-16.
[89] HN Italy 431, 436, 437, 450, 454-6, 589; possibly Maleventum (438-439; the dating of these coins is less clear).

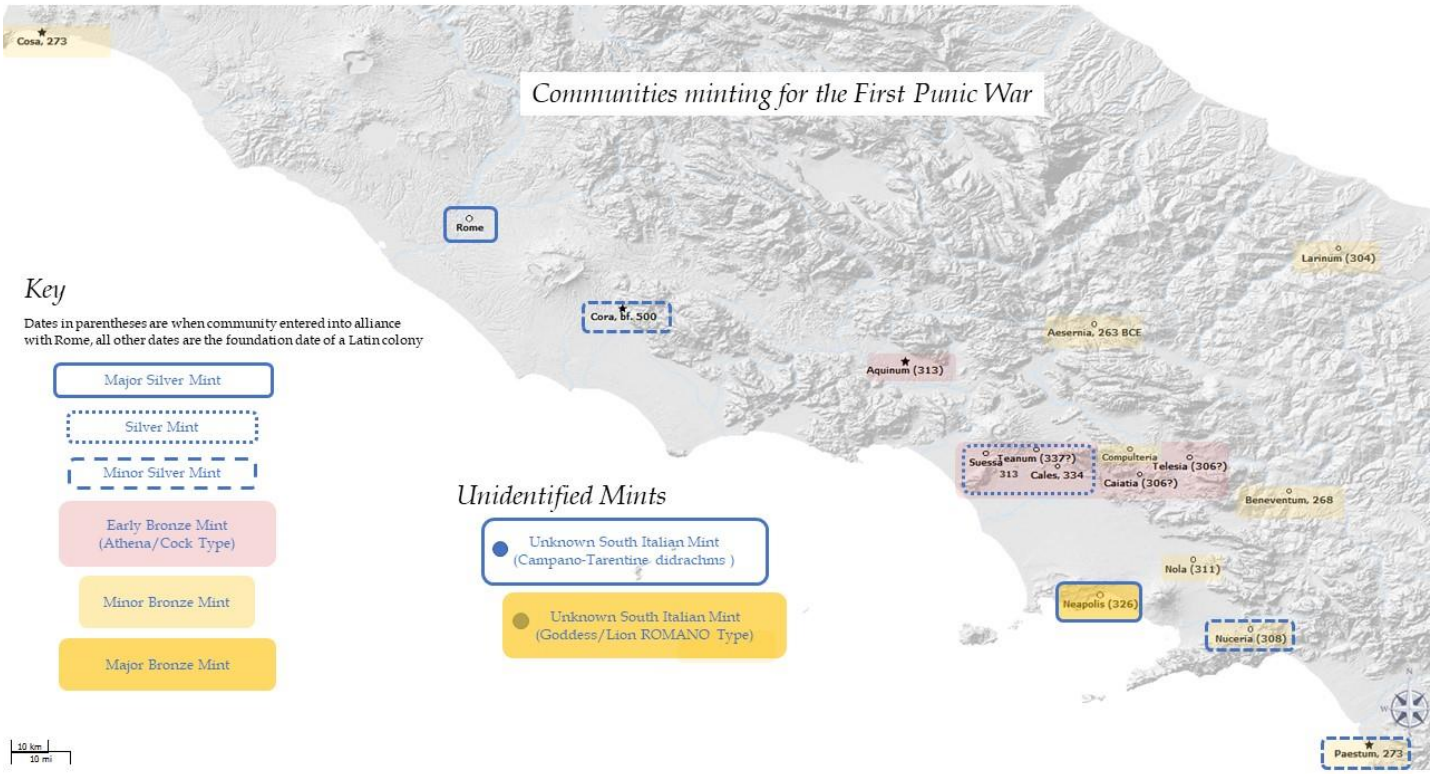

***FIGURE 31**: Map of communities minting during the First Punic War. Created by the author using image and data from the Antiquity À-la-carte Application produced by Ancient World Mapping Center (AWMC) at The University of North Carolina, Chapel Hill.*

The bellicose rooster as a symbol of victory, perhaps even divinely favored victory with the augmentation of the star, fits well with the other symbols of victory found on the Roman currency bars: an anchor and tripod (RRC 10/1); a filleted trident and filleted caduceus (RRC 11/1); grain-ear and tripod (RRC 6/1). The caduceus and the tripod are often divine attributes of Mercury and Apollo respectively. However, their semantic resonances could also be more generalized. Very early on in Greek art the tripod became a generic symbol of victory, a natural evolution from its use as a prize for the winners of athletic competitions at many religious festivals and a common thank-offering to the gods for victory.[90] Likewise also the fillet is a symbol of victory derived from the agonistic tradition, a symbol often combined with laurel crowns and palm branches, but no less resonant when it appears on its own.[91] The multivalent caduceus will be appear again and again on later Roman coins often as an attribute of the divine personifications *felicitas* (the state of being blessed), *fides* (loyalty), *pax* (peace), and more.[92] In the Hellenistic world, as the herald's staff, the caduceus represented the arrival of good news and the

[90] Kosmopoulou 2002: 76, cf. Ariel and Fontanille 2012: 110.
[91] Cf. Paus. 9.22.3 and ANS 1997.50.1 and coins of Catana generally.
[92] Cornwell 2017: 34-40.

end of conflict,[93] and thus by extension was an attribute of Nike (victory). This is particularly well illustrated on the coins of Terina in S. Italy and was a symbolism that found resonance at Rome.[94]

Victorious naval imagery *could* be just as thematically appropriate for Roman currency bars in the period prior to the First Punic War as well as during and after.[95] Polybius' characterization of Rome as lacking any navy or seafaring experience before this war is certainly somewhat exaggerated.[96] The speaker's platform in the forum takes its name, the *rostra*, literally meaning 'the ship rams', from the rams taken as trophies during the capture of Antiate fleet in 338 BCE and displayed thereupon.[97] From that date forward, but especially after the Pyrrhic War, Rome expended great efforts to create a seaboard defensive network (**fig. 32**).[98] This network consisted of fortified structures on each and every landing spot between the Tiber and the northern edge of Campania on the Tyrrhenian Sea. The network consisted of different types of urban settlements and sanctuaries dependent on pre-existing conditions and local populations. Nevertheless, on balance with the cock imagery used in the early part of the war and the inscription referring to *navaled praedad* and the possible metallurgical parallels, the evidence points to a date in the First Punic War.

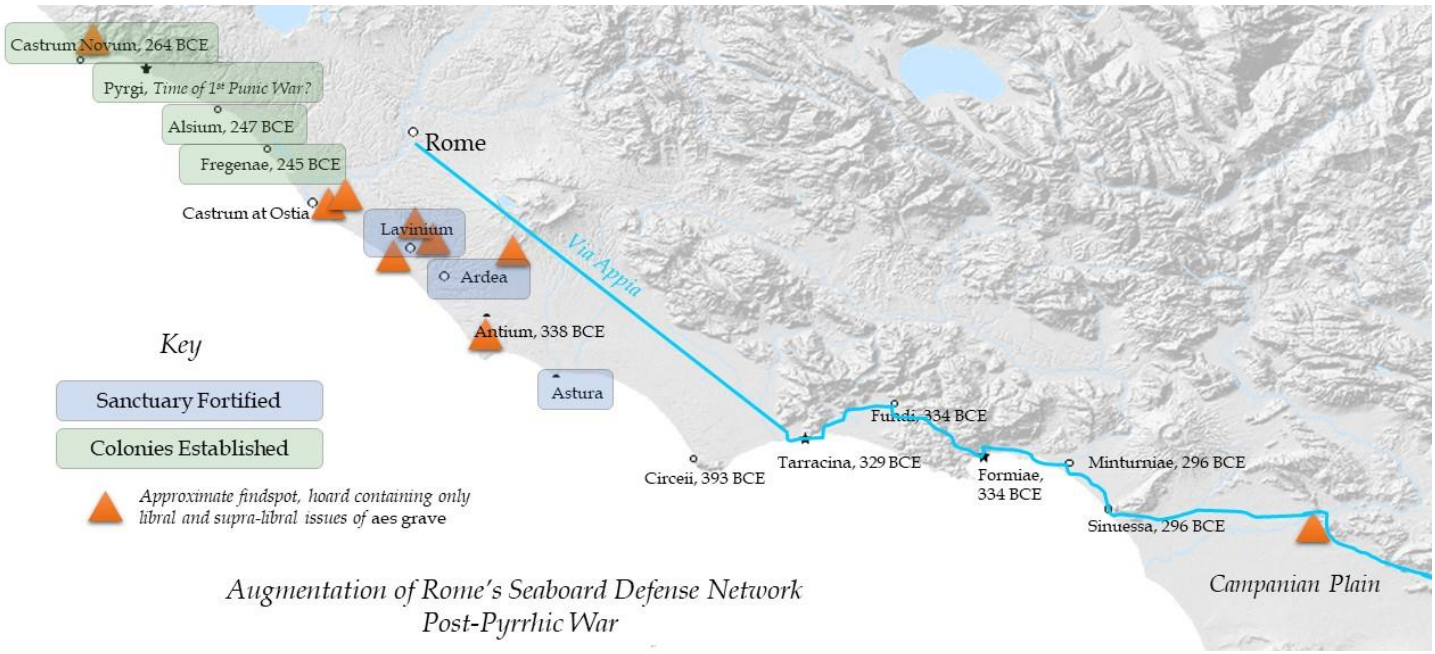

***FIGURE 32**: Map of communities minting during the First Punic War. Created by the author based on Jaia and Molinari 2011 with images and data from the Antiquity À-la-carte Application produced by Ancient World Mapping Center (AWMC) at The University of North Carolina, Chapel Hill.*

[93] Polybius 4.52.4 and 24.12.1.
[94] *HN Italy*, p. 193-196; RRC 460/4, cf. RRC 367.
[95] Le Bohec 2003; Steinby 2005; Crawford 1985: 41 n. 20; I would not go as far as Steinby 2007 in suggesting Rome had developed an extensive and experienced navy at a very early date.
[96] Polyb. 1.20.
[97] Livy 8.14.12
[98] Jaia and Molinari 2011: 91-92, cf. Salmon 1969: 70-81.

Other iconographic allusions to the First Punic War could be read onto some of the other Roman currency bars, but not in nearly with the same certainty as the cocks, rostra, elephant, and pig. So, for instance, in the Second Punic War the Romans take to using a grain-ear as a secondary symbol to indicate a coin was struck in Sicily and one bar type has a grain-ear on one side and a tripod on the other.[99] Another intriguing connection is the appearance of Pegasus with the legend ROMANOM and an eagle on a thunderbolt on the other side, given that the Carthaginians had issued a 5-shekel piece with Pegasus as its reverse design during the course of the war.[100]

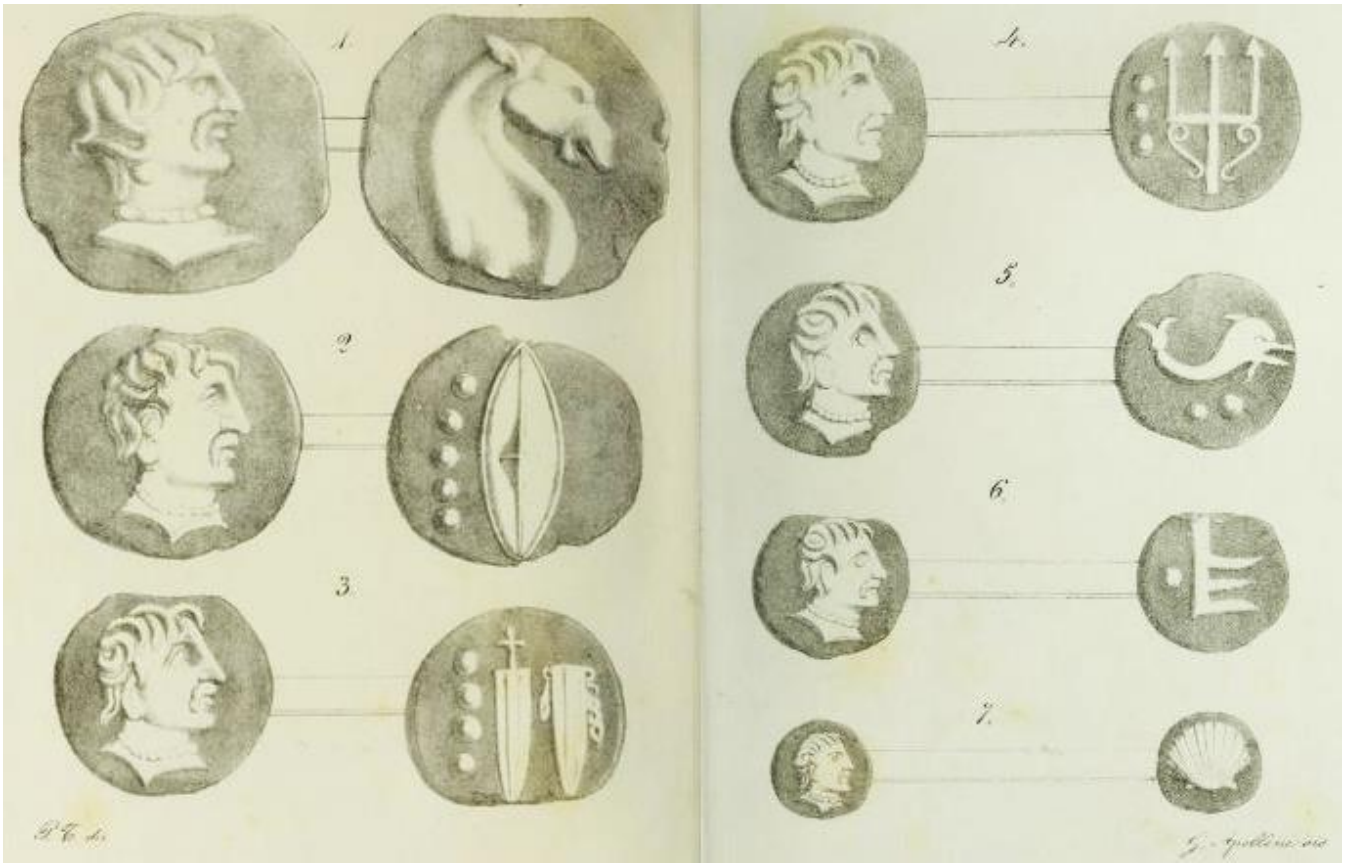

FIGURE 33: From Marchi 1839: classe IV, plate 1, drawings of *aes grave* from Ariminum formerly in the Museo Kitchneriano collection, likely now in Palazzo Massimo. The largest unit illustrated here, perhaps intended to be a full pound or as, has no denominational mark, and is unknown to Vecchi 2014, Gorini 2010, or Rutter 2001. The horse's head may be inspired by RRC 18/3 (or 13 or 17). Image in the public domain.

The hypothesis of a unified period of production associated with the time of the first Punic War may also be suggested by the types on the *aes grave* issued by the Latin colony of Ariminum sometime after its foundation in 268 BCE which seem to the borrow iconography of the Roman currency bars for

[99] RRC 6/1, cf.

[100] Jenkins 1978: series 6, but, as Prag 2010: 5 rightly discusses, the Pegasus on this coin type is likely inspired by Syracusan types that in turn copy the coinage of Corinth.

most of its reverse designs.[101] The first series of this colony is dated to the time of First Punic War and is issued in at least six denominations all of which have a Gallic male head on the obverse (**fig. 30**): a 5-uncia piece (shield), 4-uncia (sword and scabbard), 3-uncia (trident), 2-uncia (dolphin), uncia (rostrum), and half-uncia (shell).[102] In particular the shield, sword and scabbard and rostrum motifs are largely unknown elsewhere on Italian coinage.[103]

The final piece of evidence that may help us date the bars—in particular the elephant and pig bar—is only suggestive at best. Pliny in his *Natural Histories* reports the following:

> Marcus Varro states that when Lucius Metellus lead in triumph a very large number of elephants, a *modius*[104] of emmer wheat was an *as*, as also was that of a *congius* of wine,[105] 30 pounds of dried figs, 10 pounds of oil,[106] and 12 pounds of meat.[107]

For Pliny the purpose of paraphrasing Varro's testimony is to prove how cheap grain could be in the past and his context invites us to this that these prices were typical market prices for the time. However, this seems unlikely: the historical record typically records special events, and this is particularly true of our information of grain prices at Rome. One *as* per modius is rock bottom lowest possible price used in the legendary account of Minucius' public distribution after the suppression of Spurius Maelius' "plot" to privately relieve a famine in 439 BCE.[108] Pliny also reports that Manius Marcius was the "first" to offer the Roman people grain at this remarkably low price.[109] In the historical period we hear of curule aediles sourcing and selling off cheap grain on four occasions between 205 and 195 BCE, but then the rates are four or two asses per modius.[110] What shocked contemporary Romans about C. Gracchus'

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[101] *HN Italy* 2-7, but now superseded by Gorini 2010 who dates the first *aes grave* of Ariminum to the period 264-241 BCE. Poole 1873: 26-29 seems to have noticed these type similarities, as he speculated that the shield/shield and sword/scabbard types of the currency bars might be attributed to Ariminum.

[102] It is assumed that this colony used ten ounces to the pound, not twelve. Gorini 2010 suggests it is based on a pound of c. 380g; this seems slightly too high for the data he collects, with the target weight having been more likely c. 360 g perhaps even a little lower, but still much higher than RRC 14 and 18. The shell is paralleled by RRC 14/5 and 21/5, both sextans. Marchi 1839: classe IV, plate 1 has a drawing of another larger *aes grave* unit from this Ariminum series with no denominational mark, possibly meant to be a full pound, that was part of the Museo Kitchneriano collection. If this piece is still extant it is likely now in the Palazzo Massimo. From the drawing it seems to have a horse's head as its type, perhaps inspired by RRC 13, 17, or more likely 18/3. Dating is based on a small hoard containing RRC 21/4 and an Ariminium biunx, as well as some archaeological finds, summarized by Rutter 2001: 17.

[103] In private correspondence C. Molinari kindly drew to my attention that the shield on the Ariminum quincunx may be intended to represent a Gallic shield, thus making the parallel with the Roman bar less direct. Roman depictions of Gallic shields vary a great deal, but those on RRC 448 and 452 have pointed ends like those found on Ariminium; also, cf. HN Italy 8 a struck coin of Ariminum.

[104] The modius is a dry measure of volume, approximately 8.75 liters or 37 cups. That is, enough wheat to produce thirteen hearty loaves using a typical modern bread recipe.

[105] The congius is a wet measure of volume, approximately 3.38 liters or 14 cups (one pint short of a gallon).

[106] 10 pounds of oil *should* equal one congius, but cf. Riggsby 2019.

[107] 18.17: *M. Varro auctor est, cum L. Metellus in triumpho plurimos duxit elephantos, assibus singulis farris modios fuisse, item vini congios ficique siccae pondo XXX, olei pondo X, carnis pondo XII.*

[108] Livy 4.12-16.

[109] Plin. *NH* 18.15, no specific date given; cf. RRC 245/1 which probably commemorates this distribution and likely dates after 131 BCE; Molinari 2016 cf. evidence of the Sardinian Hoard, Hersh 1977: 27.

[110] 203 BCE, Livy 30.26; 201 BCE, Livy 31.4; 200 BCE, Livy 31.50; 196 BCE, Livy 33.42.

legislation in the 121 BCE is that it made the regular sale of some grain at such low prices a regular monthly event.[111] Still in 74 BCE the sale of grain at one as per modius was a novel and noteworthy event.[112]

As I said at the end of section one above the most likely hypothesis for the function of the bars is in the distribution of war spoils to soldiers and the most likely occasion for that type of monetary distribution is the Triumph. We have our best testimony for these regular monetary distributions from the early second century thanks to the survival of Livy's text and his interest in this type of record; amounts very but we most commonly hear of soldiers receiving 250 asses or 25 denarii in this later period.[113] We also have testimony for the Triumph being a time of public largesse and banqueting. Beard lays out the available evidence and shows that at least by the mid first century BCE historians thought of food and triumphs as going back to the very origins of the ritual, but that it is likely that formal banqueting was restricted to the elites by invitation only and that ordinary soldiers and the Roman people took away any food that was on offer.[114]

Based on all this, it is reasonable to suggest that Varro's evidence on prices are those which Metellus himself made available to the Roman people on the occasion of his triumph as a form a largesse. And, we can observe that there are fixed amounts of five food items available for purchase for an *as* each: emmer wheat, wine, figs, oil and meat. If a soldier received one of these five- as bars at that triumph, he could turn around and spend it all on a sizable quantity of food for his own enjoyment or to share with friends and family. The bars that were not redeemed in this way became ritual offerings or entered the money supply. It is also worth noting in this context that pork was the most common meat used to feed soldiers, and that the bulls (RRC 5/1) and grain (6/1) which appear on other Roman currency bars may have symbolic value but also remind the viewer of very real concrete food-stuffs.

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As I said at the beginning of this paper, there is no one definitive piece of evidence that can be used to 'prove' that the Roman currency bars all originate from a relatively narrow period in time and that that period is likely to be the First Punic War. In particular, we have very little physical evidence to help us date the elephant and pig bar. All that said, I believe that the evidence laid out in this article shifts the balance of probability away from the long time span imagined by Crawford and others (280-242 BCE) and instead shifts the likelihood to a much more narrow period of manufacture, likely inspired by the triumphs celebrated during the course of the First Punic War. Generally speaking, the types all share a similar dispersal and hoarding pattern and a similar metrological and metallurgical profile. The iconography take as a whole also point strongly to a First Punic War date and a historiographical reading

[111] Gracchus' price per modius was 6 and 1/3 asses, but because of the retariffing of the denarius about 20 years earlier to 16 asses, this is the 'equivalent' of the 4-as price in 'old money'

[112] Cic. *Off*. 2. 58.

[113] 197 BCE: Livy 33.23.7, 70 asses; 194: 34.52.11, 250 asses; 191: 36.40.13, 125 asses; 189:37.59.6, 25 denarii; 187: 39.5.17 and 39.7.2-3, 25 denarii and 42 denarii; 180: 40.43.7 42, 50 denarii; 178: 41.7.3, 25 denarii. Centurions received double and Equites triple these base amounts; for discussion see, Pittenger 2008: 140-141.

[114] Beard 2007: 257-263.

of the literary evidence used to suggest other dates has shown that it is not nearly as compelling as previous scholars may have thought.

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