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Objekttyp: **Article**

Zeitschrift: **Museum Helveticum : schweizerische Zeitschrift für klassische Altertumswissenschaft = Revue suisse pour l'étude de l'antiquité classique = Rivista svizzera di filologia classica**

Band (Jahr): **71 (2014)**

Heft 2

PDF erstellt am: **28.04.2024**

Persistenter Link: <https://doi.org/10.5169/seals-515432>

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## Elephants in Vegetius' *Epitoma Rei Militaris* (3.24.5–16)

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*Abstract:* The sources underlying Vegetius' late-antique treatment of anti-elephant defences in the *Epitoma Rei Militaris* have hitherto not been examined in detail. A close examination of his material pertaining to elephant warfare reveals that most of it hails from sources dealing with the Roman Republic or the Hellenistic world in general, as would be expected. In some cases, these sources, or at least a broader underlying source tradition, can be identified with some security. Yet there are elements that do not fit this pattern and indeed could be indicative of anti-elephant warfare in late antiquity, more so given that Rome encountered the elephants of Sassanian Persia on several occasions in the fourth century A.D.

Towards the end of the third book of his *Epitoma Rei Militaris*, written at some point between the years 383 and 450 and dedicated to an unknown imperial honorand, Vegetius turns his attention to the means by which scythed chariots and elephants may be defeated in battle.<sup>1</sup> We concern ourselves here with the material pertaining to elephants. The main reason for this is that there are two elements in the *locus* that do not seem to emanate from the time of the Republic and Early Empire, the eras which generally constitute the periods of principal interest to Vegetius. Instead, they could well pertain to an age much closer to his own. This was an era in which scythed chariots were clearly no longer used, and indeed had not been used for centuries, but in which there was certainly the possibility of facing the Indian elephants of the Sassanian Persians, at least on the frontiers of the Eastern Roman Empire.<sup>2</sup> Vegetius, seemingly living in a time characterized by conflict with various barbarian peoples, was principally concerned

- 1 Abbreviations follow the "Liste des périodiques" in *L'Année philologique*. Other abbreviations are as per *OCD*<sup>3</sup>. De Boor = C. De Boor (ed.), *Theophrastus Chronographia* I (Leipzig 1883); Dindorf = L. Dindorf (ed.), *Chronicon Paschale*, 2 vols. (Bonn 1832). Translations are generally either verbatim or slightly adapted from the relevant Loeb Classical Library volume, except for Vegetius' *Epitoma*, which is taken from N.P. Milner (trans.), *Vegetius: Epitome of Military Science* (2<sup>nd</sup> ed., Liverpool 1996), though adapted as deemed necessary. There have been many attempts to divine the recipient of Vegetius' *Epitoma*, but the exact date matters little for our purposes and need not be discussed here. A comparatively recent summary of the various arguments can be found at M.B. Charles, *Vegetius in Context: Establishing the Date of the Epitoma Rei Militaris*, *Historia Einzelschriften* 194 (Stuttgart 2007) 16–21. I would like to thank Dr Philip Rance for reading a draft of this article and making several very useful suggestions on how to improve it.
- 2 On the Sassanian use of elephants, see M.B. Charles, "The Rise of the Sassanian Elephant Corps: Elephants and the Later Roman Empire", *IA* 42 (2007) 301–346; P. Rance, "Elephants in Warfare in Late Antiquity", *AAntHung* 43 (2003) 355–384.

with restoring Rome's former military prestige by drawing his readers' attention to the types of tactics, equipment, training and other military practices associated with the distant past. In particular, he wished to revivify what he describes as the *antiqua legio*, the traditional Roman legion composed of citizen-soldiers. This, he argues, was the military formation principally responsible for Rome's rise to military pre-eminence, and should therefore be used to reduce its dependence on barbarian *foederati*.<sup>3</sup>

As a result of his interest in the apogee of Roman military power, and the means by which it was established and maintained, Vegetius often relies on sources dealing with the time of the Republic, or the Early Empire. Indeed, Vegetius names Cato the Elder (*Epit.* 1.8.10, 1.13.6, 1.15.4, 2.3.6), Cornelius Celsus (*Epit.* 1.8.11), Frontinus (*Epit.* 1.8.11, 2.3.7), Sallust (*Epit.* 1.4.4, 1.9.8), Tarruntenus Paternus (*Epit.* 1.8.11), Varro (*Epit.* 4.41.6) and the *constitutiones* of the emperors Augustus (*Epit.* 1.8.11, 1.27.1), Trajan (*Epit.* 1.8.11) and Hadrian (*Epit.* 1.8.11, 1.27.1) as sources. His use of these relatively early sources has been well documented, particularly by German scholars in the early to mid-twentieth century.<sup>4</sup> In a great many cases, it is quite possible to identify whence Vegetius draws his material. Less well understood, however, is whence he derived material that seems to pertain to the Late Empire in general, or indeed his own time in a more specific sense. Vegetius was probably little more than an armchair authority on *res militares*, and thus had little if any practical military experience on which to draw, though we cannot be certain of this.<sup>5</sup> As a result,

- 3 Charles (n. 1) 126, n. 3 writes that "It is clear that Vegetius' *antiqua legio* was, in many respects, an imaginary concatenation of various sources hailing from various points in time". C.D. Gordon, "Vegetius and His Proposed Reforms of the Army", in J.A.S. Evans (ed.), *Polis and Imperium: Studies in Honour of Edward Togo Salmon* (Toronto 1974) 35–55, at 49 observes that Vegetius' ideas "are assigned to some nebulous golden age of the far past". Much has been written on the *antiqua legio*. See, indicatively, H.M.D. Parker, "The *Antiqua Legio* of Vegetius", *CQ* 26 (1932) 139–149; E. Sander, "Die *antiqua ordinatio legionis* des Vegetius", *Klio* 32 (1939) 382–391; M.P. Speidel, *The Framework of an Imperial Legion: The Fifth Annual Caerleon Lecture in honorem Aquilae Legionis II Augustae* (Caerleon 1992) 26–30.
- 4 See, e.g., F. Lammert, "Zu Vegetius' Epitome rei militaris IV 1–30", *PhW* 51 (1931) 798–800; id., "Ennius, Livius XXI 49–51 und Vegetius De re militari IV 32", *WS* 58 (1940) 89–95; E. Sander, "Zu Vegetius II 19; 21", *PhW* 47 (1927) 1278–1280; id., "Zu Vegetius IV, 38; 41", *PhW* 48 (1928) 908–910; id., "Frontin als Quelle für Vegetius", *PhW* 49 (1929) 1230–1231; id., "Die historischen Beispiele in der Epitome des Vegetius", *PhW* 50 (1930) 955–958; id., "Die Quellen von IV, 1–30 der Epitome des Vegetius", *PhW* 51 (1931) 395–399; id., "Die Hauptquellen der Bücher I–III der epitoma rei militaris des Vegetius", *Philologus* 87 (1932) 369–375; id., "Die Quellen des Buches IV 31–46 der Epitome des Vegetius", *RMPH* 99 (1956) 153–172; D. Schenk, *Die Quellen der Epitoma rei militaris des Flavius Renatus Vegetius*, diss. (Erlangen/Leipzig 1930), with an exceedingly brief treatment of *Epit.* 3.24.5–16 at 57.
- 5 Milner (n. 1) xvi–xvii describes the work as a "scissors-and-paste" mosaic of other works, with some of his own material woven into the work at various points. On this, see also C. Giuffrida Manmana (trans.), *Flavio Vegezio Renato: Compendio delle istituzioni militari* (2<sup>nd</sup> ed., Catania 1997) 49; F. Paschoud, *Roma aeterna. Études sur le patriotisme romain dans l'Occident latin à l'époque des grandes invasions* (Rome 1967) 111.

one imagines that he referred largely to texts written in the Late Empire for his more contemporary observations. Yet it is not impossible that he also secured information from acquaintances with a military background.<sup>6</sup> In this article, we look closely at all the material that Vegetius presents on how to deal with elephants, with an emphasis given to possible sources for the information presented.

Vegetius (*Epit.* 3.24.5) begins his discussion of elephants by stating that *elephanti in proeliis magnitudine corporum, barritus horrore, formae ipsius novitate homines equosque conturbant* ("Elephants in battle cause men and horses to panic because of the size of their bodies, the horror of their trumpeting and the novelty of their very form"). There are certainly many references in the extant sources to the effect that elephants had on cavalry. That said, Vegetius ignores the likelihood that their smell, as per Florus (1.13.8) and Livy (21.55.7, 30.18.7), was just as powerful a deterrent to horses as the elephants' size, trumpeting, and unusual appearance.<sup>7</sup> So, there is nothing of any real novelty here. It is perhaps worth pointing out that the language used by Vegetius is not dissimilar to that of Ammianus, who witnessed Sassanian elephants first-hand at the siege of Amida in A.D. 359 and wrote about them in his *Res Gestae*, written in the Theodosian age. In particular, witness Amm. 25.1.14: *post hos elephantorum fulgentium formidandam speciem et truculentos hiatus, vix mentes pavidae perferebant, ad quorum stridorem odoremque et insuetum aspectum magis equi terrebantur* ("Behind them the gleaming elephants, with their awful figures and savage, gaping mouths could scarcely be endured by the faint-hearted; and their trumpeting, their odour, and their strange aspect alarmed the horses still more").<sup>8</sup> Given the frequency of similar assertions in the kinds of sources most closely associated with Vegetius' *Epitoma*, one hesitates to suggest that our author, here, was drawing on Ammianus for *Epit.* 3.24.5.

Next, we turn to *Epit.* 3.24.6. Vegetius, obviously writing from a very Romano-centric perspective, observes that the Epirote king Pyrrhus was the first to use elephants against a Roman army in Lucania, while the Carthaginian Hannibal later deployed them in Africa, with the battle of Zama (202 B.C.) being alluded to here. Vegetius ignores the fact that Hannibal fielded elephants in Italy, both at the Trebia (218 B.C.) and during his long occupation of the pen-

6 For example, Vegetius writes, at *Epit.* 3.25.3, that the phrase *colligat campum* or "collect the field" is used by soldiers, the meaning being "to take spoils from the slain enemy". Milner (n. 1) 114, n. 7 observes that "This piece of soldiers' slang is not otherwise attested". Other information could have come from military acquaintances, such as the Christian-inspired military oath (*Epit.* 2.5.2–4), or a similarly inspired military password or *signum vocale* (*Epit.* 3.5.4).

7 For other examples of Roman cavalry being unable to withstand Pyrrhic and Punic elephants, see App. *Hann.* 7; *Pun.* 43; Zon. 8.3, 8.13.

8 Cf. Amm. 19.2.3 (terrifying appearance), 25.3.4 (smell and trumpeting), 25.6.2 (stench affecting men and horses).



insula, though some of the evidence for this is of dubious reliability.<sup>9</sup> He then goes on to say that an unspecified Antiochus, surely Antiochus IV, who used elephants against Rome at Magnesia (190/189 B.C.), employed them in the east, while Jugurtha had large numbers of the beasts. The latter assertion, it seems, is a reference to the engagement by the river Muthul (109 B.C.).<sup>10</sup> All this warrants no especial commentary. With reference to Lucania, and thus presumably to the Pyrrhic wars, Vegetius (*Epit.* 3.24.7) writes that a centurion once cut off the trunk of an elephant with his sword. Vegetius seems to have made a mistake here, for Florus (1.13.9) refers to such an incident taking place at the battle of Asculum in 279 B.C., where the soldier Gaius Numucius was credited with such a feat.<sup>11</sup> As Milner points out, this was in Apulia, and not Lucania.<sup>12</sup> It seems that Vegetius mixed up the battles of Asculum and Beneventum (275 B.C.), the latter of which *did* take place in Lucania. So far, Vegetius appears to be relying on sources dealing with Republican history, as one would expect.<sup>13</sup> Indeed Schenk, in his treatment of the *locus*, cites Frontinus as the source for Vegetius' references to Pyrrhus (see Front. 2.3.21, 2.4.13) and Hannibal (see Front. 2.3.16).<sup>14</sup>

But, at the very same *locus*, at least in Reeve's now-standard edition of the text, Vegetius presents some information that is somewhat more difficult to associate with the period of the Republic: *et bini catafracti equi iungebantur ad currum, quibus insidentes clibanarii sarisas, hoc est longissimos contos, in elephantos dirigebant* ("Pairs of armoured horses were harnessed each to a chariot; mounted [on the horses] were *clibanarii* who aimed *sarisae*, that is, very long pikes, at the elephants"). This statement, regarded as historical fact by Fiebiger, appears to flow on immediately after the description of the Roman centurion's bravery.<sup>15</sup> Reeve merely separates the two statements with a comma. Immediately thereafter, i.e., at *Epit.* 3.24.8, we read *nam muniti ferro nec a sagittariis*

- 9 For elephants at the Trebia, see App. *Hann.* 7; Livy 21.55.2; Polyb. 3.72.9; for elephants used later, see Livy 23.18.6, 23.41.10, 23.43.6, 23.46.4, 26.5.3, 26.5.11, 27.42.7, with 23.13.7, and Plut. *Marcell.* 12.3. On problems with some of the evidence from Livy, see M.B. Charles and P. Rhodan, "Magister Elephantorum: A Reappraisal of Hannibal's Use of Elephants", *CW* 100 (2007) 363–389, at 377, largely following P. Jal (ed. & trans.), *Tite-Live. Histoire romaine* 13, Collection des Universités de France (Paris 2001) 30 n. 'd'; see also J.F. Lazenby, *Hannibal's War: A Military History of the Second Punic War* (Warminster 1978) 96.
- 10 On Magnesia, see Livy 37.40.2–4, with Flor. 1.24.16; on the battle of the river Muthul, see Sall. *Jug.* 49.1, 53.3–4.
- 11 *Nam et centurio in Lucania gladio manum, quam promuscidem vocant, unius abscidit* ("A centurion in Lucania cut the hand [i.e., trunk] off one with his sword, what they call the *proboscis*"). Note the spelling *promuscis* used in the MSS, something also found in MSS of Florus (see 1.13.9), as Milner (n. 1) 113, n. 3 points out.
- 12 Milner (n. 1) 113, n. 3.
- 13 Milner (n. 1) 113, n. 4: "late-Roman (from Persian) term", as per O. Fiebiger, "Clibanarii", *RE* 7.1 (1900) 21–22, at 22.
- 14 Schenk (n. 4) 57.
- 15 Fiebiger (n. 13) 22: "Gegen Elefanten schwangen sie von Streitwagen aus ihre Sarissen (Veget. III 24)".

*quos vehebant beluae laedebantur et earum impetum equorum celeritate vitabant* ("Being covered in iron they were not harmed by the archers riding on the beasts, and avoided their charges thanks to the speed of their horses"). This seems to refer to the same *clibanarii* found at *Epit.* 3.24.7.

It is difficult to associate the information introduced above with the Pyrrhic wars, or even the Republic or Hellenistic world in a broader sense. *Catafractarii* (also written as *cataphractarii*), these being heavily armoured horsemen whose horses were also armoured (which is what Vegetius seems to mean when he writes *catafracti equi*), were certainly known in the Hellenistic world, at least as a troop-type. Yet they do not appear to have been used by Rome until centuries thereafter.<sup>16</sup> Vegetius uses *catafract-* elsewhere when he is describing material that is likely to come from the Republic or Principate, especially with respect to the equipment of the *antiqua legio* (e.g., *Epit.* 1.20.4–6, 2.15.4, 2.15.7, 2.16.1, 2.16.3). So, the presence of *catafracti equi* does not get us anywhere. But the appearance of *clibanarii*, which word appears to belong to a period *after* the Principate – as Milner, in his commentary on the text, has pointed out – is more difficult to reconcile.<sup>17</sup> There is some debate about what the difference might have been between *catafractarii* and *clibanarii*, with the latter possibly being a more specialized sub-set of the former, but this is not the place to deal with such a matter.<sup>18</sup> Suffice it to say that the later word is certainly not attested until the Late Empire.<sup>19</sup> Epigraphic evidence suggests that the nomenclature was in official mil-

16 Sarmatians were certainly being equipped as what would eventually be known as *catafractarii* by the first century A.D. On Sarmatian cavalry armour, see, e.g., Tac. *Hist.* 1.79.3, where the *tegimen* of the horsemen is *ferreis laminis aut praeduro corio consertum*, together with scenes XXXI and XXXVII of Trajan's Column, where Sarmatian cavalrymen and their horses wear scale armour. For images, see F. Lepper and S. Frere, *Trajan's Column: A New Edition of the Cichorius Plates* (Brunswick Road, Glos. and Wolfboro, NH 1998) pls. XXIII and XXVIII respectively.

17 D. Paniagua Aguilar (trans.), *Flavio Vegecio Renato. Compendio de técnica militar* (Madrid 2006) 305, n. 348 recognizes that "Los *clibanarii* eran los jinetes blindados con coraza característicos del ejército de época tardía".

18 Some contend that there was no difference at all, e.g., E. Gabba, "Sulle influenze reciproche degli ordinamenti militari dei Parti e dei Romani", *Atti del convegno sul tema: la Persia e il mondo greco-romano (Roma 11–14 aprile 1965)*, *Accademia Nazionale dei Lincei* 363, Quaderno 76 (1966) 51–73, at 65: "dei quali [*sc. clibanarii*] non si riesce a scorgere una differenza con i *catafracti*". But cf. M.P. Speidel, "*Cataphractarii Clibanarii* and the Rise of the Later Roman Mailed Cavalry", in id. (ed.), *Roman Army Studies* 2 (Stuttgart 1992) 406–413 = *Epigraphica Anatolia* 4 (1984) 151–156, at 153–154. Speidel, drawing on the *Notitia Dignitatum*, points to *clibanarii* predominating in the Eastern Empire, and *catafractarii* in the Western Empire: "a real difference between these two kinds of units" (408); "all mailed horsemen, including the *clibanarii*, could be called *catafractarii*, but some were further qualified as *clibanarii*" (409). This view appears to be supportable.

19 The word appears to be unknown in Latin in the classical period, and it is not listed in the *OLD*. It is possible that it might originate from *clibanus* (cf. the Greek κλίβανος), which refers to an earthenware oven; cf. Fiebiger (n. 13) 22, who thinks that it comes «aus dem Persischen», a view followed by M.I. Rostovtzeff, *The Excavations at Dura-Europos Conducted by Yale University and the French Academy of Inscriptions and Letters: Preliminary Report of Fourth*

itary use by at least A.D. 320 or thereabouts.<sup>20</sup> There were no Roman *catafractarii* or *clibanarii* in the Republic, much less during the Pyrrhic Wars. A further clue to a possibly more contemporary influence is provided by the reference to *conti*, for these were the long shafted weapons, used more or less like a lance, carried by the *catafractarii* and *clibanarii*.<sup>21</sup> Yet the linguistic argument for a non-Republican context for the second part of *Epit.* 3.24.7 is not watertight. Eutropius (6.9.1) uses the word to describe horsemen of the Armenian king Tigranes II operating in the first century B.C. Eutropius (see 10.16.1), writing in the late fourth century A.D., had accompanied Julian's army during the Persian campaign of A.D. 361–363, so it may well be that he is using a word known to him rather than to his sources for Republican history. The same could hold equally true for the Vegetian passage in question, i.e., our author was thinking of a Hellenistic or Republican context, but was adducing a word from his own era.<sup>22</sup> It is impossible to tell.

*Season of Work, October 1930–March 1931*, ed. P.V.C. Baur, M.I. Rostovtzeff and A.R. Bellinger (New Haven, CT 1933) 217–218. See also O. Gamber, “Kataphrakten, Clibanarier, Normannenreiter”, *Jahrbuch der Kunsthistorischen Sammlungen in Wien* 64 (1968) 7–44, at 23, with n. 40, who sees *clibanarii* as being of Parthian origin, at least as a troop-type, with D. Hoffman, *Das spätrömische Bewegungsheer und die Notitia Dignitatum I* (Düsseldorf 1969) 267–268, where the word's etymology is also discussed.

- 20 According to Speidel (n. 18) 406, the first reference to a *vexillatio eqq(uitum) cat(afractariorum) clib(anariorum)* could come from a gravestone from Claudopolis first published by E. Pfuhl and H. Möbius, *Die ostgriechischen Grabreliefs II* (Mainz 1979) 334, no. 1401; and *AE* 1984: 825. Speidel (n. 18) 407 dates the stele to “before 18 September 324”. The next datable mention of *clibanarii* is in Nazarius' panegyric of A.D. 321 (see *Pan. Lat.* 4[10].22.4), which praises Constantine the Great for his victory at Turin in A.D. 312. The word appears more frequently in the late fourth century, for it is used by a) Ammianus (16.10.8, perhaps the *locus classicus*, witness *sparsique cataphracti equites [quos clibanarios dictitant] personati thoracum muniti tegminibus, et limbis ferreis cincti* – “and scattered among them were the full-armoured cavalry, whom they call *clibanarii*, all masked, furnished with breastplates and girt with iron belts”, with 16.12.22), b) Eutropius (6.9.1), and c) the unknown and presumably late-fourth-century-A.D. author of the *Historia Augusta* (*Alex. Sev.* 56.5). This *locus*, which describes Persian cavalrymen defeated in A.D. 232 by Severus Alexander, rather suspiciously mirrors Amm. 16.10.8: *cataphractarios, quos illi clibanarios vocant*. Units with *clibanarii* in their name are also found in the *Notitia Dignitatum* (*Or.* 5.29, 5.40, 6.32, 6.40, 7.31–32, 7.34, 11.8; *Occ.* 6.67 = 7.185, with Hoffman (n. 19) 265–277. This text hails, in its original form at least, from some time soon after the death of Theodosius I, though it appears that it did not reach its final form until the time of Valentinian III – note the presence of a unit called *Placidi Valentinianici felices* at *Occ.* 7.36. For more descriptions of what seem to be *clibanarii*, or at least very heavily armoured horsemen, see Claud. *In Rufin.* 2.355–364; Jul. *Orat.* 1.37c–d. Cf. Heliod. *Aethiop.* 9.15.1–6; Propert. 3.12.12.
- 21 In personal correspondence, Dr Philip Rance pointed out that Vegetius' description of the device “makes little intrinsic sense”, for, if the main weapons associated with the device were the riders' *conti*, there was no real need for the chariot, which does not appear to have been scythed.
- 22 I thank Dr Philip Rance for this observation.



To pursue an additional line of inquiry suggested by Milner,<sup>23</sup> unusual weapons similar to those described by Vegetius at *Epit.* 3.24.7–8 are referred to in the treatise *De Rebus Bellicis*, written by an unknown author known as the Anonymus. This *libellus*, seemingly penned in the mid-fourth century A.D., and possibly during the joint reign of Valentinian I and Valens, was designed to offer suggestions on how the Roman army might be improved.<sup>24</sup> We have a good idea of the machines envisaged, for manuscripts preserve useful illustrations.<sup>25</sup> In Fig. VI, we witness a strange scythed chariot device, called a *currus drepanus* or *currodrepanus*.<sup>26</sup> It was intended to be drawn by two scale-clad horses. On the back of each is an armoured soldier. These look more or less like a *catafractarius* or *clibanarius* and carry a very long shafted weapon, such as the *contus*.<sup>27</sup> In Fig. VII, we find a smaller chariot, called a *currodrepanus singularis*, which appears to be without scythes, and is propelled by a single scale-clad horse bearing an armoured warrior equipped with a very long shafted weapon, with both ends pointed. The final picture of possible interest is found in Fig. VIII, which depicts a so-called *currodrepanus clipeatus*. This takes the form of a small scythed chariot harnessed to two scale-clad horses, both of which are controlled by a single armoured postilion, who seems to carry a spear-like weapon. Now, the Anonymus' fanciful machines were seemingly never constructed, much less used.<sup>28</sup> Yet Vegetius describes equip-

23 Milner (n. 1) 113, n. 5, with reference to "Anon. *de Rebus Bellicis* 12–14".

24 On the date, see, e.g., G. Bonamente, "Considerazioni sul *De rebus bellicis*", *AFLM* 14 (1981) 9–49; A. Cameron, "The Date of the Anonymus *De Rebus Bellicis*", in M.W.C. Hassall (ed.), *De Rebus Bellicis Part I: Aspects of the De Rebus Bellicis*, BAR International Series 63 (Oxford 1979) 1–10; H. Elton, *Warfare in Roman Europe, A.D. 350–425* (Oxford 1996) 269; E.A. Thompson (ed. & trans.), *A Roman Reformer and Inventor: Being a New Text of the Treatise De Rebus Bellicis* (Oxford 1952) 1–2.

25 Although medieval copies of the originals, it is generally accepted that the illustrations more or less convey what the Anonymus intended – more so since the machines could not have been built from the descriptions alone. On this, see J.J.G. Alexander, "The Illustrations of the Anonymus, *De Rebus Bellicis*", in M.W.C. Hassall (ed.), *De Rebus Bellicis Part I: Aspects of the De Rebus Bellicis. Papers presented to E.A. Thompson*, BAR International Series 63 (Oxford 1979) 11–13, at 11, following Thompson (n. 24) 15–17, and note especially: "the Anonymus' literary style is so obscure and *rébarbatif* that no illustrations could have been devised with the aid of the text alone" (17). The implication is that the original illustrations, which formed the basis for later copies, were originally drawn either by the Anonymus himself, or at least were executed under his close supervision.

26 Figure numbers are as per Thompson (n. 24).

27 According to E.L. Wheeler, "The Army and the *Limes* in the East", in P. Erdkamp (ed.), *A Companion to the Roman Army* (Malden, MA/Oxford/Carlton, Vic. 2007) 235–266, at 261–262, the first official unit of "mounted pikemen" or *contarii* was Trajanic (this being *Ala I Ulpia contariorum*), while "the first unit of cataphracts (fully armored *contarii*)" was Hadrianic (*Ala I Gallorum et Pannoniorum cataphracta*). Encounters with Sarmatian *catafractarii* such as those of the Rhoxolani were the impetus for the creation of such units, and "had nothing to do with the Parthians". The "proliferation of cataphract units began in the third and fourth centuries, when [the Romans] ... did respond to Sasanid practices" (262).

28 Thompson (n. 24) 57 describes them as "impracticable".



ment of very similar type in his *Epitoma* – and recommends them against elephants. This is strange, for Vegetius’ language seems to suggest that they *had* been used, and successfully too. As a result, a firm connection between the Anonymus – who never mentions elephants – and Vegetius remains problematic, although tempting.<sup>29</sup>

The next method of combating elephants described by Vegetius is not so difficult to place in a Republican military context (*Epit.* 3.24.9). Witness the following: *alii contra elephantos catafractos milites immiserunt, ita ut in brachiis eorum et in cassidibus vel umeris aculei ingentes ponerentur e ferro, ne manu sua elephas bellatorem contra se venientem posset apprehendere* (“Others sent against elephants armoured infantrymen; on their arms, shoulders and helmets huge iron spikes were set, so that the elephant could not use its trunk to catch hold of the soldier coming against him”). Here, we read of heavily armoured soldiers or *catafracti milites*, presumably foot-soldiers in this context, being protected from elephants by means of iron spikes attached to their arms, helmets and shoulders. This was carried out so that the elephants would be unable to grab the men with their trunks. The closest that we come to such a stratagem is found in Zonaras (9.22), who epitomizes Book 22 of Cassius Dio’s history and deals with events in the Third Macedonian War (171–168 B.C.). Here, we read that Perseus, king of Macedon, trained a phalanx of soldiers, described as ὀπλίται, and so presumably infantry, to deal with Rome’s elephants. To do so, these troops were equipped with shields and helmets to which sharp iron nails had been affixed (witness ὀξέσιν ἤλοις τὰς ἀσπίδας καὶ τὰ κράνη σιδηρώσας αὐτῶν).<sup>30</sup> This, of course, is not exactly what Vegetius describes, but it is close enough to suggest that he was possibly inspired by a version of this incident, such as what might have been recorded in a) the now-lost accounts of Poseidonius or P. Cornelius Scipio Nasica Corculum, who both wrote about the battle, and were used by Plutarch (*Aem.* 15.5, 16.3, 18.5, 19.7, 21.7), or b) the full version of the accounts of Appian, Diodorus Siculus or Polybius, now only available in fragments.

Yet the spikes had no effect on the twenty-two elephants stationed on the Roman right flank at Pydna (168 B.C.). Livy (44.41.3–5), seemingly paraphrasing elements of Polybius (and especially 29.17.2[12]), recounts how Perseus’ “anti-elephant corps” (*elephantomachae*) proved to be utterly useless – they certainly did not prevent Perseus’ forces from being routed. Thus the only problem with

29 That said, the use of *carroballistae* and scythed chariots propelled by armoured horsemen remains highly problematic. One might therefore wonder whether Vegetius, if familiar with the *De Rebus Bellicis*, a supposition not entirely beyond question, might have lifted these devices and inserted them into his text, perhaps under the mistaken impression that these machines had actually been used at some point. It is a long bow to draw, clearly enough, and one hesitates to say more about the matter.

30 The *locus* also describes how Perseus trained the Macedonian horses to be unafraid of elephants by constructing images of elephants that smelt and sounded like the beasts (he contrived to make them trumpet in a similar way to real elephants). The horses gradually become accustomed to these devices, so that they would eventually be unafraid of the real animals in battle.

associating Pydna with *Epit.* 3.24.9 is that the idea of fixing spikes to armour was clearly an *unsuccessful* anti-elephant stratagem. Vegetius (*Epit.* 3.24.16) closes his discussion of elephant warfare with the following words: *adversum elephantos plura exempla et machinamenta rettulimus, ut si quando necessitas postula-verit sciatur quae sint tam immanibus beluis oppenenda* ("Against elephants we have listed several examples and devices, so that if the need ever arise it may be known what should be deployed against such monstrous beasts"). Our author therefore presumably intended to provide his reader with examples of devices that could prove efficacious against elephants in combat.<sup>31</sup> Perhaps Vegetius was careless in this instance, was using a heavily abbreviated source, or simply wanted to describe all the devices that he had encountered in his readings.<sup>32</sup> Whatever the case, it remains likely that Perseus' *elephantomachae* were the underlying inspiration for the *locus*.

The next section (*Epit.* 3.24.10–13) presents fewer problems, but it will still be worth reviewing this section in full:

*10. Praecipue tamen velites antiqui adversum elephantos ordinaverunt. Velites autem erant iuvenes levi armatura, corpore alacri, qui ex equis optime missibilia dirigebant. 11. Hi equis praetercurrentibus ad latiores lanceas vel maiora spicula beluas occidebant. Sed crescente audacia postea collecti plures milites pariter pila, hoc est missibilia, in elephantos congerebant eosque vulneribus elidebant. 12. Illud additum est, ut funditores cum fustibalis et fundis rotundis lapidibus destinatis Indos per quos regebantur elephanti cum ipsis turribus affligerent atque mactarent, quo nihil tutius invenitur. 13. Praeterea venientibus beluis, quasi inrupissent aciem, spatium milites dabant; quae cum in agmen medium pervenissent circumfusus undique armorum globis cum magistris absque vulneribus capiebantur inlaesae.*

But especially the ancients deployed *velites* against elephants. *Velites* were young men lightly armed and able bodied, who sent spears with marvellous skill from horseback. While the horses ran past, they brought the beasts down using broad lances or large javelins; then, with increasing boldness, larger numbers of soldiers would combine together to cast *pila*, that is javelins, into the elephants, destroying them with wounds. Another method was for slingers with "sling-staves" and slings

31 Rance (n. 2) 359, however, observes that Vegetius "does not appear to regard elephants as a serious or regular military problem". This is curious, and could possibly have implications with respect to the ongoing debate concerning when Vegetius was writing, and whether he was thinking of military affairs in the West or in the East, where elephant warfare was still a possibility. This, of course, is not the forum to discuss these matters.

32 Vegetius does not seem to be mindful of Livy's admonishment (44.41.4) that *nam sicut pleraque nova commenta mortalium in verbis vim habent, experiendo, cum agi non quem ad modum agatur edisseri oportet, sine ullo effectum evanescent, ita tum elephantomachae nomen tantum sine usu fuerunt* ("For, as frequently men's new inventions appear strong when described, but in actual trial, when there is need for action rather than a description of how they will act, so in this battle the anti-elephant corps was a mere name without practical effect"). This seems to be a paraphrasing of Polybius' treatment of this unit, preserved as a fragment at 29.17.2[12], but not specifically mentioning the anti-elephant unit.

to shoot round stones at the mahouts [literally, “Indians”] controlling the elephants, knock them off, turrets and all, and slay them; no safer method has been found than this. Or else, as the beasts charged, the soldiers yielded ground to them as if they had broken into the line. When they had reached the midst of the formation, they were surrounded on all sides by massed groups of soldiers and captured with their drivers, intact and free from wounds.

The information presented at *Epit.* 3.24.10–13 can be linked to various *loci*, especially those dealing with the Punic Wars, and the Second Punic War in particular. As Milner points out, Vegetius’ understanding of *velites* “obviously belongs to the middle Republic”.<sup>33</sup> The use of *velites* against elephants is attested at the decisive battle of Zama, which took place in 202 B.C. between the Romans under Scipio, and a Carthaginian army led by Hannibal. According to Livy (21.55.11), Roman light infantry, which he specifically calls *velites*, also successfully repelled Hannibal’s elephants at the Trebia with short throwing spears known as *veruti* (218 B.C.). There are various other examples of Roman infantry successfully harassing Punic elephants, and any one of these, or perhaps several of them, could have been an underlying source for Vegetius’ information.<sup>34</sup> Yet Vegetius tellingly makes a bit of a meal of things. Although he says that the *velites* fought on horseback, this, at least from our available sources on Zama, surely the *locus classicus* for the use of *velites* against elephants, does not appear to be the case. Livy (30.33.3) described *velites* as the *levis armatura* or light infantry, while Polybius (15.12.4) mentions the cavalry showering the Punic elephants with javelins, but only after being forced out of the Roman infantry formation. As Frontinus (2.3.16) attests, the cavalry were arrayed on the flanks of Scipio’s army – not at the point initially attacked by the elephants.<sup>35</sup>

The next part of the passage refers to slingers and their ability to knock down the beasts’ mahouts, or *Indi* as Vegetius anachronistically calls them.<sup>36</sup> That said, Vegetius curiously seems to think that the elephant drivers were

33 Milner (n. 1) 113, n. 9, with *velites* described at Veg. *Epit.* 3.16.5–7 as operating *with* the cavalry if the need arose, especially if the cavalry were outnumbered.

34 Aside from Zama and the Trebia, Polybius (11.24.1) writes that light infantry, together with missile-bearing cavalry, were able to harass the elephants of Hasdrubal (son of Gisgo) at Ilipa in 206 B.C. (witness ἀκοντιζόμενα καὶ διαταραττόμενα). There is also Livy’s description of a battle that supposedly took place in 203 B.C. in the land of the Insubrian Gauls between Mago and Roman forces under P. Quinctilius Varus and M. Cornelius. The account is likely to have been derived from Roman annalistic tradition and is therefore problematic. A shower of javelins (*pila*) (30.18.10–11) was able to disperse the beasts, though the troops are specifically described as legionaries, and not *velites*. On the *locus*, see Charles and Rhodan (n. 9) 371–372. Aside from the Punic references, missiles were also successful against the elephants of Pyrrhus at Beneventum (275 B.C.); see Plut. *Pyrrh.* 25.5, with Flor. 1.13.12–13.

35 Schenk (n. 4) 57 cites this *locus* as the source for Vegetius’ *praeterea venientibus beluis, quasi inrupissent aciem, spatium milites dabant*.

36 Dionysius of Halicarnassus (*Rom. Ant.* 20.1.7) describes slingers armed with caltrops being deployed at Asculum.



positioned in turrets, instead of being perched on the elephant's neck, as is widely understood to have been their customary post.<sup>37</sup> Now, there is some debate about whether African elephants, such as those used by Carthage against Rome, ever carried turrets, for these were presumably of the species *Loxodonta cyclotis*, also known as the forest elephant. These beasts, now no longer found in northern Africa, are smaller than either the Indian elephant or the very large African bush elephant, the latter of which does not seem to have been used by the ancients for military purposes.<sup>38</sup> Punic elephants are never described as bearing turrets in any reasonably reputable historical source, although turreted African elephants were seemingly encountered by Roman forces at Thapsus in 46 B.C. (Pseud.-Caes. *BAfr.* 30.2, 41.2, with 86.1).<sup>39</sup> In any case, turrets were closely associated with elephants in antiquity, as evidenced by their frequent appearance in numismatic and three-dimensional depictions of elephants, so one need not make too much of this. Vegetius, here, could also be describing operations against Pyrrhic Indian elephants, which *did* appear to carry turrets, for we know from his previous reference to Lucania (*Epit.* 3.24.7) that he had read at least some information about Rome's war with Pyrrhus.<sup>40</sup>

The third part of *Epit.* 3.24.10–13 surely deals with Scipio's stratagem at Zama, whereby lines were opened up in the Roman formation to allow the Carthaginian elephants to pass, after which they were slaughtered or captured. Instead of arranging the heavy infantry maniples in the customary checker-board formation, Scipio arrayed them in columns, with the spaces in between filled with light infantry who were ordered to move out of the way once the elephants approached, all so as to give the appearance of a regular Roman battleline to the Carthaginians and their allies. Vegetius' reference to *velites* is also presumably an allusion to this stratagem, as discussed above. Although recorded by Livy (30.33.1–3, 14–16) and Polybius (15.9.6–10, 15.12.3–4), we know

37 For a particularly good numismatic representation, which dates to around 220 B.C. (Spain), a point in time close to the eve of the Second Punic War, see F. De Visscher, "Une histoire d'éléphants", *AC* 29 (1960) 51–60, at pl. 5.

38 That this is so is attested by the fact that ancient sources describe Indian elephants as the largest variety; see, e.g., Pliny *HN* 8.32; Polyb. 5.84.6; Philostr. *VA* 2.12.1; Strab. 15.1.43. On this issue, see M.B. Charles, "Elephants at Rome: Provenance, Use and Fate", *Athenaeum* (2014) 25–46, at 27, n. 4.

39 On Punic elephants with turrets, see the presumably apocryphal information at Sil. Ital. *Pun.* 4.599, 9.239–241, 17.621. On Thapsus, see especially M.B. Charles and P. Rhodan, "Reconsidering Thapsus: Caesar and the Elephants of Scipio and Juba", in C. Deroux (ed.), *Studies in Latin Literature and Roman History XIV*, Collection Latomus 315 (Brussels 2008) 177–188.

40 P. Goukowsky, "Le roi Pôrus, son éléphant et quelques autres", *BCH* 96 (1972) 473–502, at 497–498 even attributes the invention of turrets to Pyrrhus or his engineers – a debatable point. On Pyrrhic turrets, the Byzantine epitomator Zonaras (8.3), hopefully relying on a reputable source, mentions πύργοι ("turrets") at Heraclea (280 B.C.), while Florus (1.13.10) writes of *turres* ("towers") at Asculum (279 B.C.). See also H.H. Scullard, *The Elephant in the Greek and Roman World* (London 1974) 104–105.



that Frontinus, who also described the stratagem at *Strat.* 2.3.16, was used as a source by Vegetius, for he is mentioned at *Epit.* 1.8.11 and 2.3.7. In all, it seems clear enough that the underlying sources for *Epit.* 3.24.10–13 were indeed dealing with elephant warfare in Republican times, or at least the broader Hellenistic world.

At *Epit.* 3.24.14–15, however, we return to somewhat murkier waters with regard to Vegetius' underlying sources:

14. *Carroballistas aliquanto maiores – hae enim longius et vehementius spicula dirigunt – superpositas curriculis cum binis equis vel mulis post aciem convenit ordinari, et cum sub ictu teli accesserint bestiae sagittis ballistariis transfiguntur.*  
 15. *Latius tamen contra eas et firmitus praefigitur ferrum, ut in magnis corporibus maiora sint vulnera.*

It is advisable to post behind the line carriage-ballistas of a somewhat larger model – these shoot bolts farther and with greater force – mounted on cars with pairs of horses or mules; then, when the beasts come within the weapon's range they are pierced by ballista-shots. A broader and stronger iron head is fitted so as to make larger wounds in large bodies.

As with *Epit.* 3.24.7–9, this information cannot be linked directly to any extant source, a point also made by Rance.<sup>41</sup> Here, we find no real clue to a more contemporary source in the nomenclature used – there is no possibly anachronistic word such as *clibanarii*. Perhaps there are other clues. Unlike the discussion relating to the other otherwise-unattested anti-elephant defences such as anti-elephant chariots and armoured men equipped with spikes on their armour, this passage uses words in the present tense (witness *dirigunt*, *convenit*, *transfiguntur* and *praefigitur*) rather than the imperfect or perfect tense (*iungebantur* and *dirigebant* at *Epit.* 3.24.7; *vehebant*, *laedebantur* and *vitabant* at *Epit.* 3.24.8; *immiserunt* and *ponerentur* at *Epit.* 3.24.9). This could just hint at the possibility that what Vegetius is writing here relates to contemporary practices, although one cannot automatically discount the use of the historic present at *Epit.* 3.24.14–15.

*Carroballistae* had been previously introduced by Vegetius at *Epit.* 3.14.14, but their use against elephants in a pitched battle, as seems to be intimated at the *locus* of concern to us here, is unattested.<sup>42</sup> Although not found in Plutarch's life of Pyrrhus, there is the curious case, attested by Dionysius of Halicarnassus and the Byzantine epitomator Zonaras, of wagons being used against Pyrrhus' ele-

41 Rance (n. 2) 359.

42 Thompson (n. 24) 65, drawing on Veg. *Epit.* 4.22.7 (*fustibalos arcuballistas et fundas describere superfluum puto, quae praesens usus agnoscit*), contends that the use of *ballistae* and similar weapons “may have been dropping out of use altogether in Vegetius' time”. If so, there is further cause to contend that Vegetius' information regarding *carroballistae* and elephants was not exactly contemporary, but neither was it from the era of the Republic.

phants. Dionysius (*Rom. Ant.* 20.1.6–7) writes of three hundred four-wheeled wagons being brought to the field at Asculum (279 B.C.). These wagons were equipped with upright beams in the centre, with a moveable pole attached to the top. At the end of the poles were tridents or large spikes or scythes of iron, or else the wagons carried cranes to which grappling irons were attached. In front of the wagons were fire-bearing grapnels that were to be lit when the elephants approached. Zonaras (8.5) says much the same thing, albeit in the abbreviated fashion of a Byzantine epitomator.

So, these machines are not exactly Vegetius' *carroballistae*, although they might at least be described as a form of anti-elephant machine. Thus one might possibly argue that Vegetius was thinking of the instance described by Dionysius and Zonaras. But that position is difficult to hold. The relevant *loci* in Dionysius (*Rom. Ant.* 20.1.7, 20.2.5) and Zonaras (8.5) are characterized by numerous references to fire, something which Vegetius never mentions as an elephant deterrent.<sup>43</sup> Moreover, that the machines supposedly used by the Romans at Asculum were either *unsuccessful*, as per Dionysius (20.2.4–5), or *were not used*, as per Zonaras (8.5), also proves something of a problem. It is clear that Vegetius, at *Epit.* 3.24–14–15, is envisaging machines that were *successfully* used against elephants – describing weapons that had failed would have been contrary to his didactic purpose, as introduced at *Epit.* 3.24.16. That the machines described at Asculum could be fictitious, and perhaps the interpolations of chauvinistic annalists, is neither here nor there.<sup>44</sup> Vegetius was perhaps not attuned to the finer points of *Quellenforschung*.<sup>45</sup> Finally, he writes that the *carroballistae* should be drawn into battle by pairs of horses or mules (*cum binis equis vel mulis*), whereas Dionysius (20.2.5) clearly states that the wagons at Asculum were drawn by oxen, presumably because they would be less perturbed by elephants than their equine cousins.<sup>46</sup>

If not from Dionysius or Zonaras' source, whence did the description of *carroballistae* come? A possibility, already noted by Rance, is the description provided in the seventh-century-A.D. *Chronicon Paschale* (350).<sup>47</sup> This *locus* re-

43 The utility of fire against elephants is also described by Ammianus (19.7.7).

44 They do not appear in any other accounts of the battle, such as those of Plutarch (who presumably based much of his account, however abbreviated, on Hieronymus) or Florus.

45 Scullard (n. 40) 109 thinks that the machines are quite plausible: "Presumably Roman annalists did not think up ways of showing the inefficiency or stupidity of the Romans". He observes that: a) Zonaras' version, where they were not used in action, was probably the most likely; b) their unsuccessful use was invented by later Roman annalists "in order to attempt to save face to some extent"; and c) this was the version employed by Dionysius. But P. Lévêque, *Pyrrhos* (Paris 1957) 389, following W. Judeich, "König Pyrrhos' römische Politik", *Klio* 20 (1926) 1–18, at 8, n. 1, writes that the appearance of these odd machines at Asculum was the result "de l'imagination déchaînée d'un annaliste", which could well be the case.

46 The Roman cavalry had been terrified by Pyrrhus' elephants at the earlier battle of Heraclea (280 B.C.); see Flor. 1.13.8, with Zon. 8.3, where the cavalry's poor performance against the elephants is signalled.

47 = Dindorf 537, lines 17–18: ὁνάγροις τοὺς πλείονας ἐλέφαντας ἀπέκτειναν.

ports the use of Roman artillery against Sassanian elephants at the third siege of the Nisibis (A.D. 350).<sup>48</sup> The description emanates from the Bishop Volgaeses, who witnessed the incident. Yet the use of ὀνόγροις surely refers to the appropriately named *onager* or ‘wild ass’, a torsion-powered thrower of stones, rather than to a *ballista*, which is a machine designed to hurl bolts. In addition, these weapons were used from a mural position during a siege, and not in the field. We cannot therefore be entirely satisfied with associating this *locus* with Vegetius’ *carroballistae*, though the principle is the same, i.e., using engines against elephants.

The *De Rebus Bellicis*, described earlier in the context of anti-elephant chariots, also described a device that is worth adducing. In Fig. III of Thompson’s edition of the text, we see a *ballista quadrirotis*.<sup>49</sup> As the name implies, this was to be drawn on four wheels by two horses clad entirely in scale armour. This device was to be worked by two men and was intended to hurl a large arrow-tipped shaft – something not entirely dissimilar to what is described at *Epit.* 3.24.14–15. The problem, once again, is that the Anonymus’ weapons do not appear to have been constructed, much less used against elephants, while Vegetius seems to be describing something that was indeed deployed in combat. A connection between the two writers must therefore remain unproven. At least for the *carroballistae*, the use of the present tense, together with the comparatively detailed information provided, hints at something very real.<sup>50</sup> We know that the Sassanians did use elephants, and were wont to deploy them in sieges.<sup>51</sup> One therefore wonders whether Vegetius, at *Epit.* 3.24.7–9, is thinking of machines used against such an elephant-equipped enemy in the more recent past. However tempting that may be, Vegetius is clearly referring to mobile weapons, and one cannot think of a stand-up fight between Roman and Sassanian troops where such weapons were deployed. The reference in the *Chronicon Paschale* is the closest thing we have, while Ammianus, our best source for such matters, mentions nothing of the sort.

In sum, from the presentation of the material relating to elephants, together with the very language used by Vegetius, it is possible to hazard a guess about whence our author draws his information. As expected, most of it can be tied relatively neatly to accounts dealing with events that occurred during the Repub-

48 As Rance (n. 2) 363, with n. 38 (on the sources), observes, the incident is recorded in nearly identical fashion by Theophanes (*Chron.* A.M. 5841 = De Boor 39, line 30): ὀνόγροις δὲ τοὺς πλείους ἐλέφαντας ἀπέκτειναν; see also Jul. *Orat.* 2.65b–66a, which *locus* deals with the same siege and also records that stones were hurled at the elephants.

49 Figure numbers are as per Thompson (n. 24).

50 The use of tense was also noted by Rance (n. 2) 359.

51 See, e.g., Theod. *H.R.* 1.11 (Nisibis in A.D. 337 or 338); Amm. 19.2.3, 19.7.6–7 (Amida in A.D. 359). Elephants continued to be used much later for the same purpose; see Procop. 8.14.10, 8.14.32–37 (Archaeopolis in Lazica); 8.17.10–11 (against the Lazi and their strongholds), with Rance (n. 2) 358, who stresses the importance of elephants to Sassanian siege-craft and military logistics, a view followed by Charles (n. 2) 341, n. 113.



lic, and the Pyrrhic and Punic wars in particular, although identifying exact *loci* is a fraught exercise – Vegetius obviously had more ancient material available to him than is available to us today. But there are at least two anti-elephant elements that do not comfortably fit the pattern. These relate to the information relating to: a) scythed chariots drawn by two armoured cavalymen described as *clibanarii*; and b) mule- or horse-drawn *carroballistae* firing shafts with heads specially designed to wound elephants. As far as one can tell, this information is difficult to relate to the period of the Republic, regardless of the comparative paucity of source material that has filtered down to us. The use of the seemingly anachronistic *clibanarii* is possibly also indicative of this, though it remains plausible that this word was an interpolation on the author's part, as it clearly was in the case of Eutropius. As a result, and if one must hazard some conjecture, it is plausible to suggest that these anti-elephant devices could relate, not to the Republican age or Hellenistic era, but to the Late Empire. In these cases, and the case of the *carroballistae* in particular, Vegetius had perhaps happened upon the information in question from his readings, or perhaps had become familiar with them from discussions with Roman soldiers. If so, they can only pertain to Rome's wars with the Sassanian Persians. This was the only power in contact with Rome that was capable of deploying elephants in the field, although the beasts admittedly seem to have been used more for logistical or poliorcetic purposes, or else to bolster morale, than for frontal assaults in the manner of Epirote or Carthaginian armies.<sup>52</sup> Yet the very nature of such weapons gives one pause, and indeed hints at the possibility of a flight of fancy on the part of either Vegetius or, what is more likely, his sources, which were perhaps poorly understood by our author. Given that Vegetius displays a faulty understanding of historical anti-elephant defences, such as Perseus' *elephantomachae* at Pydna and Scipio Africanus' *velites* at Zama, the latter emerges as a strong possibility.

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52 Rance (n. 2) 282. Yet elephants were used to attack the beleaguered column of Julian in A.D. 363, witness Amm. 25.3.4–5, 25.6.2, with Zos. 3.30.2–3. On other occasions in the same campaign, the elephants were placed *behind* the infantry, as per Amm. 24.6.8, 25.1.14.